“WE GROW UP WITH IT"

AN ETHNOGRAPHIC STUDY OF THE EXPERIENCES, PERCEPTIONS AND RESPONSES TO THE HEALTH IMPACTS OF ENERGY ACQUISITION AND USE IN RURAL SOUTH AFRICA.

DISSERTATION

to obtain
the degree of doctor at the University of Twente,
on the authority of the rector magnificus,
prof.dr. H. Brinksma,
on account of the decision of the graduation committee,
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by

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DEDICATION

This work is dedicated to all my family but especially to three women in my life whose best qualities I pray to have one day. To my grandmother, whose innovativeness and courage changed and saved the lives of many generations of women and children in her village and far beyond; to my mother, whose courage and love is phenomenal; and my late sister Roselyn, whose loving-kindness and patience continue to inspire me to this day.

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List of Acronyms

ALRI	Acute Lower Respiratory Infections
ANC	African National Congress
ARI	Acute Respiratory Infections
ARV	Anti-Retroviral
ASGISA	Accelerated and Shared Growth Initiative for South Africa
AT	Appropriate Technology
BEE	Black Economic Empowerment
BLA	Black Local Authorities
CDM	Clean Development Mechanism
CDT	Cutwini Development Trust
COPD	Chronic Obstructive Pulmonary Disease
CSG	Child Support Grant
CSIR	Council for Scientific and Industrial Research
DALY	Disability Adjusted Life Year
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Minerals and Energy
DMEA	Department of Minerals and Energy Affairs
DPLG	Department of Provincial and Local Government
DWAF	Department of Water and Forestry
ECATU	Eastern Cape Appropriate Technology Unit
EDRC	Energy for Development Research Centre
ENERGIA	International Network on Gender and Energy
ESCOM/ESKOM/EVKOM	Electricity Supply Commission
ESMAP	Energy Sector Management Assistance Program
FBAE	Free Basic Alternative Energy
FBE	Free Basic Energy
FCG	Foster Care Grant
GAD	Gender and Development
GHG	Green House Gas
GT	Grounded Theory
IAP	Indoor Air Pollution
IDP	Integrated Development Planning
IEC	Integrated Energy Centre
KI	Key Informant
kWh	Kilo Watt Hour
LPG	Liquid Petroleum Gas
LSA	Local Services Area

MDG	Millennium Development Goals
MRC	Medical Research Council
NEC	National Energy Council
NELF	National Electrification Forum
NER	National Electricity Regulator
NERSA	National Electricity Regulator of South Africa
NRCS	National Regulator for Compulsory Standards
OAP	Old Aged Pension
ORTDM	O.R Tambo District Municipality
PASASA	Paraffin Safety Association of Southern Africa
R	Rand
RA	Research Assistant
RDP	Reconstruction and Development Program
RETs	Renewable Energy Technologies
SABS	South African Bureau of Standards
SAPIA	South African Petroleum Industry Association
TESCOR	Transkei Electricity Supply Corporation
VDF	Village Development Forum
WHO	World Health Organisation
WID	Women In Development
WSSD	World Symposium on Sustainable Development

Exchange Rate

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Glossary

abasokolayo	Those that suffer/struggle
abomvu/abantu abomvu	Literally: red people, also referring to the smearing of ochre. Often said, of people with little formal education. Although people can refer to themselves as such, it is seen as a demeaning term
dikazi (amadikazi) idikazi	Pondo women who choose not to marry but instead to be independent and head their own homesteads

efukwini	Time period after birth until the umbilical cord falls off, that it is also the term for the room where mother and infant stay during this period, to which access is restricted
entla	The back of the kitchen space, opposite the door of a traditional round hut kitchen
esibayeni	At the kraal
esiXhoseni	The Xhosa way
gidilana	This entails reciprocal gift giving (also labour and cash) between households during traditional ceremonies
ibaketi likhulu and ibaketi lincinci	Ceremony. Literally big bucket and small bucket. Party where women bring particular gifts to the bride
igoqo	A firewood pile (also made during *lobola* negotiations)
igqirha	Traditional Doctor. *cf*: *ugqirha* which is modern doctor
ikongo	Day of *ikongo* - Pondoland Uprising
ilima (amalima)	A kind of co-operative labour whereby a household head requests help from community members to plough her or his field
imifino	Indigenous vegetables
imphepo	Type of shrub used for ceremony
ingqele	One type of respiratory infection
isiko	Ritual
iziko	Fireplace
izitshongo	Firewood gathering parties in preparation for ceremonies
khumtsha /ukhumtsha (amakhumtsha)	Refers to an individuals' or household's state of being modern
Lobola (ilobola)	Bride wealth – given as part of marriage negotiations for a traditional Xhosa ceremony
makoti (amakoti)	Daughter in Law
mnene'mzi	The man of the homestead
nyanda	A firewood bundle head-load

pinifa	Housecoat worn when working at a ceremony by married or 'respectable' women
sibaya	Cattle *kraal*
sibonda	Sub-village Headmen
spaza	Small shop/stall selling low cost items
ubukazi	Womanhood
ubundoda	Manhood
ukuchaza	This is the ritualistic cutting of the face to stop particular, undesirable behaviours, or to address the demands of ancestors.
ukuqinisa mtwana	Literally: to toughen up a child
imigidi (Sing. umgidi)	Celebrations that a family or clan will undertake for various rituals
umkhululo	Ceremony. Literally removing mourning clothes - after a death of a family member, also called *umombolo*
Umkhupha	Steamed bread
umngquzo	Girl's initiation ceremony
Umqaba (Amaqaba)	A person who sticks to Xhosa traditions (literally those that smear themselves – face and clothes- with ochre). Also used to refer to some one who had little or no formal education. In this case, the use is often seen as derogatory
Umngqusho	Samp and beans
umthetho	Any cultural rule that can governs how things are done, when by, and by whom
umuhluko	May be interpreted as 'development'
vakasha (ukuvakasha)	To walk around and socialise with one's peers

Preface and acknowledgments

My journey to this PhD on energy and health from an ethnographic perspective started out as that of a Mechanical Engineer. As a student I worked on a series of appropriate technology projects that led to looking at low cost micro-hydro for my final year project and an introduction to AFREPREN's energy policy work. I then briefly worked for the Malawi electricity utility, ESCOM, before doing my Masters at the University of Cape Town (UCT), with an initial aim of looking at energy planning and modelling. What I encountered during the compulsory introductory course at the then EDRC was a side of energy I had unknowingly been gravitating towards but had not articulated: energy for sustainable development. During the last phase of my MSc I became involved with the HEDON household energy network and it was here that my passion for the sector started. As a HEDON associate and later consultant, I was introduced to the work of various persons working on energy-development linkages but I was profoundly affected by the work of Dr K Smith, particularly from 2002 to 2004, and was surprised by its implications. If millions of women and children were dying as a result of indoor air pollution (IAP) caused by cooking with solid fuels, something I had taken as merely unpleasant until then, what was being done about it? My first thoughts were of the ranges of technologies that could be easily developed to address the problem. Around the same time but particularly in 2004, I also became aware of ENERGIA's work on gender and energy. In 2005 while in Cape Town on other business, I gate-crashed their meeting on energy and MDGs and with my growing interest in the health aspects of energy I ended up working with them, focusing on the health MDGs aimed at reducing maternal mortality, reducing child mortality and reducing HIV, TB and other diseases. What also struck me during this period was the limited attention to deaths from IAP, when compared to the media and international community's attention to severe acute respiratory syndrome (SARS). Whenever I debated this discrepancy with professionals I was often told it was about the economics, the returns on investment, the financial costs, or it was because SARS was a global threat that between 2002 and 2003 had killed about 800 people. I was also wondering why there was little research on other health aspects of household energy other than IAP. In any case, I became fascinated by the various possible linkages between energy and health.

What I did not want to do was to repeat the work being done by a number of scientists who were examining the question of whether or to what extent IAP from solid fuels is linked to respiratory infection. I wanted to look at the entire cycle of energy use - from acquisition, use, to disposal - and to closely examine the question of financial costs. With many institutions bring interested in renewable energy from a supply or climate change perspective, other researchers' interest in what I wanted to do was limited as was the literature. However, a chance encounter whilst working with HEDON led me to a job offer at the University of Twente's Technology and Sustainable Development (TSD) group - now part of CSTM. Here I found a rare academic opportunity where I could chose a research topic without being narrowly limited to particular areas of interest as defined by funders.

Through the years I gathered a lot of lessons from my supervisors Dr Nico Schulte Nordholt and Dr Joy Clancy, as well as from my other colleagues work experience. Of these many lessons, one that has stuck out as I finish writing is how technically minded I was at the beginning of my research, going along with widely held albeit erroneous assumptions that energy supply and use is culturally and gender neutral. Of course to understand this situation I would need to get to know and value a culture, preferably *in-situ*. This is not something my academic setting could have helped me with except to give me pointers. The real lessons on appreciating culture were offered free of charge by the people of Cutwini and Tsilitwa, and many others I met on my trips to and from these villages, as well as during my stay in Netherlands.

During my fieldwork, I found unbelievable kindness and hospitality. Firstly, I have to thank *my families*: the Gule family in Cutwini and Ms Ngayi in Tsilitwa, both of whom took on a stranger and cared for me with such love and warmth. They were not just host families but have become a part of my life beyond this research. Zoleka Mazinyo was my research assistant who guided me through the minefield of a new culture, patiently taught me Xhosa, made sure I did not misunderstand people's intentions, and always cheered me up when things looked down or slow. I will always value her friendship and wish her much success in life. Bongani Mlotywa, my ad-hoc research assistant and key informant from Cutwini proudly mapped out his culture to me and gave me a glimpse into the world of men's aspirations for their lives and their complicated but often simplified relations to women. The many women and men, girls and boys of Cutwini and Tsilitwa - too many to mention here - who made my stay easy by joking with me, teasing me, taking time to explain and show me their world with so much openness, and always assuring me I was one of them. This thesis was possible largely because they shared their daily lives with me and patiently answered my 'common knowledge' questions, often updating me whenever we met. *Ndiyabulela abantu bam!* The women vendors of Lusikisiki who quickly picked up my 'foreignness' and always ensured that I got on the right van back to the village whenever I was in town. At Kob lodge in Lusikisiki, I found friends and even a doctor so that in worst case scenarios when transports back to Cutwini appeared scarce, I was never panicked. In Tsilitwa, the Councillor often took time off from his busy schedule to show me around the wards he was responsible for, which gave me a good grasp of the area and its challenges. The nurses and program managers from both villages, who answered my questions and showed me their work, who try to do their best under resource constraints and have to work in between two different cultures that converge and diverge unpredictably.

From RoetScientific, Merida Roets and her husband who offered me work space, administrative assistance and transport without knowing me - thank you. I also came to admire the work they do in the communities around them and in nurturing a crop of young Eastern Cape black professionals. Also from RoetsScientific, Nnonopheli who travelled with me, offering his own vehicle to look for research villages he had never heard of. He was my very first interpreter in Cutwini the day I arrived. At Fort Hare University, Sampson Mamphweli's advice and assistance on getting research permits helped me avoid many wrong turns in the process.

Back in the Netherlands, I owe many thanks to my promoter Nico Schulte Nordholt for his understanding and support, and above all his patience and belief that I would actually finish this work. The amount of travelling he endured to come close to where I lived for discussions between 2009 and 2010 was incredible, and his support when I had to stay in the Netherlands beyond September 2009 was well beyond the call of duty. On top of that he always ensured that I was well fed during these discussions. My co-promoter, Joy Clancy and her partner Giles Stacey each gave me a nugget of advice that I have tried to make good use of. Joy's nugget of *"means to an end"* kept me hoping that there was an end at least, and my request for Quince sweets were promptly answered keeping my energy levels high whilst writing up the research. As a result of working with Joy I have seen the world of women and men in a different light and for that I am a better researcher. Giles' nugget on the difference between *"evidence that supports and evidence that proves"* was a good reminder not to get carried away in my analysis. Their home was always open to me with delicious vegetarian meals that I will miss. My other co-promoter, Sjaak van der Geest from the University of Amsterdam was always prompt and focused on his feedback. His quick solution to my lack of office space in 2010 was a life-saver.

Ada Krooshoop, Annemiek van Breugel, Barbera van Dalm-Grobben and Monique Zuithof were always ready with a smile and coped with every administrative and logistical question I brought to them. In 2010 when I could not easily access the University of Twente library, Barbera dutifully ordered books for me and sent them on - an unenviable task. Ada's patience and calmness was simply astounding and without her skills and dedication the layout of my final thesis would have been disastrous.

Annemarije Kooijman-van Dijk, who always encouraged me, showing me I was not the first to experience the range of fears and mishaps at the writing stages. She and her husband Henk-Jan soothed these anxieties with bars of chocolate, lovely meals, a place to sleep when I was in Enschede and their children also did their part: Kamiel always gave up his room for me and Ralf was always ready with a smile and a screech for me whenever I visited. Winnie Ingolo (Krens) has been a God-send for many students in Enschede. She always guaranteed a laugh and has provided emotional and spiritual support to me and many other foreign students at ITC and UT - a sort of ambassador-at-large for those of us that found ourselves in Enschede.

Thank you Jon Lovett for allowing me to use his flat whenever he could, Karlijn Morsink who was always ready to help - from coloured markers to storage space, Hazel Kwaramba and Vera Kovalainen for their warm friendship - thanks for coming to Amsterdam to see me and my sister. In my last year when I needed new arrangements to stay in the Netherlands, Frans Coenen and Margaret Skutsch jumped in to make sure that this was possible. Frank van Boekel and Harry Bartelink have always made it easy and possible for me to reduce and navigate IT mishaps even when I was in the field - thank you.

When I joined the University of Amsterdam *werkplaats* in 2010 I found yet another home there. I will never forget my hilarious, refreshing but always intellectual discussions with Josip Kesic and exchanges on entering new cultures with Iris. They both made me feel instantly at home, as did Muriel and Anne from the secretariat.

The people of IND surprised me with their understanding and support. At a time of economic and identity uncertainty in Europe and the '*fear of the other'* across the globe, it is my hope that the Netherlands will not lose the tolerance it was once famed for.

Looking back, the years between 2005 and 2010 were some of the most turbulent in my life and particularly after 2009. I made it through these years because I had amazing support from my family who were always praying for me and encouraging me. I could not have completed this thesis without the courage and support of my sister Priscilla, whom fate sent to Amsterdam in 2008. When she needed me most between 2009 and 2010 I was busy travelling to and from Enschede and spent whatever time I had in between this commute in various libraries or simply mentally locked away. She never complained or demanded more of me even though she was going through a much tougher, life changing experience than I was. Such courage kept me going when it was easier to make excuses. Finally, James Robinson my partner and friend, who travelled from UK every month for four years to see me and who shared his family so that I added yet another set of 'parents' to my repertoire of family. His support for me, including missing many World Cup matches, has been beyond measure and the sacrifices he made have humbled me. I am looking forward to each day that is ahead of us *sithando sam*.

Enschede, 2010

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Introduction

Background

In 2002, an estimated 2.5 billion people depended on biomass fuels for cooking (OECD/IEA 2002) because they did not have, or had limited access to, modern energy carriers[1]. Less talked about are those who depend on kerosene, more commonly known as paraffin or illuminating paraffin in South Africa. The number of people without access to modern energy carriers is also expected to increase, reaching 2.7 billion in 2030, as global population rises (OECD/IEA 2002). Both biomass and paraffin users – and sometimes these are the same people – face various consequences, including health impacts during both acquisition and use, as a result of this lack of access to modern energy carriers. Although the OECD/IEA report is frequently quoted in other works (Practical Action 2009, World Bank 2006), questions remain as to how this energy–health nexus is experienced, perceived, and responded to, at the various levels. These levels include the international, national, local, and the household level[2]. This thesis examines how the various actors[3] within these four levels experience, perceive, and respond to the health impacts of energy use, and why such experiences, perceptions and responses both exist and persist. The objective of the study is to inform development policy and practice, and at the same time, extend theory related to development interventions.

South Africa, where the study is located, is one of the countries attempting to increase energy access to its citizens, and was selected as the study site for reasons explained in the penultimate section of this chapter. Although the questions raised in this research refer to South Africa, the answers are relevant for energy sectors in many

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1 Energy carriers are the forms in which energy is delivered to the end-user. They include fossil, biomass fuels, batteries and electricity, and need further conversion to useful energy such as light, sound, heat and mechanical energy (Skutsch & Clancy 2006).

2 The four levels therefore cover actors responsible for formulating and enabling energy-access policies and those responsible for acquisition and use who are affected by these policies.

3 Here I define actors as parties such as individuals and organisations that have particular role dimensions, interests and responsibilities.

developing nations, as well as other basic services sectors, with the usual caveats for generalising findings from one setting to another.

Statement of the problem and study objectives

The focus in this research on experiences, perceptions and responses to the health impacts of energy use stems from two observations. The first is from my personal experiences and professional knowledge prior to this research, in areas where people have either no or limited access to modern energy carriers such as electricity and gas. Whether in my home village of Huwa in Dedza, Malawi, or the other villages I visited such as Maphephetheni in South Africa, or Kajulu in Kenya[4], the patterns around fuel acquisition and use seem to be common. It is usual to encounter people, mostly women, carrying heavy loads of firewood, often on their heads[5]. They do this several times a week, and it is an activity that many of them have done for a lifetime. In addition, those without access to modern energy carriers – once again mainly women – often cook, sit and chat in smoky kitchens. To the observer, carrying firewood on the head appears to be back-breaking work and being in a smoky kitchen often leads to stinging eyes and coughing fits. What is their experience of these conditions? How do they perceive these experiences and how do they respond to them? Why do they continue to do something which to an outsider appears to be harmful to health?

The second observation is that the academic and (grey) development literature often highlights the negative health impacts of firewood carrying and smoke exposure. According to this literature, a lifetime of carrying firewood results in musculoskeletal damage and/or back pain (Echarri & Forriol 2002, 2005, Haile 1989, Haile 1991, Jäger *et al*. 1997, Joosab *et al.* 1994, Laxmi *et al*. 2003). Trips to the forest may also lead to injuries such as falls and broken bones (Wickramasinghe 2001, 2003), and physical and sexual harassment including rape (Haile 1989, MSF 2005). Indoor air pollution (IAP) from the burning of firewood for cooking has been shown to be responsible for problems such as respiratory infections (Kossove 1982, Smith-Sivertsen *et al*. 2004a, Smith 1987, 1993), eye problems (Smith-Sivertsen *et al.* 2004b, Visser & Khan 1996), and possibly cardiovascular diseases (Von Schirnding *et al*. 2000). South Africa's Medical Research Council (MRC) estimates that in 2000 IAP from use of solid fuels in South Africa was responsible for loss of healthy life years comprising 60, 934 DALYs (0.4% of all DALYs) and was responsible for 2,489 deaths representing 0.5% of all deaths in that year (Norman *et al.* 2007)[6]. The black population bore 99% of this burden. This, however, is based on the assumption that 20% of South African households use solid biomass fuels. Other experts estimate South African firewood use to be as high as 30% or more (GTZ 2008), implying a higher rate of negative health impacts from IAP. This could be higher still in rural areas such as parts of the former

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4 Visits to the villages of Maphephetheni and Kajulu in 2006 were the basis for pilot studies which led to a better formulation of the research problem and a change in methodology as further explained in Appendix 1.

5 This is of course a relative term but advocacy literature often quotes 20kg, although Heglung (1992) reports that women in East Africa carry as much as 70% or more of their body weight. To give an idea to the reader from contemporary travel, 20kg is as heavy as a typical flight luggage allowance.

6 DALY stands for disability-adjusted life year, and is a time-based measure of overall burden of disease that combines years of life lost due to premature mortality and years of life lost due to time lived in states of less than full health (WHO 2002).

Transkei, now called Eastern Cape, where over 50% of households use firewood for cooking (STATSSA 2007). Open fires also present a burn hazard for children and adults (Bruce *et al*. 2004); paraffin has been linked to high incidences of burn injuries among children (Ahuja & Bhattacharya 2004, Nega & Lindtjørn 2002). An issue that receives much attention in South Africa, although it is less researched elsewhere, is the fact that poorly designed paraffin stoves can overheat and then burst into flames. Paraffin accidents accounted for 1,300 deaths, 9,000 hospitalisations, and destroyed 20,000 dwellings in South Africa in 1999 alone (Kenny 2002)[7]. In addition, accidental paraffin ingestion results in at least 200 deaths a year and 16,000 hospital admissions (Kenny 2002).

The literature cited above, which is covered more extensively in Chapter 2, draws multiple correlations between energy and health. In addition, the majority of these studies are from an etic[8] perspective that focuses on measuring levels of incidents and the burden of disease. As such, they represent one particular type of 'outsider's' way of perceiving the energy–health nexus, *i.e.* the positivist's[9] view. What is not addressed in the literature are the experiences, perceptions, and responses of the various actors. How do the actors themselves experience and perceive energy acquisition and use in the context of health?

Furthermore, these 'outsider' views only examine one particular level of the energy–health nexus: that is the individual level. Such a focus results in the addressing of a particular level as if it is independent of others. Van der Geest *et al.* (1990) have criticised this focus on the individual level, arguing for a multi-level perspective which recognises the influences of other levels of organisation on each other.

The absence of a literature on emic[10] experiences, perceptions and responses therefore represents a gap in the understanding of energy and health linkages. Such a gap influences the understanding of actions at the household level, as well as the outcomes of international and national interventions aimed at household actors. Further, although relevant in tracing causes and health burdens, knowledge of the correlations between energy use and health has limited relevance if not complemented by an in-depth understanding of why experiences, perceptions and responses persist within the four levels. Such knowledge is relevant both from an energy perspective as well as from a health perspective, where it can help actors within these sectors formulate improved policy interventions and program design. This could in turn lead to improved living standards for persons with no or limited access to modern energy carriers. Based on the gaps identified above, this research will examine four levels – the international, national, local, and household levels – with the following objectives:

- to identify gaps in knowledge on the health impacts of energy acquisition and use throughout the four levels;
- to understand why these gaps exist and persist;

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7 This figure is an estimate based on reports to emergency services, and media reports. There is currently no systematic recording of paraffin accidents according to a PASASA executive (Interview, 6th May, 2010).

8 The etic perspective is the external, social-scientific perspective of reality (Fetterman 1998).

9 A positivist view, in its simplest form, adopts the stance that there is reality that can be apprehended, measured and explained, so that finding an objective truth is possible. It chiefly uses quantitative methods, and manipulates or controls variables to verify or falsify hypothesis. The observer's feelings about what is observed must be excluded.

10 In contrast to etic views, emic views take the perspective of the insider or the respondent.

- to make policy recommendations aimed at addressing the identified gaps;
- to make a scholarly contribution to the field of household energy and energy policy.

Main research questions

In order to address the objectives outlined above, this research is guided by the following main research questions:

1. *What are actors' experiences of the health impacts of energy acquisition and use?*
2. *How do actors perceive and respond to these experiences?*
3. *What is the gendered nature of the health experiences, perceptions and responses resulting from energy use and acquisition?*
4. *Why do actors perceive and respond to the health impacts of energy acquisition and use in the way they do?*
5. *Whether and why do perceptions at the four levels converge or diverge?*

The next section provides the methodology, and approach used to answer these research questions.

Methodology

The methodology for international-level and national-level analysis was a review of secondary data. I only conducted one interview with a gender expert for the international level, and was involved at the beginning of my research with ENERGIA's work on gender, energy and the Millennium Development Goals. At national level, I supplemented the literature reviewed with interviews with DME officials and energy experts who had been involved in energy projects from before 1994. At the local level, I analysed program objectives and how they have been implemented using secondary data. I also carried out interviews with persons responsible for the program implementation and I observed local health personnel in the two villages at their work places, and additionally in one of the villages (Tsilitwa) through day-to-day interactions[11].

The thesis starts at the international level, going down through the national and the local and, finally, to the household level, which forms the core of the study. The rest of the discussion in this chapter, therefore, focuses on the methodology at household level.

Formulating and (re)defining the research and its questions

This research started out focusing on the financial costs of the health impacts of energy acquisition and use at the household level. This was based on the fact that such costs are not addressed in the literature. Mainstream *rational economics* provided the underlying assumption guiding this question. With this in mind, I undertook pilot studies in Kajulu, a village in Kisumu, Kenya, and in Maphephethe(ni), a village in KwaZulu-Natal in South Africa, in 2006. I spent six weeks commuting to each of these two villages and conducting a survey. The survey was guided by the questions: What impacts do people

[11] I call the actors at local level 'policy intermediaries', because they work between the policy makers and those at whom the policies are aimed. The term 'policy intermediaries' here also includes particular initiatives and programs which are a translation of broad policies.

experience? How do they treat the health impacts, and at what financial cost to themselves? The data that I collected in 2006 showed that the last question, which was the core of the study, was premature in the sense that one cannot understand costs meaningfully if the underlying ways of perceiving such costs are not understood.

One of the common answers that I got from these pilot studies was: What else can you do about it? I further noted that respondents do not keep track of health expenses and sometimes share medications. Accounting for costs where expenditures on health were not budgeted and therefore difficult to trace, and where medicine sharing is common, was therefore problematic. I then wondered whether the residents perceived the impacts of acquisition and use as a problem at all, or whether they constructed these problems in the same was as I do? Secondly, I wondered whether they responded in ways other than what I had assumed, *i.e.* in terms of financial costs incurred in treatment, an assumption based on *rational choice*.

Based on these reflections of the pilot study, I changed the main research questions from ones based on gaps I had found in the literature, to questions based on gaps I had found in the field, which were in the literature as well. I therefore redefined my research questions to reflect these gaps. In this way, Grounded Theory (GT) methodology helped me reshape my research questions, since I was more open to data on the ground and to developing hunches, themes and explanations from the daily happenings I witnessed (Charmaz 2006)[12]. GT allows the researcher to enter the field without pre-set theories which then have to be verified or falsified.

I also found that by commuting every day to the villages, I was missing much that was not being articulated in interviews. This informed my decision to select an experience-near approach, and I therefore decided to move from survey methods to ethnography. This made it possible to be close to the household energy activities[13], which occur daily from dawn to dusk and include both mundane and more distinct rituals[14]. Such practices can hardly be captured in positivist approaches, although positivist approaches in themselves serve relevant and particular areas. With etic perspectives, not only does the researcher have short-term contact, but s/he also comes with predefined questions. This limits the way in which the respondents answer these questions, *i.e.* the respondents' reports of their experiences are restricted by the researcher's own limited framework. Other experiences that the respondent might have that do not fit this pre-defined framework are deemed to be irrelevant or non-existent, and therefore do not become apparent.

There are few researchers that have used ethnography in studying energy issues (Wilhite 2005), exceptions being James (1993, 1995) in KwaZulu-Natal in South Africa, (Ross 1996) and, outside South Africa, Winther (2008). The implication of choosing an ethnographic approach for the questions addressed in this research is that there are no

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[12] There were of course other methodologies I could have used to answer the initial questions without taking a users' perspective. Methodologies such as willingness-to-pay do not require that that user's feelings and interpretations be taken in consideration. However, as stated in Appendix 1, they give little indication as to what these costs actually mean.

[13] A point to note here is that in this research, household energy includes energy used at household level for small-scale enterprises. This is because in the homesteads I interviewed and visited that had enterprises, there was rarely any separation between energy used for family needs and for enterprises.

[14] I use the term distinct rituals to mean specific rituals that have overt ceremonies and meanings. I use the term mundane rituals to mean the daily activities that are unconsciously ritualistic and meaningful beyond utility functions but are often not seen as rituals but habits.

previous studies to act as a frame of reference, as far as I am aware. This fact and my experiences from the pilot studies of 2006 mentioned previously are suited to GT, which is appropriate for understudied research areas (Charmaz 2006, 2008, Glaser & Strauss 1967).

In 2007 I decided to focus on one country to allow me longer engagement in one place, and I opted for South Africa for reasons stated later in this chapter. However, following news reports and advice from acquaintances in South Africa, I opted to focus on a village other than one in KwaZulu-Natal. I identified six possible research villages based on a list derived from an internet search, an examination of an 'electrification map' obtained from ESKOM Southern Region (based in East London), a search while based at RoetsScientific[15], and from general discussion with people I came across. Appendix 1 provides a more detailed discussion of how I applied GT, the techniques I used to collect and analyse data, and a critique of it.

The use of theoretical concepts in this study

Although, in line with GT methodology, I did not go to the field with either a fixed analytical framework or a specific theory to prove or disprove, I selected concepts that would help me clarify the emerging details and provide explanations as I gathered and analysed the data, and as themes came into sharper focus. For example, the notion of *policy symbolism*, explaining the pursuit of electrification in the face of various constraints to the use of electricity for cooking, is explored in Chapter 3 and further applied to household energy sector programs in Chapter 4.

In Chapter 4, I explain the residents' interactions with both government and with each other at the household level, as limited and enabled by a range of pre-existing material and immaterial *i.e.* intangible conditions, or what Bourdieu (1977) calls *habitus*. I also used the concept of s*ocial suffering* (Kleinman 1997) and the concepts of *grande misère* and *petite misère* by Bourdieu (1999) to highlight the many kinds of suffering, both material and immaterial, that shape the practices of people living on the margins. I apply the concept *dispositions* as explained by Bourdieu (1977) to explain household-level actors' perceptions and responses, both conscious and unconscious, as being generated by their particular *habitus*. The concept of *habitus* is further applied at the local level, where I extend it to the notion of *habitus porosity*, to explain how within the same actors' *dispositions* from one *habitus* interact and co-exist with dispositions from another *habitus*.

At the beginning of my household-level fieldwork, I found that women sometimes struggled to explain their experiences of collecting firewood, and of using firewood or paraffin. Although my probing did not seem very useful at times in prompting answers or soliciting responses, I realised that the very silences and inarticulateness were indeed part of the answer to my research questions[16]. From feminist perspectives, I selected

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[15] RoetsScientific is a local rural development NGO whom I had contacted at random when looking for advice on the rural areas in Eastern Cape. They then provided me an office for ten days as well as local transport assistance to help me select my research villages.

[16] My interpretation of these silences is close to but different from Annecke's explanation (1999). She argues that the women in Maphephetheni did not want to discuss their firewood collecting experiences because they were too painful to recount (Annecke 1999: 10). Hadju (2006: 23), in her study of livelihoods in Cutwini, concludes that this "polite answering" and "lack of enthusiasm" about firewood collection signified that natural resources were not a pressing need and that the villagers in Cutwini had more pressing needs. It is true that they had many problems, and natural resources are

Arderner's *muted group* theory (Ardener 1975) to explain the women's inarticulateness and silences. The experience of trying to listen to silences, or "*what was being said all along*", is similar to Bourdieu's experiences in interviewing a farmer in France, in which he hears what the farmer was telling him, "*without telling because he couldn't tell himself*" (Bourdieu 1999: 391)[17]. Discussions on *the meanings of things*, from material cultures studies (Fiske 1989, Douglas 1979) and from society and technology studies (Akrich 1992, Rip & Kemp 1998, Verbeek 2005) also helped clarify how and why outcomes of technology and technical interventions, at the local and household levels, might differ from those anticipated by policy makers.

One of the major outcomes of this research is the use of the emic concept of *hardiness*, which I apply to explain people's responses to their situation, including, but not limited to, the lack of access to modern energy carriers.

The use of these concepts also enabled me to broaden the relevance of this study, particularly in making policy recommendations, relevant not just for the energy sector but for development interventions in general, in Chapter 7.

Why South Africa?

The choice of South Africa might raise questions, given the rapid electrification in the 1990s and its potential to reach 100% connection in the near future. In addition, as a Malawian I come from a country where over 90% of households use firewood or charcoal for cooking. South Africa has various modern energy-access programs, of which the most far-reaching is the electrification program. The resulting wider reach of modern energy carriers makes modern energy access possible, at least in the physical sense, for a wider socio-economic spectrum of people. By comparison, in many Sub-Saharan African countries access to modern energy carriers is limited to urban areas, and mostly for medium- to high-income households. This wider reach therefore makes it possible to study socio-economically comparable rural areas with and without electricity in South Africa.

A second reason is that the South African electrification program has differed from electrification programs in other Sub-Saharan African countries, because the country has largely financed its own program. In contrast, other Sub-Saharan African countries tend to depend on donor financing, which limits the extent of not only their programs but also of the justifications of such programs, as the analysis in Chapter 2 shows. This means that South Africa has unique lessons to offer to other countries embarking on energy programs. While academic in nature, in the sense that it is a scholarly undertaking with a particular methodological approach, this research is also of practical importance in that it aims to make policy recommendations.

A personal motivation for choosing South Africa is that I have been making regular trips to the country since 1995, having studied there between 2002 and 2004, and also having worked as an intern for the Parliamentary Monitoring Group, focusing on the Minerals and Energy Portfolio Committee. The new political dispensation of 1990, and the finances that South Africa has, gave me the hope that research done in South Africa could be used by policy makers to support their declared intentions for redistribution. In

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abundant, but this does not make firewood 'not a problem', especially given the potential negative health consequences.

[17] In this sense, and in other senses described in the various interviews in his book, Bourdieu's methodological approach is close to, and can be considered as, Grounded Theory.

contrast, in Malawi, research is first limited to the terms of reference of donors, and programs are largely limited to donors' own discourses. As such, countries like Malawi, which are more donor-dependent than South Africa, often implement policy recommendations in line with donor conditionalities. South Africa, on the other hand, because of its independent financial capacity has the potential to implement policies beyond such conditionalities. In this sense there was the practical reason to choose South Africa; that I wished to avoid undertaking research in vain.

Choice of village sites

There are thousands of villages and eleven official languages in South Africa. There is a population of 49.3 million (STATSSA 2009) spread over approximately 1.2 million square kilometres. This diversity, together with the country's history, underscores the variety of South Africa's cultures, geography, climate, and the economic circumstances of its people. Classifying any village as a typical South African village is therefore problematic. Nevertheless, I selected the two villages in this study because they had the required development features that made them good candidates for the comparison needed to answer the research questions presented previously. By 'development features' I mean, very narrowly, the absence or presence in a village of the physical infrastructure associated with modern life: modern energy infrastructure, a clinic, piped water, schools, and telecommunications infrastructure.

The first village where I started conducting research in 2007, Cutwini, is physically remote and without modern amenities such as piped water, electricity or a clinic. Most of the access route from the nearest town is a dirt road, and its school is not a full primary school (see Chapter 4). The second village, Tsilitwa, although it is also physically remote from town centres, is accessible because it has a higher daily frequency of vehicles going to town. This is because it has what is a relatively good school (by Eastern Cape standards) to which students from surrounding areas come, and because there are more households in Tsilitwa with higher incomes as a result of the quality of jobs available, which are government jobs rather than seasonal work. Moreover, it has many modern amenities including electricity, two schools (a third one was built in 2009), a post office and a guesthouse. It also has piped water across the village to a number of water points, and a development advice office. Tsilitwa was one of the first two villages in South Africa that had tele-medicine facilities set up to enable nurses in the local clinic to consult doctors at bigger hospitals, specifically Sulenkama Hospital, one of the major and oldest hospitals in rural Eastern Cape[18]. Finally, it turned out that Tsilitwa has a proactive political leadership that has lobbied government support for these facilities.

Despite these differences, the villages are also comparable. Although the population contains two different groups of Xhosa - Cutwini is largely Pondo, while Tsilitwa is largely Hlubi - the villages share the Xhosa cultural heritage and the same language, albeit with minor dialectal differences. They are also socio-economically comparable because in both villages the majority of the residents are unemployed and many households are dependent on government social grants (see Chapter 4). Like most of Eastern Cape, both villages are marginalised by being in a rural location and by being a

[18] Sulenkama Hospital, also known as Nessie Knight Hospital, was built in 1880 by Scottish missionaries.

part of the former homeland of Transkei[19]. However, residents in both villages are constantly in touch with urban areas through migrant worker linkages and the media. Both villages display the effects of this migrant labour in the gender composition of the adult population, which is skewed towards women, whose migration rate is historically lower than that of men. In both villages, women-headed households outnumber male-headed households because of this migration history, and both display high levels of marriage breakdowns and historically high levels of widowhood[20]. A final reason for selecting these two villages was a practical consideration. It so happens that these two villages were relatively easy for arranging access and making hosting arrangements which enabled me to stay in the village, an essential in ethnography. In each of these two studied villages there was someone who was enthusiastic about helping me identify a host family, and negotiate my stay there.

An African ethnographer among Africans

Many white and other western researchers have discussed how their skin colour affects their research in a society that is predominantly non-white, such as Hadju (2006). For various reasons, there are more ethnographic texts written by white Westerners about African issues than by black Africans. In both villages, many asked why I was doing "*this thing that white people do, coming here to live among us, asking questions; aren't our cultures the same?*" Later on people from both villages introduced me to outsiders who noticed my "strange Xhosa" with variations of – "*She is the one who does the thing that white people do, asking questions about our culture*" (see Appendix 2: A day at the mobile clinic Cutwini). Their perception of research as something done by white people only was a constant reminder to me of our shared colonial and racialised heritage, and, more importantly, it was a reminder that entry is not automatic and has to be continuously negotiated. Access was also sometimes difficult because of doubts whether, while white people bring money, this black person, who was not a politician, would benefit them.

Certain answers that I would be given would be based on respondents' perceptions of me as a black person, a woman, a childless woman or as an outsider, and sometimes a combination of all or some of these role dimensions. This sometimes worked to my advantage in that people would extensively discuss some concepts that they felt Westerners would not understand. Sometimes I could quickly grasp a concept because it had an equivalent in my own culture. At other times, however, this worked against me because people were slow or reluctant to explain things, assuming since we were both (researcher and respondents) African, as opposed to white or other non-African researchers before me, I already knew the explanations for whatever I was asking. To counter this, I often narrated marriage practices from my matrilocal culture. The fact that in my culture we do not pay *lobola* and that the husband moves to the wife's home village was so shocking for them (and *"bad for Malawian mothers who lose a son"*) that it led to long discussions of our cultural differences and similarities. Such sharing of cultural 'oddities' turned out to be good ice-breakers for detailed discussions with

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[19] The Eastern Cape Province, in which the two villages are located, comprises the former homelands of Transkei and Ciskei. Both the villages in this study are located in the former Transkei, and so subsequent references to homelands will have particular focus on Transkei.

[20] Although in recent years this is often attributed to HIV/AIDS, Eastern Cape also exhibits this pattern because many migrant workers in the mining industry suffered from miners' silicosis and died soon after 'returning home' (Interview, Davies, 11th September 2009).

men about their position (which they felt was sometimes difficult) in a patrilineal society.

My position itself would change from time to time. At times I was labelled as Magi *ukhumtsha* (the modern one); at other times as Magi *umqaba* (the traditional one); and once even, Magi the white person. I would therefore be naive to claim to have "gone native"[21]. It was difficult for me to accept everything that was deemed as "traditional". Rather, my status was fluid in that sometimes I was treated as an insider, and at other times as an outsider. I simply tried to fit in while being aware of my underlying outsider status, and conscious of the methodological and ethical implications of such fluid positions, some of which are discussed in Appendix 1.

Structure of the thesis

Having defined the objectives and the four main research questions that this research seeks to address, the general setting of the study, and the approach applied, I now outline the structure of the study.

Chapter 2 addresses two objectives of this research at the *international level*. Firstly, it discusses how selected key discourses[22] have shaped in development policy and practice how the energy problem is perceived, their impact on the energy-health nexus, and why these discourses have largely neglected the energy-health nexus. Secondly, by reviewing international literature on the health impacts of energy acquisition and use, Chapter 2 exposes knowledge gaps and explains why these gaps have occurred.

Chapter 3 moves the discussion to the *national level* and assesses whether and how the perceptions of energy acquisition and use shaped at the international level have been addressed in policy. Reflecting on the multi-level perspective, it shows similarities and differences in underlying assumptions with regards to energy access, to explain perceptions and responses at the national level.

Chapter 4 addresses the link between the international and national levels on the one hand, and the local and household levels on the other. It analyses the *setting* within which discourses[23] at international level, and policies at national level, aim to function. It analyses the conditions which enable and constrain residents of the research villages in perceiving and responding to their social world[24].

Chapter 5 analyses the *local-level* perceptions and responses of policy intermediaries, including both energy and health sector officials and programmes. The focus is on

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[21] I use 'native' here in the ethnographic sense of adopting the same customs and understanding as the inhabitants of the particular ethnic group.

[22] A discourse is a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent stories or accounts. Each discourse rests on assumptions, judgements and contentions that provide the basic terms for analysis, debates, agreements and disagreements (Dryzek 1997).

[23] An array of factors can result in the inclusion or exclusion of particular discourses. Such factors might include lack of 'scientific' evidence and power relations between the advocates of different issues. Such exclusion does not mean the excluded discourses have no effect on analysis, debates, agreements, perceptions and responses. Ignoring a specific issue might for example lead to a perception that a problem does not exist, a perception that in turn can shape the kind of responses to it (no action) or to other problems.

[24] This is also what Bourdieu (1977) calls habitus, which he defined as a set of dispositions that generate practices.

policies implemented by the government as both a key and a long-term actor in the energy sector in South Africa.

Chapter 6 focuses on the *household level*. This is the study's *pièce de résistance* and it is here that I apply Grounded Theory. It provides an analysis of the experiences, perceptions and responses to the health impacts of energy acquisition and use in the two villages studied. Throughout this explanation, focusing on the household level, I reflect on the convergences and divergences in the perceptions and responses at the other three levels, and why these persist.

Chapter 7 summarises the key arguments of the study, providing answers to the main research questions. It explains the study's scholarly contributions, reflects on the methodology used, and makes policy recommendations for the energy and health sectors, as well as development policy in general and also presents and epilogue of the study.

2

Energy development: Global–local discourses as a reflection of experts' perceptions and responses

Introduction

The objective of this chapter is first to investigate whether or not, at the international level, the discourses that have shaped experiences, perceptions and responses in the energy sector have neglected the energy–health nexus. Secondly, it aims to identify gaps in knowledge at the international level about the energy–health nexus. In so doing, it aims to understand why these gaps occur and what the implications are for the four levels that this thesis addresses.

The first section examines global discourses that have defined the energy problem from its emergence in the 1970s to the present, ending at the COP 15 in Copenhagen, an event meant to design the post-Kyoto climate change agreement. The use of the end point of COP 15 in 2009 is based on the assumption that the climate change discourse will continue to shape the energy sector in the next few decades, as it has since 1997. Further, it assumes that the actors who are key in shaping the energy discourse have been able to draw on experience of the effects of the Kyoto protocol on various social groups since 1997. They therefore have the opportunity to stay the course or change the nature of the agreement that will replace the Kyoto Protocol. This does not invalidate the fact that other imperatives such as energy security continue to shape the sector. The second section narrows the focus to look at the research on energy and health, and to examine the linkages that have been established between the two sectors. The final section concludes the chapter by explaining the gaps identified and the implications of the findings in this chapter for the energy–health nexus.

Global discourse on energy: Evolution from deforestation to the Millennium Development Goals

Although I have structured the following discussion on discourse in a fairly linear and chronological manner, the actual appearance of issues in the discourse is not linear, nor

can it be pinpointed to a specific time in history. The chronological order is therefore an estimation of when specific issues peaked and the linear approach is adopted for convenience.

The energy problem as a problem of deforestation

Energy policy development can for many countries be traced back to the 1973 oil crisis and subsequent oil crises of 1979 and 1985[1]. For over a century before the oil crisis, colonial administrations viewed the energy problem in Sub-Saharan Africa (and elsewhere in the Third World) almost exclusively in terms of Africans' wastefulness and extravagant abuse of the environment (Tropp 2006)[2]. The energy sector was often narrowly defined as the electricity sector and for the poor the key option was rural electrification. These were solely the business of the state, which slowly invested in the provision of modern energy carriers according to a centralised planning model. This centralised model focused on providing electricity for governmental offices, industrial and urban residential areas first, and later expanding to rural areas. The principle underlying the model was *rational economics* that was rooted in two key tenets. The first tenet was to expand access to densely populated areas, which were invariably urban, so as to benefit from the economies of scale (Zoomers 2001). The second tenet was to focus the provision of modern energy carriers on those areas where such provision could be economically justified, where people could consume and pay for a certain level of energy services.

Apart from economic considerations, the provision of electricity was also constrained by technical considerations. In developing countries, urban areas were the only places where it was technically possible to connect and utilise electricity (Bailis 2010). This is because at that time, electricity technology and standards were unsuited to the semi-permanent house structures that were common in rural areas in developing countries. Related to technical constraints were constraints on securing payment. Until recently, billing depended on utility personnel recording consumption from a meter, and the utility sending - often by post - a bill to the consumer on a monthly basis. For rural areas, distance to the utilities' offices, lack of comprehensive postal services, and irregular incomes that did not match this traditional end-of-the-month billing systems were constraints on the extension of electricity to rural households. In addition, income levels were often deemed too low to cover such monthly bills.

With the world oil crisis of 1973, scientists, economists and policy makers defined four issues that shaped the energy sector for decades to come. These four issues were: predicting when world oil supplies would run out; finding new geographic sources of oil other than the Middle East; finding new energy sources and alternatives to fossil fuels, such as renewable energy; and enhancing the efficient use of existing energy sources. The imperative for these issues was energy security, both in a physical sense of having adequate supplies, as well as in a political sense of reducing the vulnerable position that non-oil-producing countries found themselves in during the oil crisis. For developing countries, the energy planning that began around this period was centred on commercial energy such as oil, electricity, coal and gas. Country energy balances contained only

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1 The Netherlands, for example, developed its first energy policy in 1974 (Melchert 2007).

2 Tropp recounts how a picture, circulated in Scotland, of Pondo men from (former) Transkei in South Africa, taken by Thomas Sim, building a house using saplings, was used to emphasise such colonially embedded deforestation discourse (2006: 93-94).

these commercial fuels, and focused only on supply side analysis (Munslow *et al*. 1988).

In 1975, Erik Eckholm, a staff member of the Worldwatch Institute (WWI), an international environment and wildlife organisation, started to call attention to what he called "the other energy crisis" – that of firewood scarcity in developing countries (Eckholm 1975). His calls were soon followed by several studies and affirmations, mostly by World Bank experts (Anderson 1986, O'Keefe & Raskin 1985), UN agencies such as the Food and Agriculture Organisation (FAO)(Best 1979), and the United Nations Environmental program (UNEP 1980). Leading international environmental non-governmental organisations (NGOs), such as the International Institute for Environment and Development (IIED 1984), also joined these calls. The *gap theory* was proposed, theorising that the rate of population growth and the rate of consumption of firewood resources were higher than the rates at which the resources were being replenished. This, it concluded, would lead to extreme deforestation and, in the worst cases, complete depletion of firewood supplies (Nkonoki & Sorensen 1984)[3]. Data from South Africa is largely absent from many of these deforestation studies: the two major near-continent-wide firewood studies between 1983 and 1987 did not include South African data[4]. Nevertheless, South Africa had already been carrying out afforestation and anti-deforestation policies for a century, which, as in many African countries, were based on the 'wasteful African' narrative pointed out earlier (Tropp 2006)[5]. The deforestation discourse then only served to strengthen the arguments for such policies. In any case, the broad and bold declarations on deforestation which were made for almost all of Africa (Ribot 1999) led to several firewood studies in Southern Africa that continued until the late 1980s. Many were funded by the World Bank, UN agencies such as the United Nations Development Program (UNDP), the FAO and leading environmental NGOs such as the WorldWatch Institute, the Beijer Institute, and the IIED. These organisations have been, and continue to be, leaders in development discourse, particularly with respect to energy and the environment in developing countries. As the main funders of development programs (and later, energy programs in particular), these organisations made the *gap theory* the basis on which many development interventions were implemented. According to Leach & Means (1988: 8) all sixty or more of the energy assessments carried out by UNDP and the World Bank used the *gap theory* as their basis. The assumptions behind the *gap theory* were, however, narrow, and did not extend the definition of energy problems outside debates about deforestation.

As a result, many social aspects of energy use were neglected. Implications for energy acquisition and/or use, such as health, did not feature in these discussions (FAO 1981). An example is Jelenic & van Vegten's study on firewood collection in Botswana, where they document distances travelled to collect firewood and weights of firewood bundles carried as evidence of dwindling of firewood supply (Jelenic & van Vegten

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[3] It is important to note that this was not the beginning but the continuation of forestry administration that dated back to the 1890s. The difference is that in this case, it was packaged as part of a development discourse while it the 1890s *"weaning the native"* from the use of indigenous forests was packaged as a civilising strategy (Tropp 2006).

[4] One of the reasons for the absence is that during these years, South Africa was under sanctions and therefore did not benefit from development cooperation (strictly speaking in those days it was technical assistance) funds that enabled such research.

[5] South Africa, and many other African countries, had before then been locked into the deforestation narrative for more than a century.

1981). They aptly named the report *A pain in the neck: The fire-wood situation in the South Western Kgatleng, Botswana.* The publication, however, does not discuss anything about the neck pain of the carriers or any other health aspects of collecting firewood at the increasing distances that the publication claims. Instead, it focuses exclusively on finding a solution to the firewood shortage problem. This was the pattern for most studies, and although images of women carrying big bundles of firewood often featured in such publications, the focus was often on how much firewood was being carried, *i.e.* how much depletion was occurring, rather than on what potential health impacts might result from carrying such bundles.

While the focus was on how to save forests, the people's experiences of such scarcity (if and where it existed to the declared extent) were not a part of the discussion, neither was the use of agricultural residues, dung and metabolic energy. African governments, with the support of their development partners – primarily the World Bank, UN agencies and the African Development Bank (AfDB) – responded to these studies by making afforestation programs and prevention of deforestation their key policy objectives. The implementation of many of these anti-deforestation policies was by means of fines imposed on women and men collecting firewood 'illegally', and the use of forest guards. In addition, women and men had to pay stumpage fees to access forest firewood in designated forests (Openshaw & Fernstein 1989)[6]. Several Southern African countries came up with forestry policies. For example, Zimbabwe amended its forestry policy in 1982, and South Africa passed The Forest Act (Act 122) in 1984. Other countries such as Malawi, which already had post-colonial forest policies (Forestry Act, 1964), simply strengthened the Forestry departments (*cf*: Skutsch 1987). This represented a technocratic approach that excluded any consideration of people's needs and experiences in favour of technical solutions. Women were most affected by these fines and the imposition of guards, who were almost universally male. While making firewood collection illegal, few countries provided viable legal and affordable means of accessing firewood.

Appropriate technology as a solution to the energy problem

The deforestation narratives intersected with the Appropriate Technology (AT) movement spearheaded by Fritz Schumacher, founder of the Intermediate Technology Development Group (ITDG)[7]. His book, *Small is Beautiful – A Study of Economics as if People Mattered*, which was published in 1973, sparked a range of programmes for bringing development to the Third World. This so-called people-centred development would come about through technology that took into account the context of the target group. Although AT is rooted in a people-focused ideology, its approach was also driven by *technology determinism.* It focused on designing simple technological solutions for people, but the starting point was the technology itself rather than the people. Thus AT became characterised by simple technologies often assumed to be workable in any Third World setting, often ignoring the differences in social and cultural aspects of the many countries making up the Third World.

As a result of this technological focus, the AT movement often failed to meet its aims. By not adequately taking the context into consideration, a number of these

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[6] Openshaw & Fernstein (1989) define stumpage fee as the value of standing wood that may be paid to the owner for access rights, and this may be paid in cash or in kind.

[7] ITDG changed its name to Practical Action in 2007. Publications and works after 2007 are therefore referred to using the Practical Action name.

technologies were not adopted. Their failure built a bad reputation for AT, which in the energy sector was also closely associated with renewable energies. AT, and by association renewable energies, became a politically tense area. Developing countries' government officials and others often saw AT as a paternalistic way of addressing development problems, especially when they compared it with the sophisticated and highly efficient technologies they saw in the West. On the other hand, advocates of AT saw this view as elitist and inconsiderate of the poor in developing countries.

One AT solution for the problems of firewood scarcity and deforestation was deemed to be improved cook stoves. NGOs such as ITDG, Volunteers in Technical Assistance (VITA), Village Earth, German Appropriate Technology Exchange (GATE), Approvecho, Fuelwood Stoves Dissemination (FWD), and international bodies such as the FAO and the International Labour Organisation (ILO), started implementing cooking-stove programmes in developing countries. In addition, bilateral aid organisations such as the United States Aid Agency (USAID), DGIS and GTZ funded several improved cooking stove projects. In the 1980s there were numerous countries with cooking-stove programmes including Kenya, Zimbabwe, Nepal, India, Pakistan, Tanzania and Malawi, all aimed at reducing firewood consumption. Also in line with the AT framework, the ITDG and ILO started looking at transport in the Third World (Barwell 1993, ILO undated). Firewood collection was identified as one of the key transport issues although subsequent action was limited. The studies on deforestation and transport combined to highlight both the long distances travelled and the times that women spent in collecting firewood. At this stage, the imperatives for promoting improved cook stoves included the assumption that they would reduce the number of times women had to collect firewood.

Despite the exclusion of South Africa in most of these studies and programmes, different kinds of stoves were making their way into rural parts of the country. Since urban South Africa allocated limited areas for black African accommodation, many were forced to return to rural areas from urban job centres through unemployment or retirement, and there they desired to continue their urban standard of living as much as possible. They brought with them commercial coal and wood stoves, although the purpose was not to reduce wood use[8]. Although not targeting health, the forest studies and later on the cooking-stove programmes highlighted the hardships related to firewood collection. In doing so, the studies located women and men within the firewood scarcity debate, but with limited focus on energy–health linkages.

The environment as the problem: The love of renewable energy technologies

In 1962 Rachel Carson published *Silent Spring*, a book discussing the impact of humans on the environment. It focused on the impacts of industrial and agricultural chemicals and propelled the focus onto environmental issues, particularly outdoor and global pollution (Carson 1962). This publication, as well as the first photograph of earth from space (Dryzek 1997), the 1970 Earth Day demonstrations in the United States of

[8] These stoves, designed for rural Europe (the most common brands were Dover™ and Falkirk™) did not reduce firewood consumption. Having been designed for cold climates where their ability to give off heat is more desirable. While many had a chimney, they were not always properly installed in rural areas, but this is unlikely to have been perceived as a problem since the households did not buy them with the aim of reducing smoke. Although in many colder areas of the developing world *e.g.* Nepal and North China and parts of South Africa, such stoves serve a useful purpose, they might actually increase wood use relative to open fires (Bailis, interview, 4th May, 2010).

America, and later, the 1972 Conference on Human Environment in Stockholm, can be considered as contributing to the birth of the environmental movement and the conceptualisation of environmental problems as global problems rather than local. They firmly defined environmental concerns as focused on ecology, and moved debates away from purely local concerns, which until the 1950s had included both the outdoor and indoor environment (Giussani 1994, Spengler & Sexton 1983, Sundell 2004). While indoor environmental problems had been largely addressed in developed countries, this had not been the case for developing countries. However, funding bodies adopted these new environmental assumptions and applied them to developing countries too. From the 1980s, the environmental discourse in its many different forms (Dryzek 1997, Hajer 1995), combined with effects of the energy crisis and underlying motives of the AT movement, propelled the promotion of renewable energy technologies (RETs) in developing countries.

Many of the technologies, such as solar driers and biogas, were imbedded in agricultural programs (GTZ 1988, FAO 1996), but there was also attention given to the health sector, particularly solar-powered refrigeration of vaccines in clinics (ETC 1997, Jiminez & Olson 1998)[9]. However, solar cookers in Africa had little, if any, impact on changing firewood acquisition and use patterns, because of low adoption levels[10]. Many RETs have similarly struggled to have an impact and have not been sustained, and have become highly political. One reason for this was that the RETs being promoted were neither mature technology nor designed for the context in which they were being promoted. As a result, they built a reputation for being inferior technology, and were often rejected. However, their promotion has not waned, because while the promotion of RETs did not meet the substantive goals with respect to the target population, their funding meets other goals. These goals are related to the green lobby, particularly in Europe, that has over the years focused on moving economies to the use of RETs in order to reduce negative environmental impacts. Having found public support in donor countries, the goals of the green movement make it politically difficult (though not impossible) for development aid to finance non-RETs, whatever the argument. For example, in countries such as The Netherlands, Germany, Norway, and Sweden, the green discourse has become a priority on the political agenda, and at the same time, they are the key bilateral financers of 'energy for the poor' in developing countries. Therefore, faced with these political imperatives, they are reluctant to divert resources from RETs to finance more culturally congruent energy technologies if these are not RETs.

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[9] This focus should be distinguished from the theme of this research, in that solar for refrigeration is an issue of infrastructure in public institutions. The central theme in this thesis, by contrast, is about energy acquisition and use at the household level, *i.e.*, on a household and individual level. In any case, the renewable energy promotion did little to address household energy issues.

[10] Figures on adoption of RETs are particularly problematic, because many authors report from an advocacy perspective. Even where the publications are not written from an advocacy perspective, the time at which the records were made is rarely defined, *i.e.*, a count based on how many solar cookers were bought will not relate how many were used after six months, and even after a year and so on. Thus one report states, for example, that *"an estimated 80,000 solar box cookers have been purchased by Indian citizens to date with a 50-percent government subsidy"* (Lankford 1990: 49). There is no mention of how long it has taken or how successful this is compared to the potential target population and the funds invested therein.

Woman as problem and victim

Boserup's book, *Woman's Role in Economic Development,* published in 1970, argued that contrary to conventional thinking at that time, women also contributed to economic development (Boserup 1970)[11]. The discussion on the status of women was picked up by many development thinkers, and the UN declared 1975 to 1985 to be the UN Decade of Women. There was a range of studies on women's lives in developing countries and Women in Development (WID) programmes became part of virtually all donor-driven programmes in the late 1970s and early 1980s (Moser 1993). Coming from a feminist perspective, Cecelski *et al.* (1979) and Irene Tinker (1979) highlighted women's workloads and burdens resulting from firewood collection and use, as well as the time taken up by firewood collection. Further, Cecelski (1992) raised concerns that conventional concepts used in assessing energy use do not include metabolic energy. This exclusion, she argued, means that women's activities and related energy needs are not addressed in energy planning. Agarwal (1986), an economist, highlighted the increasing women's burden as a result of deforestation, while Hoskins (1979) stated that firewood scarcity in Guatemala caused households to change their diets towards less nutritious foods, an assertion supported by Brouwer *et al*. (1997, 1989) based on their research in Malawi about a decade after Hoskins' publication.

The study of energy from feminist perspectives brought attention on women and, as a result, women became the main target for cook stove programmes. Further, the focus on women sharpened attention on women's experiences and some of the linkages between energy and health, including spinal damage and problems in childbearing resulting from carrying heavy burdens and respiratory health problems of time spent in smoky kitchens (Cecelski 1986, Dankelman & Davison 1988, Tinker 1984). Most of these studies and interventions focused on reducing drudgery and improving the welfare of women. Later, in the wider development sector, there were conceptual changes from looking at women to looking at gender from the gender and development (GAD) paradigm. As opposed to WID's approach of integrating women into programmes and processes, a gender perspective sees gender as socially constructed, and is therefore concerned with the assignment of specific roles, responsibilities and expectations to women and to men (Rathgeber 1989). Within such a conceptualisation, the *gap theory* was further challenged for casting women as perpetrators of deforestation. The WID and gender perspective by contrast, largely cast women as victims of power relations that shaped their social worlds in particular ways that did not favour them. Several studies supported the view that household energy was not responsible for most of the observed deforestation, showing that it was largely a result of agricultural trends, urbanisation and other changes in land use (Cecelski 1986, Dankelman & Davison 1988, Eckholm *et al*. 1984, Leach & Mearns 1988, Munslow *et al*. 1988, Tinker 1984). Some gender activists also questioned the focus on stoves for women, as reinforcing and not challenging women's positions. Other feminists also saw the focus on women's role in energy acquisition and use as reflecting the generally subordinated positions of women,

[11] Three issues in Boserup's assertions are important to state here. Firstly, she critiqued Margaret Mead's assertion that men brought food and women cooked it, and illustrated that women contribute substantially to household and communities through their work in subsistence agriculture. Secondly, she showed that women, under colonialism, had lost their status because colonial administrators valued men's agriculture over women's, and therefore introduced technologies targeting men while women were left with inefficient technologies. This is an especially important assertion because it is valid across sectors other than agriculture. Thirdly, Boserup argued that 'hierarchisation' of men's work roles over those of women was a result of technology distribution that was biased towards men.

and argued that access to modern energy would contribute to their empowerment. However, on the other hand, some literature shows how access to electricity has yielded mixed results, and that it did little to reduce gendered labour[12] demands (Clancy & Kooijman-van Dijk 2006, Cowan 1983)[13].

In other cases however, the WID and GAD approaches over-simplified the position of women. Women were cast as powerless, existing under male oppression, their faces the face of poverty. Women's power spheres were rarely, if at all, investigated thus programs targeting them were often welfarist in nature, with marginal benefits. As such, in the energy sector, they were locked into that powerlessness and provided with the most basic of stoves. Clancy (1998) for example, shows how this focus on cook stoves ignores other energy needs of women such as productive uses. Such a one-dimensional view of women in developing countries did not allow for the exploration of the more complex interactions between men and women, or women's needs as opposed to advocates' needs.

The energy sector stands alone

Until the 1980s, energy programs in developing countries were implemented as part of other development programs, but early in the 1980s it was becoming a stand-alone sector. From 1981, the World Bank and the UNDP undertook energy assessments as a basis for energy-sector planning in developing countries (Bakhiet 2008). In 1983, the World Bank established the Energy Sector Management Assistance Program (ESMAP) to support countries in formulating justifiable energy investment programs for World Bank and UNDP assistance (ESMAP 1999). This further strengthened the position of energy as an issue in the development sector rather than a sub-set of other sectors, such as forestry, agriculture or education. Increasingly, household energy issues were studied for their own sake in accordance with this new-found status. However, the assessments of the World Bank and UNDP were still largely from a supply perspective and ignored the demand side (Bakhiet 2008).

In the second half of the 1980s the question arose as to how households could change to forms of energy that would reduce the hardships associated with firewood use, and to help economic growth. The *energy ladder* theory was proposed which theorised that households will move to higher quality fuels as incomes increase (Hosier & Dowd 1987). Although this theory has been challenged (Eberhard & van Horen, 1995; Saatkamp *et al*. 2000), it stimulated thinking on the various energy sources available to households and raised some useful questions, particularly questions about the tendency of households to use various energy carriers, and questions about social determinants of energy use such as culture and attitude.

By the second half of the 1980s stove programmes were falling out of favour, and, according to Crewe (1997: 11), by the end of the 1980s all multilateral and bilateral organisations, except FAO, DGIS and GTZ, had abandoned their stove programs. There are three main reasons why improved cooking-stove programmes fell out of favour. Firstly, adoption levels were low and, although this was partly because of the lack of involvement of the end users in designing stoves (Kammen 1995, UNDP 2001), for donors this represented failure and therefore there was little justification for continued

[12] By gendered labour I mean labour that is allocated to a particular social group according to whether one is female or male and is therefore seen as female work or male work.

[13] Cowan's work was based on the American household. One of her arguments is that household technology did reduce drudgery but not labour demands.

implementation. Secondly, the apocalyptic predictions of *"the last wood under the pot"* (Nkonoki & Sorensen 1984) did not materialise, and with challenges to the *gap theory* (Eckholm *et al*. 1984, Foley *et al*. 1984, Leach 1991, Fairhead & Leach 1996) and questions over whether improved cook stoves saved firewood (Foley *et al*. 1984)[14], there was a further decrease in the justification for cooking-stove programmes. Thirdly, the Washington Consensus ushered in a neo-liberal agenda, resulting in a major shift in funding patterns and in an emphasis on market rather than state interventions. There was therefore limited funding for improved cook stoves, which were largely funded by welfare programme budgets.

Rural electrification as a non-African solution

In post-colonial countries, few governments had either the resources or the political will to focus on rural electrification, and the World Bank once again became a key player[15]. In 1975 the Bank published its policy on rural electrification (World Bank 1975). A cornerstone requirement for investing in rural electrification was that there was sufficient demand from emerging users of electricity to ensure a reasonable economic rate of return on investment (World Bank 1975). Although the World Bank did not strictly adhere to this criterion – at least in the case of Asia (World Bank Independent Evaluation Group & White 2008) – in Africa most rural electrification was deemed uneconomic. The World Bank's investment was therefore marginal compared to that in other developing regions. Of the US$ 1.2 billion that the World Bank lent for rural electrification projects between 1975 and 1984, Africa received the smallest share, less than 3% (World Bank 1996). This pattern is also seen with respect to UNDP energy projects, which show limited growth in funding for energy programs in Sub-Saharan Africa. This suggests that for the World Bank and UNDP, heavy investments in the African energy sector were not a priority.

Most of the funding for rural electrification projects was in any case soon reduced or cut off altogether. According to Skutsch (1994), donor reluctance to fund electrification also resulted from the realisation that electricity was not being used to boost economic production, but rather for household consumption. Thus during this period, the World Bank saw the economic aims and outcomes of rural electrification as more important than the social benefits. Perceived expectations of the benefits of rural electrification did not include the health benefits that might have been derived from using electricity in the household.

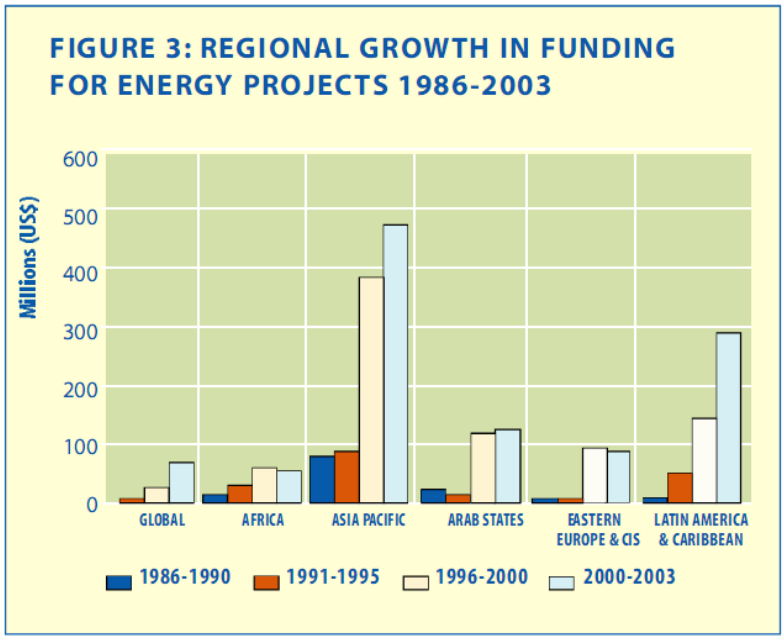
Energy-sector reforms that followed in the 1990s further exemplify this prioritisation of economic performance over social benefits. In 1993 the World Bank set out a reform policy agenda which focused on improving returns on investments and deregulating (liberalising) the power sector. From the 2000s researchers questioned the impacts of such energy-sector reforms on the poor, most of whom had no access to electricity and would be further excluded in a neo-liberal, profit-focused policy environment (Kayo 2004, Matinga 2004). This debate on access, however, focused on physical access and

[14] The authors questioned whether improved cook stoves saved wood when compared to traditional fires, taking into account real-life use rather than laboratory performance, and women's skills in managing traditional fires. Many studies claiming stove savings had been tested only in laboratories thus far.

[15] The World Bank itself rarely funds construction of energy-access infrastructure. What it does is underwrite bank loans for governments.

electrification rates, on the numbers of households and the numbers of villages electrified.

Figure 2.1: World Bank and UNDP funding for African energy sector vs. other regions
Source: UNDP, 2004



However, such a focus ignored what, and how, energy was used inside the household or the village. In such a context, any discussion on the potential health impacts of energy use was lost because of the inherent but flawed assumption that having access to modern energy carriers meant deriving all the possible benefits from it. The daily interactions of energy users, including discussions over who makes decisions for appliances or energy expenditure, were sidelined, with the result that social issues such as health continued to be marginalised.

Along with these questions on energy-sector reforms, there were wider criticisms from NGOs and other researchers over the impacts of structural adjustment on the poor, which led to some changes in development discourse. The World Bank released various reports focusing on the human dimension of poverty in response to criticism that its approaches were not people-centred. One such report was called *Energy services for the World's poor* (World Bank 2000). This was part of the Bank's efforts to put people at the centre of the energy debate by addressing the demand side of energy provision. The formulation of the concept of *energy services* was critical in that it acknowledged energy in the context of the services it provides, rather than from a technocratic perspective of availability of physical infrastructure. By discussing energy services, the discussion brought a sharper focus to the demand side of energy and greater attention to the needs of people. However, the differences between people, particularly gender differences, were ignored. The focus of the report was to frame these energy services within a neo-liberal agenda, and so the focus was on access, commercial innovations, and reducing financial, legal, regulatory and tax barriers to better energy access.

The discussion above has focused on discourses that targeted the global South, *i.e.* the developing countries. Other discourses that have shaped the energy sector are broader global discourses, particularly the Sustainable Development discourse, the

Climate Change discourse and the Millennium Development Goals (MDGs). These differ from the narratives described above in that they all are based on some form of global agreement for co-operation. The rest of this discussion will focus on these discourses, and will continue to examine how they shape experience, perceptions and responses in the energy sector.

Sustainable Development and the resurrection of Renewable Energy

In 1987 the World Commission on Environment and Development (WCED) released a report, popularly referred to as the Brundtland report. The report focused on ways to address global environment and development problems, identifying six critical areas including "sustainable energy paths and consumption patterns" (WCED 1987)[16]. Within this energy theme, there is reference to the fact that women and children collect increasingly scarce firewood, and this is framed as a hardship. In the report there is no reference to the health implications of carrying firewood, and even the weights that collectors carry. In terms of cooking, this statement is made: "*The woman who cooks in an earthen pot over an open fire uses perhaps eight times more energy than an affluent neighbour with a gas stove and aluminium pans*" (WCED 1987: 196). This is framed purely as an issue of poverty and inefficiency, without the implications of this inefficiency on health being discussed. However, the report does briefly mention linkages between energy use and health: "*One of the most widespread chronic problems is the eye and lung irritation caused by wood smoke in developing countries*" (WCED 1987: 194).

There is no further discussion of the impacts of these problems on health or other health issues related to the energy chain. This vague reference to energy and health problems in developing countries reflects two issues. First, it represents the energy-development discourse at that time, which focused on ecological and environmental problems framed from a global perspective. This is apparent in constant reference to local pollution and pollution of the biosphere. The second is that this vague reference reflects the state of knowledge at that time. As will be presented in the second section of this chapter, most of the research on energy and health was conducted after 1987, but not necessarily in response to the WCED report.

Regardless of the shortcomings of the WCED to advance debates on energy and health in developing countries, it had impacts, albeit indirect ones. The report popularised the term *sustainable development* and its attendant buzzwords, *sustainable energy*. Despite the fact that the term sustainable development is controversial and very broad, it has become a critical discourse through which energy-development problems are perceived and interpreted, and responses formulated and judged. Development was now firmly seen as going beyond income indicators to include environmental and social aspects. Subsequent meetings such as the 1992 United Nations Conference on Environment and Development (UNCED), also known as the Rio Summit or the Earth Summit, and the 2002 World Symposium on Sustainable Development (WSSD) gave some momentum to issues relating to energy and development. For the UNCED and Earth Summit the focus was still on the environment, in line with the 1970s narrative, although WSSD attempted to take on the social aspects of Sustainable Development. Notwithstanding the fact that the WSSD was comparatively less successful than UNCED and the Earth Summit in that the expected agreements on social aspects of

[16] Other areas identified were population and human resources, food production, distribution and terms of trade, species and ecosystem preservation, and rapid urbanisation.

sustainable development did not materialise (Steiner 2003), the energy–health nexus was recognised as an issue worthy of further investigation at the very least [17].

Another result of the sustainable development discourse is a multi-faceted understanding of poverty, which for the energy sector led to the recognition of *energy poverty*[18]. Connecting energy to various development aspects within the sustainable development discourse strengthened justifications for energy-access projects that are not based solely on narrow economic grounds.

Further, the sustainable development discourse revived justifications for RETs, which were equated to sustainable energy. Over the next decade, after the WCED report in 1987 and the UNCED conference in 1992, forums, NGOs, multi-lateral agencies and governments repeatedly declared that RETs would be the way to address the myriad household energy issues. However, for the most part these RETs, in their current designs and costs, fail to meet social needs in developing countries. Such limitations and the cultural incongruence of technologies such as solar cookers and biogas are often ignored, while the interests of advocates who in many cases also fund such programs or who have a blind faith in technology are given priority.

The assumption was that RETs would ensure the fulfilment of the Brundtland objectives because they would provide environmentally benign energy, while ensuring access to modern energy services, and therefore development. The tone of the sustainable development discourse reflects its roots in the 1970s environmental movement, which prioritised environmental concerns over poor people's needs (Carter 2001, Cohen *et al*. 1998).

Despite the fact that the sustainable development discourse includes three pillars – the economic, the environmental and the social – these three are not equally addressed. The first two have so far dominated debates such that the social pillar, which entails issues of empowerment, redistribution and different negotiating positions of those affecting and affected by sustainable development discourse, is often overlooked. In the context of household energy and the issues addressed by this research, the question arises whether the social aspects of women's and men's gendered concerns about energy for cooking, or household energy in general, enjoy the same attention as the environmental issues or questions of energy supply. Looking at debates so far, this is

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[17] The most aggressively promoted RETs in Africa have been solar technologies. The justifications have been that Africa, with *"plenty of sunshine"*, would greatly benefit from solar energy technologies based on four main assumptions. First, African governments (and other energy players) would avoid the huge costs previously imposed by the nature of grid power. Secondly, the isolated and dispersed nature of rural settlements would no longer impose a barrier since RETs are modular and can be installed in isolation and as money becomes available. Thirdly, once installed these RETs, solar lighting or solar cookers for example, would not require payment of monthly bills to the utility. Some even call solar power *"free energy"*, and therefore perfect for the poor, even though in reality the solar panels have to be paid for and have operating costs. RETs were therefore the solution for cash-strapped governments and poor rural households alike. Finally, RETs, are seen as environmentally benign technologies (although their manufacture is more controversial due to the waste products they generate such as arsenic and other heavy metals in solar cell manufacture). Their use imposes fewer environmental impacts compared to fossil-derived energy, and therefore are seen as key to the sustainable development urged by the UNCED and a growing number of voices.

[18] Energy poverty is defined as absence of sufficient choice in accessing adequate, affordable, reliable, high-quality, safe and environmentally benign energy services to support economic and human development (Reddy 1999). This concept became common after 2000 in an effort to highlight the energy dimension of poverty and convince mainstream development practitioners of the role that energy can play in economic and human development. It had a resonance with the increasing acceptance of a broader definition of poverty than solely one of income deprivation.

not the case. In general, issues of context such as culture, power relations (including access to discourse networks) are secondary to those of development and the global environment.

The climate change discourse and its impacts on the energy sector

The 1987 discourse of Sustainable Development intersected with the discourse of Climate Change, brought to the attention of the world in the 1980s and climaxing with the signing of the Kyoto Protocol in 1997. Under the Climate Change discourse, energy use is one of the key contributors of greenhouse gas emissions (GHGs), and so energy consumption must be either curtailed or clean energy investments must be made. Based on notions of "equal but different responsibilities", climate-change mechanisms have been established, of which one is the Clean Development Mechanism (CDM), considered the key mechanism for funding clean energy under the Kyoto Protocol. Under this mechanism, developed countries would finance clean energy in developing countries, and in so doing reduce the rate growth of greenhouse gas emissions. While new financing mechanisms held out the promise of removing the barriers posed by the high costs of clean energy, the CDM and carbon-trading schemes have so far failed to achieve this goal for the poor, especially the household sector, for three critical reasons.

Firstly, as with the sustainable development discourse, this clean energy is seen to be clean with respect to the global environment, and not to the household situation. Although the energy technology that can be used for a cleaner global environment is the same as the energy technology that can be used for household cooking, their contexts are different. When policy and actions address a global context, the assumptions gloss over differences between the various local contexts that make up the global. There is an inherent assumption that as long as a technology is mature it can work in any context as long as barriers, mostly financial, are removed. In contrast, the household environment is very local and complex, and for it, the social dimension is significant. Yet the assumptions made for global solutions often ignore misfits between the needs and the context of the global environment and those of the household environment.

The barriers related to technologies' inability to meet social needs, discussed previously, remain. Even where RETs succeeded, as has been claimed in Kenya in relation to Photovoltaics (Acker & Kammen 1996), the needs they address do not include cooking. They therefore do not address the health impacts related to carrying heavy firewood loads, IAP from smoke or the health impacts of using paraffin[19].

Secondly, the criteria for eligible investment do not accommodate the context of household energy. Investment under the Kyoto Protocol must first and foremost contribute to the reduction of carbon emissions, and this must be made in a way that is accountable, and savings must be substantial. In terms of energy carriers, a good and easily traceable and accountable investment might be a renewable-energy-based power station or energy efficiency improvements, for example. However, who benefits from this power station in terms of using the energy services, and what end uses are addressed, are less of a concern under the monitoring mechanisms. Household users (for cooking in particular) are not automatic beneficiaries, but have to compete with other end users as well as with other sectors[20]. These other sectors would include, for

[19] Solar panels might, however, address cold storage for vaccines, but as already stated, this is not a household energy issue.

[20] Sustainable development benefits are part of the criteria, but this could include jobs created or land rehabilitated. As such it does not necessarily give household users or cooking a crucial advantage.

example, manufacturing, where investments are made in a factory, with standardised and easy-to-document operations, and which are therefore less complex than households and more favourable to the accounting methodologies. Monitoring procedures and the strict criteria for investment all contribute to the CDM's failure to benefit poorer sections of the developing world particularly for countries with smaller populations, dispersed beneficiaries and higher transaction costs[21].

The failure of the climate-change discourse in addressing the needs of the poor can also be explained by looking at the roots of the discourse itself. The first is the epistemic origins of climate-change science, which are rooted in natural science and prioritise technical solutions. Since 1997 there have been efforts to "account for the poor". However, these efforts are mainly in terms of adaptation measures and the 2009 Conference of Parties in Copenhagen did not provide substantial solutions for developing countries. Upstream solutions such as the focus on moving to "green economies" still do not take into consideration the situation of the poor. The second is that the climate-change discourse, as far as solutions are concerned, is rooted in neo-liberalism and prioritises (global) markets in finding and distributing benefits (Braidotti *et al*. 1994, Charkiewicz 2009). However the trade mechanisms for climate change are structured in such a way that they are inaccessible for smaller developing countries, and particularly for the household energy sector and those responsible for acquiring and using household energy. In a sector where the energy–environment nexus is governed by the *polluter pays principle,* as in the case of IAP, it is the women and children that pay with their health, since their participation in defining the market is non-existent. The results of the constraints of the climate change mechanisms are that they fail to contribute to improving access to modern energy carriers for household-level actors. Efforts to include improved cook stoves, which have peaked since a publication on black carbon (Ramanathan & Carmichael 2008), are slow, but also raise questions as to whether they take the household energy sector back to blaming women, as deforestation claims mentioned earlier did.

Despite these shortcomings, the sustainable development discussed previously, and climate change discourses, remain critical in shaping the energy sector.

There have been other voices that have presented alternative views, showing that fossil fuels such as liquefied petroleum gas (LPG) should be harnessed to meet the needs of the poor and reduce health impacts such as IAP. Smith (2002) argues that providing the world's 2 billion people without access to modern energy carriers with LPG for cooking would add less than 2% to global greenhouse gas (GHG) emissions, while saving millions of lives of women and children. This 2% or more can then be compensated for by improving motor-vehicle efficiency. However, such views are ignored because of the moralising and emotional imagery of climate-change debates expressed in powerful metaphors such as "the needs of future generations" and "global catastrophe". Even at the 2002 WSSD, where social aspects of sustainable development were supposed to feature highly, they were overshadowed by discussion on the environment and climate change.

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[21] Most of the funds have benefitted China and India, leading to the cynical retranslation of CDM to China Development Mechanism. According to Karky (2008), India, Brazil and Korea account for about 80% of all CDM projects, and China alone benefits from about 45% of the Certified Emissions Reduction (CERs). South Africa benefits from about 1% of projects and 1% of CERs, which is the best record in Africa.

Energy in the Millennium Development Goals discourse

In 2000, 192 nations and over 20 international agencies signed the Millenium Development Goals (MDGs), a set of quantitative targets for addressing poverty (Deverajan *et al*. 2002). This set of targets is instructive for two reasons. Firstly, they reveal the perceptions of mainstream development experts with respect to energy in general, and the energy–health nexus in particular. Secondly, they are the only formalised international development targets, and therefore they have become powerful shapers of perceptions and responses. The exclusion of energy as a goal or even as a target in the original MDGs shows how, as recently as 2000, mainstream development experts continued to think in the framework of the economic development tradition, where energy was not located at the core. At the WSSD in Johannesburg in 2002, energy experts lobbied for the inclusion of energy in the MDGs, and this led to an acknowledgment of the role of energy in poverty alleviation. The Johannesburg Plan of Implementation[22] argued that energy is a prerequisite for many human needs and, therefore, for achieving the MDGs (WSSD 2002). An energy target was added to the environmental goal (Goal 7) but is rarely referred to or measured.

Other authors followed with reviews of hypothetical linkages and correlations between energy and health, highlighting the lack of access to modern energy carriers as an aspect of health (Matinga 2005a, b, UNDP 2008). Research, particularly epidemiological research on energy–health linkages, which had until then had a low profile, was revisited and new evidence emerged. From 2002 onwards WHO started to pay attention to energy–health linkages focusing on IAP (WHO 2006), which had not been addressed before, although in 1984 and in 1991 WHO had released reports of impacts of IAP from biomass on health (WHO 1984, 1991). The reason why the WHO started focusing on energy–health linkages after 2000 was that there was mounting epidemiological evidence showing correlations between IAP from solid fuel use and respiratory infections. This evidence, included in the global burden of diseases report in 2000, showed that use of solid fuels was a major health problem. Smith & Mehta (2003) estimated that solid fuel use might be responsible for as many as 1.6 million deaths, which would make it the third most common risk factor for death, after malnutrition and sanitation[23]. As of 2009, the WHO's interest in IAP was beginning to peak, and it was beginning to engage in advocacy activities in this area.

However, other energy-use experiences such as paraffin emissions and accidents are inadequately explored at the international level. Apart from fuel-focused research, there are also major gaps in our knowledge on other effects such as eye irritations, headaches, and the health implications for pregnant women and the chronically ill.

Throughout the above developments, a few experts continued to raise the profile of these issues concerning energy and health (Ellegård 1996, Smith 1993). Since these experts were involved in relatively small networks that are not at the core of development debates, I will call them an energy–health community of practice, recognising at the same time that, like the mainstream development experts, they are not necessarily a coherent unit. This community of practice, consisting of several networks and forums, has focused on raising awareness of the various health impacts of energy acquisition and use at the household level, from different perspectives. The publication

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[22] This is the report that was produced as an outcome of the 2002 WSSD.

[23] The 1.6 million deaths is the lowest value in the range of estimates. Other estimates indicate IAP could be the cause of up to three million deaths per year.

Boiling Point, established in 1982, and the Household Energy Network (HEDON)[24], established in 1992, have been vital in providing a forum for a North–South exchange in knowledge on the energy–health nexus. From a gender perspective, the International Network on Gender and Energy (ENERGIA) which was formed during the Beijing Conference on gender, lobbied for attention to be focused on how energy affects women's lives, including the health impacts of energy acquisition and use. In 2002 the Partnership for Clean Indoor Air (PCIA) was formed as a forum for bringing attention to IAP in particular. The United Nations Commission on Human Rights (UNCHR), the United Nations Development Fund for Women (UNIFEM), the Women's Refugee Commission (WRC) and the Fuelnetwork[25] have recently started to focus on violence against women, particularly as they collect firewood in conflict situations. The following section looks at the evidence on energy–health linkages.

The health impacts of energy acquisition and use

In this section I shall present the available evidence on energy–health linkages with two main objectives. The first is to provide an overview of the state of knowledge on energy and health, revealing gaps in knowledge. Secondly, by providing this evidence and these gaps, I analyse why the energy–health nexus has been neglected, and why it should be given priority in mainstream development debates. There have been over a hundred studies done on linkages between energy and health, but I only review a few selected texts for reasons stated below, and refer to other texts only in a more general manner where necessary.

In the first part of this section, I shall look at acquisition as a starting point of energy access, asking the question: with what kinds of health problems, if any, do experts link energy acquisition, and how have the experts responded to them? Due to the nature of the acquisition of energy sources, I will focus mostly on firewood. In the second part of this section I shall look at energy use, first focusing on firewood as the main source of energy in rural areas, followed by paraffin[26]. LPG is rarely used in rural areas in Southern Africa, and so I will only make passing references to it at this stage. (It is generally considered safe, in terms of health impacts.)

Although there are many NGO reports addressing linkages between energy and health, I have excluded them from this literature review for two reasons. The first is a methodological problem in that the samples are usually too small to be regarded as valid quantitatively, and the methods applied are too vague to be regarded as reliable qualitatively. Secondly, most NGO activists writing these reports are also involved in advocacy, hence potentially creating a conflict of interest. However, some of the work of GTZ and of Practical Action in Southern and Eastern Africa is instructive, and has provided estimations of possible reductions in IAP using various energy technologies. I, therefore, refer to them with the two caveats above. I have limited the review to

[24] A knowledge network which has over 80% of its members from developing countries, and which is an especially important household energy forum for policymakers and project implementers in the South.

[25] The network was established in 2007 following reports, mostly from *Medicins Sans Frontier* (MSF) and World Refugee Council (WRC), about rapes, most of which occurred during firewood collection in Darfur.

[26] The use of dung and its impacts are far less studied than those of firewood, often being assumed to be similar. I have therefore combined the discussion of dung and firewood in this section except where different data is available.

Southern Africa, and make reference to non-Southern African studies only to provide additional evidence to support a point, or where there is a lack of such a study from the Southern African region. I have done this to err on the side of caution because of the bigger difference in aspects such as firewood collecting methods, cooking methods and reproductive work[27] practices between Southern Africa and regions such as Latin America and Asia.

Health impacts of firewood collection and carrying

Literature on the impacts of firewood collection can be categorised in two groups. The first category refers specifically to the carrying of firewood. This is important in that this literature shows how it is carried, how much and how often, and therefore provides insights into what impacts can be expected. The second category comprises literature on collectors' experiences during their firewood collection trips and their impact on the collectors.

This review will be limited to head-loading studies because, in general, women in Southern Africa head-load their firewood and there is also no data on those that carry it in other ways, such as on their backs[28]. One of the earliest studies on head-loading and health was in Zimbabwe (then called Rhodesia) in 1968 by neurosurgeon Dr Levy, and focused on injuries related to heavy (90kg) loads in general. The sample is dominated by men (carrying sacks of maize) and is derived from those individuals who reported injuries at Harare Central Hospital. In the data analysis, he does not separate long-term and short-term carrying or load amounts. However, some of his findings are instructive and lead me to pose new questions. Firstly, fourteen injuries were reported over ten years and only two were women. Of the women, one was walking with a heavy head-load of firewood when she tripped and fell, and the other was being loaded with a sack at her home. He concludes that injuries to the cervical spine[29] resulting from carrying heavy loads on their heads are uncommon. He also puzzles over the fact that they are upper spinal injuries rather than lower spinal injuries[30] (something I will come back to in Chapter 6 in discussions on Cutwini and Tsilitwa). This study presents two questions whose answers are relevant to the larger purposes of this research. Firstly, since research and observations show that carrying loads on the head is common in Africa (Bryceson & Howe 1993), does the small number of cases that were reported at the hospital imply that head-loading is not creating important health issues, or that such cases are not commonly presented to the modern medical establishment?

Secondly, observations and research show that it is women who are more involved in household related head-loading, although men may be involved in commercial head-

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[27] Reproductive work refers to all tasks undertaken to reproduce the labour force and includes child-bearing and rearing, feeding the family, caring for the sick, teaching acceptable behaviour and so on (Khamati-Njenga & Clancy 2005).

[28] In developing countries, people manually carry firewood in three main ways. The first is carrying the wood on the head (referred to here as head-loading), the most common form. The second is by strapping a tumpline (a band) across the forehead, which is then tied to firewood pile, say in a basket, a method that is common in Asia and parts of West Africa. A third way of carrying firewood is by using a sling across the waist, at the back, satchel-like.

[29] The cervical spine is the term for seven bones, sometimes called the vertebrae, from the skull to the base of the back. They are often abbreviated C1 through to C7.

[30] The upper spine is the part of the spine that corresponds with the chest, while the lower spine corresponds with the stomach part of the torso. Later, in reference to household-level data from the two villages, I use the terms lower back and upper back – translating from Xhosa equivalents but avoiding the technical terms since they are not based on medical diagnosis.

loading. Why then are there only two women out of fourteen cases? What caveats must we bring to reviews of such studies in hospital settings and for this research? What do these gender differences tell of a bigger story, if anything? Before addressing these questions, I shall review head-loading and health studies first.

The average firewood head-loads carried range from 10 kg to 36 kg with an average of 24 kg in Ciskei (Bembridge & Tarlton 1990), and an average of 38 kg for head-loads measured in KwaZulu by Gandar (1983). This is similar to studies in Malawi and Tanzania where nursing women collected an average of 31 kg and non-nursing women collected an average of 27 kg (Biran *et al*. 2004), and in Botswana by Jelenic & van Vegten (1981). On average, women collect wood two to three times a week in South Africa for 1.5 to 3 hours at a time (Bembridge & Tarlton 1990, Gandar 1983) although this varies by region, season, demands and wood availability. These hours are similar to those found in other countries such as Malawi, Ethiopia and Botswana (Biran *et al*. 2004, Haile 1989, Jelenic & van Vegten 1981). These weights should be seen against the ILO recommended weights for adult women of 20kg, and its recommendation that, as much as possible, women should not be allowed to carry heavy weights (ILO 1967a).

Carrying firewood manually is generally considered a woman's task, and this starts at around 5 to 6 years of age (Wilson 1961, Matinga 2008) and may continue until over 70 years of age. What then is the effect of carrying such loads on health according to scientific experts?

In a qualitative study of 276 women firewood carriers in Addis Ababa, Ethiopia, Haile (1989) found that women carry an average of 36 kg (about 75% of body weight) over 12 km, and at least 17% of the women were carrying loads heavier than their body weight. These women experience back pains, eye and chest problems and high rates of miscarriage (Haile 1989). Other health impacts that women in Haile's study experienced were frequent falls, bone fractures, headaches, rheumatism, anaemia, internal disorders and miscarriages (Haile 1989, Haile 1991). Since there are few studies on head-loading, studies from Asia provide further evidence. In Sri Lanka, Wickramasinghe (2003) conducted in-depth interviews with 720 households. She asked the women to rank the most crucial problems detrimental to their health that they experienced due to firewood collecting, categorised as immediate effects, after-effects and cumulative effects. In her study, women reported that they experience skin irritations, poisoning, allergic reactions, fungal infections, snake bites, injuries and respiratory problems. Similar impacts have been documented by Laxmi *et al*. (2003) in India, who add falls, backache and chronic physical discomfort to the list of impacts documented by Wickramasinghe. A major weakness with these qualitative studies is that they offer no rival explanations particularly for impacts such as backache, which is known to be associated with other factors such as stress, poor posture, carrying other household supplies such as water, and provide little context for us to understand the more complete picture.

Echarri & Forriol (2002, 2005) offer a unique perspective on the impact of head-loading, because they used clinical interviews and radiography to compare the cervical spines of women who carry firewood on their heads against a control group. They studied women in Congo who carried firewood weights of between 25 and 50 kg, which were up to 4m long and which the women carried for distances of between 6 km and 8 km. These weights and distances are comparable to those carried in South Africa, as mentioned previously. The sample comprised 72 women aged between 24 to 80 years, of whom 29 were pre-menopausal (24-42 years old) and 43 were post-menopausal (49-

78 years old). In their 2002 study, they found that there was no statistically significant relationship between degenerative changes[31] and wood-bearing, but the proportion of degenerative changes was greater in the firewood bearers than in the control group (41.4% *vs* 26.1%) before menopause and a similar pattern was observed in the older group (61.9% *vs* 51.1%). In their study of 2005, Echarri & Forriol clinically examined head-loaders (both men and women), dividing their sample between what they categorised as bearers of heavy loads, 28 persons carrying heavy quantities of wood (50 to 60 kg) over short stretches of 1 km for an average of three days a week for several years, and 33 medium-load wood bearers, whose loads consisted of 30 to 35 kg carried over long distances (average of 12 km), with several stops. These two groups exhibited similar patterns to the women collecting firewood for their households in terms of weights carried. Another similarity is in the second group, which carried these loads on an average of three times a week for several years, a pattern similar to that found in parts of the Eastern Cape in South Africa. However, these groups also showed some differences from the patterns of women collecting firewood. Women collecting firewood usually travel distances that are less than 12 km but more than a kilometre[32]. A second difference is that many women collecting firewood have limited opportunities to rest on the way back from the forest, due to the demands of other work back at home. Nevertheless, the studies are useful in understanding the clinical impacts of head-loading. Echarri & Forriol found that incidences of prolapsed disc[33] were higher among bearers of heavy loads. Percentages of reports of pain were similar in the two groups of bearers (32% and 27.3%) and were lower in the control group (5.5%). Neck stiffness was greater in the bundle-bearing group (36.4%) than in the heavy-load bearing group (21.4%) and was lowest in the control group (5.5%). Echarri & Forriol (2002 :141) cite that women:

> *"…stiffen their neck in order to bear the weight, and develop hypertrophy of the trapezius muscle; they also walk with an exaggerated swing of the hips in order to gain speed without losing balance".*

Maloily *et. al.* (1986), Heglund (1992) and Heglund *et al.* (1995) have also pointed out that women adapt their gait to compensate for the spinal loading. Heglund (1992) suggests that the gait changes have an effect of making firewood carriers energy-efficient, *i.e.* women can carry heavy loads without spending as much metabolic energy as they do when they walk without these adaptations to their gait. He does not elaborate whether these gait changes, which amount to posture changes and a departure from natural skeletal movement, have an impact on skeletal health or on internal organs including the uterus[34]. Neither does he discuss relations between energy expenditure from firewood collection and energy nutrition in resource-poor contexts. This is in line

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[31] Degenerative changes referred to here are skeletal deteriorations due to, among other things, age and repetitive strain.

[32] This however varies widely depending on firewood availability in a particular community and the availability of viable alternatives.

33 Discs are tissue between vertebrae that allow for back flexibility. They may bulge (prolapse) due to physical stresses or degeneration, sometimes causing them to press on nerves and cause pain.

[34] To be fair to Heglund, his concern was not the health of African women, but to assess their carrying expertise compared to that of American military personnel who carry less than African women but expend more energy. His findings show that American military recruits needed twice the metabolic energy used by the women to carry the same load and walk at the same speed.

with concerns raised by Cecelski (1992), that metabolic energy in firewood collection is not addressed in research.

The work of refugee agencies has highlighted the issue of women's security during firewood collection trips. For example, Benjamin & Fancy (1998) and Kagwanja (2000) reported on rape experiences among displaced persons from refugee camps in Kenya when collecting firewood. Similar accounts have been reported by Tadesse in Ethiopia (2002), Abebe, Hussein *et al.* in Ethiopia (2003), Ziebell in *Medicins Sans Frontières* (MSF) in Sudan (2005) and Kasirye *et al*. (2009) in Northern Uganda. Although there is limited literature in non-conflict situations, C. Roth (Personal Communication, October 2005; January, 2008) has reported rape and requests for sexual favours by forest guards among women in Southern Malawi[35].

Before concluding this review of the literature on firewood collection, it is important to revisit the questions provoked by Dr Levy's study in Zimbabwe, recounted at the beginning of this section. The evidence from the qualitative studies (Laxmi *et al*. 2003, Wickramasinghe 2003) and clinical studies on skeletal degeneration and pain (Echarri & Forriol 2002, 2005, Joosab *et al*. 1994) suggest that there are linkages between firewood collection and health outcomes although these are not fully understood in an emic sense since most studies are undertaken from an etic perspective. The evidence also shows that in clinical studies most of the victims are urban, male commercial head-loaders. This is at odds with the fact that women are often seen and reported head-loading in both urban and rural settings. This suggests that there are social factors at work that may be deterring women from reporting their conditions in clinical settings, or that the women do not make linkages between their health and firewood collection (and other heavy loads they carry). Another reason could be that those who record the treatment do not make connections to firewood collection. This raises questions about how women experience and perceive the musculoskeletal impacts of head-loading. Although Dr Levy's study was conducted in an urban setting forty years ago, Ecchari & Forriol's studies show similar patterns, so that the question of gender and perceptions remains relevant[36].

From the qualitative studies there is general agreement that musculoskeletal injuries are an issue affecting the health of firewood collectors. The evidence on impacts on reproductive health, as suggested by Haile (1991), is rather limited because of inadequate data and the methods used. Despite the lack of evidence from firewood collection studies, other studies, including the ILO (1967a, b) recommended that women should not carry heavy loads, especially while pregnant[37]. Perverse reproductive health outcomes of carrying heavy loads might include miscarriages and low birth weight.

From an epidemiological[38] point of view there is uncertainty over the severity and significance of degenerative spinal changes from firewood collection. What this means

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[35] During my pilot study in Kenya, women also insinuated that forest guards sometimes asked for sexual favours in the form of a relationship in order to facilitate access to the forest. The extent of these demands cannot be substantiated in this research.

[36] Head-loading however would have been more common at the time of Levy's study due to limited car ownership and transport options.

[37] These were set with consideration of formal forestry work in mind but do provide an idea of what is considered dangerous work. According to ILO, countries set between 20 kg and 25 kg as the maximum weight that one should carry and specified that for lifting, the weights should be lower.

[38] Epidemiology is defined as the study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems.

is that there is limited data to make conclusive statements about the occurrence of such changes in specific populations, or to make definitive conclusions about distribution and causes (*e.g*. effects of gender, occurrence among firewood collectors *vs* non-collectors, and whether firewood collection is a key determinant). However, this uncertainty does not mean that the health impacts are irrelevant, only that they have not been adequately studied. Nevertheless, from the studies presented here (Echarri & Forriol 2002, 2005, Joosab *et al*. 1994), and from incidences reported in the literature of repetitive strain injuries, there is reason to conclude that spinal injuries and musculoskeletal pain might indeed be crucial health consequences of firewood collection. This is of importance not only because most studies on skeletal health focus on lower back pain, but also because, as I will show later in chapter 6, upper back pain was one of the main complaints of women who collect firewood in both the villages I conducted this research in.

Despite the fact that studies of the health impacts of firewood collection have been inadequate, there is little doubt that in the long term such degenerative changes can and do occur as a result of repetitive stress injury. The lack of studies on musculoskeletal health implies that experts do not regard musculoskeletal health as a serious health issue in developing countries.

Health impacts of energy use

To date, the literature on the health impacts of energy use has focused on the effects of IAP and burns. Most of the studies relate to the use of firewood and, to a lesser extent, dung, paraffin and coal. The first category of energy use studies relates to solid fuel (firewood, dung, agricultural waste and coal) and how its by-products such as carbon monoxide, carbon dioxide and particulates affect health. Coal is of limited interest to this study because households in rural Eastern Cape rarely use it, although it is used in other parts of South Africa, particularly in urban and peri-urban areas. I have therefore left it out of this review, but refer any reader wanting to know more to studies by Finkelman, Belkin *et al.* (1999), Terblanche *et al.* (1992) and Collins & Rossi (2004).

The second category of studies relating to energy use and health focuses on the impacts of energy use and these includes the use of firewood and dung (biomass fuels) and the use of paraffin which are discussed in the following subsections.

Health impacts of IAP from energy use

While working in Transkei, doctors noted that women suffered from Pulmonary Fibrosis, culminating in Cor Pulmunae (damage to the right side of the heart) and subsequent death (Palmer & Dynes 1967)[39]. This was later termed *Transkei Silicosis* or *Domestic Silicosis*, and was largely linked to maize-grinding, which allowed silica dust from stones to enter the lungs, and also to smoke-filled huts (Palmer & Dynes 1967). Palmer & Dynes suggested that *Transkei Silicosis* was a matter of life and death for half a million women in Transkei. Sofoluwe (1968), studying children in Nigeria, associated cooking smoke with bronchiolitis and bronchopneumonia in children exposed to three

[39] Readers may find it interesting that this study was done during the apartheid period, and wonder why there was interest in an aspect of the health of the black population. According to Tony Davies, generally considered as having pioneered mining and health studies, the interest can be linked to two drivers (Davies, Interview, 11th September, 2009). The first was that doctors found silicosis in women while studying silicosis in men who worked in mines. The driver for research on silicosis among men was the rapid loss of young men returning from mines. And for the doctors, most do not seem to have subscribed to the apartheid ideology and were concerned by the health indicators in Transkei and other homelands.

hours of smoke per day. In Papua New Guinea, Cleary & Blackburn (1968) found that smoky environments led to recurrent infections, which resulted in chronic bronchitis and emphysema and, subsequently, Cor Pulmunae. Despite these findings and the linkages between air pollution and health in Europe in the 1950s (Sundell 2004) and before, there were few studies done for the next decade, 1970 to 1980 in developing countries. At this time the energy sector was not taking into account the social impacts of lack of access to modern energy carriers. And the health sector was focused on infectious diseases.

Biomass fuels (firewood and dung) and their consequences for health re-emerged following a study in India in 1981 by Kirk Smith, but funding was unavailable to continue the work (Robinson 2009)[40]. Further, Kossove (1982), studying Zulu children in South Africa, also found that children exposed to firewood smoke were more likely to have respiratory infections. In 1984 the World Health Organisation made further connections in their publication *Biomass fuel combustion and health* (Koning *et al*. 1985). In its publication, the WHO brought together research on IAP and health and made recommendations for addressing the problem. There was, however, no concerted effort such as awareness campaigns or promotion of better cook stoves or energy sources to address IAP in developing countries. Studying children's respiratory health in South Africa, Collins *et al.* (1990), Terblanche *et al.* (1992) and Grobelaar & Bateman (1991) (who called it *hut lung*) also found associations between IAP and respiratory health. Most of these studies made associations through statistical analyses of IAP levels and health status, particularly chronic obstructive pulmonary disease (COPD)[41], while (in some cases) controlling for confounding factors, and presented the data according to sex and age. What they do not do is to address the gendered nature of the diseases, *i.e.* how the social, cultural and historical positions and roles of women and men affect these outcomes.

Armstrong & Campbell's study in Gambia (1991) is important in the context of this review because it brought into the analysis aspects of daily life. In doing so, it brought into focus socio-cultural issues of childcare practices and gender. These authors found that the risk of pneumonia had an increased association with smoke exposure in girls, but not in boys. This was because girls were kept in kitchen environs with their mothers until an older age than were boys. They also found that children strapped on their mothers' backs during cooking were six times more likely to develop Acute Respiratory Infections (ARI) than unexposed children. Strapping children on the back is a common way of carrying them, so that a woman or a young girl can look after the child while working. In India, Mishra *et al.* (2000) found that the incidence of fuel-related ARI was higher among boys than among girls. Here, the keeping of boys in the kitchen until a later age was linked to Indian parents' social preference for male children which results in mothers allocating longer care times to male children. These two studies highlighted

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[40] Kirk Smith kindled interest in IAP in his 1987 study, and his research can be regarded as a key factor in stimulating many of the subsequent studies and interventions. Although his geographical area of expertise was Latin America, particularly Mexico and Guatemala, I have used a number of his publications here because he is recognised in both the energy and health sectors as the international leading authority on biomass-related IAP in developing countries. He is also one of the few scientists who bridge the gap between energy and health in their research.

[41] COPD, or Chronic Obstructive Pulmonary Disease, is a progressive disease that makes it hard to breathe, characterised by cough, accompanied by phlegm, wheezing, shortness of breath and chest tightness, among other symptoms. It is associated with exposure to lung irritants, such as air pollution, chemical fumes, or dust.

the socio-cultural context of IAP, but other subsequent studies have continued in the line of epidemiological and positivist perspectives.

In 2000, the WHO conducted risk-assessment studies of a range of diseases which showed that IAP from solid fuels was a serious health issue, particularly for women and children. The burden of IAP on global health was thought to cause at least 1.6 million deaths every year (WHO 2002). This resulted in a revisitation of IAP studies from the 1990s, and funding became available for new studies, mostly in Latin American countries such as Mexico and Guatemala, and in Asian countries, particularly Nepal and Mongolia. In Africa, there were some studies focusing on South Africa (Barnes *et al.* 2009, Rollin *et al*. 2004, van Niekerk 2006) and Kenya (Ezzati & Kammen 2001, Mutere 1991, Sikoka *et al*. 2002). The focus on Latin America, Nepal and Mongolia can be attributed to the fact that the impacts of IAP are considered particularly bad in high altitudes linked to the lower oxygen concentration. However, it is also connected to the fact that the key persons involved in the research, such as Kirk Smith from the US and Pandey from India, have historically focused on these geographical areas. IAP has also been implicated in tuberculosis (TB), as some studies show that exposure to high levels of IAP makes the lungs more susceptible to infections (Mishra *et al*. 1999b). The evidence on air pollution focuses on the indoor environment, and there is no data on outdoor cooking[42].

From another point of view, a study by Bailis *et al.* (undated) showed that the incidence of ARIs decreased by 44% in children whose households shifted from an open fire to improved cook stoves. Another study in Kiambu District in Kenya demonstrated statistically significant reductions in the prevalence of ARIs among children under the age of five and in women when improved stoves were used, compared to those households which did not use them (Wafula *et al*. 2000). Similarly, Ezzati & Kammen (2001) in Kenya and Boy (2002) in Guatemala showed improved health among children and women resulting from the cleaner burning of charcoal and firewood. Arguments for the promotion of improved cook stoves have since been re-energised, with additional justifications for health.

There are other less well-documented health impacts of indoor air pollution. These include health impacts on ocular (eye) health (Díaz *et al*. 2007, Ellegård 1997, Mishra *et al*. 1999a, Saha *et al*. 2005, Smith-Sivertsen *et al*. 2004b, Visser & Khan 1996), association with low birth weight (Boy *et al*. 2002, Mishra *et al*. 2004, Siddiqui *et al*. 2008), associations with cardiovascular diseases and a variety of cancers (Bruce *et al*. 2000).

Health impacts of paraffin use

The *SA Medical Journal* in 1961 carried one of the earliest journal articles on poisoning by accidental paraffin ingestion in South Africa[43]. Of the 61 patients reporting to Livingstone Hospital Casualty Department, Port Elizabeth, between January and December 1959 in Kossick's (1961) study of such paraffin ingestion cases (excluding

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[42] The assumption appears to be that with outdoor cooking, the smoke is diluted by the air to such a degree that it becomes a minor factor (Clancy 2005). From my experience, however, outdoor cooking during traditional ceremonies can produce enough smoke to make it hard to breathe, because there are many pots cooking at the same time and seats are arranged around the fire so that it can be tended to.

[43] Introduction of paraffin into the lungs produces rapid development of a pneumonitis (inflammation of lung tissue), which may be visible on radiographs within 20 minutes of its introduction, and may persist for several weeks, even when symptoms and signs have disappeared.

one case of ingestion suspected to be an attempted suicide), the average age was 21 months. Like many after him, Kossick attributed some of the risk factors of paraffin ingestion to the fact that paraffin was widely used among South Africa's "non-whites" for cooking, lighting and heating. Ingestion was attributed to the fact that paraffin is kept in containers previously used to store milk, cold drink bottles, cups, jam and condensed-milk tins, and within easy reach of adventurous children (Kossick 1961). A similar association is reported in other studies in South Africa (Butchart 2000) and in India, with Ahuja & Bhattacharya (2004) reporting that over 70% of households in their study population stored paraffin in such a manner. Subsequent studies confirmed that paraffin poisoning might be a substantial threat to the health of children under the age of five.

A 1990 study of 436 children in the Cape Peninsula in South Africa showed that paraffin poisoning affected children mainly between the ages of 12 and 36 months. A study by Reed & Conradie (1997) found that 111 children under the age of five years were admitted for paraffin poisoning. The majority of them were between one and three years of age. They made up 9% of total ward admissions in this age group. Another study of 145 children admitted for paraffin ingestion between January 2000 and June 2001 at the Philadelphia Hospital in Mpumalanga, South Africa, showed that children younger than five years of age were more significantly affected than those older than five years of age (91% *vs*. 9%). In Zimbabwe, a retrospective study of 2764 hospital admissions using data from 1998 to 1999 in eight major urban referral hospitals showed over half of accidental poisonings were caused by paraffin ingestion. Other studies from outside the region show a fairly similar trend. Based on admission data from 1997 to 2007 in Srinagar, Kashmir Valley, India, Wani *et al.* (2004) found that of 650 cases of poisoning, about 39% were paraffin poisoning, making it the leading cause of poisoning. Children under the age of five represented 54% of all paraffin poisoning incidents, making them the most likely victims of paraffin poisoning.

Studies of the national health burden from paraffin poisoning are rare with the exception of South Africa. The burden of health from paraffin poisoning among children in South Africa was said to be 143,000 children in 1999, and an estimated 4,000 children died from paraffin poisoning in South Africa alone in 2000 (Butchart 2000).

In studies of accidental paraffin ingestion by children under the age of five years that segregate their results by gender, boy victims tend to outnumber girls. Boys made up 58% of all cases in the study by Malangu *et al.* (2005), 63% of the cases in the study by De Wet (1994) and 60% in the study by Wani *et al.* (2004). These paraffin ingestion incidences in studies from different countries suggest that incidences are related to a combination of user behaviour, *i.e.* poor safety procedures or low awareness of safety procedures, and child curiosity.

Burn injuries are another category of health impacts of paraffin use. Butchart's study (2000) found that burns were the leading external cause of death for children under the age of one in South Africa. When the age range is extended to include children between the ages of one and four, burns were the second leading external causes of death. In rural Mashonaland in Zimbabwe, based on the evidence of 196 guardians, Matanhire *et al.* (1994) found that burns were the second most frequent type of injury among children under the age of five. Based on a recall of the two weeks before the study, Matanhire *et al.* (1994) found that burns made up 16.3% of all injuries. Using guardians' recall over a

12-months period, Nega & Lindtjørn (2002) found that the second most common source of burns in Mekele, Ethiopia, were flames (34%).

For burns, the study by Nega & Lindtjørn (2002) shows similar patterns to those of paraffin poisoning, where boys under the age of five outnumber girls of the same age group. However, this pattern changes with age, so that all burn injuries that occurred in the 10-to-14-year-old group were seen among girls. For adults, nearly 88% of all burns in the household affected women (Nega & Lindtjørn 2002). Burns studies suggest that these are a result of a combination of gendered work responsibilities, poorly designed stoves and alcohol use (Ahuja & Bhattacharya 2004, Butchart 2000). Among adult males in South Africa, most of the burn accidents are associated, at least in part, with alcohol use (Butchart 2000) which results in stove users leaving stoves unattended or knocking them over.

The preceding section has focused on the key findings on energy and health linkages, identifying gaps in knowledge. The evidence from the literature discussed above shows, firstly, that there is limited focus on the acquisition of energy as well as other aspects of energy use in relation to health. A few researchers (Echarri & Forriol 2002, 2005, Laxmi *et al*. 2003, Wickramasinghe 2003) have examined the impacts of firewood collection, and there is a general consensus that women, the primary collectors of firewood, are negatively affected. Musculoskeletal damage is one of the main effects of collecting firewood, but women also face a variety of other hazards, including threats of sexual harassment.

A second finding is that the research has largely been based on quantitative methods. These have been extremely useful in making casual linkages and correlations. However, such methods tend to present impacts and experiences related to energy acquisition and use in a vacuum, devoid of their social, political and cultural context. As a result, they mute people's experiences by setting out predefined categories within which the respondents must fit their experiences. Where gender and culture have been referred to such as in the studies by Armstrong & Campbell (1991) and Mishra *et al.* (2000), the analysis has not addressed the role of power relations in such gender differentials. The following subsection takes a step back, and explains why the energy–health linkages have been neglected.

An energy sector blind spot

The limited attention on health impacts of energy acquisition compared to energy use can be explained by the fact that firewood collection falls into a 'no-*man*'s land'[44]. It is neglected in the energy sector because it is considered an issue of transport (Skutsch 1994), and because metabolic energy is not accounted for in energy planning and planners are less aware of the burden of firewood collection on women's health (Cecelski 1999). Firewood collection is also neglected in the transport area because there is little focus on transport systems in development debates, particularly the transportation of firewood (Skutsch 1994). The few cases which pay attention to transport do not include household transport resources.

Recently, however, gender and energy experts have increasingly called attention to the problem. This has largely taken the form of reviewing linkages between energy acquisition and use to women's health, including reproductive, skeletal and respiratory health and other health issues (Matinga 2005a, b). Such work, however, is limited in its

[44] The term 'no-man's land' is used with an emphasis on the "man" to underline the neglect of the issue in male-constructed policies which are blind to issues that predominantly affect women.

impact because policy action often depends on the existence of a large body of evidence on correlations and causality, as can be seen in IAP issue. The cost of implementing policy and the competing demands for limited funds mean that there tends to be a preoccupation with proving linkages rather than taking action.

The health discourse of work-related health: De-occupying women

Although the range of women's health experiences of energy acquisition and use are related to work, impacts of both energy acquisition (collecting firewood) and use are also neglected in the health sector. This is because reproductive work is not considered an occupation, and the household is rarely conceptualised as a work place where work hazards exist or where pollution can occur. As a result of this, neither the occupational and environmental health policies, nor actions on the health impacts of work address impacts of reproductive work at the household level. This is, however, not a problem confined to developing countries, but rather a global problem. The very term *occupational health* focuses on 'occupations' with a direct link to 'economic' activities. Health scientists define it in such a way as to exclude unpaid work for the purpose of costing workers' compensation (Messing 2010). Since women's reproductive work is not considered as an occupation, nor as paid work (since it normally is not), and is not covered by insurance in case of injury, it is falls outside this definition. In other words, the women who work from dawn to dusk are simply 'de-occupied': they do not have any occupation and cannot be compensated for their injuries. Even social scientists who include unpaid work in their concept of work-related health (Messing 2010) rarely take into consideration reproductive work. Thus effects of reproductive work are left unaddressed under assessment methodologies used by what (Messing 1998) calls one-eyed science, meaning science that is blind to the gendered differences in work roles and the resulting gendered health impacts.

The failure of attention to head-loading also reflects a wider lack of studies on musculoskeletal disorders in developing countries. This neglect is particularly striking in Africa with regard to lower back pain, one of the most studied musculoskeletal disorders in the developed world. Walker (2000) reviewed 56 studies from 1966 to 1998 focusing on lower back pain, and found only one study was from Africa. Louw *et al*. (2007) also conducted a systematic review of lower back pain and musculoskeletal conditions focusing solely on African studies. Their review of the 27 studies that fit their criteria showed a focus on paid workers (*i.e*. excluding those undertaking reproductive work), scholars and sports participants. Also striking is the fact that only seven studies were conducted in rural areas, while two combined rural and urban samples. A closer look at these studies also shows that only three studies focused on rural residents (as opposed to rural farmers, scholars or workers), of which one study focused on rural women. Habib *et al*. (2010) attempted to broaden her search and included data from industrialised countries in her review of 56 studies on musculoskeletal health. She found that only 12 of these dealt with musculoskeletal problems or pain from household work, and only seven included diverse aspects such as childcare and the "double day" (for women undertaking both paid and unpaid work outside and inside the home respectively). This supports the earlier statement that the health impacts of women's work are largely neglected. What is further interesting is that in the studies reviewed on musculoskeletal health in Africa are increasingly focusing on persons working on computers, whom, based on the work profile in Africa would be a

fraction of those working in the home alone, further pointing to the invisibility of the health concerns related to reproductive work.

The discourse of women's health – Sexual, maternal and reproductive beings

The health of women in modern health discourse also has distinctive features in that the focus for women has been on their sexual, maternal and reproductive health[45]. Although these aspects are of high importance, women's health is much more than these. However, compared to all other aspects, these are the three aspects that have drawn most international attention. One reason for this is that the outcomes of poor health for sexual, maternal and reproductive health are often adverse and may include death. Ironically, miscarriages, low birth weight and other issues that reflect poor maternal health may also result from women's work loads as shown by the linkages illustrated by Haile (1991) and Mishra *et al*. (2004). Further, heavy loads carried by women might be a contributing factor to obstructed labour due to changes in the spine (Matinga 2005b). In a number of child-health training materials, the WHO and UNICEF cite work burdens and the need for women to reduce firewood trips during pregnancy. Other sectors such as the energy sector are not referred to as possible linkages through which such improvements in women's lives may be made and women are not offered viable options for reducing the risks of heavy work.

The discourse of health in Africa – The infectious place

There are other reasons for the lack of focus on the health impacts of energy use. Historically, the African health sector in general has focused on communicable and infectious diseases such as diarrhoea, cholera, TB and, since the second early 1990s, HIV. Chronic and non-communicable diseases in comparison have received much less attention in Africa. One reason as advanced by Unwin, Setel *et al.* (2001) is the fear that a focus on non-communicable diseases will reduce resources for communicable diseases. Additionally, the focus on chronic diseases has been limited. The impacts of energy acquisition such as musculoskeletal disorders, repetitive strain injuries and respiratory infections are non-communicable, and most often lead to chronic disorders and hence they fall into the category of health issues that face limited attention. Delamonthe (2009) decries this neglect of non-communicable diseases, estimating that they account for 60% of worldwide deaths, but less than 1% of health budgets. Boutayeb & Boutayeb (2005) also refer to this neglect of non-communicable diseases, particularly the lack of standard protocols for assessing chronic non-communicable respiratory infections such as COPD.

Schneider *et al.* (2009), working at South Africa's Medical Research Council, estimated that non-communicable diseases, including those caused by domestic fuels, account for 33% of diseases in poor areas in South Africa. Recently, there has been some interest in these non-communicable diseases in South Africa, but these are largely limited to diabetes, hypertension and cardiovascular diseases[46].

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[45] For differences in reproductive and maternal health, see Paolisso & Leslie (1995).

[46] These are often referred to as diseases of affluence, although in South Africa they are also high among the poor in rural areas as I observed in both Cutwini and Tsilitwa. This may be related to the fact that the money dependence of households leads them to buy low-quality food, since they are in a modern economy but with limited means. In Cutwini and Tsilitwa, for example, households often buy fatty chicken skins (which are remnants of skinned chicken filets) because they want but cannot afford chicken meat, and use high amounts of Sodium Mono Glutamate to enhance flavours since they are exposed to in 'modern' cuisine but cannot afford herbs and spices.

The lack of attention to non-communicable diseases distorts efforts to ensure a more rounded approach to improving health. Even were communicable diseases under reasonable control, poor peoples' health conditions would still be unacceptable as long as non-communicable diseases continued to be neglected.

While some of this focus on communicable diseases is related to the severity of the conditions such as is the case with HIV, others have to do with colonial health discourses that conceptualised Africa as a place of infection and parasitic diseases. Even new efforts to include "neglected diseases" still conform to these imaginings. For example, recent calls to address neglected diseases focus on "neglected tropical diseases" and the parasites associated with them, and continue to overlook other health problems that are not related to place (tropical) *per se* but to other dimensions of poverty.

Conclusions

The first objective of this chapter was to investigate whether, at the international level, the discourse that shapes experiences, perceptions and responses neglect the energy–health linkages. The findings show that in mainstream development debates many of the health impacts of energy acquisition and use are not taken into account. However, within the energy–health communities of practice, the results are mixed, as the literature reviewed in this chapter shows.

The main discourse shapers in the energy sector, such as actors located in forestry and in energy planning, focused historically on the supply side of energy. Others, including advocates of AT and RETs, implemented energy interventions within the framework of *technology determinism*. Further, electrification projects were implemented in terms of economic justification. These three situations meant that social aspects of energy and the socio-cultural context in which interventions worked were ignored. This led to blindness to the health impacts of energy acquisition and use and, therefore, responses were limited or largely ineffective.

Currently, the Sustainable Development and the Climate Change discourses frame responses to the energy needs of the poor. In addition, the MDGs represent a critical global agreement that shapes responses to development issues. The Sustainable Development and the Climate Change discourses are rooted in the 1970s environmental movement, formulated in the West and subsequently applied globally without taking adequate account of national and local contexts. Sustainable energy is often equated with renewable energy, whether or not this meets the social needs of the poor. In addition, the social pillar of sustainable development is weak, and is therefore overshadowed by debates on the global environment. The neo-liberal focus of climate-change mechanisms do not take into account the different needs and contexts of poor countries, especially the complex context of household energy. For their part, the MDGs, emerging from traditional perspectives of development, ignored energy. Later additions still leave energy as a peripheral issue.

The second objective of this chapter was to identify knowledge gaps at the international level. Empirical gaps in knowledge were revealed, and two problems emerged. The first is how knowledge influences development practice, and the second is a problem of communication. The literature reviewed in this chapter shows that empirical gaps exist in that there are few studies that have focused on the health impacts of collecting firewood. Nevertheless, there are a few studies available, from both the

qualitative perspective and the quantitative perspective that look at health issues at other points in the energy cycle. These show that women's musculoskeletal health is negatively impacted by carrying heavy loads. Qualitative studies also show that in conflict situations, women may be exposed to injuries and to the risk of physical and sexual harassment.

The major health focus is on respiratory illnesses related to energy use. These studies show consensus on the correlation between pollutants from firewood use and poor respiratory health among women and children, resulting in about 1.6 million deaths every year. Apart from respiratory health, there are also a number of studies on impacts of energy use on ocular health, cardiovascular health, and a variety of cancers. Despite the evidence on the millions of women and children dying from IAP annually, and in spite of the evidence on musculoskeletal health and other impacts shown in the literature review sections of this chapter, mainstream development rarely focuses on them, with the exception of the WHO's growing, but not yet significant interest. The reason for this lies in the traditional focus on women's sexual, maternal and reproductive health, while neglecting other aspects such as their work-related health. In particular reproductive work is not categorised as productive work, despite being vital in maintaining the work force.

A major problem relates to the production of knowledge and how it influences practice. This has affected energy–health linkages in two ways. Firstly, development practice is convinced of the existence of a problem only if positivist studies indicate strong linkages. Secondly, the issues become visible if there is a strong lobby, which for the energy sector has emerged from other disciplines such as environment studies and rational economics. The lack of a strong social-focus lobby in the energy sector means that social aspects of energy, including health, are marginalised and over shadowed by global environmental issues.

There is also a problem of communication between the mainstream development community, and the energy–health community of practice. This has meant that the two rarely work together to address the health problems outlined in this chapter. A part of this problem results from the fact that there is finite funding for a myriad of problems in the developing world, and future funding often depends on ability to show success in obtaining funding in the past. This creates 'turf protection' tendencies that limit cross-discipline communication and co-operation.

The next chapter addresses the question of experiences, perceptions and responses of and to the health impacts of energy acquisition and use at the national level.

3

National level: Energy policy drivers in South Africa – from security to reconstruction and development

Introduction

This chapter analyses energy policy drivers at the national level as a reflection of the experiences, perceptions and responses of policy makers. Since effective policies govern resource allocation, they may expand or limit the perceptions and responses of actors at the local and household levels. The first objective of this chapter is to assess, at the national level, whether and how the impacts of energy acquisition and use have been addressed in policy. The second objective is to assess whether and why national level perceptions and responses converge with or diverge from those at the international level.

In the context of South Africa, this second objective is especially important because of the country's long experience of international isolation, which resulted in its embarking on some unique policy trajectories under majority rule. In addition, when compared to other African countries, South Africa is relatively well-resourced and has a modern economy, and as a result it can and does embark on policy trajectories that do not always conform to international development discourses. In contrast, as shown in Chapter 2, most African countries have no choice but to operate within the conditions set by donors, who are also key actors in the making of the discourses.

The discussion starts in following section and covers the period from the 1920s until the late 1980s, at the twilight of apartheid. The section thereafter picks up the analysis from the time of Nelson Mandela's release from prison in 1990, as the beginning point of the "new South Africa". This analysis continues up to 2009/2010, when it was announced that electricity tariffs were to be substantially increased for the first time in the democratic era, which coincided with the end of my research period. The chapter concludes in final section with an explanation of the main findings in relation to the two objectives stated above.

Drivers of energy policy in apartheid South Africa

In South Africa the energy sector has historically depended on cheap local coal supplies, resulting in some of the world's lowest electricity prices (Eberhard & van Horen 1995). Having cheap energy sources within a political setting where resource distribution was governed by race ideology created a unique context in which experiences were shaped. In this section, I examine the question of policy drivers during the apartheid period, as a reflection of the policy makers' experiences, perceptions and responses *vis-à-vis* energy and health.

For households in rural South Africa, there are five main energy-carrier options for cooking: biomass, *i.e.* firewood and dung, coal, paraffin, electricity and LPG[1]. Due to its use as a default term for modern energy in many debates, I have given electricity a particular focus in the analysis in this chapter. For example the World Bank, the most powerful supra-national body in the energy sectors of many developing countries, often equates electrification with access to modern energy. Although this may and does lead to many misguided and skewed policies, it means that there is more data to analyse on electricity than on other energy carrier options. There is also a practical reason for adopting electricity as a default for modern energy, however misleading this may be. The technical versatility of electricity allows, in theory, its use for various required services such as lighting, cooking, multi-media (including television and other information technology), refrigeration and many other applications. However, in practice, electricity use may be constrained by a range of factors, including affordability, reliability and social issues such as those found in using electricity for cooking. An example is where people may continue to use firewood because they find that food cooked by means of electricity tastes differently.

Another factor is that firewood is often distributed through informal supply chains, whose complexity might include variation by day, season or community event. This makes the collection of data that is reflective of such complexity a methodological problem, made worse by the energy sector's preference for quantitative analysis and use of macro-economic models, both of which capture little of the local realities. Finally, firewood resources and contexts are highly localised, and available accounts are often too specific to extrapolate to other areas. This represents a critical gap in the data, particularly for this research, because firewood is a key energy source in rural South Africa, and especially in former homelands such as those in the Eastern Cape.

In South Africa the supply and distribution of liquid and gaseous fuels, including paraffin and LPG, have largely been left to the private sector. They are often traded through various middlemen before reaching the consumers in poor households. While this in itself is not a problem, attempting to track its end-use is difficult, and so in terms of the analysis in this chapter there is a data gap. Moreover, during the apartheid era the Petroleum Act (Act No 20 of 1977) prohibited the publication of details pertaining to the sector (Eberhard & van Horen 1995, Hoffmänner 2002, Marquard 2006). This

[1] Coal dominates South Africa's primary energy provision, accounting for 77% of energy use. This is partly because of its use in the electricity sector and the high intensity of energy use of South Africa's mining and manufacturing industry. Nationally, in the household sector, according to STATSSA (2005), electricity accounts for 52% of cooking needs, while wood and paraffin provide 20% and 21% of cooking needs respectively. Coal is the least used energy carrier, providing 3% of cooking needs. In my observation, however, there seems to be an underestimation of firewood use. Moreover, the data on electricity does not say whether this is as the main energy carrier within the household or a lesser-used option.

makes any discussion of petroleum policies and use disjointed in the sense that parts of the political history of the liquid-fuels sector in South Africa are absent.

Despite these gaps in knowledge, the analysis of the electricity sub-sector provides insights for understanding perceptions and responses in the energy sector as a whole. The analysis in this section focuses on the context of energy policy in South Africa, divided into the apartheid and post-apartheid periods. Within each period I examine the divergences and convergences with international experiences as analysed in Chapter 2.

Before proceeding, I include a note on the use of the terms black and white in this thesis. These have been used in terms of the racial classifications of the apartheid state, where black includes all persons of colour[2].

The dark ages – Energy by colour in a segregated South Africa

This sub-section looks at energy policy drivers during the apartheid period. Although the analysis starts from the 'birth' of electricity in South Africa, the focus is on the period when black resistance to apartheid was at its peak. This period also coincides with the time when energy policy rose on the agenda internationally as a result of the 1970s oil crisis. It ends at the dawn of the post-apartheid period in the late 1980s.

Electric street lighting first came to the diamond-mining town of Kimberley in 1882 (Annecke 2008, Eberhard & van Horen 1995). Over the years the sector changed from one with multiple disjointed networks, to a largely integrated network involving various municipal generators and distributors, and dominated by the Electricity Supply Commission (ESCOM)[3]. Between 1882 and the late 1920s, electricity was used mostly by the mining industry (Christie 1984). This was in line with global trends at that time, whereby electricity was stimulated by economic activities, mostly to do with the extraction of natural resources, whether gold mining in South Africa (Christie 1984) and in Zimbabwe (Chikowero 2007) or copper mining in Zambia (Hausman *et al.* 2008). The same was true for non-African countries where electrification was stimulated by the rubber industry in Indonesia (then Dutch East Indies) and Vietnam (then French Indochina) (Hausman *et al.* 2008). The need to power transport infrastructure was another key stimulator for electrification in South Africa, where its development was linked to the development of the railways, firstly for trade and later for public transport (Christie 1984). This was also the case in other countries such as the United States of America, where electricity's development was initially linked to the development of transport networks (Hughes 1993, Nye 1990). By the 1930s, electricity access in South Africa was being extended to households, with major rural electrification initiatives in the Western Cape (Christie 1984). The key consideration for electrification at this time was the expected demand, *i.e.* identifying those areas with customers who could afford to pay for the service, and which therefore provided economic justification for its provision. Owing to the socio-economic structure of that period, whereby there were substantial differences in economic power between white and black South Africans, the majority of those who benefited were white households. The two foci of expectations –

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[2] In South Africa, the broad categorisations were black meaning black Africans, white meaning Caucasian mostly of British and Dutch origins, coloured meaning all people of mixed race and Asian meaning persons with origins from the Indian sub-continent. The complexities of more detailed classifications are beyond the scope of this analysis.

[3] Although municipalities and other entities produce and distribute some electricity, ESKOM remains the main electricity producer and supplier. It is important to note that in this work, I use ESCOM when referring to its activities before 1987 and ESKOM when referring to it after 1987 when it changed its name.

sufficient demand and economic justification – coincided with those at the international level, as shown in Chapter 2.

In rural areas, the target group for electrification was farms, and in particular white households, for a variety of reasons. Firstly, regulations at that time allowed one connection per property (Gaunt 2010), which meant that the main property, logically that of the farm owner, was electrified while the houses of farm workers remained without access. Secondly, many rural houses were constructed of mud and were temporary or semi-permanent in nature. As standards and technology design at that time did not take this into account, such structures were not eligible for electrification. Similar constraints limited electrification of poor households in other countries. Third was the ambiguous legal status of persons living in areas designated for white people. Under apartheid's racial segregation laws, black persons living in areas declared white were either breaking the law or were considered temporary migrants, as was the case, for example, with labour migrants. The rest of the energy sector was administered in a piecemeal fashion by energy carrier (Marquard 2006), a trend that was common internationally before 1973. Apart from the energy crisis of 1973 and the price shocks of 1979, another factor that affected the energy sector and dictated investments was the economy of South Africa in the context of its mining industry. In the 1970s, South Africa was still industrialising and was heavily dependent on the mining industry. In 1970 revenue from mining activities and products accounted for about 13% of South Africa's GDP, but had doubled to just over 26% by 1980, with a substantial increase in coal exports, especially after regulatory changes in 1976 (Jones 2002). Such growth meant that investments in the power sector also increased substantially, in part to meet the demand from the mining sector, which in itself is an energy-intensive industry and assisted by policies to advance white Afrikaner interests (Jones 2002, Fine & Rustomjee 1996).

As noted in the international-level analysis, the 1973 oil crisis resulted in countries re-orienting or developing energy policies based on energy security concerns, both in a physical and a political sense. For South Africa, the political reasons included ensuring energy security in the face of an embargo imposed by the international community in response to apartheid. This was particularly important in 1979 after the fall of the Shah's government in Iran, the last major oil supplier to South Africa, resulted in the cutting off of supplies (Lewis 1990). In response, the South African government revamped its synthetic fuels programme, which had started in the 1950s, and made heavy investments particularly in the liquid fuels sector. These investments, made in the context of energy security, did not address the needs of the rural poor, the majority of whom were black, since such needs fell outside the defining mandate of the policies that dictated such investments.

While many rural black areas remained without electricity, some black urban townships did have access, including households. While this thesis focuses on the rural context, a detour to examine the reasons for the electrification of black urban townships will shed more light on energy policy drivers in South Africa. In Soweto, Alexandra and other black townships, the electrification drive started in the 1970s, particularly after the 1976 Soweto uprising. The international visibility of the events of 1976 forced a reconsideration of the conditions of black citizens in South Africa (Beinart 2001), although not necessarily radically changing the basis of the apartheid state. The Soweto uprising can then be seen as one way in which the black population made themselves *politically visible* by organising mass protests. Secondly, the *political visibility* of the

black urban population in the 1970s was connected to the economic realities that the apartheid government had to come to terms with. Despite major disparities in purchasing power, the black population, by relative population size and as a result of their increasing, albeit slow, entry into the skilled and semi-skilled labour market (translating into increasing incomes for this sub group of the black population) was increasingly an important consumer group of goods and services, and therefore a key market segment for services such as electricity. This recognition of the potential black consumer, combined with the relative ineffectiveness of migration and residency controls of black populations in urban areas, prompted subtle shifts in policy. The government recognised elements of the urban black population as a permanent social group, not only to be politically controlled, but also capable of contributing to future economic growth through consumption.

When the homelands began to achieve their nominal independence from South Africa, starting with Transkei in October 1976, black households in those territories were further marginalised. One implication of declaring Transkei an independent homeland was that whatever little financial support it had received from the South Africa state decreased, and administration of the Transkei was left without sufficient revenue for the provision of services such as electricity. Raising revenue in Transkei was difficult because of the lack of industry to generate tax revenue, as well as the high poverty rates of its population. In addition, the Department of Minerals and Energy Affairs (DMEA), created in 1980, was responsible for energy matters in South Africa and putting all energy functions were under one department for the first time in South African history (DMEA 1980), although it was not necessarily responsible for energy matters in the independent homelands. To this end, homelands had their own energy departments (Ncetezo 2010), in the case of Transkei the Department of Public Works and Energy. As such there was no obligatory basis for the DMEA to finance or get involved in the energy affairs of the homelands. Furthermore, the homelands of Transkei, Bophuthatswana and Venda had their own electricity supply corporations (Gaunt 2003), and Ciskei's Department of Works bought bulk electricity from ESCOM[4]. In addition, the management of the homelands, including the management of development initiatives, was often affected by struggles not only with the apartheid government but also because of political and ideological in-fighting between factions within each homeland.

While official data on electrification rates in Transkei in the apartheid era are scarce, it is still possible to make estimates of electrification rates in the area[5]. According to Ncetezo (2010), a former employee at the Transkei Electricity Supply Corporation (TESCOR), electrification rates in the 1990s in Transkei were less that 5%, and the Department of Works and Energy did not implement many rural electrification programmes. Others who also worked on electrification in Transkei dispute this and suggest electrification might have been higher (Gaunt 2010). In order to cross-check the data on electrification rates in Eastern Cape in the 1990s, I examined the number of

[4] This state of affairs complicates the analysis of the central government's involvement in the apartheid period. One way of looking at this issue is that the South African government, through the DMEA, could not electrify these areas because they were regarded as independent states. On the other hand, as other countries did not recognise these independent states, it is correct to conclude that the South African government should have, but neglected to, electrify these areas. After all, South Africa did remain centrally involved in many of the affairs of the homelands, such as security.

[5] The government did not include independent homelands in most national statistics and censuses of the Republic of South Africa but independent homelands had their own censuses (Christopher 2009).

customers that TESCOR had at the time of its incorporation into ESKOM in 1991/1992. In 1992/1993 after electrification efforts had already started, the corporation had just under 7,000 domestic customers, while the population of Transkei was estimated at 4 million (ESKOM 1995). Assuming a household size of six, this latter figure translates into a total of 630,000 households. Assuming that each customer represents a household, the electrification rate in Transkei in 1991/1992 can be estimated at around 1%. This figure does not include municipal electrification, although the main towns in rural areas had already been taken over by TESCOR, before TESCOR itself was taken over by ESKOM in 1995 (Auditor General 2000). For example, in 1984 TESCOR took over responsibility for the electrification of Lusikisiki, a key rural town that is the hub of Ingquza Hill Municipality (Catholic Diocese of Kokstad undated). In whatever manner one examines it, black South Africans, and in particular those living in rural areas, were largely excluded from the potential benefits of electrification.

Alexandra Hoffmänner (2002) has investigated the history of South African energy research for her PhD thesis, and as part of her research she reviewed the DMEA's annual reports. According to her, it was only in 1985 that the annual reports made passing reference to fuel supply to the homelands. In 1985 there was an acknowledgement of the third- and first-world energy sectors in South Africa. This arose in reference to the disparities whereby about 99% of white urban areas were electrified while most black areas were not, the latter continuing to depend on firewood, dung and paraffin. Yet ESCOM continued to electrify "white spots" in rural areas. The DMEA 1985 Annual Report pointed to the need for an alternative energy programme that would target low-income communities. It cited the potential for renewable energy for water pumping and heating, and low-cost electricity as one of the four priorities of an alternative energy programme using appropriate technology for the Third World (DMEA 1985: 73). In addition, it raised concerns over the availability of firewood in underdeveloped rural areas, deforestation and environmental degradation. There was, however, little action undertaken to address these concerns. ESCOM also stated concerns for poor households in the 1985 Annual Report. This position in part reflects ESCOM's assertion of its position as a modern utility, in touch with international debates. Further, the apparent shift in focus to underdeveloped areas in the 1985 ESCOM report can at least in part be accounted for by the change in its leadership, as I will explore later on in this chapter. The neglect of firewood in energy interventions resulted in part from lack of political will, as well as paradigm differences in terms of responsibility for firewood issues. Both Annecke (2003) and Marquard (2006) show that the Minister of Energy at that time did not consider firewood an energy issue, but rather an issue of forestry. Such lack of a 'policy home' for firewood issues emanates from global discourses as pointed out in Chapter 2, whereby firewood was often seen as an appendage to other developmental issues, while the energy sector focused on commercial energy carriers and the forestry sector focused on deforestation.

In 1986 South Africa formulated its first White Paper on Energy Policy, focusing once again on securing cheap power supplies in anticipation of an increase in energy demand following an economic upswing experienced in the early 1980s (ESKOM 1990). At this time most of the poor black majority did not experience substantial changes in either economic conditions or access to modern energy carriers, with experiences of modern energy limited to paraffin and, to a much more limited extent, to LPG. Both these energy sources were supplied purely by commercial interests (Eberhard & van Horen 1995). The petroleum sector was however not in the business of

delivering social benefits, and neither were there any safety standards for paraffin stoves.

The poor paraffin stove designs used were for many years, and continued to be, a cause of many injuries, deaths and property loss due to fires. For the few blacks who had physical access to electricity, it was perceived as unaffordable, especially for cooking purposes, and its quality was poor. The poor quality of electricity services was largely attributed to financial, managerial and political problems that affected Black Local Authorities (BLAs). Part of these problems was because BLAs lacked political legitimacy in the community, since senior figures in them were seen as stooges of the apartheid government. These communities therefore undermined BLAs by refusing to pay for services as a form of protest against such perceived collusion. In turn, BLAs could not afford to provide quality services to their communities, let alone carry the cost of electrification, as they could not guarantee a return on their investment (Marquard, interview, 2nd September, date 2009). In addition, and perhaps more important for the homelands, black areas had a customer base which experienced high levels of poverty, which reduced the amount of revenues that local authorities could recover. By contrast, white local authorities, most of which were in urban centres, were often financially categorised together with industrial customers, allowing for the cross-subsidisation of white domestic customers, an advantage that black customers did not have (Marquard, Interview, 2nd September, 2009). According to Horowitz in Marquard (2006: 174-175), white local authorities supplied 91% of industrial and commercial customers, whereas BLAs supplied 1%[6].

Expecting an upturn in the economy and subsequent high demand for electricity, ESCOM built extra power stations (ESKOM 2009). However, demand grew at a lower rate than ESCOM had expected (Gaunt 2010), leaving the parastatal with an excess generating capacity of about 4,000 MW (ESCOM 1990), and yet more power stations were in the development pipeline. An alternative view is that, considering that over 70% of the population did not have access to electricity, this was not so much excess capacity as a reflection of the low priority placed on expanding access to the millions of the unreached black population.

The capital requirements for this new building programme led to high tariff increases between 1975 and 1982, with the largest rise being recorded in 1977 at 48.2% (ESKOM 2009). In response, the government ordered a commission of inquiry into ESCOM's performance led by Dr de Villiers in 1983, and some of his recommendations led to the replacement of the management of ESCOM in 1985. In 1987 ESCOM publicly committed itself to electrifying households, adopting *Electricity for All* as its slogan (Bekker *et al.* 2008). At the same time it underwent a restructuring, changing its name to ESKOM[7]. Although the new chief executive, Ian McRae, who took up the post in 1985, attempted to extend access to black townships, this was limited by the political context in which the energy sector operated[8]. The reasons for this electrification

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[6] I shall not discuss further the many benefits to white households at the expense of black households here to avoid distraction. I, however, refer the readers interested to Horowitz (1994) and Marquard (2006).

[7] This name is a combination of the company's English name, Electricity Supply Commission (ESCOM), and its Afrikaans name, *Elektrisiteitsvoorsieningskommissie* (EVKOM).

[8] McRae joined ESCOM in 1947 and worked there until 1994, when he moved to work for the National Electricity Regulator (NER) as its first chairman and CEO until 1997. The political limitations in electrifying black households are illustrated, for example, by the clandestine meetings that McRae had

programme were both strategic and personal (Marquard 2006, McRae 2006): strategic because the excess capacity had to be used to limit ESKOM's poor technical performance and secure a return on investment, and personal because McRae was uncomfortable with the disparities that he saw at ESKOM as well as in the wider South African society. In the 1980s Trevor Gaunt and Anton Eberhard also wrote about the need for energy services for low-income households, where they highlighted the differences in access to modern energy between black and white households, and the difficulties faced by largely back households in accessing and using energy (Gaunt 1980, Eberhard 1986). In 1987, Charles Dingley[9] argued for electricity access to be extended to all South Africans (Gaunt 2005). The propositions by Dingley, McRae and others were later formally proposed as the basis for a national electrification programme discussed at the ANC conference on electrification in 1992, where the National Electrification Forum (NELF) was formed (Marquard 2006). These efforts were boosted by funding for economic scenario planning from Old Mutual-Nedcor, and by a political scene that was rapidly changing (Bekker *et al.* 2008, Segal 2007)[10]. A shift in the energy discourse, from energy security to energy for development, is clear when one examines relevant research after 1987. Sarah Ward's review of about 100 rural-energy studies in South Africa between 1979 and 1994 is especially useful in this regard, as it shows only five studies on rural energy between 1979 and 1986, and seven rural-energy studies in 1989 alone (Ward 1994: 13). Many of these latter studies were conducted by the Energy for Development Research Centre at the University of Cape Town (EDRC) under the Energy Policy Research and Training Project (EPRET), which was initially financed by the National Energy Council (NEC) and commissioned by ESKOM[11]. Others were funded by the Norwegian Overseas Development Agency (NORAD) and ESKOM under the project: *The role of electricity in the integrated provision of energy in rural areas.*

Returning to the question of whether and how the energy policy in South Africa addressed energy–health linkages, the above analysis shows that in the apartheid period, the energy policy did not primarily address social concerns particularly not those of the majority of black households. As a result, it did not concern itself with social issues such as the health impacts of energy acquisition and use. As to why this was the case, there are three main reasons.

Firstly, energy planning adopted a supply perspective that focused on commercial energy and the electrification of households. The provision of electricity to households

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with community leaders in Soweto to find out ways of ensuring that households would pay for electricity, so that he could convince others of blacks' ability to pay for electricity (McRae 2006).

9 Charles Dingley was an electrical engineer who had previously worked for ESKOM and was at that time Senior Lecturer in the Electrical Engineering Department at the University of Cape Town. In addition, a number of academics at University of Cape Town had some history of political activism in reaction to the apartheid state. This afforded, especially in the last years of apartheid, some political space for energy and poverty research.

10 One of the key proponents of the Old Mutual-Nedcor scenarios analysis was John Maree, who, from 1985, was chairman of ESCOM, which probably explains the inclusion of electrification in the scenarios. The scenarios analysis aimed to map out how South Africa would evolve in the 1990s, with the aim of developing business strategies, and among these were proposals for electrification. Other proposals were to do with health care (focusing on HIV/AIDS), education and low cost housing (Segal 2007).

11 Marquard *et al.* (2006) assert that the NEC had developed an interest in energy and development for rural low-income households in the 1980s, but could not implement it for jurisdictional and political reasons.

was on the basis of traditional economic justifications that were in common use internationally. Electricity was a powerful economic tool in that the cheap electricity that the state maintained and the extensive network (in so far as its political interests were concerned) of economic development that has led some parts of South Africa to be rated as part of the First World. Secondly, energy policy was driven by energy security, both in a physical and political sense, and hence particularly important in maintaining the apartheid state by reducing dependence on the international community. Thirdly, in South Africa the notion of extending access to modern energy carriers using social justifications suffered from the same neglect as it did internationally. As a result, access to energy during this period was equated to access to electricity, with other energy-access options not being seen as the responsibility of the state.

What was different about the South African situation compared to other African countries was that it did not have the same kind of resource constraints, both in terms of generation capacity as well as finance. Typically, electrification has moved from being seen as infrastructure provided for economic reasons only, to a source of social benefits, as resource constraints decreased and as electrification of economically justifiable areas became complete. The expectation would therefore be that once the economically justifiable areas were electrified, electrification would move to rural and uneconomic areas. However, in South Africa, even after economically justifiable urban areas became completely electrified, there was little effort to electrify non-economic areas. Instead, public finances were directed to expensive projects such as the development of nuclear power and a synthetic fuel programme, rather than to the funding of social investments. This was because these two programmes were not only political projects as previously mentioned, but they were also *symbolic projects* for the apartheid government. Politically, power lines supplying isolated white households, which crossed over but did not supply black townships, were powerful symbols of the ideology of racial superiority for those who subscribed to the ideology of apartheid. The same was true for urban areas where a power generation plant towered over the un-electrified Orlando township, while the electricity was fed into the grid (Annecke 2003) and consumed elsewhere, largely by industry and white electrified households[12].

The building of the synthetic fuels programmes, Sasol II and III, are particularly reflective of political aims and *symbolism* overruling social and even economic interests. The expansion of Sasol, the synthetic fuels programme which started in the 1950s, was seen as one of the viable options for responding to the oil embargo (Gaunt 2010), and during the 1973 oil crisis, Sasol's comparatively low price was a benefit to the South African economy, although not necessarily economically viable. In 1974 the government commissioned a study on the technical and financial implications of building a second synthetic fuels plant. Sasol's managing director P. Etienne Rousseau[13] advised against the building of a second synthetic fuels plant because of its questionable financial viability, but the government chose to overrule this advice. In December 1974 the Minister of Economic Affairs announced that the Cabinet had approved the construction of Sasol II (Steynberg & Dry 2004) at a cost of R 2.4 billion (Hoffmänner

[12] Although Orlando Power Station was built between 1939 and 1943 (Annecke 2003) and apartheid was not a formal system until 1948, the non-provision of electricity to black households persisted for decades before 1948 and afterwards. Moreover, racial segregation in South Africa and many other African countries existed for years, formally and informally, before 1948, and it continues up to the present in many forms.

[13] P.E. Rousseau was Sasol's first managing director and remained with Sasol until the late 1970s.

2002). In 1979, Iran, the last oil supplier to South Africa, stopped all deliveries (Hoffmänner 2002, Marquard 2006)[14]. The reaction from the South African government was to direct in 1979 that Sasol III be built at a cost of R3.2 billion (Davies *et al.* 1988 in: Hoffmänner 2002: 180).

At this point, many of the areas where blacks resided remained un-electrified, and the household electrification rate in South Africa remained at less than 30%. The government preferred to concentrate on such symbolic projects as Sasol rather than focusing on the most beneficial choice for the wider population. Such *symbolism* was well captured when, a few months before the Cabinet approved the expansion of the synthetic fuels programmes described above, a South African delegate visiting Iran to negotiate an oil contract responded to Iran's refusal to co-operate by declaring: *"Now watch us build more Sasols"* (Wessels 1980 in: Hoffmänner 2002: 180). However, apart from the symbolic significance of Sasol in terms of technological mastery, independence and strategic prowess, its plants did also provide a considerable number of products, allowing the government also to exercise leverage over the multinationals.

Modern energy was also a political tool for the black resistance movement, although in a more limited way. Electricity was a channel for resistance through the non-payment of bills mentioned earlier. In addition, in 1969 the ANC officially sanctioned the sabotaging of infrastructure as a legitimate form of protest, and power stations were identified on the list of main targets (ANC 1969). In the 1980s the liberation movement sabotaged key energy infrastructure such as the Sasol coal-to-oil station in 1980, the Koeberg nuclear power station in Cape Town in 1982, and the Umtata sub-station in Transkei in 1985 (ANC undated). To the banned ANC, destroying the symbols of segregation was symbolic of their capacity to destroy the apartheid state and resist subordination.

In such a period, energy policies and programmes had a greater symbolic value than compared to their substantive objectives in so far as modern energy access for the poor is concerned. As a result, social aspects such as health were neglected and there were virtually no responses to the health impacts of energy use.

The role of electricity as a political tool changed but did not cease with the end of the apartheid period in 1990. The *symbolism* of energy continued to shape experiences, perceptions and responses at various levels in South African society. The next section continues this discussion by looking at the implementation of energy policy in the post-apartheid era.

Drivers of energy policy in post-apartheid South Africa

The second era of South Africa's energy policy starts from around 1990/1992, which was the time the new political dispensation was being negotiated, *i.e.* the post-apartheid nation. Internationally it was a time when governments and development partners were beginning their efforts to put the sustainable development agenda into practice.

This second era is divided into three periods. The first starts in 1990 and ends around 1999, which coincides with the beginning of Thabo Mbeki's presidency and the expansion of the electrification programme to include more rural areas. Internationally, this was a time in the development discourse when poverty was being reconceptualised and the linkages between local and global interactions rethought. The second period is

[14] In reality, South Africa could and did buy oil supplies on the spot market (which although costly, was for the apartheid government, a price for maintain the systems.

from 2001 to the present, a period of renegotiating the structure of the energy sector as well as a national reflection on the post-apartheid era and its promises. Internationally, it is a time when Millennium Development Goals and Climate Change have taken centre stage. The third period is the indeterminate future. I finish by briefly analysing the shape that the energy sector appears to be taking.

The 'golden age' – Everything is going to be alright now![15]

Following the 1990 unbanning of liberation organisations such as the ANC and the release of Nelson Mandela, politicians and activists started to negotiate policies for the new political dispensation. With negotiations taking place, ESKOM could now undertake its *Electrification for All* efforts with relative political freedom. It decided to finance the electrification drive, and also agreed to take over electricity providers that had been serving homelands such as TESCOR[16]. This was, at least in part, a strategic move to prevent government interference in the new era, as ESKOM has experienced in the past, or as McRae puts it, to avoid the *"politicians in the engine room syndrome"* (McRae 2006). The clear signs of the end of apartheid also signalled an end to the strategic interest in defining energy policy as a tool for maintaining the apartheid state. The change in the political climate resulted in a shift in the substantive aims of the energy policy, but not an end to symbolism itself. As Marquard (2006) observed, the traditional concerns of the apartheid state – coal, liquid fuels and electricity – which had previously received the bulk of energy research funds, were replaced (at least conceptually in formal declarations) by concerns over energy utilisation and efficiency, and energy for development.

Various researchers and academics embarked on work to fill a knowledge gap that had resulted from the neglect of black areas under apartheid. Up until then national demographic data had excluded homelands. Although some research had been done in rural areas such as Best's research on firewood scarcity (1979), Liengme's research on wood use for firewood and for building (1983), Eberhard's research on firewood consumption patterns (1986), and Gandar's research on firewood use and its impacts on the environment (1988), policy makers' understanding of the target population for which new policies had to be designed in the post-apartheid South Africa was not comprehensive. Apart from the gap in terms of coverage across provinces (most of Eberhard and Gandar's research was in the then Transkei, Ciskei and KwaZulu), there were two other gaps worth mentioning here. The first was that the bulk of the studies had focused on rural areas, which were politically more acceptable spaces to do research in than urban areas where mass political actions were occurring (Marquard, 2nd

[15] A young woman made the statement "*Everything is going to be alright now!"* to me when she was telling me how her life expectations had not materialised despite the end of apartheid. In 1992 she had failed her school-leaving exam, known as matric, which is a basic requirement for continuing to higher education and for getting a well-paying job. She said she and her classmates had not studied or worked hard. When I asked her why she did not study, she told me *"When Mandela walked out of prison, it was so unbelievable. We told ourselves we didn't have to work so hard because everything was going to be alright now. That was the attitude then. Everything is going to be alright now!"* This last sentence, to me, captured the euphoria that was in almost every sector of society in South Africa soon after Mandela's release, as well as much of the international community that had opposed apartheid.

[16] According to Marquard (2005) monthly connection rates increased from under 1,000 to 30,000 household in 1992. That same year a meeting was also held (with ANC representatives in attendance) during which the National Electrification Forum (NELF) was established to drive electrification efforts in South Africa.

September, 2009). The second was that the initial studies had not taken a gender approach in their data collection analysis. What this means for this study was that by focusing mainly on energy supply, scarcity and use patterns, without considering the various roles of women and men, these studies were blind to the different experiences of women and men. In recognition of these gaps, the first energy research studies in the post-apartheid period focused on poor urban areas such as townships and, later on, incorporated some gender aspects of energy acquisition and use. Most of the studies that initially informed the ANC government's energy policies were undertaken by the University of Cape Town's Energy for Development Research Centre (EDRC). Staff at the centre had a strong focus on the social aspects of energy access, including both poverty and gender aspects. A number of the staff had also been anti-apartheid activists. Their research therefore brought a strong focus on the poverty and welfare dimensions of energy policy, but also often showcased the unfairness of the disparities in access to modern energy carriers between black and white South Africans. Few studies, however, dealt with health (Terblanche *et al.* 1992, Eberhard & van Horen 1995), and their focus on socio-economic impacts of energy use sometimes touched on IAP and, later, on paraffin fires.

In 1992 the ANC released a set of policy guidelines in the document *Ready to Govern* (ANC 1992). In it, the party pledged to launch a national electrification programme to *"improve the quality of life of our people, stimulate the economy and reduce pollution levels"* (ANC 1992: D9). At the same time, the World Summit in Rio took place, and the sustainability agenda emphasised at the WCED became entrenched in the energy–development discourse. Five factors came together to make the ANC's pledge feasible. These were, firstly, the democratic context whereby the constitution recognised all persons as equal. Secondly, the political and strategic commitment from ESKOM to provide *Electricity for all* represented a change of policy imperatives. The third was the fact that ESKOM's excess capacity and its already extensive network of power lines made it possible to quickly extend electricity to previously neglected households. The fourth was that there were finances available from ESKOM which funded national electrification and subsidised municipal electrification targets, and which were further supported by a euphoric international community. Finally, there was an emerging global discourse that recognised the role of modern energy services for development that led to increasing acceptance of socially rather than economically justifiable electrification only and this led to more release of funding. The level of international support, however, was relatively minor compared to ESKOM funding. For reasons addressed in Chapter 2, international support in terms of infrastructure was almost exclusively focused on renewable energy, and therefore on off-grid electrification. These factors triggered what I consider South Africa's 'golden age' as far as quantitative access to electricity in households is concerned. The electrification programme, a part of the government's Reconstruction and Development Programme (RDP), was a hallmark initiative aimed at reducing the disparities inherited from the apartheid period.

In terms of energy and health linkages, research findings and, more importantly, media reports – particularly after 2000 – highlighted the impact of paraffin and sub-standard paraffin stoves in the lives of South Africa's poor urban populations. Most prominent was what became known as "shack fires", which are often caused by exploding paraffin stoves and, for this reason, are locally nicknamed "firebomb" stoves. The media images were vivid and therefore created a new level (and face of) *political*

visibility of the urban poor[17]. Discussions of paraffin safety also highlighted paraffin ingestion among young children. Two other health issues that were discussed were IAP and the impacts of carrying heavy firewood loads, but they were less visible than either electricity access or paraffin fires.

On an international level, there was pressure from the World Bank on many governments to liberalise and preferably to commercialise power utilities, and to allow private participation in the power sector. Southern African countries such as Zimbabwe (Kayo 2004), Malawi (Matinga 2004) and Zambia (Haanyika 2008) carried out studies on the reform question[18]. In addition to calls for power-sector reform, there were many advocates lobbying for an increase in the share of renewable energy technologies (RETs) among the options for improving energy access (EarthLife 2000)[19]. These advocates argued that RETs would be the best way to ensure energy access to rural, isolated households.

The period between 1990 and 1996, in which South Africa was governed by a government of national unity (GNU), was fraught with uncertainties for the emerging energy policy. One reason for this in the energy sector was that the DMEA had a National Party minister, former Foreign Minister "Pik" Botha, whilst the Cabinet was ANC-dominated. This made it difficult to combine the security-oriented policies from the apartheid era with the emerging energy-for-development discourse of the post-apartheid era. A second reason is that the new bureaucrats coming into government had yet to develop the relevant skills such as energy statistics, analysis and modelling (DMEA 1994, Marquard 2006). According to Marquard (2006), the problems also resulted from the fact that the ANC did not have a concrete energy strategy and policy upon entering government, except for the general position that the apartheid era structures should be dismantled (Marquard 2006: 385). Such uncertainties and subsequent changes in both leadership and structure of the DMEA, which in 1997 came to be known as Department of Minerals and Energy (DME), led to delays in the establishment of a concrete energy policy framework[20].

Eventually in 1998, the government published the White Paper on Energy Policy, which highlighted five main objectives, of which the fourth was managing environmental and health effects (DME 1998)[21]. Despite this stated objective, there

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[17] Personally, living in Cape Town at that time, I was shocked by the extent of paraffin fires. One of my first roommates had burns over 80% of her body. On my occasional visits to Khayelitsha Township, while volunteering to build Habitat for Humanity houses, I found that it was not unusual to meet people with scarring from burns, often covering over 50% of the body.

[18] The power-sector reforms in South Africa have been largely limited to the corporatisation of ESKOM and establishing regional electricity distributors, which remains an ongoing and, as yet, unclear process.

[19] For example, the environmental justice group EarthLife has continuously opposed government's proposed coal power stations as well as the development of the Pebble Bed Modular Reactor (PBMR), including taking the government to court over the PBMR plans.

[20] For example, in this period, the Department of Minerals and Energy Affairs was headed by a National Party (NP) minister, while after 1996, when the NP withdrew from the GNU, the department was headed by an ANC minister, which resulted in another delay as the new leadership took time to establish ownership of the policy process (Marquard 2006: 285). As a result, its energy policy framework was largely externally influenced by policy activists, party activists (more intimately linked to the ANC as a party) and the parliamentary committee.

[21] The other four are: increasing access to affordable energy services, improving energy governance, stimulating economic development, and securing supply through diversity, *i.e.* diversifying supply sources and primary energy carriers (DME 1998: viii).

have only been limited efforts to address firewood and paraffin use. Firewood in particular is not the subject of any national programme. The omission of firewood in national energy programmes in the post-apartheid period is of interest for a number of reasons. Firstly, under apartheid, a regime ideologically uninterested in energy for poor black populations, the DMEA implemented the "energy for development" programme which focused on firewood in poor black areas, and in the 1990s and during the transition, when the DMEA was headed by a National Party minister, there was an attempt to do a large-scale mapping exercise of firewood use. This omission of firewood from national energy policy under the ANC leadership provides insights into perceptions and responses to energy in policy circles, and its reasons will be explored further in the subsequent subsections. What is important to acknowledge at this stage is that in the post-apartheid period, the government's focus, as far as households were concerned, was expanding access to electricity to poor households, which, because of the disparities discussed earlier, were predominantly black.

South Africa's electrification programme between 1990 and 2001 was impressive. It is important to note that at this time South Africa was in a good position to yield increased social benefits, including health benefits, for three reasons. Firstly, the country had extensive 'indigenous' research, which, although not perfect, had set out various innovative options for addressing the needs of the poor. Secondly, the government and ESKOM had their own sources of finance and infrastructural capacity, which meant that they did not have to be constrained by donor conditions, as discussed in Chapter 2. Thirdly, few in the international community would have criticised a welfare approach in the case of South Africa, considering the deeply embedded racial disparities which seemed to demand a welfare approach.

One innovative recommendation at the onset of the post-apartheid policy period was energisation. Energisation has a plethora of definitions (Nissing & Von Blottnitz 2010, Sebitosi & Pillay 2007), but its fundamental premise is the provision of a range of modern energy services, focusing on end-user needs rather than on a narrow supply-side focus of electrification. Further, it allows for the provision of different energy carriers based on what type of energy service requirements they best meet according to technical efficiencies, *e.g.* natural gas may be provided to meet cooking needs and electricity for lighting.

The government declared its support for energisation, and with assistance from the international community implemented a number of such projects, notably the Hluleka Nature Reserve, Lucingweni village (Clark & Drimmie 2002), and integrated energy centres (IECs), aimed at providing a range of modern energy carrier options. In reality, such promises to focus on energisation remain confined to electrification, with its impressive and highly visible power lines and quantitative counts of households reached. Other aspects of energy access and use, for instance efforts to address firewood use to meet the objective of reducing health effects, as stated in the Energy Policy (DME 1998), continue to be neglected.

Part of the reason for this focus is that, compared to improving the way people use firewood or providing a suitable alternative, electrification is more politically beneficial for governments because it is a higher-profile achievement. Although the *symbolism* of the post-apartheid era is driven by different underlying aims, this shows that the continued value of *symbolism*, as a critical factor in responses to energy issues, continues in the post-apartheid period.

Secondly, the pursuit of electrification represents the belief, despite evidence that electricity does not always meet expectations (Clancy & Kooijman-van Dijk 2006, Cowan 1983), that the majority of the population will transition to cooking with it once it is available to them. In turn, it is assumed, the energy policy goals will be reached, since electrification will solve the problems associated with the health impacts of energy acquisition and use.

The post-electrification blues

The excess generating capacity and the good financial position that ESKOM had in the early 1990s, made it possible for the utility to rapidly electrify households, without the constraints of major infrastructure investments. This was because the capital costs of generation plants developed in the first phase of electrification had been recovered well before 1994. Moreover, at the beginning of the electrification drive most households serviced were urban, in high-density locations, and close to already existing infrastructure.

In 2001 ESKOM was corporatised as a step towards the restructuring of the electricity supply industry in South Africa. This meant it was expected to make a profit and was liable to pay tax, and for this reason it was no longer willing to finance the capital expenses of electrification, which it considered to be unprofitable (Bekker *et al.* 2008). The financing of electrification then had to come from the central government budget.

From 2001 electrification was therefore funded by central government and channelled through the DME. However, the responsibility for the provision of basic services was transferred to the Department of Provincial and Local Government (DPLG). This led to disagreements over who should undertake electricity services provision. The lack of clarity over responsibilities contributed to a slowing down of the electrification programme, until 2005 when electrification was allocated to the DME (Bekker *et al.* 2008). There was confusion as to who would be responsible for aspects of electrification such as planning and allocating finances for electrification. Although DPLG was the designated department for basic services, few local authorities had experience in the planning and implementation of electrification for poor households. There have therefore been instances where money provided to local authorities for electrification has not been spent while other local authorities borrow money for electrification despite the fact that the DME had electrification funds that they could request (PMG 2007).

Experiences from the first years of the electrification programme showed that, despite this initiative, household electricity consumption was relatively low. Davis (1998, 1995) and Prasad & Ranninger (2003) found that that newly electrified households were not using as much electricity as had been expected. One reason for this was said to be the fact that households could not afford to use electricity. In 1998 the National Electricity Regulator (NER), now called the National Electricity Regulator of South Africa (NERSA), proposed a poverty tariff for poor households, which were defined as households with an income of less than R500 per month (UCT 2002). According to NER (in UCT 2002: 7), "*this was in line with international trends which were moving towards poverty relief embedded in grants rather than energy pricing*".

Whether the NER statement above truly reflects international trends at that time or not, it highlights the welfare perspective from which the mass electrification efforts thereafter took place. To help address this, the government announced in 2000 that it

would allow for the provision of 50 kWh for free per month to each poor household under the Free Basic Electricity (FBE) policy.

At this point, about 50% of households in Eastern Cape were electrified (STATSSA 2002). The number was lower in rural areas where there were electrification backlogs. Realising that FBE did not benefit un-electrified areas, the government put in place the Free Basic Alternative Energy programme (FBAE). This programme allowed the free distribution of alternative energy sources such as gel fuel[22] and paraffin to poor households who did not have access to electricity. This is administered by the DPLG (*i.e.* it is a local-level undertaking, and is therefore further analysed in Chapter 5 below).

With regards to other energy carriers, in 2001 the government removed value-added tax (VAT) (levied at a rate of 14%) from paraffin, resulting in savings of 40c per litre based on 2001 prices. This was aimed at making it more affordable in order to encourage its use. Nationally, efforts that specifically addressed health linkages were focused on paraffin safety campaigns and developing safety standards for paraffin stoves. Some of these efforts, notably safe paraffin use and low-smoke coal, were promoted and financed by organisations such as the Paraffin Safety Association of Southern Africa (PASASA), which were not government bodies. Paraffin is used widely by the urban poor as well as in rural areas, although in rural areas consumption appears to be less.

The DME also launched a programme to reduce household coal emissions, namely the South African National Low Smoke Fuel Programme. The main way of reducing the smoke emissions was by introducing a new coal-fire lighting technique, called *Basa njengo Magogo***.** Coal is rarely used in rural areas, mainly being used among poor urban households located close to coal mines or trading points, particularly those in the northwestern parts of the country. So far, this has largely been limited to a pilot programme in urban areas.

Firewood and dung, on the other hand, which are used more widely in rural areas, especially in the former Transkei and Ciskei, have barely been addressed in any concerted way. When I interviewed DME staff and a programme manager for GTZ on this issue, their reply was that the DME mandate is electrification and not other energy options (See Chapter 5). Rural areas such as the Eastern Cape were therefore not particularly well served by current efforts, as far as the health impacts of energy acquisition and use are concerned. It seems that addressing firewood use is not a priority, because it lacks the impressive symbolic value of electrification. The policy declaration aimed at addressing health impacts of firewood acquisition and use in the Energy Policy (DME 1998) appears to have been symbolic, in the sense that it is a policy not intended to be implemented, as shown by the lack of resources committed to it. Such *policy symbolism*, as opposed to the *symbolic outcomes* or *symbolic projects* displayed by the electrification programme discussed previously, entails making declarations without committing resources in order to convince people of government's prioritisation of the associated goals (Edelman 1964, Schneider & Ingram 1990). Of course, there might be other reasons for failures of implementation, such as contestation between different agencies, lack of resources, the aforementioned discourses in the energy sector which are deeply embedded and for other reasons. But for Edelman (1964), *symbolism* diverts attention from the environment (context in this research) and focuses on that which is emotionally gripping. In a context where deprivation is closely

[22] Gel fuel is a combustible gel made from ethanol, a thickening agent and water. When the ethanol is made from agricultural crops (*i.e.* sugarcane) it can be considered to be a renewable fuel.

linked to a history of racial segregation and the brutality it entailed, promises to provide what was previously denied are particularly emotionally gripping. However, such emotions might also blind those promised to a more realistic assessment of the possibilities.

The current period can then be characterised by the government's realisation of the limits of electricity access, defined only from the technical perspective of the number or percentage of households connected. This is likely to continue, considering that in 2004 the then South African President, Thabo Mbeki, pledged that the country would electrify each household by 2012. There are debates over what this means, since the baseline was not defined, but some researchers show that this target is not likely to be met (Bekker *et al.* 2010). In an interview with a DME official, I asked how this target is going to be met and his reply was:

> *"We don't know, we heard it as everybody else and then we were surprised. We now just have to make sure we make that target"* DME official, 10th September 2009.

The DME's deputy minister sanctioned Mbeki's commitment to universal access to electricity in 2005, and in 2006 the DME introduced policy guidelines to support the objective. However, exactly how the universal access will be funded and managed in an environment where there are capacity constraints is unclear. It suggests a case of the tail wagging the dog. From a policy point of view, such 'policy declarations' can also be seen in terms of *policy symbolism* in the sense used by Edelman (1964) and Schneider & Ingram (1990).

A brief look into the future

The final section of this post-apartheid analysis is a look into the future, based on current developments in the South African energy sector.

The strategic plan for the period 2008-2011 is instructive in regard to the energy sector because of a number of Bills and Acts that are under discussion or have been ratified by Parliament. The main focus of the strategic plan includes the restructuring of the electricity distribution industry, the National Energy Act (2008), the Radioactive Waste Management Agency Bill and the Mine Health and Safety Amendment Bill. For the energy sector, the strategic plan focuses on electrification and the need to address the electrification targets backlog. Further, it makes reference to liquid fuels and the commissioning of a pilot programme for safe paraffin stoves in selected areas. Other than that, the strategy focuses on energy security, particularly for liquid fuels, biofuels, energy efficiency, and on accelerating the renewable energy policy. There is a glaring absence of focus on household energy. After Jacob Zuma became president on 9 May 2009, the DME underwent restructuring. Energy affairs were decoupled - in terms of its policy home - from the Minerals sector to become the stand-alone Department of Energy (DoE). But there are no signs of any radical shift of focus towards household energy or energy–health linkages.

With regard to ESKOM, in the financial year 2008/2009 the utility made a loss of R9.7 billion, its worst ever financial performance, and 95% of this loss is attributed to electricity supply contracts with BHP Billiton, the global resources company which has aluminium smelting plants in Mozambique and South Africa (Creamer 2009). Another development has been the fact that demand is outstripping supply, contributing to frequent power outages, particularly between 2007 and 2008. Also contributing to these outages were a range of issues related to poor planning, that are beyond the scope of this

discussion[23]. The need to invest in new generation capacity has led ESKOM to request a 35% increase in the price of electricity from NERSA[24]. Between 2010 and 2013, overall electricity prices will increase by 25-26% per annum. This should also be seen in the light of price increases since the end of the apartheid government which have been at an average of 5% per year between 1994 and 2007, and an increase of 27.5% in 2008. For rural domestic customers the price increases will result in an 18.7% increase in tariffs in 2010 and an annual average increase of 24% in 2010-2011 (ESKOM 2010). Whichever way these figures are looked at, households will experience one of the biggest increases in electricity costs since 1994. Such an increase could undermine a households' ability to make the transition to electricity use. To balance the effect that such price increases might have on the poor, ESKOM has proposed that the FBE be increased to 70 kWh per household per month for customers on or below a basic 20A connection. Whether or not such an increase in the level of FBE will occur and whether it will lead to the intended benefits, remains to be seen.

While the convergence in the energy planning discourses at the international and the national levels can be understood as "the state of the art" in the second half of the 20th century, and the apartheid era *symbolism* can be understood as being in line with the intentions of the state, what is puzzling is that the post-apartheid government seems insistent on pursuing electrification. This is especially so because of the amount of research since the 1990s that has shown that electricity might not be affordable or readily acceptable for cooking. The answer to this is that, historically, electrification has had a symbolic value for governments internationally. Electrification is a vivid symbol of modernisation and development, and as such is a highly desirable undertaking for governments. A comparative analysis of international literature shows that electricity has had symbolic value, whether in the developed or developing world. The pursuit of electrification by the post-apartheid state, as discussed here, is similar to Ferguson's explanation of electrification pursuits in Zambia as a symbol of the modernist state (Ferguson 1999), and Winther's understanding of the electrification of Zanzibar (Winther 2008). Similarly, in India electricity was pursued as a symbolic break with British rule (Coleman 2008). In Thailand, having been introduced by the King in 1884, the *symbolism* of electricity is captured in the notion of *fay laung,* meaning the king's electricity (Williams & Dubash 2004) and thus attributing the arrival of modernity, as symbolised by electricity, directly to the Thai king and hinting at his heroic achievements.

In a different context, in that it does not relate to a break from a former colonial power but a different kind of repression, Lenin's Russia pursued electrification as part of his socialist project, as a way of consolidating power and as a reaction to Western democracy. It was a way of proclaiming that socialism, too, was a force to be reckoned with (Banerjee 2003, Coopersmith 1992). From the spectators' angle, Nye's analysis of the social meanings of electricity in America in the last two decades of the 19th century and the first four decades of the 20th century shows that Americans always viewed

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[23] The FIFA World Cup football tournament, which is ongoing at the time of writing this thesis, also raised concerns over power outages as demand was expected to increase. The South African government made agreements with neighbouring countries to divert power from them to South Africa. These are countries that experience power outages themselves.

[24] This percentage represents the increase in the revenue that ESKOM can recover from tariffs. NERSA decides on the increase based on a request from ESKOM, and approves or rejects it depending on its assessments and the submissions (often protests) of users and unions.

electricity from both a functional and a symbolic perspective (Nye 1990). For them, it signified a validation of the urban industrial order. What such nearly universal symbolic meanings suggest is that the pursuit of electrification will continue not only in South Africa, but also elsewhere in developing countries. Electrification, although it might fulfil the symbolic objectives of the state, and even give a sense of inclusion for previously marginalised groups, have questionable impact on the attainment of broader social goals when other barriers to using it continue to persist. The goal of a sense of inclusion itself is not irrelevant for a nation. *Symbolism* is therefore not bad in itself, but it can lead to perverse outcomes in other areas and to a misinterpretation of policy goals and outcomes, since symbolic policy goals are promoted by the political will and support they often have while more socially beneficial substantive goals are rarely well articulated and supported. Another value of *symbolism* is that it can raise awareness of people's own marginalisation, and therefore point the way to how they might more effectively interact with the state.

Conclusions

This chapter has dealt with the question of whether and how the national energy policy objectives have addressed the energy–health nexus. The discussion in this chapter has shown that the energy policy drivers during the apartheid period did not focus on energy–health impacts, or on other broader social goals of black South Africans. Energy policy focused on electricity for economic development, in the same way that international level justifications of electrification were shaped. The imperatives for national energy policy were, as was the case at international level, driven by the need for energy security. Additionally, the energy security imperative, particularly with respect to liquid fuel sector in South Africa was adopted to maintain the apartheid state in the face of international isolation and sanctions.

The electrification of households, the majority of which were white households, was partly due to the better financial position of the white population in South Africa, making their supply economically justifiable compared to the largely poor black households. Further, providing modern energy carriers such as electricity to the black population was complicated by a mix of spatial governance regulations based on a racial ideology, and the paradigm differences of those responsible for the different aspects of energy, as was the case with firewood and wider economic growth considerations. However, economic, regulatory and technical rationales alone do not completely explain why black households were to a large extent not electrified and not served in other ways with modern energy carriers. The social justifications for electrification, for example, were not completely absent, as is shown by the economically unjustifiable electrification of dispersed white households in rural areas, illustrating some degree of a welfare-oriented approach. An additional explanation for the energy policy in South Africa is that the very limited expansion of modern energy carriers, particularly electricity, to black households had symbolic meanings in accordance to the state's racial ideology of that time. Access to modern energy and electricity in particular, as with other resources, came to be a symbol of the apartheid ideology, being accessed by the white population and mostly denied to the black population. The electrification of black urban townships, such as Soweto and Alexandra, which started in earnest after the 1976 uprisings and with the emergence of a growing relatively high income-earning black urban population point to the notion of *political visibility* as a driver for addressing socially justifiable modern

energy access programmes, particularly electrification. Such uprisings made the poor urban blacks a political cost for the apartheid government, while rising income made them viable consumers. This resulted in the expansion of electricity access to the black neighbourhoods.

In the democratic period, the South African energy policy does acknowledge the health impacts of energy acquisition and use. Energy policy is driven by post-apartheid needs of restitution, and a social agenda that has been at the core of the expansion of electricity access to households that were previously denied access. However, the energy sector, and electricity in particular, has not lost its *symbolism* for the state. Just as the ANC, an organisation banned during apartheid, used the sabotage of modern energy installations as a form of symbolic destruction of the apartheid ideology, the ANC government has retained *symbolism*, as represented by power lines, albeit for different political goals. The expansion of electricity access to previously marginalised communities has been a symbolic break with apartheid, and has been transformed into a powerful symbol of the building of the new South Africa. The substantive social goals of restitution and the symbolic goals of "heroic undertakings" have led to a rapid increase in physical access to electricity among the previously marginalised black South Africans. What the *policy symbolism* has also led to is a narrow focus on electricity, at the expense of comprehensive modern energy access solutions. Specific social goals, such as the national policy objective of addressing the health impacts of energy acquisition and use, were largely ignored. Nonetheless, there has been an exceptional focus on paraffin and health, within which safety campaigns and standards were set up in order to address burn accidents and ingestion. Internationally, this is a unique undertaking: firstly, because there are no other comprehensive energy–health programmes worldwide (that I am aware of); and secondly, because, traditionally, the national level (*i.e.* the public energy sector in developing countries) has ignored engagement with users. The uniqueness of this initiative is a result of South Africa's post-apartheid context, in which the private sector is mandated, whether overtly or covertly, to participate in redistribution efforts. The petroleum industry has therefore driven this initiative because of its own strategic economic and political aims. In doing so the industry defined the policy environment, *vis-à-vis* paraffin use, and the government has now joined these efforts. In this sense, the notion of a *blameable entity* – the fact that the petroleum industry could be blamed for its apartheid period "sins of commission or omission" – explains why it was politically important for the petroleum industry to address the health impacts of paraffin use.

In contrast to electricity and paraffin, firewood, although widely used by the most disadvantaged groups, is perceived as having little political importance. Firewood is overwhelmingly acquired and used by poor rural women and affects those who are a politically and socially invisible group in energy decision-making circles at the national level. The supposed interests of rural women are interpreted and represented by (elite) men and women, who are responsible for formulating energy policy. Most of these men and women have little understanding of the poor rural women's experiences. As a result there is little focus on firewood in the energy policy. Moreover, maintaining firewood as a continuing energy source after apartheid would signal for the ANC an incomplete project in terms of the symbolic breaking away from the apartheid regime, and is even perceived as "stepping back in time", despite the fact that firewood is a reality in the lives of many poor rural inhabitants. The symbolic and strategic power of particular interventions, and the notion of *policy symbolism* used to explain the focus on electrification, imply that the perceptions of, and responses to, specific issues at national

level are partly driven by the *political visibility* which is dictated by the politico-social power of the group affected by a particular energy source. This has specific implications for gender empowerment in development policy, which will be addressed in Chapter 7.

To further explore the above assertions, it is important to assess government programmes and initiatives to address this policy objective at the local level. Chapter 4 will therefore first present the setting within which such programmes and initiatives must achieve their policy objectives, before these are analysed in Chapter 5.

4

The Setting: Nature of the place and the people

Introduction

Chapter 4 presents the household setting that is the focal point of actors from all levels; international, national, local, and household. It is here that international discourses and national level policies must interact with the realities of people's everyday lives. The first objective of this chapter is to analyse the conditions that shape the residents' social world and their perceptions of it, in particular in relation to energy acquisition and use. The second objective is to analyse the practices that these conditions generate, and the meanings of such practices as perceived by the residents. The final objective of the chapter is to reflect on the implications of the findings in view of the findings at international and national levels.

The first section of this chapter analyses historical conditions and the ways in which these have structured daily life in the two research sites. The second section presents the physical locations of the research villages, focusing on the natural, infrastructural and political resources with which people respond to their daily experiences and needs. The third section discusses key social norms, *i.e.* practices, relevant to this thesis. It analyses how such practices and their meanings are shaped, and how these interact with each other. In so doing, the section shows how household-level actors produce and reproduce their *habitus*, in a conscious and unconscious manner. The fourth section analyses how people make a living by utilising their physical and cultural capitals in response to, and as a result of, their pre-existing conditions. The penultimate section focuses on the tensions between "modernity" and "development", in order to illustrate the alternative meanings of development for different people, and how this affects collective and individual experiences of, perceptions of, and responses to, 'artefacts[1] of development', in particular electricity. The final section concludes the chapter by examining the

[1] I use this term to emphasise the nature of objects of development as being a) made by an agent b) having a specific intention. Such a definition, of course, ignores the dynamics of its use (Houkes & Vermaas 2010), but is nevertheless used in this research because, in my experience, modern energy has been viewed as such, being made (exploited) by humans with particular intentions, while, as Chapter 6 will show, the dynamics of these exploitations, at least in the household, are often ignored.

implications of the analysis in this chapter, especially for the findings from the international and national levels, as presented in Chapters 2 and 3.

The place: Past and present

From Transkei to Eastern Cape: History's shaping of experiences

The Eastern Cape is one of nine provinces in South Africa, and is comprised largely of the former homelands of Transkei and Ciskei. It is largely rural and has some of the highest levels of poverty in South Africa. Since the two villages in this study are both located in the former Transkei, the historical discussion in this subsection mainly focuses on this region.

Transkei comprised an area of about 41,000 km^2 of land, whose residents mainly depended on crops and livestock for their sustenance (Hunter 1961, Beinart 1981). Around the 1890s several external factors started to influence Transkei in a way that resulted in loss of political power and subsequent marginalisation for the residents. Although these events occurred over a hundred years ago, so that many of the residents do not relate to them on a daily basis, this analysis will show how they still have relevance today for the people of Eastern Cape, and for South Africa at large.

First came the discovery of diamonds in Kimberley, gold in Witwatersrand, and a boom in commercial farming by white farmers. These economic events created a demand for labour that their surrounding areas could not meet. At the same time these events resulted in increased economic and political power for white settlers, who needed black labour to support this economic growth. The colonial administration imposed hut taxes starting from 1870 (Redding 1993), in part to make the livestock-dependent communities shift to a money-based economy, and therefore create a demand for jobs amongst local men, who were reluctant to join the labour force (Beinart 1981, Redding 1996). Taxes were also used to achieve other moral and political goals, and therefore shape the social world of the black population. A moral driver for hut taxes was to reduce polygamy by taxing men for every additional wife, and therefore to "civilise" them (Redding 1993). Political power was exercised in the annual collection of taxes, a ritual aimed at demonstrating colonial state power and the subordination of African subjects (Redding 1996). This was true for other countries under British colonial rule such as Malawi, Zambia and Zimbabwe.

The result of the hut tax was to establish and reinforce economic, social, moral and political power over local populations. An additional result of the hut tax (and other state projects) was that it reproduced and reinforced gendered power relations. This is because women were classified as legal minors, and therefore not required to pay tax (Redding 1993). Although parts of South Africa, and particularly Eastern Pondoland in the Transkei, successfully resisted subordination for some time, it was other events that facilitated their inclusion in this 'colonial project'.

In 1896 a rinderpest outbreak destroyed 80% to 90% of cattle in Transkei[2] (Bundy 1977, Van Onselen 1972). Without the traditional source for sustaining family life, the process of labour migration from Transkei to urban centres in the Western Cape,

[2] Rinderpest is an infectious viral disease that affects bovines and some wildlife. The disease is characterised by fever, oral ulcers and high death rates. Recognised as far back as the 18th century, it has been linked to changes in social organisation among pastoralists. A vaccine was discovered only in 1999.

KwaZulu and Transvaal (mainly to present-day Gauteng)[3] accelerated because of the rinderpest outbreak. The power behind rural production and living shifted in favour of distant administrators set in a cultural world that was foreign to the locals.

A rural-urban interdependency was launched which pushed remote rural areas into a modern economy, which at times was beneficial to them, but in many ways remained at odds with the daily realities of rural life. Rural-urban interdependencies were beneficial in that they became conduits through which cash earned on the mines and farms could be channelled to rural areas. The benefit of this emerging migrant economy was that rural areas could better cope with their changing world. There was also a better sharing of 'other ways of knowing', including meanings of illnesses as well as strategies for resisting state subordination. However, such interdependencies also brought with them the breakdown of traditional family structures, and therefore the social systems that had supported rural life[4]. Since labour markets were designed to favour males, women were left behind, and had to cope with both their traditional roles as well as those previously undertaken by males (Buijs 1996, Driel 1994). Yet women were also pushed into a money-dependent social world in the sense that they had to pay for goods and services such as firewood (Tropp 2006) and health services (Stewart 1996). However, their money-earning opportunities were limited by living arrangements in urban job centres, and later on by apartheid (pass) laws after 1948. As a result women were pushed further into subordinate positions compared to men who had, albeit limited, economic opportunities to participate in the new economy[5].

In 1913, the Natives Land Act set out areas called reserves and prohibited Africans from buying or occupying land outside these reserves[6] (Bundy 1977, 1979). For the "people of reserves", as they were known at that time, it led to overcrowding, impoverishment, and further limited their participation in political and economic activities. From 1963 Transkei became "self-governed", and in 1976 it was declared an independent homeland[7]. In reality this independence meant greater constraints on movement to urban centres, and also limited financial support from the South African government[8]. This meant that the finances for social services, such as electrification, were to largely come from revenue generated within the homeland. However, the limitations in economic participation and social opportunities such as education necessarily meant that such funding was inadequate compared to the "white areas".

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[3] In 1893, a record number of 27,000 men left Transkei to work as migrant labourers, with the exception of the Amapondo who resisted mass migrant labour until around 1903. By 1916, about 90,000 men from the Transkei area were working in gold mines, according to Beinart & Bundy (1987).

[4] Since rural life had been dependent on household labour and its gendered divisions to support the family.

[5] This discussion is not intended to claim that the subordination of women was as a result of white settler policies. However such policies and the capitalist directions of the economy further reinforced women's subordination.

[6] According to Beinart (2001), although this officially allocated 13% of land to Africans, in reality their allocation of land was about 8% until after the 1936 Natives Trust and Land Act released extra land.

[7] Later, other areas, namely, Bophuthatswana in 1977, Venda in 1979, and Ciskei in 1981 were declared independent, while Gazankulu, KwaZulu, Lebowa, KwaNdebele, KaNgwane, and Qwaqwa were declared self-governing territories. After 1994, they were all fully incorporated back into South Africa.

[8] At this stage the movement of blacks to urban areas was seen as a threat rather than a benefit by the Nationalist government, due to increased organisation of anti-apartheid movements.

In the second decade of the 1900s, colonial administrators became concerned with black peasant agriculture, specifically to address soil erosion, which was blamed on the overstocking of livestock. This concern built up support for state intervention from the 1930s onwards under the Betterment Planning programmes (Beinart 2003, De Wet 1987). Some of these soil degradation narratives had a sound basis. As Beinart (2003) shows, increasing migrant incomes had initially been invested in livestock, and in some places ownership levels rapidly increased to those seen among white farmers, which in turn aggravated overcrowding and land degradation. In addition, some more successful farmers in the reserves were cultivating bigger portions of land and with increasing intensity. Apart from the dangers of environmental damage, state intervention was designed politically to improve the living conditions in the reserves so as to make them more efficient suppliers of temporary migrant labour while severely clamping down on the urban drift of "unwanted" Africans. At the same time, "surplus" Africans were being moved off "white" rural land into the demarcated reserves, and had to be catered there too.

A key aspect of this program was to rationalise "black spaces" by moving scattered homesteads into ordered and densely populated settlements. This involved three aspects: zoning areas according to use, *i.e.* residential, agricultural and grazing land; culling livestock or forcing black farmers to auction off their cattle to white farmers; and forced removals from one settlement to another. Scattered villages were therefore regrouped and homesteads were allocated a portion of land, sometimes 100 by 100 m, but over the following years this area steadily decreased. From evidence in Cata and Keiskammahoek in Ciskei (De Wet 1987, 1989), Shixini (McAllister 2001), Xhora and Hobeni (Fay 2003) and Caguba (Kuckertz 1990), and from my own key informant interviews, it appears that forced removals in Transkei peaked between 1960 until 1969, affecting millions of residents. Such relocations had a range of impacts, including changing the role and powers of the chief, changing village leadership systems and agricultural systems, as I will later show in this chapter.

Following the transition to a non-racial democratic state, the reserves or homelands were reincorporated into South Africa in 1994. Transkei and Ciskei were joined to form the Eastern Cape Province, covering an area of 169,580 km^2. However, they continue to exhibit many features, such as high rates of poverty and male out-migration, as before. The Eastern Cape Province is currently rated as the second poorest province in South Africa. Its only major industries are located in the previously "white" areas around the urban hubs such as Port Elizabeth and East London in the west. It has an unemployment rate of 43% against the national average of 36% (STATSSA 2008)[9].

One of the main outcomes of the above brief history of the Eastern Cape is that its areas of major African population destiny, the former homelands of Transkei and Ciskei, continue to experience extreme political, economic and social marginalisation. Male migration also means that many women have to raise families alone for two reasons. Firstly, many men who migrate to urban centres are either unable or unwilling to maintain linkages with their rural homesteads. Secondly, the work in urban centres, and in mining in particular, takes a heavy toll on male life expectancy. According to Davies (Interview, 11th September, 2009), in the past, within three years of returning

[9] This includes those in informal employment, meaning "those in the informal sector, plus employees in the formal sector, and persons working in private households who do not have a written contract of employment, and whose employers do not contribute to a medical-aid plan or a pension on their behalf" (STATSSA, 2008: 5).

home, a large number of male migrants died, mostly of mining-related lung silicosis. This left many women having to fend for their households without the benefit of cash inputs from male household members, as well as having the double responsibility for household and subsistence activities to maintain the viability of the family. The patterns and consequences of male absence are still conspicuous today, as I will show later in this chapter. They have been further reinforced by high HIV/AIDS prevalence among migrant labourers in the last two decades.

The research setting

Cutwini village

Located at latitude 31° 24´ and longitude 29 45´, Cutwini (according to residents, incorrectly spelt by government as Cutweni) is a coastal village some two to three km from the Indian Ocean, and 27 km from the nearest rural town of Lusikisiki. Cutwini village was largely created by betterment policies in the 1960s, a fact illustrated by the grid-like settlement pattern that is reflective of the policy's desire to bring order to rural villages in South Africa. In 2007 it consisted of around 150 homesteads, mostly built on top of gently rolling hills with occasional sharp escarpments at between 219 and 308 metres above sea level. The village is bounded by deeply incised gorges through which flow Nonzakamba River to the west and Cutwini River to the east. Beyond these rivers one comes across arable and grazing land. Located about two kilometres from the village edge are a total of seven forests: Makhalini, LuKhotyeni, KwaSibhamu, Lihlathi Likhulu, KwaM'bhude, Mazizi, Gumtree'eni, with the last two being exotic tree plantations and the rest indigenous forests. Together they provide over twenty wood species for which villagers travel 2 to 7 kilometres, up and down the hills, to collect firewood, construction poles and other non-wood resources such as medicines and *imifino* (indigenous vegetables).

There was no electricity grid in Cutwini at the time of the study between 2007 and 2009[10]. In addition, there was no permanent clinic, but instead a mobile clinic from St Elizabeth Hospital in Lusikisiki came once a month to provide primary healthcare services (see Appendix 2 – Day at the mobile clinic in Cutwini). The one infrastructural artefact of modern life present at the time of the study was a primary school, which conducted classes from standard one to nine. For the last three years of schooling, from standard ten to twelve, students go to a school near Lusikisiki. The government provides free transport for students above standard nine to attend the government school. Before this initiative began, school children had to start walking at dawn to cover the 20 km distance to Mgqunqusha Senior Secondary School near Lusikisiki, a factor which almost certainly contributed to lower educational achievements. A crèche, which used to be held in an abandoned house in 2007, was moved to the primary school site in 2009. Villagers, mostly women and children, collect water from over seven streams and springs located throughout the village. Washing is done at home in buckets because there are no wells, water pumps or piped water supplies. Washing clothes is one of the jobs that was traditionally for women, but is now shared at least by unmarried men. Almost every household is within 10 to 15 minutes of a water source. In April 2009, just after the parliamentary and presidential elections, the government 'protected' five water points in the village by damming streams with a 10 to 20-cm-high wall (Picture

[10] As of 28th June 2010, there was still no electricity, although ESKOM had enumerated the households for electrification in 2008.

4.1). In reality the water, which is just a few inches deep, is still accessible to animals and not in any way protected from disease vectors.

Picture 4.1: A "protected" stream in Cutwini[11]

Cutwini, 2009 (Photo: The author)

Cutwini is located in what is known as the Wild coast, a part of the Eastern Cape that is being targeted for tourism development. It is also within the Pondoland area of endemism, *i.e.* has plant and animal species unique to the area. With tourism as one of the key economic policies of the Eastern Cape provincial government, Cutwini is expected to yield benefits[12]. A hiking route runs through the village, past the Egosa fault to the east and on to the Waterfall Bluff and Cathedral Rock[13]. Many hikers start from Msikaba Natural Forest reserve, go past the village and spend the night in Mbotyi, a neighbouring village about 10 km south-west of Cutwini. Mbotyi has a guesthouse with both solar lighting and modern toilets, and although the hiking route from Msikaba to Mbotyi has some of most scenic parts just south of Cutwini, the village loses potential income related to tourism because of its lack of facilities. Few tourists are ready to take up the option of being hosted in rural homesteads with no lighting and very basic sanitation. During my stay, in "good months" there was at least one group of tourists who spent a night in the village. Two village men in their late twenties work as tour guides and earn income this way. In 2003 the government promised a campsite for

[11] Looking closely, one can see to the bottom of this well and the debris in it is visible, indicating how shallow and unprotected it is.

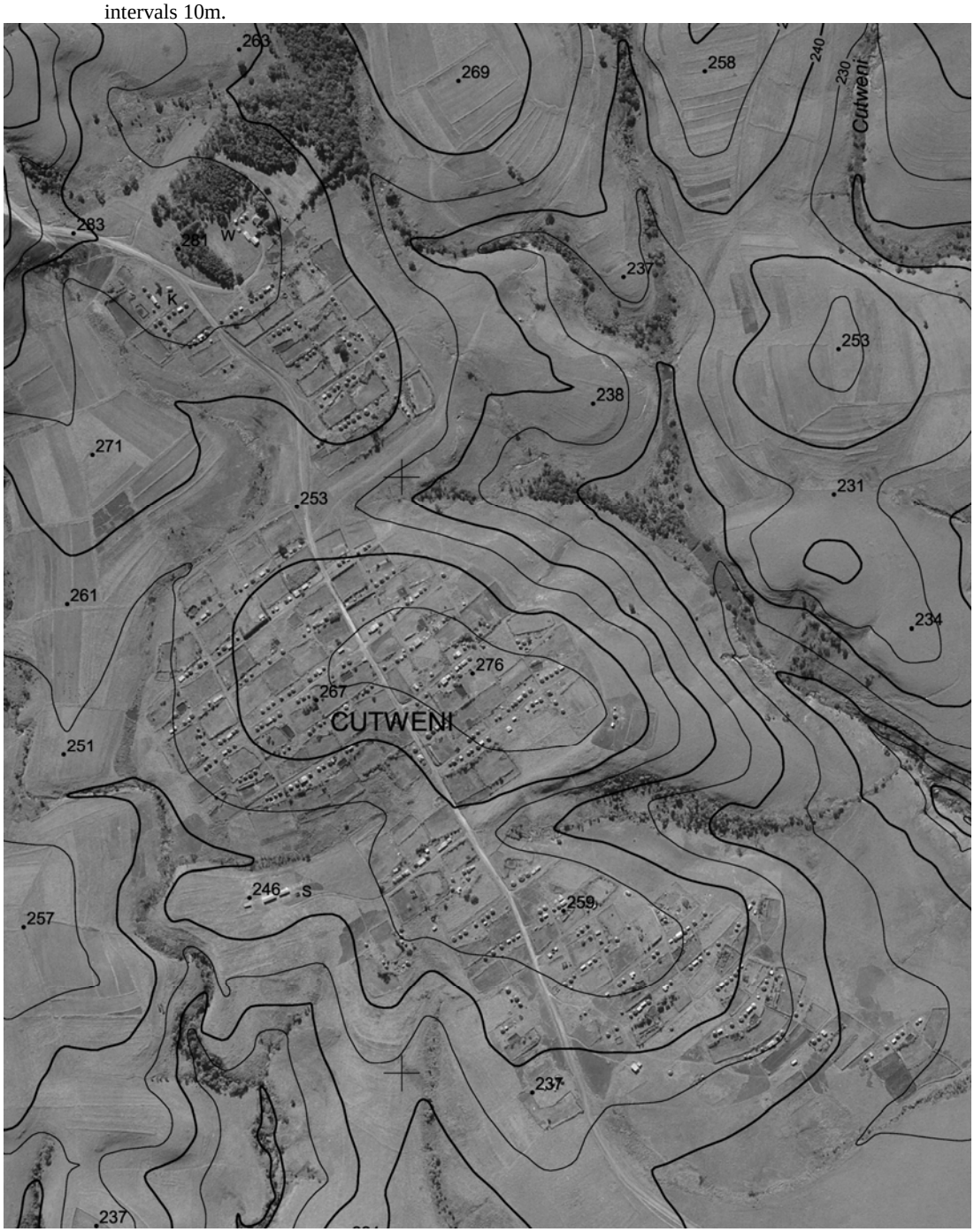
[12] The national government and provincial government of Eastern Cape have made tourism a key area to focus on as a livelihood strategy in Eastern Cape, particularly the Wild Coast. The EU provided the money to provide awareness training and promote community tourism.

[13] Waterfall Bluff and Cathedral Rock are two geological features located within a few hours' walk from Cutwini, and are amongst the famous tourist attractions on the Wild Coast hiking trail.

tourists, to be equipped with a range of facilities, and although, according to community meetings, that money was provided by the government, as of June 2010 there was as yet no campsite. At the end of September 2007 thatching grass was delivered to Cutwini for the campsite, and later in 2008 some wheelbarrows and other equipment arrived. Villagers continue to guard the materials that have already been delivered. The issue of the campsite was discussed at every community meeting I attended from 2007 through to 2009.

Map 1: Cutwini Orthophoto Map (2003)

Second Edition 2003. 1:10,000 series (not to scale). 3129 BD 16&21. ©State copyright. Taken from a map published by the Chief Directorate: Surveys and Mapping, Republic of South Africa. Contour intervals 10m.



There are five kiosk-like *spaza* shops in the village where residents buy groceries such as paraffin, candles and tinned fish. However, for many major items such as LPG and bulk shopping, residents go to Lusikisiki town[14]. The nature of the *spaza* shops, where only small and low-cost household items are sold, is an indicator of the comparatively lower financial resources in the village compared to Tsilitwa. However, many households take items on credit, and so these *spaza* shops provide a kind of safety net when households are short of finances[15].

It takes one to two hours to travel from Cutwini to Lusikisiki by car, partly because the access is via a dusty and rugged road, with the exception of the four to five kilometres of paved road near Lusikisiki. There are no buses, but there are at least six vehicles[16] owned by families in the village that take people to town between 7 and 9 a.m. in the morning, returning at around 3:30 p.m., with the last vehicle returning around 8 p.m. There are more transport options on days when government agents come to give out social grants, because many people (mostly women) go shopping in Lusikisiki and most vehicles make at least two return trips on this day. The road gets muddy and more rugged in the rainy season, especially at the entry point to the village, and the conditions can become such that certain vehicles limit their services during this time. The ward councillor of the area has for many years promised to rehabilitate this part of the road (KI2 woman, ward committee member, councillor interview; 9th July, 2009), but as of 2009 it remained in disrepair. The poor road access and limited transport options increase the sense of isolation for Cutwini, and to an extent the cost of living. For example, a litre of paraffin which costs between R5 to R6 in Lusikisiki is sold for R11 to R12 in the village.

Annual temperatures range from 13°C to 36°C (Kepe 2001), and in August and September wind speeds increase, sometimes reaching 60 km/hr and frequently whipping up dust devils. Once or twice a year, winds are strong enough to destroy some roofs in the village, as happened in August and September 2007[17].

The residents of the village are largely members of the Pondo group of Xhosas who were displaced from seven surrounding villages (including Bhobe, Mandabeleni and Ntlavukazi) during the implementation of Betterment Policies in the 1960s (various KI intervews, 2007 and 2009). There are a few families from other groups including Amarozikhrutshi[18], AmaBhaca and others, but migration from other villages has been low since the Betterment schemes. The land from which they were displaced was turned into maize and tea estates. The maize project is now abandoned, as was a dairy farm project established post-apartheid following the collapse of the maize estate[19]. Although the tea estate is one of the main employers of villagers, it has a contentious relationship

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[14] The transport cost per person was R10 one way in 2007, increasing to R12.50 in 2009. In addition, a cylinder of gas more than 5 to 7 kg (depending on the driver) costs R10 as will any bulk item (*e.g.* 20 litres of paraffin).

[15] I have deliberately used the term finances rather than incomes on subsequent pages to underline the fact that this is money received from government (*i.e.* grants) and not earned through work or businesses.

[16] These pick-up trucks are locally called *iVani* (van) since most of the passengers have to sit in the back under a hard canopy. The minibuses are called *Quantum* after their brand name.

[17] For days when wind speeds are high, women do not generally collect firewood, unless under duress, because the wind unbalances the head-load.

[18] These are said to be the descendants of shipwrecked Rosicrucian missionaries who intermarried with the local population. Others from this group established a clinic that continues to function in Lusikisiki.

[19] Driving to Cutwini one can see the empty dairy farm with what looks like brand-new equipment.

with the local people, and in both 2007 and 2009 there were pay disputes. The memories of resistance efforts to Betterment are deeply etched with vivid stories of the day of *ikongo* (Pondoland Uprising[20]) among older persons. The village's closeness to Lusikisiki and Ingquza Hill, the 'ground zero' of the Pondoland Uprising, explains this passion and clarity of memory.

In 2009 some of the residents of Cutwini received restitution for being forcibly moved during Betterment, although not every affected agnatic clan (members of the patrilineal line of kin) received their compensation. In addition, compensation was only given to male descendants since they are the traditional household heads, and because women moved to the initial village as part of marriage customs. As a result, the degree to which women benefited from the compensation was dependent on the decisions made by their male relatives or partners. For some women, their brothers did not find it necessary that they should be given money, or gave the women smaller amounts. For other women their male siblings or husbands divided the money regardless of gender. Most women I talked to were visibly upset by the government's decision to distribute the money in this 'traditional' way, as it reneged on its constitutional mandate for gender equality[21] and because women too had suffered during the uprising. Apart from the relocations and *ikongo*, there have been few major disruptions to life in Cutwini, with a near non-existent crime rate such that residents said they could not remember the last theft[22].

A day in the life of a homestead in Cutwini

This subsection presents how household members spend their day in Cutwini. In doing this, I will clarify the question of who is responsible for key energy activities and who is most exposed to the impacts of energy use in the household. It is for this reason that I chose the homestead as the point of observation. Within the household, observations are by gender and age because these reflect the division of labour and space. This 'day in the life of a homestead' is a reconstruction of daily life based on my general observations of my host family, household interviews, and focused observations, for which I slept at three other homesteads in Cutwini.

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[20] For more on the Pondoland Uprising of 1960, I refer the reader to TRC Briefing Document (1997) and Govan Mbeki's book, Peasant's Revolt (1984).

[21] Several women illustrated to me the different ways in which the government could have traced which women were eligible, calling it "*an easy thing to do*". Women had also suffered and been part of the Pondoland Uprising in their own right including attending the meeting that led to the shootings and distracting police during attempts to arrest attendees.

[22] This refers only to inter-household crimes and does not include any crimes that may be committed inside the household such as partner violence.

Box 4.1: Day in the life of a homestead in Cutwini

Between 6 and 7 a.m. the household rises and goes about its daily activities, although those that start work at 8 a.m. in town might wake up earlier. Women will go to the kitchen where one of them (normally age 7 or above) will start a fire with plastic materials, a candle stub or wood kindling. A pot or kettle of water is then set on the fire and the day starts in earnest. Chickens, which normally sleep in the round mud kitchen, are let out of the kitchen and the floor is swept. The women will then take 20 or 25-litre pails and go to collect water at nearby streams, which they carry on their heads. Children between the ages of 5 and 10 might carry 5 or 10-litre pails. Where boys and young men collect water, they will carry two to three pails or a 20-litre *isipakupaku* (jerry can) in a wheelbarrow. If the boy is less than 15 years old he may carry a pail of water on his head. Women do not generally use wheelbarrows.

Women will then wash plates from the previous night, make breakfast and ensure that children are ready for school. Young boys will let goats and sheep out of their pens. Where an adult male is present he will go and look at any livestock, checking for signs of illness or distress. He will then herd the cattle to the field, often leaving the cows on their own sometimes for days at a time[23]. Where there is no livestock, or if they are still in the field, the man will walk around the compound ensuring that everyone is undertaking their duties and especially that children are helping and obeying their mothers (or other adult females).

Any person who has commitments in the morning, such as going to school or to work, will be given four to five litres of hot water in a basin called a w*askom* and will go off to bath. Young girls and boys often wash themselves in the kitchen, since homesteads almost never have dedicated bath huts. Children will then eat their breakfast and leave for school while the 'mother' dishes breakfast for the rest of the family. Breakfast is often tea and bread or white maize porridge, because eating traditional foods is increasingly considered backwards. In richer families, oats or sausage may occasionally be eaten for breakfast.

After breakfast, the man of the house (*mnene'mzi*) will sit on a stool on his side of the kitchen (inside or outside) and observe the day's proceedings, while the women continue to make preparations for the day. If not in formal employment, he will later leave the homestead surrounds to go and socialise in the village.

If *umngqusho* (the staple food consisting of stamped maize and whole beans) is to be eaten for supper, cooking may start as early as 10 a.m. or as late as 2 p.m. In households using their own garden maize, they will stamp it themselves, but in most case maize is now bought from supermarkets. While children are at school, the women will undertake the day's tasks which may include firewood collection (on average two to three times a week), collecting dung and plastering the floor with it, collecting mud and plastering the walls, and washing clothes.

The fire lit in the morning is often re-lit two or three times in the course of the day, but it is rare for the traditional round kitchen to go without a fire for more than a couple of hours in a day. At around 3 p.m. school children will return home. Girls will start their household work, going to collect firewood and water and helping with cooking. Cooking can start around 2 to 4 p.m.[24], depending on what is to be eaten and whether it will be eaten hot or cold. Cooking times are often long and vary even for the same food type and recipe. *Pap* (stiff maize porridge) may take 30 minutes or an hour to cook, *umngqusho* may take anywhere between two and six hours, and rice can take anywhere between 40 minutes to 2 hours. Meat is often boiled for an hour or more. Cabbage – the most commonly eaten vegetable – spinach and *imifino* (indigenous vegetables) are cooked for about 20 to 30 minutes. Pumpkin and potato, both of which are served as vegetable side dishes, often with rice, may be cooked for 20 minutes to an hour. The variations in time depend on a number of factors such as what else the women are doing during this time, how the food is preferred, the energy carrier used and firewood availability (not scarcity).

[23] A few households have paid help to do this, and on weekends one of the young men in the household will help out.

[24] Skar (1982) suggested that people cook twice or eat cold food due to firewood shortages. This was not the case for Cutwini or for Tsilitwa. There were other reasons such as the perceptions of what it means to cook three times a day. Women for example, when asked what they do throughout the day would reply, "*I cook twice, not three times like white people*". There is often a lit fire throughout the day even when there is not cooking. Here firewood availability relates to the fact that there is firewood

After school, young men and/or boys will bring animals back from the fields between 4:30 and 6p.m. Around 5 p.m. the family starts gathering in the kitchen, first women, because they are already in or around the kitchen, then the men coming from their social meetings. Neighbours and friends will pay the evening visits to borrow or buy items. Supper is often between 6:30 - 7 p.m., and more chatting will occur until about 8:30 p.m. when the fire will be slightly spread out to extinguish it. Household members will then disperse to their various sleeping quarters. Very few people, mostly the poor and the old, sleep in the kitchen, but not with a burning fire. This number of people may increase on cold nights to take advantage of any residual heat in order to keep warm.

Tsilitwa village

Tsilitwa is an inland village situated at latitude 30° 98´ and longitude 28° 73´. The landscape undulates sharply, rising from 1043 to 1274 metres above sea level, with the highest points at 1470 metres, making it particularly difficult to walk, especially with a head-load. Tsilitwa is bounded by grasslands and forests (Ntaboduli, Cengcane, Sulenkama, and Ngcoti) before one gets to the main road running from Sulenkama to Qumbu, some 7 to 12 km away from the village edge. Other forests that villagers use belong to the headman[25] and include Etwa, Gqomo and Gqoboza. Although parts of the Ngcoti forest has indigenous trees, these are too far up in the hills, and so people depend on three wood species (gum, pine and wattle) for various purposes, including firewood. The presence of exotic tree species and tree plantations around Tsilitwa, and the fact that many households have been paying for firewood supplies for as long as they can remember, shows that unlike Cutwini, Tsilitwa was much more affected by forestry administration at the turn of the twentieth century. Unlike Cutwini, however, the forests are further from the homesteads, with the nearest being an average of 7 km from the village.

Of the main three rivers in the village, Tsilitwa River is the largest and is joined by the smaller Mtshezi and Rwantsana Rivers. In addition there are three streams (*imithombo*) feeding these rivers, from which people sometimes collect drinking water.

Tsilitwa has had electricity since 2003/04, which I will explore later in this chapter. It has three schools: Bambisa Junior Primary School, Qumbu Technical High School, Joubert Junior Secondary School, and there is a fourth school being built in Thembeni section. Of these schools, Qumbu Technical High is the pride of the village and attracts students from Sulenkama, Ntaboduli, Qumbu town and from as far as Umzivubu and Umzimkhulu (over 200 km away). This is because it was the first technical high school in the area in post-apartheid South Africa and has one of the best pass rates in the Eastern Cape, achieving 78% in 2008 when the regional average was 51%.

Built in 2001, a water reservoir feeds at least ten taps in the village, which are opened for several hours each day. After a diesel generator was stolen, the reservoir now uses an electric pump to draw water from Tsilitwa River. The residents are expected to pay for the resulting electricity bills, but many refuse, and so water services are often cut off, prompting people to collect water from often stagnant and dirty streams and pools. On a visual inspection alone the stream water in Tsilitwa is of a

stock around the homestead, while firewood scarcity would imply that resources, *e.g.* in the forest, are limited.

[25] Headmen's forests are those forests that the government allocated to chiefs to manage in the early 1900s. Tropp (2006) provides a more detailed account of such configurations.

poorer quality than that in Cutwini due to both stagnation as well as being more accessible to livestock[26].

Prior to 1978, Tsilitwa was one of the few villages that had a visiting mobile clinic from Sulenkama Hospital, some 26 km away. The mobile clinic was then replaced by an in-village clinic in the form of a rented house, which acted as accommodation for nurses and a place for providing primary health care, as well as being a shop (KI Interview). In 1981 the village experienced a typhoid outbreak which caused many deaths, and this prompted the establishment of a clinic in a temporary structure. This was rebuilt in 1985 with bricks and mortar (KI4 woman Interview, 2009). A new plot was later identified by the community leadership on land vacated after Betterment, and in 2003 a new clinic was built.

A six-bedroom guesthouse was built in 2001 and opened by Thabo Mbeki, the then president of South Africa, with the anticipation that it would enable tourism and generate much needed jobs and incomes for the community. The guesthouse has several modern facilities, including a separate kitchen with fridge, microwave, gas cooker, sink and taps, outside lounging area, showers with water tanks and solar water heaters. However, there are no specific areas or issues of interest for tourists in the area around Tsilitwa. The guesthouse is used very occasionally by guests and researchers (including myself) to the village. Average occupancy is two guests per year, and no one is employed there, although occasionally two women are asked to clean the facility to keep it in good condition.

There are five main shops in the village, which are not considered *spaza* shops because they also sell bigger items such as cement, bulk flour and items such as dishwashing liquid, hair products and mobile phone airtime. In addition, two of the shops sell electricity (albeit at very different prices to formal shops) and LPG. With business captured by these two big shops, which belong to some of the richest community members, few other households sell goods from their homes. The stock in the shops is a testament to the relatively higher incomes of owners, but more importantly to the better finances of the residents when compared on average to the residents of Cutwini. However, many residents still buy at least some of their groceries from Qumbu town, 30km away and about 30 minutes of travel time, because it is relatively cheaper, and because going to town is also an adventure.

A government bus runs daily from Nonyikila (another village several kilometres from Tsilitwa), bringing patients to the clinic and taking workers, students and other residents to various places including the high school and to Qumbu town. The bus passes through the village around 8 a.m. and returns at 3 p.m. with government workers, shoppers and school children. The cost of the bus trip to town is R10.50, with an extra R2 for luggage in the hold. There are other private vehicles available at R16 per person (R5 for extra luggage). In the afternoon over 20 vehicles and two private buses carry school children (and some adults) from school to their homes[27]. This availability of transport options throughout the day means that although Tsilitwa is further from the nearest rural town than Cutwini, it is more accessible. It also makes rural-urban linkages in Tsilitwa appear stronger and more visible. It takes between 30 minutes and an hour to

[26] Due to the large number of natural water points in Cutwini, some are allocated for animal use only. In Tsilitwa there are fewer natural water points and therefore more competition for water between animals and people.

[27] Qumbu High School alone has 1400 students and but the number students in and around Tsiliwa during the days are much higher since there are two other schools in the village.

go to Qumbu town (the bus is the slowest mode of transport) and another hour to reach Umtata, the provincial city and former capital of Transkei.

There is also a post office where people get their social grants, remittances and postal products, and there used to be a (now defunct) advice office. The advice office provided advice on government welfare programs, but due to lack of interest it was closed. In August 2009, parts of these offices were used to store the maize harvested from government-ploughed fields.

The councillor and other key informants remembered Betterment as being implemented around 1965. Unlike Cutwini, Tsilitwa did not experience Betterment and resistance to apartheid policies in terms of a defining moment such as the Pondoland Uprising, and as a result the narratives of Betterment were less impassioned and not described with such vivid and detailed memories. So far, there has been no compensation for households that were forcibly moved.

An issue that continues to affect Tsilitwa more than Cutwini is that of crime. During my stay there were a number of muggings and house break-ins, and in June 2009 two people were killed. Mugging incidents were focused on the roads around the village, including the forest, and the main target for criminals was mobile telephones. House break-ins were aimed at TVs and DVD players. By August 2009 tensions were running high, and walking around the village after 6 p.m. was discouraged. Teachers wrote a letter to Qumbu police detailing how the spate of robberies and violence had started in 2001 and was steadily getting worse, leading to most teachers living outside the village[28]. The police responded by sending crime liaison officers and counsellors from the department of social services. Although the cause(s) of such a high incidence of crime are not clear, the districts of Qumbu and Tsolo generally have exhibited high crime rates since the 1980s (Peires 1999, Minnaar 1999). Many residents feel that this high crime rate has increased due to both electrification and the schools' reputation[29].

There are two important observations to be made on the nature of crime in Tsilitwa. The first relates to how people perceive government authorities as incapable of dealing with pertinent issues. One of the people killed in 2009 was a victim of mob justice because people felt his case would not go to court. Police inaction, as detailed in the letter to Qumbu, appears to support such perceptions, although democracy is also blamed. The second observation is that despite the fact that people feel TVs and DVDs put them at risk of crime, they continue to buy them and even replace them after theft. As I will show in Chapter 6, these are some of the most common electrical appliances, with some interviewed households replacing them three times due to theft. This shows that people place a high value on owning TVs and DVDs, an issue that will be further explored in Chapter 6.

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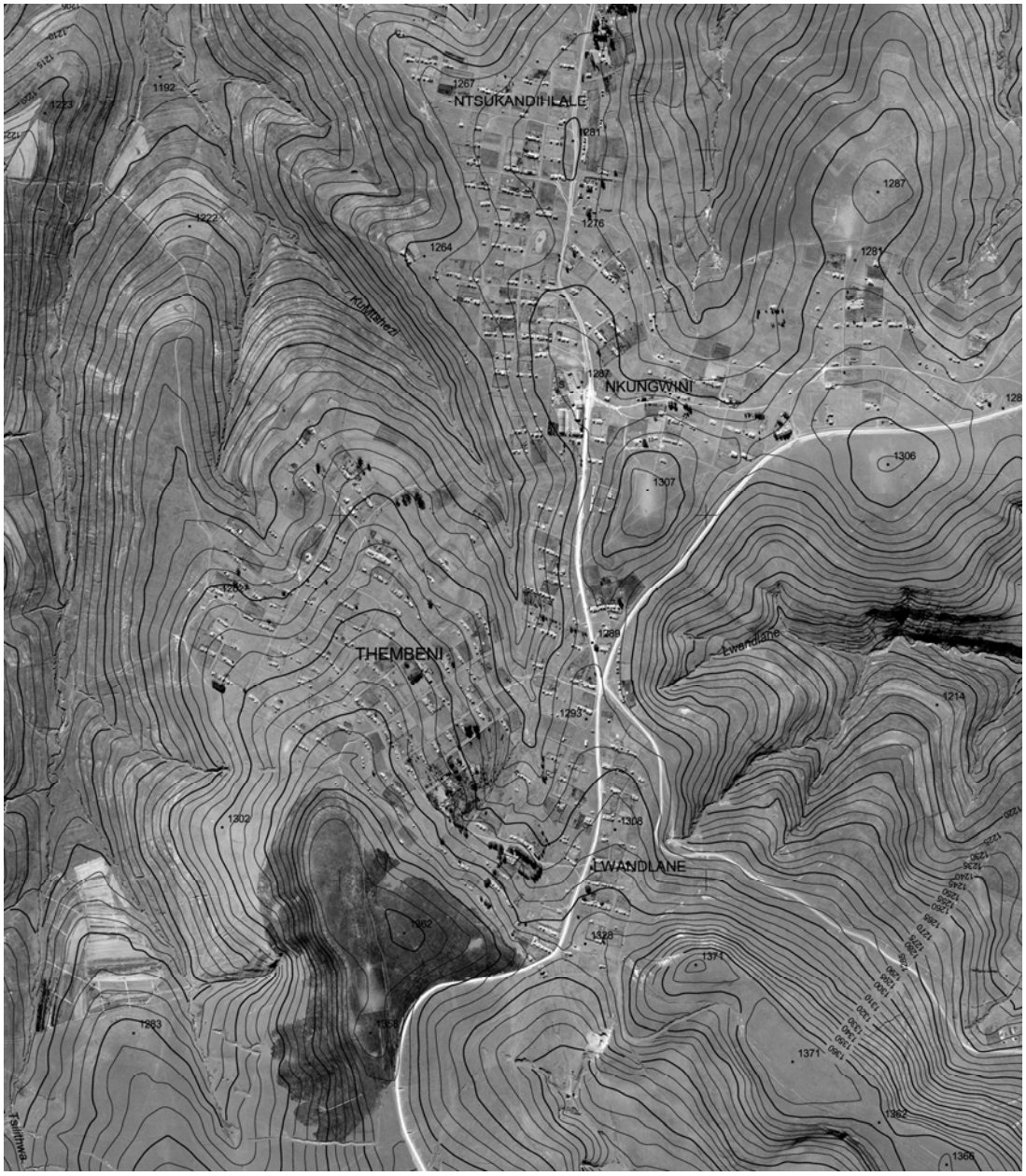
[28] Of the 47 teachers working in the three schools, only about 8 live in the village. I noted over 10 homesteads, of which four had large modern houses, that had been abandoned and become dilapidated. Some of the main reasons for abandoning homesteads are robberies, the death of the owner, or accusations of witchcraft.

[29] The reputation of the Qumbu High School is blamed because it attracts students from outside the village. The belief is that these students identify households for gangs of robbers from outside the village to break into. Such beliefs have been corroborated by the fact that some students have been linked to these gangs.

Map 2: Tsilitwa Orthophoto Map (2003)
Second Edition 2003. 1:10,000 series (not to scale). 3028 DC 25. ©State copyright. Taken from a map published by the Chief Directorate: Surveys and Mapping, Republic of South Africa. Contour intervals 10m.



A day in the life of a homestead in Tsilitwa
In this subsection I look how a day is spent in Tsilitwa. As there are many similarities to that in Cutwini, Box 4.2 will focus on the differences between the villages. As is the case with the Cutwini day, this is based on a reconstruction of a typical day for my host family, observations at three other homesteads where I conducted focused observations, and household interviews in general.

Box 4.2: Day in the life of a homestead in Tsilitwa

While in Cutwini the day generally starts between 6 and 7 a.m., in Tsilitwa it starts at 5 to 5:30 a.m. and not with fire but a cacophony of ringtones, text messages and telephone discussions as people take advantage of low mobile telephone tariffs. This difference is because the telecommunications network in Cutwini is patchy to the point of being almost non-existent, while Tsilitwa is relatively well covered and stable. At around the same time, the TV and DVD players are switched on and the day continues more or less the same as in Cutwini. As with Cutwini, bath huts or rooms are rare. With the exception of a few households, people heat bath water on firewood and dung.

Another difference in the morning routine is that the previous night's soap operas are re-run from about 8:30 to 10:30 a.m., and those not going to work or school will often sit down and watch these. Many of the women will combine TV-watching with household work, and occasionally students, mostly boys, will miss school to watch DVDs that have to be returned[30]. Household members will then either switch to DVDs or leave the TV on in the background for company or in case something interesting comes on. Few switch the TV off for more than a few hours. The afternoon often has children's or educational programs, and in both cases the target groups are still in class. Older females will therefore continue to watch DVDs, while older males will have gone to socialise elsewhere in the village.

Around 3 p.m., girls who have returned from school will start doing their household work, while boys go to *vakasha* or help around the homestead if there is any (male) work that is allocated to them. One job not common in Cutwini that boys help with regularly in Tsilitwa is the sawing of firewood.

TV-watching starts to peak again at 6 p.m. with American soap operas. Most households tune in to local-language programs at 8 p.m. before proceeding to watch *Generations*™ at 8 p.m.[31] All the households that I slept at had adjusted their evening meal or socialising times to coincide with this programme. Some households receive friends to join them in watching South Africa soap operas, whether or not these friends have TV. While many adults sleep about an hour after watching *Generations*™, younger members of the household would continue to watch the television until at least 11 p.m. and sometimes well after midnight.

The description above highlights the changes in the daily routines and interactions as a result of the introduction of television. Apart from time-related changes, some households have also changed their places of interaction and socialising to wherever the TV set is located. While the kitchen has thus far been the focal point for socialisation, the advent of electricity along with TVs and DVDs has altered this pattern. The room with the TV, whether this is a hut or the lounge, now competes with the traditional kitchen as the face of the homestead. Guests are increasingly received in whichever room has a TV, although strangers are still generally received in the kitchen and close friends are given a choice. In addition, cultural discussions are often held in the kitchen or *esibayeni* (*i.e.* at the kraal[32]) if they involve only men. In households with high levels of financial resources and/or modern buildings, TV is often watched in a room other than the kitchen, thus reducing the time spent breathing polluted air.

However, changes from the traditional Xhosa architecture to modern structures (with cement floors, brick walls etc.) pre-dates electrification, and are not necessarily caused by it. For most households, the dilemma of locating a TV is solved by placing it in the traditional kitchen with many women watching it as they work. The result is that, like the fire, TV marks the beginning and the end of each day. It also means that it is

[30] It is likely that girls rarely do this because they are more likely to be admonished or to be called on to do household chores if they stay at home.

[31] *Generations*™ is South Africa's number one soap opera programme. It follows the lives of a largely black urban elite in Johannesburg, detailing their successes, corruptions and breakdowns in work and love. It is broadcast in local languages but with English sub-titles, and English is weaved through most conversations. For most youth this is a life they fantasise about.

[32] I use the Afrikaans/Dutch term *kraal* when the discussion refers to it purely as a physical structure. However, in decisions of the kraal where its cultural relevance is touched upon, I use the term *esibaya*. The word kraal is widely used in South Africa by Xhosa speakers as well as in official texts.

difficult to conclude whether TVs lessen exposure to pollution (*i.e.* by people moving away from the fireplace to wherever the TV is, and therefore moving further from the pollution source); indeed, among boys exposure may be increased as a result of more time spent in the kitchen if the TV is located there. In other cases, *e.g.* women watching TV in a room other than the kitchen, pollution exposure times might decrease.

Leadership structures and effects

Kuckertz (1990) has pointed out that homesteads are economically and socially independent entities that pledge allegiance to a chief referred to in Tsilitwa as *inkosi* and in Cutwini as *mkhulu* or *inkosi*. However the chief's powers are relatively weak in rural Eastern Cape, partly due to political movements that saw the establishment of residents' associations in the 1980s (McAllister 2001). In the post-apartheid era there have been debates on the powers of chiefs and how they relate to councillors. Despite the establishment of the House of Paramount Chiefs, chiefs remain without substantial political power, and their relationship with councillors remains ambiguous, so that party officials have been regularly invited by chiefs to clarify their position. In both Tsilitwa and Cutwini, the position of the chief is further weakened because they live in other villages, and are only contacted by their representatives on critical matters or for ceremonial duties. Chiefs are consulted on issues to do with land allocation and, in Tsilitwa, during circumcision season (end of May to end of July). Otherwise, sub-village headmen, *sibonda*, represent the chiefs.

Development issues are dealt with by appointed persons, firstly the ward councillor, who is a member of a particular political party. In theory a development committee – called the Development Trust (CDT) in Cutwini, and Village Development Forum (VDF) in Tsilitwa – acts as a linkage bringing the needs of villagers to the attention of the councillor, but in practice such a linkage is less clear and often dysfunctional.

In Cutwini the councillor is seen as detached from the village, and although he occasionally pays a visit, residents do not trust that he will help bring development in any way. In Tsilitwa the ward councillor lives in the village and has constant contact with residents because he is also principal of Qumbu Technical High School but few residents feel involved in his decision making about their needs.

From the point of view of leadership linkages, the councillor in Cutwini locates himself very much in terms of the ANC. He sees development as an exclusively ANC achievement. In Tsilitwa, the councillor, although an ANC member, pursues development primarily as someone who was born in the village. In contrast to the ward councillor for Cutwini, he takes a more critical stance toward the ANC and government. As a result of this critical stance, he aggressively pursues development rather than waiting for the government to fulfil its goals. The following sub-section shows how differences in leadership approach can account for some of the variations between the two villages.

How and why Tsilitwa got development and electricity

The account of how Tsilitwa obtained the various development initiatives (including electrification) is important, because it illustrates networks, power and the tensions between the modern and the traditional. Since electricity is provided by modern institutions such as ESKOM and the government through the municipalities, communities such as Cutwini and Tsilitwa have little choice as to when and how they get electricity, because of their marginalisation. In general, villages wait for state

decisions with administrative areas being put on a waiting list that uses various criteria to determine when a particular place is to be electrified. Theoretically such criteria include projected population-linked demand, the range of anticipated users, and proximity to a grid network. In the case of South Africa, it is also a function of a political commitment to achieve universal access to electricity, as pointed out in Chapter 3. In practice other considerations are also taken into account. Of importance in the context of South Africa is the political and historical context of a place. Tsilitwa did not meet any of these rational criteria at the time it was electrified. There were several un-electrified villages around Tsilitwa, and the village had no special political nor historical relevance. As the councillor put it, there was no "*political will, just community will*"[33] (Interview, ward councillor 4th July, 2009). According to the ESKOM schedule, Tsilitwa was to be electrified in 2008/2009 (ESKOM 2007). In reality, this would probably mean an additional year or two of delay, since ESKOM has a backlog in the electrification of villages. However, the development forum in Tsilitwa, under the leadership of the school principal cum ward councillor, envisioned a more rapidly developing village, originally centred on education (Interview, ward councillor, 4th July, 2009).

In 1992, the present councillor (then principal of Bambisa Primary School) wanted to introduce commercial and technical subjects to the curriculum and expand the age range of students taught at the school. The principal, together with the village development forum, petitioned the Eastern Cape Appropriate Technology Unit (ECATU) for finance, and received funding from both ECATU and the EU to build three more classrooms. In 1998 the EU funded a few more classrooms, and the development forum also petitioned Safmarine to provide temporary structures, which were used as a co-op shop and an advice centre. Keen to get political support for their vision, they invited the then president to the village, and in 1999 President Nelson Mandela[34] opened a set of shipping containers to act as offices and new buildings of the school. This sparked some political interest, and once again the development committee tapped into this to the benefit of the village.

Even though Tsilitwa did not have electricity, at the beginning of 1999 the councillor petitioned ESKOM to provide second-hand computers to the technical college. ESKOM agreed, and an official handover was scheduled for May that year (*Dispatch*, May, 1999). Politicians and the press were invited and the handover was publicised in newspapers. Realising that this well-publicised event would involve handing over computers to a school without electricity, the Department of Education ordered that the school be electrified. The consulting engineers, Gibb Africa, electrified the high school over a two-week period, in time for the official handover ceremony on 12th May 1999 (*Dispatch*, May, 1999). The level of installed capacity was limited but allowed for a future upgrade.

In 2001 the VDF raised funds and travelled to Pretoria to lobby the Department of Environmental Affairs and Tourism (DEAT) for development programmes. In 2002 DEAT financed the building of a guesthouse in the village as a way of promoting

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[33] This statement came about in the context of the developments in Shawbury, which is a village one hour's drive from Tsilitwa. This village has seen a lot of investment as part of heritage preservation efforts because a number of black anti-apartheid activists such as Winnie Mdikizela-Mandela were educated at a missionary school there.

[34] Mandela himself hails from another area of the former Transkei, about a four hours drive away from Tsilitwa.

tourism. The VDF also lobbied the Council for Scientific and Industrial Research (CSIR) for funds for information technology. CSIR, which was funding IT development, chose Tsilitwa to be one of the first of their telemedicine projects because of the above request from the VDF. Together with the clinic, these technologies were powered by solar panels. However, the solar power system proved unreliable and was later superseded by grid electricity.

Later in 2001/2002 the VDF collected R100 from each household, with a few refusing to pay, and gave it to ESKOM as a down payment for household electricity connections (Interview, KI, 3rd March, 2009; Ward Councillor, Interview, 21st February, 2009). ESKOM could not receive this money for legal and political reasons, but did respond by electrifying households in Tsilitwa. ESKOM used low-capacity 10-Amp connections that were enough for lighting and black-and-white TVs, but not for cooking. Those that wanted to use electricity were asked to pay about R100 for the upgrade. As I will show in Chapter 6, the low amperage connections do not reflect the desires of the people in Tsilitwa. Of the 89 households I interviewed, only two had not upgraded to 20 Amps to allow for cooking.

The strategy of systematically provoking, prodding and petitioning has paid off in terms of acquiring infrastructure such as electricity, schools and to a limited extent water. Instead of being electrified in 2008/2009 as planned, the village was electrified five years ahead of schedule. However, the development brought about has not always played out as expected. For example, the Technical High School was due to provide training in various skills such as woodwork, bricklaying and sewing, and to be the second biggest resource centre in the Transkei after the University of Transkei (*Dispatch* 2001). The computers and an internet connection would also provide opportunities for distance learning. These have not materialised. The sewing initiative fell through due to a lack of interest from villagers (KI Interview, 21st June, 2009), and the resource centre remains without any resources. When I stayed in the village in 2009, despite the modern outlook of the school and workshop buildings, there was little equipment inside the classrooms. The telemedicine facility, which was acclaimed by various authors (Chetty *et al.* 2006, Stockholm Challenge 2004) as the future of health services in remote rural areas in developing countries, rarely functions. The digital camera for taking patient images no longer works, and the internet connection is intermittent and slow. The chief nursing sister of Tsilitwa clinic used to buy batteries for the digital camera from her personal budget, but in 2009 felt that this was too large an expense for her to cover all the time. One of the staff at the clinic put it this way:

> This telemedicine project, I hate it. It barely functions, and yet everyone talks about it. Every time the government talk of their achievements in parliament – it's Tsilitwa and that project. When have people been here to see that it works? Hayi Magi, it's a curse (Chief nursing Sister, 2nd July 2009).

This illustrates two issues that offer insights into issues of infrastructure and its potential benefits. Firstly, although the networks of power that the councillor depends upon to achieve 'development' are unclear, he clearly possesses and uses political capital to his advantage and to the advantage of Tsilitwa. Secondly, most of the projects have had little success in terms of acceptance and utility in the village. Various members of the VDF attribute this to a lack of interest among villagers (VDF meeting, 21st August, 2009). The landscape in Tsilitwa is indeed a testament of this 'disinterest' in development. A number of expensive items of equipment have just been left lying

around the village. Just to name a few: geysers for solar-powered water heaters are used as sitting benches at the entrance to the clinic, and a Caterpillar brick maker is left unused on the guesthouse premises. There are also the abandoned advice office, an abandoned gardening project, abandoned tractors and the sewing project closed soon after inauguration.

Efforts by government officials and the development committee to involve people in development are also ignored, as shown in people's absence at development meetings. When I asked a number of women why people did not attend development meetings, many responded, "*What will I get there? They give each other things. No, I will just stay at home, I'm busy with my things.*"

Others reported that they would go if the government would be distributing things. On one occasion many people gathered, hoping to receive 20 litres of paraffin meant for poor people. But much larger was the crowd that gathered almost the whole day on 20th August 2009, when the Minister of Transport came to give away bicycles meant for school children's travel to Qumbu Technical High School[35]. Similarly, there was great anticipation for the meeting that would be called to distribute maize harvested from government-ploughed fields, and many told me "*that's a meeting I will not miss! We want to receive* [that maize]."

In many ways, the frequent complaints from residents that government is "supposed to be doing something for us" stand in contrast with such under-utilised infrastructure and equipment.

Looking at the composition of the VDF, the development projects selected, and in the way in which villagers are participants in selecting them, one notes a top-down approach to development. The education of committee members is to first-degree level, while most villagers above 35 years of age have an average of 4 years of education, while adults below 35 have an average of six years.

One explanation for this is that rather than a 'disinterest', the villagers resist these projects as a form of protest. Here Scott's (1985) notion of "*everyday forms of peasant resistance*" is useful in understanding people's reactions to development efforts. Such resistance, according to Scott, does not involve manifestoes, demonstrations or pitched battles, but takes form of "*foot dragging, dissimulation, desertion, false compliance, pilfering, feigned ignorance, slander, arson, sabotage, and so forth*" (Scott 1985: 29). From the perspective of Bourdieu's *habitus*, this resistance is clarified by examining the two groups more closely and acknowledging the VDF members and the villagers as inhabiting different (class) *habitus*. The VDF committee comprises teachers, nurses and others with average education of post-secondary school while the average education of villagers is 6 to 8 years (depending on the period in which they were born). All but one of the VDF members have stable jobs with incomes that are about 10 times the average household income in the village. Therefore, VDF's selected projects, informed by their own aspirations and (desired) practices are *objectively incompatible* with the aspirations of most villagers. As a result, villagers exclude such projects as unthinkable. Actors' practical evaluation shows little likelihood of success (defined by the villagers in terms of their own benefit from these actions) under their current circumstance, so that the actors are only refusing *"what is what is anyway, refused"* (Bourdieu 1977: 77) *i.e.* they

[35] This in itself struck me as an odd donation. It was not clear what criteria would be used to distribute 200 bicycles among 1400 pupils of Qumbu Technical High School. Even more curious was the fact that no one uses bicycles in Tsilitwa, as the terrain can be very steep and there are only a few clear paths on which to cycle.

are ‘disinterested’ in the development projects whose benefits they are denied by default on account of their lack of the skills and other capacity to benefits from such projects.

The people: Social life

In this section I shall first examine social life by looking at the homestead (domestic space) for three reasons. Firstly, the homestead is important because it is here that “ways of being”, *i.e.* dispositions, are explicitly and implicitly impressed upon individuals, as well as on and by society itself. Secondly, from an energy perspective, the bulk of rural energy use in Eastern Cape occurs within the homestead, due in part to the lack of industry. Thirdly, from a health perspective, the household, embodied in the homestead space, is the locus for decision-making on health matters (Berman *et al*. 1994), although, within it, decisions may differ by age, gender or other factors. I shall therefore examine the organisation, first, of home life, as the setting where energy and health interactions occur, and then how through social-cultural processes (socialisation) individuals become part of *habitus*. In this regard I shall discuss a limited number of social relationships and the meanings of relevant practices that are produced and reinforced in social interaction through households and in the community. In this discussion, I do not separate individuals by age because of the similarities across the age spectrum. Where there are differences I make them explicit in the text.

The kitchen: a social place where one becomes a household member

Xhosa villages comprise a set of homesteads in which kin share resources and risk. The typical homestead *(umzi)* consists of three to four huts *(izindlu)*, of which at least one hut, often a round one, is designated as a kitchen. This traditional kitchen is more than a place for cooking; it is also a place for distinctive and mundane rituals, and an important social space. Even in a modern home with a lounge, social and ritual functions often continue to be performed in the kitchen[36]. Even in Tsilitwa, where electricity has been introduced, the traditional kitchen in the form of a round hut persists.

The kitchen is by far the most important place for socialisation, because it is here that most women and men spend their time when they are at the homestead. Women may spend between 50% and 80% of their waking hours in or around the kitchen, while most men spend about 30% of their time in this space. It is in the kitchen that guests, both male and female, are received, and where parents interact with their children. Infants, and to a lesser extent toddlers, tend to spend more time in the kitchen than older children, because they are often left there sleeping while their mothers work alongside.

The kitchen is also a place of pride, particularly for a woman, and much care goes into making it look nice, especially in arranging the *entla*. The *entla* (the back of the kitchen, opposite the door) is considered a female space, while the entrance is considered a male space. The therapeutic aspects of the kitchen are also valued. Whenever my hosts thought that I felt lonely (in most cases I was just seeking a quiet space for working on field notes), they would make a fire in the kitchen and invite me to sit next to it. The same was true for others suspected of feeling lonely, or for someone coming home after a hard day’s work.

The time spent in the kitchen decreases for school-going children because they spend most of the morning in the classroom. Once they return from school, and on holidays

[36] The lounge, together with the rectangular house design, symbolise a modern house.

and weekends, children and young women will sit in the kitchen or help around the homestead, while young men mostly go *ukuvakasha, i.e.* to walk around and socialise with their peers. Minor changes have occurred in socialisation patterns in Tsilitwa due to electricity, namely that both young and old, female and male residents spend much time watching television, which is often located in the traditional kitchen.

In the kitchen hut, women and men are designated different places, women to the left (the side the door opens on to), and men to the right, although this is not always strictly adhered to. Comparing the inside of the hut to its outside environment, these positions correspond to a woman's place being demarcated by a firewood pile (*igoqo*), and a man's side being demarcated by the *sibaya* (cattle kraal). Whether inside, outside or at community social events, while men always sit on chairs and benches, women sit on mats, low benches or, once all men are seated, on any remaining chairs. Women occupying chairs will often give them up to males coming into the room. Older women, however, prefer to sit on the floor, whether or not men are around. Apart from tradition, many women reported that they have chronic back pain, and sitting or lying on the floor relieved the pressure on their backs.

The household and the family – structuring Xhosaness

A typical household (*i.e.* over 60% of households) in both Cutwini and Tsilitwa comprises at least one parental figure and junior members of the household whom, for the sake of clarity and because they are referred to as such, I will call children (of that particular household). These are not always the biological children of the parental figure, but might be social and/or fostered children. I borrow the term *social children* from Kuckertz (1990) who uses this term for children such as those parented by their mostly maternal grandparents. They may belong to *amadikazi*[37], or are a result of pregnancies outside marriage if the biological father never paid "damages" and/or *ilobola*. Foster children include orphans and children of family or friends who live with non-biological parents in order to be closer to better education facilities (a common reason for fostering in Tsilitwa)[38]. They may also be fostered to take care of, provide domestic labour for, and to provide company for ageing grandparents. Finally, as a result of declining marriage rates, both men and women tend to have children by more than one partner. These children may therefore be fostered to allow their parent to pursue a life with a partner who is not a biological parent to the child. This complex formulation of a household has three implications for energy and health access, in Ribot & Paluso's framing of the term access (2003)[39], and for the energy and health experiences and perceptions addressed in this research.

Firstly, in coming from different backgrounds, members bring different experiences that have to be negotiated to form a single unit. Secondly, members pool together finances and other resources for the benefit of the household, but these resources are not used or shared equally or for a uniform purpose. Fostering might also influence the flow and distribution of cash and other benefits, since persons fostering the child might "lose" income to the child's biological parents (if they too need support) or might have

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[37] *Amadikazi* (pl.), or *dikazi* (sing.), are AmaPondo women who chose not to marry, but are still heads of their own independent households.

[38] Not all orphans are the so-called "HIV orphans" that tend to be portrayed within current development perspectives.

[39] They define access as *"the ability to benefit from things – including material objects, persons, institutions and symbols"* (Ribot & Paluso 2003: 153).

an additional income from them. Loss of cash by fostering parents is especially true for young parents who sometimes appropriate the child support grant (CSG), when it should have been paid to the fostering household. Thirdly, and particularly important for multi-generational households in the context of energy and health, members of a household bring different skills and pressures to the household which influence energy access and use, depending on age and taste preferences. Older women tend to prefer to use firewood or paraffin as a cooking fuel (as will be shown in Chapter 6) because they are afraid to operate electrical appliances (and therefore use them only when a young person is around). In some cases, certain (traditional) foods were perceived as more flavourful when cooked on a wood fire.

The average household size in Cutwini and Tsilitwa was seven and six respectively, in line with other accounts (Beinart & Bundy 1987, Hadju 2006, Kuckertz 1990, McAllister 2001). In both villages the most common configuration was a three-generation household with some members of the middle generation absent due to jobs, divorce, separation, single parenthood and settling out. Cutwini tended to have fewer large households, although one had 21 members due to the recent death of a young mother from drowning in 2009, after which her children were sent to live with their maternal grandmother because "*men cannot look after children*". Such abrupt changes in situation make households vulnerable as they move from one socio-economic circumstance to another, often with little preparation.

The households in both villages were categorised according to emic criteria, as being female, male, dual or group-headed. There were no *de jure* child-headed households *per se*. In this way the households did not confirm recent findings of child-headed households in AIDS-affected areas. A reason for this is that other family members, often grandparents, take orphans in soon after the death of the parents. Group-headed households generally comprised young adults, with the household heads being older than 18 years in all cases. Decisions were made by *"sitting together to discuss and list what is needed"*. Their parents had left for jobs in other places, preferred to live in a different location, had been chased away or had fled after witchcraft accusations, or had died.

Apart from the household, it is also important to explain the notion of the family and how it affects the pooling of resources. Here, I modify Stack's (1996: 31) definition of the family[40]: it is taken to be the smallest, organised, durable network of kin and non-kin who interact, provide for the domestic needs of a household, and assure its survival, but are not bounded by physical proximity. Such durable networks are vital in bringing resources and experiences into households. In Cutwini and Tsilitwa, as in most parts of rural South Africa, households have family linkages within the village but, more importantly for access to modern resources, they are also linked to urban families. Many depend on these urban families not only for financial survival, but also as a linkage to a more modern world, and in Tsilitwa in particular to acquire electrical appliances, as I show in Chapter 6.

Becoming part of a community

Growing up in any community and culture entails socialisation into a particular set of rules, rights and responsibilities. What kinds of socialisations can be found among people in Cutwini and Tsilitwa that can help us understand their experiences and

[40] Stack defines the family as the "*smallest, organized, durable network of kin and non-kin who interact daily, providing domestic needs of children and assuring their survival*" (Stack, 1996: 31).

perceptions of energy-related health impacts? How do these socially constructed experiences affect people's responses, and to what extent are they durable? In this section I analyse the issue of socialisation, from birth to adulthood, highlighting in particular energy–health connections along the way.

Becoming a member of the family and clan

The birth of a child has largely changed from an event that happens in a hut surrounded by traditional birth attendants and Xhosa rituals, to one that occurs in a modern hospital surrounded by nurses. This shows the transition that the Xhosas have made, and continue to make, towards the western biomedical model of health. Once mother and baby return home, a number of rituals have to take place in order to introduce the child to the ancestors. These rituals ensure that ancestors know and protect the child, and that it is protected from *umoya omdaka*[41]. Such rituals include: smoking the house with *imphepo*, a shrub of the species *Helichrysum odoratissimum;* and *ukuqinisa mtwana* (meaning: toughening up the child), which involves passing the child over *imphepo* smoke, smearing the child's forehead or fontanel with ash or dung, and sometimes performing an *imbeleko* ritual[42]. The first (roughly) 10 days of a child's life are critical, and both mother and infant must be kept away from men and strangers, and the mother must also not work. The mother and child are said to be *efukwini* (*i.e.* the term for the room where mother and child stay, to which access is restricted, during the time period until the umbilical cord falls off). There are two reasons why *efukwini* is important. Firstly, the seclusion helps the vulnerable mother and child avoid *umoya omdaka*. Secondly, *efukwini* aims to keep the baby warm by ensuring that there is a fire in the room at all times, a practice of interest to this research because, according to Schwartz (2004), the lungs of children under the age of five are not fully developed and are therefore more susceptible to infection when exposed to pollutants. Accordingly, children bear a greater burden of biomass-related lung morbidity and mortality compared to women and men (WHO 2002, Schwartz 2004).

The ritual of *efukwini* is changing due to young women increasingly using paraffin heaters to keep their infants warm[43]. If the mother stays in a hospital until the umbilical cord falls off, many aspects of *efukwini* are abandoned altogether. However, keeping a baby warm throughout the day, often in a kitchen, for several months remains important. The changes to *efukwini* are, however, not due to an awareness of the possible health impacts of energy use (*e.g.* smoke) on infants, but are for two other reasons[44]. The first is the changing accessibility of paraffin, which is considered a more convenient fuel, although the heaters can have emissions issues and are sometimes fire

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41 Literally, *umoya omdaka* means 'dirty wind' – In Xhosa cosmology this is ill influence which can manifest itself in the form of bad luck, disease, or even death and is sent by bad people with magical or esoteric powers.

42 *Imbeleko* is largely performed by agnatic kin. In the past, the father would make a baby carrier for the mother from goat's skin, hence the word *imbeleko:* meaning baby carrier, from the verb *ukubeleka,* to carry on the back, also to give birth. A goat or sheep is slaughtered and the child is presented to ancestors with incantations. These days, the carrier can be bought and the ceremony conducted many years after the birth of the child, partly due to financial reasons and partly because women often have to wait for the father to come back from migrant work. For those groups that circumcise, *imbeleko* must be done before circumcision to ensure that the young man is protected during circumcision.

43 A few young women even allow partners to enter *efukwini*, something that is seen as a taboo by traditionalists.

44 Moreover, for weeks after childbirth, the room where the child sleeps is often frequently smoked with *imphepo* to ward off *umoya omdaka*.

hazards. Secondly, the changes are due to a general shift in the perceived relevance of various rituals. The current generation of both women and men choose from a range of rituals in order to define what is important and *"unchangeable"*. As a rule of thumb, the rituals that have no direct linkage with ancestors are being perceived as less important. Further, certain traditions are abandoned because of allegiance to particular Christian churches, an issue which was very prominent in Tsilitwa among those that are aligned to Madam Spalding[45] whose tenets require that they renounce belief in ancestors and other Xhosa traditional belief.

The importance and prevalence of *efukwini* among both younger and older women points to a number of issues. It shows that there is a low perception and low awareness of the impacts of smoke of infants' health; but it also presents new mothers with the opportunity to rest and recuperate after childbirth, and may well protect the child from exposure to infections. This recuperation time is important in a context where women provide the bulk of household labour. Nurses in Qumbu reported that they encourage *efukwini* not only because it is their culture, but also because they see it as an opportunity for mother–child bonding (Interview, IEC manager, 20th April, 2009). An additional factor in the decline of rituals is that increasing rates of single parenthood mean that young women can make most of the decisions about what rituals to follow themselves, rather than deferring to the agnatic kin.

For most villagers, no one health model is exclusively adhered to, and health is ensured through a mix of Xhosa and western medicines which "*help each other*". Women, for example, will not utter the word "measles" if they are carrying or holding an infant, because of the belief that doing so will trigger measles. At the same time, infants are regularly taken to under-five clinics and vaccinated against illnesses such as measles. In both Cutwini and Tsilitwa, all respondents reported that they vaccinated their children. Although they did not always know the specific details of the vaccines, they ensure a complete treatment with the help of health cards in which already administered vaccines are ticked off.

The above analysis reveals that firewood and smoke occupy an important part of Xhosa life. It further shows that Xhosa practices cannot be considered pure or closed, but are a mix of practices from Xhosa and non-Xhosa models. This should guard against any simplistic conclusion that the people of the two villages cling to their culture, but rather that they choose according to their perceptions and understanding of their context.

Becoming an adult – on power and authority

As children grow, their relationships with those that surround them become increasingly defined by specific boundaries rooted in power relations. The first power relationship aspect is that of 'authority by age', which governs the relationships, space and division of labour between children and adults. In this regard, children are raised to respect and obey adults and to be helpful to them, for example by doing some of their work. For

[45] These households were distinctive in that they often displayed Madam Spalding, a black Christian priest who did her missionary work in Tsolo (two hours drive from Tsilitwa, where adherents go for prayers on Sundays and for pilgrimages once a year) and spoke against traditional practices. Over 80% of those pledging allegiance to Spalding's church declared that they did not go to traditional doctors, but some of them reported that they used their own traditional medicines. Madam Spalding appears to have linkages to Arthur Edward Spalding, who was born in Tsolo and lived there as a trader and died in Umtata in the 1950s.

their part, adults often delegate portions of their work to children as part of a learning process, in preparation for a time when the children become stewards of their own homesteads. This also reduces the adult work burden, especially that of women who deftly delegate household work responsibilities to younger persons. Thus, children have the responsibility for helping adults, while adults have rights over the children's labour. The circle of adults who can make calls on a child's labour extends beyond the homestead, since every person is expected to respect anyone who is older. However, these rights belong first and foremost to the adults of the homestead in which the child grows up. The circle weakens as it extends outwards, depending on the quality of relationship between the young person's homestead and the adult in need of the labour. Thus, a woman might go to the forest less (or not at all) if she has a household that contains younger female members. Similarly a girl is expected to cook not only in her own homestead, but also in the homestead she happens to be visiting if the person cooking is older than she is. Any complaints, for example that she is tired, or any perceived reluctance to help adults, will lead to accusations that she is lazy and to questions about how her parenting. Such relationships can also exist between teachers and students, whereby students are often sent on errands for their teacher's homestead. A young person relieving an older person of work not only signals their respect for the older person, but also gains respect in the community – for themselves and those that raised them. "*They raised her well*" or "*they raised her esiXhoseni*" (meaning: They raised her the Xhosa way, or like a true Xhosa).

A second aspect of power relations involves marriage. This works in two ways. Firstly, married women (including widows) are generally considered more respectable than their single counterparts. However, this is not a straightforward matter, and some single women dispute this and prefer to stay unmarried. The status of being a single woman among the Pondos, being *idikazi*, is considered a valid choice, and has less stigma attached to it than being a single man of marrying age. Such men are called *impohle*, with connotations of many 'inabilities'. Singlehood is also becoming more acceptable as marriage rates decline. The research by Hunter (2009) supports this observation, and calculates that, based on census results, marriages for persons over the age of 15 shows a decreasing trend – 56% in 1936, 42% in 1980 and 30% in 2001. Although part of this may be explained by a decrease of marriages between 15 and 20 years of age who are more likely to be in school in 2001 than in 1936, and /or who might be avoiding early marriages for other reasons, there is also an increase in teenage pregnancy (DOH 1999) which would suggest being a single parent is more acceptable[46].

Within a homestead, it is common for at least one married son to continue to live in his parental home, together with his wife and new family (see Kuckertz 1990, for a detailed discussion). The wife is referred to as a *makoti* or *molo ka zana*, meaning daughter-in-law[47]. The *makoti* must take over work duties from her mother-in-law, who was once herself a *makoti*. It was the wish of many older women in the village to have a *makoti* in order to relieve them of work, and if a *makoti* chooses to stay in an urban centre with her husband it often results in a sense of resentment. There is a second level

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[46] The phenomenon of teenage fathers is also an increasing reality, although it is less discussed in the literature. Recently the HSRC has conducted research on this topic. With respect to early pregnancies, the DOH report (1999) shows that 35% of women under the age of 20 have had a child, and 3% of women under the age of 20 are married. Under the age of 18, 30% have had at least one child.

[47] Throughout the rest of the discussion I will use the more common term of *makoti*, unless in a verbatim quotation where I might use *molo ka zana.*

of *ubuMakoti*, in that a woman is not only a *makoti* within her husband's household, but also in the homes of all agnatic kin. Thus, during any ceremonial gatherings, while the rest of the women in the village rest and wait to be served, the *makoti* are busy cooking and serving the crowd. I noted at *imigidi* and funerals that even *makoti* from other villages, who were related to the homestead hosting the ceremony, would work while many other women sat down and chatted. When I asked why they were not helping, the answer was simply, "I'm not a *makoti*" or "I'm a *dikazi*". By using these power demarcations, single women are able to avoid community work. It is here that it is important to separate the notion of *idikazi* from being a widow or divorcee. Other authors take these to have the same meaning. In Cutwini, widows and divorcees are still *makoti* and are expected to act as such, including being expected to continue with the work of *amakoti*. *Idikazi* are not expected to work, although they may volunteer to help anyway.

Here it is important to understand work and issues of power in terms of the meanings to those who practice them. One should not view the work (only) as a tool for women's subordination or a means of survival. In her work as a *makoti,* both in the household and the community, she declares a social space as her own. The tradition of *ukukwenda,* the Xhosa wedding ceremony, is an example of this. During the *lobola* negotiations a woman makes a firewood pile called *igoqo*, which she will then use to cook food for her new family when the negotiations are over. At the culmination of *lobola* negotiations and the commencement of *ukukwenda*, the bride comes out of seclusion and starts working around the homestead, as the negotiators drink beer and celebrate her union to her husband as well as to her new homestead. She will also fetch water, sweep inside and outside the home, and plaster the floor with a mixture of dung and water. In doing so, she is showing her new family that "*they should not be surprised when they see her, she is now part of the family*" (KI1, Interview, 8th July 2009)[48]. Her *igoqo* signifies the transfer of reproductive power from the older woman (her mother-in-law) to her, since a household can only have one *igoqo*. The work on her 'wedding day' signifies that she is now a member of the family, allowed to use and own the *iziko* (fireplace).

Becoming women and men

The above discussion refers to the power relations governed by age and by marital status. The following section focuses on the power relations more directly linked to gender. The socialisation of children into masculinities and femininities starts at fairly young ages, and is carried out by a range of community members and the children themselves as they observe the roles of adult women and men. I witnessed children as young as five years old accompanying their mothers and sisters on trips to collect firewood, to fetch water and help older women to cook. Boys, on the other hand, will start helping their fathers and brothers by opening goat pens or tethering goats to poles, before graduating to looking after cattle at around eight years old. It is likely that boys start their most gender-defining labour – cattle herding – slightly later than girls, because of safety concerns over their interactions with animals when away from adults. Girls use the fire mostly in the presence of a watchful mother or older sister.

[48] Based on my observations, in most cases the *makoti* works in her mother-in-law's house just as hard as she would work in her mother's house, unless the mother-in-law was a particularly "bad" person or the *makoti* is particularly *"lazy"*.

Picture 4.2: Makoti of various agnatic relations work at *umgidi* in Cutwini
Photo: The author, 2009.
Note: The distinctive dress, called *pinifa*, is worn for community work by most women, but at all times in one form or another by married women, widows and some divorcees. Behind them in the garden (because this homestead had no *sibaya*), men are roasting meat.

As girls and boys enter puberty, *rites de passage* rituals may be invoked to usher girls into *ubukazi* (womanhood) and boys into *ubundoda* (manhood)[49]. In Cutwini, where many of the villagers are Pondo, circumcision is rare after being abandoned by King Faku in the 1800s (Hunter 1936). It is, however, making a return due to interaction in urban centres with young men from groups that practise it. In these contexts the uncircumcised are routinely mocked for being "boys". In Tsilitwa circumcision is very common and almost all boys undergo it at some stage in their lives. Once boys and girls have undergone these *rites de passage* they are classed as adults and their roles become even more gendered. The crossing of gender lines can cause offence, and even the handing out of sanctions. In one incident during my research, a woman sat on the men's side during an *umgidi* ceremony, drawing shocked gasps from the crowd and shouts from men who threatened her for disrespecting them. During the same ceremony the main sponsor, a woman who supports her family in the village, embarked on a lengthy speech on how the initiate was now the man of the family.

> *I have been taking care of this family but I'm only a woman. You are now the man of the house and I give you your rightful reins. You must take care of us in every way, protect us, feed us, make sure mama is well*. (Nomlindile's speech, Umgidi, Cutwini, 11th July, 2009).

[49] In earlier times, some girls underwent *rites de passage* such as *umngquzo* or *intonjane*, where they are secluded and advised on the importance of doing their chores with diligence, on staying away from men and the importance of getting married. This tradition is returning among the AmaPondo and at least two *umngquzo* were held in Cutwini in 2009.

This handing over of reins was made even though the initiate was a chronic drunk and had no economic means of heading the household. Similarly, young girls who exhibited tomboy-like behaviour such as climbing trees were said to need *isiko* (ritual) and *ukuchaza*[50].

Although the distinct rituals of entering womanhood and manhood are important examples of the engendering of an individual, also important are the mundane rituals. Much of the engendering of boys and girls occurs through these mundane rituals that dictate how, what and where women and men work, talk, sit and eat – hence what Bourdieu (1977) calls *habitus*. Both women and men earn their respect in the community by conforming to these gender roles. In this way, gender becomes not only a social categorisation, but a structuring principle that produces particular practices. Moreover, since conforming to gender roles accords one respect, it is through these gender roles as impressed upon by *habitus*, that one earns *symbolic capital*[51]. The result of this is that what one might see as subordination from an etic perspective, is also the very way in which a form of power is derived from an emic perspective.

Women's positions: Heads and managers

The position of African women in patriarchal and even matriarchal societies is often portrayed as one of powerlessness and subordination. In many ways women are indeed subordinate, but to emphasise this position ignores the complex interplays between the cultural script and reality. If this view had been adopted for this research it would have lead to misinterpretations and confusions in later stages. In this sub-section, I will present some of the complexities of women's positions.

Firstly, female-headed households were the majority in both of the villages studied as part of this research. In Cutwini, women made up 54 (72%) of the 75 households interviewed in 2007, compared to 16 male-headed households (21%) and 5 households (7%) headed jointly by a man and woman. Of the 89 households interviewed in Tsilitwa (2009), women headed 63 households (71%), while men headed 20 households (22%). Four other households (4%) were headed by both a man and woman, and two households were headed by a group of sibling children (2%).

Women, secondly, are at the centre of planning and organising many ritual events, including giving permission for a son to go for circumcision. This is in part due to women being the head of the majority of households. Another factor is that men are largely in charge of livestock, while everything else is done by women. Men will frequently be part of the decision-making process, and almost no event will be undertaken without the authority of a man somewhere in the "chain of command". However, neither can these events be undertaken without the acquiescence of the women of the homestead.

Women also earn money more frequently and consistently than men. This is because the majority of earnings come from government-administered social grants. According to government policy, where available it is an adult female guardian, and not a male

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[50] This is the ritualistic cutting of the face to stop particular undesirable behaviours. These behaviours could include a child being routinely naughty or wetting the bed. In the past it included cutting a digit, especially for young boys, although this has largely been abandoned – its remaining evidence being missing fingers among elderly men. The word *ukuchaza* also means to explain and to characterise or to give character to.

[51] Bourdieu (1977) sees cultural and social capital as disguised forms of economic capital, being convertible from one form to another and *vice-versa*. It can include respect born out of one's knowledge of a particular subject.

adult, that should sign and receive the child grant. In observing "grant days", I noted that women sign for the grant and go grocery shopping immediately afterwards, signifying a level of control over much of the homestead finances. Further, in Cutwini, I noted that women would speak freely at community meetings, even admonishing the leadership, and engaged in power struggles for public political positions just as men did.

Another illustration of economic power is savings groups, which are an important way of making a living in both study villages, as well as other parts of South Africa. While few of these groups bring new money to members, *i.e.* interest, in general they focus on encouraging savings to enable members to buy bulk household supplies at discount supermarkets. In addition, members can save enough money to buy higher-value items, such as cookers and furniture, the costs of which would take them too long to save for on an individual basis[52].

Savings-group membership is overwhelmingly dominated by women – a widely documented phenomenon (Frances 2004). In Cutwini only one savings group had any male members, while in Tsilitwa all groups were women only, with the exception of a number of men between the ages of 27 and 39 who had formed their own group[53]. Such group compositions show the important roles that women have in ensuring the day-to-day survival of households, by finding strategies to provide for their needs during stressful times. It also shows that they are in charge of their finances since it is they, and the savings group, who decide how the money will be spent.

Continuing the analysis of savings groups, a second observation of note is that the groups are mostly made up of poorer women. In both study villages the teachers, nurses, shop owners (most of whom were female) and other individuals with relatively high and stable monthly incomes did not join any savings groups, considering them unimportant for their households' welfare. All women interviewed who had government jobs had bank accounts and formal funeral covers, while unemployed women tended to have informal funeral covers, or low-premium funeral covers. This can be attributed to the fact that the former group's relatively high income allows them to save money without seriously compromising their daily needs. This signifies that savings groups are a key financial strategy for poor households that allows for the provision of vital supplies, particularly during those months characterised by high expenses and/or low incomes. Savings groups were therefore also a subtle indicator of (economic) class.

A third important issue is illustrated by what the groups use their money for, predominantly foodstuff and groceries, *i.e.* survival goods. Some groups allow members to take cash rather than to pool money for the bulk-buying of groceries, with a number of women using this money to buy electrical appliances. Three of these women were

[52] There are two kinds of saving groups common in both in Cutwini and Tsilitwa. Both kinds are rotating payment groups but differ in how and what they distribute as savings to members. One type of group gives the pool of money to one member in selected months, in a rotating manner. The second, more preferred type, is where the group saves for the entire year and then bulk buy groceries which are divided equally among members. Buying at the end of the year not only helps them amass considerable savings but more importantly allows members to have grocery supplies during the months when the households feel most financially stressed, from December to February.

[53] In line with the gender differences in socioeconomic status, the male group had the highest contributions I ever encountered but perhaps because it was a new phenomenon to them, they admitted that their group faced managerial problems. When I asked the group members why the group was in financial trouble they answered that, women are ones who know how to manage money. In contrast, men have a "long heart" and often make their targets very high even when there is little chance of meeting that target. The expression "men have long hearts" is often used to express it takes a lot, to satisfy a man. Mostly, this is used with respect to men having multiple partners.

very poor, as classified by their incomes and based on a wealth ranking exercise, had an average of three years of education (compared to the village average of six), and depended solely on the state old-age pension. Once they accumulated their money, they bought washing machines, stoves, even microwaves because "*dayirhalela etauni*" ("I was craving/admiring it in town"). However, when asked whether their savings groups ever discussed development and/or health related issues, only one woman responded that a member of their group, who was once a nurse, had once or twice discussed health issues with them.

The life: Making a living

This section looks at how the residents of Cutwini and Tsilitwa make a living, starting with how they get their financial resources, their urban–rural linkages, agricultural activities, and gift exchange practices.

The state welfare project: Safety nets and dangerous hammocks

After apartheid, the new South African government embarked on what can be seen as a welfare project whereby it created a range of safety nets for the poor in the form of social grants and a range of free social goods and services[54]. Here I focus on social grants because they are by far the most important sources of finance in Cutwini and Tsilitwa, with two key grants being the old-age pension (OAP) and the child social grant (CSG). At R1010 per month in 2009, the OAP is one of the largest social grants and the second most common in either village.

All South African women and men from the ages of 60 and 63 years respectively are eligible. The CSG, at R240 per month in 2009, is the most common grant in either village, with children up to the age of 15 years old being eligible. (This has since been increased to 18 years in 2010). Of the 75 households interviewed in Cutwini in 2007, 59 (79%) received some kind of social grant. In Tsilitwa, 81 (91%) of the 89 households interviewed received some form of a social grant. Those that did not receive a government grant had two factors in common. Firstly, they were headed by at least one government employee (*i.e.* who had a high-income job) or owned a high-income business. Secondly, they were not living with children under the age of 16 or older persons over the age of 60, meaning that no member of the household was eligible for an OAP or CSG grant. Other households with high incomes, but living with biological or non-biological children under the age of 16, received a government social grant of one kind or another. For example, I encountered three households with income levels of above R7,000 per month (*i.e.* three times the eligibility threshold for social income grants) who had children – some of whom were fostered and others biological – who were receiving at least one CSG.

The patterns of social grant distribution point to a high level of income dependency on the government social-support schemes. Defining grant dependency as a situation where more found that in Cutwini 49 (65%) of the 75 households could be categorised as grant-dependent, while in Tsilitwa of the 89 households interviewed, 67 (75%) were grant-dependent. Within each village 83% of those households receiving a grant were grant-dependent. The difference in grant dependency may be attributed to the fact that there were more (seasonal) jobs in Cutwini compared to Tsilitwa, due to the Mazizi tea

[54] Other services include free health care, the regular distribution of food in rural areas, free government homes, building toilets for people, and so on.

plantation. However the jobs in Tsilitwa, when available, paid substantially more than in Cutwini. Another reason could be the success in obtaining social grants in Tsilitwa, which was aided by the (now defunct) advice office, as it reduced the need to go to town and queue for grants registration. Thirdly, there is more fostering in Tsilitwa, partly due to the good school facility, leading to more households accessing CSGs. Finally, the Cutwini data used here is from 2007, and social grant accessibility and eligibility has since expanded. In comparison, data from Tsilitwa was from 2009 when grant eligibility categories had been extended to cover more people by age.

The numbers of households in Cutwini that received social grants was higher than Hajdu (2006) reported. She reports that in 2002 some 47% of households received social grants totalling more than R600, and about 17% received the CSG. Two explanations serve to clarify this difference in what I observed. Firstly, accessibility to social grants has increased rapidly over the last few years due to increasing awareness of how to access them. Secondly, after 2005 several social grant eligibility categories were widened to allow more beneficiaries[55]. At a national level, these changes have resulted in increases in the number of people accessing social grants from about 9 million recipients in 2005, to 12 million in 2007, and about 13 million in 2009 (Department of Finance 2009). Eastern Cape has experienced the second largest increase in recipients (after KwaZulu Natal), with an average annual increase of 9.5%. In addition, people formulate ways in which they can become eligible for social grants[56]. The level of grant dependency is, however, consistent with other studies such as Driel (2009), who reports that 66% of households derived all their finance from social grants.

While social grants have been proved to improve standards of living, particularly in regard to child poverty, there has been debate as to whether they encourage laziness or teen pregnancy. Some authors, particularly anti-poverty advocates, have dismissed these concerns. Throughout my interactions in both villages, there was concern from nurses, teachers and parents that young girls were no longer concerned about becoming pregnant, because they thought that they would be able to support their children by receiving grants (although, in reality, some CSGs never get to the children)[57]. One woman told me to put as a recommendation in my research that CSG should not be given to teenage mothers. This discussion led to the question of what would then happen to the many teenage mothers in the village, at the end of which the woman conceded it would be a difficult endeavour, before adding: "*but what do we do Magi? Our children scare us. I'm afraid for my daughter, these kids think R200 can feed a child.*" The same woman later told me, "*People now feel that it is better to have 4 or 5 children than to have one, because you can't feed a child with R250 but if you have 4*

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[55] For example, from 2008 men who had previously qualified for the OAP grant at the age of 65 could receive it from the age of 63. Changes to the CSG included extending the age of eligibility to 16 years in 2009, and raising the eligible household income threshold to R27,600 per year. In 2010, it is expected that 18-year-olds will also be eligible to CSG (Department of Finance, 2009).

[56] During my fieldwork in 2009, because people had become used to me, a number of women revealed that they exaggerated their age by 6 to 10 years so that they can start receiving the old-age pension earlier. One young man told me how he had tried to get two IDs so that he could have more benefits in future. The attempt to maximise state benefits is not unique to these villages, neither is it unique to rural areas or to South Africa in general. Such efforts point to the significance of social grants in people's lives.

[57] This should be seen in a different light from the contention that grants encourage pregnancies, and is purely based on perceptions of villagers and nurses.

children it's R1000 and you can stretch that. But [my daughter] will come off the grant next year. I don't know what I will do."

In another situation, while visiting an HIV-positive respondent in Tsilitwa, I was shocked by a suggestion made by another person in the room. When the HIV-positive young woman said she wanted to start looking for work so that she could support herself when her disability grant ran out in January, the other person said, "*No, why don't you just keep receiving this grant? If I was you, I would just stay and keep getting R1000*". When the young woman replied that she wanted to earn something and I commented that getting off the grant was a good sign meaning she was getting better, the other person argued that it's better to just receive the R1000 than bothering to go to look for a job. Several people recollected efforts to stay or get on the grant, convincing me that without employment opportunities, access to social grants was key to "making a living", so that not being eligible rendered persons vulnerable.

Another form of welfare programme is the Accelerated and Shared Growth Initiative for South Africa (ASGISA)[58], within which several initiatives are being implemented. In the agricultural sector the government has effectively taken over as a farmer of rural fields, in the sense that it ploughs, plants, weeds and harvests crops on behalf of villagers. In Cutwini, because of the previously mentioned leadership problems, the government had not finished farming all the fields and many were left in various states of neglect. Despite the fact that a small amount of work would potentially reap a large reward, only about four households took over where the government had left off, indicating that in general where government has not completed a task, people do not want to complete it. It was, as far as they were concerned, the role of the government to farm and then distribute the maize. In Tsilitwa, as a result of stronger local leadership, the government ploughed and harvested the majority of fields in 2009. The maize was harvested and shelled using John Deere™ machinery, hired from outside the village. Six women from the village were then hired to pack the maize in bags from the 20 to 26th August 2009. There were about 700 bags of maize, each of about 50 kg, waiting to be distributed to villagers when I left at the beginning of September. As a result of this approach, village job creation was minimal since the hired machinery was from outside the village and by hiring such efficient machinery few people were directly employed (four men operating the machines and six women sewing maize bags). In this case, the real beneficiaries appear to be the owners of the machinery, who lived in Umtata. In this way, the government appears to offer assistance, but also engages in *rituals of benovelence*, which in turn limit the possible benefits of welfare projects.

Another example of government social projects and the dilemma they bring was in relation to water. The piped water in Tsilitwa was designed to supply ten households, but is used by the whole village. As pointed out previously, the system uses an electrical pump and villagers are expected to contribute money every now and then to settle the bill. However, the majority refused to pay; according to VDF members, in 2008 only twelve households contributed the required R50 (VDF meeting, 21st August 2009). When I asked one woman why she did not want to pay, her first reply was that she had no money and therefore could not afford R50 every few months. I then asked her how she could afford the phone dangling on a string around her neck, she laughed and replied, "*I'm a rural person, I live in a village, not in the city. Why should I pay for*

[58] Launched in 2006, ASGISA is a government programme that aims to achieve a 6% economic growth rate beyond 2010; and its ultimate goal is to halve unemployment and poverty by 2014 (Mlambo-Ngcuka 2006).

water as if I live in town?" Others simply said it was for the government to do development things in the village; it was not their responsibility. A few villagers, however, felt differently, Nomawethu (pseudonym), for example, felt that cutting off water was a good thing:

> *People should learn to pay for things. They are too used to free things and always say they don't have money. I'm glad they cut off water so people can pay. When it is their cellphones and ibeer, they have money. When it's water or development things, they have no money.* (Nomawethu, aged 43, works as a cleaner.)

It would be easy to criticise government support programmes as promoting a culture of dependency with reference to these attitudes. Some would argue that the poor of Cutwini and Tsilitwa are just waiting for government handouts. However, such evidence does raise relevant questions that need to be debated in order to better direct interventions. For this research it is important to understand how people treat 'government goods' and 'private goods'[59]. An obvious benefit has been the reduction in child poverty, as reported by women who praised the grants because they could feed their children. From my observations in both villages, only two children (in Cutwini) exhibited signs of malnutrition, and both of these were also HIV-positive. On the other hand, I also observed that through such welfare projects people have embarked on a new kind of loss of political power, one that is different from that experienced during apartheid. During the election period I was in Cutwini and extensively discussed the upcoming elections with villagers, including the *sibonda*. Many residents were dissatisfied with the government's performance because the promises made in 1994 had not become a reality for them, as the presentation on village facilities previously shows. In 2009, in the middle of the second decade of the post-apartheid period, they still had the same roads from the days before apartheid; they still had no piped water or protected wells; they lacked qualifications and skills improvement opportunities; and they experienced persistent unemployment. In addition, the majority of the residents in both villages suspect and are disappointed by high levels of corruption, a view supported by media reports of corruption among political leaders, some of whom they knew to be poor before ascending to power, and based upon their experiences with the phenomenon of 'black diamonds'[60]. Despite these dissatisfactions, with the exception of a few enthusiasts, many told me they would vote or had reluctantly voted for the ANC. When I asked why, the overwhelming response, particularly among women, was that they were afraid of losing the social grant money[61]. As such, rather than being a "safety net", the social-grant system can also be seen as a dangerous "hammock" in which people

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[59] Government goods, as women and men perceived them, included infrastructure and other things promised by the government, including water, toilets and to a lesser extent houses. Private goods included household goods such as telephones, cars and everyday household items. Houses seem to have taken an ambivalent status in this taxonomy, because in Eastern Cape the backlog is very high and the people I talked to in the village appear to have accepted the fact that government will not manage to provide them with free houses in the short to medium term.

[60] Black diamonds is South African slang used to denote the black elite (mostly *nouveau riche*), who are few but increasingly very rich. The reference recognises that in mining black diamonds are rare and fetch higher price on the market *i.e.* very expensive.

[61] None of the parties had pledged to stop social grants in any of the adverts and campaign speeches I listened to. However, for villagers, the grants brought in when the ANC came into power were from the ANC itself, and for many of the villagers there is no distinction between government and parliament on one hand, and the ANC on the other.

will lay down their *political selves*, because of the fears of losing whatever financial security social grants offer. For the ANC, the grant system can become a political *safety net* against any accusations of a lack of delivery.

The urban connection and migrant labour

Although migrant labour opportunities are perceived as being scarcer today than before, such labour continues to play a role in helping rural households in both Cutwini and Tsilitwa to participate in "development" or "modern life". This is achieved less through cash transfers and more through the transfer of desires for, and symbols of, a modern life. This sub-section presents the extent to which urban migrants contribute to making a living in the two villages.

In Cutwini, up to 20% of the households interviewed had a close family member (husband, child or sister) who was a migrant worker in an urban area. Up to 15% of the households interviewed received remittances from an urban-dwelling family member. In Tsilitwa, 31% of households had a close family member living in an urban centre, and 29% of the households interviewed received remittances from urban migrants. Some migrants do not send remittances, instead bringing groceries when they visit their families. However, the level and frequencies of contributions from urban migrant labourers varies by household and gender. Men generally visit their homesteads once a year around the Christmas period. This is similar to what McAllister found in Shixini (McAllister 2001). Women visit their homesteads more frequently, three to four times a year.

In addition to sending remittances, family members also serve the purpose of introducing modern lifestyles and practices to rural areas. This happens not only when they come back with new fashions and behaviour patterns, but also because rural family members occasionally visit their kin in urban centres where they observe and desire the development and modernity they observe. A common answer in either village as to why a household had bought an electrical appliance (Tsiliwa) and/or other goods such as furniture was often: "*I saw it in Durban or Kapa and I craved it*". Many first experiences with electrical appliances were in "town" during visits to kin, or because of periods of time spent there working. On other occasions, urban kin will give a TV set to their rural kin, enabling them to enter into a world that is far from (and sometimes at odds with) their own.

Agriculture and its role in daily living

A defining feature of rural areas, particularly in Sub-Saharan Africa, is the lack of industry and dependence on subsistence agriculture to meet household needs[62]. It is therefore important here to clarify the role that agriculture plays in making a living in the study villages.

In both villages, the rainy season peaks from October to March, which also marks the ploughing and planting season. Annual rainfall in this region ranges between 700 to 1100 mm.

Researchers such as Hadju (2006), when questioning a household about agricultural activity, ask whether they own a field. Based on my observations, I found that a more

[62] Although certain rural areas may participate in cash-cropping it is often at a small scale or in outgrower schemes and not as a substantial part of cash-cropping. In Cutwini for example some households have plots at the tea plantation mentioned earlier, but most of them reported that their incomes from these rarely reach R1000 over six months.

useful approach was to distinguish whether a household owns a field and/or a garden and whether they plant it. The categorisation of fields was taken from emic definitions: where a garden is small (less than 100 m by 100 m), often within the boundaries of the homestead, it is used for a combination of maize and vegetables and is often fenced. Fields, located on the margins of the village in areas designated as arable land during Betterment schemes, are larger and rarely used for planting vegetables, being largely used for maize. Only in Tsilitwa was there a case of fields, belonging to a group of teachers that were collectively fenced (six fields within one fence). In both Cutwini and Tsilitwa, while many owned a field, very few ploughed it, saying that animals would eat the crop and that farming is physically hard work for the resulting gain. Other less quoted reasons included poor soil quality and the costs of inputs. In 2009, after the introduction of the previously mentioned ASGISA programme, the main reason for not ploughing a garden became[63], "*the government did not plough my field*". Discussions with government officials and key informants, however, indicate the tendency to focus on gardens rather than fields started about 30 years ago (Interview, ward councillor, 21st February 2009). When one looks at events 30 years ago, the tendency is most likely to have been a result of, among other things, Betterment policies and rising labour burdens on women left behind as a result of male migration to towns.

Despite limited cultivation, crops do provide some relief for households for two to three months of the year. When asked whether there were fluctuations in household well-being, households generally reported that the "hardest months" were from September to February, when there were competing demands for financial resources, while at the same time there was little maize available from the gardens. In the rainy season, women collect *imifino* (indigenous vegetables) to supplement household food needs, and between April and May the situation starts to improve because of harvesting of garden crops such as green maize and pumpkins. Eating *imifino* is considered a hardship, or generally something that non-progressive people like, and my love for these was one of the reasons I was called *umqaba* – a traditionalist. Changing diet to a more western or modern one, and therefore being more dependent on shop-bought products, is therefore one of the ways of attempting to achieve modernity.

Cows are an important form of cultural capital, particularly for men. Their value for adult males includes: generating respect and pride; ensuring well-being because they are ritual animals; and they are a way of getting a wife (in the form of *lobola* exchange). Further, they are "economic" capital because they support households by providing labour for cultivation, the collection of construction materials and occasionally firewood. Their value of their use as beasts of burden is however reduced by the perception that not using cattle for work is a way of ensuring the animals' health. Box 4.3 provides more details on the value of cattle.

[63] This was the main reason in Tsilitwa since all data pertained to 2009. However, if a household member was asked why they did not plough their garden before ASGISA, the main reasons were hardships, animals and costs of inputs.

Box 4.3: The value of cattle

Livestock, especially cattle, are of great importance to homesteads for at least four reasons. First, they signal one's socio-economic status in society. They are considered a dependable investment and are a source of pride and respect[64]. Livestock, and more so cows, are rarely slaughtered, and when they are it is usually for circumcision parties – even then families will prefer to buy a cow rather than slaughter their own, thereby reducing their stock. This then maintains a household's socio-economic standing in the community. A cow is also slaughtered when it is too old, through a special ceremony called *ukugugisa iinkomo* (to age a cow*)*. Otherwise a cow is eaten only if it dies of its own accord, with the meat being shared with one's close friends, neighbours and relatives.

Secondly, livestock are a pathway to well-being because of their importance in rituals. Rituals in turn are used to maintain good relations with ancestors who then ensure the health, good luck and the well-being of members of the homestead. When asked about the livestock that a family owns, the reply often started with, "*in this home, we only keep isiko* (ritual) *livestock."* With little variation, *isiko* livestock are mostly cows and goats, but sheep are also kept, mostly for food during ceremonies.

The third importance of livestock, in this case cows, is their importance for endorsing marriage through *lobola*, or bridewealth. A variety of cows of different cultural categories have to be given to the bride's family to formally transfer the woman to her husband's home. This also accords the man's family respect because they were able to fulfil their cultural obligations. A woman also takes pride in the fact that her husband paid *lobola* for her, and in the number of cows he gave[65]. One young Pondo man told me during discussions about circumcision deaths: "*I don't think one becomes a man through circumcision. I don't believe it. For me, a real man is one who manages to give lobola for his wife and takes care of her and his children*".

Finally livestock, especially cows, can be used for labour such as ploughing fields, collecting poles, and, to a lesser extent, for collecting firewood. However, this depends on men's willingness to use the cow for labour, as many fear this will emaciate their cows.

The discussion above shows that although culturally important, livestock have little importance for everyday sustenance of households. For example, only one household in Cutwini and five in Tsilitwa milked their cows for their own consumption. Two households in Tsilitwa also occasionally milked their cows for sale. Where cows are milked this is mostly restricted to the summer because of the fear that the lack of grass in winter combined with milking would affect their cows' health. Some women however also said that cows are no longer milked because men no longer do their homestead duties. Over 80% of households in both villages kept chickens, which are more readily used for household food needs in pressing times than are cows, goats or sheep. In each village only one household reared chickens for sale. Projects to introduce poultry farming in both villages never took off. Fowl have very limited ritual importance[66]. It must be noted that cattle are considered a male domain and are

[64] I was often asked if we keep livestock in Malawi, whether our cows were fat, what type of horns they had, their colour and whether they were strong. This later became more meaningful to me when back in The Netherlands I read Hunter's account, where she was asked almost the same questions in the 1930s (Hunter 1961). This shows the persisting value that cattle have in Xhosa culture.

[65] It is also possible, and increasingly preferred by men, to give an equivalent in cash, because this is cheaper than cows. However certain cows, such as *umuthuko*, which is given to the bride's mother, remain compulsory. (*Umuthuko* means the state of being shocked, i.e. the mother is shocked.) The *Umuthuko* cow is however always slaughtered as part of marriage ceremonies so it does not represent a gain for the mother. Young men often said that the demand for *lobola* when most of them had no jobs was the main reason that they were not getting married. Women on the other hand had at least two reasons, the high *lobola* and because "*amadoda basile ngoku (men are silly these days) and just play around*". In comparing my culture to theirs, men sometimes found the lack of lobola in Malawi a liberating idea for them, at other times as a source of shame.

[66] A few households maintain the practice of slaughtering a chicken for a first-time guest as a sign that they are welcome to the homestead as a family member.

therefore cared for by men, and it is men that make decisions to slaughter cows (and all other four-legged animals). Women take care of and make decisions about chickens.

Gift exchange and labour co-operation for living

Gift exchange is an important way for accumulating wealth and managing expensive rituals[67]. Gift exchange is also an important way of maintaining the kinship networks that support households. For this research, it is especially important because it clarifies some discrepancies between a household's possessions and its declared financial resources. Further, it constitutes an important way in which households participate in an electrified world in Tsilitwa, *i.e.* how they get some of their electrical appliances.

There are various kinds of gifts, and the most important ones are ritual gifts. These are important because they must be reciprocated in various ways in order to maintain networks and the benefits of membership of those particular networks. They also represent major expenditures with the potential of causing households much financial stress and keeping them within economically defined networks *e.g.* those with high income tend to exchange ritual gifts among themselves and the same applies to the poor.

During ceremonies, members of a network will *gidilana* (from *ukugidilana* – to dance or celebrate for each other). This entails bringing gifts such as a sheep, a goat, fine blankets, fine clothes, drinks and food to the host household, but also labour and cash contributions. (See Appendix 4 Day in the life of a homestead, Tsilitwa) During one *umgidi* I counted over a dozen fine blankets and duvets for each of the two young initiates. In addition, the hostess of the *umgidi* bought a bed-set for each of the initiates (each worth over R3,000), suits and two wardrobes that cost over R1,000 each. With the exception of bed-sets and wardrobes, similar gifts were given in another ceremony – that of *ukuphuma igqhirha* (an equivalent of a graduation for a traditional healer). These gifts enable the initiate or new *igqirha* to start an independent homestead (if and when they chose to do so) with a range of household goods, but also to earn respectability by having new "respectable and enviable clothes". Other occasions for which major household gifts and livestock may be given include *umngquzo* (girl's initiation), weddings including *ibaketi lincinci* and *ibaketi likhulu* (literally small bucket and big bucket), *umkhululo* (removing mourning clothes). The main items given to a woman at *ibaketi lincinci* are daily household goods. At an *ibaketi likhulu* ceremony, a rule of thumb is that the gifts should be furniture[68]. Other gifts are not connected to distinct rituals but more to linkages with urban kin. These include mobile telephones, daily consumables and electrical appliances, particularly TVs and DVD players. Cooking appliances are rarely given as gifts.

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[67] Based on interviews and observation, ritual celebrations and parties are less common in Cutwini than in Tsilitwa. When I asked households how many ritual celebrations and parties they had held each year in the past three years, on average, households in Cutwini reported less than one ritual celebration per household per year. In Tsilitwa, households held 1.5 rituals ceremonies and parties per household per year. This was especially observable between June and July, which is circumcision season when there were three ceremonies in Cutwini but over 10 in Tsilitwa. The difference is accounted for by the fact that in Tsilitwa most of the rituals are related to circumcision and pre-circumcision ceremonies.

[68] As a result, *ibuketi likhulu* often takes place much later than *ibuketi lincinci*, in extreme cases after children have grown up and even after widowhood. A few women complain that whatever gains they make through *lobola* are returned through *ibuketi* ceremonies, since the gift givers are supposed to be the bride's kin. However, in the event of a divorce these gifts remain at the husband's homestead, while cows have to be returned.

It is important to pause here and consider why furniture, most of it rather expensive, is part of the *ibaketi* ceremonies, while electrical cooking appliances, even in Tsilitwa, are not (particularly when one considers that these ceremonies are hosted by and for women). In two instances I asked women who had been involved in *ibaketi* ceremonies why they did not give electrical appliances. They both replied that this was not something people considered, because for *ibaketi lincinci* they have always given household goods, and for *ibaketi linkhulu* they give beds and other furniture. One person had seen an *ibaketi* ceremony where a heater was given, which had been a major surprise and caused a lot of discussion. In other words, household goods and furniture have been around long enough that they have entered the realm of cultural experiences. In contrast, electrification is fairly new and so giving a related gift is still making its way into the cultural realm. I must emphasise here that this is not so much an issue of cost, as household goods and blankets cost the same or more than an electrical hot plate, and furniture can cost more than a four-plate stove with an oven.

Picture 4.3: Bed-sets are delivered at an Umgiqi

Finally there is *ilima*, which, although I discuss it under gifts, is more a kind of co-operative labour whereby a household head requests help from community members to plough her or his field. This practice has, however, diminished in both Cutwini and Tsilitwa because many people have abandoned their fields. Gardens in Cutwini are ploughed by close networks of homesteads, while in Tsilitwa the majority of households pay R250 for a tractor to plough their garden. Thus, in a year there may be only three to four *amalima* called out, while previously when agriculture was more extensive there would have been over thirty *ilima* (Interview, KI, 8th July 2009). In addition to *ilima* for ploughing fields, women sometimes ask for *izitshongo* – firewood-gathering parties in preparation for ceremonies such as *imigidi* and wedding feasts. In both Cutwini and Tsilitwa, *izitshongo* are rarer than *amalima*. While the advent of purchased and tractor-transported firewood may have contributed to the decrease of *izitshongo* in Tsilitwa, this is not the case for Cutwini. Moreover Tropp (2006), in analysing strategies for firewood gathering under colonial forestry constraints, also reports that, historically, *izitshongo* have been fewer than *amalima*. This makes the issue of the tractor availability in Tsilitwa an inadequate explanation. Another way of examining the limited assistance for women's tasks through *izitshongo* is rooted in the different socio-cultural expectations placed upon women and men, as well as in the interpretations of (assistive)

technology. Women are in general expected to undertake their work with little complaint. Men are not expected to complain either but their work has increasingly been commercialised or mechanised.

Multi-layered and multiple kinds of suffering

In this sub-section, I look at suffering as a condition and as a key aspect of daily life. The suffering in both studied villages is multi-faceted, often multiple as well as layered. By this, I mean that the suffering is caused by many different circumstances; that it manifests itself differently; and that individuals and households normally go through different types of these manifestations simultaneously. Such suffering includes everyday struggles to "*make it through the day*" that have become part of daily life, as well as the more major events that cause suffering over and above the everyday experience. The layers therefore include suffering because of a lack of material resources, suffering because of often intangible historical conditions, and because of the generalised misery of living within such circumstances.

Although most of this may be termed poverty, I prefer to use the term "suffering" for three reasons. First, the term suffering is closer to the emic term *ukusokola*. *Ukusokola* means suffering, but also has connotations of being confused or being confounded. This confusion captures a sense of marginalisation that is close to the definition of Sen (1999), who calls it "unfreedoms"[69]. Secondly, this term, like Chambers' *deprivation trap* (Chambers 1983), implies physical weakness, poverty, isolation, vulnerability and powerlessness, so that it encompasses a broader definition of poverty as going beyond the lack of financial resources[70]. Thirdly, the term suffering, as presented by Bourdieu (1999) and Kleinman (1997) entails multiple types and layers of suffering, including *petite misère* or *ordinary suffering* (Bourdieu 1999) and *broken networks* (Kleinman 1997). These are concepts I will return to later in Chapter 6.

The first level of suffering is dynamic, and results from seasonal changes, as mentioned in the analysis of agriculture, which intensifies from December to February for three reasons. Firstly, households spend *"a lot of money"* for Christmas festivities and for new clothes for the children. Secondly, in January, children go back to school, requiring supplies, including uniforms[71]. In addition to this, in Tsilitwa the sufferings increase during the holiday period at Qumbu Technical High School, because households temporarily lose rental incomes from lodging students, at the same time as their expenditures are higher than usual. A third reason for suffering in the months of October to December is that agricultural investments are made (ploughing, fertiliser etc.) at a time when there are limited garden crops to eat. Although field are often less than 100m by 100m, households in Tsilitwa for example, hire a tractor to plough them rather than ploughing them manually.

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[69] Since current generations are not always conscious of how historical power relations led to such suffering, at least not on a day-to-day basis, I found this interpretation particularly suited to suffering in terms of marginalisation. One can say the marginalised are confounded because they live in a world controlled and shaped by forces and power struggles often beyond their circles of influence and over which they feel they have no control or influence. It is in this way, that it is particularly close to Sen's "unfreedoms" (1999).

[70] As the woman who undertook the wealth ranking categorised them, *"they suffer, they have nothing because they have nothing. No power, no one, they don't have someone with power in the hands (physical power) in these households."*

[71] Many schools have two to three different uniform colours and include a smart trousers with a blazer, tracksuit-type uniform and a skirt and blouse uniform (for girls).

Figure 4.1: Seasonal suffering calendar

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Festivities, school expenses and lack of fall-back options such as garden produce and rents (for Tsilitwa) deplete most household resources		Green maize and vegetable availability eases suffering. For the poorest, they might also occasionally do piece-work for other people's gardens.				Poorest households, especially those without gardens, start suffering. Coincides with costs of rituals and ceremonies which start in June, peaking in July.		Investments for ploughing and increasing need to "buy everything" means suffering starts in earnest for most families. Some households in Cutwini take up tea-picking work in nearby Mazizi.		There are limited foods in gardens, but demands for festivities mean many households are suffering.	

Key for Figure 4.2:

- Hardships peak
- Hardships begin, worsening for the poorest households
- Hardships are low
- Hardships are lowest

Job insecurity is another cause of suffering. Apart from social grants and government employment, most other jobs are highly seasonal. In Cutwini, the Mazizi tea plantation is the largest employer, but available jobs peak late in the year, and as indicated earlier, pay disputes often lead to breaks, even during peak season. In Tsilitwa, those without post-secondary education depend on short-term jobs on development projects, such as the maize shelling mentioned earlier, or working on the school building site. Here pay disputes also happen, especially between the sub-contractors and the building assistants, whose contracts are sometimes by word-of-mouth. The low levels of education mean that even migrants working in urban centres are often dependent on low-skilled, low-security jobs. Many spend several months each year without jobs. These insecurities in income cause uncertainty in household planning, and contribute to a tendency to make incomplete transitions to desired lifestyles, including energy transitions, as a protective measure.

Apart from money problems, suffering also results from disconnectedness with family members. Although there were no *de facto* child-headed households, because orphans are quickly taken in by other relatives, there were *de jure* child-headed households. A sense of disconnectedness can result from the migration of parents to urban jobs. I observed four cases in Tsilitwa of teenagers who had been left behind while both parents worked in urban centres; in one of these households the domestic worker was the head. Another more common form of disconnectedness resulted from broken relationships, in most cases where fathers, and to a lesser extent mothers, had left to live in urban centres, and rarely made contact with the homestead. As a result, a substantial number of children were being raised by grandparents and other relatives. While some young persons reported that they did not mind the absenteeism of a parent ,

perhaps because they had both "*never known*" or could not remember them, others reported that this absenteeism made them suffer.

The final major source of suffering resulted from high rates of HIV/AIDS. During my stay in both villages, there was barely a weekend without a funeral, with the 'worst' weekend being one in which there were four funerals in Tsilitwa[72]. Of these, the eldest was for of an 84-year-old woman who died after a late diabetes diagnosis. Of the other three, the oldest was a teacher who was born in 1978 and was 30 years old at the time of her death. Of all the nine funerals I attended in Cutwini, one man had been 73 years old, another – a teacher – was 43 years old, but the remainder were between the ages of 18 and 35 years. The latter were also of the age group that had young children[73]. This general pattern of deaths was also repeated in Tsilitwa. As Case 4.1 shows, a combination of sufferings combine to make suffering layered and multiple.

Case 4.1: An illustration of how HIV contributes to multiple layers of suffering.

Nokwazi never knew her father, and her mother left when she was young to go and work in Durban. According to her aunt Nolungile, who had fostered her since she was about 10 years old, "*her mother went to Durban to prostitute herself, dumping the children with me.*" Nokwazi and her younger 18-year-old sister Andikwazi are reluctant to talk about their mother, even though Nokwazi had been very open from the very first interview. Here we start seeing Nokwazi's broken networks, starting with her parentage as well as her aunt.

Her aunt spends a lot of her time and money on drinking beer. When I asked Nolungile what a typical day is like for her, she told me that she "*wakes up and goes to drink beer.*" This had shocked me, but observations in 2007 and 2009 confirmed that she was almost always drunk. The money for maintaining the household, including Nolungile's beer-drinking habit, was from the child-support grant for two young girls aged 8 and 5. These young girls are Nokwazi and Andikwazi's daughters respectively. Their material poverty was easy to see because they had a monthly income of R380 in 2007, for a household of five. They had limited productive labour. Even the two young girls tried to help with housework, including collecting wood[74]. On top of this material poverty, both Nokwazi and Andikwazi were HIV-positive. Nokwazi was in the late stages of HIV/AIDS and was always lying on a mat whenever I visited her. Andikwazi was marginally better, but she had TB (which was not being treated), shingles (*Herpes Zoster*), and was pregnant. She was self-conscious about her appearance because her face had been affected by the shingles. The first times I visited her, she would hide her face behind a cloth until her elder sister told her it was "silly" to do it in front of me. These three women all had broken bodies, each in her own way.

One of the aims of my visits had been to try and find ways in which Nokwazi and Andikwazi could get ARVs and the disability social grant. They did not have their birth certificates and could therefore not prove they were South African citizens entitled to government assistance[75]. Reflecting on Nokwazi's situation, as she got weaker, there was little hope for a change in circumstances. She died in January 2008. Her grant was never processed.

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[72] Except under special circumstances and with special permission, all burials must take place on a Saturday. The people who were buried in the four funerals in Tsilitwa on the Saturday had died a number of days apart in the preceding week.

[73] Hadju (2006) states that the HIV rate in Cutwini was probably 30% across the population during her study, and that it was as high if not higher than the average rate for the Eastern Cape. I agree with this assessment, and suspect that the same is true for Tsilitwa.

[74] I once weighed their wood bundles when I met them coming from the forest. The younger girl carried a 3-kg wood bundle, the older one a 7-kg wood bundle.

[75] This point particularly illustrates the bureaucratic indifference of state institutions that respond with assistance to certain categories of suffering but not others (Kleinman 1997), since their children are already receiving social grants as South African citizens. Hers was not the only case where ARV approval was awaiting the bureaucratic red tape. In another case, a man of 37 years was waiting for the councillor, who promised to look at his case. He had been waiting for about a year because "*the councillor is often busy.*"

To help us in this discussion, I turn to the concepts of *social suffering* (Kleinman 1997), *grand suffering, ordinary suffering* or *petite misère* (Bourdieu 1999). *Social suffering* results from three main occurrences – a breakdown in networks, a breakdown of/in bodies, and a breakdown because of social institutions that respond with assistance to certain categories of sufferers (and I add sufferings) while denying others, or treating others with bureaucratic indifference (Kleinman 1997). I include Bourdieu's concepts of *grand suffering* and *petite misère* (1999) because they remind us to keep our focus on the layered nature of suffering. *Grand suffering*, according to Parkhurst (1999b :viii), in her translation of Bourdieu, means material poverty – the struggles for cash, legitimating and prestige. Such struggles cover the material dimension as well as the spiritual and moral dimensions of poverty. *Petite misère* is translated by Parkhurst (1999b) as *ordinary suffering*, and encompasses suffering, unhappiness and misfortune. Case 4.1 above, that of Nokwazi, a 24-year-old woman whom I had befriended since the first interview, illustrates the multiple suffering encountered in Cutwini, as well as in Tsilitwa. I visited her five times during my stay in Cutwini in 2007, and once we had a short chat in the van as she was going to the hospital. I have selected the story of Nokwazi for four reasons. Firstly, my repeated contact with her and her openness enabled me to piece together a more coherent biography that allows me to understand suffering, and with it how people respond to daily experiences. Secondly, it captures all aspects of Kleinman's *social suffering* – broken networks, broken bodies and a selective and indifferent bureaucracy. Thirdly, it captures the two concepts of *grand suffering* and *petite misère.* Finally, the story of Nokwazi is by no means unique.

The themes of this story – of suffering stacked upon suffering – repeated themselves in both Cutwini and Tsilitwa. Some, like Nokwazi and Andikwazi, lacked in both a material and "spiritual" sense, while others had familial networks but not much else[76]. Those that suffered the worst had few functional social networks, were poor, and broken by age, disease and/or poverty.

While *grand sufferings* (illustrated here as poverty and HIV without medical assistance) are overwhelming, a focus on this, in the words of Bourdieu, according to Parkhurst (1999), *"keeps us from seeing and understanding daily petite misère."*

Nokwazi's talk was as much about the grand suffering of poverty, being HIV-positive, and marginalisation, as it was about the small daily sufferings. Her *petite misère* presented a myriad of small but significant conflicts that further added to her suffering. Should she stay by the fire to keep warm or away because it worsened her TB? She was also distressed that her pregnant sister had one less person to help to collect wood, while comforting herself that "they should understand and just eke out a living (*ukuthunez'ubhutyu*)" [77]. She was worried about her eight-year-old daughter. She was very aware of the stigma of her disease, but had to confront this as she tried to access her social grant[78].

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[76] I use spiritual here to include a sense of emotional support, whether religious or non-religious.

[77] Meaning her family would have to do as much as they could with whatever they had, literally *"to gently coax along the most emaciated ox in order to eke out the last reserve from it."*(Kirsch *et al.* 2004).

[78] In one case, women and men were refusing to vacate and give her a seat in the front of the van even though she was too weak to ride in the back. People's reluctance was because they did not want to sit in the canopy end of the van and not that they feared being infected. Stigma is seen in both villages, both in terms of whisperings of *"who has it"*, and in HIV-positive people's reluctance and sense of shame in discussing their status.

The long periods of illness caused by health conditions such as HIV/AIDS is emotionally and financially difficult for their families. Firstly, young girls, although living in a *de jure* adult-headed household, would head the household and take care of the sick for a long time. In my 2008 article, I recounted the case of M, who had been a *de facto* household head and her mother's primary carer from the age of 10 years until she was 13 years when her mother died, and she was taken in by her grandparents (Matinga 2008). Secondly, since most of those dying have young families, after their deaths these children move to relatives' homesteads. In many cases the relative is a grandmother who, although receiving the OAP grant and likely to receive the foster care grant (FCG)[79], experiences a sudden expansion of her household and responsibilities. In a number of cases, grandparents older than 80 years were barely managing even before their household expanded, and its expansion can add stress to their household. This may mean that the fostered orphans become *de facto* household heads. In other cases, of course, this has its advantages because of inherent co-dependences. The suffering brought about by such varied, long-term conditions has major influences on people's experiences, perceptions and responses.

Emic discourses of development: Tensions and dilemmas

Like most villages in the developing world, Cutwini and Tsilitwa have for some time been on a quest for "development". In academic, NGO and government circles, development entails meeting certain basic needs such as food, access to clean water, education and other such modern facilities. Although acknowledged as difficult to achieve, as exemplified by years of limited results, development is often framed as a highly desired state of being for those living in developing countries. My observations in Cutwini and Tsilitwa were that development, and its attendant concept of *modernity*[80], are problematic, and not universally desired in the form in which they are imposed on the villagers for three reasons, and bring a number of conflicts as a consequence.

Firstly, neither development nor modernity are neutral processes or states that are introduced into a neutral space; they come into a social world where they necessarily (partially) displace traditional practices which existed because they served a specific and valued purpose, whether this purpose is explicit or hidden in rituals. As a result, some aspects of development and modernity may be accepted, while other parts are rejected.

Secondly, development and modernity are often framed as being a departure from the traditional, but such departure has different meanings for different people, and this may result in tensions between various individuals.

Thirdly, development and modernity generally entail new opportunities that are appropriated in different ways by different people, depending on their pre-existing

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[79] The foster care grant is provided if a child is removed from parents and placed with foster parents for legal reasons, or if the parents of the child die and others take custody of them. In 2007, it was R620 per child per month and this increased to R680 per child per month in 2009.

[80] Here my conceptualisation of modernity borrows from Giddens (1990) in that it is a western venture, modified in context. Antony Giddens sees modernity as modes of social life or organisation which emerged from or in Europe from about the 17th century onwards, and eventually became influential worldwide. His focus is, however, on social institutions, while here I focus on individuals and communities.

dispositions and capitals. This creates a third type of conflict which is a conflict over who benefits and who loses.

An appreciation of development and modernity is crucial in understanding how people experience, perceive and respond to the various aspects of energy acquisition and use. The objective of this sub-section is, therefore, to briefly analyse the meaning and nature of development and modernity as perceived and interpreted in the two villages, and the tensions and dilemmas that they bring.

To understand the nature and meaning of development and modernity for the residents of Cutwini and Tsilitwa, it is firstly important to understand the words used in talking about the two concepts. The first word is "*umuhluko*", which may be interpreted as "development", and is often seen in a positive manner. It is sometimes interchanged with the term "*ukunyuka*" – to arise. In contemporary discussions of development, this is associated with modern facilities such as water, electricity, and schools. In discussions with residents from the two studied villages, development was intimately connected with modern infrastructure provided by government, particularly within the framework of its promises in 1994. As a result, when people said they wanted development or they are lacking in development, they demanded that the government should meet its promises and provide free water, build them houses and toilets, and provide jobs[81]. Later on, after the government started ploughing their gardens, they saw the government's failure in other places to either weed or harvest as a failure of development. A second word is used more in reference to the state of a person or being. "*Ukhumtsha*" refers to an individual's or household's state of being modern, which resulted either from having a good job, being educated or having lived in urban areas and adopted ways of living that were considered at odds with village life. *Ukhumtsha* was often presented in a negative light, especially by those that consider themselves to be traditionalist. In this context, not all rich people were *amakhumtsha* and neither were all *amakhumtsha* educated or rich. The opposite of *ukhumtsha* is "*umqaba*"[82] (pl. *amaqaba*) meaning a person who sticks to Xhosa traditions (literally those that smear themselves – face and clothes – with ochre). Although these were often poor people with little formal education, other wealthier people also fitted this category. People with little formal education were often called "b*abomvu*" or "*abantu babomvu*" (red people, also referring to the smearing of ochre).

The majority of residents were caught between the two poles of these categorisations, depending on the particular context. Although modern electricity and artefacts such as hotplates were highly desired, their constant use represented the displacement of values of being a 'good woman' (*cf*: Chapter 6), and therefore brought on themselves accusations of being *khumtsha* (in the negative). Men and women would sometimes report that their daughter or one of the household's residents preferred to cook with electricity because she was a *khumtsha.* While many strived to be modern by buying and using mobile telephones, they also declared their traditional values by criticising those that preferred to use electricity for being too modern, or trying to be modern.

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[81] These demands are based on promises of the ANC's in 1994 and are also the basis of the electrification program as indicated in Chapter 3.

[82] This term is largely associated with South Africa novellist A.C Jordan and appears to have gained popularity among Xhosas in their struggles against Christian conversion. *Amaqaba* is then also used in contrast to *Amagqobhoka* (the "civilised" or schooled ones, those that have taken on many western values and behavioural patterns) meaning those who converted to Christianity, often accompanied by going to school and abandoning the practice of wearing a blanket and smearing ochre.

Women, middle-aged and older, who considered themselves "true" Xhosas would wear a *pinifa* (house coat), while those that considered themselves modern often did not. Such differences can bring about tensions.

The facilities in Tsilitwa brought about by the councillor's efforts present an example of the gains and losses that result from modern artefacts at a community level. For the councillor, not only did they represent development and modernity, but also a gain of political and cultural capital. As a result, he was confident enough to call for *"as many challengers to my post as possible because I will win – I work hard."* However, for people like Xoliswa below, this development and the modernity it implied brought her pain because, as a poor woman, their benefits were elusive, and they served to magnify her lack of many forms of capital. Such uneven effects of development and modernity contribute to a seeming lack of interest in development initiatives because, for those without sufficient capital to appropriate the benefits, such development only serves to highlight their own marginalisation:

> *For me these days are worse, because the things like electricity, I see them and I see that in their homes people have bought televisions and many things. And I cannot afford those things but I want them. So for me, life was better without this because I can see that I have things that I crave. It is hard"*. (Xoliswa, woman who works as a cleaner in households in Tsilitwa.)

The limited number of job opportunities in Cutwini, and more so in Tsilitwa, meant that there was a widening gap between the *amakhumtsha* – in this sense teachers, other individuals and households working in government institutions and business people – and the rest of the villagers, particularly the *abasokolayo* (those that suffer/struggle). In Tsilitwa, for example, I encountered cases in which some teachers told me they would not come with me to a specific funeral because they only go to "*teachers' funerals and other people like us*." Thus increasingly, villagers socialise within their income groups, facilitating an exchange of social and other forms of capital within fairly closed circles, as illustrated by the savings associations.

The above discussion has one critical implication – that the dilemma that development and modernity brings results in tensions that, as I will show in Chapter 6, result in a continuous negotiation whereby individuals try to live modern lives in a traditional world. This in turn affects whether, and the extent to which, individuals and households may use modern energy.

Conclusions

The first objective of this chapter has been to analyse the conditions that shape particular ways of being, doing, acting and perceiving the social world on the part of the subjects of this study.

Historical conditions produced a marginalisation of the residents of the two villages, not only as rural residents but also as black South Africans. The two key conditions that caused marginalisation – lack of political power and lack of economical power – create a dependence on state benevolence. Yet this state benevolence, produced in a top-down manner, generates a subtle resistance, which is made visible in a 'disinterest' in development. Such disinterest is explained in terms of the different aspirations and expectations between those selecting the development interventions and those who are the targets of these interventions, as informed by their different (class) habitus. The

state's welfare projects, while being supportive of the recipients' efforts to make a living, can also be seen as a loss for the people. State welfare produces a loss of people's political power, because they fear losing access to such benevolence if they do not give the ruling party their support (*e.g.* by not voting for its representatives).

The prevalence of HIV/AIDS combines with pre-existing material and social conditions to produce multiple and layered kinds of suffering. It is through these conditions, of marginalisation and suffering, that residents must make meaning of their social world and with such meanings respond to their daily experiences.

With respect to the meanings of such practices, three observations are critical for explaining daily experiences, perceptions and responses.

Firstly, it is important to understand that the homestead and its heart – the kitchen – are the generating structure that produces particular actions, which are themselves generated by history, cultural and material circumstances. The actions therein, including firewood collection and cooking, can therefore not be separated from these generating structures and circumstances.

Secondly, it is crucial to realise that the meanings that mundane and distinct rituals (*i.e.* practices) produce, are the very sense of who one is within a community. From birth to adulthood, the engagement in a set of gendered practices, affirms one as a member of a particular household and group. In this respect, gender is a key way of giving meaning. To engage in practices not assigned to your gender opens you to sanctions from other community members. However, the position of women traditionally seen in the literature – as one-dimensional, subordinate and powerless – should not blind us to the fact that women, as a result of largely historical changes at the turn of the 20th century, are in fact in the majority as household heads, both in a *de facto* and a *de jure* sense. Economically, women's finances and financial strategies are critical resources for the household. Women are also managers of community life, particularly of social events, although here men's decision-making also appears to be important. A contemporary Malawian saying helps us picture this situation: *"Men are heads of households and women are the neck, they turn the head where it must."* As such, women's roles in deciding the nature and actions of a household should not be under-estimated, nor should one be misled by their apparent powerlessness.

The third observation, related to the second, is that the reproductive work of women, often presented in the literature as evidence of women's subordination, has multiple meanings and is a critical *cultural capital* in defining a what a 'good woman' is, but also in making the woman part of a specific social group. In particular, for married women it is a way of appropriating her social space in both her husband's household and his wider community. As such reproductive work, in the form of collecting firewood and cooking at both home and at community gatherings, has an important cultural value. This does not invalidate broader notions of power relations between men and women; rather it offers a multiple emic perspective of gender.

The fourth observation is that, based on the practices that their *habitus* produces, residents of the two villages have their own meanings of development that are not always the same as those of development practitioners. Neither are these meanings the same from one villager to another. Firstly, the complexity of people's practices and meanings presented here is at odds with the one-dimensional view of the rural poor, upon which policy at the international and national levels is often based. Secondly, the fact that the meanings outlined above, being embodied, are often unconscious and sometimes even seemingly incoherent, conflicts with methodologies that inform

international and national level responses, which assume specific and coherent ways of being that can be captured in pre-set frameworks. For those whom “development” has yielded results which are inconsistent with their emic desires, or where the results are at odds with their emic interpretations, such interventions may bring more hardships and may result in resistance. Understanding both the tensions and dilemmas of the meanings and effects of development, is especially relevant when we look back at the discourses hatched in the corridors of power in Washington, at global conferences such as WCED, WSSD and in MDG declarations, as outlined in Chapter 2, and in the policy objectives set out by national policy makers as shown in Chapter 3. The gap between the discourse and policies at both international and national levels on the one hand, and the realities of complex life in the two villages on the other hand, must be understood in order to make any policy recommendations workable and relevant to people’s lives on the ground.

5

Experiences, perceptions and responses of policy intermediaries

Introduction

This chapter examines the impact of the implementation of national-level policies at the local level, based on the setting in which they are implemented, which was presented in Chapter 4. The local level here includes actions at provincial, district, municipal and village administration units. This level is important in this research because it is where policy claims and aims must be legitimised through actions of policy intermediaries, as defined in Chapter 1. As with Chapter 3, in which the energy policies were analysed, the distinction between the three themes – experience, perceptions, and responses of policy intermediaries – is not always clear. Perceptions, for example, might not be clearly demarcated, but have to be deduced from the actions, programmes or policies such actors undertake or implement. I therefore group these themes together, except in cases where I refer to a specific experience such as an event, a specific perception or a specific response.

To address the objectives of this chapter, I am guided by the following questions: How is the structure for the delivery of energy–health objectives, as outlined in the Energy Policy (1998) set up? What are the main objectives of energy programmes and initiatives that are implemented with a view to realising the energy–health objectives of the South African energy policy? In what ways are energy–health linkages addressed by health-sector policy intermediaries? To what extent do programmes and initiatives in either sector address energy–health linkages, and if so, based on what arguments? Why have the structures, energy programmes, and initiatives focused on the specific issues that they address?

For the purpose of this discussion, I take policy – as indicated in Chapter 3 – to include explicit statements and plans of actions that guide legitimate action and responses through law, code or other government-established mechanisms (Gilson & Ploy 2008). I take programmes and initiatives as specific time-bounded activities or sets of activities undertaken to produce specific outcomes, whether services changes,

products or conditions. Although these two are not mutually exclusive and can overlap, they are differentiated in this research by their level of implementation and responsibilities. Policies are formulated at a higher level in the political–administrative system, while programmes tend to be subsets of policies undertaken at other or lower levels, with a tendency for responsibility for implementation to be more decentralised. Further, policies may address a range of issues at sector level, while each programme addresses a narrow issue.

This chapter begins with an analysis of the programmes and initiatives of the energy sector in the first section, followed by an analysis of the programmes and initiatives of the health sector in the second section. The third section contains an analytical comparison of the energy and health sector responses. The final section provides the answers to the questions that have guided the analysis in this chapter.

Energy programmes and initiatives in practice

The analysis in this section focuses on policies and programmes implemented by the government and complemented by the work of NGOs where necessary. Although some of these programmes are developed in one way or another at national level, for example the policy that creates the programmes might be national, I discuss them at local level, because they are implemented by funding channelled through the Department of Provincial and Local Government (DPLG). Implementation of services programmes is by specific municipalities, and for Cutwini and Tsilitwa these are Ingquza Hill Municipality (previously known as Qaukeni Municipality) and Mhlontlo Municipality, respectively. To clarify the various levels of implementation discussed in this section, Figure 5.1 illustrates the governance structure for public services delivery in South Africa, focusing on funding for free energy services.

The financing and delivery structure presented in Figure 5.1 above can be understood as follows. The local government, through the DPLG, is mandated with the implementation of free basic services, including free basic electricity (FBE). FBE is funded by national government through its allocations to the DPLG, which then allocates the funding to municipalities such as Ingquza Hill and Mhlontlo through Equitable Share financing from central government. In most poor and rural municipalities, and this is the case for Ingquza Hill and Mhlontlo, electricity distribution licences are held by Eskom, and so the funding for FBE is ultimately channelled to ESKOM to pay for the electricity that the utility will provide to eligible households.

At the beginning of each financial year, the municipality and the DPLG informs ESKOM of the number of households deemed eligible for FBE. Eskom, as the electricity supplier, provides FBE amounting to 50 kWh of electricity per eligible household per month through its prepaid (card tokens) meters or through conventional (credit) meters that have been configured for FBE, to customers that are deemed poor, within the boundaries of the specific municipality, based on the tariffs recommended nationally by NERSA. Eskom then recovers the money from the DPLG through the municipality by furnishing both with invoices detailing the number of households and total amount of FBE disbursed[1].

[1] Local government financing is generated from a range of sources, including inter-governmental funding from national (national treasury) and provincial government, which includes: Local Government Equitable Share (LGES); conditional grants; property rates; bonds and others. However,

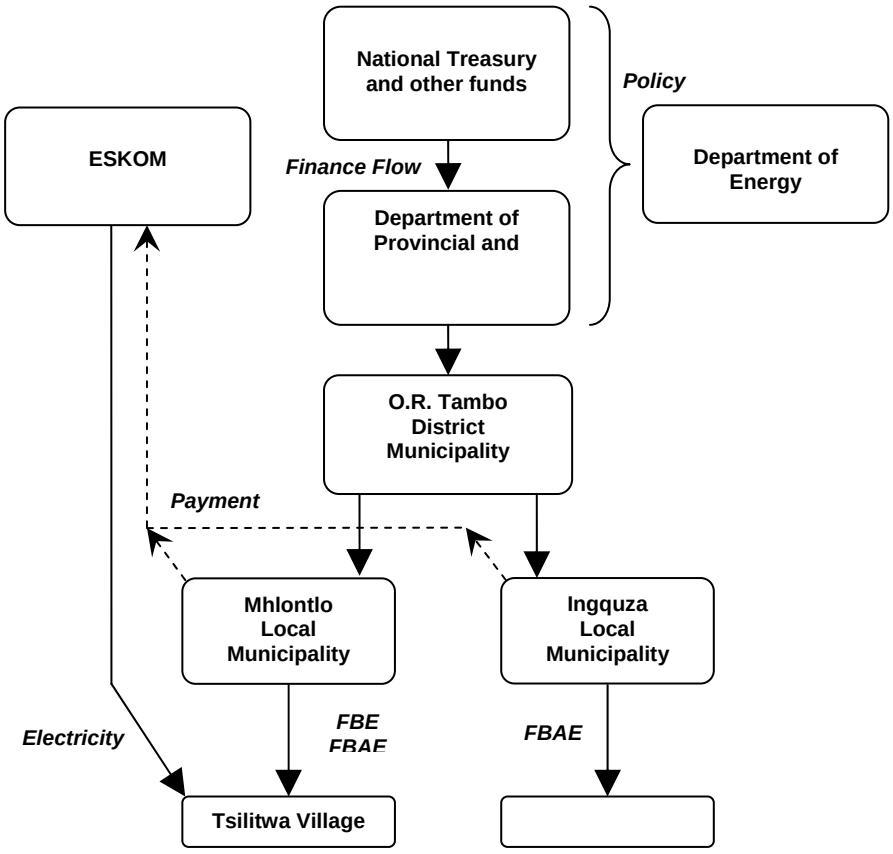

Figure 5.1: Financing structure of services delivery, focusing on free energy services

The financing and delivery structure presented in Figure 5.1 above can be understood as follows. The local government, through the DPLG, is mandated with the implementation of free basic services, including free basic electricity (FBE). FBE is funded by national government through its allocations to the DPLG, which then allocates the funding to municipalities such as Ingquza Hill and Mhlontlo through Equitable Share financing from central government. In most poor and rural municipalities, and this is the case for Ingquza Hill and Mhlontlo, electricity distribution licences are held by Eskom, and so the funding for FBE is ultimately channelled to ESKOM to pay for the electricity that the utility will provide to eligible households.

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for FBE, especially in Eastern Cape's rural municipalities, the bulk of the financing comes from LGES (>50%) and other national government grants.

municipality by furnishing both with invoices detailing the number of households and total amount of FBE disbursed[2].

The structure of this sub-section is as follows. First, I discuss the general structure for energy services delivery and its implications on energy–health linkages. Secondly, I discuss energy initiatives implemented in South Africa, of which the declared objectives include addressing the health impacts of energy acquisition and use.

Structure for energy services delivery

In order to understand how the structure for the delivery of energy–health objectives is set up, I start by examining the energy strategies and activities at Municipal District level. Based on the DPLG policy, the delivery of free basic services including free basic electricity (FBE) and free basic alternative energy (FBAE) is the responsibility of local authorities, including municipal districts and municipalities[3]. To ensure that resources are available the DPLG, through municipal districts, must plan and budget for these services in their Integrated Development Plans (IDPs). In turn, municipal districts must also budget and plan for the service needs in their municipalities. National government has general guidelines for FBE, but leaves the development of administrative systems and procedures to the DPLG, which in turns leaves its (targeting) details to individual municipalities. At the time of this study the O.R Tambo District Municipality (ORTDM), where both Ingquza Hill and Mhlontlo Municipalities are located, had no specific policy for energy strategy. The planning for energy services is, however, included in the IDPs. In addition, neither municipality had personnel dealing with energy specifically, allocating the responsibilities for strategic planning via the strategic municipal manager.

The closest that either Cutwini or Tsilitwa have to public-sector energy personnel are integrated energy centres (IEC) personnel based in villages that have IECs, and IEC managers, who are DME employees who manage IEC personnel. The IEC personnel are the ones who are close to villagers, but they are co-operative members responsible for managing the IEC co-operative, and are not energy specialists. The Eastern Cape IEC is located in Caba Mdeni, in Alfred Nzo District Municipality, which is over 100 km from the two studied villages. It is therefore too far away to serve either of the study villages. Similarly, there are no energy NGOs within at least 100 km or more of either village, and therefore there is no contact between the villagers and persons with energy expertise. In Tsilitwa, where there is electricity, ESKOM technicians' contact with villagers was limited to connecting households, showing them how to load units, and advising them that electricity is dangerous[4]. As I will show in Chapter 6, many villagers do not even know that when there is a power outage, they can call ESKOM technicians to address the problem. This absence of intermediaries extends to firewood use, in that there is no initiative addressing this activity. It was only once mentioned in the O.R Tambo IDP, on the establishment of woodlots in local municipalities other than Ingquza

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[2] Local government financing is generated from a range of sources, including inter-governmental funding from national (national treasury) and provincial government, which includes: Local Government Equitable Share (LGES); conditional grants; property rates; bonds and others. However, for FBE, especially in Eastern Cape's rural municipalities, the bulk of the financing comes from LGES (>50%) and other national government grants.

[3] In terms of electrification and bulk electricity infrastructure, ESKOM is responsible for putting these in place with funding from the central government, sometimes through DPLG.

[4] One result of this framing of electricity is that people do not use electricity when it is raining heavily, when it is windy and when there is a thunderstorm.

Hill or Mhlontlo. Although there is a forestry office in Cengcane Forest on the Tsilitwa village boundary, where the majority of households get their firewood, its mandate is limited to supply concerns largely by regulating the harvest of wood and selling it for various purposes (Forest Officer, Interview, 26th August 2009).

The lack of energy policy intermediaries can be explained by two issues prevalent in the energy sector. Firstly, it reflects the legacy of the broader energy sector whereby until recently, it was not seen as an independent sector within the development discourse. As explained in Chapter 2, energy programmes and initiatives were traditionally implemented as a sub-set of other programmes such as agricultural programmes or under forestry. The outcome of this non-independent status is that it was belatedly recognised as being a key aspect of development. Consequently, in developing countries, the energy sector usually lacks public-sector structures and local-level presence of personnel, such as district energy officers. In general, intermediaries at a local level are restricted to commercial ventures such as petrol filling stations (service garages) selling paraffin, whose mandate is narrowly economic, *i.e.* to sell their products at a profit. The energy sector therefore continues to be on the periphery when compared to traditional development sectors such as water and sanitation, health, education and agriculture. As central planning is a common feature in these other sectors they tend to have local personnel such as district officers. By comparison the energy sector is not structured in this way and as such few local authorities have the capacity to plan for energy issues.

Secondly, for South Africa, apartheid further weakened local structures through inequitable resource allocation, and the low prioritisation of black local authorities (BLAs). The exception being where structures had been developed for control and subordination, or where there were clear benefits for the apartheid state. As a result, planning at rural local level appears to have been neglected.

For the rest of the analysis in this sub-section, the lack of local energy personnel means that I shall focus on analysing whether and how specific energy policies and programmes that directly affect households and that have linkages to the energy–health nexus, have been implemented at local level.

Energy programmes and initiatives

The analysis of programmes and initiatives is based on a review of the design and results of the programmes, drawing on secondary data, complemented with a few interviews and observations. The analysis is arranged in order of the energy carriers that form the core of the programmes. I start with firewood and dung, followed by paraffin, then electricity. This order follows the order in which these energy carriers are used for cooking in the two study villages, from the most commonly used to the least commonly used.

Firewood and dung programmes

Despite the fact that more rural households use firewood and dung as a fuel than paraffin, there has been limited focus on these in the new political dispensation. In 1992, government departments comprising the Department of Water and Forestry (DWAF), the National Department of Agriculture, the Department of Education and the DME started looking at improving firewood supplies to households. The project *The Biomass Initiative* aimed to address “the rural fuel situation” (Williams *et al.* 1996). The objective was to deal with supply through initiatives such as woodlots and social

forestry, and to address energy efficiency through improved cook stoves. Such a project is important in the context of this research, because improved cook stoves can reduce firewood use and improve combustion properties, and thus reduce smoke emitted.

The project closed in 1996, due to lack of interest within the DME – according to two key informants, one from DME and another from UCT (Interview, IEC Manager, 10th September, 2009; Marquard, Interview, 2nd September, 2009). A search through the archives at the University of Cape Town, which carried out the programme at the DME, and an internet search revealed only two documents. The first is a technical document that reviews commercial stoves used before 1990 in rural areas. This provides technical calculations of stove designs that would be considered under the programme, and provides justifications for the programme (Dickson & Baldwin 1990). This is a document written as part of a project conception. The second is a project review document in 1996 (Williams *et al.* 1996). Respondents at the DME and at the University of Cape Town reported that the focus on biomass energy in South Africa was minimal before apartheid and decreased further after apartheid. When asked why the DME had limited focus on biomass energy, one (black) respondent who had been at the DME during the transition period replied:

> *At that time if you suggested firewood, it was like you were the enemy. The feeling in the department was that the whites made us use wood so now everyone can use electricity. From my training, I knew biomass would continue but I could not say much. I was the only black in the department before; I had worked with the white men. The new men, the black men, did not want to listen. They just wanted electricity for everyone so no one could say much.* (IEC Manager, 10th September 2009).

This view was supported by Marquard (2006) who asserted that there is very little focus on firewood within the DoE. This was also further supported by a programme manager from GTZ (10 May 2010) who said:

> *In the case of South Africa, the reality is that the government ignores firewood and biomass energy use, to the extent that they leave it off graphs when they make a presentation. Apart from the original White Paper on Energy and the Renewable Energy strategy, there are no other strategy or planning documents dealing with the issue of household energy use or wood fuel management.*

These assertions are also supported by Arnold *et al.* (2004), who point out that since the 1990s, there is little action to deal with firewood in the South African energy sector. These assertions and the lack of wide-reaching, long-term biomass initiatives by the government since the 1990s, underscores the impact of the political experiences of South Africans on the energy policy. It illustrates tensions between pursuing policy for its substantive objectives and pursuing policy for its *symbolism*. In this case, during the transition period when post-apartheid policies were being shaped, creating policies that would acknowledge the continued use of firewood and dung after apartheid was seen as a throwback to the days of apartheid, when the black population was deprived of electricity access. As such, firewood and dung symbolised the historical subordination of black people, and had to be 'policed out' in favour of electricity, which then would symbolise a break with their political marginalisation during apartheid. Currently, the majority of firewood-related programmes are being carried out by bilateral efforts such as the GTZ programme and other NGOs. These are largely very local and often short-term projects.

Paraffin programmes

In Chapter 3 it was already stated that programmes that address the health impacts of paraffin use, which I broadly term paraffin–health linkage programmes in this chapter, are driven by efforts from the petroleum industry. This was largely in response to media reports on paraffin fires in townships, which were further boosted by reports on burns and deaths resulting from paraffin fires and incidences of paraffin ingestion as indicated earlier (De Wet *et. al* 1994, Kossick 1961, Malangu *et al.* 2005, Matzopoulos *et al.* 2006). This was however not new. Medical officials had discussed the problem of paraffin burns and paraffin ingestion in medical journals much earlier (cf: Kossick, 1961 using 1959 data). The attention to the health impacts of paraffin after 1994 can be attributed to two factors.

Firstly, the political changes in South Africa prompted a focus on social problems in black communities, including the role of the private sector in reinforcing racial disparities, whether actively or through complacency[5]. As a result, in the post-apartheid period many private-sector companies were driven to address social problems linked to their products. For the petroleum industry, in the context of paraffin use, this was politically important because the population group most affected by the health impacts of paraffin use was poor blacks. This created political impetus for the industry to address the health impacts of paraffin.

Secondly, there was the injury surveillance study of 1999 which, by giving numbers of the national burden of morbidity and mortality resulting from paraffin use, showed that the health impacts of paraffin use were indeed a key health issue. To understand how the government, including local government, came to be part of the efforts to address the health impacts of paraffin use and in what ways, it is important to understand the origins and reasons behind the responses to the paraffin–health linkages.

At a meeting in 1994, the petroleum industry formed the South African Petroleum Industry Association (SAPIA). They held discussions with the ANC government-in-waiting over its response to the health impacts of paraffin use (PASASA website, accessed 30th August 2009). This was the first co-ordinated and direct effort to address energy and health issues. According to the PASASA website, SAPIA became directionless[6] and was replaced by PASASA in 1996 (PASASA, accessed 30th August 2009)[7]. The responses of PASASA include paraffin safety campaigns targeting paraffin users, promoting child-proof paraffin storage containers, and lobbying government to introduce compulsory paraffin safety standards.

Although many paraffin safety campaigns started in 1996, by the beginning of my pilot study in 2006, and even my first field study in 2007, few people in the rural areas were aware of them. In 2009 there were frequent discussions on "*Umhlobo Wenene fm"*, rural Eastern Cape's popular radio station, asking people to check that stoves had South African Bureau of Standards (SABS) rating before buying them. The focus on safety campaigns beyond radio has concentrated in urban townships, especially in

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[5] One of the high-profile issues in the complacency of the private sector is with regard to miners' occupational health and the high rates of silicosis, pneumoconiosis (also called black lung disease, which is caused by accumulation of coal dust in lungs due to long term exposure) and lung cancer morbidity and mortality among black workers. Legal action was taken against the mining conglomerate Anglo-American.

[6] This was the wording by PASASA although the website does not elaborate on what they mean by directionless.

[7] As of 2009, members of PASASA included BP, Chevron, Engen, PetroSA, Sasol, Shell and Total (PASASA, 2009).

Gauteng and in Western Cape. When I asked a PASASA executive why the focus has been on urban areas he gave two reasons. The first was the high costs of advertising and travelling, and the second was the lack of local structures and personnel. Currently, PASASA has one person serving Eastern Cape, based in East London, which is a major urban area. She is responsible for organising safety campaign events in the whole of Eastern Cape and liaising with municipal disaster management teams on issues related to fire hazards and accidents in households.

In 2004, SABS tested nine stove designs commonly used in South Africa, and all of them failed the standard safety test (www.Hedon.info, accessed 29th October 2009). Then the DME announced that SABS stove standards were almost completed, and non-compliant stoves would be banned from the market by the end of that year (PMG website, 21st February 2010, announced on 22nd June 2004). In 2005, the parliamentary portfolio committees on Minerals and Energy and on Health held a joint conference. One of the resolutions was to *"encourage the use and development of safe alternative fuels"* and to ensure that national disaster management legislation is implemented at local level (National Assembly 2005; PMG 2005).

Following, in part, campaigns by PASASA and other NGOs and academics, the government gazette released the compulsory standards for non-pressure paraffin stoves and heaters in November 2006 (PASASA 2006). In January 2007, three years after the minister's announcement, and nearly eleven years after the SAPIA meeting, the government announced a ban on paraffin stoves that did not meet the safety standards. This ban was effective immediately and shops, at least those operating in the formal sector, had to remove them from sale. The ban was announced, however, before any approved safe stoves were widely available. Unable to afford or unwilling to use electricity or gas all the time, most of the paraffin users were left with no other option. Or, like the residents of Cutwini, they did not have access to electricity at all. At the beginning of the ban in 2007 I was in Cutwini, and none of the residents I talked with were aware of the stove ban. However, they had noted a sharp decrease in the number of shops selling paraffin stoves in Lusikisiki and surrounding town centres. Others were upset and wanted to know whether my research was related to this. By August 2007 only a few "Indian" (Indian and Pakistani) and Chinese-owned shops[8] were selling paraffin stoves, and the price had risen from R35 per stove to R50 then R80 per stove, and finally at the beginning of September 2007, to R120 per stove. By the end of September and beginning of October 2007 I searched Lusikisiki for a paraffin stove and called acquaintances in Durban, but could not find any paraffin stoves on sale. The ban

[8] The use of the term "Indian" or "Chinese" shop is not meant to racialise these shops, but is used for two main reasons. Firstly, this is how they are referred to in the study villages and beyond, e.g. by PASASA and by the NRCS (2009). Secondly, and related to the first reason, these shops differ from other supermarkets in that they are often family-owned, while other shops such as Shoprite, Checkers and Boxer are part of co-operative structures. As family-owned, they are formal in the sense that they may pay tax and are registered. However, their operations are often outside the formal guidelines that given co-operative-governed shops such as Shoprite, Checkers and Boxer. Most of them escape quality and legal checks imposed on more formal shops, and many of them impose more restrictions on consumer rights. For example, they impose body searches on customers, particularly black customers, and often refuse product return even when the product was defective in the first place. These generalisations of course, do not apply to all "Indian" and "Chinese" shops, but these observations are certainly more prevalent among them. Few blacks, especially black South Africans in rural areas, own big shops or supermarkets. Their concentration of ownership is in the informal sector, operating spazas (kiosks), and these rarely sell energy technologies such as stoves, although they do sell paraffin and, sometimes in electrified villages, they sell electricity units.

had been effective in the short term from the point of view of policy implementation. Nevertheless, from the view of policy impacts, its effects were not as successful. Villagers who wanted to replace their stoves had no option but to continue to use their old ones. This, despite the fact that they were aware that ageing stoves were more likely to burst into flames and/or produce high amounts of smoke and fumes. Paraffin stoves gradually returned to the shelves around December 2007 (own observations, and based on Durban information). However, the first batches of stoves available still had no safety ratings and were "Chinese-imported" Panda and Flame stoves[9]. In addition, there was a range of similarly designed stoves with slightly changed names. When stoves became widely available again in 2009, they retailed at between R60 and R90 each. However these 'new' designs, which were twice as expensive as before, had false claims of safety because at this time SABS had not approved them. There were still no safe paraffin stoves in shops until around July 2009 when the ParaSafe[10], a SABS-approved stove, became available at least in one department shop in Qumbu and another in Umtata, retailing at between R168 and R234. This is two to three times as expensive as unsafe paraffin stoves. It is also the same price or twice as expensive as the electric stove, for those that had electricity access, although their operating costs do not necessarily change in the same proportions as the changes in costs of buying the stoves. Only two households, one in Cutwini and one in Tsilitwa, had attempted to change to a safe paraffin stove, and neither could cook on it. The Cutwini household had a different model, whose name was not clear as it had been obliterated by smoke that the stove produces when lit (the box had been discarded) and the entire stove was soot-blackened. Also according to the user, it often extinguished itself, and while we chatted, she made several attempts to light it but could not. The second stove in Tsilitwa was a Primus-type model. The owner had bought it for R200 and never used it because she could not get it to work. When I visited her homestead, we tried to light it but all our efforts failed. It had not come with instructions. Later, in September 2009, I learnt that post-graduate students testing the stove at a university in Johannesburg had also had problems lighting it. This suggests that neither experience with using other paraffin stoves – in the case of the women of the two villages – nor formal technical knowledge as in the case of post-graduate students in Johannesburg was an adequate condition to easily operate the stoves. In 2009, the PASASA released a statement, in which they noted the low sales of the new safe stoves and continued sales of banned stoves (Cape Argus Website, 2009, accessed 30th August, 2009). According to an executive of the National Regulator for Compulsory Standards (NRCS), of 141 stores visited only 14 were selling approved stoves. However, the PASASA report did not discuss any user experience and how it had affected these sales, implying a deterministic approach in their expectations that, as long as the safe stoves were available, households would switch over to using them. In any case the NRCS, with the support of police officers, confiscated the illegal stoves and arrested one trader (Cape Argus Website 2009, accessed 30th August 2009).

A study funded by GTZ in Soweto suggests that willingness to change to safe paraffin stoves is low. While the study was conducted in Soweto, an urban,

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[9] Panda was earlier made by a Chinese–South African company. When that was ceased, the shops imported the Panda stove from China. There were also claims that the Chinese–South African company was still producing the same stove but saying it was redesigned, although it was neither redesigned nor approved by SABS.

[10] ParaSafe is leak-proof, and has an automatic shut-down mechanism to reduce fires.

cosmopolitan area, its results still offer insights into attempts to address energy–health linkages through the introduction of safe paraffin stoves. This is especially the case as the people in the study area are better informed due to more safety campaigns in urban areas) and have more income opportunities than those in rural areas. The higher income opportunities mean that they are in a better position to afford safe paraffin stoves which, as mentioned earlier, are more expensive than unapproved paraffin stoves. Additionally, incidents of paraffin accidents appear to be higher and have worse outcomes in urban areas than in rural areas. An assumption can then be made that these three factors would make the uptake of safe SABS-approved stoves faster in urban areas. Yet the GTZ study suggests otherwise. The study found that while 70% of the 150 households interviewed were aware of the ban on paraffin stoves, up to 79% had not changed their stoves types, and 80% did not stop buying paraffin (Mrubata & Dhlamini 2008). In addition, up to 30% said they would not buy a safe paraffin stove. A shortcoming of this study is that is does not provide an in-depth analysis of the reasons why households are not ready to change from seemingly dangerous paraffin stoves, with the exception that 60% indicated that they would not spend more than R60 on a safe stove (Mrubata & Dhlamini 2008). This suggests that the financial costs of these stoves may be one of the factors affecting their acceptability. In addition, the study was carried out just months after new stoves became available, which is probably insufficient time to assess transitions.

When I asked an IEC Manager at DME to explain what the government is doing to ensure safe paraffin gets to the people, I was told:

> *Off the record, I think the government is too relaxed about the issue of standards. It's been a song for too long. Even when available [policy, M.N.M] you don't find it necessary… they are not enforced. The thing is, when you adhere to standards quality is higher, then….hmm bigger costs and hmmm the level of poverty in rural areas and informal settlements. It's a catch-22 but it can't be used as an excuse.* [11] (IEC Manager, 10th September 2009)

Other IEC officials whom I talked to at the DME also felt that there was little being done to stop paraffin use because the petroleum industry does not want to lose the household paraffin market. As a result, more effective efforts such as attempts to wean households off paraffin are not pursued in favour of what the interviewees called "*inadequate attempts that these people* [i.e. government policy makers, M.N.M] *like*". One IEC manager expressed concerns over the dominance of the petroleum sector in debates on paraffin safety:

> *… what you have to understand is the thing that for the petroleum industry, Sasol, Total and them* [this refers to other petroleum companies distributing paraffin in South Africa, M.N.M], *the paraffin for household is a big business, I mean millions every year, 300 million litres?*[12] *They are not going to lose that market. So they make*

[11] In the end we agreed that because the *"off the record"* information was critical I can write about it but must keep the person's name protected.

[12] Actually, the amount of paraffin used in South Africa annually is about 700 million (PASASA 2009), but the amount of paraffin used for cooking in households is difficult to estimate because, outside the formal business sector such as the aviation industry and commercial operations, paraffin may be bought at one point and sold to a range of retailers who then sell is on to households as well as informal businesses where records are rarely kept or requested by central statistics. These are also sectors ignored by national statistics, which have so far focused on formal supply chains.

> *all these things and all you hear is that there will be safe stoves and they sponsor it and government says yes. We even need IECs not to be with petroleum people. With them giving all this money, we are not going to eliminate paraffin use, but people you know it even from where you are, will not easily change from paraffin if it's there.*

A similar sentiment was voiced by a senior academic at the University of Cape Town (2nd September, 2009). Parliamentarians have similarly questioned the dominance of the petroleum industry in PASASA (PMG website accessed 10th February 2010). However, the organisation maintains that it acts independently and asserts that the household market is much smaller and more difficult to manage for the petroleum industry than other customer groups such as the aviation industry, which uses paraffin as aviation fuel but is more centralised and therefore easier to manage or address. Thus they feel that the household is of lower strategic economic importance to them (PASASA manager 6th May, 2010).

Currently, PASASA is facing the possibility of withdrawal of support from one of the funders, and claims there is decreasing enthusiasm from organisations and persons attempting to develop safe stoves. The reason for this is said to be government's "feet-dragging" over stove standards:

> *We have struggled to get government structures to collaborate with, especially for the DoE to come up with standards… Even now, we are still not happy with the standards that are available. The stove that has been approved… yes it's better than the others, but when we tested it, it did not meet all the requirements.* (PASASA Executive, 6th May 2010).

Two aspects must be noted here in terms of the government's response to PASASA's efforts. First, the approved stove, ParaSafe, is a pressure stove, and the pressure stove standards that have been approved so far are not compulsory[13]. Secondly, it is important to note that a member of parliament, who also has a stake in the company that makes ParaSafe, has been accused of delaying stove standards[14]. Such political linkages might also contribute to decreasing enthusiasm among stove developers and manufacturers.

Currently, PASASA is seeking to expand its mandate to household energy safety, and also to work in other Southern African countries. This change is partly driven by the need to expand their possible sources of finance, resulting from growing uncertainty of continued funding from the petroleum industry. The approach for addressing the health impacts of paraffin use explains some of the intermediaries' perceptions and responses.

Why then has the government responded ineffectively to the health impacts of paraffin use? Firstly, a look back at the transition period, from 1990 and 1994, shows that the policy frameworks of the incoming ANC government were undefined. Even with knowledge of the impacts of paraffin, there remained a gap between policy and action in the formative years of the post-apartheid era, *i.e.* 1990 to 1994. This gap is seen in the lack of concrete strategy to deal with the question of paraffin from 1994, and even after 1996 when an ANC minister headed the energy department. Other authors' findings show that the existence of a policy gap in the energy sector was not unique to the household sector. Auf der Heyde documents what he calls a *policy vacuum* in the

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[13] The majority of stoves used in households are however non-pressure wick stoves and so making non-pressure stove standards compulsory first is also a matter of prioritising.

[14] The Member of Parliament has not been investigated for any wrong-doing in the case of delaying stove standards, and there is therefore no proof of wrong-doing.

nuclear sector during the transition (Auf der Heyde 2000), while Marquard (2006: 177, 392) discusses a more general lack of policy strategy in the energy sector at the beginning of the post-apartheid era. With no concrete government policy, the petroleum industry, through the formation of SAPIA, moved to occupy this policy space that existed immediately after 1994. In effect, the petroleum industry moved in to define the paraffin policy framework in which household paraffin use would continue, by funding efforts to make it safer. As a result, the government, even in the current period, develops its paraffin–health actions more as an endorsement and reaction to PASASA's continued framing of the paraffin-use landscape, rather than pro-actively as the leading and defining agency.

The move by the petroleum industry filled an important gap and has had important achievements, including successfully lobbying political support for stove standards. The establishment of PASASA is, however, also a strategic move for the petroleum industry, both economically and politically. Economically, the fact that 40% of South African households use paraffin (PASASA 2009) means they represent a considerable share of the paraffin market. With a potential aggressive restitution programme imposed by the new government, it was crucial to ensure that this market was secured, rather than risk being outside the policy-defining processes. Funding paraffin safety campaigns would ensure that paraffin use, and therefore the market for their product, continued.

Politically, it was also important because the liquid-fuels sector had been crucial for the apartheid state, as shown in Chapter 3, and in the post-apartheid era it needed to shed its apartheid linkages. In post-apartheid South Africa, the need to redress the disparities and injustices of the past has led to a unique relationship between the private sector and the state. Various initiatives, such as affirmative action, black economic empowerment (BEE) and other restitutions programmes are prominent features of this relationship. The industry has felt driven to participate in addressing disparities, as they fear that non-participation can have high political and economic costs[15]. Since certain major companies are seen as having been a part of the apartheid structures, in one way or another, they form what I call *blameable entities.* Such *blameable entities* feel they have to take politically visible strategic actions and be part of redressing injustices, even beyond government's framework. Such moves ensure that there is a trade-off between the costs of being policed by the state to meet its social objectives, and the costs of being a part of defining the environment in which they operate. By funding paraffin–health issues, the petroleum industry's position becomes one of a champion for solutions of a social problem. Although the petroleum industry's funding has yielded benefits for households and helped the development of safe stove standards, the imperative for the responses to the health impacts of paraffin were defined first, to meet economic and political interests, while social outcomes were a vehicle for fulfilling these economic and political interests.

While the petroleum industry represents a *blameable entity*, it was not the only player in household paraffin. The energy–health nexus with respect to paraffin is a junction between the energy source, the stove technology, the distributor, and the user.

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[15] In 2004, I was an intern with the Parliamentary Monitoring Group (PMG) in Cape Town, and the experience of being a "fly on the wall" during parliamentary sessions was enlightening on how companies and individuals strategise around BEE. I refer readers who are interested in BEE, its implementation and results in contemporary South Africa, to Johnson, R.W. (2009), especially Chapter 11, and Hirsch, A. (2005) and to attend to nearly daily news reports of who gets major BEE deals and their socio-political networks.

The studies reviewed in chapter 2 show the health impacts of paraffin may result from poorly designed stoves, fuel contamination during distribution and sales, or household behaviour, such as storing paraffin in drink bottles (De Wet *et al.* 1994, Matzopoulos *et al.* 2006). This means other key players, including stove manufacturers and stove retailers, paraffin distributors, and the households themselves also represent *blameable entities*, yet they did not take a similar corrective stand as the petroleum industry immediately after 1994. This seeming discrepancy can be explained in terms of the position and associated risks of *blameable entities*. Informal petroleum products distributors such as the members of PASASA, local retailers and stove retailers are too dispersed and have little capacity to finance projects. The cost for pursuing them might also be higher. On the other hand, households are not a viable *blameable entity* because they are a voting constituency, but are also perceived as poor and needing help rather than blame from the government. Further, the petroleum industry is comprised of mega-corporations with an internationally recognised brand which they must protect. This has implications for households depending on firewood who are not politically visible, as explained earlier with respect to urban households.

The gap in action can also been explained in terms of the lack of capacity in the energy sector that has been discussed in Chapter 3. With specific reference to the issue of paraffin, managerial and capacity constraints are seen not only in the delay in action, but also in how the action was eventually taken. An immediately effective ban on stoves without an available substitute sent a message of government's political will to address paraffin safety. Yet, it displayed lack of strategy on how to address the needs of those that depend on paraffin stoves. Firstly, it left millions of paraffin users without an alternative to the unsafe paraffin stoves. Secondly, it had an effect of displacing older stove designs sold in formal shops, with a range of new, unapproved but imported stoves without addressing the core problem. In other words, the move was a *symbolic* gesture of political will without substantive strategy, as expounded upon earlier in Chapter 3.

Free Basic Energy (FBE) and Free Basic Alternative Energy (FBAE) Policy

As the pace of electrification increased in the 1990s, studies indicated that there was a slow move from energy sources traditionally used by the poor, such as firewood and paraffin, to electricity (Davis 1998; Davis 1995; Prasad & Ranninger 2003). Davis (1998) showed that even after electrification, households continued to use a range of energy carriers, including paraffin and firewood. Such factors form the political, legal and social basis for the provision of FBE. In 2000 the DME officially announced FBE as part of the broader Free Basic Services Policy. Prior to this announcement, several municipalities were already providing different levels of free electricity, ranging from 20 kWh per household per month to 100 kWh per household per month, or had other forms of poverty tariffs.

In 2003 the DME released the Free Basic Energy Policy, which set 50 kWh per household per month as the amount of FBE that would be provided to poor households. According to the DME the motivation for the 50 kWh was that, on average, 56% of households connected to the grid were using less than 50kWh after electrification (DME 2003: 5). The DME stated that this amount of electricity would be "sufficient *electrical energy to facilitate access to electronic media, lighting and limited thermal application like water heating, basic ironing and cooking*" (DME 2003: 5), and that grid FBE can

be extended with the use of energy-efficient technologies. Table 5.1 shows how the DME calculates electricity use for a household that reaches the 50 kWh benchmark.

Table 5.1: Electricity use in a poor household according to DME

Item	Watts	Hours used	Days used	kWh	Qty
Energy saver light	11	5	30	1.7	1
Light	60	5	30	9	3
TV (B&W)	35	6	30	7	1
Iron	1000	4	6	24	1
Kettle	1000	0.5	30	15	1
Hotplate	1000	1	25	25	1
Light	100	5	30	15	1
Fridge (Small)	250	6.5	30	4	1

Source: DME, 2003:5

The DME paper does not offer explanations on how they made the assumptions for such a household, its level of income or whether it is rural or urban or whether the data used was gender-disaggregated. The wording of the policy is, however, the same as that of an EDRC report in 2002. Tracing the origins of the assumptions further suggests that the statement "*56% use less than 50 kWh*" came from research by Prasad and Ranninger (2003), because this is the only document that has this figure based on primary data. The DME policy itself quotes ESKOM, but without a date or full citation. The study was on electricity use in (pilot) urban and rural households in the Western Cape which had had access to electricity for six months before the study. By adopting this as a standard for national-level policy, the DME assumed that all consumers had made the change to stable electricity use. This appears to be an overly optimistic assumption. Further, they exclude the climate variations possible in South Africa's diverse geography. Lastly, since the data comes from a poor community which was assumed to be unable to afford electricity, setting 50 kWh per household per month as the benchmark for FBE amounts to equating people's inability to afford electricity to the quantity they need.

Table 5.1 provides further underlying assumptions that are questionable when we consider the demand-side perspective. First, looking at cooking, the calculation assumes that a household would require one hour of cooking per day. As shown in Chapter 4, households that cook traditional foods boil them for two to six hours. Even households that have eliminated traditional foods from their diets cook for longer than one hour per day. This is therefore unrealistic at best, even when thermostat controls, and therefore effective energy rating, is considered. Finally, the table assumes certain desires, lifestyles and rationale of the poor such as a small fridge and an old black-and-white television[16]. As I shall show in Chapter 6, rural people themselves desire urban lifestyles transmitted to them via urban–rural connections, television shows and by the rich among them. In Tsilitwa, only one household had a black-and-white television, and few households had a TV that was less than 21 inches. Others had microwaves and washing machines; and big fridges were preferred to small fridges. DME's envisaged household therefore has little in common with the rural households that I encountered. The question here is then, who are the poor and how are they defined? Secondly, there

[16] In fact, although I do not suggest that there are no black-and-white televisions in shops in South Africa, during my many visits to shops, including informal shops that sell appliances, I did not see any black-and-white television sets.

is an underlying assumption of what the poor want. This question will be further addressed in Chapter 6.

Although the DME assumes the availability of energy-efficient appliances, these are not available in rural areas, neither are comprehensive energy-efficiency campaigns, with the exception of ESKOM's colour-coded PowerAlert gauge on TV[17]. Although many households have one or two energy-efficient bulbs provided at electrification by ESKOM, they fitted the rest of the house with incandescent bulbs, and few understood that the bulbs given by ESKOM were energy-efficient. Under current circumstances, rural households are then unlikely to extend their 50 kWh by using energy-efficient appliances. This argument is not about whether or not 50 kWh should be increased, but to demonstrate its inadequacy in meeting the goals relating to health stated in the policy (DME 2003: 5). Therefore it does not help households to avoid the health impacts of energy use posed by fuels such as firewood, dung and paraffin, although it might provide relief for energy expenses.

In addition to the inadequacy of FBE as a measure for meeting the health objectives of the Energy Policy, targeting who gets FBE is unclear and problematic[18]. In Tsilitwa, ESKOM did a "*quick survey*" and selected households who should receive electricity and gave them special uploading cards. However, a look at these households showed that they comprised a mix of income levels and social status, from teachers who earn high incomes to poor households who depend on government grants. When I asked some of the poor households why they were not getting free electricity, they said they were not there during the survey or they did not know how to get it[19].

A flaw with FBE was that unelectrified areas, many of which are rural and some of the poorest and most marginalised in the country, could not benefit from it since its prerequisite was having access to electricity. Realising this, after criticism and research, the government developed the Free Basic Alternative Energy policy in 2005 (Mlambo-Ngcuka 2005), and started implementing it in 2007. The aim was to provide alternative forms of energy to unelectrified households, such as gas, coal or paraffin, costing an equivalent of the FBE (DME undated)[20]. There is, however, confusion about this among both beneficiaries and those who are supposed to distribute it. Firstly, households are unaware of the policy, and therefore cannot proactively claim their energy allocations. Secondly, local leaders are unaware of how to facilitate the process for their constituents. Two events, one in Cutwini and another in Tsilitwa illustrate this point.

When I returned to Cutwini in 2009, I discussed what had happened while I was away, *i.e.* 2008. One of the events was that in 2008, the councillor had announced that the government, through the development trust, would give free LPG to those that could

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[17] This is a strip of colour-coded message, in English, that comes on the TV screen when the energy demand increases. Three colours, green, yellow and red indicate good balanced demand, increasing demand and critical demand levels with risks of power cuts. This system has been in use since May 2006. Many of the people I watched TV in Tsilitwa with did not pay attention to this, especially because the critical stage was often from when they start cooking, to soon after the Generations soap opera (cf: Chapter 4). Many did not even know that it was meant to indicate that they must take measures to reduce electricity demand.

[18] The adequacy of FBE can of course be assessed with respect to other objectives of the Energy Policy. This assertion does not extend to these other objectives.

[19] Electricity receipts have a note in English on how and where to register for free electricity, but most people do not read the receipt since few have good command of English, but also because the writing is in small print and few are aware of its implications.

[20] Households in concession areas had already been receiving subsidies for the maintenance service from the energy providers.

not afford it. A member of the CDT wrote down some names and personal identity numbers of those who would get the LPG, and submitted them to the councillor. Later on, the people were told they would not receive full gas cylinders, but could take their identity documents to a specific shop in Lusikisiki that sells gas, and there they could buy gas for R70 instead of the usual R195. Some villagers went to the shop and bought this discounted gas, while others were told the gas allocated under this scheme was out of stock and they could not buy it. Villagers had expected a repeat, but as of the time that I left Cutwini, such an announcement or offer had not been repeated. When I tried to ask the councillor's representative about this issue, he was rather evasive and did not answer the question (Interview, 9th July 2009). The municipal strategic manager of Ingquza Hill was also unable to provide any information at all, and ended up not answering any of my questions but just gave me plans for integrated development. It is important to note here that when I returned to Cutwini in 2009, this was one issue that women often asked me about. Many suspected corruption, and others told me that the next time they are asked for identity numbers, they will not provide them because they never benefit from such programmes[21].

A second incident relates to paraffin distribution in Tsilitwa. One Saturday morning in June 2009 there was a long line of women and children jostling close to the post office. When I asked what was going on, it turned out that there was a government vehicle that was distributing twenty litres of free paraffin to "poor" households[22]. When I asked when the announcement had been made, the women told me they had just heard commotions and went out to see what was going on. Later in July, I asked the councillor in Tsilitwa under what programme this free paraffin had been distributed, and how poor households were selected. He responded that he did not know and had not heard of it. His remark, on how things are distributed, was particularly enlightening:

> *The problem is, sometimes these things are political. Like the food packages you asked [about before, M.N.M]. They [may be] distributed when elections are near.* (Councillor, Interview, 4th July 2009)

The councillor suspected that the paraffin was being given out because it was the start of winter, and that it would help the poor households to stay warm and was part of FBAE (Interview, 4th July 2009)[23]. Once again, there was limited awareness about what should be happening and why, even among the officials who are in constant contact with both local government agents and villagers.

People's reactions to the paraffin distribution in Tsilitwa were less hostile because they consider their councillor as having their interests at heart. However, many were dismayed that some rich households closer to the road had received the free paraffin while other poorer households did not. An example of a poor household that could have benefitted from the distribution was that of a blind woman who lives a few metres from the spot where the distribution took place. However, on Saturdays she is usually alone and could not go there because she did not know what the commotion was about. A few

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[21] I did not investigate whether corruption was indeed the motivation for this.

[22] After this incident, I included in the semi-structured questionnaire questions related to FBE and FBAE, but no one had heard how the paraffin distribution had been decided or when it would be distributed.

[23] It is important to note here that night-time winter temperatures between June and the beginning of August in Tsilitwa can be as low as one to five degrees Celsius, and day-time temperatures can range from five to 10 degrees Celsius.

metres further from her lives a retired teacher whose children work in urban centres. Her homestead can be classified as one of the well-to-do ones in Tsilitwa and had a Dover™ firewood stove (signifying that her socio-economic position had been better than most for a long time, since such stoves are found among those that were employed well before the 1990s), an electric urn, a microwave, an electric as well as a gas stove. She benefitted because she heard the commotion and had no constraints in going to receive the paraffin. Such basic lack of clarity in targeting or just communicating benefits to those that need help indicates the state of disarray that affects FBAE. This is further illustrated by the fact that FBAE, which was meant for unelectrified areas, was being distributed in an electrified area, meaning that some households in this village get a double benefit, as far as the claims of the FBE and FBAE policies are concerned.

This preceding discussion of the problems of FBE and FBAE point to two underlying problems. The first is a lack of understanding of who the target user is. The envisaged 'poor household' is based on a one-dimensional view of poverty, and an assumption that the poor have meagre and low-threshold aspirations (hence, the black-and-white television). Secondly it points to poor planning, emerging in part from a focus on rolling out programmes and attaining quantitative coverage, rather than addressing the depth of the problem, *i.e.* assessing the potential benefits.

Another factor hindering the benefits that poor households can get from FBE and FBAE initiatives is that most municipal authorities, the institutional setting within which these initiatives must be implemented, are not fulfilling this function. According to Marquard *et al.* (2007), by 2007 70% of ESKOM customers qualified for FBE, but only 65% of these eligible customers were getting it. The number of people not receiving FBE is also higher in rural areas than in urban areas. Attention to poor urban areas is greater than to the rural areas because the urban poor are able to regularly achieve political visibility through, for example, mass action or strikes. In the IDPs, most municipal officials do not include FBE financing and therefore do not get it or get an inadequate amount (Interview, IEC Manager, 10th September 2009). This assertion is supported by the absence of an FBE budget in Ingquza Hill's IDP (Ingquza 2008). Further, in an interview with the strategic municipal manager for Ingquza Hill (Interview, 9th July 2009), he was unable to articulate the criteria for the FBE or explain how many households get it. An assessment of the O.R Tambo Municipal District IDP report shows that all electrified households, and all households with solar connections in the district, receive FBE (ORTMD 2009: 17). This claim is inconsistent with my observations in Tsilitwa, where not all households receive it. The O.R Tambo Municipal District report shows that the district municipality assumes that electrified households automatically qualify for FBE, pointing to a lack of understanding among local personnel on how FBE and FBAE should be facilitated. A DME official told me:

> *The problem is that even DPLGs don't know what to do. They have no technical capacity and they do not put it in their budgets. If we see the IDPs in time, we might say, okay, there is no FBE here, but to be honest most of the times we never see them so they do not get the funding.* (Interview, IEC Manager, 10th September 2009).

Such a mistake is likely to have stemmed from the fact that there is an option for self-targeting FBE in that all households with a 10 Amp connection automatically qualify for it. However as noted earlier, the majority of the households upgraded to 20 Amps, meaning that they do not automatically qualify for FBE.

The implementation of the FBE and FBAE shows at least political commitment towards making electricity access cheaper. For those who can access these benefits, FBE and FBAE have relieved some of the financial burdens of using modern energy carriers. However, FBAE under the current (non-)strategy is too disjointed and *ad hoc* to yield real and lasting benefits. The benefits of FBE are also a limited response to the health objectives of the energy policy, because the amount is too small to displace firewood. This will become increasingly important where households cannot afford to buy the same amount of electricity as before because of the electricity price increases. As discussed in Chapter 3, they may then become more dependent on FBE. However, the real issue is not so much the adequacy of the amount of electricity which can be justified on the basis of the costs of supplying adequate electricity to a large proportion of poor households. A more critical problem in terms of this research lies in the underlying assumptions of both FBE and FBAE. Three underlying assumptions can be identified. Firstly, affordability is exclusively defined in financial terms, while issues of perceptions of affordability are ignored. Secondly, there is an underlying assumption about the nature of the poor. They are envisaged as having specific desires framed only in terms of their financial limitations: black-and-white TVs are an example of this assumption. Thirdly, electricity is seen as a fairly neutral artefact that supplants other technologies and brings about social change. In this sense, by ensuring modern energy access through electrification and FBE, the assumption is that a change to using electricity (including for cooking) will occur, and objectives of the energy policy will be met. I will explore these assumptions in more detail in Chapter 6, where the analysis shows that electricity does not align with policy objectives in such a deterministic and linear manner.

Related to this deterministic approach is the absence of efforts by energy policy intermediaries to get people to shift to cooking using modern energy carriers in order to meet the specific policy objectives they aim to address. In contrast, ESCOM in the late 1930s actively advertised and encouraged the use of electricity to displace manual labour, calling electrical equipment "*low-wage motor-operated servants*", whose use could lead to savings (Christie 1984: 116-117)[24]. Similar drives to influence user perceptions of the benefits of electrical appliances have been documented in America (Hughes 1993; Matly 2005; Nye 1990) and in Canada and post-war Britain (Parr 1999) and other countries in Europe (Matly 2005). While some of the promises documented by Nye sound exaggerated, *e.g.* electricity eliminated work and kept women younger (1993: 277) – a point that, interestingly, women in Tsilitwa also made – the argument I make here is that policy intermediaries could be more involved than they are in shaping how people benefit from modern energy carriers and what kind of benefits they perceive as important to invest in.

Integrated Energy Centres

In 2003, the Department of Minerals and Energy, in partnership with the business sector, established integrated energy centres (Parallax 2007) throughout South Africa. The aim of the IECs was to bring affordable, safe and sustainable energy services close to poor rural households (DME 2005). A secondary aim was to provide income-generating opportunities, serving as a co-operative bringing skills and income

[24] In the South African context where domestic workers were overwhelmingly black women and men in white households, such advertising of course had potentially serious negative impacts on black households' income-earning potential.

generation to the targeted villages[25]. The IECs were to be located where there was the greatest poverty, and the IECs were to be aligned with the IDPs of that particular local authority (Parallax 2007). The government aimed at having ten energy centres to begin with. The first IEC was established in Eastern Cape in Caba-Mdeni village in Alfred Nzo district, as stated previously.

Neither Tsilitwa nor Cutwini have IECs. However, a discussion I had with a number of IEC managers at the DME was critical in highlighting policy imperatives. Apart from the Global Village Energy Partnership (GVEP)[26], which funded one IEC from 2005 to 2006, all other IECs were funded exclusively by petroleum distributors. This prompted one DME official to say: "*as people point out to us in some of these conferences, we (IECs) are just another store for the petroleum industry, we are just paraffin shops*." A question arises whether this large involvement of the petroleum industry is simply a case of misunderstood restitution. Alternatively, it can also be seen as "policy capture"[27] and defines, overtly or covertly, how government will structure its policies. Contrary to the expectations of either the government or the villagers, this has not meant cheaper paraffin:

> *The villagers are supposed to get clean paraffin from the IECs* [but] *there is difference in purity in paraffin from companies, and when the IEC is sponsored by Total or Sasol, it only sells their paraffin. Sasol is more expensive than the unknown* [refers to unknown brands sold in informal shops, M.N.M]. (IEC Manager, 10th September 2009)

The higher costs of paraffin from the distributors have meant that villagers prefer to get their paraffin in rural towns where unbranded paraffin sells at a cheaper price than in IECs (Interviews IEC Managers, 10th September 2009). Any "extra" costs assumed by the fact that they have to pay for transport costs to and from the town are not truly extra costs to paraffin only, since households will also buy other household items for which they would have made the trip anyway. The high price of paraffin combined with the fact that most IECs are not located in villages, but rather along the main road, has made their products and services less accessible for the rural poor than envisioned. Alternatively, people can purchase their supplies at a price higher within the village, as they do in Cutwini and Tsilitwa, compensated for by being able to purchase it from a convenient location and under negotiable conditions such as paying in instalments.

When asked about how the IECs contribute to addressing health issues related to paraffin, two issues emerged. First, the IECs do not always sell the paraffin in pre-packed containers, but allow customers to buy child-proof containers available at the IECs. The customers are also allowed to bring their own containers. According to IEC managers, the vast majority prefer to buy using their own bottles, to avoid the cost of the empty bottle. When I bought a 5-litre child-proof bottle to use for paraffin in Qumbu town, it cost me R2.85, while the paraffin cost me R4.85 per litre at Boxer (one of the common and cheaper formal shops in Eastern Cape). The 'household economics' can be

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[25] Members of the co-operative are trained, largely in business management skills.

[26] GVEP is a global partnership of development agencies, developing country governments, academia, private sector and non-governmental organisations whose aims include, assisting in scaling up of sustainable energy projects, partners coordination and providing advice and small projects finance for energy projects. It was launched at the WSSD IN 2002.

[27] I use this term to mean a process and situation in which the policy space and resulting actions are dominated by interests of those whose actions were problematic in the first place. It is a term I have borrowed from Posner (1974).

illustrated in that had I brought my own bottle, the money used to pay for the empty bottle could have been used to buy an extra half litre of paraffin. Many customers, whenever they buy paraffin from the IEC, continue to re-use their soft-drink bottles as paraffin containers. These are the bottles that have been implicated in poisoning, because children mistake them for drinks (as shown in Chapter 2). However, I noted that the child-proof bottles were only child-proof before the first opening. Thereafter, the "proofing" seal breaks off and the bottle can be easily opened. Given this situation, combined with the costs of child-proof bottles and the lower penetration of awareness campaigns in rural areas, it is unlikely that households would invest in child-proof bottles which cost an equivalent of half a litre of paraffin, when they are not really child-proof once opened, and where average paraffin usage for cooking stands at 5 litres per household per month as it does in Cutwini and (to a lesser extent) in Tsilitwa.

The second issue that limits the IECs' role in reducing the health impacts of energy acquisition and use is that, at the time of the interviews, they did not stock any safe paraffin stoves. When I asked why this was the case, since the DME was supporting the campaign for safe stoves, one IEC manager replied:

> *This is what I mean when I say no enforcement. They should be having safe paraffin appliances. Shops have exploding stoves. Pakistani, Chinese stoves, they are there. So the people, they still want the paraffin and so they will buy those stoves. I'm telling you, these people* [government policy makers, M.N.M] *are not serious.* (IEC Manager, 10th September 2009)

On the other hand, both IEC managers agreed that incidences of paraffin fires are low in rural areas because the accelerant factors that are present in urban areas – small, crowded spaces, inflammable building materials such as paper and canvas – are, by and large, absent in rural areas. This does not address the issue of flammability due to use of contaminated paraffin. According to a PASASA executive, paraffin used for cleaning machine parts is sometimes taken and mixed with paraffin used for cooking, causing contamination and thereby changing flammability properties. However, the reasons for fewer cases of contamination in rural areas might be because of lower vehicle ownership, and fewer workshops and industrial solvents. Ultimately though, there is currently too little information to point at specific causes of differences between contamination incidences in urban and rural areas.

On providing information on energy–health linkages, the IECs sometimes have posters or information leaflets on their premises, but there is little active effort to communicate them. Where such efforts are present, they are not continuous, as will be illustrated by the case in Cutwini and Tsilitwa in the next section. For example, in Cutwini, the only paraffin safety campaign was conducted in November 2008. In Qumbu, the health LSA has 29 health centres, including Tsilitwa. The programme managers at the LSA reported that they had conducted paraffin safety talks in four out of the 29 health centres. These safety talks were held just once in each of the four centres targeted. This is unlikely to have reached a critical number of households, and once-off information campaigns are unlikely to result in sustained changes of long-standing habits.

The conclusion from the above discussion of IECs is that the focus on health within the energy sector is limited in favour of a focus on physical access to modern energy services. Secondly, there are too few IECs to have any appreciable impact on the health impacts of energy use, and progress in dealing with health impacts of sources such as

paraffin has been slow. Third, the IECs, by not providing safe appliances, support people's perceptions that the IECs are, in their current format, "*just a paraffin selling point*".

The way in which paraffin and its health impacts have been dealt with by the South African (public) energy sector suggests poor planning. First, the evidence from the framework of the paraffin "policy" situation discussed above suggests a vacuum in energy policy, specifically with respect to households. Secondly, the removal of VAT on paraffin to make it cheaper at a time when there were no safe paraffin stoves, and then banning stoves then in use without providing alternatives first, reinforces the sense of inadequate forethought. Thirdly, there was an unacceptable delay in action from the time that the adverse impacts of paraffin were acknowledged and the government had political power to address them, to the time when efforts were implemented, and even then, at the insistence of PASASA and other lobbyists.

Health programmes and initiatives in practice

Structure of the health sector

In the health sector there are various levels of implementation as shown in Figure 5.2.

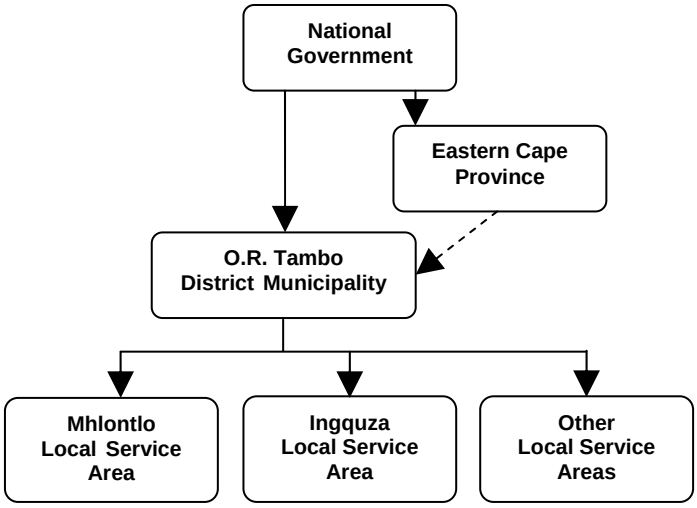

Figure 5.2: Structure of the public health sector in South Africa

Because of the lack of a clinic in Cutwini, there were no public health personnel in the village. Therefore, analysis in the case of Cutwini is based on the next level that is closest to the households, which is Ingquza Hill local services area (LSA), which was based at St Elizabeth Hospital and Gateway Clinic in Lusikisiki. This data was acquired through interviews, with occasional reference to observations made at the mobile clinic when it came to Cutwini. In Tsilitwa there is a clinic, which is the public-sector organisation that is closest to households. The analysis for Tsilitwa is therefore based on data from interviews with and observations of personnel at Tsilitwa Clinic. This is supported by data from interviews with programme managers from Mhlontlo LSA.

With respect to Cutwini, I interviewed the chief community health nurse who oversees community health matters for villages allocated to the Ingquza Hill LSA, including Cutwini. The hospital and clinic are located at 30 km from Cutwini, meaning at least an hour in travel time. They are the most common points of call for modern

health services for the residents of Cutwini. In Mhlontlo LSA, I interviewed eight programme managers, the chief nursing sister of Tsilitwa Clinic, and village health workers for Tsilitwa. They are responsible for transforming policy declarations into actions for the communities – where financing for this is provided – and Tsilitwa village falls under their jurisdiction. I conducted three interviews with the Tsilitwa chief nursing sister, dealing with three dimensions of her role[28]. I will focus on her role as nurse and clinic manager, while acknowledging that all three role dimensions are crucial to understanding perceptions and responses, as I will show later in this section. For village health workers, I conducted group interviews. Based on their education and income levels, they are even closer to the household level than the manager. Their perceptions further highlight the tensions between the roles of policy intermediaries.

Although I did not interview the manager of Mhlontlo LSA because she was unavailable, she assured me that since the municipal managers are under her supervision, they represent her position as well as the position of the provincial government of Eastern Cape, and the national-level position; she said that they "*implement policy from Gauteng* [*i.e.* government policy, M.N.M] *in a same manner*." As I will show, policy intermediaries such as programme managers implement policy as it is handed down, and do not divert substantially from it in terms of programme focus. It was therefore not critical to interview programme managers in Ingquza Hill. It is instructive to know that all health personnel interviewed come from villages and towns around the villages. For example, the chief community health manager in Lusikisiki (for Cutwini) was born and raised in Lusikisiki and worked at the same health facility for 35 years. She was a Pondo Xhosa, and thus shares (some part of) ethnic identity with the people in Cutwini. She had a four-year nursing degree and other forms of training. At Mhlontlo LSA, all but one share Hlubi Xhosa identity and were born and raised in Qumbu (where the LSA is centred). The one who had not been raised in Qumbu grew up in the rural area of Willowdale, about 90 km from Mhlontlo LSA. She was a Xesibe Xhosa, therefore shares a common Xhosa heritage with her co-workers. Moreover, there are also Xesibe Xhosa in Qumbu. Together, the sample of programme managers and nurses in Mhlontlo had an average age of 46 years, and the average number of years working in the health sector either as a nurse or as programme manager was 18[29]. Their area of focus has been Qumbu, with the one exception of a nurse who worked in Umtata for five out of her 16 years' work experience before moving to Qumbu. Like the chief nursing sister, they all had multiple role dimensions that included their professional roles as programme managers and their roles as mothers, as wives and as Xhosa women, to name a few.

In the following sub-section, I have separated the discussion of the interviewee's experiences into their professional experiences and their personal experiences, although they may not be wholly separate. This is because, in each interview, the nurses and programme managers referred spontaneously to experiences in their professional lives

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[28] The first interview which will be discussed here was in her role as a nurse and manager of Tsilitwa clinic, and this interview was held at the clinic. The second interview was in her role as a member of the VDF, and the interview was held at the guesthouse. The third was in her role as a homestead owner, and the interview was held at her home. During the last two interviews, there was no one else but myself, my research assistant, and, at the guesthouse, my PhD supervisor. During the interview at the clinic, there were village health workers at some distance but in the same patient receiving hall.

[29] When two outliers who have practiced for two and four years are taken out, then the average number of years they have practiced was 23 years. It is also important to note here that all programme managers had previously worked as nurses.

as well as experiences in their personal lives. This indicated that although the interview had aimed to address their professional experiences, their personal lives were intertwined with their professional experiences. In the analysis of professional experiences, I refer to their experiences with the health system and clients that seek or do not seek help. In the section analysing their personal experiences, I focus on the professionals' own experience, perceptions and responses as women who undertook firewood collection and cooked with firewood or paraffin, as well as women in a Xhosa tradition according to their narratives.

Professional experience, perceptions and responses of energy acquisition

The interviews with programme managers and nurses showed that none of their programmes and activities incorporated issues related to firewood collection and health. This, they reported, was because it was not in their training or their professional discussions, since this is "*just women's work*". Indeed there was no incorporation of women's household work into their programmes. Despite this exclusion, four of the programme managers reported that in their experiences both as nurses and as programme managers, women did complain about the impacts of firewood collection. To address these complaints, the nurses would administer painkillers and muscle-ache ointment.

One programme manager's insights into the situation of women was especially enlightening, because her Bachelor's degree was in Occupational Health, and the programme she managed focused on chronic diseases, and included impacts of work on health, particularly chronic health issues such as musculoskeletal disorders and respiratory illness such as COPD and ALRI. These illnesses are similar to those related to firewood collection and use of firewood and dung as shown in Chapter 2. An assumption can be made that, based on her training and her professional experience, this programme manager is more likely than others to recognise or at least to be sensitive to the impacts of energy acquisition and use, such as the ones presented in Chapter 2. Other programme managers, in contrast, dealt with more specific, and slightly removed, programmes such as HIV prevention. However, the interview showed the programme only focuses on occupational health only if the health impact results from paid work rather than any unpaid work. As explained in Chapter 2, this has to do with how the terms "occupational health" and "work-related health" are used in different disciplines.

In rural areas, the focus is particularly on miners and ex-miners. This focus on occupational health excludes women, particularly rural women who work mostly at household level or in informal settings. Other respondents also reported that women do complain about bad, compressed chests due to carrying of firewood, neck pain and stiffness, and that they suffer from broken bones, snake bites and general injuries. On the other hand, one respondent also stated that some young women collect firewood not because it is compulsory, but for "friendship reasons", *i.e.* as a way of socialising.

Another manager pointed out that people, including nurses, are not aware of the impacts of firewood collection on the spine and take it as part of life, *i.e.* they do not conceptualise musculoskeletal health problems resulting from firewood collection as health problems. The community health nurse in Lusikisiki pointed out that although, professionally, she realised that carrying firewood was physically painful and often resulted in chronic, life-long pain, the nurses do not address this:

> *We simply wouldn't think about it that way because like that information is not there in our training. They would treat the patient; they wouldn't send her away but they*

would just say it's backache and give amapainkillers and irubbing stuff. People, even nurses, are simply not aware. (Community Health Nurse, Interview, 15th April 2009)

Not everyone, however, regarded experiences of firewood collection in a negative light with respect to health. Three programme managers, two of whom were from Health Promotion and Community Liaison, considered firewood collection as beneficial exercise for pregnant women, and therefore encouraged it as part of health promotion:

We encourage them to collect wood as a form of exercise because you know with their work they are always doing work so they cannot go running [jogging, M.N.M] so we encouraged that [collecting firewood]. (Programme Officer, Health Promotion and Community Liaison, Interview, 20th April 2009)

When one of the officers said this, the other whispered in her ear and after hesitation, she added that: "*In case of pregnant women the first trimester is critical so we discourage it.*"

Table 5.2: Health professionals' perceptions and responses to health impacts of energy acquisition

Themes[30]	Number of persons reporting , N =10
Firewood collection while pregnant is an exercise	3
We don't discuss it but I see connections/Its relevant /Clients talk of it	4
We give them painkillers	4
We give them rubbing stuff	
Not important these are days of RDP[31]	3
Not important we are used to it/Our culture	2
My programme doesn't deal with that [32]	8

The main response to the impacts of firewood collection was to provide symptomatic relief by prescribing painkillers and pain relief muscle ointment. As one manager put it: "*there is no proactive way of dealing with this.*" The implication of this approach is that the problems which women report based on the symptoms they feel are not traced back to their causes. This has two critical implications. Firstly, that there is limited information on the health impacts of firewood collection that is passed on and recorded in health information systems. As such, morbidity burden assessments may underestimate them. Secondly, because there is no contextualisation of such health

[30] Nurses and programme managers were given open-ended questions in which they were asked their positions, what issues they addressed, and whether they in any away addressed firewood collection or energy use. These themes were generated from their answers afterwards through in-situ coding.

[31] This refers to the fact that these nurses felt that with mass electrification since the 1990s, the impacts of energy acquisition and use, were no longer a problem.

[32] For this specific answer, N is 8 because the overall programme managers do not deal with a specific programme.

issues as musculoskeletal disorders, there is no clear understanding of the various work contexts of women that result in musculoskeletal disorders.

Four programme managers attributed the lack of action to the fact that they, as nurses, were not aware of the extent of the problem. Two nurses also reported that in many cases, women report their problems very late to the clinics; in the words of one programme manager, "*they are in so much chronic pain they cannot move.*" The chief nursing sister in Tsilitwa also reported that in her experience, the worst case was when a woman who had been collecting firewood collapsed and started vomiting blood and later died. For her, this was probably as a result of excessive wood collection whilst having an underlying health problem. Although rare, the issue of vomiting blood also appeared as a theme in household interviews (See Chapter 6).

In addition to clients' reporting health problems late, one programme manager supervising the Chronic Diseases Programme pointed out that clinics, and even hospitals, do not properly diagnose the patients because of shortages of trained staff. Apart from the impacts of wood collection, the Chronic Diseases Programme manager also reported other work-related health impacts that women experience. These included hoeing, hard household work, carrying water and carrying big ceremonial pots, while for men, she attributed back ache to hoeing. This shows that women's musculoskeletal health problems cannot be attributed to firewood collection only, but to a range of daily experiences, including their other household and reproductive work, their habits as well as their socio-economic status.

In Chapter 3, one explanation for limited focus on women's work and health was the imbalance in focus on communicable diseases at the expense of non-communicable diseases. The nurse in charge in Tsilitwa, while referring to this, reported that one reason for the absence of interventions relating to energy–health linkages was because the focus was on "*fashionable diseases such as AIDS*". This statement should not be taken to mean that AIDS or other communicable diseases are unimportant. Rather, it captures the tendency to emphasise a few health conditions while neglecting a more holistic approach to health. This lack of a holistic approach to health was further talked about by the HIV prevention manager, who also deals with persons with HIV/AIDS, when she said:

> *Fatigue is a real problem for persons with HIV. Most of the women are positive and sometimes ill but still need to collect wood. And that's a big problem. And now we are even telling them to make gardens [under a project to improve nutrition of HIV-positive persons as well as their income-generating opportunities, M.N.M]. So they are just tired and it's not good for their health.* (HIV Prevention Manager, Interview, 20th April 2009)

Professional experience, perceptions and responses of energy use

Of the eight programme managers, seven reported that they do not address issues of smoke in their programmes, while one said she sometimes talks about the need for children to be away from the kitchen when boiling water. This she reported was to reduce children's smoke exposures. Table 5.3 below presents the main perceptions and responses of the programme managers and nurses, with regards to firewood smoke.

Table 5.3: Health professionals' perceptions and responses to health impacts of firewood use

Themes	Number of persons reporting N=10
Smoke does affect children but we don't talk about it	2
Smoke not a problem/Doesn't cause problems	3
We don't discuss it is not important /its normal	2
We tell them to open windows	3
Important only for ex-miners	3
My programme doesn't deal with that	7

The narratives of the nurses generally framed smoke as a minor irritant that women are used to. However, there was a distinct difference in the issue of paraffin use in two ways. First, the Health Promotion Programme had actively included paraffin in their programmes, and had conducted some awareness campaigns. It is, however, important to note that of the 29 clinics under the jurisdiction of Mhlontlo municipality, once-off awareness campaigns had been held in only four clinics, and Tsilitwa was not one of them. In Lusikisiki, the community health nurse was not sure about the number of villages targeted, but reported that they were "*too few*". Household interviews in Cutwini, however, showed that it was one of the villages that had held an awareness campaign meeting, in November 2008 (See Chapter 6).

Secondly, all managers and nurses in both locations acknowledged the health impacts of paraffin use, notably burns and accidental poisoning among children under the age of five. This can be explained by the fact that the main health impacts of energy carriers, such as firewood and dung, including chronic respiratory infections, are rather obscure, often accumulating over time, and by the time that the effects are seen, the causes as well as the confounding factors are not always obvious. On the other hand, impacts such as burns and paraffin poisoning are direct and visible in the short term, so that cause and effect can be seen and linked immediately. The difference between the lack of attention paid to firewood–health problems, and that paid to paraffin health problems, raises two important questions. The first is the question of what a health impact or a health problem is, and the second is who defines health impacts as such, questions which I shall answer later on in this chapter.

Personal experiences of energy acquisition

To discuss the experiences, perceptions and responses of the nurses themselves, I shall build the narrative around experiences of one Anti-Retrovirals Programme (ARV) manager, but will also draw critical experiences from other nurses' and programme managers' life stories. I have chosen the one case because the manager in question has worked in the health sector for 18 years, which is at par with the average working experience (in terms of time) for the sample. Secondly, her personal and professional story included themes that could be found in all the other interviews. She was therefore one of the cases that was representative of the general situation.

Throughout the interview she weaved in and out between her professional experiences, in which she encounters women with health problems from various

activities associated with household energy, to her own experiences as a young girl undertaking these activities in her own homestead[33]. Like her, other nurses recounted backache, mostly between the shoulder blades, running away from snakes, being bitten by snakes (two programme managers), leg pain and other injuries, including broken bones (one programme manager). Another respondent, responsible for the Chronic Diseases Programme, also gave detailed accounts of musculoskeletal problems that she experienced. As she talked, she was also constructing a medically coherent story for herself (*i.e.* she had not voiced this narrative before):

> *I was one of the people who did not know…and now knowing I have a slipped disk and compressing I now think that it could not have been the nursing only. Because these problems were from when I was young, and I always ended up with a small nyanda* [firewood bundle] *and sometimes no nyanda at all. People would laugh at me*. (Programme Manager, Chronic Diseases Programme, Interview; 20th April 2009)

She had lived with the pain until 2004, when she finally sought help and was diagnosed with a slipped disc and a compression of the sciatic nerve. The result was that her spine was fused in a surgical procedure to relieve pain and stabilise it. While her back pain may have been caused or exacerbated by other factors, she also recognised that the pain had started when she was a young girl, collecting firewood and water, and only got worse with subsequent trips, and later on in her nursing duties[34]. Coming from someone qualified in occupational health, this account was especially instructive, and supported the notion that for nurses themselves in this context, the impacts of firewood collection or carrying other heavy things is often in the subconscious and not a priority. Not only did this manager not seek help for her chronic musculoskeletal pains (which she described as excruciating) as a lay person, but she did not seek help even as a nurse. She finally sought medical help many years after quitting nursing to become a programme manager. To her, her back pain was not a health problem because "*you knew it was because you carry heavy firewood bundles*". All of the programme managers reported that as young women they had collected firewood and experienced its negative impacts on health, but "*that was how we lived then*".

This can be partially explained by the fact that, as a girl and later as a woman growing up in a culture in which firewood collection is a "woman's task", there was limited social space in which its negative health impacts could be expressed. I shall explore this notion further in the analysis at household level in Chapter 6.

Explaining response and non-response in the health sector

This sub-section explains the findings on experience, perceptions and responses to health impacts of energy acquisition and use from the perspective of the health sector. Before answering the questions raised throughout Section 5.3, I will first address the

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[33] She raised her leg and showed me a bloated scar which was a result of a snake bite while collecting firewood as a pre-teen. When I asked her whether it causes her any problems now, she reported that there was no problem, but it had been a serious bite that had affected her for a long time.

[34] She attributed this to lifting patients off beds, which is a common cause of back injury among nurses.

notion of *habitus porosity* between the various role dimensions of the health sector personnel, enlightened by Bourdieu's concepts of *schemes*[35] and *dispositions*[36].

Habitus porosity

In the nurses' and programme managers' discussions about both their professional and personal experiences, one theme that kept surfacing was the fact that firewood collection and firewood use for cooking was part of the Xhosa culture. In this way, the responses in the professional setting were not only narrated through a biomedical lens, but at the same time through the traditional Xhosa lens, such that the nurses and programme managers were using their various role dimensions, introduced in section 5.3, to perceive and respond to their clients' experiences as well as their own. This is important to recognise in the context of this research for two reasons.

Firstly, the professional roles as nurses and programme managers are western conceptualisations and involve *schemes* and *dispositions* acquired through western-informed modern education and training. Similarly, the related tasks of formulating and implementing programmes and the programmes' administrative "culture" are western conceptualisations born out of biomedical models of health, which create their own *schemes* and *dispositions* in line with such conceptualisations. On the other hand, the nurses and programme managers also embody their roles as mothers, as wives and as Xhosa women, largely born out of their Xhosa identity, traditional in their conceptualisation, with the *schemes* and *dispositions* these roles entail. The difference in *schemes* and *dispositions* of the two models, one western-derived and the other derived from Xhosa culture, is a potential source of conflict, or what Bourdieu (1977: 511) calls *habitus divided against itself*. However, their narratives showed that rather than conflicting or existing in a mutually exclusive manner, their *habitus* as health professionals, and their *habitus* as Xhosa women, mothers, and wives, constantly interacted and informed each other, so that each *habitus* is porous to the *dispositions, schemes* and therefore perceptions and responses of the other. Thus in their perceptions and responses, the nurses and the programmes they implement display what I term *habitus porosity*. These interactions sometimes led to perceptions from different *habitus* reinforcing one another, and at other times, conflicting with each other. Such continual interaction has critical implications for the perceptions and responses of health professionals. These interactions were especially apparent in interviews with the health professionals when they answered my questions with interweaved stories of their professional and their personal experiences. This mixing of narratives and the resulting *habitus porosity* is not surprising, because, as stated earlier, all of the health professionals grew up and lived in the rural areas of the former Transkei where access to modern energy carriers and to modern health services were limited. As women, they undertook and were familiar with energy acquisition and use, and were socialised in more or less the same ways, as household actors recounted in Chapter 4. For example, one manager said *igoqo* was no longer important as part of the culture, but was "*just a competition to separate capable from incapable women*". In this sentence, she at once denied the cultural aspect before articulating it with reference to notions of capable and incapable women, which are culturally constructed notions, similar to the notions of a

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[35] Bourdieu (1977: 27) explains schemes as immanent in practice, implicit rather than unconscious, so that they exist in the practices of agents but not in their consciousness or their discourse.

[36] Bourdieu (1977) defines dispositions as resulting from an organising action, a way of being, a habitual state, close to notions of tendency, propensity and inclination.

"*good woman*", as introduced in Chapter 4 and further analysed in Chapter 6. That said, for the programme managers and nurses, firewood collection seemed to have less cultural importance than firewood use. This is illustrated by the fact that the respondents paid for their firewood to be collected, or bought firewood loads. Finances, time pressure and opportunity costs are some of the factors that contributed to this change. In contrast, all respondents pointed out to the importance of firewood use in the Xhosa culture, for their clients as well as for themselves. Six of the 10 nurses and programme managers reported that they had built huts in their homesteads so that they could make a Xhosa fire (*i.e.* an open wood fire). Two other respondents complained that they could not have a hut because they lived too close to a rural town centre, where the government planning permissions did not allow huts. They were therefore forced to make a fire outside rather than in the preferred huts. For ritual fires, they travelled to their villages where a hut would be available. Another programme manager reported that her hut had a cement floor, and for her this had the major disadvantage that she could not make a fire in it. The importance of fire and firewood use is expressed in the comfort it brings, not in terms of warmth but in a therapeutic sense of cultural security. One nurse put it this way:

> *I like the firewood, the iziko (fireplace)…It is because it tells me who I am. It reminds me I'm Xhosa.*

All programme managers and nurses interviewed reported that they use predominantly electricity and gas for cooking. The reasons included affordability, having modern style houses with cement floors and not wanting the smell of smoke on their clothes. However, personal narratives also show that, despite these reasons, and the relatively high and regular incomes, and even the fact that they were working in the health sector, firewood use remains important for two reasons. The first was because of preference: "*I like it*" or "*grew up in it*", and the second was because firewood has cultural importance and is key to performing various rituals. So it is not surprising that in their professional roles, the majority of the nurses did not consider firewood use as detrimental to health, since it is important in their personal lives as well. The nurses here show that their Xhosa *habitus* overlays their western, biomedical *habitus*, raising the question of why this is the case?

The four explanations provided in Chapter 2 with regards to health discourse may clarify this. The neglect of work-related health discourse; the health discourse of Africa as an infectious place; the focus on women only as reproductive, maternal and sexual beings; and the limits in transfer of ideas between levels and disciplines: these together imply that nurses have a weaker conceptualisation of health impacts that fall outside common health discourses. These include the health impacts of women's work, such as energy acquisition and use. In contrast, their Xhosa interpretations of energy acquisition and use were not only developed over a lifetime, but were also not challenged or are inadequately challenged by alternative interpretations. Thus their Xhosa *habitus* in this particular case, is stronger and overlays their western biomedical *habitus*.

This leads to the answer of the questions on what is a health problem and who defines it, posed in Section 5.3 with respect to professional health experiences. It shows that within the biomedical model, health problems, and subsequent actions are not only a result of the application of objective science, but are socially constructed. As such, they are defined within the limits of history and politics, and by actors within specific levels. For the public health sectors of developing countries, health problems are

predominantly defined in western capitals such as in Geneva by WHO, where they do not always take into account the daily realities of locals in villages like Cutwini and Tsilitwa. In addition, since most research only looks at one particular level of actors, any divergences of discourses at different levels and the reasons for these are rarely addressed. This further illustrates the value of the multi-level perspective approach used in this research, which can expose such divergences and any convergences between discourses at various levels.

Energy sector and health sector revisited

The problem of compartmentalisation: There is nothing we can do

A common response among all the health professionals whenever they acknowledged the energy–health linkages was: *there is nothing we can do.* This perceived lack of alternatives was at times framed as the fault of the client: "*Even if you tell them they keep doing it"*. These two responses signify the lack of awareness that the energy sector does have various alternatives that can be used to reduce firewood use as well as smoke, which were the two main issues for which professionals felt there was nothing to be done. This is further illustrated by the fact that these professionals had never heard of improved cooking stoves, for example. To them, the only alternatives were electricity, gas and paraffin, which, some of them pointed out, were not affordable for certain poor rural households. After the interviews, the community health nurse in Lusikisiki asked me whether she should talk to her clients about smoke because she was concerned about its impacts on infants. I showed her pictures of the different kinds of smoke-reducing, energy-efficient stoves. She had never seen or heard of efficient stoves, and asked me my thoughts on why the government had not made this known in the health sector. She then asked for research references so that she could use them to convince decision makers on the need to address smoke. However, she was discouraged on hearing that most materials have to be accessed via the internet.

The lack of knowledge about the health impacts of energy acquisition and use and their solutions in the health sector is partly explained in terms of *compartmentalisation*, which is present in many other development sub-sectors. While within the energy sector, there is a specific community of practice that is aware of the energy–health linkages as shown in Chapter 2, it largely limits its discussion to the energy sector itself. Similarly, even where the health sector acknowledges the impacts of energy acquisition and use, these discussions are limited within the health sector. As a result, the impacts continue to exist in the health domain while the solutions continue to exist in the energy domain, and *vice-versa*.

The reaction of the community health nurse in Lusikisiki upon being told that most references are available on the internet points to a different level of *compartmentalisation*. This is the *compartmentalisation* which exists between the (academic) research domain and policy practice domain. A first level of this *compartmentalisation* is technical, in that the persons "on the ground", such as programme managers and nurses, rarely have access to channels of information such as the internet, while this is increasingly the experts' preferred channel of information dissemination. Secondly, there is the *compartmentalisation* resulting from the costs of access as well as the costs of rights to access to findings. Costs of access refer to costs of accessing the internet, for example, which would be high for nurses and programme managers in rural contexts such as the two LSAs. Even if the community health nurse

could find internet access, she would not have access to the bulk of the research since rights to these are granted through subscriptions that are often too costly for developing-country personnel and those not attached to academic institutions[37]. Thus, the different professionals, *i.e.* energy professionals and health professionals, work with parts of evidence and solutions in their compartmentalised domains, when in fact these parts of the puzzle have to be put together to make effective solutions.

Conclusions

The analysis in this chapter shows that the perceptions and responses of the policy intermediaries in the energy and the health sectors at local level are a result of a combination of historical, political, administrative and cultural factors. A common theme is that the sectors largely ignore the health impacts of energy acquisition and use.

With respect to the question of the structures for the delivery of energy–health objectives of the energy sector as outlined in the Energy Policy (1998), the analysis shows that there are no specific responses to address the health impacts of energy acquisition and use. This is because at local level, there are no comprehensive public-sector structures in the form of personnel who can translate the policy objectives to fit local contexts. The perceptions and response at national level are therefore transferred to local contexts without any adaptation. Firewood, a common energy source at local level in rural areas, and specifically in the two villages, has no specific programmes, whether under the energy sector, the forestry sector or local government.

Whilst the government at local level participates in paraffin safety through safety talks, for example, the drive for paraffin safety has come from PASASA. The funding of PASASA from the petroleum industry has to do with the strategic interests of the funders, both economically and politically. Politically, it is a result of a situation in which a politically visible social group, in this case, the urban poor, was made visible through media, statistics and the possibility of action. This provokes action from an organisation with the potential to be blamed, at high political costs, for specific negative social outcomes of the social group. In this case the petroleum industry, *i.e.* the *blameable entity*, has been the main funder for paraffin safety responses. Without specific policies at national level to drive responses with respect to paraffin use, local government (and national government) has reacted to the efforts of the petroleum industry. This has implications for poor rural households, who largely depend on firewood and dung, in that they lack a similar organisation with strategic interests in driving amelioration of conditions for household actors in this sector.

Since there are no specific programmes and structures to address energy–health linkages, the question of the main objectives of programmes to address health impacts of energy acquisition and use has been approached by analysing the objectives of energy programmes implemented with respect to households. With respect to the energy sector, the main objectives of key energy initiatives and programmes, at local level, are to provide physical access and improve affordability of electricity for poor households. The main programmes, FBE, FBAE and IEC, focus on physical and quantitative access, *i.e.* number or percentage of households reached with modern energy carriers, rather than a range of derived benefits such as health. Further, these

[37] Internet access, of course, has its own share of misinformation. In South Africa, an example is the information that the former Minister of Health accessed online, recommending use of beetroot and garlic for addressing HIV/AIDS, rather than providing modern medicines such as ARVs.

initiatives show that the efforts of the DoE and DPLG at local level prioritise the hallmark project of electricity access, rather than a comprehensive mix of modern energy-access options. While FBAE covers a wider range of energy sources, it is intermittent to such an extent that it is almost unimplemented in some areas (*i.e.* when one considers the case of Cutwini where only few households bought subsidised LPG but this only happened once, as of June 1010). This shows poor planning and a lack of capacity within the DPLG, the body responsible for the implementation of FBE and FBAE.

Apart from the poor implementation, the amount of energy provided cannot meet the cooking needs of the poor. This contradicts the claims of the policy behind FBE and FBAE, in that they do not address the health impacts of firewood collection and energy use. Additionally, with regard to FBE and FBAE, the inherent assumption is that by providing modern energy technology (electricity in the case of FBE), and making it affordable through a basic support tariff, this will automatically lead to the meeting of policy objectives. This assumption reflects top-down *technology determinism*. In this way, the approach of the energy sector at local level, which is a reflection of national-level approaches and is similar to that at the international level, is supply-focused. In particular, it ignores the historical, social and cultural conditions, as discussed in Chapter 4 that generate particular practices of energy users.

Underlying these failures of FBE is that the calculation of 50 kWh appears to be based on households' short-term experience with electricity. Further, the amount represents electricity use in households that experience constraints, including monetary ones. By setting this level as the FBE benchmark, the policy equates inability to use more than 50 kWh with their level of need or demand for electricity.

With respect to the health sector at local level, the question of the extent to which programmes and initiatives address energy–health linkages was addressed by examining the health programmes and actions. Here a mixed picture was revealed, in that while women's experiences such as pain from collecting firewood may be addressed as general pain, there are a number of limitations relating to recognition of the problems, and how they are perceived. There is also a difference in terms of these perceptions according to the energy source, in that firewood impacts are largely ignored and considered an unproblematic part of daily life, while increasingly the health impacts of paraffin are acknowledged.

In the local health sector, personnel are generally not aware of the extent of the impacts of the collection and the use of firewood and dung, interpreting them largely as minor irritants. Paraffin however, because of the visibility of its impacts, is acknowledged as harmful to health under specific conditions. The perception that the health impacts of firewood collection and use are minor irritants, while at the same time acknowledging that women report such problems to local clinics, is explained in terms of the notion on *habitus porosity*. The dominance of the Xhosa *habitus* over the biomedical health model among local-level health professionals, with respect to the energy–health nexus, is the result of the adoption of the health discourse of the international level with all its shortcomings, as explained in Chapter 2.

With the exception, to a limited extent, of paraffin, the analysis also shows that the energy sector and the health sector are compartmentalised. Actions and solutions that can be found in one domain are not known in the other. As a result, the responses to the impacts are limited by sector-specific discourses. *Compartmentalisation* also implies that the extent of the health impacts of energy acquisition and use is not well known, an

issue that will be partly addressed in Chapter 6, which focuses on experiences, perceptions and responses of household-level actors.

6

Experiences, perceptions and responses: Views from households

Introduction

This chapter presents ethnographic data on the experiences, perceptions and responses to the health impacts at a household level. The objective is to assess how, at household level, actors experience, perceive and respond to the health impacts of energy acquisition and use. In the first section, I analyse how energy is acquired, what health impacts of acquisition are experienced, and how household actors perceive and respond to these experiences. The second section analyses energy use, the energy carriers used in the two villages, their perceived impacts on health, and how households perceive and respond to these health impacts. This is followed by a section where I apply various concepts to explain the findings of the chapter. The penultimate section explains the findings of the chapter using Bourdieu's concept of *habitus*, which reproduces thoughts, perceptions, expressions and actions. The final section concludes by providing answers to the main research questions as addressed to household-level actors, with a focus on explaining why these actors perceive and respond in the way they do.

Energy acquisition: Experiences, perceptions and responses

In this section I analyse the experiences, perceptions and responses of household-level actors with respect to firewood collection, as the starting point of energy acquisition and use. The section starts with how women and men collect firewood in Cutwini, then Tsilitwa. This is followed by a discussion of how women and men both experience and respond to these experiences in the two villages.

Firewood collection in Cutwini and Tsilitwa

In Cutwini, where forests range from 2 to 7 km from the village centre, collecting firewood is largely the responsibility of women and girls. They start collecting from the age of 5 and continue well into their 70s, and occasionally 80s. This age range was also noted by Hunter in the 1930s (Hunter 1936). On average, women and girls from the age

of 13 years carry 25 to 30 kg of firewood on their heads. Most of this firewood is dead (dry) firewood that women collect from the forest floor or dead tree branches.

Picture 6.1: A common sight: Girls returning from firewood collection, young men having a walk around the village **(**Cutwini, 2009 (Photo: The author).

Women who collect firewood in Cutwini can be divided into three groups, according to the frequency with which they collect it. These groups are based on interviews and triangulated with data from the firewood survey. The firewood survey included 35 respondents, of whom two were boys aged 12 and 14, while the rest were women and girls from the age of 7 years to women in their 70s. The first group collects firewood once per week, and includes schoolgirls who collect on Saturdays. The second group comprised women and men who collect firewood two to three times per week. The third group of women collects firewood four to six days per week. The last group largely comprises those women working at the Mazizi Tea Estate and a few others who sell firewood in the village. Women working at Mazizi Tea Estate collect firewood every working day on their way back from work, since they pass by one of the forests.

In 13 of the 75 households interviewed in Cutwini, there was not a single member of the household who collected firewood, with the households instead buying all of their firewood supplies, while in seven other households the respondent did not collect firewood but there was someone else within the household who did. In 2007 the average price was R12 per head-load, and on average households that were dependent entirely on purchased firewood used one and a half head-loads every week, which equates to a weekly expenditure of R18 on firewood. While occasionally one might see a young boy aged 15 or less collecting firewood, males are rarely involved in this activity, although they may collect water if a wheel barrow is present to carry it in. On the three occasions that I did see men carrying wood in 2007, there were distinctive differences in how and why they collected firewood as compared to women collectors. In two cases they collected the firewood using an ox-cart. In contrast, women do not use ox-carts or other animals to collect firewood. In the other case, the man was carrying wooden poles on his shoulders for constructing a kraal. Men rarely collect wood for cooking purposes but may collect wood for construction, while women will collect wood for cooking as well as construction. Further, while women carry their loads on their heads, men will carry a load on their shoulders, a mode of carrying that women are not expected to use. When I

asked why there were these differences in modes of carrying and in the reasons for carrying wood between the sexes, the answer was that it is *umthetho* (a cultural rule). In two cases in 2009, I saw men collecting firewood in a half-ton pick-up truck. In one case the wood was to be used for home supply after one of the forests had been cut to the ground[1], and in the other case the wood was needed by church elders to use at an annual Easter pilgrimage to Durban (the wood had already been cut under a programme that was removing a section of the forest). Four other families also reported that boys in their households, all of whom were under the age of 15 years, collected firewood. The cut-off point of 15 years also represents the average age at which the community considers that the boys are now men. As stated in Chapter 4, in other Xhosa groups and for a few AmaPondo, it is considered the ideal age for boys to undergo circumcision. Below is a table showing the number of times that respondents collected firewood per week in Cutwini (Table 6.1).

Table 6.1: The number of times respondents collected firewood per week in Cutwini[2]

Average number of times the respondent collected firewood	Number of respondents (Household interviews) n=55‡	Number of respondents (Firewood Survey) n= 35*
Once per week	12	8
Two to Three times per week	18§	15§
Four to six days per week	10	16
Varies a lot	5	N/A

‡This n excludes 20 respondents who did not collect firewood, comprising 13 households where no one collected firewood and seven households where a person other than the respondent collected firewood.
§These groups had young men under the age of 15 in them, from four households in the household interviews, and two men from one household in the firewood survey. The rest were women and girls ranging from the age of 5 to 83.
*Includes four respondents who were encountered on two separate trips and separate days and their bundles were therefore weighed at two different times.

Of the 75 respondents asked about their firewood collecting experiences in Cutwini, up to 20 did not collect firewood. Of these, four were men and did not collect firewood because "*men do not collect firewood*". When I asked the men why this was the case the answers were either, "*it is not men's job*" or that "*the people will laugh at me*". Similarly, when I asked women if they would like men to be more involved in their

1 In 2009 there was a dispute when the villagers realised that the forest was being cut to the ground, *en masse*. It turned out that the village boundary, and therefore their ownership of this and other forests, had changed after the plantation management discussed this with the government without any involvement of the villagers. The villagers launched a series of negotiations with the chief and the government and referred to two earlier disputes and the resolutions that were made under apartheid that gave them ownership of the forests. This loss of forest, and particularly government's agreement to change rights without the involvement of village leaderships, represents one other example of loss of political control.

2 Three factors must be taken into account when interpreting this table which is aimed at giving a broad picture rather than being statistically representative. Firstly that those that never collect firewood might once in a while collect firewood for a neighbour's funeral or celebration. Secondly, figures for Saturday may be an underestimate because I never had an opportunity to weigh firewood loads on this day. This also means that school going children's firewood collection is underestimated if one reads this as a representation of contribution by age group. Thirdly, the figures represent persons not households. Household members can and often do have different collecting patterns especially if the household comprises of under 20s and over 30s, whom in most cases will collect firewood in different peer groups.

work, including collecting firewood, they reacted as if scandalised. At times (during social events or interviews) the women discussed two married men who could often be seen washing clothes or looking after their toddlers. The expression was that a man was "*even caught cooking*", while the other was "*caught washing clothes and looking after his toddler*" when his wife went to Durban on a business trip. Here, gender lines are rather clear and reinforced by both women and men, to the extent that some women would sometimes say "*making the boys cook, they abuse their rights*". Such expressions, particularly by women, provide insights into the sanctioning of both women and men who cross gender lines – here in terms of the gender division of labour – and the associated shame that goes with such 'rebellion' against the societal norm. However, those women who "*made their sons*" undertake 'female work' such as cooking, collecting firewood and stamping maize told me, "*They have to know in case I die*" or "*I don't want my son marrying early just because he can't cook for himself. That's not the right thing to do.*" Others expressed it in clear contemporary gender language: "*they said that now we are all equal, men and women. In this household, we are all equal."* In saying this, the women were referring to the constitutional rights of women and men publicised after the 1994 democratic elections.

As stated in Chapter 4, Tsilitwa has mostly plantation forests about 7 to 12 km from the village centre, further than is the case for Cutwini. Although I once saw a 7-year-old girl coming from a firewood collection trip with her sisters and grandmother (also reported in interviews), most girls in Tsilitwa start collecting firewood at between 10 and 12 years of age. This is because the distances are long and the forests are considered not to be safe for children under the age of 10. A dependence on firewood from the plantation forests has meant that rather than collecting firewood from the forest floor or breaking off dead branches, as collectors in Cutwini do, trees have to be cut down. Of the 89 respondents in Tsilitwa, only 27 collected firewood in the forest (all women) by head-loading. Of these, 18 used a combination of head-loading and tractor-collected firewood. There were also six respondents who collected their firewood from around the homestead, and these are excluded from this figure of 27. Of these six respondents, four used a combination of homestead-collected firewood with tractor-collected firewood. For the discussion of firewood-collecting experiences and the associated perceptions and responses, I will consider those that collect from around the home to be the same as those that do not collect firewood. This is because they take a few branches by hand from just a few metres away from the kitchen. In addition, they did not report any adverse experiences as a result of collecting firewood around their homesteads.

Those that collect manually from the forest in Tsilitwa can be put in four groups. The first is those who collect once a week, mostly on Saturdays; as in Cutwini, this group largely comprises school-going girls. The second group collects firewood two to three times a week. The third group collects it twice a month, and the fourth group collects firewood intermittently. The latter comprises those that buy some of their firewood in tractor-loads. Table 6.2 presents these different categories and the number of women in each category.

Table 6.2: The number of times respondents collect firewood in Tsilitwa

Average number of times the respondent collects firewood	Number of women as per household survey n=27
Once a week	9
Two to Three times a week	6
Twice a month	3
Intermittently	9

Of the 89 respondents, 83 said their households depend on firewood that is collected by some form of transport: a tractor, oxen or van. By 'depend', I mean that all or most of their firewood supply is brought in using one of these three forms of transport. Six respondents reported that their households do not collect any firewood. Table 6.3 presents the categories of firewood collectors according to their different collection methods.

Table 6.3: How residents collect firewood in Tsilitwa

Mode of firewood collection	Tsilitwa n = 83‡
Head-loading only	9
Head-loads and also uses tractor	18
Buys/Hires tractor	43
Uses own van/tractor	4
Uses oxen	4
Hires tractor and collects around the homestead	4
Only collects around the homestead	1

‡ Excludes six who did not use any firewood at all, as will be discussed later.

The fact that most of the firewood in Tsilitwa is from plantations has led to male involvement in household firewood supplies in a number of ways: in the cutting down of trees, and in the driving of tractors, vans and oxen. A few men will cut down a forest tree and then drag it to their own home to use as firewood. It is, however, important to note two things here with respect to the gender theme of this research. The first is that men rarely drag wood from the forest unless in desperation. They do it because there is neither (appropriate) female labour nor cash to purchase wood, since the forests are far and the terrain is rugged. The second is that, as opposed to the negative views on men head-loading, it is acceptable for them to drag firewood. As highlighted earlier, men can and do carry construction wood on their shoulders. A second probable reason why the dragging of wood is acceptable is that the end-use is not clear; it could be used as construction wood. Sawing wood, whether for firewood or other uses, is generally considered men's work.

There are three main pricing options for firewood that is collected by a tractor, each with a few variations. The first and most common is that the tractor owner provides labour for cutting and delivering the firewood. This is the most costly option (*i.e.* in terms of money paid, not perceived value of services provided) at R500 to R600 per tractor load. The second price option is where the tractor owner provides transportation, and the household either independently hires cutters or asks a male household member to cut down the trees. The third price option is where the household offers a cooked meal to the cutters in return for their labour, only paying for the firewood load. This latter category is occupied almost exclusively by elderly widows. Each option has a range of prices that the household can afford to pay, ranging from R180 to R600 per

tractor load, depending partly on the relationship between the customer and the tractor owner and wood cutters, on the amount of firewood carried, and on negotiations. Households may pay for their firewood in instalments that can range from paying over a period of two to six months. In this way, households choose an option and payment arrangement that is most suitable to their needs and within their financial limitations. I must note here that a R500toR600 tractor-load is used up in four to six months during what households called "*normal months*", and less when there are ceremonies and in winter, which coincide from June to the beginning of August.

In both Cutwini and Tsilitwa, two main factors determine whether a household collects firewood. The first is household demand, and willingness and ability to buy firewood from those who sell it. The second is the opportunity to collect, with part of this being due to a stockpiling strategy for times when one cannot collect firewood. Beyond these two factors, collecting firewood may also be affected by the weather and social events such as funerals, weddings and *imigidi*. Also for both Cutwini and Tsilitwa, not only is manual firewood collection the responsibility of women, it is often a lifetime responsibility, as indicated by the age ranges of the firewood collectors.

The difference in collecting practices between Cutwini and Tsilitwa is brought about by a combination of four factors: the longer distance to the forest; the security fears because of high crime levels; the availability of an alternative mode of collecting (*i.e.* tractors); and the acceptability of purchasing firewood. The use of a tractor for firewood collection has further been boosted by social grants, which make money available to a majority of the households including those that do not have an income earner. Further, there is a long history of purchasing firewood around Qumbu due to long-established state interventions in forest use. The forests used by the villagers are part of Tina Valley which Tropp (2006) shows was one of the areas that colonial administrators focused on when they enforced forest access fees over a century ago. However, of these factors affecting Tsilitwa residents it is security concerns and distance to the forest that were most often cited by both women and men as reasons for not collecting firewood manually. For the men in Tsilitwa whose daughters and/or wives did not collect firewood, the main reason they cited was that they were afraid that the women would be raped[3]. This perception was based on what they hear and know about the forest.

The above discussion shows that while firewood is a critical energy source, its acquisition occurs under different contexts, resulting in different dominant modes of firewood collection. Despite the different contexts of the two villages leading to different firewood collection practices, for those that collect firewood there were many similarities in the experiences of firewood collectors with respect to health. I will therefore discuss these together in the next sub-section.

Experiences of firewood collection in Cutwini and Tsilitwa

Women use short panga-like knives, commonly called *Bushu* in Cutwini and *Zembe* in Tsilitwa, to cut off branches if they cannot pick twigs from the forest floor and/or break off dead branches. When women in Tsilitwa have to collect firewood from plantation forests, they may also use axes to fell trees, although this is rare. Women from both villages cut firewood into suitably sized pieces either with an axe or by breaking it

[3] Discussions and action on personal security are almost entirely a male affair in Tsilitwa, even though during my stay it appeared that more women than men were attacked. When meetings were called to address the situation, only men were invited. This was a distinct difference from Cutwini, where women and men participated in meetings together and women spoke out as much as men.

against the knee. I must comment here that although women did not link this practice (or working on their knees to plaster floors) to cases of *amadolo* (*lit.* "knees", meaning knee ache) and *isingqa* ("waist" or waist pain), these conditions are particularly considered "*women's complaints*" in both villages. This suggests that repetitive stress due to the nature of women's work may be linked to knee and waist ache[4]. In contrast to knee ache, general back pain was seen as a health problem for both women and men. I also noticed a number of women with scars on the lower parts of their legs. These had resulted from accidents with axes while chopping wood. Women, however, did not normally bring this up in interviews and when I asked why the answer was often, "*Was I supposed to mention even things like that?*" Subsequent discussions clarified that these accidents are such a part of their lives that they become unworthy of reporting – that the women were normalising them.

Once the firewood collectors have an adequate amount of firewood, they tie it up in bundles and head-load their bundles to carry them home. These bundles may range in weight from 2kg carried by a five year old, 8kg carried by a 7 year old, up to 70kg for a bundle carried by a middle-aged woman[5]. Table 6.4 shows the average weights carried by specific age groups.

Table 6.4: Age range and average weights of firewood carried in Cutwini

Age range	Number in group N=35*	Average weight of firewood collected (kg)
<8	4	7
11-20	11[§]	20
21-30	10	24
31-40	4	28
41-50	7	29
51-74	3	27

[§]This group included two boys aged 12 and 14, while the rest were women and girls.
*Note that four persons were each surveyed twice, having been encountered on two different days. This adds four additional data points and brings the number of data points to 39.

As pointed out in Chapter 4, by the age of 13 most girls are considered mature enough to undertake any jobs that older women, such as their mothers, can do. In most of my observations there was little variation between firewood loads carried by a 13-year-old girl, and that carried by a 30-year-old woman. This implies that by this age, most girls have mastered firewood collection and head-loading.

Before proceeding to analyse the impacts of carrying firewood, two points must be made in terms of the gender literature currently available. The first is that most advocacy literature quotes 20 kg as the average weight of firewood that women regularly carry. According to the data in both villages, the average is actually higher, a finding supported by studies by Biran *et al.* (2004) as indicated in Chapter 2. The 20 kg may derive from an assumption that firewood weights are the same as water weights, which in itself appears to be based on a 'scientific' calculation of water density, and the

[4] Within occupational health at the turn of the twentieth century, work done kneeling down, such as polishing floors, was associated with housemaid's knee or Patellar Bursitis. This is now mostly associated with professions such as carpet layers (Stellman 1998).

[5] This was rather high and I weighed it twice to double check. The explanation could be that we weighed this load on the first day of the woman going out to collect firewood after a period of mourning. During this period she could not undertake any work, and so this may have been her way of making up for lost supplies in her homestead.

fact that many women use 20-litre pails. A second point to note is that most studies do not take into account the age of women, and either classify them as women in general or focus on older women only. My observations that girls as young as 5 years old head-load wood and gain a level of expertise at about 13 years, shows that studies that focus on women can gloss over and ignore the impacts of firewood collection on young girls, whose spines are probably more vulnerable since they are still developing. In Cutwini for example, I met a girl of 15 years who did not collect firewood because she had chronic backache, and took the anti-inflammatory Ibuprofen on a regular basis. While I cannot conclude that this was a result of firewood collection (which she had undertaken until she was 13 years old), it further illustrates the perversity of ignoring musculoskeletal health among women, as pointed out in Chapters 2 and 5. An important thing to note about this encounter was that I met her while she was returning from a firewood-collecting trip (she was not carrying anything), having escorted her friends. The fact that she regularly accompanies friends on firewood-collection trips indicates the social aspects of the firewood collection.

In both Cutwini and Tsilitwa, musculoskeletal problems, falls and snakes were the main problems experienced during collecting firewood. Tsilitwa also had an additional issue of security fears, particularly fear of being raped and murdered, which was not reported in Cutwini. Table 6.5 presents the impacts reported by respondents. Since the answers were not pre-empted and that since certain experiences were considered "*too normal to mention*", as discussed earlier, it is likely that the true numbers of the incidents are actually higher.

Table 6.5: Health impacts of firewood collection in Cutwini and Tsilitwa[6]

Reported impact[7]	Total number of women reporting Cutwini (n= 55)	Total number of women reporting Tsilitwa (n=27)
Upper back pain	24	10
Back pain	19	13
Whole body pain	16	7
Waist pain	12	1
Accidents	12	3
Broken bone	2	3
Cuts and bruises	10	5
Neck pain	6	10
Mid-back pain/chest pain	6	4
Legs	7	1
Snakes[8]	31	5
Exhaustion	9	7
Fear of criminals and rape	0	12
No impacts at all	5	1

Note: Multiple answers possible.

[6] Men are excluded here because those that occasionally collect firewood reported that they do it very rarely and barely feel anything. In terms of what men encounter, they reported that they encounter animals and see it as an opportunity to hunt rather than a threat. The impacts listed here were those generated by the women themselves, rather than a pre-defined list for them to choose from.

[7] With the exception of accidents, whose time frames are explained later in the text, all other impacts were reported as on-going or as "daily experiences", meaning that they are experienced during almost every trip.

[8] Tsilitwa had a lower number of snake incidents and this is likely be a reflection of the kind of habitat of the village. Cutwini village has more vegetation and more wild animals, including snakes. For example, during my stay there I encountered four snakes around homesteads, but none in Tsilitwa.

In Tsilitwa, only one respondent reported being chased and beaten (while in a group). Another woman reported a friend's attempted rape, during which the would-be victim stabbed the attacker with a screwdriver.

The prominence of gender violence and rape in the literature, as well as the potential health consequences of exposure to violence, including psychological trauma and the risk of infections with sexually transmitted diseases, make it worth exploring the issue further before proceeding with the rest of the analysis. First, it is important to note that none of the women who had been interviewed reported being raped. They only reported their fear of being raped, and that they had heard stories about other women being raped. There could be two reasons for this, the first being that no one reported being raped because of the traumatic nature of the experience. This would not be unusual since it is well documented that rape victims sometimes choose not to disclose such events because of the trauma and/or associated stigma. The second could be that these stories of rape, which respondents reported hearing about are just rumours. However, my discussions with key informants, village health workers and the chief nursing sister, supported accounts of occurrences of physical attacks, including rape, in the forest area. It was further supported by the village women's refusal to include me in their firewood-collecting trips. They feared that "*if a visitor to the village gets murdered or raped, the person who took her there will be in trouble*." This was unlike Cutwini, where once women knew that I could actually carry firewood on my head they were excited to go for firewood collection with me, and even initiated trips to the forests. When I approached the councillor about getting someone to go with me to collect firewood, he recommended that I go with the tractor driver (a man), to ensure that I would be safe. In the end, I never went on a firewood-collection trip in Tsilitwa[9]. Such reactions, combined with the crime rate as discussed in Chapter 4, suggest that the fears of criminals are realistic.

To counter these security risks in Tsilitwa, women collect firewood in groups, while in Cutwini it is not unusual for women to go to the forest alone, from dawn to dusk[10]. In addition, whenever possible they either alert or collect close to village men who are herding cattle nearby for added safety. However, the issue of security should be viewed with a caveat that criminality in Tsilitwa has less to do with firewood collection and more to do with the broader security context of the village as discussed in Chapter 4. This means that putting a stop to collecting firewood alone would not necessarily address the issue of criminality. It is also wise to keep in mind the women's explanations, as well as nurses' assertions that:

a. Women were raped even on the way to neighbouring villages to visit friends and relatives, and not because (or only when) they were collecting firewood.

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[9] Later on in my stay I was driven to the forestry office (at the edge of the forest). As I walked back another villager passed in his vehicle and immediately stopped to pick me up. As we drove back he admonished me for being in the forest alone, even though I had only been away from the forest office for a few minutes. The next day, I was warned by my Tsilitwa 'mother' (who had been told about this) not to be *"stupid, because this is a bad village"*.

[10] I have seen lone women twice in Cutwini come from the forest with a pile of firewood, one at about 7:30 a.m. and the other at 8 a.m., meaning that they probably went there at about 6 a.m. In another case while doing a home stay, the makoti of that home went to collect firewood with a friend at about 6 a.m. At other times, a woman could be seen coming from the forest alone, at dusk. This was never the case during my stay in Tsilitwa.

b. Most of the criminals that women and men encountered on pathways had the initial intention of stealing mobile telephones, and the violence was more of a by-product of this intention. Most murders were not premeditated but were instead an effort to avoid identification.
c. The majority of rape cases occur within people's homes and/or neighbourhoods, and are often perpetrated by acquaintances, which is a well-documented fact in rape studies around the world.

Having made this explanatory detour, I shall now return to the analysis of the rest of the reported experiences in Table 6.5. The women in Cutwini reported 12 accidents, and of these, three required hospitalisation, while two others reported that accidents limited their work activities at home for at least one week each. One 44-year-old woman had had a broken arm, having fallen from a tree while breaking of branches. The arm never set properly and remains crooked, although she reported that it does not cause any pain or problems. The absence of hospitalisation in Tsilitwa can be partly explained by the fact that there is a clinic in the village and people can commute from home. In Cutwini, women would have to travel 30 km to the hospital[11]. A second explanation is that since most of the firewood is plantation wood, women rarely climb trees, which reduces the chances of falling from a tree and breaking bones and other serious injuries that require hospitalisation. A third explanation is the fact that relatively more households in Tsilitwa buy firewood, so that the reduced manual collection results in reduced firewood collection-related accidents. With the exception of broken bones and accidents requiring hospitalisation, all other accidents were those that had occurred within the last three months prior to the interviews.

Apart from the pains listed in Table 6.5, which were those experienced soon after firewood collection, chronic musculoskeletal pains were common among both women and men in the two villages. Women attributed the chronic pain to hard work, especially carrying things on the head *(siyathwala kakhulu, siyathwala kakubi* meaning: We head-load a lot, we head-load badly). In addition to this, they also attributed chronic pains to hoeing and plastering houses. They specifically related "*side pain*" and torso muscle ache to plastering houses. Three women also said life's stresses were contributing to their aches and pains in the neck. For men, chronic back pain was linked to hoeing and working in mines. Old age was another factor mentioned by persons of ages 70 and above. And for the women and men in Cutwini, other sources of musculoskeletal pain that respondents reported were linked to their work at the tea plantation and with the government program *Working for Water*, where they cut down invasive tree species. Both of these work-types require that they stay standing for long periods and have repetitive arm and torso movements. I also wondered to what extent, especially for the women who sat on very low benches or on the floor, such postures contributed to back pain. Personally, I found that sitting on such low and thin benches made my back ache. Nevertheless, there was one major difference with the back pain related to firewood collection. Women included upper back, shoulder and neck tendons when discussing musculoskeletal pain related to carrying firewood, while when men discussed musculoskeletal pain, they focused mostly on lower back pain. Based on responses and my own experiences, firewood collection is one of the many factors contributing to musculoskeletal pain, in addition to tasks such as hoeing. However, hoeing is becoming

[11] The clinic and hospital are 3 km from the town centres of Lusikisiki, which itself is 27km from Cutwini.

less manual. In Tsilitwa, households tend to hire a tractor to plough their gardens, for which they pay R250. And as stated in Chapter 4, the fields have largely lain fallow until recently, particularly in 2009 when government was ploughing these fields for the owners. This, and the fact that water is nearer to homes compared to firewood, might leave firewood collection as one of the main work-related links to musculoskeletal injuries[12]. It is important to note here that although water is collected more frequently than firewood, its weight is lower, and all but one woman in Cutwini said that collecting firewood was harder than collecting water. Similarly in Tsilitwa, those that collect firewood considered that collecting water is easier than collecting firewood. However, one must also take into consideration the fact that water collection tasks are daily routines, while firewood collection is undertaken two to three times a week in general. The cumulative impacts of carrying 20 litres of water every day, sometimes several times a day, can therefore not be dismissed.

While discussing impacts of firewood collection in one interview in Cutwini, a new theme came up, namely firewood collection during pregnancy. A woman, who had a two-weeks-old baby, reported that she had experienced lower uterine pain when collecting firewood while pregnant. I therefore added a pregnancy-related question for obviously pregnant and post-natal women[13]. In Cutwini, there were five women who discussed their firewood collecting experiences while pregnant. All of them reported uterine pain. One of these women stopped collecting firewood in the fifth month of pregnancy. Three collected it until the eighth month of pregnancy. And one continued to collect until just before giving birth[14]. In Tsilitwa, the two pregnant women I had interviewed had stopped collecting firewood well before they became pregnant. It was therefore not possible to compare cases. However, similar responses also came up in focus group discussions with pregnant women and men with infants in both Cutwini and Tsilitwa.

Apart from the impacts listed in Table 6.5, some women who had underlying health conditions also reported that collecting firewood exacerbated these. In Cutwini, of the ten women who reported that they were HIV-positive, six reported that firewood collection had a negative impact on their health. This was either because of fatigue or anxiety that collecting firewood and other hard work would make them vulnerable to illness. One woman said she had been anxious at the beginning of her diagnosis in 2007 (during which she was also being treated for TB and had an infant daughter), but during our discussion in 2009 she reported that she was no longer anxious. Three women in Cutwini had stopped collecting firewood because of their HIV diagnosis. Of these, two had AIDS and were very weak. The other had stopped collecting firewood at some point in 2005 because of fatigue and headaches, and she reported that she changed to cooking using LPG to protect her health. In Tsilitwa, there were two women who reported that they were HIV-positive. One of them was ill and had stopped collecting firewood. The other did not want to recount her experiences except to say "*everything has changed now*". Apart from being HIV-positive, other respondents also reported other health

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[12] Work related as opposed to psychosomatic linkages of body pains.

[13] I did not ask this to women that were not visibly pregnant and did not disclose their pregnancy because of associated taboos of revealing an early pregnancy.

[14] I was rather shocked (and impressed) when the same week she had collected firewood with me and others, I was told she had given birth to a baby girl and had entered *efukwini*. The fact that she gave birth the same week that she collected firewood underscores how late into a pregnancy some women continue their firewood-collecting tasks.

conditions as being worsened by collecting firewood. Critical among these was the issue of vomiting blood. This was reported by one woman in Cutwini who had undergone surgery to remove polyps or tumours in her oesophagus, and two other women from Tsilitwa who had TB and suspected that this made them particularly susceptible. These accounts appear to be similar to the one recounted by the nursing sister of Tsilitwa clinic who reported that a woman died after vomiting blood whilst carrying a firewood bundle (see chapter 5). Although these appear to be rare incidences, such susceptibility to vomiting blood among persons with TB and other specific underlying health problems might be related to "*chest compressions*" that women reported feeling when they collect firewood, signifying strain to the chest area.

Table 6.5 and the discussion above show that musculoskeletal pain and injuries are a critical experience for women who collect firewood. However, there are other issues in their daily lives, particularly related to other household and reproductive work, that also add to the burden of musculoskeletal disorders, for both women and men. Further, it shows that other underlying health conditions, such as being pregnant or having other illnesses, can be negatively affected by collecting firewood. Since, despite the stated impacts of firewood collection, women are forced to continue collecting firewood, understanding how they perceive and respond to their experiences is critical, and this is discussed in the following section.

Perceptions and responses to firewood collection experiences

In this sub-section, I discuss the perceptions and responses to firewood collection. I have discussed them together because they are not mutually exclusive; perceptions govern responses and, in turn, responses can be a reflection of perceptions. I shall answer the question of perception and responses by looking at the evidence from three angles. The first angle is to look at how women and men collect firewood. The second angle is to look at why some persons collect firewood and others do not. The final angle is a direct look at the behaviours women engage in to counter their experiences, if at all.

As pointed out earlier, women use a cushion ring when carrying firewood. This protects the scalp from the bruising caused by the firewood bundle, and acts as a shock absorber which reduces injury such as that caused by stress and strain on their necks. This is a practice passed on from generations and that is considered a natural part of firewood collection. However, the use of cushion rings on the head has limited protective effect, since women still report musculoskeletal problems. In Cutwini and to a lesser extent in Tsilitwa, women wore gumboots and trousers, often under dresses, to protect their feet and legs from injuries. Some women, however, could not wear trousers because it was considered disrespectful of one's husband, disrespectful of one's in-laws and other women, being immoral and/or being modern. Another limitation in the case of protective wear is that some women have never had gumboots, since these are from their formal work (Mazizi Tea Plantation and Working for Water programme). By collecting in groups, or alerting men they know that they are collecting firewood in the vicinity, the women in Tsilitwa ensure that they have added security. Once again, this is limited by the fact that women have no way of ensuring that there will be male acquaintances within whichever area they are collecting firewood.

The second angle of analysis is to examine those households that do not collect, and to ask the question why they are not collecting firewood, and whether there is a demonstrable link between firewood collection and health outcomes. As mentioned earlier, 20 respondents did not collect firewood in Cutwini, and of these 16 were

women. As for the men, all of their reasons for not collecting firewood were the gender divisions of labour as mentioned earlier. In Tsilitwa more households did not collect, but those that are presented in Table 6.6 represent the proportion interviewed before the responses reached saturation.

Table 6.6: Women respondents' reasons for not collecting firewood

Reasons for not collecting firewood	Number of women in Cutwini N=16	Number of women in Tsilitwa N= 83
Our household buys firewood/ Too far and criminal threat*	13	56
I am too old	4	2
I had an injury/illness	2	0
I got tired and stressed because of collecting firewood	1	5
My husband died[15]	1	0
I'm lazy	2	3
There is no *makoti* here	2	4

*For this response, in Cutwini, respondents reported neither distance nor criminals as reasons for not collecting firewood. The answers that the *"forests were too far"* and that *"we stopped collecting firewood because of criminals"*, were encountered in Tsilitwa only, with a combination of *"our household buys firewood"*.

Of the reasons given in Cutwini, "*being tired and stressed by collecting firewood*" is a direct health impact reported. There are two observations to be made from the above table. First is the fact that the main reason for stopping collecting firewood in Cutwini is the ability to buy it. The 13 households where no one collected firewood were also households that displayed limited female labour for collection – in combination with other factors – because the older females work full- or part-time, and younger females are absent or go to school. In other cases, it was because of there being one female only, and that female having a physical disability or other underlying concern. Nathan & Kelkar (1997) have referred to the trade-offs of opportunity costs of women's labour. Thus, when the women can find more economically valuable uses of their time, they might stop collecting firewood. This is supported in Tsilitwa by three women who reported that they had stopped collecting firewood because they were now running businesses. This economic aspect is particularly important, since it was the income from the economic activity that enabled the women to purchase the firewood. It must also be stated here that in Cutwini, where a household purchased firewood and had an income earner, the income earner was more likely to be a female who had previously collected firewood, further supporting Nathan & Kelkar's thesis of opportunity costs (1997).

As stated, distance and fear of crime are the primary reasons given for changes that have occurred over the years, whereby the majority of the households in Tsilitwa have their firewood collected by tractor, and these two factors account for the main difference in firewood collection modes between the two villages. Another factor affecting change is underlying health problems, including age. Apart from these factors, there are two

[15] I must note that while a widow in mourning will sometimes not collect firewood and do other heavy duties, this particular woman was well outside the mourning period. Her husband had been dead for four years. The mourning period for widows in both Cutwini and Tsilitwa is twelve months if the person died of a long illness and "natural" causes, and six months if the person died in an accident or if the death was sudden and difficult to explain. Men are not obliged to undergo a mourning period when widowed.

sets of answers that must be examined further that give insights to perceptions and responses. The first set is: "*I stopped collecting when my husband died*" or "*because I'm not married*" or "*I do not live with my in-laws*" and "*There is no makoti here*". All these relate to a woman's state of being married, and I therefore code these answers as 'marriage reasons'. The second set is "*because I'm too lazy*", answers that I will examine more closely in the following sub-section[16].

Making of a 'good woman' and a 'good home'

This section examines the meanings in women's answers collectively coded as 'marriage reasons', and those that claim to be lazy. One aspect of firewood collection emerged serendipitously. While asking about firewood collection patterns, one woman told me that she went to collect firewood once a week. Her daughter said she collected firewood three times a week. Her mother then added that this was because her daughter wanted a good *lobola.* When I asked the daughter about this, she replied that she wanted people in the village to understand that she "*was not a lazy woman*". She would make a "*good makoti*". On another occasion, a young woman who had become a friend was getting married. She was hidden at the prospective parents-in-law's homestead, and I wanted to see her because I was curious about what went on during such a ceremony. I was told that she was in hiding (I could still visit her), and the only time she could get out was to collect firewood, which she would use to make *igoqo*. After the negotiations (*i.e.* when she was officially a wife), she would then get out of the house and prepare food for her new relatives. From that time on, she would be a *makoti*, and would have to have an *igoqo* in an appropriate place within her (new) homestead. What then is *igoqo* and how relevant is it to the discussion on energy and health? First and foremost, an *igoqo* is a neat pile of firewood that a woman makes in her marital homestead. It can be taken to have two purposes. The first is as a cultural artefact, and the second is for practical purposes.

As a cultural artefact, it has at least four purposes. First, it symbolises a woman's industriousness. One 30-year-old woman in Tsilitwa told me:

> *It's [igoqo] important because my parents will be proud of me, and my husband's people will know that they taught me well at home.*

In the past, women would compete to make the biggest and neatest *igoqo*, and the best one represented the most industrious woman. Secondly, it symbolises the woman's place in the homestead. *Igoqo* is therefore seen as the artefact(ual) opposite of the man's artefact which is *sibaya* (cattle kraal), and is accordingly located opposite to the man's place which is the *esibayeni* (at the kraal); the two being place on either side of the *indlu* (main hut). Thus when there is a gathering where women and men must sit outside, they will sit *egoqweni* (at the *igoqo*) and *esibayeni*[17] respectively. Women's rituals will also take place by the *igoqo,* while men's rituals will be conducted at the *esibaya*. Thirdly, although this cultural purpose has largely disappeared, *igoqo* is used to announce pregnancy and birth. When a woman wanted to announce her pregnancy, she would

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[16] I must note here that one of the women in Tsilitwa who said she is too lazy to collect was a 71-year-old woman. She then asked me to go to interview her sister, who continued to collect firewood at the age of 87. However, the issue was not that she was the younger of the two, but rather that she was a woman and did not collect firewood.

[17] Some homesteads that did not own cattle nevertheless built *isibaya* for ritual purposes, or still had a place around the homestead, located opposite the side of the hut with igoqo.

make a fresh *igoqo*. Once the baby was born, she would separate the *igoqo* into two piles and spend about 10 days in *efukwini*. Upon exiting *efukwini*, she would once again combine the two firewood piles into one, signifying she is no longer *efukwini*. The fourth is that the *igoqo* symbolises the transfer of reproductive power from the elder *makoti*, now a mother-in-law, to the new *makoti*. Reproductive power relates both to work in the homestead and biological reproduction[18]. Since at least one *makoti* lives with her mother-in-law, new relations and hierarchies have to be formed. The older woman takes on her roles as a mother-in-law and grandmother, while the younger woman now assumes the role of a *makoti*. When the older woman hands over the role of *makoti*, she also hands over household tasks. At the *kwendisa* ceremony when the *makoti* comes out after *lobola* negotiations, her *igoqo* implies she is now responsible for the work around her new homestead. It is now the new *makoti*'s responsibility to cook, collect firewood and (hopefully) continue the paternal lineage by bearing children. The older woman might collect firewood if she wants to, but this is not an obligation, and a 'good *makoti*' might even stop her from doing so.

However, the most common purpose of *igoqo* currently is practical. This is reasonable since weddings and marriages themselves have become rare (see chapter 4). Its practical purpose is for keeping firewood available for cooking and for keeping warm. But this practical purpose is not completely removed from socio-cultural ties. By making an *igoqo* during *lobola* negotiations, a woman will not have to run around looking for firewood during the event and thereafter. The same goes for the *igoqo* one makes while pregnant, which she will use soon after childbirth when she is unable to collect firewood. Thus, whether a woman is married or not, industriousness and preparedness are prized cultural assets. Women for example would reply:

> *Of course igoqo is very important, because you cannot be looking for firewood when you have guests. What kind of a woman would you be?!*

In other words, a 'good woman' should be industrious enough not to be caught unawares without firewood. Such a woman is considered to have made a 'good home'. If a home were to have two or more *makoti* (for example two married brothers still lived in their childhood homestead), their wives, who are the *makoti* for the homestead, would make one *igoqo* only. This is because the homestead sees itself as a single and united unit, "fed" by one *igoqo*. Within these conceptions of *igoqo,* the notion of *"lazy woman"*, in contrast to the industrious woman, starts to become clear. The ability to collect firewood is seen as an asset for a woman, *i.e.* a form of cultural capital. This has the implication that women see firewood collection not only as their responsibility or as hard work that has the potential to harm their health, but also, in part, as a definition of what makes them '*good women*'. The reply, *"I stopped collecting when my husband died*" then becomes more meaningful. Similarly, another who says "*I'm happy to collect because I can feed my husband and children. And our parents can be warm*" sees fulfilling her roles as critical. Yet the question arises: considering that the majority of the women in Tsilitwa buy their firewood from a tractor, is the concept of *igoqo* still relevant when there are other energy-carrier alternatives available? Furthermore, with the high rate of women-headed households and a reduction in marriages, is this

[18] It must be noted that any of *makoti*'s children born before *kwendisa*, even if fathered by her husband, are not considered her husband's children unless he has paid "damages" on top of the *lobola*. Such children belong to the woman's father and not her husband. For a discussion on parenting rules, see Kuckertz (1990).

firewood-collecting skill still valued? And therefore is it relevant in the analysis of the question of energy and health? To answer this, I first asked some respondents whether they knew what *igoqo* was. Only one 20-year-old male out of the eleven males asked did not know *igoqo.* Two younger girls, both aged 16, knew about it and that *makoti* has to make one, but did not know "*all the details about it*". I asked women and men about the importance of *igoqo* in current times and contexts. I made a special effort to focus on younger men. Among these young men, I also wanted to know whether it would matter that the woman they married could collect firewood or make *igoqo*. This special focus on young men, and questions on women they would want to marry, was important because they, I assumed, would play a large part in (re)defining what constituted the 'good woman'.

Table 6.7 presents a summary of the results on the importance of *igogo* in Tsilitwa. The sample comprised 31 persons with ages ranging from 16 years to 84. Of the 31 persons, twenty respondents were women and eleven were men.

Table 6.7: Is *igoqo* relevant now?

Sex of respondents N=31	Average age of respondents	Number of respondents in this group	Number of respondents - It is important	Number of respondents - It is not important	It is important for practical reasons	It is important for cultural reasons
Females	22	5	5	0	5	5
	44	6	2	4	2	1
	65	7	6	1	7	4
	77	3	3	0	3	2
Males	22	8	7	0	7	7
	61	3	3	0	3	2
Overall	43	31	26	5	27	21

Table 6.7 shows, firstly, that all men felt that the *igoqo* is still relevant. However, in addition to the *igoqo*, they also felt that a woman should be well versed in other household work as defined by the gender division of labour within their cultural context. Secondly, older women were more likely to say that *igoqo* is not relevant because "*culture is disappearing*" and that "*today's modern women do not know how to make it*". Yet they continued to say "*a house is a house because of igoqo*", and proudly declared that they had *igoqo*, often taking me to see it. Table 6.7 shows that even though more women of average ages 65 and 77 said *igoqo* is not important at first, the majority of them (spontaneously) went on to explain why it is both culturally and practically important. Younger women, although less aware of the various cultural dimensions of *igoqo*, knew of its linkages to the definition of a 'good woman'.

There are also four comments made that are worth keeping in mind in assessing the relevance of *igoqo*. The first comment was made by two 16-year-old girls. They said it was important, but not in their homes (*i.e.*, they themselves did not make one nor did they collect firewood). However, they also went on to say that they would make an *igoqo* if their husbands' relatives required them to do so. The second comment was made by a 30 year old who said that making *igoqo* was important, and that her family would be proud of her, and that her husband's family would know that she had been "*taught well*". The third comment was made by a young man in a focus-group discussion (data not included in this table). During the discussions, seven of the eight

young men (average age 20) said it was important, but not only should a woman know how to make *igoqo*, but that she must also know other household work. One young man disagreed and said "*a woman is not a woman because of igoqo*". At that point another young man challenged him as to whether his wife would be acceptable to his uncle if she did not make an *igoqo*. The young man who had chosen to differ became silent. The fourth comment was made by an older woman who lives with her daughter-in-law while his son works in Durban. The elderly woman said "*igoqo is very important for our culture and I always want one in this homestead. But I cannot force them to do it because I will be kicked out and live on my own.*" All four comments point to the importance of kin on the perceptions of such practices as making *igoqo*, showing that while individual perceptions are important, kin's perceptions might take precedence over that of the individuals. Understanding how women and men perceive and respond to their experiences in such a context must therefore take these dimensions into consideration.

When Table 6.7 and these four comments are taken together, they show the contested position of *igoqo* in a world that is changing. Further, they illustrate the fact that it has not disappeared, as some women suggested, although some of its aspects are indeed becoming obsolete. Whether a woman will make *igoqo* or not largely depends on her agnatic kin, with whom she will live, as well as pressures from her own kin about what her actions might mean. It must also be acknowledged that the present-day *igoqo* for practical purposes is sometimes made with firewood collected by a tractor, as was the case in Tsilitwa; and in both villages it is not always neatly arranged. The *igoqo* related to weddings is made with head-loads of firewood, but a young woman may seek the help of her mother or sister to do this, depending on how culturally flexible the two families are. The marriage-related *igoqo* is very neatly arranged compared to the practical *igoqo*.

In cross-checking the literature, I found that mentions of *igoqo* go back as far as the 1930s (Hunter 1936) . Recently, it has been reported by McAllister among AmaPondo (2004), and by Cocks (2006) and Cundill (2005) who found it among the Mfengu Xhosa around Grahamstown. Apart from referring to its cultural value and its role in defining a woman's place, McAllister does not venture further into the concept. Cundill (2005) reported that the young women she talked to about *igoqo* said that it was not important. This represents a substantial difference from the results here, where all young women in the sample felt that it was important. However for Cundill's study three factors have to be taken into consideration. First is the fact that in Qongqota, Cundill's study site, up to 81% of the households had *amagoqo* in their homesteads, suggesting that it is important despite her conclusion to the contrary (based on young women's responses). Considering the dynamics of the social life of a married woman in Xhosa communities, it is doubtful that the young women in Cundill's study would not make *igoqo* once they are married, especially if the women's in-laws or their kin desired it. Secondly, Cundill's study areas seem to have been exposed to modernisation much earlier that both Cutwini and Tsilitwa, with water reticulation as early as 1970. This might have changed the position and perceptions of women. The third is that the community's access to wood resources was affected negatively by betterment schemes (Cundill 2005). In both Cutwini and Tsilitwa the majority reported that, although betterment schemes removed them from their homes, it did not substantially change their access to wood resources. In Cutwini, the majority of the original villages were as close to forests before betterment as Cutwini is today. Similarly, in Tsilitwa, most villages that moved

to the present-day site were at approximately the same distance to the forest, and so both women and men often asserted that the woods had always been far. Cocks (2005) has also discussed *igoqo* extensively, but has focused on the species used to construct *amagoqo.* She clearly demonstrates the cultural value of *igoqo*, pointing out that it represents a woman's domain, is the residence for ancestral spirits, and it is where women urinate at night, while men urinate at *ubuhlanti* (*esibayeni)* (Cocks 2006:28). In the past, it was also used as a burial place for infants (Cocks 2006). The cultural value is further highlighted by the fact that, while 26 species of wood were used for firewood, only 15 species were used for making and maintaining *amagoqo*, and that all but one of the species used in *igoqo* were used for ritual purposes (Cocks 2006:48). The use of only a few specific species in *igoqo* shows that special effort is put into making *igoqo* properly, and the reason for this is because it is a culturally important artefact. *Igoqo*'s cultural importance is further supported by the close correlations between the wood species used in *igoqo* and the wood species used in rituals.

The prevalence of *igoqo* across Eastern Cape points to the cultural values placed on firewood collection and on firewood in general. By giving women a sense of respect and dignity, as defined within their cultural context, the health impacts of collecting firewood may be overlooked. This would suggest that after electrification, firewood collection might persist until alternative ways of defining a 'good woman' become entrenched in the culture. The cultural importance of firewood was further shown by the fact that wood is grouped in various categories according to associated beliefs. Such categories include firewood that cannot be brought into the homestead; firewood that cannot be burned; firewood that can be burned but only outside, *i.e.* in the open air, firewood for ritual meat roasting, and firewood for cooking anywhere. Although on the surface these do not appear important or even existent, when I collected firewood other women and girls would go through my collected bundle and remove the forbidden species. My load was often re-inspected at home (since I went collecting firewood with other villagers and not my host family members) to make sure that no bad wood types were used in the homestead.

The following section therefore looks at how women respond to the health impacts of firewood collection, also revealing some of the associated perceptions. Table 6.8 shows the forms of actions (and non-actions) that women undertake in response to their firewood-collecting experiences.

Table 6.8: Women's responses to health impacts of firewood collection

Themes	Cutwini	Tsilitwa
As a woman, I persevere	6	3
Clinic	9	3
Compress or hot bath	5	2
Forced by circumstances	2	1
Nothing	9	3
Our culture	1	4
Pain killer	11	4
Rubbing stuff	9	4
Traditional meds	3	1
Used to it	1	5

In both Cutwini and Tsilitwa, there are two main ways of dealing with musculoskeletal injuries. The first is to just live with it, which is the most common way

of dealing with injuries, with the exception of broken bones. When a person breaks a bone or sustains a "*deep cut*", they go to the clinic for treatment[19]. The second is to seek symptomatic relief for aches and pains. This is mostly by taking StopPain™ (Paracetamol) and/or using "*rubbing stuff*", primarily Methyl Salicylate ointment, which is an over-the-counter topical analgesic. Households often buy their own painkillers, but also get them from the government clinic, and sometimes use traditional medicines or a combination of modern and traditional medicines. In one case, a 40-year-old woman in Tsilitwa reported that she took Paracetamol before going to the forest and one immediately after. Then another one said she took one just before she goes to bed. When I commented that this might be too much Paracetamol, she replied: "*This is how we live, otherwise how can I sleep?*" Her mother then went to the bedroom and came out with her daughter's box of StopPain to show me.

Evidence of musculoskeletal problems is also supported by the reports from the interview with the chief nursing sister in Tsilitwa and at St Elizabeth hospital. My own observations at the clinics in both villages showed that one of the most requested medicines was "*rubbing stuff*". My own experiences when I collected firewood in Cutwini also support the fact that musculoskeletal pains are prevalent after carrying firewood, and to a lesser extent, water.

Women who collected firewood while pregnant, or soon after giving birth, generally stockpiled firewood during the pregnancy, but were sometimes able to hand over the duties to other women. One woman from Cutwini reported collecting more frequently during pregnancy to stockpile firewood which she could then use in the first weeks of the baby's life. One other reported that she became "*lazier*" as pregnancy progressed, and therefore collected less often. Two of these women said there was no change in the frequency or load size that they carried before and during the pregnancy. After giving birth, four of the women returned to firewood collecting after from ten days (coinciding with *efukwini* period) to one month. One woman, who had felt "*lazier*", returned to collecting five months after giving birth. I must note here that three of the five women who continued to collect firewood came from households where there were no females to help with or take over the firewood-collection tasks. In focus group discussions, some women reported that they do not collect firewood at the beginning of the pregnancy and then restart when "*the pregnancy is stable*", which is roughly in the second trimester, *i.e.* fourth or fifth month. In both Cutwini and Tsilitwa, two women reported that they had been told that going to collect firewood while pregnant is good because it is an exercise. This resonates with what programme managers and nurses in Ingquza Hill and Mhlonthlo LSAs reported, as presented in chapter 5. In discussions and chatting, some women told me that they believed that if one stopped heavy work such as collecting firewood during pregnancy, the baby would be a lazy person. It is apparent in this that avoiding laziness is a critical cultural standard, which is understandable in a context where daily survival for a long time has been dependent on manual work.

The discussion above shows that women collect firewood from a young age, and as a result come to accept the experiences that affect their health as "*part of being a*

[19] This of course is subjective, and I have seen some cuts that I would consider serious, bound up, In one case, a young woman had a splinter enter her eye. She bound a scarf over the eye. The eye watered for a week and was red, but she considered it too minor to go to the clinic with. Another case was when I had just finished interviewing young women and noticed one with a scarf tied over her eye. I asked why the eye was bandaged, and she told me that a splinter had entered the eye whilst she was chopping firewood. Eye injuries, like axe injuries, were rarely talked about.

woman". In addition, as in most if not all cultures, the daily lives of women are filled with expectations about their reproductive roles, albeit measured differently. For Cutwini and Tsilitwa, fulfilling these roles and meeting the implicit and explicit standards, includes among other things how well a woman keeps a home, of which having a well-kept stockpile of firewood is an important aspect.

Energy use: Experiences, perceptions and responses

Having looked at the experiences, perceptions and responses related to firewood collection, I will now turn to those of energy use. This section starts with a discussion of the energy sources used for cooking, and how energy is used in the two studied villages. It then moves to a discussion of the respondents' perceptions and responses to the health impacts of such use.

Energy used for cooking in Cutwini and Tsilitwa

At the time of this study, from 2007 to 2009, there was no electricity in Cutwini and firewood was the main energy source of energy for cooking[20]. Paraffin was mainly used to supplement firewood, and was used mostly for quick cooking tasks such as making tea, making breakfast porridge, cooking vegetables or warming food. Although paraffin use for cooking in Transkei has been recorded as early as the 1950s and even before, it has not become the main cooking energy source, partly because it is perceived as expensive. Unlike in other parts of Eastern Cape (Eberhard & van Horen 1995) and unlike in Tsilitwa, households in Cutwini do not use dung and rarely use post-harvest waste such as maize cobs[21]. When I asked why people did not use dung for cooking, they said it was because they had enough forests and that dung "*smells bad*". Table 6.9 below presents the energy used for cooking in Cutwini.

Table 6.9: Energy use in Cutwini in 2007

Fuel used	Households reporting N=75
Paraffin and firewood	56
Paraffin, firewood and gas	8
Firewood only	3
Paraffin and occasional firewood[22]	3
Firewood and gas	2
Paraffin and gas	2
Gas only	1

In 2007 the average household in Cutwini used 5 litres of paraffin per month at a cost of R40. In 2009, a survey of 20 households, supported by my observations, showed that

[20] As of June 2010, there was still no electricity in Cutwini, although ESKOM has enumerated households for electrification in 2008.

[21] When people use cobs, they use them after harvest almost in an absent-minded way to get rid of them, but do not really consider it an energy option. The exception to this general rule, are the poorest households where an elderly person lives alone or with young children. I once observed a household with an elderly woman and young children under the age of 10 use everything from agricultural waste to plastic bottles, because they had run out of money and there was no one to collect firewood.

[22] Uniquely these three households, although using multiple fuels, cooked mostly with paraffin and only occasionally with firewood. One was a man living with his brother and the other two were relatively wealthier households that did not collect any firewood.

the use of paraffin had not changed substantially between 2007 and 2009. There was, however, an increase in the number of households using gas. In 2007 only thirteen households used gas, but this number had at least doubled by 2009. Although the number of households surveyed in 2007 and those surveyed in 2009 is not comparable, informant discussions supported the view that gas use had increased. There are at least two reasons for this increase. The first is that income levels increased in some of the households included in the survey. The second reason is that in 2008 households were presented with an opportunity to buy gas canisters at the discounted price of R70 for 9 kg instead of the normal R195. This appears to have been the FBAE initiative discussed in chapter 5. Although some households had taken advantage of this, few were actually using gas regularly for cooking. The rest had bought the canisters that one time, but were unable to continue using gas because they considered the costs of refilling canisters to be too high.

Of the five new gas users, four of them had income increases. These four households can be divided into two pairs. The first pair did not use gas regularly while the second did. The first pair of households had income increases that were more sustainable because they were running businesses. However, they were not using gas for sustained periods of time but for special guests. The second pair of households had only experienced a one-time cash injection rather than a sustained income increase. One of the persons who had bought an LPG canister and stove was my research assistant (RA). She bought a 20-kg cylinder and a gas stove for her mother. The second household that has a one-time cash injection had benefited from land compensation cash described in Chapter 4. These findings appear to contradict conventional thinking that sustained income increases would lead to an upgrading of energy source, as suggested by the energy-ladder theory cited in Chapter 2. It is therefore worth finding out some of the reasons why changes did not happen in some instances, but happened in others.

Case 6.1 provides accounts of circumstances in the four households, and why LPG was being used less in the first pair of households and more in the second pair. These accounts of households that were moving to LPG, and how they used it, show how profound past experiences, combined with having the opportunity in the form of cash and available alternatives, changed their responses. What does the account of Zoleka's mother show? The first is that in regard to safety considerations, responses such as hiring minders may be inadequate because such a minder cannot always be there. Indeed, for many other families, employing a full-time minder is not an option. Yet Zoleka's second response of changing to LPG was inadequate as well. This is because the "*eureka!"* moment that changed her perception and responses stopped with her and did not extend to her mother, who was the target beneficiary of the intervention. Later, when her mother regained consciousness, Zoleka asked her why she had to go out and stand by the fire. Her reply was: "*I like the fire*". This is not in any way unreasonable; yet within the limitations of her world, and in the context of her underlying health condition, it became a threat to her health. Such limiting conditions show how simple and reasonable everyday preferences take on particular meanings in marginalised contexts. In this case the fire, which in other contexts such as a modern house with a fireplace is a comforting feature, becomes a threat in a context where the users are poor and marginalised.

Case 6.1: Changing to LPG use in Cutwini

Households 1 and 2: No sustained use of gas
Households 1 and 2 had a number of things in common. They both were running businesses which used LPG as an input. One was a bakery, while the other household was using a freezer to store and sell chicken and cold drinks. They had relatively reliable incomes from these and other small businesses such as charging mobile telephones and running a small 'cinema'. They also had children under the age of five, who are considered vulnerable to the health impacts of energy use, according to the literature on energy and health. In household 1, the female decision maker often used one cylinder, alternating between using it for the freezer and for cooking, especially when special guests came. In household 2, the female decision maker negotiated with her son, who owned the bakery, about when and how to use the gas, but she also had a smaller canister which she could use without this negotiation.

Households 3 and 4: Sustained use of gas
In household 3, Zoleka's mother has epilepsy and during an epileptic seizure in 2001, fell into an open fire. She sustained burns over half of her body that required her to stay in a hospital for over half a year. She received skin grafts during this time and the scars are very visible. Since then, Zoleka and her sister have always employed a person to look after her. This way, if she has a seizure someone can make sure she is safe. In 2009, Zoleka bought a gas stove and a 20-kg gas canister. When I asked her why, she told me:

> *You know how my mother suffers. Now that I worked with you, I realise I shouldn't do all this energy and health research while my mother uses wood. I told you about her scars! What if one day people don't find her in time?*

While doing my second phase of research in Cutwini, we were chatting in the house when Zoleka's mother, who was outside, had a seizure by the fire. When we rushed out, the pot of water which was on the fire (luckily not too hot) had toppled and she was lying in the ground, drenched in water. Luckily, she was not burnt by either the fire or the water.

Sandra (pseudonym) from household 4 is a 32-year-old woman who once lived in Durban with her husband. She studied up to matric level but never graduated. When I interviewed her, she used an English name rather than a Xhosa name, which she used in other settings and which she was known by. She could understand most English although she was not confident enough to speak it. Her house was modern in many ways. Her *indlu* was built in an octagonal shape and connected to the main house rather than in the traditional fashion where it is round and built as a stand-alone hut. Her husband worked at the hospital in Lusikisiki as a general clerk and owned a car. She bought a gas cylinder from the land compensation money, given to her by her brother. When I asked her why she used her compensation money to buy a gas stove, she told me:

> *I never sleep thinking my children will die in a fire. It always happened where we lived* [in Durban]*. When I got this land money, and my husband also got some…we put it together and split it in half. We bought what we wanted. I wanted a bed suite…household things and the gas stove, he wanted new rims for his car. So we* [each] *bought those things.*

Note: Epileptic fits are one of the most common health issues in both villages, but more so in Cutwini. In Tsilitwa epilepsy was one of the health issues that the nurse felt is not well addressed. The reasons for such a high rate are not known because of limited research, but pig worms might be implicated.

Apart from the influence of profound experiences, having money and (knowledge of) available alternatives, there was one more thing in common between the households that were using LPG more for cooking. The women from these households, who had invested in the gas canisters and were responsible for refilling them, considered themselves and were considered by others as being modern. In Zoleka's case, her modernity was displayed in the way she dressed, her taste in music and her preference for staying in Durban or Johannesburg whenever an opportunity arose. For Sandra, her modernity was in the way she introduced herself, the way she arranged her homestead, and the experiences of living in an urban environment. Although both lived and grew up in Cutwini, their average years of schooling were higher than other women in the village (8 years, compared to 4 years of schooling among persons older than 30, and 6

years among persons younger than 30). Exposure to modern life was not true for the women in the other two households. Such a combination of factors appear to have influenced their desire to sustain gas use, so that income alone is an inadequate explanation of what aids or impedes responses to health impacts of energy use.

For Tsilitwa, energy use is affected by the availability of electricity since 2003/2004. Table 6.10 shows the patterns for energy used for cooking in Tsilitwa in 2009 by household income category.

Table 6.10: Energy use combinations and household income ranges in Tsilitwa[23,24]

Income categories[25]	WEP	WED	WEPD	WEGPD	WE	WEG	GE	E
R240 up to R1000	4	3	8	1	3	0	0	N/A
R1001 up to R2000	1	9	12	1	N/A	N/A	N/A	N/A
R2001 up to 3000	1	1	3	N/A	N/A	1	N/A	N/A
R3001 to 4000	N/A	1	2	1	N/A	N/A	N/A	N/A
R7000 to R9999	N/A	1	1	1	1	N/A	2	2
>R10,000	N/A	N/A	1	4	N/A	N/A	N/A	N/A

Key for Table 6.10

WEP: Firewood, Electricity and Paraffin
WED: Firewood, Electricity and Dung
WEPD: Firewood, Electricity, Paraffin and Dung
WEGPD: Firewood, Electricity, Gas, Paraffin, Dung
WEGD: Firewood, Electricity, Gas and Dung
WE: Firewood and Electricity
GE: Gas and Electricity
E: Electricity only

These results show energy combinations used in households located in different income categories, and should not be compared across households because the ranking was done qualitatively by the households themselves, without reference to other households. It was not based on actual quantities used and therefore cross-comparison would mean comparing different amounts both in terms of energy units and costs. Comparing electricity by costs is also futile because many households were unaware of their real expenditure on electricity, although they perceived electricity to be expensive. Moreover, when I calculated the prices of electricity units, I noted that shops both in the village and in town centres sell electricity at prices that differ from each other and from ESKOM prices. The differences were by as much as 30% to 40%, and so unless one knows exactly when and where the electricity units were bought, one would be comparing different units. However, the table is indicative of four observations that it

[23] One may notice a gap, in that there are no households in Tsilitwa with incomes between R4000 and R7000. This largely reflects the fact that incomes in Tsilitwa either come from social grants (and some households may have up to 5 members on social grants) or government jobs. It also reflects the income inequality between those that have no jobs or depend on piece jobs, and those that depend on government jobs and relatively high-income businesses.

[24] This table has excluded those where incomes were unknown, for example because the respondent did not know where incomes came from, but also to make it more legible.

[25] Households in both villages are largely dependent on income grants. To calculate the incomes here I used a total of grant finances that households received, as reported, and compared with official figures. This was added to other incomes that households reported. In most cases, the other incomes were lower or almost equal to total grant finances, and by putting households within income bands of about R1000, error is reduced by locating them at least within their income ranges. The most reluctant groups to report their incomes were rich households. To reduce error here, I used official government salary ranges, since many of the rich households are either teachers or nurses. Given a specific figure based on these official salary figures, respondents then said whether the figure was too high or too low, and the approximate margin of error. For the most part, they simply reported, for example, “I get more than R6000 and less than R10,000”, thereby giving me a range to locate them in.

highlights. First, the table shows that despite years of having to buy their firewood, and at least six years of having access to electricity, firewood remains a key energy source for cooking. Secondly, it shows that the use of dung, a fuel considered to be a fuel for the poor, is present across all income categories, as is the case with firewood. This is in part because electricity is perceived as an expensive option. Thirdly, it shows that many households use some electricity for cooking, up to 67 of the 73 households in this table (92%), or 79 out of the 83 households with electricity, *i.e.* 95% when all households using electricity in the Tsilitwa sample are considered. It must, however, be noted that few households use electricity as a primary energy carrier. Electricity use has been boosted by the fact that hotplates, the most common electrical cooking appliances, are considered affordable to buy at a cost of between R120 and R200 per hotplate. The fourth observation to make from the table is that the majority of households use multiple energy sources. This agrees with the literature in the energy sector (Mehlwana & Qase 1999; Shackleton *et al*. 2008).

Picture 6.2: A kitchen illustrating multiple energy use

Table 6.11: Reasons for not using firewood in Tsilitwa

Reason for not using firewood	Number reporting n =6
Always used gas and electricity	1
I'm blind	1
I don't like it/Now we have electricity	3
Makes clothes smell of smoke	2
I'm no longer a *makoti*/There is no *makoti* here	2

For most households in Tsilitwa, using gas is a third or a fourth option, which they use when there is a power outage or when the village shop runs out of electricity units. The same is true for paraffin, which is considered an expensive energy option[26]. I shall return to the issue of the use of multiple energy sources in the discussion of responses. It is crucial to also examine households that seem to divert from the norm in their patterns of energy use. The first diversion from the norm is in those households that do not use

[26] Here I have focused on cooking only, but other households use paraffin for heating in winter.

firewood at all. Table 6.11 shows the reasons why women in Tsilitwa were not using firewood in these households.

One of the two women who said she is no longer a *makoti* had at least three other factors that contributed to her not using firewood for cooking. Firstly, this woman is a teacher and therefore could afford to use electricity all the time, as she did. Secondly, she did not have a separate kitchen for cooking on a fireplace. For a household without the cylindrical traditional hut, cooking indoors with firewood was not an option because people do not want to damage the cement floor, or stain painted walls with smoke. The general pattern in both villages is to cook food indoors except in ritual and ceremonial cooking, and sometimes, when cooking food in bulk in "Xhosa pots". Thirdly, this household had stopped cooking traditional foods such as *umqusho* (samp and beans) and *umkhupha* (steamed bread), which require at least two hours and up to four hours of boiling or simmering. Their staple food was now rice or pap (a flour-based food similar to *polenta*, but without spices). In spite of these factors, her assertion that she does not use firewood because she is not a *makoti* is also relevant as shown in Case 6.2.

Case 6.2: A return to wood and tradition

Five months after I got to know her, she moved in with a boyfriend, but kept her previous homestead where her children continued to live[27]. Whenever she was at her boyfriend's place, she would make hot water and cook meat in bulk on the fireplace outside. This was despite the fact that her boyfriend's income was well over R10,000 per month (making their combined income over R16 000 per month) and they could afford to cook with electricity. Since living with her boyfriend, her work pattern had completely changed from a woman who before would come home from work and rest while her children worked. She was now always busy working around the home, cooking, cleaning, ironing shirts and washing. As she was moving back into the role of a makoti, having been separated from her previous husband for about a decade, she was also moving into a more traditional gender role. When I asked her why she was now cooking on a fireplace, she replied: "*Magi, people should know that there is now a makoti here. It can no longer be as if he is still alone."*

Case 6.2, which illustrates the return to more traditional gender roles upon entering a new relationship, asserts the earlier themes of how women, in this particular society, derive their value of being 'good women' from reproductive work. It further shows that although incomes, exposure to modernity and education might in some ways affect energy use, gender – including women's definitions of feminities and men's definitions of masculinities and how these are enacted – may override other factors. It also shows that transitions are not unidirectional, even in the presence of "adequate income", so that the diversion from the norm of not using firewood as shown in Table 6.10 is not necessarily permanent for certain households.

Returning to Table 6.11, the two persons who did not want to use firewood for cooking were both teachers and did not want to smell of smoke at work[28]. This has to do with how persons moving to more modern lifestyles, or who work in modern settings,

[27] I slept on several occasions at both of her homes and was therefore able to make in-depth observations of the changes recounted here and why they occurred.

[28] This is common for men wanting to move from firewood use, as I found out in one taxi ride when men asked me what I was doing in Eastern Cape. When I told them, they went into a long discussion of how they hated smoke; it sticks to your clothes so much that cologne does not help. It is also the reason some professionals have two kitchens, a modern one and a traditional one.

perceive themselves and would like to be perceived. As one young man resident in Tsilitwa village (in a different context) put it:

> *The good thing that electricity has brought is that you can now smell the Axe* [a deodorant brand, M.N.M]. *Before, you could not smell the deodorant, you just smelled of smoke like a villager*.

The second diversion from the norm in energy use in Tsilitwa is those households that did not cook with electricity at all. There were six households here that did not use any electricity for cooking. Table 6.12 provides the reasons why these households do not use electricity for cooking.

Table 6.12: Reasons for not using electricity in Tsilitwa

Reason for not using electricity at all	No of households reporting n = 6
Did not upgrade to allow cooking	2
Did not connect because the home was built after electrification[29]	2
Electricity was damaged	1
It needs money	1

Of the two that did not upgrade to allow cooking, one was in the process of requesting an upgrade. Her husband had just moved back to the village after working in Durban as a care nurse in a hospice. The other was an elderly woman from a poor household. Similarly, of the two that did not have electricity because their homes were built after electrification, one was a blind woman who lived alone, and the other was an elderly woman who also lived alone. Thus of these four, three were constrained in their access to electricity largely because they did not know how to get access and were socially isolated. This social isolation should also be understood in the context of the fact that other households that had been built after electrification could get an electricity connection. This was either legally and formally[30] through ESKOM, or informally by means of an extension cable from a friendly neighbour. Apart from having weaker networks, the blind woman was additionally constrained by the fact that she turned blind in 2003 before electrification was complete. She was more familiar with cooking on a paraffin stove, which she had used for a long time when she had her sight. Electricity on the other hand was a new technology which she did not feel safe using as a blind person without prior experience with it.

Up to 78 out of 89 households use dung at some point in the year. Dung usage peaks in dry season. There are three main uses for dung as an energy source in Tsilitwa. These are: for heating bath water, for cooking meat in large portions, and baking bread. Dung is especially preferred for baking bread because households find it easier to control by partially burying a *bakpot* in hot dung.

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[29] In addition to having built the house after electrification, one of the households also belongs to a woman who is blind and lives on her own. She employed another woman to help her with tasks such as cooking. Her household only uses paraffin for cooking.

[30] Here I adopt the definition of illegal and informal as used by Bekker *et al.* (2008.) They classify informal connections as extensions of electricity supply from one household to another by householders so that the electricity is still metered. Illegal connections on the other hand are classified as the distribution of electricity by householders or their agents that bypass metering systems (so that electricity is not being metered (p. 3134). There was also no evidence that any of the households in Tsilitwa had illegal connections.

Picture 6.3: Baking bread with firewood in Cutwini vs baking bread with dung in Tsilitwa

From conventional logic and past studies there are two common explanations for continued firewood use after electricity access. The first reason is that people have low incomes and cannot afford the costs of electricity. As I showed in chapters 2 and 3, this is the dominant discourse at international and national levels. In Tsilitwa, this partially explains the continued use of firewood as presented in Table 6.10 earlier, and supported by the fact that in the low-income categories all households use firewood and/or dung. Yet, Table 6.10 also shows some departures from this explanation, since rich households continue to use firewood and even dung. Furthermore, it is not the richest households that use only modern energy services.

Case 6.3: Living in two *habitus*

When I entered Joyce's (pseudonym) homestead, there was a man, Joyce's husband, standing over a fire fuelled by goat dung and bones of a sheep. A huge pot of meat was boiling on it. The homestead had a big modern house and a modern octagonal 'hut', and it was obvious this was a home of well-to-do people. Joyce's husband told me to talk to his wife who was the "*manager of the household*". After asking my credentials, an indication that she was familiar with formal research procedures, and giving her consent, Joyce, 66 years old, told me her story and that of her family. She worked as a nurse in Johannesburg and Durban before resigning in protest against apartheid. After that she joined "the struggle" as an ANC activist before settling back in her home village in Tsilitwa after 1994. Joyce and her husband run several businesses, including a farm, a minibus that transports villagers, and a kiosk. They had an income of at least R16,000 per month. This excludes occasional remittances from their children, who were working in cities. This was one of the highest earnings in the village. They also produce the bulk of their staple food, unlike most villagers who depend on store-bought food. With the high education level, high exposure to modern life, high incomes and few household members (all her children are grown up and live in the city), I expected that she would have one of the households that had transitioned fully to using electricity for cooking. When I asked her what appliances she had, she replied, "*everything, I think you can name it and I have it"* and she did: stove, microwave, radio, TV, DVD, washing machine, even a cake mixer and an egg beater, which no other households I encountered had. However, Joyce still used firewood, which she bought by the tractor load, and regularly used dung. When I asked her why she continued to use firewood and dung, her reply was "*I'm black*."

When Joyce says "*I continue to use dung because I am black*," she refers more to her Xhosa identity rather than her race[31]. She also identifies herself with the keeping of Xhosa culture. By her education, the type of house she lives in, her appliances and her political activism, Joyce is a modern woman and a *Khumtsha*, with the connotations that entails, as explained in chapter 4. Yet she also embodies the traditional values. For example, as I talked to her, she pointed to the potted plants in her home, telling me which ones are curative medicines and which ones protect against *umoya om'daka* (dirty wind). The use of potted plants to decorate houses is especially common in homes of persons who are considered, or consider themselves, to be modern, or have lived in urban areas. Yet her choice to fill these pots with Xhosa medicines reflects her traditional values. She is both *mqaba*, in the sense of being traditional, and *khumtsha*, in the sense of being modern and well-to-do. As a result of this complex identity, even though she can afford to use electricity all the time, she also uses traditional energy sources – firewood and dung – as a way of participating in a traditional Xhosa life that remains important to her.

Joyce's case illustrates the complexity of actors' perceptions and responses. These perceptions and responses are formed by experiences that reach further than economic rationale. On the other hand, the data used to develop energy policy, as discussed in chapter 2, is dependent on quantitative data, which by its nature ignores these complexities. Thus, for example, the choice that Joyce made would be analysed with respect to the money she earns, her education, and in some cases her decision-making power with respect to her husband. As Joyce's husband told us, she is the manager of the household, and as a woman, one who worked as a professional nurse and has financial resources, the assumption would be that she would be both aware of and proactively act to reduce the health impacts of energy use. It is only when Joyce's biography and the conditions that have structured her experience and hence her perceptions are added to her basic demographic information, that the complexity of her choices become apparent. This then requires a rethink of how to categorise and address her needs in policy.

As presented in Case 6.1, four households in Cutwini started using LPG regularly after increases in incomes. In Tsilitwa, however, after electrification most of the households that continued to use LPG regularly were the households that either had high incomes or someone who could not operate an electric stove. Four out of the five households that continued to use LPG had monthly incomes of over R7000, which is on the highest end of earnings in the village. The one household that had a low income had constant assistance from a son who had a monthly income of over R10,000.

The son, who had a farm in Ugie (about 200 km from Tsilitwa), would constantly refill his mother's LPG canister. Before electrification he had provided her with solar panels for lighting and a gas stove. Thus, despite the fact that money wise the household depended on OAP grant, this household can be considered wealthy in terms of social

[31] In Eastern Cape, like most Southern African countries I have been to, people use the reference to "*us black people*" or "*us people*" in a way to mean 'us Africans'. Thus, a Xhosa person saying "*us black people*" should be seen as a reference to a collective black African heritage (whether such a collective heritage is existent or not is a different matter), and not always with political intonations that such a pronouncement might have in the West, or among educated black African elites. A black person is often referred to *umntu*, *i.e.* a person, while a white person is either *mlungu*, *i.e.* white person. In Joyce's case, however, her previous activism might also have affected the use of the term.

assets. The head of the household, an 84-year-old woman, lived with her teenage grandson. She could not operate an electric stove but was used to operating a gas stove. Her grandson, on the other hand, preferred to use electricity. However, even after her son and his new wife moved into the house, they continued to use a combination of electricity, gas, firewood and paraffin, as did many of the richest households as presented earlier in Table 6.10. Households using this energy combination paid an average of R400 per month if one spreads out the cost of firewood and adds other monthly energy costs (a tractor load of firewood typically lasts for four to six months, being used up faster in winter.) In comparison, households that used electricity only or mainly paid an average of R200. Using electricity only, or electricity and firewood only, turned out to be cheaper than including either LPG or paraffin in their repertoire of energy carriers. Explaining the combined use of electricity, gas, firewood and paraffin in rich households in terms of lack of energy or financial education only is inadequate. If this were the case, such a pattern would then have to be even more prominent in poorer households and households of the less educated than in rich households, whose heads typically had more years of schooling. After all, poor households were less likely to know their electricity costs than rich households, because they bought their electricity ad hoc and in small units of about R10 at a time. These amounts are bought by different household members, as and when they can manage to do so. Moreover, I did not find any household which buys small units of electricity and tallies the total at the end of a specific period. Rich households had higher levels of education than the poorer households. They also bought their electricity less frequently and in bulk, often in units of R50 to R200 at a time. Households that bought electricity in bulk were more aware of their monthly costs of consumption of electricity because the money was often from one household member (a household head). Further, rich households also get more electricity units for the same unit cost because they bought electricity in formal shops, usually supermarkets in town, which did not have additional, informal charges on top of the formal price.

The question arises, then, how were they not aware that such a combination proved to be more expensive than using electricity only? The combined use of these fuels in rich households can be explained by at least four factors. The first is that some of the households had made big investments in equipment, for example in a gas stove or firewood stove before electrification. After electrification, they could not simply abandon these technologies, either because of what they had cost or because they were emotionally attached to them. This was true in at least two of the four households using a combination of firewood, electricity, gas and paraffin. The second is that households in rural areas tend to have two to three generations living in one homestead, and older generations are more reluctant to use new technologies, causing differences in energy-use patterns across different generations. The third is that even these rich households, all of which had higher levels of education compared to the average (*i.e.* post-secondary and college education compared to the average 6 years of schooling in Tsilitwa) were not always energy-aware – not in the sense of costs but in the sense of budgeting for it and identifying wastage in use, making it difficult to make informed choices or exercise energy efficiency, for example. Thus one would find at times that food is left to simmer or boil for long periods of time the way households would have done with firewood, which is perceived as being cheaper than electricity. The fourth is that the use of multiple fuels is a measure against the fact that electricity supply is not always available (Box 6.1), which influences reluctance to depend on electricity.

Box 6.1: Power unreliability in Tsilitwa

During my stay in Tsilitwa I recorded six days on which there were power outages during the months of June and August. These outages were linked to strong winds that are common between mid-June through to October. Most households were also unaware that when there is a power outage they can call ESKOM, who are obliged to get power back within four to six hours. Every time there was a power outage, I would call ESKOM and, after calling a few times, they even knew my name since they could cross-check my telephone number with previous fault reports. At some point, an ESKOM technician asked me if I owned the guesthouse or if I was a ward committee member. This was because I was the only one who always called in case of a power outage. That said, ESKOM technicians although being based in Umtata always responded within four hours. In August, they further improved their response system by sending you an SMS to acknowledge that you reported an incident. Then they would send another SMS as soon as the fault had been addressed.

On four other occasions I could not buy electricity in the village because electronic vendor lines were offline (there was no network). When the two village shops that sell electricity run out of electricity units, households tend to find a friend who is in town and SMS them with a meter number, to buy more electricity for them. Yet, on two other occasions, I tried to buy electricity not only within the village, but also in town centres by calling friends in Umtata, Johannesburg and Durban, and even directly from ESKOM. It was not possible to buy any electricity because, I was told, the vendor information system was offline. This went on for four days, from Friday to Monday on the first occasion and for two weekdays on the second occasion. Such insecure electricity availability is one of the reasons why households almost always have an alternative energy source at hand, even when they can afford electricity. The vendor lines used to buy electricity units depend on the telephone network and has little to do with ESKOM. Yet their failure to sell electricity directly when called, which their policy assures that you can do, is in sharp contrast to their advanced fault-reporting feedback system.

The experience illustrated above, which residents of Tsilitwa experience from time to time, creates a need to always have an alternative energy carrier available to use. For those that cannot afford electricity, or for some other reasons must use firewood as an alternative, such a situation makes 'backtracking' to older energy carriers easy as well as normal. As a result, embedding the use of electricity as the key energy source in a household is not desirable.

Having discussed the energy use patterns, the following section presents an analysis of the health-related experiences with the energy carriers used in the two villages.

Experiences of energy use in Cutwini and Tsilitwa

I have so far looked at energy use patterns and used them to start to build an understanding of experiences, perceptions and responses to the health impacts of energy use. I shall now examine what health experiences people have from the various energy carriers they use. Although some respondents, particularly older women, were afraid of using electricity, no one reported negative health impacts in Tsilitwa. Similarly with LPG, only one woman in Tsilitwa reported being afraid of it. She had heard of gas leaks that "*led to explosions that burn down entire houses*". However, all LPG users in both Cutwini and Tsilitwa took precautions by shutting down the gas at two places, the cylinder and the hob, after use. In Cutwini, one household with a bakery business put their gas canisters outside, and only the pipes and the stoves were inside the house[32]. The discussion on energy use experiences, perceptions and responses will therefore

[32] The owner had seen this precaution in Durban where he had worked in bakeries and meat-processing plants. By putting the cylinder outside, the worst of the explosion would be there rather than inside the house.

focus on firewood, paraffin and dung. These are the energy sources that women and men discussed in interviews. However, in a focus group in Cutwini, the issue of candles did come up. I will discuss that at the end of the following sub-section.

Experiences of using firewood for cooking

Table 6.13 below presents the health-related experiences of using firewood in Cutwini and in Tsilitwa. As can be seen here, the most reported impact is eye problems, followed by respiratory problems. Two women in the household interviews in Tsilitwa felt that the eye problems that the smoke caused affected their long-term eyesight. One woman complained that smoke was the cause of her ear pains, "*because ears and eyes go together"*. Other than that, few connections were made to long-term impacts of firewood smoke. Certainly, none of the respondents made the health connections presented by experts in chapter 2. Thus, some women would report that they ignored anyone complaining about smoke. Further, four respondents in Cutwini and three respondents in Tsilitwa reported that smoke made their houses dirty.

Table 6.13: Experiences of firewood use in Cutwini and Tsilitwa[33]

Impact reported	Cutwini n = 69‡	Tsilitwa n = 83‡
Pain in the eyes	37	21
Makes me breathlessness	13	20
Headache	13	6
Makes me cough	10	18
It's there but not a problem/ Don't care	9	7
Hurts child's eyes	6	3
Affects child's chests	5	1
Afraid that it will make my TB worse	4§	2

‡This excludes those that do not use firewood at all and those, in Cutwini, that barely used firewood. However, the results are derived from what was mentioned in their narratives, not from options presented to them.
§These were women's answers, because men often go out during cooking – although men too can be present in smoky environments when chatting around a fireplace, especially in the evening.

There was a particular fear among persons with TB that being in smoky kitchens would worsen the TB, and that as a result the person with TB would start coughing up blood. In this context, one man in Cutwini reported that as a result of these fears, he had reduced the amount of time he spent in the kitchen. The women often did not have this choice because they are responsible for cooking. At other times, neither man nor woman had the choice to go out, because they wanted to keep warm by the fire or socialise with family despite the perceived risk.

One glaring absence from the table above is the lack of burns associated with open fires. When I asked about this, women said children can occasionally step on embers, but this is usually not serious since there is someone to watch over them. This is something I observed in many households, that a child would run around the kitchen but there was almost always a keen eye among family members, both women and men, to catch it when it gets near the fire or stumbles over it.

[33] Some differences in experiences between the two villages might be accounted for by differences in species of wood used. I noted for example a particular wood species in Cutwini whose smoke caused a burning sensation on my facial skin. Although women admitted that this wood species had "bad smoke", no one had the same reaction to it as I did, and it was commonly used in many households.

From Table 6.13, it is clear that it is the impacts resulting from smoke, over which people have little control, that were reported the most during interviews[34].

Case 6.4: Change of cooking energy and its reasons

An instructive development in the two years between my 2007 and 2009 research periods was in a household that used paraffin and occasionally firewood in 2007. The young (male) owner of the household now had a pile of firewood outside his home in 2009. Firewood was now his main source of energy for cooking, while in 2007 his main source of cooking energy had been paraffin. When I asked him about this change, he replied *"I'm now a married man. I have a wife."* In 2009 he was building a kitchen for his wife to cook in, since she could not cook in their bedroom any more because she was using firewood.

The change illustrated in Case 6.4 above can be explained by three factors which are illustrative in understanding energy use in these two communities. The first is that as a married couple they now had to adhere more to cultural expectations. When guests came, the wife would cook for them. Secondly, the wife provided the labour for collecting and cooking with firewood that had been absent in this household before 2009. The third is that as a single man he rarely ate at home because men normally do not cook. As a couple, they would eat more meals at home and they would have guests over. Doing all the cooking on a paraffin stove would therefore had been more expensive and firewood, which is collected free in Cutwini, represented a logical choice.

Perceptions and responses to firewood and dung use in Cutwini and Tsilitwa

This section analyses the responses of firewood and dung users in the studied villages. Table 6.14 shows the forms of behaviour that the respondents engage in to counter the effects of firewood use.

Table 6.14: Responses to firewood use experiences

Response	Cutwini n =69	Tsilitwa n =83
Open windows	15	22
Air channelling	11	2
Goes out	10	12
Nothing	7	8
Takes headache pills	7	4
Its culture/I'm Xhosa/I like Xhosa fire	7	3
Seeks medication (clinic, buys, traditional)	5	1
We are used to it/We persevere	5	10
Takes fire out	4	2
Do nothing because children cannot close eyes	2	0

One of the responses in the above table is air channelling, a way of directing air into a hut that is common in Cutwini. Households will put a mat against a chair or wall, a plastic barrel or propping it with a stick at the door, effectively creating a horizontal

[34] One must also note that in both Cutwini and Tsilitwa, the doors of the traditional kitchens are always open, or the upper half of the door is open throughout the day. However, the inside is still often full of dense smoke, sometimes to the extent that it is difficult to see other people in the room.

chimney through which smoke can escape. Apart from demonstrations to show me this method, I only observed it being used in four households in Cutwini, and it was even less common in Tsilitwa, where it was mentioned only once in interviews.

Picture6. 4: Channelling air into a kitchen using the mat and stick technique

There was a discrepancy in that, while many households reported opening windows, it was rather rare to see households use this method. On various occasions I noted that a number of households that reported opening windows had actually sealed their windows shut with mud, or had stuffed rags around cracks to stop "cold air" from getting in. There was also a discrepancy in households whose respondents said they go outside when they make a fire, and yet in my observations only in a few such cases did household members go out to avoid smoke. In most cases, the lighting of a fire prompted congregation around it. Thus, respondents appeared to over-estimate their proactivity in smoke-avoidance behaviours.

The efforts stated in Table 6.14 show two things. The first is that households' members are aware that opening windows would at least relieve them of the smoke. The second is that many of the respondents have been living in such environments since they were infants, hence the replies "*we are used to it*." My reaction to smoke was such that I would cough, my eyes would water, and sometimes I would ask if we could continue the interview outside, which illustrated to me the value of "getting used to it". Accordingly, their threshold of what constituted too much smoke was much higher than mine. Such subjective experiences, perceptions and responses should be taken into consideration in interpreting the responses in this thesis, and it may well be that even when household members open windows when "*smoke is too much*", their measure of what constitutes unacceptable smoke levels may be far above the WHO or other standards of air pollution.

Similarly, just as in firewood-collection responses, respondents did not always take painkillers, but did so only if they perceived the smoke to be particularly bad, and to cause headaches. Respondents also reported that they knew specifically when "*this smoke would cause a headache*". A third reason for the discrepancy in ventilating homes is the system of beliefs about how respiratory infections and fevers are caused and how they should be treated. Respiratory infections have several names, and may be

considered to be one thing or different things in Xhosa aetiology. One type of respiratory infection, which can also be classified as "*the chills*", is called *ingqele*, and is largely attributed to cold and/or wind (the wind doesn't always have to be a cold one). To ward it off, one can stay by the fire to keep warm. Faced with such a choice, women, men and children opted to stay in the smoky huts, since the effects of smoke, such as eye pain and breathlessness, are largely considered to be temporary inconveniences. Similarly, sitting by the fire along with enemas is seen as a way of treating a respiratory infection called *umkhuhlane*, which is accompanied by high temperatures and, in my observations, dehydration in children who often refused to suckle, drink or eat. As I tried to understand the various Xhosa conceptualisations of different respiratory infections I was on occasions told, "*ubiyane* [generally referring to thick phlegm] *is normal in children like these*", and in one particular encounter, a respondent explained why they do not take children with respiratory infections to the clinic: "*It is normal. It is the child without ubiyane who must be taken to the doctor*." Although this was said largely as a joke, it underlines how common such respiratory conditions are, so that they are seen as normal. According to Xhosa explanations in both villages, *ubiyane*, the most common respiratory infection, may be caused by different things including: if a woman did not complete required rituals during and after pregnancy, if children play with dust, if children eat sweet things; or it may just be a normal part of childhood; or any combination of these.

Apart from firewood, as illustrated earlier, residents in Tsilitwa also use dung for cooking. The very way in which it is used underscores the perceptions and is in itself a response to the experiences of using dung as an energy source. In Tsilitwa, people use it on its own or use it in combination with firewood. It is used to heat water, cook bulk meat for festivals, and especially for baking bread. Of the 78 households that use dung, only five use it indoors only, while six others use it both indoors and outdoors, depending on the weather, leading to a total of 11 households which use dung for cooking indoors at least some of the time. Those that use dung indoors often make a shack-like kitchen dedicated for this because of its "*strong smell*". The widespread preference for using dung outdoors is in itself a response to its perceived health (and non-health) impacts, because, according to the respondents and also my own observations, it creates heavy smoke and a strong smell. Even those using it outdoors reported that they make the fire "*and run away*". Up to seven persons who reported using dung indoors (in shacks) reported that its smoke is worse than that of firewood. In addition, women were worried that dung makes houses dirty, and that the smell "*never goes away*". One woman reported that it caused her headaches. Four other women said the smoke from dung was bad, but there was nothing they could do so they persevered. One woman also contradicted herself:

> *There is no problem. No problem at all. We are used to it except that the only thing you get is illnesses from the smoke. In the chest, the eyes…Your chest just closes up. That night you will get headaches. May be even tomorrow [i.e. until the next day].*

Four persons reported that the handling of dung (including collection) causes hand irritations whereby the skin peels off in strips from the edge of the nails. This is probably as a result of its alkalinity, since the PH level of dung is typically 6 to 7. One person reported that she once encountered a snake that had been mistakenly collected with the dung, but she was not bitten.

One concern for dung use may be that its handling could transfer faecal-philic pathogens to food and water. Such a concern, however, is not exclusive to use of dung as an energy carrier, since it is extensively used in plastering floors and sometimes in rituals. In this case, plastering floors may pose a bigger threat, since it is wet, fresh dung, while when used as an energy source is collected dry or semi-dry. None of the respondents made any linkages between using dung – either for cooking or plastering floors – to any infections, including worms, which are common among children in both villages.

Although this study focused on cooking energy as brought up in interviews and observations, the issue of lighting and its impacts on health spontaneously came up in all focus group discussions held with pregnant women and with women who had children under the age of five. Candles are the main source of lighting in Cutwini. In Tsilitwa candles are used when there is a power outage or when there is thunder, due to the belief that electricity should not be used during a thunderstorm, and in the six households without electricity. During interviews, no one mentioned that candles affected or threatened their health in any way. However, in both villages, when I had focus group discussions with pregnant women and women with infants, candles were reported as a source of stress for post-natal women. The reason for this is that when women have infants to take care of, they often leave a candle by their sides so that they can wake up and care for the baby. This is a source of stress because the women, often tired, doze off, but fear that clothes or curtains can catch fire. One woman recounted how, soon after giving birth, she dozed off in her room and the candle fell on her mattress and caught fire:

> *I woke up and the fire had already caught the curtains. I held my baby but could not move because of the after-birth pains. I was just screaming and screaming. That my baby was going to die. Then my mother, who was in the other room, heard me and came. She took the last water we had and extinguished the fire. Then the next day, we had no water. Eish, I don't want candles.* (Woman, Aged 29, Cutwini 2007)

In addition, women also reported that they were stressed because toddlers can easily reach the candles, and houses can catch fire that way. Although no one reported injuries from these, the women from both villages reported this with passion, emphasising the stress that this brings into their lives. As one woman put it:

> *At night you cannot enjoy your baby because you are tired but you are too afraid to sleep. But still the sleep wins then you just wake up.*

Experiences with paraffin use for cooking

With the use of paraffin, there are two major problems that households reported, explosions and smokiness, as presented in Table 6.15 below. There are three kinds of explosions that I observed. The first was when the screw cap of the fuel tank burst off, ostensibly due to a build-up of pressure in the paraffin tank. The second was when the stove bursts into a long flame, which often occurred when one tried to switch it off. The long flames might sometimes singe one's face if one were leaning over the stove, which is a necessity because cooking is often at floor level. This was the most common kind of explosion. Less common (and which I did not observe) are the cases in which the stove explodes into a ball of fire, as presented in Chapter 2. There were two such cases reported in interviews in Cutwini and one in Tsilitwa. In one case in Cutwini, the stove

owner, who lived in a one-roomed hut (and therefore cooked and slept in the same place), had left the stove on and gone shopping, and when he returned the stove and some of his clothes and possessions were on fire, but no one was injured. In the second case a young man had slept with a paraffin stove on and the stove burst into flames after overheating. The young man sustained burns that left scars which made it difficult for him to move his neck. The one case in Tsilitwa was similar to that in Cutwini, where a stove owner left a stove unattended and it burst into flames[35].

Table 6.15: Experiences of using paraffin for cooking

Problem with using paraffin	Cutwini n = 69	Tsilitwa n = 68
Bursts	20	9
No problem	14	6
Smoky	12	18
Makes me feel bad/dizzy	3	0
Fire accident	2	1
Affects eyes	2	5
Affects breathing	2	5
Smells	2	4
Young person drank it	1	2
I'm afraid of it	1	0

Table 6.15 shows that most of the experiences, such as smokiness and accidents, are comparable between Cutwini and Tsilitwa. However, the paraffin stove explosions in Cutwini is twice as much as in Tsilitwa. This can be explained by the fact that those that use paraffin in Tsilitwa use it for fewer and shorter periods than those in Cutwini, because in Cutwini paraffin is the second-most important energy carrier after firewood, since there is no electricity.

From discussions with health officials, there appears to be fewer incidences of bursting stoves and accidents in the two villages compared to urban settings. Moreover, despite 20 reported bursting incidences in Cutwini, only two households reported fire accidents. One of the reasons is already stated above: the duration of use of paraffin stoves. This has been reported as a contributing factor in stoves heating up and bursting into flames (Kenny 2002). Further, the occurrence of paraffin accidents, such as burning down of houses and burning of persons, has been linked to overcrowding and to the use of flammable materials for construction, as is common in townships. The number of people available at home is also likely to be a factor. The context of the paraffin accidents in both villages, in that the worst accidents happened when a paraffin stove was left unattended by a male user, must also be understood to clarify any conclusions about why paraffin accidents occur.

Similarly, paraffin poisoning is low in both villages compared to figures found in the literature focusing on urban settings – although, as in urban settings, the households in both villages store paraffin in soft-drink bottles. When I asked why the children did not drink paraffin more often than they did, the response was "*we hide it*" or "*we watch over them*". Lower employment rates in rural areas and multi-generational households probably provide "group" parenting for children, whereby siblings and grandparents can

[35] In one case in Tsilitwa, a woman did not want to talk about paraffin stoves because she had moved back to the village from Cape Town a year after she lost five family members in a paraffin fire accident. This incident is not included in the above cases because it happened in a different setting (an urban township), and due to the respondent's inability to recount the event.

watch children. This could account for the lower incidences of paraffin ingestion. As noted earlier, at the time of the study, Cutwini had had one paraffin safety campaign in November 2008, while Tsilitwa has not had any safety campaigns (although the nurse did report that she reminds parents not to keep paraffin in soft-drink bottles). This shows that there is awareness regardless of official campaigns.

One of the aspects of paraffin use that has been cited as a reason for bursting stoves is paraffin contamination (PASASA 2010). One source of contamination is said to be the deliberate addition of spirit to paraffin (Program Managers 2009). When I checked this among 20 households, I found that only two households reporting adding a few drops of methylated spirit to paraffin. The reason for doing this was reported as being to reduce the smoke from the paraffin. I found that many respondents were unaware of this belief, but once I mentioned it, they were interested to find out if it works. To avoid popularising it as legitimate, I removed the question from interviews. Observations led me to conclude that many household members do not add methylated spirit or other additives to paraffin and have not heard it. The use of methylated spirit in an effort to reduce smoke further supports the evidence that households do consider smoke from paraffin stoves to be a problem, although their perception of what constitutes "*too much smoke*" may be different from objective scientific measurements.

Perceptions and responses to paraffin-use experiences

In responding to a stove that has burst into flames, people simply remove the stove from the kitchen. Some households believe that putting a coin (cent) on top of the stove will reduce the smoke, while others put pieces of candle wax. Occasionally, the stove is replaced if it is deemed that the problem is age-related. However other respondents felt that there was no use replacing the stoves, because even new stoves do burst into flames and some stoves are smoky even when newly purchased.

When comparing responses to problems with respect to firewood and paraffin use, it is interesting to note that respondents did not include "*we are used to it*" as a response to paraffin problems. This, I argue, is because people can directly connect the impacts of paraffin, such as poisoning when a child drinks it, to the paraffin itself. Similarly, there is a direct, visual and nearly immediate connection between a stove fire and resulting burns. However, the causal path for smoke and respiratory infections (rather than a transient cough that ends after the smoke is gone) is less clear to people. For laypersons in the village, these connections are further complicated by the other confounding factors such as TB and common coughs. Another factor is that, like laypersons elsewhere, in the absence of such information from the modern health sector (which the analysis in chapter 5 has shown is inadequate), they cannot make physiological or causal connections between their environment and fatal respiratory infections. (See the literature analysed in chapter 2 above). Although availability of information in the modern health system in itself is not an automatic deterrent to risky behaviours, in the absence of such explanatory information, the health impacts that have long lead times are interpreted as transient, irrelevant or are interpreted within other explanatory frameworks such as through Xhosa aetiology. One such example is breathlessness and wheezing, called *iphika* in Xhosa, which might have a number of bio-medical causes including COPD. But for those who have not had a modern medical diagnosis, interpretations such as "*she was fed* [magic, M.N.M] *poison, that's why she suffers from iphika*," usually suffice as an explanation.

In the earlier discussion on energy use, I categorised it in terms of the combinations of energy sources that households use for cooking (Table 6.10). This gives an impression that energy use within a household is always uniform, an impression that is inaccurate. In ten households, respondents spontaneously talked about the differences in energy use within a household. A puzzle that arises in such cases is: If the household can afford modern energy carriers, why are household members using different energy carriers? Secondly, what are the differences in these energy use patterns and what implications do these differences have for understanding why household-level actors perceive and respond to energy–health linkages in the ways they do? Table 6.16 presents some of the differences and the reasons given for them.

Table 6.16: Intra-household differences in energy use and reasons given for these

Situation in the household; n=10	Reason given
Elderly woman uses gas, young man uses electricity	I do not know how to switch this thing on
Elderly woman uses firewood, young women prefer electricity	I do not know how to switch this thing on
Elderly woman uses paraffin, young woman uses electricity and firewood	The women of these days are just too modern
Elderly woman uses firewood, young women prefer electricity	I like the Xhosa fire. These women are too modern. But when I make my fire, they like it too. They are just lazy
Elderly woman uses electricity, others use gas and electricity	Gas is a wrong thing, we only use it to be modern
Women use firewood, men use electricity	It is women's belief to use firewood
Women use firewood, electricity and paraffin, men use electricity	Women don't know how to use electricity
Young men use electricity and paraffin, young women use firewood, electricity and paraffin	It's because they cook *Umngqusho.* Its because they are used to cooking with firewood
Woman uses dung and firewood, young man uses paraffin	She likes firewood. She is not comfortable using electricity. She is used to firewood
Elderly man uses paraffin, young women use electricity	It's because they are too modern

Looking at the table above on differences in intra-household energy use provides some answers on people's perceptions and responses. There are two main differences in energy-use patterns. The first difference is that between older persons and younger persons. The second is observed between women and men, particularly the young, since older men rarely cook. Younger men almost never use firewood for cooking unless they are heating bath water (although they will warm themselves by the fire as they socialise with their family). They will use electricity and, to a more limited extent, paraffin if they cook at all.

As for the reasons for intra-household differences, the older women in these households were reluctant or afraid to use electricity. This was a technical knowledge issue in that they did not know how to operate electrical appliances: a new and dangerous artefact to them. Second, there is an issue of gender, of how men perceive themselves. As a few of the young generation of men cross over to do jobs traditionally done by women, they try to maintain their constructed masculinities by using the new technology. As one young man put it:

Vuyisano: Men see themselves that they are men so they cannot kneel and blow onto the fire. They cannot cook. They come in, eat and leave the plates…

Magi: Is this changing now?

Vuyisano: No, it is not because we grow up in front of our fathers and we see what they do and we do the same. But sometimes you say …hmmm, you are hungry but you have to use the two-plate [electric hotplate M.N.M]. *Not the fire*

Magi: Why not the fire

Vuyisano: Ah, (laughter)..it is women [who are] are used to that thing

Annecke has also observed the phenomenon of men's preference for electricity in her discussion on the changes in gender relations as a result of electrification in townships, suggesting that men are more willing to cook with electricity (Annecke 2005).

A third factor has to do with modernity. Across gender and across age groups, those that wanted to enter the modern world of cooking using electricity (but also using other modern technologies) were students and young people in general. It is young women and men who have most access to the many modern technologies that are entering daily life in these villages. They are less afraid of them and eager to be trendsetters. While this helps households to move to modern energy services, it has nothing to do with how these young women and men perceive health impacts of energy acquisition and use. On the other hand, some women and men of the older generation and some men, as illustrated in Table 6.16, see (women's) cooking with electricity as "*laziness*" and a desire to be modern – in the negative sense.

The continued use of firewood and paraffin by the elderly also has particular implications for child health. Eastern Cape has a high rate of teenage pregnancies and parental migration to cities, which has increased in the post-apartheid era as women and men move more freely in the hope of a better life. As a result, children are often raised by grandmothers, implying that in spite of the introduction of modern energy, and even though the household might list electricity as its main source of energy, young children can continue to be exposed to the health impacts of firewood, paraffin and dung because their primary carers, the grandmothers, are unable or reluctant to use electricity and, in some cases, gas. Thus, introducing new energy sources alone is an inadequate solution for such a social and economic context. Better-ventilated houses, for example, along with education campaigns on firewood, paraffin and other energy–health impacts, would also be required.

How does gender influence perceptions and responses?

Another indicator for people's perceptions and responses to the health impacts of energy use would be how they invest their incomes in various energy appliances, where alternatives exist. In Tsilitwa electricity exists as an alternative to firewood, dung and paraffin, yet as the preceding analysis shows, use of firewood and dung persists. While in themselves, social grants from government may not be enough for energy and other basic needs, they do present an opportunity for households to expand their range of goods and services. This section then examines if there are gender-related constraints to moving to electricity (as the 'healthier' choice amongst available alternatives in Tsilitwa). I chose to focus on gender for two reasons. The first is that throughout this thesis, gender division of labour as well as space – as shown in chapter 4 as well as in this chapter – have been recurring themes. Secondly, the literature on energy acquisition

and use shows that the resulting health effects impact upon women more than men (chapter 2), making gender a critical lens through which both energy acquisition and use must be seen.

From a gender perspective, some authors have suggested that women have less power and therefore less input in what appliances they may buy. This input includes decision-making power and incomes. The argument goes further to say that men, who are not usually responsible for cooking, choose to buy appliances such as TVs and radios (James 1993). If this is valid for Tsilitwa, then the earlier analysis of perceptions and responses in will have to take such constraints into consideration. This is because women would have little motivation to respond against negative experiences of energy acquisition and use if they cannot make the decision to change. Similarly, if they can make the decision to change but do not have the financial capacity to effect the change, they may also respond in a particular manner (*i.e.* just get used to it). A good point to start in responding to the question of whether, and how, women are constrained in buying appliances is:

1. to examine the appliances owned by households according to the gender of the household head, and examine whether women-headed households are less likely to have and use cooking appliances;
2. to examine who funds the appliances available in households, and whether there is a difference in the type of appliances that men fund compared to those that women fund;
3. to investigate what appliances are seen as most important to the different members of the household (*i.e.* which ones they value most), and see how women's preferences differ from men's.

I must emphasise here that the data is mainly from women because of the population structure. In addition, even in households where men have not migrated, the men are rarely at home, giving me little opportunity to interview them – a situation that in itself implies women are, by and large, in charge of the households' daily running.

In Table 6.17, I have excluded radios because people use their televisions to listen to programmes they would otherwise listen to on the radio. Here I have used only television and cooking appliances because they are the appliances most referred to in the literature about the energy purchasing choices of women and men.

Table 6.17: Modern energy for cooking and television ownership by household headship in Tsilitwa

Appliance	Female head n =63	Male head n=20
Modern energy for cooking (Electric or gas stove)	58 (95%) n=61	17 (94%) n=18
Television	39 (70%) n=56	12 (63%) n=19

The above table suggests two things. The first is that relatively more female-headed households use modern energy for cooking compared to male households. The second is that television, allegedly a "*male appliance*", is also higher among female-headed households than among male-headed households. This is even more pronounced when one considers that for one of the female households, their television was broken, another

was stolen, and a third had opted not to buy a television because she was afraid that it would make her susceptible to house break-ins, especially since she lived alone.

At least three factors could explain this pattern of appliance ownership. The first is that the sample is naturally biased towards female-headed households due to population structure. In the specific case of Tsilitwa, and some rural parts of South Africa, male-headed households may be poorer, because the male is at home in the village rather than working in town. It should be noted here that headship was defined by who makes the major daily decisions. Women themselves suggested that, although traditionally men were household heads, the women made daily decisions, especially when men were away, and daily decisions "*are what builds a homestead*". Considering that migrant males typically come home once a year, it is also reasonable that households with migrant males would be female-headed. A third explanation is that this pattern has resulted from government policy as to who signs for the grant, as indicated in chapter 4. This would then put financial resources into the hands of more women than in previous times, when households were largely dependent on male-generated incomes. Interestingly, three males in the sample responded that their wives were household heads. This is a departure from most traditional patriarchal societies where males would report themselves as household heads, in accordance with their traditional positions. In addition, as stated in chapter 4, women start receiving their pensions earlier than men (60 *vs* 65, but this is set to change in 2010). Thus one sees, for example, that with the exception of one case, the poor women that had washing machines had bought them by saving their pensions. It is also important to note here that the most common cooking appliance, a two-plate hotplate, is cheaper than a television.

Reactions to habitus

The above sections have provided evidence of experiences, perceptions and responses, from the perspective of household energy users, to the health implications of energy acquisition and use. This section provides explanations as to why such experiences, perceptions and responses result. At the core of the argument is the contention that experiences, perceptions and responses are intimately connected to material and immaterial (in the sense of intangible) conditions, which in turn produce practices with particular meanings for the subjects.

Living on the margins

Reflecting on the analysis in chapter 4, the people of Cutwini and Tsilitwa (like many other poor black South African) have historically occupied a social world that is marginalised. From the turn of the last century to the present, they have had little control over their social and political lives, and have had few options for (re)claiming more advantageous positions. This marginalisation has been defined in racial (and through homelands, geographical) terms, offering extremely limited access to political, economic and social power in the colonial and apartheid eras. It continues to a large extent in the post-apartheid era through the people's historically embedded position, and also resulting from current political and economic forces. In addition to these constraining political events and institutions are the limitations that result from marginalisation and cause other multiple *social sufferings* that the people experience on a daily basis. Examples of such suffering include illness and death, particularly from HIV/AIDS, uncertainty and disillusion with institutions (primarily government) which,

to a large extent, have failed to meet their expectations and have failed to change their economic and social positions. Such experiences shape their perceptions and responses to daily life, of which energy acquisition and use is a part. An assessment of perceptions and responses must therefore be seen in the lived, historicised space and time in which the affected persons try to make sense of their world. The suffering recounted in chapter 4, as in the case of the young woman who had been abandoned by her biological parents and remained unassisted by state bureaucracy, makes it possible to understand how affected persons might choose not to respond to the *petite misère* and sometimes, even the *grande misère* of their lives. Living on the margins for such long periods of time, from one generation to the next, brings about the sense that things are unlikely to change, so that "*getting used*" to adverse conditions is the only coping mechanism available.

Scripting technology

The analysis in this chapter shows that while incomes affect energy use and therefore the range of responses available for people, they only do so as part of a wider, more complex configuration. Another way of understanding the complex configuration beyond income is to look at the technology and the setting itself. Increasingly, the understanding of technology has changed from considering it as a neutral black box which, given a set of technical and economic inputs, provided specific outputs, to focusing on technology as a "living" part of daily experiences[36]. Over the years, the understanding of technology has moved to conceptualising it as a system that acts and is acted upon, through many interpretations by designers, manufacturers, promoters and users, so that it has complex meanings. Rip & Kempe (1998) use the term *regimes* to denote a set of rules or grammar embedded in complex engineering practices, production processes, characteristics, skills and procedures, persons, ways of defining problems embedded in institutions and infrastructures. They conceptualise that *regimes* arise as a result of earlier changes that structure subsequent changes (Rip & Kempe 1998). The concept of *regimes* is important in understanding that technologies do not come into any empty social space, but have to adapt and be adapted to pre-existing and continuing interactions. It is then important to understand the tensions that exist between the regime constructed by earlier dispositions, and the as yet unarticulated

[36] Rip & Kempe (1998) have looked at the many ways of looking at technology that have developed over the years. They include looking at technology as a set of tools coming from the outside and rupturing society, so that it is a source of particular impacts. A second way is to look at technology systems as stratified components which are combined into a configuration that works, and such a perspective includes infrastructure and skills required to handle the object to work properly. This conceptualisation recognises that since skills are routines, they include behaviour patterns, so that the impacts of technology are not limited to serving their intended purpose. A third way is to focus on technology as transformative, as an input that, in combination with capital and labour, provides a specific output. This view, which is linked to neoclassical economics, assumes that skills and knowledge are drawn freely and technology fulfils a function. A fourth perspective is that of certain anthropologists, who view technology as a key aspect of the socio-cultural landscape, either as part of the ecology or, metaphorically, to make culture visible (Douglas 1979 in: Rip & Kempe 1998:334), and technology as part of societal transformations, not just a driver of those transformations. Furthermore, technology is seen as a symbol and as an ideology, and here Rip & Kempe (1998) focus on its western symbolism, which presents technology as a symbol of modernity, progress and rationality. Such symbols may come from official declarations, or from how it fulfils or legitimates roles, actions and policies. Verbeek (2005) has also looked at the moralising aspect of technology, using the example of medical ultrasound. Finally, Rip & Kempe (1998) also review the notion of technology as a seamless web combining landscape and symbolic aspects.

regimes being scripted by the new technology. Akrich (1992) uses the notion of the *script* to discuss contradictions and resistance to technology in society, when it is conscripted into a new regime. For Akrich, technology designers inscribe their own predictions of how the user will appropriate a particular technology, but users may not play this designer script as envisioned (Akrich 1992). The assumption made from the energy-development perspective is that users will take up the modern energy carriers, replacing firewood, dung and even unsafe paraffin stoves, which will in turn reduce the health impacts of energy acquisition and use[37].

As a result of these pre-existing *regimes* however, users have to find ways of resolving the tensions that result from introducing new technology. In Makhulu's homestead (Appendix 4), the tensions between the traditional values of the fireplace and the other (new) values of watching TV are resolved by watching TV while sitting around the fireplace. As pointed out in chapter 4, most households in Tsilitwa, despite changing to cooking with electricity at least part of the time, watch TV and socialise in the same traditional, poorly ventilated kitchen, where a wood fire is burning. In this way, the interactions between social environment and the technology mean that the script developed by actors such as the DME and energy-development practitioners, in which users appropriate modern energy carriers to improve their health, is not realised. In other cases, the tension is resolved by reducing or removing certain slow-cooking foods from the diet, so that the new script might bring unexpected new problems. An example in Tsilitwa would be the reduction in the protein content of diets through the abandonment of slow-cooking foods such as beans, even though the family cannot afford other quick-cooking protein sources such as meat or fish. Other scripts might also evolve in accordance to the cultural values of respect and dignity, where such respect is considered to be derived from undertaking hard reproductive work.

Borrowing from Verbeek's notion of moralising technology (2005) and reflecting on the findings of chapter 2, the moralising aspects of technology are seen in the RETs debate, and in the moral argument over sustainable development (using resources in the present in a way that does not impact on the resources available to future generations). Similarly, the climate change discourse promotes or denies specific technologies based on the moral ground of obligations to future generations. Arguments for household energy technology for empowerment, for gender equality and for reducing drudgery, also emphasise the moral aspects of technology, since they look at the subordination of women as wrong, and see energy as playing a role in promoting equality. The moralising aspect of technology also becomes important in how women are judged as 'good women' or 'lazy' women based on whether they make an *igoqo*, collect firewood 'often enough', or use electricity to cook rather that firewood. Understanding both sides of such scripts is therefore crucial to understanding how outcomes expected of technology might not be realised.

Mutedness and hegemony

I already pointed out in chapter 1 that women were inarticulate and sometimes silent in expressing their experiences of collecting firewood. Others opened up more as we collected firewood together and in other informal settings. As explained earlier some women criticised themselves as "*being lazy*", for finding alternatives such as collecting firewood by tractor. Some were apologetic for claiming that "*smoke hurts my eyes and*

[37] Or to address other aspects of energy development that experts see as crucial to addressing quality of life issues such as poverty.

chest" or that they "*hate it*". Others accepted it, claiming: "*I am a woman…I have to collect even if my body is in pain and refusing even when it is painful*." They accept their positions so that they even deprecate those among them that dare to express the view that collecting firewood or cooking with it has negative health impacts.

To understand these attitudes, I refer to Ardener's theory of muted groups, which hypotheses that society's hierarchies prioritise some groups over others. Underlying such prioritisation are asymmetrical power relations. This then results in privileging the dominant group's particular ways of expressing (*e.g.* expressing experiences) as appropriate (Ardener 1975; Kramarae 1981). In the case of the women who are responsible for energy acquisition and use, their *mutedness* can be seen primarily in their silences, which they have adopted because what they say is not often heard in dominant groups when they express it in the women's own way. Secondly, it results from the dominant group privileging its own ways of expression, or choosing not to hear or not to respond to alternative modes of expressions and alternative meanings, which it deems to be irrelevant (Kramarae 1981). For example, men would often say how easy women's work was compared to theirs. Such an assertion ignored the fact that women's work was daily work, as compared to the men's once-off and seasonal work. The assertion also ignores the fact that there was also heavy work in the women's work repertoire. While at least three men acknowledged women's burdens with powerful symbols, the majority would dismiss it as: "*they just wash dishes*"[38].

However, the women and men of Cutwini and Tsilitwa are not the only ones involved in the muting process. As chapter 2 has shown, methodology has contributed to this muting too. Energy and health experts typically use experience-distanced quantitative surveys, often with pre-designed questions and limited ways of answering. In doing so, they become a dominant group that defines how the muted group, rural women in this case, express themselves. In focusing on what is important to themselves as appropriate ways of expressing experiences, the experts have effectively muted what is important for the affected persons, both women and men. The few studies available on impacts of head-loading stood in stark contrast to the passionate expressions used by the women whenever they discussed impacts of firewood collection, *e.g.* with phrases such as: "*it crushes you, it crushes you to dust*" and "*it bleeds you dry*". Even with respect to the area of IAP and respiratory infections, an area where the literature is substantial, the studies are such that IAP measuring gadgets are read off and results written in publications that the affected populations can neither access nor understand. Here, what is seen as relevant are the level of particulates and whether or not these reach a determined level, or whether or not particular interventions are technically efficient, while the women's expressions of opinion and experience are largely seen as irrelevant talk. The women are expected to adjust and adopt these new ways *i.e.* interventions. This is not to discount quantitative methods, but rather to decry the lack of 'experience-near' studies. It is not surprising, then, that none of the respondents knew that IAP can lead to death, particularly among under-fives, even though experts largely agree on this (see chapter 2). Overarching these methodological issues is the fact that the development agenda is set far away, with limited involvement of muted groups.

How does this muting occur at the level of household actors? Muting is achieved first through a lifetime of observing older women, joining in the activities from a young age, and broader gender socialisation. In the process, women gain what Bourdieu called

[38] One young man said women are treated like donkeys, while another said they work like slaves. Both were referring to how much work women do with little help.

practical mastery (Bourdieu, 1977). A mastering of not only the practical and physical skills required to balance a firewood bundle on the head or cook on a smoky fire, but also a mastery of the socially constructed perceptions and responses.

Such muting can also create what I call 'mimicking', where respondents sometimes gave answers according to what the government had said. For example, some respondents reported that cholera was a problem in Cutwini and in Tsilitwa, yet when asked when was the last time any one had experienced this problem the answer was "*never"*. Neither Cutwini nor Tsilitwa had experienced cholera in years, a finding supported by health personnel of both LSAs. Further investigations revealed that there are often cholera campaigns, and so people take this to be the problem. In other words, predefined, experience-distanced discourses effectively rid respondents of ways of expressing other subjects in their lives. (see also chapter 4: "*we focus on what is fashionable*".)

Before proceeding with the issue of women as a muted group, there is need to address the responses of other women who said they have no problem collecting firewood or cooking, because they enjoyed it. It could be that the women had gained expertise because they had done it for a long time and that they did indeed simply enjoy the work. I coded this "*loving labour*" to capture not just the fact that they (claimed) to love the work, but also to refer to common understandings of household work as being done out of love for the family. This explanation did not hold under scrutiny, since women would then respond for example "*the smoke is there but I do not care about it because I'm cooking for my husband or family*," or "*I feel good because my husband stays warm.*" Another woman felt that her "*parents would be proud of her*". It is also questionable when pitted against the responses of those who experienced pain, both in this study and from musculoskeletal injury studies (*cf.* Joosab *et al.* 2009). I therefore changed the code to "*moral claims*". By moral claims I mean that these women, although they experience the negative health effects from firewood collection, firewood use and/or paraffin use, they do not conceptualise the health effects as problems because it gives them a moral status. Such a moral status might be that of being a "*good woman*", "*having a good home*", or being seen as "*not lazy*".

Does this explanation that women can make a *moral claim*, which enables them to appropriate a *moral status*, mean that this particular group of women is not *muted*? In view of these responses, how can we understand *mutedness*? There are two explanations for this dilemma. The first is the fact that one of the groups that liked going to the forest are young women who said they "*can be with friends and chat*". This is a reflection of the lack of social space for women outside the kitchen compared to young men, most of whom can walk around the streets the whole day (see chapter 4). This reason was not found among any of the older women, suggesting that the older women have at least created their social space in the kitchen, negotiating the male–female divide. Young women, on the other hand, have to find their own social space away from that already claimed by women and men. They can do so strategically by combining work and creating their spaces on trips to the forest, to the water point and other work places. The second explanation is that women also gain a form of power from attaining and maintaining the standards of a 'good woman' and the accompanying moral status, and so they come to see the positive aspects of the work they do. Wendy Annecke, a feminist working on gender in the energy sector, recounts her own guilt at potentially losing the image of a "*good mother and partner*" (Annecke 1999 :5), as well as her reluctance to relinquish her power when her partner takes over cooking duties. The

presence of these standards across cultural and socio-economic divides points to how powerful such power niches can be, as society demands them.

The power derived from gendered work cannot simply be ignored as minor. However, this power should also be seen in terms of power relations that exist in women's worlds. Since these *muted* women must live and express themselves in the world of the dominant group (Kramarae 1981), their very expressions of status and power are defined in terms of the choices of the dominant group. They define *moral status* in terms of being a '*good woman*' or making a '*good home*', thereby deriving some sense of power within the sphere to which the dominant group has relegated them and within which they find a sense of identity and something good about their lives. It is therefore also important to recognise that in changing to modern energy carriers, or the *un-muting* of women, they may experience a loss of status and power at another level. This might cause them to feel conflicted about changing the meanings of being a 'good woman', or about asserting the negative effects of the very activities from which they derive this power. Thus, when women in Cutwini and Tsilitwa are scandalised at having a man help them, or are reluctant to stop collecting firewood, they protect the status and power they have attained in their *muted spaces*, while simultaneously reproducing their domination and mutedness. Women are they left asking, as they did ask me whenever I suggested what I saw as a more balanced sharing of their work: "*What will we be doing then?*" In other words, what will then define them as 'good women'? Annecke also reveals these power niches that muted groups carve out within the space they are relegated to, and the dilemma encountered when moving out of such spaces:

> *After years of repetition I experienced cooking as a chore, as an irksome task I had had enough of, and only when I relinquished the activity did I perceive its function in my identity and position of authority in the household. My collusion in the system granted me not only fulfillment of my desire to nurture but a certain authority, status and legitimacy.* (Annecke 1999 :11)

Another useful concept for understanding the seeming conflict between being muted and the power of the *muted space* is by using the theory of *cognitive dissonance* developed by (Festinger 1957). In its simplest form, the theory of *cognitive dissonance* posits that, faced with difficult circumstances where a person has made a choice with negative consequences, the person may experience a sense of conflict, *i.e.* dissonance. To resolve such dissonance, s/he will emphasise the positive attributes of the choice over the negative attributes (Aronson 1969; Festinger 1957). Here of course the choice of the women is limited, but by framing the activity in a positive way, the dissonance about why they do it can be resolved. In reframing the health-affecting work as work that makes them '*good women*', the women are able to resolve their own conflicts and therefore (emotionally) compensate for its negative impacts. Furthermore, some of their articulateness can be understood by using the Marxist perspective of "*false consciousness*". From this perspective, women as a group with limited power may embody representations of social relations that do not acknowledge the realities of their subordination. Within such a framework, the impacts of activities that represent such subordination (*mutedness*) may similarly be (unconsciously) concealed. Thus, it was especially striking how women would assert that men do so much hard work, yet both

women and men struggled to list the work that men do, apart from looking after cattle (often done by one boy in the household)[39].

Mutedness, *cognitive dissonance* and *false consciousness* show some level of acquiescence. Gramsci's notion of *hegemony* (1971) is therefore useful in understanding such responses. Although the position of women is much more complex than that of subordination, as shown in chapter 4, the cultural institutions in both studied villages are largely dominated by men. Earlier analysis in this chapter has already shown the subtle and explicit ways of pursuing acquiescence, which the women adopt as their own, of which *igoqo* is one example, and the work that men cannot do (like collecting firewood or cooking) is another. Women as a *muted group* normalise and acquiesce in their own muting.

Muting is also replicated in the lack of interaction with the energy-sector officials and technicians. On one hand, there are the officials and technicians, who envision a specific configuration of users and develop policy and technology for these envisioned users. On the other hand, there are the real users, who have to respond to these policies and technologies in a complex reality, but whose needs and social worlds are not always taken into account in these policies and deployed technologies. Similarly, it occurs in the interactions between health officials and the affected persons. As stated in chapter 5, there are no local public-sector energy officials, the only contact with them in Tsilitwa was when ESKOM technicians came to connect households. Apart from one talk on safety, households are expected to "figure out" how to maximise the benefits from electrification. The assumption is that there is a need for modern energy carriers, and that the users know how to use and therefore benefit from these energy carriers – an approach based largely on *technology determinism*.

From the health sector, the interaction with local health officials presents two problems for the target users. First, women doubt if they will be taken seriously and often asked me if they would be treated if they presented their concerns regarding smoke to the clinics[40]. Second, the modern health care system provides its assistance in a way that is incompatible with the Xhosa conceptualisation of treatment. This is compounded in the case of respiratory illnesses. There are four common illness diagnoses for respiratory infections: common cold, flu, asthma and TB. Those that suffer from chronic respiratory infections that are neither asthma nor TB cases find themselves in a *muted field*. By *muted field* I mean a field of sufferings for which there is no way for them to express their condition and its causes within the dominant paradigm. Although data at the international level analysed in chapter 2 shows correlations and causations between smoke and chronic obstructive pulmonary disorder (COPD), the COPD program in South Africa as shown in the analysis in chapter 5 targets men only, because "*women do not work in polluted environments*". Several women, both young and old, resolved this dilemma by self-diagnosing with TB. In 2009, because the news about swine flu was often on the radio and on TV, a number of people declared that their chronic respiratory conditions were due to swine flu. In this way they could at least name their condition, and thus construct their own meanings of health where there were none provided by the experts. On the other hand, women also

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[39] Two men in Cutwini were rather shocked when they found out they do not undertake household work through most of the day. This emphasises also that men probably do not seek and plot to subordinate women, but simply reproduce their habitus.

[40] This was less of a case in terms of pains, because in many cases they go and get painkillers and rubbing stuff by simply complaining of body aches.

often reported that nurses were incompetent for two reasons. Firstly, they waited for the patient to tell them what was wrong, unlike the Xhosa healers, who "*know before you tell them*"[41]. Secondly, the nurses give them medicine which is usually for symptomatic relief and not curative, and the nurses do not explain what is the cause of the ill health. This again entailed a comparison with Xhosa healers and diviners, who trace the illness to a specific event or person and therefore its roots.

The above situations with the modern health care system in these two communities further reinforces the sense that nothing can be done – a sense that affected persons should simply "*live with it*" (*i.e.* stay mute). Consequently, people are not aware of the full implications of their experiences, and are therefore constrained in how to perceive and respond to these experiences. The health impacts of firewood collection and smoke are then reduced to transient inconveniences of poverty that have to be borne as mere irritants.

Meaning of things and being[42]: Modern tensions in a traditional place

In discussing how gender influences perceptions and responses I showed that female-headed households invest in TVs as much as they invest in cooking appliances, if not more. Considering the higher costs of TV sets compared to hotplates and the added risk of robbery which often turns violent, it might be concluded that women and men invest more in TVs than they do in cooking appliances. Still, cooking appliances have higher operating costs than TV, and therefore it is assumed that households cannot afford to cook with electricity. Other forms of goods consumed in the two villages call for a closer look at the question of consumption, and therefore the extent to which "affordability" is a barrier to responding to impacts of energy acquisition and use.

From the energy sector, one effective way to respond to the health impacts of energy acquisition is to change to using modern energy carriers, such as LPG and/or electricity for cooking. In order to do this, households must have physical access and must be able to afford the modern energy carriers. In developing countries, the question of energy affordability itself is often filled with claims that energy is not affordable without discussions of what is "affordable"[43] or the gender dimensions of affordability in households. Therefore, it will clarify things to mention first that there are three major themes which are common in affordability debates. Affordability conveys a notion of reasonable costs in relation to people's finances[44]. In the context of modern energy services, energy experts assume that a household can afford its modern energy services if the costs of getting and using the services do not extract an unreasonable share of the household budget. They get the sense of what is "reasonable" from a presumption that the household can use modern energy carriers and retain sufficient finances to meet other basic needs such as food, clothing, transport, medical care and education.

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41 This refers to the fact that Xhosa traditional healers use divination techniques, and often start a discussion by telling their clients the problems that the client has. When the respondents compare this to what nurses do, which is to ask the client's symptoms, they perceive it as a lack of expertise.

42 I have borrowed this notion from Csikszentmihalyi & Rochberg-Halton (1981), who use it as the core of their analysis of domestic goods.

43 So far, experts tend to be vague about what is affordable. Generally, in the energy sector the test that is applied is: what energy source does the household use most? Or, the energy amounts used by household are seen as the level of affordability as indicated in the case of 50 kWh for FBE in chapter 3.

44 Reasonable and unreasonable are, of course, in themselves highly subjective, very contextual and strongly linked to the situational real purchase power of the household.

Secondly, energy experts assume that if households are electrified, as is the case with 85 of the 89 households in Tsilitwa, but do not always use electricity for cooking, if they have physical access to LPG but do not use LPG for cooking, it is because they cannot afford these energy services. A third way of assessing affordability of energy carriers, according to energy as well as development experts, has been to ask households whether they consider energy use too expensive, or whether the bills are too high – as done by McDonald (2002). These three ways of measuring and discussing affordability make two major assumptions. The first assumption is that the households act entirely as rational entities, making economic decisions based on an economic rationale, as perceived by international and national-level actors: and that these rational decisions have been made with adequate information on the benefits and costs of competing choices. This further assumes that the reporting of high bills or un-affordability has been based on an objective economic calculation. A second assumption is that if they have the physical access to modern energy carriers, they have to use it, and any non-use is perceived as being a result of limited capability. That is to say, technology acts in a purely deterministic way, shaping how women and men live.

In living in both Cutwini and Tsilitwa, I observed what at first appeared as irrational consumption, mainly in the use of mobile telephones and TVs. This made me question my own assumption that households could not afford to use electricity for cooking. In my mind, being passionate about (received notions of) economic development (or perhaps having a "development fetish"), I wondered why the households did not invest more in 'development gimmicks': modern health services, education, including books, and modern energy services for cooking or lighting.

Take for example Cutwini, where the mobile telephone network was so patchy as to be considered non-existent. Yet many household members had mobile telephones. Of course, other researchers have shown that mobile telephones can enhance livelihoods where they are used, for example, to check prices of products in the market (World Bank 2007). In Cutwini few persons had enterprises and fewer still used mobile phones entrepreneurially. For others, particularly parents, mobile telephones are useful for keeping in touch with migrant relatives, for social and economical reasons. Still, why did many, especially young adults, have sophisticated handsets including ones with internet applications even when they did not know how to use them? Why did households buy mobile telephones not only for adults and young adults, but also for children as young as 13 years, if they are indeed poor? This phenomenon was even more impressive in Tsilitwa, where I found children as young as 10 years old with mobile phones. A number of these mobile phones were bought specifically for the children, and were not hand-me-downs. Some matric and post-matric young adults (mostly 16 to 20 years old) even had the latest third-generation mobile telephones, paying monthly contract fees of at least R200 over at least two years[45]. Similarly, in Tsilitwa, households that had TV opted for big colour sets, a departure from DME's assumption that poor households would use black-and-white TV sets. The manner in which they used their chosen technologies (the all-day use of TV and DVDs, even when no one is watching them) suggests that some households could "afford" to use modern energy carriers. The main reason for having a telephone was "*everyone has/my friends have them*", or "*these are RDP times*", or "*these are modern times*". Both women and

[45] In Cutwini, acquaintances and friends often commented on my old phone: a Nokia™ 1100. When I said it worked perfectly for me because I could call and SMS, they laughed. They would joke that they would pool cash together to buy me a "proper" phone that "would be expected of me".

men, when asked why they liked TV, replied that it was because they could watch and discuss *Generations* and other soap operas, which, as indicated in chapter 4, have become a part of daily life. Other reasons were to know what is happening out there, and for women, to listen to gospel music. For some people the TV was also a way of "*removing loneliness*". From these replies, it appears that people get a feeling of belonging to society and also derive a therapeutic effect from watching TV. In contrast, hotplates were liked for their utility: "*because I cook with it*", or "*because it cooks fast.*" These responses show social and utilitarian functions for mobile telephones and TVs, while for cooking appliances, the function is almost exclusively utilitarian. While not discounting the social, therapeutic and utilitarian value of mobile telephones and TVs, the ubiquitous consumption and perceived affordability of mobile telephones and TVs, compared to the perceived high costs of modern energy services, has also to be understood in terms of their social meanings. Such an understanding can clarify the perceptions related to investments in the use of modern energy carriers such as electricity and gas for cooking by household actors.

Mobile telephones and big colour TVs have clear status meanings. These meanings are constantly constructed by the TV itself through images it brings to the public, and various forms of advertising (*e.g.* street leaflets common in town centres all over Eastern Cape). Moreover, the status meanings of mobile telephones and TVs are more portable and transmittable than those of using modern energy carriers and the services that they offer. The mobile telephone is carried on the person at all times, while the TV is carried in discussions of yesterday's episode of *Generations*, for example, or in the exchange of DVDs. One's peers, one's community and society at large can locate an individual within a society hierarchy according to the type of mobile telephone that they pull out of their pocket, and even the ringtone it plays (*e.g.* polyphonic or not; personalised with downloaded music or owner's voice or not). In South Africa, a country of great inequality but where people's lives and lifestyles are very visible to each other through urban migrant workers and TV programmes, such social symbolism and self-symbolism[46] are especially vital for defining and locating oneself. In this way, artefacts not only reflect the existing reality, but also ways of being or feeling not yet available (Csikszentmihalyi & Rochberg-Halton 1981). For marginalised persons, these 'status goods' should therefore not be seen in terms of vanity, but rather as an attempt at inclusion, and a foreshadowing of what could be (Giddens 1990).

Similarly, traditional artefacts, including those linked to energy are saturated with meaning. The *igogo*, physically constructed by women, for example, is an artefact (as Fiske (1989) would point out) to think with and to speak with. On the one hand, the *igogo* acts as a *hegemonising* or *mystifying* device and practice. On the other hand, it acts to coalesce the social relations particularly between the *makoti* and her husband's kin, with whom she now has to live. Similarly the fireplace, as a social place where the family gathers after a long day, where the rituals are performed, functions as a social

[46] Drawing from Wickland & Gollwitzer (1981), I take social-self as the person's definition of self with respect to others, resulting from expectations of socialisation. For Wickland & Gollwitzer, the individual is incomplete in self-defining until s/he has an awareness of others' acknowledgement. In this way, it is a particularly useful notion for marginalised groups whose intrinsic value is rarely acknowledged. Symbolic self is representational but also social self. In this way, self-symbolising is concerned with defining competencies even when such defining competencies hide "incompetencies" (e.g. "we are modern too").

symbol, representing cultural capital. These are meanings that other technologies such as solar cookers may not as yet provide, and for that reason, may be rejected.

During interviews in Cutwini, at least six women older than 50 years and two women under the age of 30 years recounted their fears and confusion as to how they would interact with ancestors if they only had electricity, since ancestors knew only about firewood. Four other women in Tsilitwa and one man discussed how they feared departure of ancestors once the village was electrified. This shows how the traditional fire and the fireplace symbolise well-being (since the presence of ancestors is critical for well-being as discussed in Chapter 4) and a sense of cultural security and continuity of traditional life in a place where the modern and 'foreign life' are constantly encroaching upon Xhosa culture. While electricity and its uses bring with them their technical functions and the power to cook faster (and cleaner, although this was not articulated in interviews), it also adds to the range of the valued – or what Gergen (1991) calls a "*vertigo of the valued*"[47]. Gergen's conceptualisation is especially important here for policy makers, as a caution against the fetishes of economic rationality that dominates energy policy (as shown in chapter 2) and for those of us who wish "development" upon others. This is because the "*vertigo of the valued*" presented by the coming of modern energy carriers brings what Gergen calls "*a multiplicity of competing values and beliefs which make rational choice meaningless*". I would dissent from Gergen's claim that rational choice becomes meaningless, however. Rather, I argue that choice becomes more complex, being rational or irrational depending on the perspective from which they are seen. Since persons are complex beings that embody contradictions, their choices can indeed simultaneously be rational and irrational.

Hardiness

I have pointed out some of my experiences with firewood collection and paraffin and firewood use, whereby I was affected while others were not (see Matinga 2008). This led me to question whether the women's experience in working in such situations ameliorated the impacts of energy acquisition and use. Eventually I started to cope better with pains from firewood collection and smoky environments, although compared to the residents of the two studies villages, I still reacted more strongly. Listening to respondents discussing their own experience, they often used words that depict a sense of strength, of not being soft. I initially coded this as *amandla*, meaning strength or power. Another observation was that some women contradicted themselves. Sometimes in interviews, respondents would start with "*I face no problems…*" before going on to list and explain a number of health impacts of firewood collecting or cooking using firewood or paraffin. Sometimes the contradictions would come up after the interviews, when we discussed the issues in informal settings such as at a funeral, at *lobola* party preparations, or during trips to the market or the forest. Pursuing explanations for these contradictions brought various concepts to light. The first was the constant reference to *ubunzima* (difficulties/burdens). This was explained with respect to the weight of the

[47] Gergen refers to the industrialised society in particular and the many options available to persons in it. For him, this vertigo comes from technology changes that have led to an expansion of social relations across geographies, which brings alternative impulses to a coherent self, as people incorporate others into themselves. The people in these two villages may not be considered to have reached the kind of saturation that Gergen may be proposing. However, the linkages he talks about – technology change, contact with many outside worlds, re-evaluation of what is proper, good or exemplary whilst the past is still vivid (Gergen 1991; 2001) – are conditions that are noticeable in this context.

firewood; *kunzima* meaning to be heavy as well as referring to the burden and hardships of the process of collecting firewood itself, as well as cooking in smoky environments. Respondents also talked of *ukunyamezela* or *ukunyamezela ubunzima wethu* (to persevere or to tolerate our burdens). Exploring these concepts further brought a new theme closely related to *ubunzima* and *ukunyamezela*. This was *ukuqina* (to make strong or hard). Because the initial code *amandla* corresponds more closely to power, while *ukuqina* corresponds to being hardy, I changed the code *amandla* to *hardiness*. From the *Oxford English Dictionary* (Oxford Dictionary Website, accessed 29th April 2009), being hardy means being capable of enduring difficult conditions, being robust, while the *Merriam Webster* defines it as being inured (*i.e.* accustomed) to fatigue or hardships (accessed 29th April 2009). Taking from these definitions, I focus on *hardy persons* as those accustomed to hardships, or capable of withstanding conditions generally considered adverse. In the next section I discuss how *hardiness* is constructed. Before proceeding, however, I must comment on two aspects of the conceptualisation of *hardiness*. In my article in 2008, I conceptualised *hardiness* as being a result of many aspects of living life in marginalised contexts, which I had earlier called *positional acceptance* (Matinga 2008). Firstly, upon adding fresh empirical data from Cutwini and from Tsilitwa, I have opted to broaden these concepts and sharpen others. Secondly, the initial conceptualisation was based on the empirical data from Cutwini only which, infrastructure-wise, is more marginalised than Tsilitwa and does not have electricity. Nevertheless, Tsilitwa continues to experience certain aspects of marginalisation. Moreover, there are no critical differences in how and which social groups experience *mutedness* and *social suffering* in the two villages. As such, the concept of *hardiness* is as relevant for Cutwini as it is for Tsilitwa. As such, the addition of empirical data from Tsilitwa, to the limited extent that is relevant for this study, provides an initial test for the concept of *hardiness* and extends the areas for application of this concept.

Living on the margins politically, physically, socially and economically is a key aspect of the context of *hardiness*. The limits within which marginalised women and men live, require that they develop strategies for survival. As the constraining circumstances continue over generations for example, these survival strategies become embodied. Such strategies may include active but limited efforts to address the problems, and acceptance of circumstances as a defining reality.

Under apartheid, the residents had no right to vote in South Africa and were limited in their participation in political processes. Since 1994, they are allowed to participate in as far as voting is concerned. Even then, many are historically constrained such that their vote does not always reflect their desires and expectations from the political process. Moreover, meaningful participation in political process is limited by their relative lack of power *vis-à-vis* modern political and social institutions, and their limited ways of expressing desires and concerns, as chapter 4 has shown. Social marginalisation in the two villages is illustrated by the lack of such modern social facilities as good schools, broader education, skills and employment opportunities and functional and equipped clinics that are increasingly crucial for inclusion. For black women, their stricter limitations on movement under apartheid resulted in even lower education and opportunities than was the case for black men, while their culturally embedded subordination – with respect to the position of men – imposes limitations both within the community and beyond. By being located in rural areas, specifically rural areas that were excluded from the benefits of a growing economy during apartheid, the residents of the two villages experience marginalisation based on their locality. Economically,

because of historical circumstances and social marginalisation, many of the residents of the two villages are without jobs. This limits their participation in a world that has become increasingly money-dependent. In the case of energy access, for example, concerns over whether or not they can afford electricity, and concerns over the reliability of income flow, limit their responses to the undesirable impacts of energy acquisition and use (among others). Within such multiple boundaries, only a limited number of actions are possible.

Hardiness also results from power structures inherent in daily life. Since *muted groups* cannot fully articulate their concerns or actualise their responses within the structures of dominant groups, they have to resort to living and expressing themselves within the bounds set by these dominant groups. Using the most prominent *muted group* in this research, women, as an example, this chapter shows women's *mutedness* through their inarticulateness, silences, self-sanctioning, and sanctioning of others within their group who appear to go beyond the bounds of dominantly accepted expressions. This is not to say that *muted groups* remain completely passive; they may also resist or develop other ways within such margins. and *hardiness* is one such way. While some of these responses, such as silencing, sanctioning and acceptance, may hinder actions against the negative health (and other) impacts of energy acquisition and use by shaping their perceptions of these activities, *hardiness* does allow women to get on with daily life.

The multiple adversities that marginalised persons face constitute layers of suffering. With limited resources to respond with, persons must choose what is addressed and what is accepted. Moreover, the breakdown of networks sometimes necessarily means that other aspects of suffering will not be addressed at all. An example here is the break-down of linkages between infant deaths from indoor air pollution, acknowledged by the community of practice discussed in chapter 2, and the use of firewood experienced by the firewood users. Since this information is "locked away" in networks that the firewood users cannot access because they are poor and because they have no way of responding to their experiences, they must find other ways of interpreting and perceiving these within the dominant group's repertoire of explanations.

Hardiness is a concept that is also found in the health literature, particularly relating to stress. Kobasa (1979) introduced the concept in her study of highly stressed executives, and used it to describe individuals who experience high stress levels but remain healthy. She argued that people with *hardiness* use their ego resources to appraise, interpret and respond to health stressors in a way that benefits their psychological and physical health (Bissonnette 1998 :5; Kobasa 1973 :3). Like resilience, Kobasa's *hardiness* allows for a sense of equilibrium in the face of adversity, but it also has a lot to do with cognitive functioning. In my conceptualisation of *hardiness*, existing difficult conditions, a sense that the situation will not change any time soon, and a need to sustain life as a social unit, drive the formation of *hardiness*. The outcome is not always beneficial in a social, psychological or physical sense, as exemplified by their *mutedness* and the chronic problems that people might face later, but it is beneficial for the sustenance of the social units. It must be noted here that Kobasa's hardiness has to do more with intangible health stressors, while in this study, the health impacts extend to the physical realm. Kobasa's "hardy individuals" have qualities such as a belief that they can control or influence stressful events, are committed to activities, to their interpersonal relationships and to self, and view changes as a challenge rather than as a threat (Kobasa 1979). In this study, however, individuals developed *hardiness* at least in part due to their inability to control, influence or change

the stressful events in their lives, and often see change as both a challenge *and* a threat. Moreover, in most cases, rather than the stressful event being something that came into their lives, it was something that individuals experienced as "given" for extended periods of time.

This research's conceptualisation of hardiness should also not be mistaken for resilience. Resilience has been defined as the ability to withstand and rebound from crisis and adversity (Walsh 1996). The similarity here is that both concepts relate to notions of overcoming adversity. However *resilience*, especially in livelihood studies, is often (although not always) used against the backdrop of shocks to a system. In such studies, the stressor was sudden, uncommon and relatively short-term or temporary, although its impacts may be long-term or even permanent. In addition, such *resilience* studies focus on reactive rather than proactive aspects, a factor which is also important to acknowledge since the poor do not only react to sudden shocks, put are continually proactive even before a shock. I therefore theorise *hardiness* as resulting from chronic stressors rather than sudden shocks. Secondly, for *resilience*, bouncing back is a key part of the concept. I, however, see coping strategies as more complex than recovery. In my conceptualisation of *hardiness*, coping includes ignoring the problem, normalising the problem so that there is no need for solving it, or reframing the problem in a positive way in order to deal with it. A result of such a broader conceptualisation of coping is that it acknowledges its multi-faceted nature, so that *hardiness* does not always result in "bouncing back". An important consequence of this, which is the core of my concept of *hardiness*, is that it can also block remedial action, by helping to bear adversity but not necessarily addressing its consequences. In so doing, *hardiness* can mask suffering. A third distinctive feature of *hardiness* here is that it puts emphasis on social construction, in that the ignoring, normalising, reframing and dealing with the related problems, occurs in and is shaped by the social worlds in which individuals live. *Hardiness* is not static but dynamic, and might change according to prevailing circumstances and resources such as information resources or changes in power relations. In responding to the health impacts of energy acquisition and use, the women of Cutwini and Tsilitwa therefore use *hardiness* to cope with other aspects of their marginalised lives, and to deal with the related long-term and chronic nature of the related health impacts.

Perceptions and responses as the everyday way of being: habitus.

To illuminate the findings presented in this chapter, I find Bourdieu's concept of *habitus* particularly useful. Bourdieu (1977) defines *habitus* as an acquired system of generative schemes objectively adjusted to the particular conditions in which it is constituted. *Habitus* has an endless capacity to produce thoughts, perceptions, expressions and actions, and is limited by the historical and social conditions of its production (Bourdieu 1977).

By starting energy acquisition and use activities early in their lives, often pre-pubescent, women start to reproduce dispositions, passed on to them by the women and men before them. These acquired dispositions are then passed on through rituals and symbols of socialisation, such as advice given to a young girl when she becomes a woman, or a young boy when he becomes a man, or to a bride during the wedding ceremony. But not only are the schemes passed on through distinct and special rituals, but more importantly, through everyday, mundane rituals. As a young girl observes her mother and sisters reproduce particular dispositions, such as *mutedness*, she acquires

these, and in turn reproduces them. A clear representation of these dispositions and their reproduction is illustrated when the women say "*we are used to it*", "*we grew up in it*", or "*smoke is in my blood*", and "*even our ancestors did this"*.

By the time they are in their early teens, they have gained what Bourdieu called *practical mastery* (Bourdieu 1977), both in the sense of the skills required to undertake these jobs, and the dispositions of how to perceive and respond to the tasks and their impacts on their health and the broader life experience. Men, on the other hand, rarely collect firewood, and the few that do so generally stop at the age of 15 when they have culturally transitioned from being boys to being men. Thus, energy acquisition and use are a way of reproducing gendered dispositions, which are reproduced several times a week throughout a lifetime. The relations between a *makoti* and her mother-in-law, or a young girl and her elderly relatives, indicate the centrality of power as a critical part of reproduced dispositions. Adjustments to the scheme may be made when particular conditions change. Critical incidents such as reduced security in the case of Tsilitwa are examples of conditions triggering scheme adjustments. Despite these adjustments in Tsilitwa, the perceptions and responses with respect to health in the two villages do not differ substantially. This is because, with adjustment, comes a multiplicity of sites of conflict within habitus. So the difference between perceptions and responses in Cutwini, without modern infrastructure, and in Tsilitwa, with electricity and other modern infrastructure, is minimal.

The similarity in perceptions and responses underlines the key role of power relations within households, within communities and beyond, embedded in social, political and economic marginalisation, gender and culture. These power relations are part of *habitus*, in which experiences are often muted with regards to *social suffering*, and individuals have, in response to these effects, developed a sense of *hardiness*.

Habitus also produces and distributes various kinds of *capital*, with which actors can navigate their world. The values attached to the related practices, whether collecting firewood, making an *igoqo*, or cooking, reflect and reproduce power relations. But they also represent *symbolic capital* and *social capital* that are vital for negotiating *habitus*. Since such practices are a combination of conscious and unconscious action, the apparent inconsistencies and incoherence between experiences, perceptions and responses become clear, in that certain aspects of it are conscious (and therefore recognised), while others are unconscious, and therefore go unrecognised.

Habitus can also constrain the possibility of action by limiting resources such as *economic* and *cultural capital*, with which one can perceive and respond to social realities. Further, actions, perceptions and responses are limited because the *dispositions* may sanction new *schemes*. The notion of a "*good woman*" works as a limiting type of *symbolic capital* that steers a woman to see her firewood collection in a particular way, and to act in a limited and specific way. At the same time, the notion of a "*good woman*" may also act as a strategising form of *symbolic capital* for other situations, thereby becoming an asset rather than a limiting factor. On the other hand, the lack of knowledge of the more adverse chronic health impacts represents a lack of *cultural capital* for action, just as a lack of income is a limitation for other residents. The range of resources and how the users of these resources appropriate them might of course vary from one individual to another. In the face of change, whether real – as for example in the case of electrification, whose benefits might be real for those who can access it – or potential – as for those who cannot fully access it – *habitus* in its complexity has to be renegotiated constantly.

It is, however, important to note that bringing in new capitals does not create unproblematic changes either. This is because new capital does not bring clear, standardised experiences and interactions that individuals can in turn uniformly experience and appropriate. The competencies, *i.e. cultural capital*, assumed by policy makers and programme implementers with which persons might appropriate the benefits of modern energy carriers, are confronted with the reality of complex individuals, their unequal access to resources and their culturally embedded, gendered interpretations of these new forms of capital. Neither is there a clear, standardised way of perceiving or responding to health impacts of previously available technologies. What the new forms of capital do is to increase fields of competition and sites of conflict. This is because the advent of modern energy carriers does not occur as a lone event at a specific time in history. Other artefacts such as mobile telephones also make their way to the same place, albeit at different rates and for different reasons. New *dispositions* that govern perceptions and responses must then emerge with reference to the multiple fields that are introduced. This entails new power relations, new meanings of distinct and mundane rituals, and new ways of allocating capital, including money. Spending patterns, and in some cases new architecture and eating patterns have to emerge, or at least be negotiated to accommodate the new artefacts. Such rearrangements may bring new opportunities. In addition, old *symbolic capital* may result in the production of moral judgements and dilemmas: of "*lazy women*" or a "*bad makoti*", accusations of being a "*khumtsha*" in a traditional place, or standing back as "*mqaba*". With such dilemmas, the new artefacts might be resisted, at least to the extent to which they are not seen as adding much value to new *dispositions* and *schemes*, or supplanting valuable aspects of old *dispositions*. Responses and perceptions will therefore not change just because technology is available for responding to particular experiences. This has critical implications for policy makers and programme implementers. This I shall discuss in chapter 7.

Conclusions

By presenting and analysing ethnographic data in this chapter I have shown that, with respect to the health impacts of energy acquisition and use, the picture is complex. This is primarily because of the women's silences and their inarticulateness in describing their experiences. This has been explained in terms of *mutedness*, so that they are unable or unwilling to express their experiences. In addition, women's experiences, and their interpretation of these experiences, is understood in terms of Gramsci's theory of *hegemony*, so that the women interpret their experiences in terms of "*being a good woman*", or as representing something that simply has to be preserved, and alternative cultural meanings of their experiences are rejected.

Secondly, the impacts of energy acquisition and use are not completely unrecognised or unarticulated. The use of techniques such as cushion rings for head-loading, and mat-and-chair techniques for channelling smoke out of the kitchen, indicate that women are aware of some of the impacts on their health. However, these are largely perceived as minor irritations. This finding, that women (and men) consider impacts as mere irritations, stands in sharp contradiction with the findings from energy–health researchers, asserting that between about 1.6 million children and women die as a result of IAP from solid fuels alone. It is however not surprising that women and men are unable to perceive the extent of the impacts of energy acquisition and use, particularly

the impacts of IAP as presented by energy–health experts at international level. This is because, as laypersons, the women and men of the two villages depend on health experts to make physiological connections. This finding reflects the gaps resulting from health discourses at international level, and reflected at national level, *i.e.* health discourses that do no go beyond infectious diseases, reproductive and sexual health, and that neglect work-related health at household level. The modern and traditional health structures with which household members interact, and which therefore shape their perceptions of health, ignore the health impacts of energy acquisition and use by ignoring work-related health at the household level. Thus, the household members also ignore these, since they have no way of expressing the impacts. The implication of this discrepancy then, is that neither emic nor etic research alone can address the energy–health nexus, and a more pragmatic approach is required.

The fact that women use cushion rings all the time when collecting firewood, and the use of painkillers, both modern and traditional, after collecting firewood, shows differences in perceptions between the international and national levels on one hand, and the household level on the other. At international level, very few studies have focused on the health impacts of firewood collection, particularly when compared to IAP. This reflects the different interests of actors at the different levels, specifically the international and household levels at either end of the spectrum.

The inability to make connections in the energy–health nexus derives from the specific setting in which the residents of the two villages experience the health impacts of energy acquisition and use. The limited perceptions and responses to health impacts are explained in terms of the mastery of dispositions, both in the sense of practical skills and meaningful ways of perceiving things, acquired over a lifetime of observation and undertaking gendered divisions of labour.

Also shaping perceptions within this setting are the conditions that produce daily life experiences. First are the historical conditions that have limited the resources with which to respond to life's daily experiences. Second are the practices that have emerged from pre-existing conditions to give meanings to daily action. In this sense, gender is a key organising and structuring principle. While discussions of energy and gender at international level mostly see the relations between women and men only in terms of women's powerlessness, this analysis has revealed more complex interactions. Firstly, what international level discourses, and to a limited extent national-level policy, interpret as subordination, *i.e.* women's responsibility for collecting firewood and cooking, the women and men interpret as meaningful production and reproduction of identities: being Xhosa, being a 'good woman', and meaningful ways of respect. Secondly, while the literature concentrates on the gendered power relations between women and men, in contrast this study concludes that women's perceptions and responses are enabled and limited not only by these relations, but also by their relations with other women.

To answer the question of why individuals respond to particular impacts in the ways that they do: the case of Tsilitwa, where electricity is an alternative, makes clear that although poverty is one of the reasons why households respond ineffectively, it is not the only one. The case of mobile telephones and TVs shows that these two modern artefacts are considered more affordable than using modern energy carriers, such as electricity, for cooking. The reason for this is found in the meanings that people derive from their use of such modern artefacts, which are in turn derived from rural-urban linkages and the representations of persons in society that such artefacts provide for

their owners. The findings further illustrate that in interacting with historical, political, social and gendered place and lives, artefacts, including electricity, take on meanings or scripts that may result in outcomes that are different from those expected by policy makers. So that what is seen by policy makers at the national and local levels as a valid response to health impacts of energy acquisition and use, may be interpreted by people on the ground as a modern device that makes women lazy.

Since, as shown in chapters 2 and 3, the energy sector depends on technology determinism rather than the co-construction of meanings, as created by advertisers of mobile telephones (and other lifestyle goods), the sector is not involved in shaping the way modern energy carriers can be used to respond to health impacts of energy acquisition and use.

For the international and national-level findings, the household level findings of affordability and how it is viewed in relation to the meanings of goods and services implies that energy policy cannot effectively address the issue of energy affordability if affordability is defined purely as an objective concept with universal meanings. Neither can the international and national policy makers address modern energy use if they perceive rural areas only in terms of a homogeneous conception of "the poor", for whom 'poverty goods' need to be provided. This implies the need to see the poor as groups of consumers with specific needs, but also with desires for dignity and modernity. Further, it shows the need to understand rural areas as heterogeneous and complex settings, rather than as a homogeneous part of the two billion people lacking modern energy carriers, as often perceived at international and national levels.

This study has found that material and immaterial (intangible) conditions, and people's various dispositions and the meanings these hold, are key to people's actions and practices. One immaterial condition, *hardiness*, born out of long-term and multi-layered suffering, has been emphasized, suggesting that people's responses are aided or hindered by the coping strategies they have developed to deal with life's adversities. While *hardiness* helps residents cope with adverse conditions, its coping strategies, which include normalising problems, also mean that problems can simply be seen as a part of life. People's *habitus*, having generated practices out of pre-existing conditions, becomes a way of "*doing things around here*". This, and the finding of the *meaning of things* imply firstly that policy and technology always have to be seen in the specific context in which they are applied. Secondly, it means that changing people's perceptions and responses will necessarily involve long-term engagement. This is in contrast with the short-term research and implementation programs commonly pursued by NGOs, bilateral partners at the international level. Chapter 7 further provides specific policy recommendations based on the arguments of this chapter, and those of the preceding chapters.

7

Conclusions, recommendations and epilogue

Introduction

The main objective of this thesis has been to understand how various actors experience, perceive and respond to the health impacts of energy acquisition and use, with a view to informing policy and contributing to academic knowledge. This final chapter answers the main research questions as presented in chapter 1. The first section presents the key findings of this research. The second section explains the key academic contributions of this work by presenting how selected concepts are used to explain the main findings and bring new insights to the question of energy–health linkages. The third section, in addressing the research objective of contributing to informing policy, makes some key policy recommendations. The fourth section reflects on these recommendations by discussing the extent and limits of the generalisability of the key findings and interpretations. Finally, last section of this chapter presents the methodological contributions that this study makes, and reflects on the research experience to help inform future work. The study ends with final remarks on some key questions related to the findings.

Key findings

This research seeks to answer the following main research questions:

1 *What are the actors' experiences of the health impacts of energy acquisition and use?*
2 *How do actors perceive and respond to these experiences?*
3 *What is the gendered nature of the experiences, perceptions and responses to the health impacts of energy use and acquisition?*
4 *Why do the actors perceive and respond to the health impacts of energy acquisition and use, in the way they do?*
5 *Whether and why perceptions at the four levels converge or diverge?*

I have approached the questions stated above by looking at four levels: international, national, local, and household level. In studying these four levels, rather than focusing on just one, I acknowledge the covert and overt influences that certain actors have on others within and outside their own level, and I avoid a dominant focus on singular social organisations as if they are unconnected (van der Geest *et al*. 1990). I present the answers to the research questions according to the levels that they address, and not according to the sequence of the above research questions. Where necessary, however, answers within each level may refer to, or be relevant for, other levels.

Actors' experiences, perceptions and responses at the international level

At the international level (Chapter 2), the question of actors' experiences, perceptions and responses is answered by examining discourses that shape the definition of energy problems, and by identifying gaps in knowledge of energy–health linkages. The focus at the international level is on perceptions and responses in terms of discourses, because it was impractical to use ethnographic methods, and the nature of the actors means their experiences have to be examined from a historical perspective.

With respect to how actors at the international level perceive energy–health linkages, chapter 2 shows that mainstream development actors, with the exception of the WHO, largely neglect energy–health linkages. Even then, the nature of WHO involvement has been limited largely to collating evidence. Despite their publication in 1984, it was not until 2000 that they started advocacy research. As to why international-level actors neglect the energy–health problem, the analysis in chapter 2 shows three main reasons.

The *first* reason for neglecting energy–health linkages is because the interests of international–level actors are defined within epistemic and political settings that prioritise the global view over specific local problems and contexts. At the international level, the main discourses that define the energy problems have historically been defined within a larger environmental discourse, where the environment is defined in terms of ecology. Although there is a specific community of researchers who have responded to the energy–health nexus through the provision of evidence, they have focused on respiratory infections from indoor air pollution (IAP) and have largely neglected the impacts of both energy acquisition (firewood collection) and use. Nevertheless, they have provided evidence that about 1.6 million people die every year from solid fuel-related IAP alone (WHO 2005). This number, said to be equivalent to a death every 20 seconds, is rarely mentioned in mainstream development debates. Such an absence shows a lack of communication between the energy–health community of practice, and actors in the mainstream development sector. Examining the key discourses that have shaped energy problems shows that since 1987, and more so after 1997, it is the sustainable development and climate change discourses that have had the most influence. The sustainable development discourse equates sustainable energy to renewable energy, and focuses on environments outside and beyond the household sphere. Further, it ignores the shortcomings of renewable energy technologies at the household level in a developing country setting. A part of this blindness to the household results from the fact that the "social pillar" of sustainable development is weakly conceptualised. Furthermore, climate change policies and responses are largely technical solutions that focus primarily on the global, and ignore the local and household contexts. Moreover, the neo-liberal framing of the solutions to climate change, by depending on international market regimes, does not take into account the complexities of the household level. As a result, climate change regimes hinder the

extent to which household-level actors can participate in, and benefit from, global carbon markets, although there are now attempts to include improved cook stoves in trading schemes.

A *second* reason why actors at the international level neglect energy–health linkages has to do with the assumptions made on household energy use in planning approaches. The analysis in chapter 2 shows that energy planning takes place largely from a supply-side perspective. Such a perspective takes on a deterministic approach that fails to recognise the different actors at the household level, such as men and women, whose different roles, responsibilities and unequal power relations mean that they do not automatically or equally benefit. Also, because macro-economists, who dominate the mainstream development debate, do not distinguish intra-household issues, this can result in a misunderstanding within the energy sector of how energy is used.

The *third* main reason why international-level actors neglect energy–health linkages has to do with the dominant discourses within the health sector. International-level health discourses have conceptualised developing country settings, especially in Africa, as a place of both infectious and neglected non-communicable disease. Further, discourse on work and health linkages internationally has largely neglected the health problems related to household work. Finally, at the international level, women's health discourse has largely seen women in terms of their reproductive, maternal and sexual selves. This focus neglects the many dimensions of women's lives, such as their role as the main providers of labour at the household level.

Actors' experiences, perceptions and responses at the national level

As with the international level, the focus at the national level is on perceptions and responses. The analysis in chapter 3 shows that, while national policy acknowledges and aims to address the health impacts of energy acquisition and use (DME 1998), it fails to address these in the application of policy. This indicates that national-level actors do not perceive the health impacts of energy acquisition and use as a priority. With respect to the question of why national-level actors respond in this way, the analysis shows that energy policy in South Africa has historically been driven by the need to fulfil economic and political goals, rather than social objectives.

Energy policy in South Africa, similar to that at the international level, was driven by energy security imperatives in the face of the 1970s oil crisis. Further, the provision of electricity followed the rationale of serving densely populated areas first, and then areas and sectors considered economically justifiable. What was different about the South African case, however, was that energy security had an additional imperative: that of securing the future of the apartheid state, whose existence was under pressure from international sanctions and isolation. A second difference was that, although ESKOM had both excess generating capacity and adequate financing (which were and remain constraints for electrification in other countries), it did not extend electricity to poor households, the majority of which were black. In this way, electricity was highly symbolic in the wider ideology of racial segregation. This *symbolism* was also apparent in the decision by the ANC to sabotage modern energy installations as a protest against the apartheid state.

Following South Africa's political change to a non-racial democracy in 1990, the imperatives for South African energy policy changed to include social goals. However, in post-apartheid South Africa the *symbolic* nature of electricity has continued to be apparent in the extensive electrification efforts of the government, at the expense of

comprehensive energy solutions that are more suited to fulfilling social goals. While the policy *symbolism* that resulted in the focus on electrification emerged partly because of apartheid, other countries have similarly pursued electrification for symbolic reasons of national identity building, despite such programmes not always optimising energy-related social benefits.

Before proceeding to present the answers to the research questions with respect to the local and household levels, it is important to understand the setting – the stage upon which the discourses and planning approaches at international level, as shown by the analysis in chapter 2, and the pursuits at national level, as shown by the analysis in chapter 3, must play out. This larger setting also provides the context in which perceptions and responses at the local and household levels are formed. The next sub-section presents the main findings from the analysis of the conditions of this setting.

How are actors' perceptions and responses at the national and the local levels shaped, and why in such a way?

In chapter 4 I provided an extensive and detailed analysis of the context within which everyday life is lived and given meaning through specific practices, given the bounds set by specific objective conditions. As shown in chapter 6, this context has profound consequences for the way in which people perceive and respond to everyday life, including their experiences and perceptions of the health impacts of energy acquisition and use. The analysis shows the setting as one where residents are largely marginalised by the political and historical events that resulted in the loss of their economic and political power. Further, they are unable to meaningfully participate in a political sense, and neither do they benefit from the promises of the "New South Africa", such as jobs, free housing and toilets, and black economic empowerment. As a result of this, the people perceive that the government's *rituals of benevolence*, although promising much, rarely meet their expectations of development. Even where political leadership is relatively strong and the physical artefacts of development are present, as is the case in Tsilitwa, development brings with it conflicts over the meanings of what it both introduces and displaces. This results from the fact that the (class) *habitus* of those bringing these development initiatives differs from those targeted by it, because of their specific *cultural capitals*. The effect of this difference is that those targeted with development may appear disinterested, *i.e.* they engage in *everyday forms of peasant resistance* (Scott 1985). Despite the marginalisation and the physical remoteness of the two villages studied, neither is completely closed to the modern and what I call 'consumptuous' (*i.e*. sumptuous consumption) world around them. The linkages that people have to urban areas, through family ties and the media, bring with them desires for a modern lifestyle. In a setting where traditional life is highly meaningful and valued, this causes tensions and dilemmas between the traditional and the modern. Residents must then try and resolve these, or move from one desire to another, depending on time and place. The analysis also shows the context to be a place of many kinds of suffering. *Petite* and *grande misère* (Bourdieu 1999) and *social suffering* (Kleinman 1997) are daily realities which cannot be ignored, because of the ways in which they shape people's perceptions and responses to daily experiences, including energy acquisition and use. What becomes clear from this analysis of the setting in chapter 4, is that the policies and technologies envisaged at the international and national levels are interpreted in particular ways within this local context. In Cutwini, for example, some women wondered what electricity would mean for their relationship

with both their ancestors and daily life, since fire and smoke are "*in their blood*". In Tsilitwa, one woman (Xoliswa) interpreted development as "painful" because she cannot afford the things she sees and desires, and is now more aware of this fact. Another woman (Joyce) can afford "*whatever appliance you can think of*", but interprets a move to modern energy as a move away from being Xhosa, and as a result she continues to use firewood and dung. Such negotiations are issues that shape how and why actors respond in the ways shown in chapters 5 and 6.

Actors' experiences, perceptions and responses at the local level

With respect to the question of how local-level actors perceive and respond to the health impacts of energy acquisition and use, the analysis in chapter 5 shows that the local level mirrors the national level. As programmes and initiatives implemented at the local level are designed at national level, and the gaps exposed at the national level in chapter 3 are also passed down to the local level, the result is a neglect of energy–health issues at the local level.

The disregard of energy–health linkages is apparent in the lack of personnel in the structures that are supposed to address energy problems at the local level. This lack of personnel is in part due to the *technology determinism* seen at the national level – namely that electrification will, in and by itself, bring about the envisaged health benefits.

With respect to the question of how local-level actors respond, the main efforts have dealt with electricity access and affordability, and there are no programmes and initiatives dealing with firewood. This reflects the *policy symbolism* in favour of electrification**,** as shown in chapter 3, in spite of the fact that firewood is the most common energy carrier among the poor in rural areas. Another type of response, the FBE, is based on incorrect assumptions made in national policy as to how much electricity is adequate for a poor household. The FBE is set at 50 kWh per eligible household per month, and is based on the average amount of electricity that the majority of poor households use after electrification. This means that 50 kWh per month is not their real need, but is the average amount they are able to use, *i.e.* an indicator of their inability to use more. Further, this amount is inadequate when one considers the amount of cooking that occurs at the household level using various energy carriers, the frequency and duration of cooking, and the types of foods cooked.

This shows how the dependence on quantitative approaches for informing policy, without a supportive understanding of the context in which the policy should be implemented, leads to perverse responses by national- and local-level actors. Like the supply-side approaches that have dominated international and national discourses, such policy approaches are devoid of context, as they do not take into account what happens at the household level, including gender dynamics.

In addition, the attempts to implement the objectives of national-level policy at the local level, regardless of their wrong assumptions, fail because of a lack of personnel and poor planning and management at that level. This is shown in chapter 5 in relating how the FBE and FBAE are sometimes not budgeted for, haphazardly disbursed, and how the numbers of beneficiaries are miscalculated, *i.e.* equating electrified households with households receiving FBE, even though access to electricity does not automatically activate access to FBE.

There are some efforts to address the health impacts related to the use of paraffin, primarily accidental ingestion by children and burns resulting from poor-quality stoves. However, these efforts are not driven by local-level actors, but by the petroleum industry through its establishment and funding of PASASA.

As to why the petroleum industry, through PASASA, has responded in this way, the analysis uses the notion of a *blameable entity*, and shows that this is an economically and politically strategic response, although it does represent a unique and valid way of addressing the health impacts of paraffin use. The analysis shows that for such a response to occur, a viable *blameable entity* (*i.e.* a possible target for accusation) must have the potential to incur high political and economic costs from such an accusation. Further, the group affected must be politically visible, and so increase the risk of the *blameable entity* incurring high political costs. The urban residents primarily targeted by PASASA's efforts were made politically visible by vivid media reports, research studies, and their capacity for mass (political) action. The political visibility of urban paraffin users and the political need for the petroleum sector to avoid blame, stands in contrast to rural firewood users' invisibility, and the fact that with firewood there is no viable entity to blame, *i.e.* no entity bears the political risk of being named the cause of ill health and death in rural areas with respect to firewood acquisition and use (apart from the government itself).

Apart from the visibility of the urban population, the analysis in chapter 5 shows that there are other reasons for the differences in policy responses with respect to urban and rural areas, partly to do with limited budgets and pragmatism (since most fire injuries occur in urban areas).

The response of PASASA also shows the complexity of addressing the health impacts of energy use in terms of the range of actors that must be involved in such attempts. For paraffin-related health impacts, these actors include stove designers and manufacturers, standards and testing bodies, civil-society groups, law-enforcement organisations, hospitals and clinics, the medical establishment, community outreach organisations and PASASA.

From the local health structures serving the two studied villages, the analysis in chapter 5 shows that, while nurses and programme managers sometimes treat such impacts by applying symptomatic relief, the causes are generally ignored.

The *first* explanation is that this is an inheritance from national policy, which itself has inherited its discourses from the international health discourse as shown in chapter 2. As such, the programmes targeted similar health impacts (*i.e.* work-related health), and fail to address the health impacts of energy acquisition and use. In terms of IAP, the health personnel take the position that "*women do not work in polluted environments*". With such *"one-eyed science"* (Messing 1998), men, who get COPD from mining and other work environments, are treated for it when they seek help. In contrast, women's chronic respiratory infections are excluded from the chronic-diseases programme because the household environment is not seen as either a work or a polluted environment. While the Occupational Health Programme addresses musculoskeletal injuries resulting from occupational risks, this is mostly related to men due to the gender skew in employment and the conditions under which they work. But because of the status and setting of reproductive work, women's musculoskeletal problems, if treated, will be done at local clinics and with pain relief medicines only. The assumption is that the setting, *i.e.* the household environment, is a safe working environment.

The *second* explanation is in terms of *habitus porosity*. The program managers and nurses serving these areas are all females who belong to the same larger Xhosa group as the households they serve, as explained in chapter 4. They grew up and continue to live with traditional Xhosa practices, but as professionals they work within a Western biomedical model of health, which suffers from knowledge gaps as identified in chapter 2. The analysis shows that, as a result of this situation, the programme managers and nurses experience *habitus porosity*, in which their professional experiences, perceptions and responses to the energy–health nexus are perceived through both the Xhosa and Western biomedical *habitus*. However, their narration of both their personal experiences and of their professional responses shows that they are largely influenced by their traditional *habitus*. This is because, with the gaps inherited from their training, which occurs within the limits of international health discourses, they are left to interpret their energy–health experiences within their Xhosa *habitus*. The result is that, at the local level, the health impacts of energy acquisition and use are not perceived as a health issue, but as one of the many aspects of a woman's life in a traditional Xhosa village. In this way, the perceptions and responses of the local health personnel do not differ substantially from those at the household level, as analysed in chapter 6.

A *third* reason why health impacts of energy acquisition and use are neglected at local level is that there exists a kind of compartmentalisation, in that one sector works independently from the other. This is shown by the fact that when health-sector actors, *i.e.* programme managers and nurses, deal with women seeking treatment for energy–health problems, their response is that there is nothing they can do but to occasionally provide painkillers. Meanwhile, the energy sector has a range of potential solutions that the health sector is not aware of, and therefore does not recommend to the women.

Actors' experiences, perceptions and responses at the household level

To answer the question of what are the actors' experiences of energy–health impacts at the household level, in chapter 6 the analysis shows that actors experience a range of health impacts. Impacts of energy acquisition include a variety of musculoskeletal injuries and risks such as snakes and falls. The risk of physical and sexual harassment has been shown to depend on the context of the place, so that it is not an issue in Cutwini, but in Tsilitwa it is. In using firewood, household-level actors experience eye irritations, respiratory infections and headaches, among other impacts. Further, the analysis shows that these actors experience risks of burn injuries and, to some extent, respiratory infections from paraffin use.

As to the question of how these experiences are perceived, the analysis shows that people largely ignore the impacts, or consider them to be a part of daily life. This is especially true for the impacts of firewood use (smoke), while the impacts of firewood collection may sometimes be lessened with pain-relief medicines.

The key to understanding the perceptions and limited responses at this level is to understand the context in which they occur. The experiences of collecting firewood and of cooking using firewood, dung and paraffin are life-long in nature, and have persisted for generations with only relatively minor changes. This has been shown by the similarities in ages of women collecting firewood and cooking in the 1930s (Hunter 1936, 1961) and those in this study. Starting to collect and cook with firewood or dung at between 5 and 7 years old (even if it is "just" to help by collecting a small bundle or to blow and to stock a fire), and attaining *practical mastery* (Bourdieu 1977) at the age of 13, means that the ways of perceiving and responding to the related impacts have

become largely unconscious – a part of daily life. Such *practical mastery* goes beyond physical skills to include ways of perceiving and responding to these experiences. Attaining this *practical mastery* is, however, not just an issue of utility, it is also a way of socialising into particular genders – socialising children into the roles of girls and boys, adults into the roles of women and men. The gendered nature of energy acquisition and use is not just a result of the gender division of labour but is, in itself, a key way of engendering life. As such, the collecting and use of firewood or dung are meaningful practices for attaining (gender) respect and power, for maintaining dignity, and for conforming to particular identities, as defined within the Xhosa culture, including Xhosa identity. The result of such meanings is that a firewood load or pile, seen by an outsider as a burden capable of harming skeletal health, is for the women carrying it a defining and moralising artefact. This is illustrated in chapter 6 with the example of the cultural artefact of *igoqo* – a pile of firewood made by a newly married woman that represents her industriousness, her place in the homestead and in her husband's community, and her taking over of reproductive power from her mother-in-law. Understanding such meanings is critical in understanding how and why women ignore or accept the health impacts of energy acquisition and use. The backaches, eye irritations, chest compressions and other impacts that some women report, are then perceived as irrelevant and not worth complaining about. Complaining about the impacts of acquisition and use, the very things that make one a 'good woman' as opposed to a 'lazy woman', or an inadequate *makoti*, results in sanctioning, including self-sanctioning. Although these meanings are primarily discussed with respect to married women, they are internalised and used by society to judge women in general, whether single, divorced, separated or widowed. Married women, particularly newly married women, are judged differently, however, and they have less room for resistance, since their power and capacity to resist depends on the quality of their relationship, and on how their agnatic kin perceive and value such practices and their associated meanings. This finding, of women sanctioning other women, requires a broadening in the understanding of gender as being beyond just the power spheres of men and women, to include the power spheres amongst women themselves. In addition the role of women's work, including firewood collection and cooking, in defining women's femininities and men's masculinities, and the meanings of these to people's own sense of worth, points to a gap in gender–energy studies, which to date have focused solely on the subordinate position of women.

A further observation from the analyses in chapters 4 and 6 is that, in practice, women's positions are much more complex than the one-dimensional "powerless women" narratives presented within international and national discourses. Nevertheless, to think that this complexity, and the fact that women find respectful meanings in back-breaking work, is a result of their own free choice would be to neglect the context in which women must make these meanings. The women's sanctioning of themselves and of each other can be seen in terms of the hegemonic relations in which they find themselves *vis-à-vis* men (Gramsci 1971), or in terms of Marxist notions of *false consciousness*, or *cognitive dissonance* (Festinger 1957), and of *misrecognition* and of *symbolic violence* (Bourdieu 1977). However, in the face of the unexplored understandings of femininities and masculinities stated above, the findings call for openness to the various kinds of femininities, and therefore various forms of feminism, including multi-cultural feminism.

The responses of ignoring and/or accepting energy–health impacts are also present where actors at the household level have access to modern energy carriers, such as electricity in the case of Tsilitwa. Since changes in modern energy access do not guarantee changes in energy acquisition and use (and the related health impacts), the household-level analysis in chapter 6 shows the incorrect assumptions behind the deterministic way in which international and national level policy and technologies are formulated and delivered. Further, the way in which people spend their finances on other products, such as mobile telephones and televisions, as illustrated in chapter 6, shows that the notion of affordability, as conceptualised at international, national and local levels, is not the only factor in maintaining previous energy-use patterns. Similarly, the fact that firewood and dung use persists across all wealth categories supports this finding. What this calls for is a re-examination of the notion of affordability, and for understanding the (non-)consumption patterns of modern energy sources from an emic point of view. However, we must also acknowledge that the household-level actors' inability to make physiological connections between their actions and health consequences, calls for etic research, so that, ultimately, it is not one single method that is used but a pragmatic combination of both.

With respect to the multi-level perspective, there are four observations to note. *Firstly*, international-level discourses, whether in terms of what they popularise or what they discard, shape perceptions and responses at various levels. This is particularly seen at national and local levels, because here activities are largely influenced by funding and knowledge (produced) from the international level. However, at each level contextual factors re-shape these discourses, depending on available resources and the shared interests between actors at different levels. Thus, for example, the discourses of deforestation at international level appear similar to the discourses of deforestation at national level, because of shared assumptions. Similarly, the health discourses at international level are adopted at national, local and household levels to the extent that these levels are dependent on international-level resources. What is missing is the incorporation of the household-level perspective into discourse at the first three levels, on an equal footing. As a result, the assumptions made at international, national and local levels, which depend on *technology determinism* and faith in what technology can achieve, turn out to be wrong.

The *second* observation is that it takes a long time and considerable persistence (championing) for a discourse to take root at lower levels, since it has to replace other, prior discourses. This replacing or modifying of dominant discourses entails competing with interests that set off and maintain existing discourses. Thus, the historical absence of discourses about the social implications of energy provision, of discourses on certain types of non-communicable diseases, of knowledge about household work-related health impacts, and of health discourses about women as socially reproductive beings, will take time to be included in mainstream development. Similarly, it will take time for environmental discourses, although they are not inherently wrong, to recognise the need for truly "putting people first".

The *third* observation is that discourses at various levels, particularly at the international and household levels, rarely converge because of the different interests and perceptions of actors at these levels. At the international level, interests often include global geopolitics and (Western) block interests, while at national and local level the interests often have to do with maintaining a voter base by means of impressive symbolic declarations. The household level also has its own interests, often dominated

by the need to sustain families within their own cultural contexts. The result of such different interests is that outcomes, when analysed from a specific point of view, may appear to have failed, particularly when they were stated within the framework of social benefits. By looking at the various levels, it is possible to understand why many of the perceptions and responses of the actors diverge rather than converge.

The *fourth* observation has to do with the context of each level and with the assumptions made about it. The international level is largely dependent on Western conceptualisations of the social world. The national level adopts Western conceptualisations, but this is tempered by both national and local contexts, including histories. However, it means that the modes of working at these two levels, particularly the local level, consist of at least two different cultures, the Western culture and the national or local culture – as the findings with respect to programme managers and nurses shows in the analysis in chapter 5. Further, the initiatives formulated at the national level, with their Western connotations, and implemented by local-level actors for households set in their own traditions are, in fact, an implementation of concepts from one cultural context to another. This means that the formulation and implementation of development policies, programmes and initiatives are an enactment of multi-culturalism. Acknowledging such multi-culturalism can lead to a better understanding of what might be generally perceived as policy failure. The adoption of multi-level perspectives, rather than focusing on a single level, has been useful to unpacking the above.

The following section addresses the objective of contributing to academic work.

Academic contribution

This section discusses a selection of the key concepts used in this study, and how they contribute to academic work. While I have benefited from a broad range of concepts, those discussed here are limited, in my opinion, to the concepts that give fresh ways of looking at the energy–health nexus.

Hardiness

The most original scholarly contribution this thesis makes is the development of the concept of *hardiness*. I borrow this concept from the emic expression *ukuqinisa*, meaning to make tough – firstly as a way of explaining how people live, not only in circumstances where they lack modern energy carriers, but also suffering other kinds of deprivation and many kinds of suffering. Secondly, this concept is a way of understanding the (non-)responses to development interventions aimed at communities and individuals who have experienced long-term marginalisation and suffering.

Hardiness refers to characteristic responses to adversity that enable individuals and/or communities to deal with multiple and layered suffering. As a result of long-term marginalisation, subordination and suffering, individuals and communities develop perceptions and responses that enable them to deal with these adversities. Their strategies include ignoring, normalising or reframing their experiences, for example by giving them positive or other distinct and culturally relevant meanings. As a function rooted in experiences, *e.g.* historical, and in power relations, *hardiness* is socially constructed and dynamic. In this thesis, it explains why women largely persevere in older ways of doing things, and in some cases deprecate the reactions to, and talk of, the

health impacts of energy acquisition and use. Unlike *resilience,* often used in livelihoods analysis, the result of *hardiness* is not necessarily "bouncing back" after a transient shock. From a positive viewpoint, *hardiness* helps people survive adverse circumstances, while on the negative side it can hinder corrective action by normalising the circumstances and outcomes. By presenting this concept in this new manner, I cautiously invite other researchers to test it, improve on it, and use or discard it as they see fit.

In addition to this contribution, I have adopted and adapted concepts from other fields and disciplines to explain the findings in this research as explained in the following sections.

Policy symbolism

I use the notion of *policy symbolism* in two subtly different ways to explain why the South African government's policies fail to respond to the energy–health nexus. Firstly, I apply it in the sense of the symbolic meanings of what policy makers seek to implement. In this thesis, it explains a focus on electrification for meeting relevant social goals, at the expense of more comprehensive energy options. In the current political period, electrification has the symbolic meaning of breaking with apartheid and therefore giving a sense of inclusion to black people, who remained largely un-electrified under apartheid. Secondly, I apply *policy symbolism* to interpret policy statements that are made but never meant to be implemented. I show this by referring to how the objective of addressing the health impacts of energy use in energy policy is not supported by provisions for its realisation. The lack of provision for this policy objective is shown in the absence of comprehensive strategies, programmes and resources for meeting such an objective. Another glaring absence is that of the policy provisions for dealing with household firewood collection and use, since firewood is one of the most widely used energy carriers, and is firmly linked to adverse health outcomes, which the policy acknowledges. In addition, *policy symbolism* has been shown in the presidential address (Mbeki 2004), where universal electrification was pledged before any comprehensive analysis was conducted of the conditions and resources needed to realise this goal. The contribution that this concept makes to the academic study of energy policy is that it provides a fresh look at policy responses through their context, rather than by applying the usual policy input – outcomes analysis.

Regimes and technology scripts

Within energy–development debates, the focus has often been on the affordability and accessibility of modern energy carriers. Thus, the analysis of energy interventions has often adopted a mechanistic model, which assumes that given a set of inputs, particular development outcomes will emerge (*e.g.* the provision of modern energy carriers will lead to improved health). By using concepts from technology studies, such as *technology regimes* (Rip & Kempe 1998) and *technology scripts* (Akrich 1992), I explain the complex interactions between energy and daily life. When a technology is introduced into a place, *e.g.* a rural village, it exists within a specific social place, which includes its norms and practices such as gender roles, cultural practices and their meanings and historical trajectories. Within such a context, the technology adapts and is adapted so that it might fit or be rejected. As a result, energy technologies, whether the fireplace or the electric cooking stove, become artefacts to speak and think with (Fiske

1989) and *moralising technologies* (Verbeek 2005) which might or might not serve social and cultural purposes. They may then introduce contradictions and face resistance within the contexts in which they are used, whether or not they are affordable. Even when such contradictions and resistances are resolved, the outcomes of use may be different from the deterministic outcomes as envisaged by policy makers. As a result, cooking on a smoky fireplace may be replaced by cooking with electricity in a smoky kitchen – where fire is used for other purposes such as "*chasing away loneliness*". By looking at this dimension of technology, the simple linkages between energy technology availability and development outcomes, often assumed in energy–development debates, are shown to be simplistic and inadequate. Whether and how people benefit from modern energy carriers will depend on the *script* that emerges from the interaction between the people, the energy carrier, and the context in which the latter must be used. Thus, technology can never be seen outside of the context in which it is to be used. This *script* adds a new layer of understanding as to why, even when modern energy carriers become available, households and individuals do not necessarily use them in the ways envisaged by policy makers and development advocates.

Mutedness, peasant resistance and hegemony: the multiple realities of daily life

The concept of *mutedness* (Ardener 1975), drawn from feminist perspectives as further developed by Kramarae (1981), explains why subordinated groups appear silent about their experiences. In this thesis, I show how *mutedness* is not limited just to women's experiences, but to household- and community-level experiences as well. At the levels at which policies and initiatives are developed, *mutedness* results from the way in which the research that informs policy is designed, as well as from the power relations between policy makers and researchers on one hand, and households on the other hand. Within the dominant language of technical experts, the experiences of women and rural people in general are muted, since they must express themselves within the limited language and predefined categories of the policy makers and researchers. When the women speak in such a setting, effectively using a foreign language, they are not heard.

Closely related to the notion of *mutedness*, as used in this thesis, are the concepts of *peasant resistance* (Scott 1987) and Gramsci's *hegemony*. They are similar in that they explain the responses of the marginalised where there are unequal power relations. However, they are different because they explain alternative outcomes with respect to these power relations. By applying these three concepts in chapters 4 and 6, I show that, while marginalisation and subordination are key limiting conditions for the residents, they are not experienced as a single reality. These multiple realities are shown in the different ways in which people respond to their circumstances and their positions. Such 'incoherence' reflects the heterogeneity of the actors, collectively described and analysed as "poor rural households". Not only do their realities differ socio-economically, as shown in the status of married, divorced and *amadikazi* (Pondo women who choose not to marry but instead to be independent), or in their wealth, it also appears that multiple realities are possible within a single individual. The case of Joyce in chapter 6, who is a modern woman, a former nurse and political activist who can afford electricity and "*any appliance you can think of*", but is also so traditional that she uses firewood and dung because "*I am Xhosa*", is an example of one individual's multiple realities. Similarly, many of the women could enact both the stereotypical position of powerless women, but also show themselves to be powerful heads and

managers of their homesteads. Together, these concepts show that to adequately address the needs of the marginalised, their multiple realities should be taken into account.

The meaning of things

By using the notion of "*the meaning of things*" to understand emic perspectives of affordability, I show that people who are generally considered too poor to afford modern goods and services such as electricity, can afford costly items that have desirable meanings for them. These meanings, in part, define what is and what is not affordable. The *first* contribution this makes to academic literature is that it expands the understanding of affordability as not only an economically rational concept, but also a socially constructed concept. The social construction of affordability happens as a result of the transfers of desires through rural-urban connections, and mainly through advertisements of just how affordable contemporary lifestyle products such as mobile telephones and TVs are. Further, such adverts represent continuous dialogues which define the meanings and values of paying for and of owning these goods and services. Such meaningful and therefore "affordable" goods and services also speak of *the self* and of the place of *the self* in society.

The *second* academic contribution that the notion of *the meaning of things* makes in this thesis is that it shows that one of the aims of the marginalised is to attain inclusion, modernity, and dignity – values that they are ready to pay for through representative artefacts. The strategies of the sellers of mobiles and TVs, in co-constructing the "*meaning of things*", appear to contradict the strategies of mainstream development actors. Yet they are not far from the strategies adopted in the promotion of household electricity use in South Africa in the 1920s (Christie 1984), and in the United States in the 1940s (Hughes 1993, Matly 2005). Meanwhile, development debates have traditionally focused on how unaffordable a better life is. Proponents of development then try and provide 'poverty goods', which are seen as affordable in a rational economic sense or only when given by government and NGOs. The appearance and quality of many of these poverty goods, mud stoves being an example, are contrary to the desires of the marginalised, *i.e.* the desire for inclusion, modernity and dignity. Instead, they speak of exactly how poor the poor are. The *third* contribution of the notion of the *meaning of things* calls for a re-examination of the poor, not only as persons who must be helped to produce or to survive, but also as a social category that can and must be empowered to consume particular products in a way that yields social benefits.

Habitus and habitus porosity

I have used Bourdieu's concept of *habitus* to illuminate the *practices* and *dispositions* of the research setting (Chapter 4), to examine the perceptions of programme managers and nurses (Chapter 5), and to explain the perceptions and responses of household-level actors (Chapter 6). In chapters 4 and 6, a particular use of this concept was used with respect to Bourdieu's idea of "*habitus divided against itself*" (Bourdieu 1977). This explains the tensions brought about as a result of the introduction of the new and unfamiliar into a particular *habitus*. The notion of "*habitus divided against itself*" focuses on the tensions and anxiety brought about by the new. However, while this conceptualisation is appropriate for what I show in chapters 4 and 6, it is not wholly fitting to the situation as depicted in chapter 5, with respect to programme managers and nurses. What becomes evident in this situation is that individuals can live in two distinct

habitus, without a real sense of tension, anxiety or conflict between the two, but with one *habitus* informing the other and *vice-versa*, albeit within limits. The contribution I make with this analysis is the notion of what I call *habitus porosity*. With this notion, the study shows how individuals, working in one *habitus* while living in another, can "pick and choose" particular practices and meanings of the two distinct *habitus*, particularly where gaps in interpretation exist. Policy makers and intermediaries in developing countries often have to work within a Western model, while their daily lives are dominated by their own cultural dispositions, although none of these *habitus* are "pure". *Habitus porosity* therefore represents a useful concept for analysing practices within multi-cultural settings.

A concluding remark on the academic contributions of this study is that many of the conditions that generate, limit, and enable practices, including *hardiness, mutedness* and *hegemony*, are largely unconscious. As such they have implications for policy-making and methodological discussions in the energy sector, as well as the wider development sector, as will be shown below.

Based on the answers to the main research questions as presented in 7.2, and the academic contributions in this section, the next section presents policy recommendations.

Policy recommendations

In this section the key objective of informing policy in the light of the findings of this study is addressed. While the policy recommendations made in this section have been divided into the levels that they address, the recommendations are inter-related, in recognition of the fact that no level is a closed or a stand-alone level. As such, some recommendations, made for one level, particularly the household level, may only be possible with resources from other levels, such as the national or international levels, in terms of financing and expertise. In other cases, not only should resources be made available, but also actions should eventuate, at a level that is different from the one which the policy recommendation targets.

International-level recommendations

- Research that informs policy should include longitudinal, long-term and experience-near research to understand what is at stake, what is meaningful for household actors, as well as how and what sorts of changes are yielded by policies and interventions. This recommendation is valid at international and national levels, and to a lesser extent at the local level.
- Energy research that informs policy should take on a pragmatic approach and allow for etic research, such as that which can clarify relevant physiological and biomedical impacts of energy provision, and also emic research, such as that which can clarify how and why people perceive and respond in particular ways.
- International-level actors have to gain a broader understanding of the context in which they promote particular policies. Since international funding is unlikely to be diverted away from its preoccupation with promoting RETs in developing countries, due in part to taxpayer/voter interest in donor countries[1], a

1 These taxpayers cannot be expected to always understand and be sympathetic to the context in which these renewable energy technologies must function.

compromise has to be found. This includes the promotion of renewable energy grids and mini-grids in poor areas, and to putting renewable energy in elite urban areas while shifting generation capacity to poor rural areas. A further compromise is to couple renewable and conventional energy projects that meet specific benefits, such as reducing IAP. In evaluating such benefits, the contextual shortcomings of RETs should be better recognised.

- Energy–health and mainstream development experts should communicate and, more importantly, re-examine the traditional issues included in mainstream development approaches. Access to modern energy carriers, although not proved to invariably bring about development, appear to have various linkages in facilitating development and improving the quality of social and economic development outcomes. It should therefore be rightfully included in the development agenda.
- Both international- and national-level understanding of the poor should allow for a multi-faceted approach. Firstly, actors at these levels should understand the poor as having multiple realities, and secondly, as behaving in diverse, heterogeneous ways. While this approach will necessarily complicate policy-making, it is also more likely to address the varying needs of the diverse social groups widely seen as poor.
- Despite efforts to move from "women in development" to "gender and development", gender issues have largely been concerned with women, in particular seeing women as a subordinated group. Rural men should also be acknowledged as a group subordinated by elite men and women. Further, gender research, gender-sensitive policy-making, and interventions at all levels, should understand both femininities and masculinities, and how these are given meanings in particular contexts. Understanding men's masculinities, and how from a man's perspective these may be threatened, will facilitate the attainment of all-round gender empowerment. To put it bluntly, there seems to be little point in empowering women who interact with men who themselves feel continuously disempowered, and therefore see their interests as threatened, thereby providing men with more reasons to feel protective of their own interest.
- Gender interventions and feminist debates should include the co-construction of new and varied kinds of femininities and masculinities, acknowledging cultural dimensions rather than enforcing hegemonic understandings of womanhood and manhood. This, like many of the recommendations here, is a long-term project, and although not necessarily an energy undertaking, greater access to modern energy might in itself contribute to changes in power relations at the household level.

National-level recommendations

- Energy planning at the national level has followed international models, and now needs to shift to locally generated and locally relevant policies, based on experience-near research.
- National planning should work with, and systematically strengthen, local-level institutions through clear guidelines, and by being responsive to local needs.
- Firewood has traditionally lacked a policy home. The Department of Energy should set up the institutional framework for addressing firewood and other

household–energy options. These national-level actors should co-ordinate with relevant actors outside their sector and level.

- While electrification access data is a good indicator for understanding the reach of physical infrastructure, it is not an automatic indicator of what benefits are being derived and by whom. Energy data should therefore include indicators that report on specific benefits as well as clarifications on who benefits.
- In addressing energy–health linkages, the energy sector should map out relevant actors and work with them to create and to implement a comprehensive plan for reducing negative health impacts of energy use.

Local-level recommendations

- With respect to energy, the role of local government as a policy intermediary is new to South Africa, enhanced by new local government legislation in 2002. The development of functioning systems and capacities to identify and reach poor households with services and designated benefits should be prioritised. In developing such capacity, however, local structures should move away from simplistic assumptions of what technology or technical inputs can achieve, to understanding and to providing strategies for how households can derive specific benefits.
- Both national- and local-level actors should work to understanding what kinds of consumers the rural poor are, and to co-construct the desirability of using modern energy carriers that are beneficial to the quality of their lives, including health.
- The local level cannot address energy as a single compartmentalised issue. Energy institutions at the local and national levels should work with various sectors and actors, including the health, housing, and rural-development sectors, as well as academics and NGOs. In other words, an integrated approach to energy planning is essential if energy is to be made to address social-development goals.

Household-level recommendations

- Rural household-level actors should become more politically visible in order for their needs to be addressed. This entails political empowerment and the attainment of increasing economic independence. This, of course, can hardly be addressed by poor households themselves or by the energy sector per se. Other entities such as NGOs, political parties, and other professions such as academics and the media, should work with households to help the actors at this level to achieve political visibility.

Generalisability of the findings and its limits

While the political history of South Africa and its ensuing narratives are unique, the findings on *policy symbolism* are valid for other countries, particularly those that were once under colonial rule. The *political symbolism* of electricity in post-colonial settings is also seen in the national identity building for Zambia (Ferguson 1999), Zanzibar (Winther 2008), India (Coleman 2008) and Thailand (Williams & Dubash 2004), and can be generalised for many post-colonial states. It is a useful concept in understanding energy-sector responses, and how the pursuit of this symbolism results in inadequate

responses to substantive social goals. In post-colonial states, this symbolism is a reaction to past and present political, social, economic, and intellectual (knowledge production) hegemonies. Yet, symbolism is not limited to post-colonial states, as shown by the case of the electrification of Russia, and Lenin's vision of its role in both completing his socialist project and as a means of consolidating his political power (Banerjee 2003, Coopersmith 1992. As a result, the findings which explain energy perceptions and responses in terms of *political symbolism*, are applicable to a wider range of contexts.

Findings on *the meaning of things* have already been explored in settings other than the energy sector. What this study does is to use this concept as a way of explaining why things have different emic meanings amongst different social actors in poor, rural settings. These meanings can lead to different outcomes in the face of opportunities motivated by etic justifications. It shows that the linkages between the goods and services provided by interventions, and the anticipated outcomes, are not straightforward. The notion of *the meaning of things* is often applied in studies dealing with developed-country settings and with a primary focus on luxury consumption. In applying it to energy and consumption of goods in a developing country setting, I show its generalisability. Thus electricity consumption, demonstrated through the buying of electrical appliances, can become a threat in a cultural sense, which can make the appliance owner susceptible to witchcraft accusations (Winther 2008), or threatens to transform a 'good woman' into a 'lazy woman', as shown in chapter 6. Such responses are derived from meanings that are largely embedded in local beliefs and power structures. Ultimately, they show that understanding the meanings that users attach to artefacts such as electrical appliances, and their underlying justifications, are key to understanding how policy can be designed, whether in Zanzibar or in South Africa.

The way, and the reasons why, people perceive what is affordable and what is not, is an important finding in a world where the poor are treated as a special group for whom development advocates should provide special 'poverty goods', which the poor should in turn accept. *Habitus* of the poor are seen simply as constraints that keep development at bay. In contrast to this approach, development approaches and discourse should acknowledge and work both with, and within, *habitus*.

There are also limits to the generalisations of findings in this research, in particular the finding related to how affordability is perceived in the two villages studied. *Firstly*, the gap between rich and poor in South Africa is very pronounced, and also very visible to the poor. This is because the country is well connected through television, migration and road infrastructure. This may be less of a case for other African countries, such as Malawi, where television ownership in rural areas is extremely low, although in my experience the disparities there are intensifying and becoming more visible too. *Secondly*, many African countries do not have extensive social-welfare programs, such as the child support grant, the old age pension, and others (Chapter 4) that give cash to the poor (although they may have other forms of non-cash social welfare such as free health care). This means that in countries other than South Africa, residents of rural villages with high unemployment are likely to have substantially less purchasing power. With general employment patterns favouring men, women might have less power in the decision-making process when buying cooking appliances. In contrast, the women in the two studied villages, mostly as a result of the OAP and CSG, had their own cash and were the decision makers when buying appliances; and so women desired and bought television sets as much as men. The high number of female-headed households in this

research sample also means that women are *de facto* as well as *de jure* decision makers in most households, without a competing male household head.

Methodological contributions

The *first* methodological contribution that this thesis makes is using grounded theory and ethnography in an energy-sector study. As stated in chapter 1, these approaches have been neglected by the energy sector (Wilhite 2005), because it traditionally depends on quantitative measures and supply-side policy design. Ethnographies, however, provide rich data on the complexity of interactions between energy and daily life. *Firstly,* mapping out this complexity is necessary in order to understand how and why those without access to modern energy carriers perceive and respond to their circumstances. In trying to understand the responses in Tsilitwa, this research shows how providing modern energy carriers to persons living on the margins might not bring about the benefits expected by policy makers.

Secondly, the ethnographic approach used in this thesis has taken the discussion of the health impacts of energy acquisition and use beyond the usual question of "what are the impacts of energy use?" It addresses people's experiences, perceptions and responses as a result of culture, power relations, politics and histories. Only in the application of this ethnographic approach does it appear possible to address these issues, and only in understanding these issues can we begin to address the questions of how various actors can better maximise the benefits of modern energy, including its health benefits. This study therefore represents a contribution that departs from mainstream, sectorally and ethically driven approaches. It shows how analyses and interventions fail to deliver desired results when they are based on approaches that do not contextualise the history, culture and politics of the setting in which they should function. It shows that policy and interventions themselves are historical, cultural and political, and should be treated as such in order to improve the chances of success.

The *third* methodological contribution this study makes is that, as a cross-disciplinary study, it has tackled issues of energy as well as issues of health. Its results are of use to both sectors, and it is assumed that parallels can be drawn for other basic services related to development efforts.

The *fourth* methodological contribution is the use of a multi-level perspective in regard to energy–health linkages. This approach recognises that experiences, perceptions and responses at each level are affected, consciously or unconsciously, by the vested interests of actors at another level. The interaction between different levels is limited and (dis)enabled by the relative power of actors in relation to each other, as well as by geographical distances and the different *cultural capitals* from which actors draw meanings from their experiences. The multi-level approach, therefore, shows the importance of understanding the context at all levels. For ethnography, it highlights the point that villages are not closed systems. Researchers in developing countries already acknowledge that powerful actors in Washington (World Bank) or Geneva (World Health Organisation) increasingly affect the daily lives of women and children in such places as Cutwini and Tsilitwa. Yet, policy research still analyses actors at different levels as if they are disconnected, and assumes that powerful actors at the higher levels influence the household level "top-down", with household actors simply responding passively.

Recognition of the covert and overt interactions of actors at the various levels should also counter the assumption that globalisation necessarily means the bundling together of issues into monistic discourses. Rather, it should make researchers and policy makers more sensitive to the local impacts of global programmes and objectives, which should not be applied in a "one-size-fits-all" manner to the highly contextual local and household levels. In particular, policies designed at the global level and applied to specific local and household contexts may have altogether dysfunctional outcomes, due to the *hardiness, mutedness* and the various forms of *everyday resistance* that pervades intra- and inter-household interactions.

Reflections and afterthoughts on methodology

It would have been nearly impossible for me to find and elaborate the concepts of *hardiness*, *mutedness*, *everyday forms of resistance*, and *habitus* in daily mundane activities, if I had not used an ethnographic and open-minded approach, as demanded by Grounded Theory (GT). By being close to the experiences of people, I was able to observe and to raise (emically derived) questions about daily life, and to highlight the complex interplays between social, economic, political and cultural phenomena. Throughout my stay in the two villages there were serendipitous occurrences that, when pursued, made certain aspects of this complex interplay more meaningful and coherent. This has been the strength of GT, which took me from linear energy–health connections, to complex issues of power relations, culture, and the various *meanings of things, practices* and actions.

Energy research and policy acknowledge the usefulness of qualitative methods, but continue to focus on quantitative data for policy-making. Where qualitative data is gathered, it is often done with rapid assessment tools by consultants with little in-depth knowledge of the specific location. While in some situations these rapid assessment tools are useful, they often fail to elaborate the extensive and rich context that is possible because of longer contact and participation. Further, when qualitative data is used to inform energy policy, it is often used superficially and is less valued than quantitative data[2]. The quantitative data, as impressive as it might appear to policy makers, strips the geographies and biographies from places and people. Quantitative data provides little meaning about what is actually happening in daily life and behind closed doors. For the real benefits to be appropriated from modern energy access, it is these complex everyday encounters that should be explored, and not just the overhead electricity lines.

The second point of reflection relates to the contribution of the multi-level perspective that this thesis applies. By looking at various levels, the findings make clear that the influences of dominant discourses tend to be in a one-way direction – from the politically and financially powerful to the disempowered. Focusing on one particular level, without understanding the effects of another level on it, including the effects of connections and disconnections between the levels, leads to misunderstandings. These include misconceptions about the target groups, which can lead to a mismatch between their needs and what is implemented, and even to failures of interventions.

2 A part of the perception problem of both qualitative and rapid-appraisal methods is the over-use of the latter by consultants, NGOs, and other actors, either to compensate for the high costs of their services or to give an impression of participatory solutions, resulting in less than meaningful qualitative data which further reduces the perceived value of qualitative methods. When used correctly, however, PRAs are powerful tools for data collection (*cf.* Bakhiet 2008) and empowerment (Chambers 1991)

Epilogue

The women and men of Cutwini and Tsilitwa, and elsewhere in the developing world

In ending this analysis, it is important to go back to the question of energy and health linkages – how they are perceived and responded to – by focusing on a few of the key questions raised by the findings at the household level. Are the women and men of the villages fully aware of the health impacts of energy acquisition and use, while still clinging stubbornly to the cultural meanings of these activities? Or is *hardiness* simply too strong to allow a different set of perceptions and responses to their conditions to emerge?

The answer to both questions is no. Their reactions are to conditions that limit their actions. Given a range of options for defining their femininities and masculinities, would then the women and men of the two villages choose the back-breaking work? Does the fact that such work is culturally meaningful imply that it should be left alone? Again, no. However, in understanding people's responses we can become more sensitive to the new tensions that development interventions in their lives can introduce. Further, it should force us to reflect on our own representations of femininities and masculinities and their (in)validity as the only ways of seeing.

Are the women and men of the two studied villages rich enough but choose only to buy 'status goods' rather than 'development goods'? No. But such choices tell us that the poor are in search of inclusion in a world that increasingly seems exclusive. Acknowledging this quest should make us researchers, development practitioners and others, question the 'assistance' that we offer, and how it might produce and reproduce exclusions.

What each of the answers to the above questions leads to is the conclusion that there is a need for the political empowerment of actors at the household level. This empowerment should be with respect to international, national and local institutions, and between women and men, as well as between women and women within their communities. This is not necessarily an energy or a health project. However, through political and economic empowerment, women and men in rural areas can become politically visible. Their experiences and the ways in which they perceive them can then become part of powerful discourses, and their responses can better represent their free choices. Without such empowerment, discourses that claim to represent their interests will remain heavy burdens and smokescreens, while the actors at household level continue to coax emaciated cows (*ukuthunez'ubhutyu*, meaning: doing as much as they can with whatever little they have) into dark smoky kitchens, while one person dies every 20 seconds!

References

ABEBE, A., HUSSIEN, S., TESEMMA, A. & VAN UFFELEN, J.G. (2003). Resolving resource conflicts around Sherkolle Refugee Camp. *Leisa Magazine*, **19**.

ACKER, R.H. & KAMMEN, D.M. (1996). The quiet (energy) revolution Analysing the dissemination of photovoltaic power systems in Kenya *Energy Policy*, **24,** 81-111.

AFRICAN NATIONAL CONGRESS (ANC) (undated). History of Umkhonto we Sizwe.

AFRICAN NATIONAL CONGRESS (ANC) (1994). *Reconstruction and development programme*. Johannesburg: Umanyano Publications.

AFRICAN NATIONAL CONGRESS (ANC) (1969). Strategy and Tactics of the ANC. In *African National Congress First National Consultative Conference*. Morogoro, Tanzania.

AGARWAL, B. (1986). *Cold Hearths and Barren Slopes: The Woodfuel Crisis in the Third World*. London: Zed Books

AHUJA, R.B. & BHATTACHARYA, S. (2004). The ABC of burns - Burns in the developing world and burn disasters. *BMJ*.

AKRICH, M. (1992). The De-Scription of Technical Objects In *Shaping Technology / Building Society: Studies in Sociotechnical Change*. eds Bijker, W.E. & Law, J.: MIT Press.

ANC (AFRICAN NATIONAL CONGRESS) (undated). History of Umkhonto we Sizwe.

ANDERSON, D. (1986). Declining tree stocks in African countries. *World Development*, **14,** 853-863.

ANNECKE, W.J. (1999). From the kitchen to the boardroom: reflections on power relations in gender and energy practice and policy. Cape Town: Energy and Development Research Centre, University of Cape Town.

ANNECKE, W.J. (2003). One man one megawatt One woman one candle: Women, gender and energy in South Africa, with a focus on research. In *Faculty of Human Sciences*. Durban: The University of Natal, Durban.

ANNECKE, W.J. (2008). Still in the shadows: Women and gender relations in the electricity sector in South Africa. In *Electric Capitalism: Recolonising Africa on the power grid*. ed McDonald, D.A. pp. 512. Pretoria HSRC.

ANONYMOUS (2009). Cops swamp Qumbu. In *Dispatch Newspaper*. Mthatha.

ARDENER, E. (1975). Belief and the problem of women. In *Perceiving women*. ed Ardener, S. London: Malaby Press.

ARMSTRONG, J.R.M. & CAMPBELL, H. (1991). Indoor Air Pollution Exposure and Lower Respiratory Infections in Young Gambian Children *International Epidemiology Journal of Epidemiology*, **20,** 424-429

ARONSON, E. (1969). The theory of cognitive dissonance: Current Perspective. In *Advances in Experimental Social Psychology*. ed Berkowitz, L.: Academic Press Inc

AUDITOR GENERAL (2000). Report on the Transkei Electricity Supply Corporation for 1994-95, 1995-96, 1996-97 and the period 1 April to 31 December 1997.

AUF DER HEYDE, T. (2000). South African nuclear policy since 1993: too hot to handle *Energy for Sustainable Development*, **IV,** 18-26.

BAILIS, R. (2010). Interview. Amsterdam.

BAILIS, R., PENNISE, D., EZZATI, M., KAMMEN, D.M. & KITUYI, E. (undated). Impacts of greenhouse gas particulate emissions from woodfuel production and end-use in Sub-Saharan Africa.

BAKHIET, N.Y.A. (2008). The walk out of the rural kitchen: Towards planning energy services for sustainable rural livelihoods in Sudan. In *School of Management and Governance: Center for Clean Technology and Environmental Policy / TSD*. Enschede: University of Enschede.

BANERJEE, A. (2003). Electricity: Science Fiction and Modernity in Early Twentieth-Century Russia. *Science Fiction Studies* **30,** 49-71.

BARNES, B., MATHEE, A., THOMAS, E. & BRUCE, N. (2009). Household energy, indoor air pollution and child respiratory health in South Africa. *Journal of Energy in Southern Africa* **20**.

BARWELL, I. (1993). *Final synthesis report of findings and conclusions from village-level travel and transport surveys and related case studies surveys*: Geneva, ILO and I.T. Transport Consultancy - World Bank Sub-Saharan Africa Transport Programme

BEINART, W. (1981). Conflict in Qumbu: Rural Consciousness, Ethnicity and Violence in the Colonial Transkei, 1880-1913. *Journal of Southern African Studies,* **8,** 94-122.

BEINART, W. (2003). *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950* New York: Oxford University Press.

BEINART, W. (2001). *Twentieth-Century South Africa*. Cape Town: Oxford University Press.

BEINART, W. & BUNDY, C. (1987). *Hidden Struggles in rural South Africa*. London: James Currey.

BEKKER, B., EBERHARD, A.A., GAUNT, C.T. & MARQUARD, A. (2008). South Africa's rapid electrification programme: Policy, institutional, planning, financing and technical innovations. *Energy Policy*, **36,** 3115– 3127.

BEKKER, B., GAUNT, C.T. & EBERHARD, A.A. (2010). Uncertainties within South Africa's goal of universal access to electricity by 2012.

BEMBRIDGE, T.J. & TARLTON, J.E. (1990). Woodfuel in Ciskei: A Headload Study. *South African Forestry Journal*, **88**.

BENJAMIN, J.A. & FANCY, K. (1998). The Gender Dimensions of Internal Displacement: Concept Paper and Annotated Bibliography: UNICEF.

BERMAN, P., KENDALL, C. & BHATTACHARYA, K. (1994). The household production of health: Intergrating social science perspectives on micro-level health determinants *Social Science & Medicine*.

BEST, M. (1979). The scarcity of domestic energy: a study in three villages. In *Working Paper No. 27*. Cape Town: University of Cape Town, Southern Africa Labour and Development Research Unit.

BIRAN, A., ABBOT, J. & MACE, R. (2004). Families and Firewood: A Comparative Analysis of the Costs and Benefits of Children in Firewood Collection and Use in Two Rural Communities in Sub-Saharan Africa. *Human Ecology*, **3,** 1-25.

BISSONNETTE, M. (1998). Optimism, Hardiness, and Resiliency: A Review of the Literature.

BLUMER, H. (1969). *Symbolic interactionism*: University of California Press.

BLUMER, M. (1984). Concepts in the analysis of qualitative data. In *Sociological Research Methods An introduction* ed Blumer, M. pp. 241-264: Transaction Publishers.

BOSERUP, E. (1970). *Woman's Role in Economic Development London*. London: Goerge Allen and Unwin.

BOURDIEU, P. (1977). *Outline of a Theory of Practice* Cambridge: Cambridge University Press.

BOURDIEU, P. (1999). *The weight of the world : social suffering in contemporary society*. Oxford: Polity.

BOUTAYEB, A. & BOUTAYEB, S. (2005). The burden of non communicable diseases in developing countries. *International Journal for Equity in Health*, **4,** 2.

BOY, E., BRUCE, N. & DELGADO, H. (2002). Birth weight and exposure to kitchen wood smoke during pregnancy in rural Guatemala. *Environmental Health Perspectives,*, **Vol 110,** 109-114.

BRAIDOTTI, R., CHRAKIEWICZ, E., HAUSLER, S. & WIERINGA, S. (1994). *Women, the environment and sustainable development: towards a theoretical synthesis*. London: Zed Books.

BROUWER, I.D., HOORWEG, J.C. & VAN LIERE, M.J. (1997). When households run out of fuel: Responses of rural households to decreasing fuelwood availability, Ntcheu district, Malawi. *World Development*, **25,** 255-266.

BROUWER, I.D., NEDERVEEN, L.M., DEN HARTOG, A.P. & VLASVELD, A.H. (1989). Nutritional impacts of an increasing fuelwood shortage in rural households in developing countries. *Progress in Food and Nutrition Science*, **13,** 349-361.

BRUCE, N. (2002). Health effects of indoor air pollution. In *Regional workshop on household energy, indoor air pollution and health*. Delhi.

BRUCE, N., SMITH-SIVERTSEN, T., DIAZ, A., SCHEI, M., SMITH, K.R., KHALAKDINA, B.A.A., POPE, D., THOMPSON, L. & KLEIN, R. (2004). Prevention Of Burns Among Children In Wood Fuel Using Homes In In Rural Guatemala rural Guatemala. *Epidemiology*, **15**.

BRYANT, A. & CHARMAZ, K. (2007). Grounded Theory Research: Methods and Practices. In *The Sage Handbook of Grounded Theory*. eds Bryant, A. & Charmaz, K. Thousand Oaks: CA: Sage Publications.

BRYCESON, D.F. & HOWE, J. (1993). Rural household transport in Africa: Reducing the burden on women? *World Development*, **21,** 1715-1728.

BUIJS, G. (1996). Women Alone: Migrants from Transkei Employed in Rural Natal. In *Migrant Women: Crossing boundaries, changing indentities*. ed Buijs, G.: Berg Publishers.

BUNDY, C. (1979). The rise and fall of the South African peasantry. London: Heinemann.

BUNDY, C. (1977). Transkei Peasantry C,1890-Passing through a period of stress. In *The roots of rural poverty in Central and Southern Africa*. eds Palmer, R. & Parsons, B. London: Heinemann.

BUTCHART, A. (2000). A profile of fatal injuries in South Africa 1999. First Annual Report of the National Injury Mortality Surveillance System",. In *National Injury Mortality Surveillance System*: The Violence and Injury Surveillance Consortium, with Participating Forensic Pathologists and the State Forensic Chemistry Labor.

CAPE ARGUS (2009). 'Illegal' paraffin stoves a safety risk. In *Cape Argus*

CARSON, R. (1962). *Silent Spring* Boston MA: Houghton Mifflin

CARTER, N. (2001). *The Politics of the Environment: Ideas, Activism, Policy*. Cambridge: Cambridge University Press.

CATHOLIC DIOCESE OF KOKSTAD (undated). A Notable event - Electricity Connection. In *History of St Anthony's Mission Lusikisiki*.

CECELSKI, E. (1999). *The Role of Women in Sustainable Energy Development*. Bolder Colorado, USA.

CECELSKI, E. (1986). The rural energy crisis, women's work and basic needs. In *International Workshop on the Rural Energy Crisis*. pp. 15. The Hague ILO and ISS.

CECELSKI, E. (1992). Women, energy and environment: new directions for policy research: International Federation of Institutes for Advanced Study.

CECELSKI, E., DUNKERLEY, J. & RAMSAY, W. (1979). *Household energy and the poor in the third world*. Washington, DC: Resources for the Future.

CECELSKI, E.W. (1995). From Rio to Beijing: Engendering the energy debate. *Energy Policy*, **23,** 561-575.

CHAMBERS, R. (1983). *Rural Development: Putting the Last First, .* Essex: Longman, Haslow.

CHARKIEWICZ, E. (2009). A feminist critique of the climate change discourse. From biopolitics to necropolitics?

CHARMAZ, K. (2006). *Constructing grounded theory*. London: Sage Publications.

CHARMAZ, K. (2008). Grounded theory training pp. Discussion. Hauppauge, New York: ResearchTalk.

CHETTY, M., BLAKE, E.H. & MCPHIE, E. (2006). VoIP Deregulation In South Africa: Implications for Underserviced Areas. *Telecommunications Policy*, **30,** 332-344.

CHIKOWERO, M. (2007). Subalternating Currents: Electrification and Power Politics in Bulawayo, Colonial Zimbabwe, 1894–1939 *Journal of Southern African Studies*, **33,** 287-306.

CHRISTIE, R. (1984). *Electricity, industry, and class in South Africa*: Palgrave Macmillan, in association with St. Antony's College, Oxford.

CHRISTOPHER, A.J. (2009). Delineating the nation: South African censuses 1865–2007. *Political Geography*, **28,** 1001-109.

CLANCY, J.S. (2002). Blowing the smoke out of the kitchen: Gender Issues in Household Energy. In *Brief No. 1*: SPARKNET.

CLANCY, J.S. (1998). Household Energy is more than Stoves. *Boiling Point*, **41**.

CLANCY, J.S. & KOOIJMAN-VAN DIJK, A. (2006). Enabling Access to Sustainable Energy: A Synthesis of Research findings in Bolivia, Tanzania and Vietnam. In *Enabling Access to Sustainable Energy (EASE)*.

CLARK, A. & DRIMMIE, S. (2002). *Energy Sustainability for South Africa's Poor: Weighing up the alternatives*. Cape Town: HSRC.

CLEARY, G.J. & BLACKBURN, R.B. (1968). Air pollution in native huts in the highlands of New Guinea. *Archives of Environmental Health*, **17,** 785-794.

COCKS, M. (2006). Wild plant resources and cultural practices in rural and urban households in South Africa. Implications for bio-cultural diversity conservation. Wageningen: Wageningen University.

COHEN, S., DEMERITT, D., ROBINSON, J. & ROTHMAN, D. (1998). Climate change and sustainable development : towards dialogue. *Global Environmental Change*, **8,** 341-371.

COLEMAN, L.C. (2008). Delhi in the electrical age: Technologies of rule and rites of power in India's Capital, 1903-2006. pp. 358: Princeton University.

COLLINS, C. & ROSSI, L. (2004). Genetic mutations linked to the practice of burning coal in homes in China.

COLLINS, D.A., SITHOLE, S.D. & MARTIN, K.S. (1990). Indoor woodsmoke pollution causing lower respiratory disease in children. *Tropical Doctor*, **20,** 151-155.

COOPERSMITH, J. (1992). *The Electrification of Russia, 1880-1926*. Ithaca, New York: Cornell University Press.

CORBIN, J. & STRAUSS, A.C. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*

COWAN, R.S. (1983). *More work for mother: The ironies of household technology from Open heart to the Microwave*: Basic Books.

CREAMER, T. (2009). Eskom slumps to record R9,7bn loss on big coal, metals-linked derivatives swing In *Engineering News*.

CREWE, E. (1997). The Silent Traditions of Developing Cooks. In *Discourses of Development: Anthropological Perspectives. Explorations in anthropology*. eds Grillo , R.D. & Stirrat, R.S. London: Berg.

CSIKSZENTMIHALYI, M. & ROCHBERG-HALTON, E. (1981). *The meaning of things: Domestic symbols and the self*. Cambridge: Cambridge University Press.

CUNDILL, G. (2005). Institutional Change and Ecosystem Dynamics in the Communal Areas around Mt Coke State Forest, Eastern Cape, South Africa. pp. 281. Grahamstown: Rhodes University.

DANKELMAN, I. & DAVISON, J. (1988). *Women and environment in the Third World: alliance for the future* London: Earthscan and IUCN.

DAVIES, T. (2009). Interview. Johannesburg.

DAVIS (1998). Rural household energy consumption: The effects of access to electricity evidence from South Africa. *Energy Policy*, **26** 207-217.

DAVIS, M. (1995). Fuel choice in rural communities. *Energy for Sustainable Development*, **II,** 45-48.

DE WET, B., VAN SCHALKWYK, D., VAN DER SPUY, J., DU PLESSIS, J., DU TOIT, N. & BURNS, D. (1994). Paraffin (kerosene) poisoning in childhood- Is prevention affordable in South Africa? *South African Medical Journal*, **84,** 735-738.

DE WET, C. (1989). Betterment Planning in a Rural Village in Keiskammahoek, Ciskei. *Journal of Southern African Studies*, **15,** 326-345.

DE WET, C. (1987). Betterment planning in South Africa: Some thoughts on its history, feasibility and wider policy implications *Journal of Contemporary African Studies*, **6,** 85-122.

DEKEDA, Y. (2007). Nessie Knight marks 80 years. In *ECDOH (Eastern Cape Department of Health)*. East London.

DELAMOTHE, T. (2009). Aid agencies neglect non-communicable diseases, international health organisations warn. *BMJ*, **338,** b2102-.

DEPARTMENT MINERALS AND ENERGY (DME) (2003). *Guidelines for implementing free basic electricity*. Pretoria: Government Printer.

DEPARTMENT OF FINANCE (2009). *2009 Budget Review*. Pretoria: Government of South Africa.

DEPARTMENT OF HEALTH (2007). National HIV and syphilis antenatal seroprevalence survey in South Africa. Pretoria Department of Health

DEVARAJAN, S., MILLER, M. & SWANSON, E.V. (2002). Goals for Development: History, Prospects, and Costs. *World Bank Policy Research Working Paper No. 2819*.

DÍAZ, E., SMITH-SIVERTSEN, T., POPE, D., LIE, R.T., DÍAZ, A., MCCRACKEN, J., ARANA, B., SMITH, K.R. & BRUCE, N. (2007). Eye discomfort, headache and back pain among Mayan Guatemalan women taking part in a randomised stove intervention trial. *Journal of Epidemiology and Community Health,* **61,** 74-79.

DICKSON, B.J. & BALDWIN, S.A. (1990). *The development of low cost fuel-efficient wood burning stoves appropriate for underdeveloped areas of South Africa.* Cape Town: ERC.

DME (2007). Department Of Minerals And Energy Presentation Of The 2008/9 - 2010/11 Strategic Plan to the NCOP.

DME (2004). Free Basic Energy Policy Guidelines pp. 29. Pretoria: Department of Minerals and Energy - Low Income Household Energy Support Programme.

DME (undated). Integrated Household Clean Energy Strategy Prospectus

DME (1998). White Paper on the Energy Policy of the Republic of South Africa. *Department of Minerals and Energy*

DMEA (1980). *Annual Report*. Pretoria: Government Printer.

DMEA (1985). *Annual Report*. Pretoria: Government Printer.

DOUGLAS, M. (1979). *The World of Goods: towards an anthropology of consumption*. London: Basic Books.

DRIEL, F.V. (1994). *Poor and powerful: female-headed households and unmarried motherhood in Botswana.*: Saarbrucken: Nijmegen Studies in Development and Cultural Change.

DRIEL, M.V. (2009). The Social Grants and Black Women in South Africa: A Case Study of BophelongiTownship in Gauteng. *Journal of International Women's Studies* **10**.

DRYZEK, J.S. (1997). *The Politics of the Earth: Environmental Discourses.* New York: Oxford University Press.

DUNEIER, M. (1992). *Slim's Table: Race, Respectability, and Masculinity.* . Chicago University of Chicago Press.

EARTHLIFE (2000). Renewable Energy – the alternative to nuclear and fossil fuels

EBERHARD, A.A. (1986). *Energy consumption patterns in underdeveloped areas of South Africa* Cape Town: University of Cape Town, Energy Research Institute.

EBERHARD, A.A. & GANDAR, M.V. (1984). Energy, poverty and development in South Africa.

EBERHARD, A.A. & VAN HOREN, C. (1995). *Poverty and Power: Energy and the South African State* London: Pluto Press.

ECHARRI, J.J. & FORRIOL, F. (2002). Effect of axial load on the cervical spine: a study of Congolese woodbearers. *International Orthopaedics,* **26,** 141-144.

ECHARRI, J.J. & FORRIOL, F. (2005). Influence of the type of load on the cervical spine: a study on Congolese bearers. . *The Spine Journal,* **5,** 191-196.

ECKHOLM, E. (1975). *The Other Energy Crisis: Firewood*. Washington DC. USA: World Watch Institute.

ECKHOLM, E., FOLEY, G., BARNARD, G. & TIMBERLAKE, L. (1984). *Fuelwood: the energy crisis that won't go away* London and Washington Earthscan: International Institute for Environment and Development

EDELMAN, M. (1964). *The Symbolic Uses of Politics*. Urbana: University of Illinois Press.

ELLEGÅRD, A. (1996). Cooking Fuel Smoke and Respiratory Symptoms among Women in Low-Income Areas in Maputo. *Environmental Health Perspectives*.

ELLEGÅRD, A. (1997). Tears while Cooking: An Indicator of Indoor Air Pollution and Related Health Effects in Developing Countries. *Environmental Research,* **75,** 12-22.
ESKOM (1985). Annual Report.
ESKOM (1990). Annual Report.
ESKOM (1995). Annual Report.
ESKOM (1997). Annual Report
ESKOM (2010). ESKOM's average price increases as approved by NERSA.
ESMAP (1999). *A Review of the Renewable Energy Activities of the UNDP/World Bank Energy Sector Management Assistance Programme 1993 - 1998*. Washington DC: World Bank
ETC (1997). Netherlands Development Assistance in the Energy Sector: The case of renewables.
EZZATI, M. & KAMMEN, D. (2001). Indoor air pollution from biomass combustion and acute respiratory infections in Kenya: an exposure study. *Lancet*, **358,** 619-624.
FAIRHEAD, J. & LEACH, M. (1996). *Misreading the African: landscape. Society and ecology in a forest-savanna mosaic*. Cambridge: Cambridge University Press.
FAO (1981). *Map of the fuelwood situation in the developing countries, with explanatory note*. Rome: FAO.
FAY, D.A. (2003). The Trust is over! We want to plough! Land, livelihoods and reverse resettlement in South Africa's Transkei. In *Graduate School of Arts and Sciences*: Boston University.
FERGUSON, J. (1999a). *Expectations of modernity: myths and meanings of urban life on the Zambian Copperbelt*. Berkeley: University of California.
FERGUSON, P.P. (1999b). Translator's Preface. In *Weight of the World : suffering in contemporary society*. ed Bourdieu, P.: Polity Press.
FESTINGER (1957). *A Theory of Cognitive Dissonance*. Stanford, California: Stanford University Press
FETTERMAN, D.M. (1998). *Ethnography Ste-by-Step*: Sage Publications.
FINE, B. & RUSTOMJEE, Z. (1996). *The political economy of South Africa: From Minerals-Energy Complex to Industrialisation*. Johannesburg: Witswatersrands University Press.
FINKELMAN, R.B., BELKIN, H.E. & ZHENG, B. (1999). Health impacts of domestic coal use in China. *Proceedings of the National Academy of Sciences of the United States of America*, **96**.
FISKE, J. (1989). *Understanding popular Culture*: Routledge.
FLICK, U. (2002). *An Introduction to Qualitative Research*. London, Thousand Oaks CA and New Delhi: Sage.
FOLEY, G., MOSS, P. & TIMBERLAKE, L. (1984). *How much wood would a wood stove save if a woodstove could save wood* London and Washington DC: Earthscan: International Institute for Environment and Development
GANDAR, M.V. (1983). Wood as a source of fuel in South Africa kwaZulu Natal: Institute of Natural Resources, University of Natal.
GAUNT, C.T. (2003). Electrification technology and processes to meet economic and social objectives in Southern Africa. Cape Town: University of Cape Town
GAUNT, C.T. (2010). Personal Communication. pp. Interview and Email Communication. Amsterdam.
GAUNT, T. (2005). Obituary: Charles Dingley. In *http://www.eepublishers.co.za/view.php?sid=1129*.

GERGEN, K.J. (1991). *The saturated self: Dilemmas of identity in contemporary life*. New York: Basic Books

GERGEN, K.J. (2001). *The Saturated self: Dilemmas of identity in contemporary life*. New York: Perseus.

GIDDENS, A. (1990). *The consequences of modernity* Stanford, California: Polity Press in association with Standford University Press.

GILSON, S.F. & PLOY, E.D. (2008). Explaining legitimacy: a model for disability policy development and analysis. In *Comprehensive Handbook of Social Work and Social Welfare: Social Work Practice v. 3*. ed Colby, I.C. pp. 676: John Wiley & Sons.

GIUSSANI, V. (1994). The UK Clean Air Act 1956: An empirical investigation *CSERGE Working Paper GEC 94-20*.

GLASER, B. (2002). Constructivist Grounded Theory? In *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research [On-line Journal]*.

GLASER, B.G. & STRAUSS, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*: Aldine Transaction

GOVERNMENT OF MALAWI (1964). *The Forestry Act*. Zomba: Government Printer.

GOVERNMENT OF SOUTH AFRICA (1984). *The Forest Act. Act 122 of 1984*. Pretoria Government Printer.

GRAMSCI, A. (1971). Selections from the Prison Notebooks. ed. Hoare, Q. & Nowell-Smith, G. London: Lawrence & Wishart.

GROBELAAR & BATEMAN (1991). Hut lung: Domestically acquired pneumoconiosis of mixed aetiology in rural women. *Thorax*, **46,** 334-340.

HAANYIKA, C.M. (2008). Rural electrification in Zambia: A policy and institutional analysis. *Energy Policy*, **36,** 1044-1058.

HABIB, R.R., FATHALLAH, F.A. & MESSING, K. (2010). Full-Time Homemakers: Workers Who Cannot "Go Home and Relax". *International Journal of Occupational Safety and Ergonomics (JOSE)*, **16,** 113-128.

HADJU, F. (2006). Local Worlds Rural Livelihood Strategies in Eastern Cape, South Africa. In *Department of Water and Environmental Studies*. Linköping Linköping University.

HAILE, F. (1989). Women Fuelwood Carriers and the Supply of Household Energy in Addis Ababa. *Canadian Journal of African Studies*, **23,** 442-451.

HAILE, F. (1991). Women fuelwood carriers in Addis Ababa and the Peri-Urban Forest. Geneva: ILO.

HAJER, M.A. (1995). *The Politics of Environmental Discourse: Ecological Modernisation and the Policy Process*. OxFord: Pxford University Press.

HAUSMAN, W.J., HERTNER, P. & WILKINS, M. (2008). *Global electrification: multinational enterprise and international finance in the history of light and power, 1878-2007*: Cambridge University Press.

HEGLUND, N.C. (1992). The Energetics and Mechanics of Load Carrying.

HEGLUND, N.C., WILLEMS, P.A., PENTA, M. & CAVAGNA, G.A. (1995). Energy-saving gait mechanics with head-supported loads. *Nature*, **375,** 52-54.

HOFFMÄNNER, A. (2002). The History of Energy Research in South Africa. Zürich: Swiss Federal Institute of Technology Zürich, ETH.

HOROWITZ, R.B. (1994). Apartheid, its demise and electricity: the development of the institutional and regulatory structure of the South African electricity industry. In *South African Energy Policy Research and Training Project. EDRC*. Cape Town: University of Cape Town.

HOSIER, R. & DOWD, J. (1987). Household fuel choice in Zimbabwe: an empirical test of the energy ladder hypothesis. *Resources and Energy Journal*, **9**.
HOSKINS, M. (1983). *Rural women, forest outputs and forestry projects*: FAO.
HOSKINS, M. (1979). *Women in forestry for local community development*. Washington, DC: USAID, Office of Women in Development.
HOUKES, W. & VERMAAS, P.E. (2010). *Technical Functions: On the Use and Design of Artefacts*.
HUGHES, T.P. (1993). *Networks of Power: Electrification in Western Society, 1880-1930* The Johns Hopkins University Press.
HUNTER, M. (2009). Providing love: Sex and exchange on twentieth century South Africa In *Love in Africa*. eds Cole, J. & Thomas, L.M. pp. 280. Chicago: Chicago University Press.
HUNTER, M. (1936). *A reaction to conquest: Effects of contact with Europeans on the Pondo of South Africa*. Óxford: Oxford University Press.
ILO (1967a). *C127 Maximum Weight Convention, 1967* ILO.
ILO (undated). *Linking energy with survival: a guide to energy, environment and women's work*. Geneva: ILO.
ILO (1967b). Maximum Weight Recommendation, 1967 *R128*
INGQUZA HILL (2008). *IDP Budget*. Ingquza Hill.
INGRAM, H. & MANN, D. (1980). Why policies succeed or fail.
JÄGER, H.J., GORDON-HARRIS, L., MEHRING, U.-M., GOETZ, G.F. & MATHIAS, K.D. (1997). Degenerative change in the cervical spine and load-carrying on the head. *Skeletal Radiology*, **26,** 475-481.
JAMES, B. (1995). Gender, development and environment in the rural village of Mabibi, KwaZulu. Durban: University of Natal.
JAMES, B. (1993). Mabibi Energy Consumption patterns. Pretoria Department of Minerals and Energy Affairs.
JANESICK, V. (1994). The Dance of Qualitative Design: Metaphor, Methodolatry and Meaning. In *Handbook of Qualitative Research*. eds Denzin, N.K. & Lincoln, Y.S. Thousand Oaks, California Sage.
JELENIC, N.E. & VAN VEGTEN, J.A. (1981). A pain in the neck: The firewood situation in the South-Western Kgatleng, Botswana. Gaborone: National Institute of Development and Cultural Research. University of Botswana.
JIMINEZ & OLSON (1998). Renewable energy for rural health clinics Colorado National Renewable Energy Laboratory.
JOHNSON, R.W. (2009). *South Africa's Brave New World: The Beloved Country Since the End of Apartheid* London: Allen Lane
JONES, S. (2002). The mining sector, 1970 -2000. In *The decline of the South African economy*. ed Jones, S. pp. 238. Cheltenham: Edward Elgar.
JOOSAB, M., TORODE, M. & PRASADA RAO, P. (1994). Preliminary findings on the effect of load-carrying to the structural integrity of the cervical spine *Surgical and Radiologic Anatomy*, **14,** 393-398.
KAGWANJA, P.M. (2000). Ethnicity, gender and violence in Kenya *Forced Migration Review*.
KAMMEN, D.M. (1995). Cookstoves for the Developing World :Traditional wood, charcoal and coal stoves are used in hundreds of millions of homes. Their redesign can have a dramatic effect on energy usage, the environment and community health. *Scientific American*.

KARKY, B.S. (2008). The economics of reducing emissions from community managed forests in Nepal Himalaya. Enschede: University of Twente.

KASIRYE, B.G., MATINGA, M. & CLANCY, J. (2009). Fuel Security and Supply Dynamics in Internally Displaced Persons' Camps of Northern Uganda *Journal of Humanitarian Assistance*

KAYO, D. (2004). Tariff and licensing laws in Zimbabwe: Implications for private sector participation. In *The Regulation of the Power Sector in Africa: Attracting Investment and Protecting the Poor*. eds Marandu, E. & Kayo, D. London: ZED Books.

KENNY, A. (2002). Why electricity saves lives. In *Focus*

KEPE, T. (2005). Magwa Tea Venture in South Africa: Politics, Land and Economics. *Social Dynamics: A journal of African studies*, **31,** 261-279.

KEPE, T. (2001). *Waking Up From the Dream: The Pitfalls of 'Fast Track' Development on the Wild Coast of South Africa.* . Cape Town: University of the Western Cape

KHAMATI-NJENGA, B. & CLANCY, J.S. (2005). Concepts and issues in gender and energy.

KIRSCH, B., SKORGE, S. & MAGONA, S. (2004). *Teach yourself Xhosa*. Reading: NTC Publishing Group.

KLEINMAN, A. (1997). *Social Suffering* Cambridge: University of California Press

KOBASA, S. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology*, **1,** 1-11.

KONING, H.W.D., SMITH, K.R. & LAST, J.M. (1985). Biomass fuel combustion and health. *Bulletin of the World Health Organization*, **63,** 11-26.

KOSSICK, P. (1961). Accidental Paraffin poisoning *South African Medical Journal* 112-113.

KOSSOVE, D. (1982). Smoke-filled rooms and lower respiratory disease in infants. *South African Medical Journal*, **61,** 622-624.

KRAMARAE, C. (1981). *Women and men speaking: Frameworks for analysis*. Rowley, MA: Newbury House.

KUCKERTZ, H. (1990). *Creating Order: The Image of the Homestead in Mpondo Social Life*. Johannesburg: Witwatersrand University Press.

KVALE, S. (1996). *InterViews : An Introduction to Qualitative Research Interviewing*: Sage.

LANKFORD, W.F. (1990). Making a Difference with Solar Ovens. *EPA Journal*, **16**.

LAXMI, V., PARIKH, J., KARMAKAR, S. & DABRASE, P. (2003). Household energy, women's hardship and health impacts in rural Rajasthan, India: need for sustainable energy solutions. *Energy for Sustainable Development*, **VII,** March 2003.

LEACH (1991). Engendering environments: Understanding natural resource management in the West African forest zone.

LEACH, G. & MEARNS, R. (1988). *Beyond the woodfuel crisis: people, land and trees in Africa*. London: Institute for Environment and Development.

LEVY, L. (1968). Porter's neck. *British Medical Journal* **2,** 16-19.

LEWIS, S.R. (1990). *The Economics of Apartheid*: Brookings Institute.

LLOYD, P. (2002). The safety of paraffin and LPG appliances for domestic use. In *Energy Management News*. pp. 1-6.

LOUW, Q., MORRIS, L. & GRIMMER-SOMERS, K. (2007). The Prevalence of low back pain in Africa: a systematic review. *BMC Musculoskeletal Disorders*, **8,** 105.

MADUBANSI, M. & SHACKLETON, C.M. (2006). Changing energy profiles and consumption patterns following electrification in five rural villages, South Africa *Energy Policy*, **34,** 4081-4092.

MALANGU, N., PLOOY, W.J.D. & OGUNBANJO, G.A. (2005). Paraffin poisoning in children: What can we do differently *South African Family Practice* **47,** 55-56.

MALOIY, G.M.O., HEGLUND, N.C., PRAGER, L.M., CAVAGNA, G.A. & TAYLOR, C.R. (1986). Energetic cost of carrying loads: have African women discovered an economic way? *Nature*, **319,** 668-669.

MARQUARD, A. (2009). Interview Cape Town

MARQUARD, A. (2006). The origins and development of the South African energy policy. In *Faculty if Engineering and Built Environment* pp. 445. Cape Town University of Cape Town

MATANHIRE, D., NSUNGU, M. & MABHIZA, E. (1994). Factors associated with incidence of domestic accidents in children aged 0-5 years in Chikomba District, Mashonaland East, Zimbabwe. *Central African Journal of Medicine*, **40**.

MATINGA, M.N. (2005a). *Energy as a key variable in reducing child mortality: A gender and energy perspective on empirical evidence on MDG #4* Unpublished Report.

MATINGA, M.N. (2005b). *Energy as a key variable in reducing HIV/AIDS and major diseases: A gender and energy perspective on empirical evidence on MDG*: Unpublished Report.

MATINGA, M.N. (2004). Implications of Power Sector Reforms in Malawi for Investment and the Poor. In *The Regulation of the Power Sector in Africa: Attracting Investment and Protecting the Poor*. eds Marandu, E. & Kayo, D. London: ZED Books.

MATINGA, M.N. (2008). The making of hardiness in women's experience of health impacts of wood collection and use in Cuntwini, rural South Africa. *Medische Anthropologie* **20,** 279-195.

MATLY, M. (2005). *Women's electrification*. Consultative Research Group on Gender and Energy.

MATZOPOULOS, R., JORDAAN, E. & CAROLISSEN, G. (2006). Safety issues relating to paraffin usage in Eshane, KwaZulu Natal. *Journal of Energy in Southern Africa*, **17,** 4-9.

MBEKI, G.A. (1964). *South Africa, the peasant's revolt*: International Defence and Aid Fund

MCALLISTER, P. (2001). *Building the homestead: agriculture, labour and beer in South Africa's Transkei* Leiden: African Studies Centre

MCDONALD, D.A. (2002). The Bell Tolls For Thee:Cost Recovery, Cutoffs, and the Affordability of Municipal Services in South Africa. In *Municipal Services Project*. Queensland.

MCRAE, I. (2006). *The Test of Leadership 50 years in the electricity supply industry of South Africa* EE Publishers

MEHLWANA, A.M. & QASE, N. (1999). *The contours of domesticity, energy consumption and poverty: The social determinants of energy use in low-income urban households in Cape Town's townships (1995-1997)*. Cape Town: Energy & Development Research Centre, University of Cape Town.

MELCHERT, L. (2007). The Dutch sustainable building policy: a model for developing countries? . *Building and Environment*, **42,** 893-901.

MESSING, K. (2010). Email. ed. M.N, M.
MESSING, K. (1998). *One-eyed science: occupational health and women workers* Temple University Press.
MISHRA, V., DAI, X., SMITH, K. & MIKA, L. (2004). Maternal Exposure to biomass smoke and reduced birth-weight in Zimbabwe. *Environmental Health Perspectives, 2003/Annals of Epidemiology." International Journal of Gynaecology and Obstetrics 59(Supplement 2).*
MISHRA, V., RETHERFORD, R. & SMITH, K. (1999a). Cooking with biomass increases the risk of blindness. *National Family Health Survey Bulletin*.
MISHRA, V., RETHERFORD, R. & SMITH, K.R. (1999b). Cooking with biomass increases the risk of Tuberculosis. *National Family Health Survey Bulletin.*
MISHRA, V., RETHERFORD, R.D. & SMITH, K.R. (2000). Gender differentials in effects of cooking smoke on respiratory illness.
MLAMBO-NGCUKA, P. (2006). A catalyst for Accelerated and Shared Growth-South Africa (ASGISA).
MLAMBO-NGCUKA, P. (2005). Speech for the Minister of Minerals and Energy,Phumzile Mlambo-Ngcuka , during the Switch-on in Mosselbay Local Municipality. *10th June 2005*.
MOSER, C. (1993). *Gender Planning and Development: Theory, Practice and Training*. New York and London: Routledge.
MRUBATA, M. & DHLAMINI, T. (2008). A survey of paraffin users in Soweto to determine the impact of the removal of paraffin non-pressure stoves from the market. *For GTZ/PROBEC*.
MSF (2005). The Crushing Burden of Rape: Sexual Violence in Darfur. Amsterdam: Médecins sans Frontières.
MUNSLOW, B., KATERERE, Y., FERF, A. & O'KEEFE, P. (1988). *The fuelwood trap: A study of the SADCC region* London: Earthscan Publications Limited.
MUTERE, A. (1991). Domestic Air Pollution in Rural Kenya. *Boiling Point Special Edition*.
NATHAN, D. & KELKAR, G. (1997). Wood Energy: The Role of Women's Unvalued Labor. *Gender Technology and Development,* **1,** 205-224.
NCETEZO, M. (2010). Personal Communication. ed. Matinga, M.N. pp. Email
NEGA, K.E. & LINDTJØRN, B. (2002). Epidemiology of burn injuries in Mekele Town, Northern Ethiopia: A community based study. **16**
NISSING, C. & VON BLOTTNITZ, H. (2010). Renewable energy for sustainable urban development: Redefining the concept of energisation. *Energy Policy,* **38,** 2179-2187.
NKONOKI, S. & SORENSEN, B. (1984). A rural study in Tanzania: the case of Bundilya village. *Natural Resources Forum* **8,** 51-62.
NORMAN, R., MATHEE, A., BARNES, B., BRADSHAW, D. & SOUTH AFRICAN COMPARATIVE RISK ASSESSMENT COLLABORATING GROUP 2000 (2007). Estimating the burden of disease attributable to indoor air pollution from household use of solid fuels in South Africa in 2000. *South African Journal of Medicine*.
NRCS (2006). Compulsory Specification for non-pressure paraffin stoves and heaters. In *VC9089-2006*.
NYE, D. (1990). *Electrifying America: Social Meanings of a New Technology, 1880-1940*. Cambridge, MA: MIT Press.
O'KEEFE, P. & RASKIN, P. (1985). Fuelwood in Kenya: crisis and opportunity. *Ambio***,** 220-224.

OECD/IEA (2002). *World Energy Outlook*. Cedex.
OPENSHAW, K. & FENSTEIN, C. (1989). Fuelwood stumpage : financing renewable energy for the world's other half. *Policy Research Working Paper*.
ORTDM (2009). *Annual Report*.
PALMER, P.E. & DAYNES, G. (1967). Transkei silicosis. *South African Medical Journal*, **41,** 1182-1188.
PAOLISSO, M. & LESLIE, J. (1995). Meeting the changing health needs of women in developing countries
Social Science & Medicine, **40,** 55-65.
PARALLAX (2007). The Future for Integrated Energy Centres in South Africa Unpublished Report.
PARR, J. (1999). *Domestic goods: The material, the moral, and the economic in the postwar years*. Toronto: University of Toronto Press.
PASASA (2009). Status of paraffin appliances in South Africa. *Newsletter of the Paraffin Safety Association of Southern Africa* **Issue 4**.
PASASA EXECUTIVE (2010). Interview.
PEIRES, J.B. (1999). The central beliefs of the Xhosa cattle killing *Journal of African History* **28,** 43-63.
PMG (2007). Minutes - Integrated national electrification programme: Progrss report by ESKOM and Department of Minerals and Energy. In *Portifolio Committee Meeting*. Cape Town: PMG.
POSNER, R. (1974). Theories of economic regulation. *The Bell Journal of Economics and Management Science*, **5,** 335-358.
PRACTICAL ACTION (2009). Energy poverty: The hidden energy crisis. Rugby: Practical Action
PRASAD, G. & RANNINGER, H. (2003). The Social Impact Of The Basic Electricity Support Tariff (Best). In *Domestic Use of Energy Conference 2003*. Cape Town, South Africa.
RAMANATHAN, V. & CARMICHAEL, G. (2008). Global and regional climate changes due to black carbon. In *Nature Geoscience* pp. 221-227.
RATHGEBER, E.M. (1989). *WID, WAD, GAD: Trends in research and practices*. Ottawa: IDRC.
REDDING, S. (1996). Government Witchcraft: Taxation, the Supernatural, and the Mpondo Revolt in the Transkei, South Africa, 1955-1963. *African Affairs*, **95,** 555-579.
REDDING, S. (1993). Legal Minors and Social Children: Rural African Women and Taxation in the Transkei, South Africa. *Africa Studies Review*, **36,** 49-74.
REDDY, A. (1999). Energy and social issues. In *The World Energy Assessment: Energy and the challenge of sustainability* New York: UNDP.
REED, R.P. & CONRADIE, F.M. (1997). The epidemiology and clinical features of paraffin (kerosene) poisoning in rural African children. *Annals of Tropical Paediatrics*, **17,** 49-55.
RIBOT, J.C. (1999). A history of fear: imagining deforestation in the West African dryland forests. *Global Ecology and Biogeography*, **8,** 291-300.
RIBOT, J.C. & PELUSO, N.L. (2003). A Theory of Access. *Rural Sociology*, **68,** 153-181.
RIP, A. & KEMP, R. (1998). Technological Change. In *Human Choice and Climate Change Vol. 2 - Resources and Technology*. eds Rayner, S. & Malone, L. pp. 327-399: Batelle Press.

ROBINSON, J.W. (2009). Viewpoints - An interview with Professor Kirk R Smith. *Boiling Point,* **56**.

ROLLIN H, MATHEE A, BRUCE N, LEVIN J & Y, V.S. (2004). Comparison of indoor air pollution in electrified and un-electrified dwellings in rural South African villages. *Indoor Air,* **14,** 208.

ROSS, F.C. (1996). Diffusing domesticity: Domestic fluidity in Die Bos. *Social Dynamics: A journal of African studies,* **22,** 55 - 71.

ROTH, C. (2008). Email Blantyre

ROTH, C. (2005). Personal communication ed. Matinga, M.N. Blantyre.

SAATKAMP, B.D., MASERA, O.R. & KAMMEN, D.M. (2000). Energy and health transitions in development: fuel use, stove technology, and morbidity in Jaracuaro, Mexico. *Energy for Sustainable Development,* **VI**.

SAHA, A., KULKARNI, P.K., SHAH, A., PATEL, M. & SAIYED, H.N. (2005). Ocular morbidity and fuel use: an experience from India. *Occupational and Environmental Medicine,* **62,** 66-69.

SCHNEIDER, A. & INGRAM, H. (1990). Behavioral Assumptions of Policy Tools. *The Journal of Politics,* **52,** 510-529.

SCHNEIDER, M., BRADSHAW, D., STEYN, K., NORMAN, R. & LAUBSCHER, R. (2009). Poverty and non-communicable diseases in South Africa. *Scand J Public Health,* **37,** 176-186.

SCHUMACHER, E.F. (1973). *Small is Beautiful: Economics as if People Mattered*: Blond and Briggs.

SCHWARTZ, J. (2004). Air Pollution and Children's Health. *Pediatrics,* **113,** 1037-1043.

SCOTT, J.C. (1985). *Weapons of the Weak: Everyday forms of peasant resistance*. Bethany, Connecticut: Yale University Press.

SEBITOSI, A.B. & PILLAY, P. (2007). Modelling a sustainability yardstick in modern energisation of rural sub-Saharan Africa. *Energy Policy,* **35,** 548-552.

SEGAL, N. (2007). *Breaking the mould: The Role of Scenarios in Shaping South Africa's Future*. Cape Town: Sun Press.

SEN, A.K. (1999). *Development as Freedom*. New York: Alfred A. Knopf.

SHACKLETON, C.M. (1998). Annual production and harvestable dead wood in semi-arid savannas South Africa. *Forest Ecology and Management,* **112,** 139-144.

SHACKLETON, C.M., BUITEN, E., ANNECKE, W.J., BANKS, D., BESTER, J., EVERSON, T., FABRICIUS, C., HAM, C., KEES, M., MODISE, M., PHAGO, M., PRASAD, G., SMIT, W., TWINE, W., UNDERWOOD, M., VON MALTITZ, G. & WENZEL, P. (2004). Fuelwood And Poverty Alleviation In South Africa: Opportunities, Constraints and Intervention Options.

SHACKLETON, C.M., GAMBIZA, J. & JONES, R. (2007). Household fuel use in small electrified towns in Makan District, Eastern Cape, South Africa. *Journal of Energy in Southern Africa,* **18,** 4-10.

SIDDIQUI, A.R., GOLD, E.B., YANG, X., LEE, K., BROWN, K.H. & BHUTTA, Z.A. (2008). Prenatal exposure to wood fuel smoke and low birth weight. *Environmental Health Perspectives,* **116,** 543-549.

SIKOKA, D., MWOLOLO, K., CHEROP, H., HUSSEIN, A., JUMA, M., KURUI, J., BWIKA, A., SEKI, A. & OSAKI, Y. (2002). The Prevalence of acute respiratory infections and the associated risk factors: A Study of children under Five years of age in Kibera Lindi Village, Nairobi, kenya. *Journal of National Institute of Public Health,* **51**.

SKAR, S.L., SAMANEZ, N.A. & COTARMA, S.G. (1982). Fuel availability, nutrition and women's work in highland Peru- Three case studies from contrasting Andean communities: International Labour Organisation (ILO).

SKUTSCH, M. (1983). Why people don't plant trees. In *The Socioeconomic Impacts of Existing Woodfuel Programs:Village Case Studies, Tanzania*: The Center for Energy Policy Research, Resources for the Future.

SKUTSCH, M.M. (1994). Integrating women in energy assistance: which way forward? *Energy for Sustainable Development*, **I,** 49-51.

SKUTSCH, M.M. & CLANCY, J.S. (2006). Unravelling relationships in the energy-poverty-gender nexus. In *In Transforming Power: Energy as a Social Project* Delaware: Centre for Energy and Environmental Policy, University of Delaware.

SMITH-SIVERTSEN, T., BRUCE, N., DIAZ, A., SCHEI, M.A., POPE, D., BAKKE, P.S., ORDOÑEZ, S., ARANA, B., KHALAKDINA, A., MCCRACKEN, J., SMITH, K.R. & KLEIN, R. (2004a). Chronic Airway Symptoms And Lung Function Among Women In A Rural Community In Guatemala With High Indoor Air Pollution Levels. *Epidemiology*, **15**.

SMITH-SIVERTSEN, T., BRUCE, N., DIAZ, A., SCHEI, M.A., POPE, D., BAKKE, P.S., ORDOÑEZ, S., ARANA, B., KHALAKDINA, A., MCCRACKEN, J., SMITH, K.R. & KLEIN, R. (2004b). Eye Discomfort, Headache And Back Pain Among Women In Guatemala Using Open Fires For Cooking And Heating. *Epidemiology*, **15**.

SMITH, K. (1987). *Biofuels, Air Pollution, and Health.* . New York Plenum

SMITH, K.R. (1993). Fuel combustion, air pollution exposure, and health: The Situation in Developing Countries. *Annual Reviews- Energy and Environment*, **18,** 529-566.

SMITH, K.R. (2002). In Praise of Petroleum? *Science* www.sciencemag.org, **298**.

SMITH, K.R. & MEHTA, S. (2003). The Burden of Disease from Indoor Air Pollution in Developing Countries: Comparison of Estimates. *International Journal of Hygiene and Environmental health***,** 206(4-5), 279-289.

SOFOLUWE, G.O. (1968). Smoke pollution in dwellings of infants with bronchopneumonia. *Archives of Environmental Health*, **16,** 670-672.

SPENGLER, J.D. & SEXTON, K. (1983). Indoor air pollution: a public health perspective. *Science*, **221,** 9 - 17.

SPRADLEY, J.P. (1979). The Ethnographic Interview. New York. : Holt, Rinehart and Winston.

SPRADLEY, J.P. (1980). *Participant Observation* Orlando: EUA: Harcourt.

STACK, C.B. (1996). *All our kin*. New York: Basic Books.

STATISTICS SOUTH AFRICA (2002). Women and men in South Africa: Five years on. Pretoria.

STATSSA (2008). Additional aspects of the labour market in South Africa: Informal employment; Underemployment and underutilised labour; Unemployment. *Quarterly Labour Force Survey* **Statistical release. P0211.1**.

STATSSA (2007). General Household Survey July 2006: Statistics South Africa

STATSSA (2009). Mid-year Population Estimates. ed. Statistics South Africa: STATSSA.

STEINER, M. (2003). NGO Reflections on the World Summit: Rio + 10 or Rio – 10? *RECIEL*, **12**.

STELLMAN, J.M. (1998). *Encyclopaedia of occupational health and safety, Volume 1; Volume 5*: International Labour Office.

STEWART, A. (1996). Correspondence. *British Medical Journal*.

STEYNBERG, A. & DRY, M. (2004). Fischer-Tropsch Technology. In *Studies in Surface Science and Catalysis*: Elsevier Publishing.
STOCKHOLM CHALLENGE (2004). Tele-Health: a Case Study Tsilitwa, Eastern Cape, South Africa
SUNDELL, J. (2004). On the history of indoor air quality and health. *Indoor Air*, **14,** 51-58.
TADESSE, T. (2002). Empowering women in Ethiopia In *Choices* ed. Diallo, D.
TAGWIREYI, D., BALL, D.E. & NHACHI, C.F.B. (2002). Poisoning in Zimbabwe: a survey of eight major referral hospitals. *Journal of Applied Toxicology,* **22,** 99-105.
TERBLANCHE, A.P.S., NEL, R., REINACH, G. & OPPERMAN, L. (1992). Personal exposures to total suspended particulates from domestic coal burning in South Africa. *Clean Air*, **8,** 15-17.
TINKER, I. (1984). The Real Rural Energy Crisis: Women's Time *The Energy Journal*.
TINKER, I. (1979). *Women and development*.
TRC (1997). TRC Briefing report V3.
TROPP, J.A. (2006). *Natures of Colonial Change: Environmental Relations in the Making of the Transkei*. Anthens: Ohio University Press.
UCT (2002). *Options for a basic electricity support tariff: Analysis, issues and recommendations for the Department of Minerals and Energy and Eskom*: University of Cape Town, South Africa.
UNDP (2008). *Energizing the Millennium Development Goals*. New York: UNDP.
UNDP (2001). *Generating Opportunities: Case studies on energy and women.* New York.
UNWIN, N., SETEL, P., RASHID, S., MUGUSI, F., MBANYA, J.-C., KITANGE, H., HAYES, L., EDWARDS, R., ASPRAY, T. & ALBERTI, K.G.M.M. (2001). Noncommunicable diseases in sub-Saharan Africa: where do they feature in the health research agenda? *Bulletin of the World Health Organization*, **79,** 947-953.
VAN DER GEEST, S., SPECKMANN, J.D. & STREEFLAND, P.H. (1990). Primary health care in a multi-level perspective: Towards a research agenda. *Social Science & Medicine*, **30,** 1025-1034.
VAN HOREN, C. Eskom, its finances and the national electrification programme.
VAN NIEKERK, W. (2006). From technology transfer to participative design:a case study of pollution prevention in South African townships. *Journal of Energy in Southern Africa* **17,** 58-64.
VAN ONSELEN, C. (1972). Reactions to Rinderpest in Southern Africa 1896-97. *The Journal of African History*, **13,** 473-488.
VAN RENSBURG, W.C.J. (1987). The South African Energy Scene. *Coal Processing*
VERBEEK, P.P. (2005). *What Things Do: Philosophical Reflections on Technology, Agency, and Design*. University Park: PA: Penn State University Press.
VISSER, A. & KHAN, H.R. (1996). When smoke gets in your eyes: kitchen air quality in rural Bangladeshi homes. *Energy for Sustainable Development*, **3,** 52-57.
VON SCHIRNDING, Y., NIGEL, B., SMITH, K., BALLARD-TREMEER, G., EZZATI, M. & K, L. (2000). Addressing the Impact of Household Energy and Indoor Air Pollution on the Health of the Poor: Implications for Policy Action and Intervention Measures. Washington DC: World Health Organisation.
WAFULA, E.M., KINYANJUI, M.M., NYABOLA, L. & TENAMBERGER, E.D. (2000). Effect of improved stoves on prevalence of acute respiratory infections and conjunctivitis

among children and women in a rural community in Kenya. *East African Medical Journal,* **77,** 37-41.
WALKER, B. (2000). The Prevalence of Low Back Pain: A Systematic Review of the Literature from 1966 to 1998. *Journal of Spinal Disorders,* **13,** 205 - 217.
WALSH, F. (1996). The Concept of Family Resilience: Crisis and Challenge. *Family Process,* **35,** 261-281.
WANI, K.A., AHMAD, M., KAUL, R.-U.-R., SETHI, A.S. & SHABNUM (2004). Poisoning in Children. *J.K Practioner,* **11,** 274.
WCED (1987). *Our Common Future*. Oxford: Oxford University Press.
WHO (1984). *Biomas fuel combustion EFP/84.64*. Geneva.
WHO (2006). Fuel for life : household energy and health. Geneva: WHO.
WHO (1991). Indoor Air Pollution from Biomass Fuel. *Working papers from a WHO consultation.*
WICKLUND, R.A. & GOLLWITZER, P.M. (1981). Symbolic Self-Completion, Attempted Influence, and Self-Deprecation. *Basic and Applied Social Psychology,* **2,** 89-114.
WICKRAMASINGHE, A. (2003). Gender and health issues in the biomass energy cycle: impediments to sustainable development. *Energy for Sustainable Development,* **VII,** 51-61.
WICKRAMASINGHE, A. (2001). Gendered Sights and Health Issues in the Paradigm of Biofuel in Sri Lanka. *Energia News,* **4**.
WILHITE, H. (2008). *Consumption and the Transformation of Everyday Life A View from South India - Consumption and Public Life* Palgrave Macmillan.
WILHITE, H. (2005). Why energy needs anthropology. *Anthropology Today,* **21,** 1-2.
WILLIAMS, A., EBERHARD, A. & DICKSON, B. (1996). Synthesis report of the Biomass Initiative. Pretoria Chief Directorate of Energy. Department of Mineral and Energy Affairs.
WILLIAMS, J.H. & DUBASH, N.K. (2004). Asian Electricity Reform in Historical Perspective *Pacific Affairs,* **77,** 411-436.
WILSON, M. (1961). *A reaction to conquest: Effects of contact with Europeans on the Pondo of South Africa*: Oxford University Press.
WINTHER, T. (2008). *The Impact of Electricity: Development, Desires and Dilemmas*: Berghahn Books.
WORLD BANK (2000a). Energy and Health for the Poor *Indoor Air Pollution Newsletter*.
WORLD BANK (2000b). *Energy Services for the poor*. Washington DC: World Bank Group.
WORLD BANK (1975). *Rural Electrification Policy*. Washington DC: World Bank.
WORLD BANK (1996). *Rural Energy and Development: Improving Energy Supplies for Two Billion People*. Washington, DC: IBRD/World Bank.
WORLD BANK (2000c). *Voices of the Poor* Washington, DC: The World Bank.
WORLD BANK (2006). World Development Report.
WORLD BANK INDEPENDENT EVALUATION GROUP & WHITE, H. (2008). *The Welfare Impact of Rural Electrification: A Reassessment of the Costs and Benefits*
WORLD HEALTH ORGANIZATION (WHO) (2002). *Addressing the impact of household energy and indoor air pollution on the health of the poor: implications for policy action and intervention measures* Geneva: WHO.
WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT (WSSD) (2002). Plan of Implementation of the World Summit on Sustainable Development. Johannesburg

ZIEBELL, S. (2005). Fuel Provision and Gender-Based Violence: Fuel-efficiency as a prevention strategy: UNIFEM.
ZOOMERS, A.N. (2001). Rural Electrification: Chafe or challenge? pp. 322: University of Twente.

Summary in English

An often quoted figure, based on 2002 estimates by the OECD/IEA, is that 2.5 billion people depended on biomass fuels for cooking because they lack or have limited access to modern energy. The fuels they use in *lieu* of modern energy - firewood, dung and paraffin - have been implicated in a range of negative health impacts, whether at acquisition or use stages. Such linkages are made by researchers and development advocates, and are based on their own knowledge and interpretations, *i.e.* on *etic* perspectives. What is less known is the perspective of those affected and affecting energy acquisition and use, and more specifically how they experience, perceive and respond to the negative health impacts of energy acquisition and use.

Since energy acquisition and use is enabled by a myriad of features including policies and decisions at various levels, this research adopts a multi-level perspective and examines the international, national, local, and household levels. It analyses how the various actors within each of these four levels experience, perceive and respond to the health impacts of energy use, and why such experiences, perceptions, and responses exist and persist. The objective of the study is to inform development policy and practice, and at the same time to extend theory related to development interventions.

The study adopts a qualitative research approach. However due to the different characteristics of actors within each level as well as practical considerations, different techniques were used for different actors. At the international level, the emphasis is on analysing secondary data while at the national level, secondary data is complimented with interviews. At local level, the research techniques include interviews, complimented by observations and secondary data. The household level forms the core of the research and the empirical data at this level is derived from primary data acquired using a Grounded Theory ethnographic approach, including interviews, participant observations, mapping exercise and wealth ranking to name a few.

Two villages in South Africa's Eastern Cape Province, Cutwini and Tsilitwa, are the field sites for the research, with the former being a village without electricity or modern infrastructure such as a clinic and piped water, while the latter has electricity, a clinic, piped water, and three modern schools. Both villages are largely inhabited by the Xhosa ethnic group with Cutwini being a Pondo Xhosa village while Tsilitwa is a Hlubi Xhosa village. The differences between the two field sites, in terms of infrastructure availability make them good candidates for comparing experiences, perceptions and responses in settings without and with electricity as well as other modern infrastructure. Nevertheless their shared heritage as Xhosa villages, situated in the same former homeland and their similarities in a range of socio-economic conditions as presented in Chapter 4 of this study, make them comparable.

Chapter 2 looks at whether and how at international level the discourse that shapes experiences, perceptions and responses in the energy sector neglects the health impacts of energy acquisition and use. Tracing key discourses in the energy sector, starting in the 1970s when energy became a key issue due to the oil crisis, the findings show that discourses for the global South, such as those related to deforestation, appropriate technology and renewable energy put technology and technical capability rather than people at the centre of their debates. For deforestation and renewable energy debates, the focus was on ecology at the expense of people who are largely seen as offenders that destroy the environment. Appropriate technology, although aimed at a people-centred approach, was largely implemented from a techno-centric angle and therefore yielded

few social benefits. The advent of the sustainable development discourse brought with it the issue of sustainable energy although initially this remained at the margin. However, sustainable energy has been equated to renewable energy even though renewable energy, using currently viable technologies, rarely addresses the cooking needs of the poor and when it attempts this, there is little if any consideration of the context in which the renewable energy technologies must be used. Further, as in past debates on development, sustainable development is dominated by the global environmental debates while local contexts and the social pillar of sustainable development are weakly represented. Another current key discourse relates to climate change which, because of the neoliberal approach of its mechanisms, fails to address needs at household level especially for poor countries whose complex situations are glossed over in global approaches.

Despite the above picture of neglect of energy-health linkages there are a number of researchers and advocates that have attended to the energy-health nexus, either from a gender perspective or from a specific group of health experts. A weakness in this current state of knowledge, however, is that such attention has been largely on indoor air pollution (IAP) from use of firewood and dung. Other impacts such as those of collecting firewood on women's musculoskeletal and reproductive health, the hazards that they encounter during collection including physical and sexual violence, and impacts of firewood, dung and paraffin use other than respiratory infections, are under-researched. Only a few studies have been done on these other impacts and these show various potential correlations between energy and health.

In Chapter 3, the research examines the South African energy policy drivers as a reflection of policy makers' experiences, perceptions and responses. The findings here show that during the apartheid era, the policy drivers did not focus on the social aspects of energy including energy-health linkages. One reason being that this was in line with discourses shaping the energy sector internationally at that time. Until the 1990s, technical constraints meant that electrification was limited to formal dwellings and billing arrangements did not take into consideration the income patterns of rural households, most of whom did not have monthly earnings. Moreover, the research shows that at the international level the focus was on electrifying economically viable areas first, thereby leaving out the poor. However, policy makers rarely considered other forms of energy for household energy access. Extending access to modern energy carriers to poor households was further limited by governments' financial constraints and energy system capacities in many developing countries. For South Africa, unlike most other countries in Sub-Saharan Africa, however system capacity constraints were not an issue because the country's public utility, ESKOM, had excess capacity that it could use to extend electricity to some of the poor. The country also had the financial resources to invest in modern energy access to meet the social needs of the poor even where there was little economic justification. However, such investments that might have addressed energy-health linkages, were largely neglected while the country pursued politically important and symbolic investments such as nuclear programs and synthetic fuels. Firstly, such projects were politically important for the apartheid state because they aimed to reduce dependency on imported energy carriers such as petroleum products in order to maintain energy security, which in turn maintained the apartheid state at a time when South Africa was increasingly isolated due to international sanctions. Secondly, the provision of modern energy and investments made therein were also *politically symbolic* for the apartheid state - separating the white

population, which was served with highly subsidised electricity, from the black marginalised population, which was largely without access to modern energy carriers - so that electrical power lines, like many other denied services and opportunities, served to emphasise the state's racial ideology. Such symbolism overruled socially beneficial investments. For a few townships that were electrified in the 1970s, such as Soweto and Alexandra, with the help of government and also as a result of efforts by black local authorities, such investments occurred because of the increasing political visibility of the residents who ensured this through mass action. For the apartheid state, the resident's growing political visibility was politically costly since events such as the 1976 Soweto Uprising increased international protest against the South African state. The investment for electrifying black urban townships was also important because the small but growing black middle class represented a viable and important customer base.

However, what the analysis in Chapter 3 also shows is that *symbolism* of electricity did not end with the change of government in 1994. In the 1980s, the ANC, then a banned organisation, had targeted modern energy installations with sabotage in protest against apartheid, symbolically destroying the apartheid government they represented. After 1994, energy policy was not comprehensively defined but a particular focus on electricity emerged, resulting in an unprecedented rate of electrification. While such rapid electrification served the important and valid political goals of addressing racial inequality in access to electricity, they did not necessarily serve the social needs of the poor *vis-à-vis* access to modern energy carriers. Although firewood and paraffin were the two main energy carriers for the poor, and while research showed that their use and therefore their related health impacts would continue after electrification, there was little in terms of both policy and action on the ground to address either firewood and dung acquisition and use, or paraffin use. The analysis of policy drivers in the post-apartheid period shows two kinds of symbolism. The first is the one stated above in which investments are focused on *symbolic* and heroic undertakings even when these are not the best ways to achieve social and even economic goals. The second kind of *symbolism*, in line with Edelman's (1964) understanding of *policy symbolism*, is that policy declarations are made without committing resources to realise such policies. In this case, the DME White Paper on Energy Policy (1998) declares the objective of addressing firewood acquisition and use with the aim of tackling the related health impacts but does not commit a comprehensive set of resources to it, instead committing to electricity provision. In this way, *"emotionally gripping"* declarations of universal electrification by 2012, as made by the then South African president Thabo Mbeki (2004) in his state of the nation address**,** obscure the context and ignore the practicalities of how to provide socially beneficial access to modern energy carriers.

Chapter 4 analyses the setting in which energy discourses at the international level, and energy policies at the national level, act and affect address daily life experiences. It is also the setting within which actions at local level must function and where household actors engage in their daily practices and make meaning of their social worlds. The main findings of this analysis show firstly that the residents of the two studied villages, Cutwini and Tsilitwa, are largely marginalised by historical conditions that have affected their political power, making their social, economic and political lives dependent on distant administrators whose understanding of the world differs from that of the villagers. Secondly, that the gendered division of labour and space is not a simple power issue and a subordination of women by men but rather defines and add meaning to life for both men and women, such that a one-dimensional view of gender relations

does not provide sufficient understanding on the lives of women and men. Thirdly, that the Xhosa culture, while always changing, continues to affect daily life and therefore understanding *emic* practices and their meanings is the key to understanding the residents' experiences, perceptions and responses. The findings show that activities such as collecting firewood and cooking are meaningful beyond their utility functions. As a result, what an *etic* observer might interpret as a harmful activity or behaviour, such as collecting firewood, might from the *emic* perspective be interpreted as part of being a 'good woman', an opportunity to socialise or a way of accumulating *symbolic capital*. In terms of the economy, the research shows that the residents of the two villages are largely dependent on government grants for finance, with limited dependence on finances from rural-urban monetary linkages and on subsistence agriculture. Such dependence on state welfare, whilst alleviating poverty, also indebts the residents to particular political affiliations even when they are dissatisfied by many other aspects of government's performance in terms of its promises and their expectations. In this way, government social grants are both safety nets that prevent the worst poverty and dangerous 'hammocks' that weaken people's political power. The fact that the two villages have a long history of migrant labour means that at least a fifth of the households have linkages to kin in urban centres. These links are useful not only in economic transfers to ensure household survival, but also in introducing modern lifestyles and desires including electrical appliances. However cash transfers from these linkages contribute less to household finances when compared to government grants due to the unreliability of urban-rural transfers. Agriculture is largely weakened by the phenomenon of abandoning fields, a process of 'deterioration' that has gone on over decades. Finally, the chapter shows that development and modernity, although desired by the residents of both villages, have different meanings for different villagers as well as for development advocates who promote particular initiatives. In addition, development and modernity not only come into a complex social world but also to people with differing abilities and positions. The implication of development in a complex social world is that its outcomes may conflict with existing practices and dispositions and may therefore be rejected or re-shaped. This means that the potential benefits of development and modernity are not equally experienced by the villagers, which may lead to conflict. The key conclusion of the analysis in Chapter 4 is that interventions, including policies and technologies, brought about with aims of providing social benefits, such as providing modern energy (in part) to yield health benefits related to abandoning the use of firewood, dung and/or paraffin, may not yield expected benefits as they interact in such a complex setting.

Chapter 5 examines the implementation of national level policies at the local level where national policies must be turned into specific actions. The local level analysis focuses on actions of provincial, district, municipal, and village administration units. The findings show that at local level there are no energy personnel to act as extension workers who can liaise with households about their energy related experiences. The absence of energy policy intermediaries such as district energy officers reflects the traditional approach to energy where it is centrally planned and has no extension services. Welfare related inputs for poor households such as free basic electricity (FBE) and free basic alternative energy (FBAE), must be planned for within municipalities through integrated development plans (IDPs). While the details of IDPs vary from one municipality to another, an examination of municipal reports and records for Ingquza Hill municipality which oversees Cutwini, and Mhlontlo municipality which oversees

Tsilitwa, shows that energy is sometimes not budgeted for. This is also true upon examination of district level records of the O.R Tambo district municipality. At other times, wrong assumptions are made about the beneficiaries of energy programmes such as FBE, which was introduced to provide 50kWh of electricity free of charge every month to a qualifying household.

Reflecting on national level gaps as identified in Chapter 3, the research shows that there are no programs addressing firewood or dung acquisition and use in either local municipality and at district level. With respect to paraffin, PASASA (2010) has started national work on paraffin safety with linkages to disaster management teams of local municipalities and some non-governmental organisations. However, what should be recognised is that PASASA is a non-governmental organisation whose funding as of 2010 was solely provided by the petroleum sector. The interest in funding paraffin safety by the petroleum industry is explained in terms of the notion of a *blameable entity*. In the context of South Africa and as used in this research, *blameable entities* are organisations or individuals that face high political costs if they are perceived as contributing to the suffering of previously disadvantaged populations but are also perceived as not participating in restitution efforts. Funding PASASA can then be seen as an economic as well as political strategy for the petroleum industry since it is a politically visible action that prevents the costs of being policed by the government. However, politically visible action also tends to focus on politically visible social groups, in this case, the urban poor. The implication of the notion of a *blameable entity* is that such actions tend to leave out the poor in rural areas who are largely politically invisible.

According to government's energy policy, one of the objectives of FBE is to reduce the health impacts of carrying and using firewood but the analysis in this research shows that this objective is unlikely to be met this way. The first reason for this is that the benchmark of 50 kWh is based on the wrong assumption, since it is derived from a study of the amount of electricity used by poor households only six months after electrification. Since the community used for the baseline study is already defined as poor, so that 56% of its households use less than 50kWh of electricity per household per month, then this amount is an indicator of their inability to pay rather than of their optimal energy needs. Secondly, the period that the community had been electrified for, six months, is too short to assume that this amount is reflective of a stabilised level of consumption of electricity. Taking into consideration the cooking patterns of rural poor households which typically require long periods of boiling food, and taking into consideration that FBE is aimed at reducing the health impacts resulting from dependence on firewood, dung and paraffin, the FBE amount of 50kWh per household per month is inadequate to substantially reduce such dependence. Further, the assumptions made about the poor households that the policy makers envisaged, epitomised in the assumption that such household would use a black and white television (DME, 1998), appear to be incongruent with the lifestyles aspired to and led by the poor in the study villages. In addition the FBAE, which aims to provide modern energy carriers to un-electrified households, is undermined by poor planning and poor targeting of beneficiaries so that in both villages its distribution is *ad-hoc* having been provided once between 2007 and 2009. Moreover, its provision of paraffin without safe paraffin appliances does not address the issue of the health impacts of paraffin use. Finally, the findings on FBAE show that poor planning has led to some electrified villages such as Tsilitwa to receive a double benefit by accessing both the FBE and

FBAE, while other villages such as Cutwini experience fewer benefits since they are not electrified and barely receive any FBAE. Finally, absent at all levels - from national to village level - in government's efforts to provide energy for social benefits is an engagement in shaping perceptions and responses of energy users. What has been adopted is a deterministic approach that assumes that the presence of 'affordable' modern energy will automatically lead to the particular benefits outlined in policy, such as health benefits.

As of local level health sector actors, the two villages were different in that Cutwini depends on a monthly mobile clinic or a hospital that is 30 km away but with regular transport availability. Tsilitwa on the other hand has a clinic within the village. The findings show that in their professional experiences, health workers do encounter clients, mostly women, who experience musculoskeletal pain from carrying firewood. These impacts are either treated with pain killers or ignored because they are not considered to be important. At local level there is a health program manager addressing both occupational and chronic health, under which the impacts of energy use and acquisition can be addressed. However, the program largely focuses on men because health discourses have characterised women's health largely in terms of sexual, maternal and reproductive health, while other health aspects beyond these three as well as non-communicable diseases are largely neglected. What the study also shows is that because of this gap in understanding women's health, and because most of the health professionals at local level are from the same ethnic group, have lived in that areas most of their lives and have therefore gone through the same gender socialisation as the residents of the two villages, there is *habitus porosity* in their perceptions and responses to the energy-health nexus. By drawing from their Xhosa *habitus*, which provides particular gendered meanings to energy acquisition and use to their professional western informed nursing *habitus*, the health professionals at local level fail to fully conceptualise the health impacts of energy use and acquisition, but rather categorise them as just a part of a woman's life, which women simply get used to. Finally, the research shows that there is a *compartmentalisation, i.e.* that sectors work as if they are not interconnected, so that the energy sector does not seek energy-health solutions in partnership with the health sector and *vice versa*. As such, the personnel in the health sector also felt that there is nothing that can be done about aspects such as smoke from cooking. This lack of awareness of available solutions from the energy sector is a result of the *compartmentalisation* that exists in both the health sector and the energy sector.

The findings in Chapter 6, on experiences, perceptions and responses of household level actors show that these have a distinct gender character to them mainly because those involved in acquiring and using energy are females, starting from the ages of 5 to 70 years and sometimes beyond. Many young women attain expertise in collecting firewood and dung, in head-loading as much as 26kg of firewood, and cooking by the age of 13. This has meant that although they experience impacts such as musculoskeletal pains from head-loading, coughing and chest pains from smoky households, many consider these to be just another part of daily life and not necessarily health impacts. However, women in Tsilitwa were particularly fearful of harassment while collecting firewood, both in terms of physical as well as sexual violence, an issue that was not reported in Cutwini. The context of Tsilitwa where crime is relatively high, compared to Cutwini where people did not report any crimes in the village, explains the differences in experiences. Impacts such as back pain, neck pain and other musculoskeletal problems from head loading were however reported by those women

who collect firewood in both villages. Musculoskeletal impacts were also attributed to carrying other things such as water as well as hard work such as plastering walls and floors for women and hoeing for both women and men. Despite these impacts, most of the women do not have effective and pro-active ways of responding to these health impacts.

To explain the limited responses to the health impacts of energy acquisition and use, the research turns to Bourdieu's notion of *habitus*, and argues that the experiences, perceptions and responses of women and men to the health impacts of the energy-health nexus are reactions to their *habitus* rather than to energy-health linkages in particular. The research uses six notions to further explain these reactions. The *first* relates to the fact that the residents of the two villages have for generations lived on the margins of mainstream society where their participation is limited by their relatively low power position. This has brought about a myriad of sufferings including *grande misère;* a current example of which is the advent of HIV/AIDS, and the *petite misère* of daily efforts to survive. This brings about a situation in which certain aspects of suffering are simply 'lived with'. *Secondly*, the perceptions and responses are explained in terms of the notion of *scripting technology.* The results of chapter 6 show that the technologies and policies that policy makers target at social groups, such as electricity, do not work in a deterministic way to achieve their objectives. Rather, they interact with the existing context and this results in *scripting technology* into particular meanings which in turn yields re-interpretations of such technologies. Thus for example, cooking with electricity is not just an act of moving from firewood but an electrical appliance can also become a moralising technology, resulting into the judgement of the woman using it as 'lazy' or as 'modern' because she no longer collects firewood or uses the fireplace. Even when a household moves to cooking with electricity, it does not automatically yield reduced exposures to indoor air pollution since the script that existed before, of a fireplace as a social focal point and cultural security, can continue to exist as household members watch television by the traditional fire place. In this way, the household resolves tensions in the technology *scripts* by using new energy technology for cooking while continuing old ways of finding comfort by the fireplace. Further, the research explains the fact that women struggle to express their experience in terms of *mutedness* and *hegemony*, which count for the *third* and *fourth* notions: *muteness* and *hegemony*. Using the notion of *muteness*, the research shows how women's expressions of their experiences and perceptions are not heard both within their communities and by researchers' use of methods, both of which limit women's own expression of experiences. In addition, the fact that women themselves sanction each other when some of them talk of the negative health impacts of energy acquisition and use also shows how they acquiescence to dominant interpretations of their work (*hegemony*), including energy acquisition and use, and its related impacts. Their expressions are then perceived through those interpretations of the dominant culture. For example, by labelling women's collection and piling of firewood as one of the markers for a 'good woman', and when women accept and even endorse such interpretations in the advice they pass on to younger women, they are incorporated in these hegemonic schemes.

While limited responses are in part a result of lack of alternatives or because alternatives are too costly, a closer examination of the setting shows that some of those who ostensibly cannot afford to cook with modern energy carriers can afford other artefacts of modern life even when these are too costly. The research explains this seeming discrepancy with the notion of the *meaning of things*, which is the *fifth* notion.

By exploring the affordable items compared to modern energy carriers, the research shows that what is affordable or unaffordable is socially constructed by a combination of (urban) exposures to what is desirable and therefore worth investing in. What this shows is that affordability is a subjective concept and is constructed through interactions such as advertising or interactions with other social groups. The difference with modern energy carriers is that development advocates have continually 'advertised' and therefore constructed them as unaffordable for the poor while alternatives such as improved cook stoves have been promoted as 'poverty goods'. As 'poverty goods' such artefacts speak of how poor the poor are, in contrast to the poor's aspirations of inclusion in a modern society. In wanting to be part of this modern world, the poor will then invest in those artefacts that speak of this inclusion. This finding therefore contradicts dominant views that perceive energy choice as determined by rational economics. It shows that the various goods presented to social groups present dilemmas that are governed by much more than incomes and conventional affordability. Finally, *hardiness,* as the *sixth* notion, explains that because the residents of the two villages have become accustomed to living with multiple adversity and layered sufferings, they learn to withstand a variety of conditions that an outsider may perceive as harmful. *Hardiness* should however not be equated with resilience in that the latter entails recovery and is expressed as a desirable quality. In contrast, *hardiness* is multi-faceted in that it includes the silencing the expression of the impacts, sanctioning expressions of negative impacts, and even making these impacts accepted. As such, it can have positive results in enabling social groups to survive but might also have negative effects by leading to acceptance of conditions that should and can be corrected. Further, *hardiness* is born out of long chronic suffering rather than sudden shocks with which resilience is often associated with.

These six notions then act as dispositions which continually generate practice, hence, becoming part of Bourdieu's *habitus,* which explains the persistence of the perceptions and responses to experience of health impacts of energy acquisition and use at household level, even in the presence of alternatives.

Summary in Dutch

Een vaak geciteerd getal, gebaseerd op schattingen van de OECD/IEA uit 2002, is dat 2,5 miljard mensen afhankelijk zijn van biomassa brandstoffen bij het koken omdat ze gebrek hebben aan of beperkte beschikking hebben over moderne energie. De brandstoffen die ze gebruiken in *plaats van* moderne energie, namelijk brandhout, mest en paraffine, brengen een aantal negatieve gevolgen voor de gezondheid met zich mee, zowel in acquisitie als in gebruik. Zulke verbanden, gelegd door onderzoekers en ontwikkelingswerkers die deze hebben vastgesteld, zijn gebaseerd op hun eigen kennis en interpretatie, dwz. vanuit een *etic* standpunt. Minder bekend is het standpunt van de getroffenen en hoe dat de acquisitie en het gebruik van energie beïnvloedt, en vooral hoe de betrokkenen de negatieve gevolgen van acquisitie en gebruik van energie op hun gezondheid ervaren, bezien en daarop reageren.

Aangezien acquisitie en gebruik van energie wordt mogelijk gemaakt door een kluwen aan voorwaarden, waaronder beleid en uitvoering op diverse niveaus, wordt er in dit onderzoek gekeken naar meerdere bestuurslagen. Onderzocht worden het internationale, nationale, lokale niveau en dat van huishoudens. Geanalyseerd wordt hoe de verschillende actoren binnen elk van deze vier niveaus de gevolgen van energiegebruik op gezondheid ervaren, bezien en hoe zij daarop reageren, en waarom zulke ervaringen, zienswijzen en reacties bestaan en blijven bestaan. Het doel van deze studie is het ontwikkelingsbeleid en de uitvoering daarvan te informeren, en tegelijkertijd de theorie betreffende ontwikkelingsinspanningen uit te breiden

De studie gaat uit van een kwalitatieve onderzoeksbenadering. Echter, vanwege de verschillende eigenschappen van actoren binnen elk niveau, alsmede uit praktische overwegingen zijn verschillende technieken gebruikt voor verschillende actoren.

Op internationaal niveau ligt de nadruk op het analyseren van secundaire gegevens, terwijl op nationaal niveau secundaire gegevens zijn aangevuld met interviews. Op lokaal niveau bestaat de onderzoekstechniek uit interviews aangevuld met observaties en secundaire gegevens. Het huishoud-niveau vormt de kern van het onderzoek en de empirische gegevens van dit niveau zijn ontleend aan primaire gegevens die werden verzameld door gebruik te maken van de etnografische *Grounded Theory* benadering, bestaande uit interviews, observaties van participanten, het tekenen van kaarten en het inschalen naar rijkdom en bezit, om een aantal te noemen.

Twee dorpen in de Zuid-Afrikaanse Provincie Oostkaap, Cutwini en Tsilitwa, vormen het onderzoeksgebied. Het eerste is een dorp zonder elektriciteit of moderne infrastructuur zoals een ziekenhuis en stromend water, terwijl het tweede beschikt over elektriciteit, een ziekenhuis, stromend water en drie moderne scholen. Beide dorpen worden grotendeels bevolkt door etnische Xhosa's, waarbij Cutwini een Pondo Xhosa dorp is en Tsilitwa een Hlubi Xhosa dorp. De verschillen tussen de twee dorpen in termen van infrastructuur maken hen zeer geschikt om ervaringen, zienswijzen en reacties te vergelijken in gebieden zonder en met elektriciteit alsook met andere moderne infrastructuur. Beide dorpen zijn echter goed met elkaar te vergelijken vanwege de gezamenlijke Xhosa identiteit, hun ligging in het zelfde voormalige thuisland (Transkei) en vanwege de overeenkomsten van een aantal socio-economische omstandigheden die in hoofdstuk 4 van deze studie worden behandeld.

Hoofdstuk 2 behandelt de vraag of, en zo ja, op welke wijze binnen de debatten die op het internationale niveau de ervaringen, zienswijzen en reacties in de energiesector

vorm geven, de gevolgen voor de gezondheid van de acquisitie en het gebruik van energie genegeerd worden. Bestudering van de belangrijkste debatten in de energiesector vanaf de jaren-70 van de vorige eeuw, toen energie een belangrijk onderwerp werd vanwege de oliecrisis, laat zien dat het discours voor het zuidelijk halfrond, bijvoorbeeld die welke te maken hebben met ontbossing, toegepaste technologie en hernieuwbare energie, technologie en technisch vermogen voorop stellen in plaats van mensen. Bij debatten over ontbossing en hernieuwbare energie ging de aandacht uit naar ecologie ten koste van de mens, die over het algemeen werd gezien als de actor die het milieu vernietigt. Hoewel toegepaste technologie mensen centraal stelde, werd het hoofdzakelijk geïmplementeerd vanuit een techno-centrische benadering, en bracht het daarom slechts weinig sociaal voordeel op. De komst van het debat over duurzame ontwikkeling bracht het onderwerp van duurzame energie met zich mee, hoewel dit aanvankelijk in de marge bleef. Echter, duurzame energie werd gelijkgesteld aan hernieuwbare energie, en hoewel dit laatste op het ogenblik met levensvatbare technologieën gebruikt wordt, is er nauwelijks aandacht voor wat de armen nodig hebben om te koken. Als er al pogingen in die richting gedaan worden, is er heel weinig begrip voor de context waarbinnen technologieën voor hernieuwbare energie gebruikt dienen te worden. Zoals in eerdere debatten over ontwikkeling, wordt duurzame ontwikkeling gedomineerd door het mondiale milieudebat, waarbinnen de lokale context en de sociale steun voor duurzame ontwikkeling zwak vertegenwoordigd zijn. Een ander huidig debat betreft klimaatverandering, dat, vanwege zijn neo-liberale benadering van de oplossingsmechanismen, er niet in slaagt de behoeften op het huishoud-niveau, vooral voor arme landen, te adresseren. Hun complexe behoeften worden weggepoetst in een mondiale benadering.

Ondanks dit algemene beeld van het niet onderkennen van verbanden tussen energie en gezondheid, is er door een aantal onderzoekers en pleitbezorgers gewezen op een samenhang van energie en gezondheid; dit gebeurde vanuit een gender gezichtspunt of door een specifieke groep gezondheidsexperts. Een zwak punt in de huidige kennis is echter dat die aandacht voor het grootste gedeelte gericht is op luchtvervuiling binnenshuis, vanwege het gebruik van brandhout en mest. Andere gevolgen, zoals die van het verzamelen van brandhout op het spierstelsel, het skelet en op het reproductieve systeem van vrouwen, de gevaren die zij lopen tijdens het verzamelen, waaronder fysiek en seksueel geweld, en andere gevolgen dan infecties aan het ademhalingssysteem, veroorzaakt door het gebruik van brandhout, mest en paraffine, blijven in het onderzoek onderbelicht. Slechts een klein aantal studies is gedaan naar deze andere gevolgen, en deze laten verschillende potentiële verbanden tussen gezondheid en energie zien.

In hoofdstuk 3 worden de overwegingen die ten grondslag liggen aan het Zuid-Afrikaanse energiebeleid onderzocht als een weerspiegeling van de ervaringen, zienswijzen en reacties van beleidsmakers. De resultaten laten hier zien dat gedurende het tijdperk van apartheid die beleidsoverwegingen niet gericht waren op de sociale aspecten van energie, inclusief de verbanden tussen energie en gezondheid. Een reden hiervoor is dat dit paste binnen het debat dat de energiesector internationaal vorm gaf. Tot de jaren-90 van de vorige eeuw werd elektrificatie beperkt tot formeel erkende behuizingen en hielden aanslagen voor gebruik van elektriciteit geen rekening met inkomenspatronen van rurale huishoudens, waarvan de meeste niet beschikten over maandelijkse inkomsten. Bovendien laat het onderzoek zien dat op internationaal niveau de aandacht in de eerste plaats uitging naar het elektrificeren van economisch

levensvatbare gebieden, waarbij de armen buiten beschouwing werden gelaten. Aan de andere kant werden door beleidsmakers nauwelijks andere vormen van energie voor het huishouden overwogen. Uitbreiding van de toegankelijkheid van moderne energie voor arme huishoudens werd verder beperkt door financiële beperkingen van regeringen en de geringe capaciteit van energiesystemen in veel ontwikkelingslanden. Echter, in tegenstelling tot de meeste andere landen in Afrika ten zuiden van de Sahara, speelde een geringe capaciteit voor Zuid-Afrika geen rol omdat het nationale nutsbedrijf, ESKOM, capaciteit te over had, dat zou kunnen worden gebruikt om de toegang tot elektriciteit uit te breiden tot de armere gebieden. Tevens beschikte dit land over financiële reserves om in moderne energievoorziening te investeren en aan de sociale behoeften van de armen tegemoet te komen. Zulke investeringen in de sociale behoeften van de armen, waardoor misschien het verband tussen energie en gezondheid duidelijk zou zijn geworden, werden verwaarloosd ten behoeve van dure maar politiek symbolische investeringen zoals in nucleaire programma's en in het ontwikkelen van synthetische brandstof. Ten eerste waren zulke projecten van politiek belang voor de apartheidsstaat omdat zij zich richtten op het verminderen van de afhankelijkheid van geïmporteerde vormen van energie, zoals petroleumproducten, om daarmee de energievoorziening veilig te stellen, die op haar beurt weer de apartheidsstaat in stand hield op een moment waarop Zuid-Afrika meer en meer geïsoleerd raakte vanwege internationale sancties. Ten tweede vormde de levering van moderne energie en de investering daarin ook een *politiek symbool* voor de apartheidsstaat, waarbinnen de blanke bevolking, die werd voorzien van sterk gesubsidieerde energie, werd gescheiden van de zwarte gemarginaliseerde bevolking. Deze laatste bevolkingsgroep had grotendeels geen toegang tot vormen van moderne energie, zodat het elektriciteitsnetwerk, evenals zoveel andere diensten en mogelijkheden tot ontwikkeling, aan deze groep werd ontzegd. Dit alles diende om de racistische ideologie van de staat te benadrukken. Zo'n symboliek overheerste boven sociaal nuttige investeringen. Voor een paar townships, zoals Soweto en Alexandra, die in de jaren-70 van de vorige eeuw werden geëlektrificeerd met de hulp van de regering en ook vanwege inspanningen door zwarte lokale autoriteiten, werden dergelijke investeringen wel gedaan vanwege de groeiende politieke zichtbaarheid van haar bewoners, die dit met massa acties hadden afgedwongen. Voor de apartheidsstaat was de groeiende politieke zichtbaarheid van die bewoners een politiek heet hangijzer sinds opstanden, zoals die in 1976 in Soweto, het internationale protest tegen de Zuid-Afrikaanse staat hadden doen toenemen. De investeringen in het elektrificeren van zwarte stedelijke townships werd ook belangrijk vanwege de kleine, maar groeiende middenklasse die een levensvatbare en belangrijke consumentengroep vertegenwoordigde.

Wat de analyse in hoofdstuk 3 echter ook laat zien is dat de *symboliek* van elektriciteit niet eindigde met de regeringswissel in 1994. In de jaren-80 van de vorige eeuw, toen het ANC nog een verboden organisatie was, had het ANC sabotage gepleegd bij moderne energiecentrales uit protest tegen de apartheid en als een symbolische vorm het apartheidsbewind dat zij representeerden te vernietigen. Na 1994 bestond er geen allesomvattend energiebeleid, maar er ontstond een specifieke kijk op energie die resulteerde in een niet eerder voorgekomen tempo van elektrificatie. Terwijl die snelle elektrificatie belangrijke en legitieme politieke doelen diende, zoals het aan de orde stellen van de raciale ongelijkheid in de toegankelijkheid van elektriciteit, diende deze elektrificatie niet noodzakelijkerwijs de sociale behoeften van de armen *vis-à-vis* de toegang tot moderne vormen van energie. Dit wordt aangetoond door het feit dat terwijl

brandhout en paraffine de twee belangrijkste energiebronnen voor de armen waren, en terwijl onderzoek liet zien dat het gebruik daarvan, en daarmee de daaraan gerelateerde gevolgen voor de gezondheid, niet zou afnemen na elektrificatie, er in het beleid of de uitvoering daarvan niets gedaan werd op het gebied van de aanschaf en het gebruik van brandhout en mest, en het gebruik van paraffine. De analyse van de overwegingen van het beleid in de periode na de apartheid laat twee soorten van symboliek zien. De eerste is de bovengenoemde, waarin investeringen zijn gericht op *symbolische* en heroïsche ondernemingen, zelfs wanneer die niet de beste weg vormen om sociale en zelfs economische doelen te bereiken. De tweede soort *symboliek*, overeenkomstig Edelman's (1964) begrip *policy symbolism*, is dat beleidsvoornemens worden vastgelegd zonder daaraan de middelen te koppelen die zulk beleid mogelijk dienen te maken. Zo wordt bijvoorbeeld in het DME White Paper on Energy Policy (1998) wel als doel vermeld dat de aanschaf en het gebruik van brandhout op de agenda moet worden geplaatst met als doel de daaraan gerelateerde gevolgen voor de gezondheid aan te pakken, maar worden er geen voldoende middelen geboden met de verplichting tot het leveren van elektriciteit. Op deze wijze verduisteren en negeren *"emotioneel aangrijpende"* verklaringen over algehele elektrificatie in het jaar 2012, zoals gedaan door de toenmalige Zuid-Afrikaanse president, Thabo Mbeki, in zijn toespraak tot het nationale parlement in 2004, de context waarbinnen in de praktijk in de sociaal profijtelijke toegankelijkheid van moderne vormen van energie moet worden voorzien.

Hoofdstuk 4 analyseert het kader dat door het energie discours op het internationaal niveau en het energiebeleid op het nationaal niveau wordt aangegeven. Het is ook het kader waarbinnen activiteiten op lokaal niveau moeten functioneren, en waarin actoren op het huishoud-niveau vorm geven aan hun dagelijks bestaan en betekenis geven aan hun sociale wereld. De belangrijkste resultaten van deze analyse laten ten eerste zien dat de bewoners van de twee onderzochte dorpen, Cutwini en Tsilitwa, sterk gemarginaliseerd zijn door historische omstandigheden die hun politieke macht hebben beïnvloed. Daardoor is hun sociale, economische en politieke leven afhankelijk geworden van ambtenaren ergens ver weg, wier begrip van de wereld totaal verschilt van dat van de dorpsbewoners. Ten tweede laten zij zien dat de scheiding van arbeid en ruimte langs lijnen van gender niet eenvoudig een kwestie is van macht en van onderwerping van vrouwen door mannen, maar eerder hun leven definieert en betekenis toevoegt aan het leven van mannen en vrouwen op zo'n wijze dat een eendimensionale beschouwing van genderverhoudingen onvoldoende inzicht biedt in het leven van mannen en vrouwen. Ten derde laten zij zien dat de Xhosa cultuur, die constant aan verandering onderhevig is, doorgaat met het beïnvloeden van het dagelijkse leven. Daarom vormen kennis en begrip van *emic practices* en hun betekenis de sleutel tot het begrijpen van de ervaringen, zienswijzen en reacties van de bewoners. De resultaten laten zien dat activiteiten, zoals het verzamelen van brandhout en koken, betekenis hebben die groter is dan hun nuttige functie. Wat een *etic* waarnemer zou interpreteren als schadelijk, zoals het verzamelen van brandhout, zou vanuit een *emic* perspectief wellicht worden geïnterpreteerd als een eigenschap behorend bij een 'goede vrouw', een mogelijkheid tot socialisatie of een manier om *symbolisch kapitaal* te vergaren. In economische zin laat het onderzoek zien dat de bewoners van de twee dorpen voor een groot deel afhankelijk zijn van regeringssubsidies ten behoeve van hun inkomen, terwijl ze slechts in geringe mate afhankelijk zijn van gelden uit ruraal-urbane financiële relaties en van landbouw voor eigen verbruik. Een dergelijke afhankelijkheid van

onderhoudsuitkeringen die de armoede verlichten verplichten de bewoners ook aan specifiek beleid, zelfs wanneer ze ontevreden zijn over veel andere aspecten van het functioneren van de regering, zoals het doen van beloften en het wekken van verwachtingen. Op deze manier vormen onderhoudsuitkeringen een veiligheidsnet dat de ergste armoede voorkomt, maar evenzeer een gevaarlijke hangmat die de politieke macht van de bevolking verzwakt. Het feit dat de twee dorpen een lange geschiedenis van trekarbeid kennen betekent dat minstens een vijfde van de huishoudens relaties hebben met verwanten in stedelijke centra. Deze relaties komen van pas, niet alleen bij vormen van economische uitwisseling om het voortbestaan van het huishouden te verzekeren, maar ook bij de introductie van een moderne levenswijze en moderne verlangens zoals elektrische apparaten. Het overmaken van contant geld als gevolg van dergelijke relaties draagt echter minder bij tot het inkomen van een huishouden dan de onderhoudsuitkeringen van staatswege vanwege de onbetrouwbaarheid van overboekingen van urbane naar rurale gebieden. De landbouw is erg verzwakt door het verschijnsel van verlaten velden, een proces van ‘achteruitgang’ dat al tientallen jaren aan de gang is. Tenslotte wordt in dit hoofdstuk duidelijk gemaakt dat ontwikkeling en moderniteit, hoewel gewenst door de bewoners van beide dorpen, verschillende betekenissen hebben voor verschillende bewoners, evenals voor ontwikkelingswerkers die bepaalde initiatieven bevorderen. Tevens doen ontwikkeling en moderniteit niet alleen hun intrede in een complexe sociale wereld, maar ook bij mensen met verschillende ambities en posities. Ontwikkeling binnen een complexe sociale wereld kan met zich meebrengen dat haar resultaten in conflict komen met bestaande praktijken en gewoonten, en kan daardoor verworpen of bijgesteld worden. Dit houdt in dat de potentiële voordelen van ontwikkeling en moderniteit niet op gelijke wijze door alle dorpelingen worden ervaren, wat tot conflicten kan leiden. De kern conclusie van de analyse in hoofdstuk 4 is dat interventies, waaronder beleid en technologie, die zijn ontwikkeld met de bedoeling sociaal nut te verstrekken - zoals moderne energievoorziening, die (gedeeltelijke) voordelen voor de gezondheid oplevert die gerelateerd zijn aan het niet meer gebruiken van brandhout, mest en/of paraffine - niet de te verwachte voordelen behoeven op te leveren wanneer zij plaatsvinden in zulke complexe omgevingen.

Hoofdstuk 5 onderzoekt de implementatie van nationaal beleid op lokaal niveau, waar dit beleid zijn legitimatie moet vinden. De analyse op lokaal niveau richt zich op acties van de besturen van provincie, district, stad en dorp. De bevindingen laten zien dat er op lokaal niveau in de energiesector geen medewerkers zijn die als toegevoegde specialisten contact kunnen onderhouden met huishoudens over hun energie gerelateerde ervaringen. De afwezigheid van beleidsmedewerkers op het gebied van energie, zoals districtshoofden voor energiezaken, geeft de traditionele benadering van energie weer: centraal gepland en zonder toegevoegde specialisten. In aan welvaart en welzijn gekoppelde voorzieningen voor arme huishoudens, zoals een gratis basisvoorziening van elektriciteit [Free Basic Electricity (FBE)] en een gratis basisvoorziening van alternatieve energie [Free Basic Alternative Energy (FBAE)], worden kant en klaar aangeboden aan de gemeenten, en wel door middel van geïntegreerde ontwikkelingsplannen [Integrated Development Plans (IDPs)]. De details van de IDPs variëren van plaats tot plaats; een onderzoek van plaatselijke rapporten en verslagen van Ingquaza Hill, dat toezicht uitoefent op Cutwini en Mhlontlo, dat op zich weer toezicht uitoefent op Tsilitwa, laat zien dat er geen budget is opgenomen voor

energie. Dit is ook naar voren gekomen bij bestudering van de districtsverslagen van de O.R Tambo District Municipality. Op andere momenten worden er foute aannames gedaan ten aanzien van het aantal gebruikers van energieprogramma's zoals FBE, dat in het leven was geroepen om huishoudens te voorzien van 50 kWh per maand per huishouden.

Gelet op de in hoofdstuk 3 geconstateerde hiaten op nationaal niveau, toont het onderzoek aan dat er geen programma's bestaan die acquisitie en gebruik van brandhout of mest aan de orde stellen; niet op lokaal, noch op districtsniveau. Met betrekking tot paraffine heeft PASASA (2010) nationale werkzaamheden gestart op het gebied van veiligheid van paraffine, met werkrelaties naar rampencoördinatieteams op lokaal niveau en naar enkele niet-gouvernementele organisaties. Wat echter ten aanzien van PASADA moet worden erkend is dat het een niet-gouvernementele organisaties is waarvan de fondsen vanaf 2010 uitsluitend werden verstrekt door de petroleum sector. Het belang bij het verstrekken van fondsen voor de veiligheid van paraffine door de petroleum industrie wordt verklaard in termen van het concept *blameable entity*. In de Zuid-Afrikaanse context en zoals gebruikt in dit onderzoek, zijn *blameable entities* organisaties of individuen die hoge politieke risico's boven het hoofd hangen zodra zij gezien worden als bijdragend aan het leed van voorheen minder bevoorrechte bevolkingsgroepen. Zij worden echter ook zo gezien als zij niet bijdragen aan het verlenen van schadeloosstelling. Het verstrekken van fondsen aan PASASA kan dan ook gezien worden als zowel een economische en als een politieke strategie ten behoeve van de petroleum industrie, aangezien het een politiek zichtbare actie is die kosten voor overheidstoezicht voorkomt. Politiek zichtbare acties hebben echter ook de neiging zich te richten op politiek zichtbare sociale groepen, in dit geval de stedelijke armen. Uit het begrip *blameable entity* vloeit dan ook logischerwijs voort dat zulke acties de neiging hebben de armen in rurale gebieden uit te sluiten, aangezien die voor het grootste deel politiek onzichtbaar zijn.

Volgens het energiebeleid van de regering is een van de doelen van FBE het terugdringen van gevolgen voor de gezondheid van het dragen en het gebruik van brandhout, maar de analyse in dit onderzoek laat zien dat het twijfelachtig is dat deze doelstelling op deze wijze wordt gehaald. De eerste reden hiervoor is dat de maatstaf van 50 kWh is gebaseerd op de verkeerde vooronderstelling, aangezien die ontleend is aan een studie naar de hoeveelheid elektriciteit die gebruikt werd door arme huishoudens zes maanden na elektrificatie. Aangezien de gemeenschap die in de basisstudie model stond al eerder gedefinieerd was als arm, waardoor minder dan 56% van de huishoudens minder dan 50 kWh elektriciteit per huishouden per maand gebruikten, is deze hoeveelheid meer een indicatie van hun materieel onvermogen dan van hun optimale energiebehoefte. Ten tweede is de periode waarin de gemeenschap over elektriciteit beschikte, zes maanden, te kort om aan te nemen dat deze hoeveelheid een gestabiliseerd niveau van elektriciteitsverbruik weergeeft. Als in aanmerking wordt genomen dat de kookgewoonten binnen rurale arme huishoudens, die getypeerd worden door lange periodes die nodig zijn om voedsel te koken, en als ook rekening wordt gehouden met het feit dat FBE erop gericht is de gevolgen voor de gezondheid voortkomend uit de afhankelijkheid van brandhout, mest en paraffine terug te dringen, dan is de FBE standaard van 50 kWh per huishouden per maand niet toereikend om deze afhankelijkheid substantieel te verkleinen. Verder blijken de vooronderstellingen over arme huishoudens zoals de beleidsmakers die voor ogen hadden, samengevat in de aanname dat zulke huishoudens gebruik zouden maken van een zwart/wit televisie

(DME, 1998), strijdig met de leefgewoonten en de aspiraties van de armen in de bestudeerde dorpen. Tevens wordt de FBAE, die gericht is op het verstrekken van vormen van moderne energie aan niet-geëlektrificeerde huishoudens, ondermijnd door slechte planning en door een slecht beleid van het in kaart brengen van gebruikers. Daardoor is de distributie in beide dorpen *ad-hoc* en heeft die slechts een keer tussen 2007 en 2009 plaats gevonden. Bovendien bewerkstelligt de voorziening van paraffine zonder veilige apparatuur niet het effect van reductie van de gevolgen voor de gezondheid. Tenslotte laten de bevindingen aangaande FBAE zien dat slechte planning ertoe geleid heeft dat sommige dorpen, zoals Tsilitwa, een 'dubbele uitkering' hebben ontvangen door gebruik te maken van FBE alsook van FBAE, die bedoeld is voor niet-geëlektrificeerde huishoudens, terwijl andere dorpen, zoals Cutwini, minder gelden krijgen aangezien zij niet geëlektrificeerd zijn en nauwelijks FBAE ontvangen. Tenslotte, het ontbreken van energievoorziening ten behoeve van sociaal welzijn in alle overheidsprogramma's – van nationaal tot dorpsniveau – bepaalt de zienswijzen en de reacties van de gebruikers van energie. De overheid heeft een deterministische houding aangenomen die uitgaat van de gedachte dat de aanwezigheid van 'betaalbare' moderne energie automatisch zal leiden tot specifieke voordelen als vermeld in het beleid – zoals voordelen voor de gezondheid.

Wat betreft de lokale actoren uit de gezondheidssector, zijn de twee dorpen verschillend doordat de bewoners in Cutwini afhankelijk zijn van een mobiele kliniek die maandelijks langs komt of van een ziekenhuis op 30 km afstand maar met regulier openbaar vervoer bereikbaar is. Tsilitwa, daarentegen heeft een kliniek in het dorp zelf. Uit de resultaten blijkt dat het gezondheidspersoneel in de uitvoering van hun beroep cliënten, meest vrouwen, behandelen met spierklachten als gevolg van het dragen van hout. Deze klachten worden met pijnstillers behandeld of genegeerd omdat de ernst daarvan wordt ontkend. Op lokaal niveau is er een gezondheidsmanager die zich bezig houdt met beroeps- en chronische ziekten, waaronder de klachten als gevolg van het gebruik en de acquisitie van energie vallen. Maar dat programma richt zich voornamelijk op mannen omdat het gezondheidsdiscours de gezondheid van vrouwen grotendeels karakteriseert als seksueel van aard en gerelateerd aan het moeder-zijn en aan geboorten, terwijl gezondheidsaspecten die buiten deze drie vallen en de niet-bespreekbare ziekten zo goed als genegeerd worden. Het onderzoek toont ook aan dat vanwege deze lacune in het begrijpen van de gezondheid van vrouwen, en vanwege het feit dat de meeste lokale werkers in deze sector afkomstig zijn uit de zelfde etnische groepering en ook het grootste deel van hun leven in het zelfde gebied hebben gewoond, en daardoor een zelfde proces van gender socialisatie hebben doorgemaakt als de bewoners van de twee dorpen, er een *poreusheid* in *habitus* bestaat wat betreft hun opvattingen over en reacties op de energie-gezondheidsrelaties. Puttend uit hun Xhosa *habitus*, waardoor zij gender specifieke betekenissen van het gebruik en de acquisitie van energie toevoegen aan hun op westerse kennis gebaseerde verpleegsters' *habitus*, falen de lokale krachten om de gezondheidsklachten als gevolg van het gebruik en de acquisitie van energie ten volle te begrijpen en plaatsen zij die daarom als nu eenmaal behorend tot het normale leven van vrouwen waar zij eenvoudigweg maar aan moeten wennen. Tenslotte heeft dit onderzoek aangetoond dat er een *compartimentering*, dat wil zeggen dat sectoren naast elkaar werken zonder de onderlinge relaties te onderkennen, plaatsvindt waardoor de energie sector niet samen met de gezondheidssector op zoek gaat naar oplossingen voor energie gecorreleerde gezondheidsklachten, en omgekeerd de gezondheidssector niet samenwerkt met de

energiesector. Vandaar dan ook dat het personeel in de gezondheidssector denkt dat er niets gedaan kan worden aan problemen als rookontwikkeling als gevolg van koken op hout. Deze onbekendheid met bestaande oplossingen in de energiesector is het gevolg van compartimentering dat zowel in de gezondheid als energiesector bestaat.

De resultaten van hoofdstuk 6, betreffende de ervaringen, zienswijzen en reacties van actoren op huishoud-niveau laten zien dat die een uitgesproken gender karakter hebben; hoofdzakelijk omdat het vooral vrouwen zijn die vanaf hun vijfde jaar tot ongeveer 70 jaar oud betrokken zijn bij het proces van energiegebruik en de acquisitie daarvan. Veel jonge vrouwen worden vaardig in het verzamelen en het dragen van lasten van wel 26 kilo brandhout en mest, en het daarop koken vanaf hun 13de jaar. Dit houdt in dat hoewel zij daarvan spierklachten, hoestbuien en pijn in de borst ondervinden, de meesten deze klachten als normaal en als behorend tot hun dagelijks leven beschouwen en niet als iets dat met hun gezondheid heeft te maken. De vrouwen in Tsilitwa daarentegen waren in het bijzonder bang voor aanranding, zowel voor fysiek als seksueel geweld, als zij hout verzamelden, iets dat niet werd genoemd in Cutwini. Dit verschil in ervaringen wordt verklaard door de situatie in Tsilitwa waar misdaad veelvuldig voorkomt, in tegenstelling tot Cutwini waar de informanten geen enkel geval van misdaad rapporteerden. Maar spierklachten, zoals nek- en rugpijnen als gevolg van het op het hoofd dragen van brandhout, werden door vrouwen in beide dorpen vermeld. Spierklachten werden ook ervaren als het gevolg van het dragen van water en van zwaar werk, zoals het pleisteren van muren en vloeren door vrouwen en het bewerken van land zowel door mannen als vrouwen. Ondanks deze klachten hebben de meeste vrouwen geen effectieve en pro-actieve reacties op deze gezondheidsaspecten.

Om deze beperkte wijze van reacties op de gezondheidsaspecten van acquisitie en gebruik van energie te verklaren, is in dit onderzoek Bourdieu's concept *habitus* toegepast. In dit onderzoek wordt gesteld dat de ervaringen, zienswijzen en reacties van vrouwen en mannen op hun gezondheidsaspecten als gevolg van de energie-gezondheidsrelaties eerder voortkomen uit hun *habitus* dan dat die worden gezien als een aan energie gecorreleerd gezondheidsprobleem. In dit onderzoek worden zes begrippen gehanteerd om deze reacties te verklaren. Het *eerste* begrip heeft betrekking op het feit dat de bewoners van deze twee dorpen generaties lang aan de marge van de samenleving hebben geleefd waarbij hun deelname aan de samenleving zeer beperkt bleef door hun geringe machtspositie. Dit veroorzaakte een waaier van leed voor hen, zoals *grande misère*, waarvan de komst van HIV/AIDS een recent voorbeeld is, en *petite misère* als gevolg van een dagelijkse strijd om te overleven. Dit leidt ertoe dat met bepaalde aspecten van leed simpelweg 'geleefd' moet worden. S*cripting technology*, als een *tweede* begrip, verklaart ook de opvattingen en reacties van de respondenten. De resultaten van hoofdstuk 6 tonen aan dat de technologie en het beleid dat gericht is op deze sociale groepen, zoals elektriciteitsvoorziening, niet op een deterministische wijze hun doel kunnen bereiken. Er ontstaat namelijk een wisselwerking met de bestaande situatie en dit leidt ertoe dat *scripting technology* een specifieke betekenis krijgt die weer resulteert in een herinterpretatie van zulke technologieën. Bijvoorbeeld, het koken op elektriciteit is niet simpel een verandering van het koken op hout maar kan ook een moreel aspect bevatten waarbij de vrouw die op elektriciteit overgaat als ‘lui’ of als 'modern' wordt bestempeld omdat zij geen brandhout meer verzamelt of het houtvuur niet meer gebruikt. En zelfs indien in een huishouden op elektrisch koken wordt overgegaan, houdt dit niet automatisch een vermindering van het blootstaan aan rook in

omdat het traditionele voorschrift, van het houtvuur als het sociale centrum en als plaats van culturele geborgenheid, kan blijven voortbestaan wanneer leden van dat huishouden televisie kijken bij het traditionele houtvuur. Op deze wijze vermindert een huishouden bepaalde spanningen van technologie voorschriften door nieuwe vormen van energietechnologie voor koken te gebruiken terwijl zij op de oude voet doorgaan door geborgenheid bij het houtvuur te blijven zoeken. Vervolgens, het onderzoek verklaart waarom vrouwen worstelen met het tot uitdrukking brengen van hun ervaringen door het gebruik van de begrippen *mutedness* en hegemonie, die als *derde* en *vierde* begrip worden gehanteerd. Met het gebruik van het begrip *mutedness* toont het onderzoek aan waarom de vorm waarop door vrouwen uitdrukking wordt gegeven aan hun ervaringen niet wordt gehoord binnen hun eigen gemeenschap en niet door bepaalde onderzoektechnieken wordt opgemerkt waardoor de mogelijkheden van uitdrukking geven aan hun ervaringen door vrouwen wordt ingeperkt. Bovendien, het feit dat vrouwen zelf elkaar veroordelen wanneer zij op negatieve wijze uiting geven aan gezondheidsaspecten van energie acquisitie en gebruik, illustreert ook hoezeer zij zich hebben onderworpen aan de geldende opvattingen over hun werk (hegemonie), inclusief die energie acquisitie en gebruik en de daaraan gerelateerde gevolgen. Hun uitspraken worden dan voorgesteld vanuit de gangbare interpretaties van de dominante cultuur. Bijvoorbeeld, door het verzamelen en het op speciale wijze opstapelen van brandhout aan te merken als een kenmerk van een ‘goede vrouw’, en wanneer vrouwen een dergelijke interpretatie accepteren en die zelfs onderstrepen wanneer zij jongere vrouwen van advies voorzien, dan worden dergelijke interpretaties onderdeel van de heersende opvattingen.

Hoewel het feit dat vormen van reacties beperkt zijn, gedeeltelijk als gevolg van het ontbreken van alternatieven of omdat die te duur zijn, laat een nauwkeuriger onderzoek van de situatie zien dat sommigen die aantoonbaar het zich niet kunnen permitteren om met moderne energie middelen te koken toch in het bezit zijn van gebruiksvoorwerpen die behoren tot een moderne leefstijl. Zelfs als die voor hen te duur zijn. In dit onderzoek wordt deze discrepantie verklaard met behulp van het begrip *meaning of things*, dat als *vijfde* begrip wordt gehanteerd. Door een vergelijking te maken tussen de reeds aangeschafte voorwerpen en de al dan niet aanwezigheid van moderne energie vormen, toont het onderzoek aan dat wat men zich wel of niet kan veroorloven een kwestie is van sociaal gedrag. Dit gedrag vloeit voort uit een combinatie van (stedelijke) indrukken waaraan men is blootgesteld van wat men verlangt en daarom het waard vindt om in te investeren. Dit laat zien dat het kunnen beschikken over iets een subjectief begrip is en dat dit is ontstaan in wisselwerking met advertenties of in interacties met andere sociale groepen. Het verschil met moderne energie producten is dat pleitbezorgers van ontwikkeling voortdurend hebben ‘verkondigd’ dat die onbetaalbaar zijn voor de armen, en daarmee hebben zij die ook als onbereikbaar voor hen gemaakt terwijl alternatieve vormen van energie producten, zoals verbeterde kook stoven, aangeprezen worden als een ‘product voor armen’. Als ‘product voor armen’, duiden zulke voorwerpen precies aan hoe arm de armen zijn in tegenstelling tot het verlangen van armen zelf om deel te kunnen uitmaken van de moderne samenleving. Door hun wens om deel te kunnen nemen aan de moderne samenleving gaan de armen investeren in die voorwerpen die laten zien dat zij daaraan deelnemen. Deze conclusie weerspreekt daarop de dominante opvatting dat de keuze van energie vormen wordt bepaald door rationele overwegingen. Het laat zien dat de verschillende producten die sociale groepen worden aangereikt voor dilemma's zorgen de bepaald zijn door meer

overwegingen dan alleen inkomen en het gebruikelijke criterium van betaalbaarheid. Tenslotte, *hardiness*, als *zesde* begrip, verklaart het feit dat juist omdat de bewoners van deze twee dorpen gewend zijn geraakt te leven met veel tegenslag en met een veelvoud aan leed, zij geleerd hebben weerstand te bieden aan omstandigheden die door een buitenstaander als schadelijk gezien kunnen worden. *Hardiness* moet echter niet worden gelijkgesteld aan weerbaarheid in de zin dat dit laatste ook een herstel inhoudt en wordt gezien als een wenselijke kwaliteit. In tegenstelling, *hardiness* is veelvormig in de zin dat het opgelopen gevolgen doodzwijgt, uitdrukkingen van negatieve gevolgen goedpraat en dat het zelfs deze gevolgen accepteert. Op die wijze kan het een positief gevolg hebben doordat het sociale groepen instaat stelt te overleven maar het kan ook negatieve gevolgen hebben doordat het omstandigheden die zouden moeten en ook kunnen worden verbeterd, te helpen te accepteren. Vervolgens, *hardiness* komt eerder voort uit een lange, chronische lijdensweg dan dat het een gevolg is van plotselinge schokken waarmee weerbaarheid meestal wordt geassocieerd.

Deze zes bovengenoemde begrippen fungeren als randvoorwaarden (*dispositions*) die een bepaald constant gedrag (*practices*) genereren, en daardoor deel zijn uitgaan maken van Bourdieu's concept *habitus*. Hierdoor wordt de voortdurende aanwezigheid verklaard van de zienswijzen en de reacties op de ervaringen met gezondheid als gevolg van de acquisitie en het gebruik van energie op huishoud-niveau, zelfs als er alternatieve mogelijkheden voor handen zijn.

Appendix 1

Methodology and critique of Grounded Theory

Structure of this appendix

Chapter 1 provided details of how I came to the research questions addressed in this research work. In this appendix, the aim is to clarify other methodological choices made throughout the research and their implications. For this discussion I have opted to present, in this appendix, the methods and techniques I used and their justifications for them in the order that follows the actual research process as much as possible. This suits the inductive approach of GT and enables me to better explain why I chose GT ethnography and to illustrate how I applied this method in this research. In particular, how the research questions evolved, how some themes emerged, and how concepts were included. Including the process and sequence in the methodology discussion allows the reader to assess the context in which findings were derived and therefore better assess their validity in answering the research questions.

Choice of Research Assistant/translator

When I arrived in Cutwini in July 2007, I could not speak Xhosa and tried to get a graduate student or another research assistant/translator (RA) who could speak both Xhosa and English well. This proved difficult for two main reasons. Firstly, with low education levels in the village, getting such an RA necessarily meant finding an external person since those that have good education are more likely to be in cities or working as teachers. An external RA would have to live in the nearest town, Lusikisiki, which is 27km from Cutwini. This would have been at the risk of delays and absences because of irregular transport. Although finding a host family for such an RA in the same village was an option, I was uncomfortable with this because I would have to be responsible for the RA's (whom I would not know well at this stage) interactions, as well as my own interactions. My success at *living rapport* (Flick, 1992) would depend on how I behaved throughout my stay and my RA's interactions would also reflect upon me and affect my rapport since residents were likely to see us as a unit. Since at this stage I would not know the RA's behaviour this seemed a risky option to me. In contrast, a local RA would be judged by how people knew her or him.

The second reason for not selecting an RA from outside the village, even with better chances of finding one who spoke good English, was that the few (educated) young women and men I interviewed in nearby towns to act as RAs were unwilling to live in a rural area for more than a few days. I therefore opted for a female RA, who was born and largely raised in Cutwini.

A local RA was further useful because she can speak the dialect (Pondo Xhosa), she could translate context specific expressions, and she could provide information clarifying situations or actions because of her in-depth knowledge of her own village *i.e.* she could act as a key informer as well. Such knowledge compensated for the fact that she could not speak English well. I tried to minimise the errors from language

difficulties by having extensive discussions with her after interviewing and I also learnt Xhosa, both of which decreased language barriers.

Apart from language, an extra challenge that came with the option of a local RA, was the fact that being a local necessarily meant that she has pre-established relationships with others in the village, both good relationships and bad relationships. Only with one household did I experience problems because of pre-existing bad relations between my RA and a member of that household, an issue that we had discussed with my RA well in advance because she had informed me about it. I continuously made attempts to relate to this household member on my own terms (I got on well with other members of the same household). All in all, the benefits of choosing a local RA outweighed the negative aspects I had anticipated.

The choice of a female RA was a deliberate one for two reasons. The first was that I knew already that firewood collection and cooking were largely done by women and felt respondents might be more comfortable talking to other females[1]. Secondly, in my pilot study in Maphephetheni, I had used a male RA and this had not worked very well because we could not sit on the same side of the house. This meant that I had to talk across the room from him or across the door if sitting outside. Such an arrangement was not amenable to the flow of discussions.

From 2007 in Cutwini, I occasionally used a male RA to act both as a key informant and as an RA when circumstances meant I could not use the female RA. In 2009 when I went to Tsilitwa, I spent two weeks looking for an RA but could not find one. In the end, I resorted to inviting the same female RA from Cutwini to act as an RA in Tsilitwa. The advantage of this was that we had an established working relationship which addressed my initial fears of how an external RA would affect rapport building. The disadvantage was that she could not provide in-depth information about Tsilitwa. However, I had built up close relationships with two other women and they acted as key formants, clarifying situations and providing in-depth information about the village. The Councillor, with whom I had frequent contact, also proved a good key informant[2].

By 2009 the skills of the RA had improved and she became an astute observer and critic of my interpretations. She would take note of some of the interactions in interviews, share her own hunches with me after interviews, and was especially good at observing homestead arrangements while I interviewed the respondents. She would sometimes ask me how I felt about the answers or tell me about something she had noted that might improve my understanding (*e.g.* why does that house look poor when their daughter works as a nurse in Saudi Arabia? Did you notice the microwave? They did not mention it in their list of appliances). This became a good way for me to reflect on the research process and findings, and to critique my own interpretations.

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1 This assumption proved to be wrong in Cutwini because women were as comfortable talking to a male RA as they were talking to a female. Still there was a difference in that my female RA could give examples of situations for the respondents to relate to if there was need for clarification. This was not the case for the male RA, whom, because of gender divisions of labour did not have the advantage of shared experience in women's household work.

2 Good in the sense that he could provide extensive information, knew many of the residents by name and circumstances, and provided his own critical analysis of why things worked the way they did.

Language and translations

In Cutwini, I was hosted by a family that spoke Xhosa only, and for the first week, we used signs and basic words to communicate (*e.g.* food, water) and basic sentences from my Xhosa books (although these turned to be less useful because of dialectical differences) as well as critical sentences that my RA translated into Xhosa for me. From the beginning, I opted not to use my RA during weekends to give her time for her own activities but also to help me expand my circle of informants beyond her group of friends and acquaintances and therefore further build rapport. These two situations facilitated my learning Xhosa and I was shortly able to converse in Xhosa, supplemented by signs. This allowed me to better follow up themes that appeared relevant during the interview. Later on, especially in 2009, I conducted most of my interviews in Xhosa myself, but my assistant remained with me to translate words, or cultural expressions I was not familiar with.

Sampling

Sampling the villages

One reason for selecting Cutwini village was that without electricity, I could learn about actions of actors who had no, or limited, access to modern energy carriers. Based on the themes that emerged during simultaneous data collection and analysis in 2007, I set out criteria for the types of villages I would need to verify or reject the emerging "hunches". For example, some of the initial research findings in Cutwini suggested that some women viewed the cost of medicines as an important limiting factor in whether and how they address the physical pains that result from carrying firewood[3]. Cutwini is 27 to 30 km away from clinics and a hospital and so I developed hypotheses to guide further sampling of villages. The first was that presence of a clinic or hospital within an area would result in more pro-active and corrective responses to health impacts of energy acquisition and use. In order to confirm or reject this hypothesis, the criteria for selecting other data sources (villages in this case) included analysis of data from a village with a clinic or hospital within walking distance or close to the village (as defined by the respondents). This is part of what is called theoretical sampling in GT, *i.e.* developing samples to confirm or reject hypotheses rather than for statistical representativeness.

The second emerging finding was that women would sometimes report that even with (affordable) electricity, they would cook with firewood because that was what *they knew* and smoke or *fire was in their blood*. I therefore had to add a village with access to electricity to provide insights important for refuting or enriching the category of choice of alternatives as a factor (or non-factor) in shaping responses. Finally, while Cutwini is surrounded by forests, there are several villages which are a long distance from forest. I wondered whether and how the distance to firewood resources would affect experiences, perceptions and responses of collectors and users, *e.g.* perceiving that this was an increased hardship. I therefore wanted to add a village to the sample, where forests were far. While Tsilitwa was initially selected because it had electricity

[3] This later proved not to be a key reason firstly because they do not pay for public health services, and many go to town – where the clinic is – frequently enough to combine with a visit to the clinic. Further testing of perceptions and responses showed other reasons are more important.

and a clinic, it turned out that it also fulfilled the third criteria, *i.e.* it had forests at a long distance from households[4]. Faced with time constraints and the need for a long term engagement, Tsilitwa was the only other village that I used as a data source for answering the research questions. I was however always open to what was going on in other villages whenever I had opportunities to visit them or encounter people from them. Thus for example, when I went to Ndindindi village when helping in *umgidi*[5] preparations, (Ndindindi is about 17 km from Cutwini and had no electricity but was further from forests than), I talked to women there about their experiences. In another instant, while accompanying the Councillor on a visit of his wards, I visited the villages of Gqwesa, Qhanqu and Khalankomo. In the last two villages, I had group discussions with women about their experiences, perceptions and responses. While these discussions by no means validate or invalidate the findings from Cutwini and Tsilitwa, they provided some insights that many of the experiences of the women in the villages visited were similar[6].

Sampling the households

My first interviews in Cutwini were in 2007 when I interviewed 75 households in a village of about 150 households. This sample is relatively large for this population not because I aimed for statistical representation but because I wanted the analysis to capture diverse conditions of households and to allow as many variations as possible. It was made possible by my long stay and the fact that the homesteads in Cutwini are relatively closer to each other compared to Tsilitwa. The sampling strategy was on the basis of GT with modifications to the classic version of Glaser & Strauss (1967). The first modification was that households were initially picked at random because I had no way of knowing which ones would be most suitable for proving or disproving emerging categories. The second modification was that other households were included not because they fitted any methodological guidelines but because they requested that they too wanted to express their thoughts on the matter. When I asked these women why they wanted to be included, they said it was because no one had ever asked them about this before.

The sample for Cutwini where I initially interviewed persons from 75 households in a village of about 150 households is relatively larger that that of Tsilitwa data, especially when one considers that in Tsilitwa I interviewed 89 households in a village of about 700 households. The reasons for this were first that categories at this stage were beginning to coalesce already and so I did not require as big a scope as at the beginning. This is in line with GT's theoretical sampling techniques that focus on

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4 From my observations and my discussions with other people, I estimated that the longer distance at which residents started using other forms of firewood collecting was at least 12 km. However, in other cases, this would be exceeded. For example, in 2009 when the forest nearby Cutwini was cut down, I saw girls who lived in villages half way between Cutwini and Lusikisiki *i.e.* about 15 km come and collect firewood since it was suddenly available in advance and without the extra burden in terms of time and physical stress of going through the forest to select the best fallen twigs.

5 These are celebrations that a family or clan will undertake for various rituals – see also Chapter 4 and Chapter 6.

6 In Qhanqu and Khalankomo for example, when the Councillor told the women what I was doing and that they can teach me more about it, women enthusiastically insisted on having a group discussion. Their discussions largely centered on physical and sexual harassment while collecting firewood, and in Qhanqu, women were additionally concerned with the trend of burning homesteads based on witchcraft accusations.

adding data according to emerging and developing categories rather than achieving statistical representation. The second reason was that Tsilitwa is more spread out than Cutwini, and the people are often away from the household either at work or visiting other places since transport is more regular there. This meant that I interviewed fewer people per unit time.

In Cutwini in 2009, I mostly focused on having focus group discussions and making observations but also undertook twenty household interviews. The aim of these interviews was not to increase the scope of the sample or variations. Firstly, it was to understand what changes had occurred since my last interviews in 2007. Secondly, it was to examine categories that had emerged in the initial post-field analysis, particularly those whose properties remained under-developed[7]. One thing that transpired was that in 2008, the government gave out cash to households that had been forcibly moved during the Betterment Programs of 1960s. The amount for compensation was up to R30 000 per household moved – meaning that members of the household that had been moved, whose children were now adults, had to decide how to divide it amongst themselves. Such information helped me examine a category of what had emerged in Tsilitwa, *i.e.* of perceived affordability and of *the meaning of things* (Chapter 6). It also allowed me to understand how the government, despite its legal declarations of gender equality, in practice abdicates to tradition since the money was given to males, as traditional heads of the household. The ability to go back to the field to re-examine categories, invariably seeing changes, turned out to be one of the advantages of ethnographic GT.

Although GT, like other qualitative methods, does not put emphasis on the sample size, and, as mentioned above, I deliberately made the household sample as large as possible, nevertheless the sample had its biases. The first bias was in terms of the numbers of men interviewed. Although they were not experts in terms of experiences of (traditional) energy acquisition and use, they were an important category in that from a methodological point of view, their data can prove or disprove emerging 'hunches', *i.e.* they are the key to theoretical sampling. In addition, from a conceptual point of view, the men are co-constructors of perceptions and responses since they live with women, producing and reinforcing practices and social structures together.

Men are under-represented for four main reasons. The first has already been stated: they are not key persons responsible for collecting firewood or cooking although they may buy electricity, batteries and even provide money for hiring a tractor to collect firewood[8]. The second is that the population structure in both villages, like most of rural Eastern Cape, has a higher female to male ratio, particularly between the ages of 20 years to about 40 years old which is when most men migrate to urban centres. The third reason is that men are rarely around the household environment since they have more social spaces in the public arena than women. This made men less accessible for me to interview. The fourth is that men, when found, often replied that the questions I was asking were *"women's things"* but that if I had questions to do with cows, they could respond to them. While this may, partly, be the same as the first reason – not being

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[7] By under-developed properties of categories I mean that there were still many unexplained exceptions to rules of a category, or that a concept or finding needed to be tested further against other variables that would affect its explanation.

[8] In Tsilitwa however, even buying of electricity and paraffin was largely the responsibility of women and sometimes young men particularly when they wanted to use electricity for entertainment and there was no electricity units left in the meter.

experts – there is also the chance that they did not want to discuss their daily work because they felt it was less than women's[9] or because I was a woman.

To reduce this bias, I used some days to specifically focus on men by visiting their main social spaces and talking to them there. In Cutwini for young men, this was easier because their social space was the road side and the village has one road running through it. In Tsilitwa, there are several roads but more importantly is the fact that young men have other social spaces such as watching DVDs at friend's places or going to the gym, both of which were less accessible to me.

Similarly, in household interviews, there was a slight under-representation of household members between the ages of 16 and 20 because they attended school during the day, and were busy with household work (mostly but not exclusively girls) and social visits or *ukuvakasha* (mostly but not exclusively for boys) afterwards. I tried to counter this by increasing contact through chatting at community social events. In Tsilitwa, I had the opportunity to further understand younger girls because I was approached by some of them to support their studies (therefore I gave lessons in the evenings at the guest house). I also taught for three days in August 2009 at Qumbu Technical High School, which enabled me to interact with young household members, both female and male, and make additional observations.

Some serendipitous events, which at first glance seemed unrelated to issues of household energy and health, later provided explanations for particular perceptions and responses. An example is the concept of a good woman which came up once in an interview, but was clarified when an informant was explaining to me why I should not go and see a bride-to-be during a *lobola* negotiation period. This brought about the concept of *igoqo*, discussed in Chapter 6. Similarly, unplanned observation opportunities came up that I could not have taken advantage of with other approaches. For example, at one of the homes I was hosted in a child falling sick with a respiratory infection enabled me to observe what it was attributed to and how it was treated. Collecting wood with the women allowed me to observe, and understand some incoherencies in women's answers relating to impacts of firewood collection. It would be difficult, and nearly impossible, to include such observations and insights using survey interviews.

Data analysis

Coding and memoing

Data analysis was simultaneous with data collection. Coding was the main way in which I explicated meaning from data: interviews, conservations, field notes and observations. The codes used derived from the data itself rather than attaching pre-conceived codes to data. I did not do word-by-word coding advocated by Charmaz (2006) as I found this unnecessarily dense and forced.

In 2009 when I was more confident with my understanding of Xhosa I began to code my interviews in both English and Xhosa, especially for phrases that were cultural expressions or words that did not translate well in English. I did this to preserve the meaning of the emerging categories as much as possible, until their properties were developed enough for me to express it in English, and to feel that I have captured the local sense of the words.

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[9] A number of men were rather surprised that after their seasonal work is finished, they have, compared to women, very little daily work.

I then wrote memos on codes and categories to further clarify meanings and identify gaps in data or my understanding of phenomena. Charmaz (2006) defines memos as critical discussions that the researcher has with the data and methods in order to understand what is happening with the data and the process.
I used all the types of memos discussed by Charmaz (2006): descriptive, analytical memos and methodological memos. These allowed me to question and understand the setting and the data better, but also to question and understand my approach and my interpretations, and therefore change directions as necessary. Other memos were about defining and refining concepts that emerged from the data. In later stages of analysis, the codes and memos (also coded), formed the basis upon which I searched for the theories that could be used to explain what had emerged from the data.

Unit of observation and unit of analysis
This research used both individuals and households as units of observation. There are two main reasons for focusing individuals as a unit of observation. Firstly, energy acquisition and use is not done by all household members. Cultural norms and demands of the related activities mean that certain members of the household such as men and the elderly are often excluded from these activities. The reported or observed experiences, perceptions and responses may therefore not be valid at household or village level.
Secondly, focusing on individuals allowed me the opportunity to understand (where available) individuals that did not conform to village level or household level (intra-household differences) practices. Experiences, perceptions and responses may vary within a household for various reasons such as individual experiences. Observed variables include gender, age and 'class'.

At other times, observing a household was more useful for example in understanding interactions and practices. This was however done with the awareness that the households or the villages are not always the lowest levels of social organisation, and as such they do not necessarily share a common set of experiences, perception and responses. The unit of analysis is the relationship between experiences, perceptions and responses.

Techniques for data collection

Interviews
There were three main types of interviews that I conducted, all of which used different kinds of a semi-structured guide. These were: face to face household interviews, interviews with key informants, and spontaneous interviews. The semi-structured interview guide allows me some basic standard data, while being flexible enough to allow broader exploration of themes in a way that was largely directed by the interviewee.

Before undertaking the interviews, the question of who to interview had to be answered. For this, I was guided by the tenets of GT that sample 'experts' can provide the relevant data (Corbin & Strauss 1998; Glaser & Strauss 1967). For households, these were largely women as stated earlier. Later this was expanded to include others outside the experts' category to test the findings and the emerging categories.

For the household interviews, the first part of the semi-structured guide solicited basic socio-economic data such as household headship, daily activities, age, energy sources used, resources for making a living and so on. The household headship question

was first phrased with three parts: who makes daily decisions, financial decisions and who makes what the respondent considered the most important decisions, which the respondent listed. In time, these categories were collapsed into one category: who makes day to day decisions because the pattern showed itself as answerable with this one question, *i.e.* reached saturation.

The second part focused on people's experiences, perceptions and responses of energy acquisition and use. The third diverted to other areas including health experiences of the household. Finally, respondents were asked to discuss whatever other topics were important for them, or were asked questions about the interviews. This allowed me to find out other areas that the themes in the guide might have obscured. In Cutwini, the majority wanted to discuss how their Councillor neglected them while in Tsilitwa, the majority wanted to discuss crime particularly related violence and the theft of television sets. Such unplanned 'diversions' helped me understand other aspects of the setting, such as the objective conditions governing action, as analysed in Chapter 4 of this thesis. Throughout the fieldwork, these questions expanded and contracted depending on what categories emerged, became irrelevant or became saturated. I should note here that, only the first part of the questionnaire was more or less standard. The rest were asked in no particular order, allowing me to use the setting, *e.g.* a displayed appliance or a pile of firewood outside to be the start of a discussion. In this way, I was guided by Spradley's ethnographic interview approach (1979) and *"art of the second question"* approach by Kvale's (2007) to make the discussions as natural as possible.

The sample in GT continually evolves, depending on emerging patterns and categories in the data collected. Such an evolution then necessitates diversifying or narrowing respondent categories or criteria. According to Glaser & Strauss (1967) sample size in GT is determined by data saturation.

The second group was semi-structured interviews with key informers. These were selected based on their potential knowledge, either by virtue of their position in society or because I was advised by other informants to ask a particular villager. The list of the key informants interviewed in both villages is provided at the end of this Appendix.

Group discussions and focus group discussions

Group discussions are useful because as Blumer puts it a group of individuals brought together "*discussing collectively their sphere of life and probing into it as they meet one another's disagreements will do more to lift the veils covering the sphere of life…"* (Blumer 1969 :41). Certain cultural concepts, for example the value of *igoqo* and *efukwini,* may have contested meanings or contested relevance among or across group members. I used group interviews to clarify such contested meanings as, conceptions of a "good woman", relevance and value of *igoqo,* relevance and value of *efukwini*, and other rituals. This data was used to triangulate the data derived from interviews. In addition, I used group discussions with village health workers because this was what they indicated they would be comfortable with.

Observations and participation

I used participant observation to further understand social life in the two studied villages and to triangulate such data with data from interviews. I further used participant observation to establish and maintain rapport. My participation roles ranged from more of a complete observer, as in the case of some of the traditional ceremonies (sometimes being simply designated as the photographer) and at other times, fully participating as

when collecting water or firewood with family and community members or doing community work (*e.g.* burning of the graves).

The observations that I undertook can be categorised in three, along the lines of Spadley's (1980) categorisations: general observations, selective participant observation in which I selected particular events, mostly community social events to observe, and focused observations[10].

The first type of observations was general participant observations which included paying attention to daily activities and speech. These included the activities I was involved in, on a daily basis, ranging from collecting water, collecting firewood (Cutwini only), collecting dung, cooking, grinding maize, shopping, chatting and running errands. I captured whatever I had observed (including what was said) in jottings during the day and field notes at the end of the day.

The second type of participant observations was my participation in, and observations of, community social events. The most common community social events I participated in were funerals during weekends. On Fridays I conducted interviews half of the day, before changing into a *pinifa* and joining women in making funeral preparations which started at noon. This included cooking, and collecting water for the bereaved house, and (naturally), a lot of chatting whilst doing these activities. Apart from funerals, I attended a *lobola* ceremony (Cutwini, 2007), *umgidi* for a circumcision party (Cutwini, 2009), *ukutschisa amangcwaba* – burning (around) graves (Cutwini, 2009), *ukuphuma igqirha* - graduation of a traditional doctor (Cutwini, 2009). Attending such events was also particularly important for understanding the roles and positions of women and men. For other events that I was unable to attend, such as *ibaketi lincinci* (See Chapter 4), *lobola* negotiations and *umngquzo* (a party for initiation of girls), I followed them up as soon as I could by interviewing the head of the household that undertook the event, about it. I was also able to participate in cooking at community events and at nine households in both villages. Cooking allowed me to experience the entire range of fuels used in the two villages. Secondly, attending such activities particularly helped me to understand the categories to which the notions of a "good woman" applied and to understand the meanings of *mundane rituals* that did not come up in interviews and can be erroneously thought of as having no relevance to the research question. An example of this was work delegation by various differences in relationships.

The third type of observations was focused observations. In 2007, I depended on the general observations stated above to understand 'what goes on' in the homestead on a daily basis. The most detailed observations, in terms of the homestead were, for pragmatic reasons, based on my host family and to a lesser extent other acquaintances in Cutwini. In 2009, I added focused observations which entailed observing a specific setting, day or interaction (Spradley, 1980). For these I also made detailed, 'time stamped' notes in real time. I did not make limitations of what I would observe or whom except to keep in mind to observe everyone and everything. From these, important categories, such as key actors, emerged and I sought explanations of my observations by having in-depth discussions with the actors in the setting.

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[10] Although observation were made right from the beginning of the field time and field notes made (during evenings), the level of participation changed incrementally as time went on. This was because the first weeks were also used to learn the language, establish relationships and trust, and also to learn the norms which later formed a framework/reference frame within which I could participate.

The focused observations included 'sleep-over observations' and 'day at the clinic' observations. The criteria for selecting households for 'sleep-over observations' included willingness to host me and be observed throughout the day and night, that one of the households in the sample should include at least one household with a male household head, and that the households should be cover a broad range of socio-economic status.

I made focused 'sleep-over' observations at three homesteads (*i.e.* excluding the two host families), in each of the two studied villages, for a minimum of 48 hours and a maximum of 98 hours. This means that in total, I was able to spend periods of at least 48 hours in eight different homes, *i.e.* when host families are included. This technique allowed me to observe a range of households for periods beyond day light activities that I could observe in the two villages while conducting interviews and interacting during the day. In each of these households, I cooked at least one meal, undertook household work as per the expected divisions of labour in that household, had in-depth discussions with various members of the household and made detailed 'time stamped' notes. Appendix 3 and 4 are samples of observation notes made at selected homesteads, one from each village.

For clinic day observations in Cutwini, I simply went to the house that hosted the mobile clinic on the day it came. In Tsilitwa, I chose one ante-natal day and one random day to observe the clinical setting (apart from several trips I made to the clinic to chat with the workers, to get water and to visit the surroundings). Appendix 2 provides the details of clinic day observations in Cutwini.

Participant observations were especially useful in generating new questions to ask either in or of, the setting or to add to the interview guide but also developing new themes and codes as well as explanations of various data. For example, the concept of *igoqo* emerged while chatting to young women about the possibilities of visiting another young woman who was getting married, *i.e.* general observations. The explanations that the young women provided for me on this occasion (about why it would be difficult to see the bride-to-be), clarified answers in household interviews, such as *"she collects* [firewood] *three times a week to get good lobola"* or *"I stopped collecting and using firewood when my husband died"*. In another case, my encounter with the sitting arrangements for women and male was during a *lobola* ceremony in 2007, showed just how seriously such practices are taken. Participant observations were also useful in understanding how people strategies around their work obligations. One example was the fact that in 2007 at funerals, people often asked me to do different kinds of work while other women would ask why I do this as if I am a *Makoti*. I started wondering why people suspected that I was married, and it was later explained to me that the suspicion was because: I wore a head scarf all the time, I did not wear trousers but preferred long skirts, and that I worked with minimum rest at funerals[11].

After several funerals, I (tested this strategy and) refused to go and wash tea cups, replying that I am not *Makoti*. This was enough for me to be released from this obligation and join *amadikazi* who were chatting. Latter observations showed that women often use such a strategy at community social events to be released from work, but *Makoti* have less room for manoeuvre. Before such encounters during participant observation, my understanding had been limited to seeing that women had only one way of negotiating their work obligations: delegating to their daughters or younger siblings.

[11] I had opted to act this way in order to 'blend in' and not to cause offence.

Throughout interviews, observation and participation, I made notes to further understand what was going on. These were generally descriptive and later I wrote memos about these observations as part of the analysis as discussed in the next section.

Wood survey

In 2007, in Cutwini, I conducted a survey of persons coming from wood collection trips to check wood weights carried and the times taken to collect wood. These persons were sampled opportunistically, by waiting along common pathways and requesting to weight firewood loads as people returned from firewood collection trip. For a number of these, whom I noted going to the forest, the time taken to go to and from the forests was also recorded. Apart from weighing the wood, persons were asked the number of times they collected wood a week, how the weight of firewood load they were carrying on that day compared to their average firewood load, and their age. In total, I weighted the firewood loads of 35 wood collectors. Two of these collectors were boys and the rest women and girls.

To find out the weight of the firewood load, women were requested to climb on a Salter scale while carrying the firewood loads, and their weight with the firewood was recorded. Their body weight was then weighed without the firewood load and the difference between the two, was the weight of the firewood. This method has also been used by (Biran *et al.*) in Malawi. The method of weighing a wood load on a hanging scale proved less convenient because firewood loads were often long and cumbersome to weigh in a hanging scale.

To map distances from the village to the forest, I used the odometer in cars. This was done 4 times with two different cars in Cutwini and once in Tsilitwa. The result is that the distances are an estimate that is less than the actual distance since the women go inside the forest and not on the edge, and since they come from different parts of the village. However, the estimates are still useful in getting a rough idea of the women's experiences.

Mapping

In both villages I conducted mapping exercises to better understand the village lay out but also how the residents understood their setting. In Cutwini I conducted two sessions to get two maps, one of which was drawn by women only and another by men only. The maps that these two groups came up with had differences which turned out to be useful in understanding the gender differences in the use of social space. It also highlights that women's social space is within and around the homestead while men's social space is outside the homestead.

In Tsilitwa, it was not possible to get men to undertake a mapping exercise and the data focused on women only.

Wealth ranking and incomes

I ranked wealth in three ways. The first was to use data on household finances from interviews and group households according to their financial resources categories. Estimates from social grants were easier because these are set amounts but remittances were harder because they vary in frequency and amounts. Because of these infrequencies, households were sometimes reluctant to give estimates of how much remittances they receive.

A second way to wealth ranking exercise was that I asked women (and one man) to independently and individually make wealth groups according to their own criteria, which I then discussed with them. In Cutwini, the women included my RA, a village development trust member, and a male key informant. In Tsilitwa, two women made the wealth ranks and these were shop owners.

Thirdly, because the style of a house and the inside of a house indicated current wealth, past work or exposure to urban life, I made a list of groups of house types and indoor types for Tsilitwa. By triangulating these with my observations, I was able to categorise households in various wealth groups. What these also show, particularly the indoor-outdoor ranking is the fact that dependency on household incomes or any one variable is sometimes a poor indicator for socio-economic status.

A critique of Grounded Theory Ethnography

GT offers strategies for systematic collection and analysis of qualitative research. This helps qualitative researchers control their research process and increase the analytic power of their work (Charmaz 2006). By increasing analytical power, it aims to move from descriptive to explanatory frameworks grounded in empirical evidence. Various steps and outcomes that constitute GT entail tenets that are specific to it (Glaser & Strauss, 1967; Strauss & Corbin, 1998; Charmaz, 2006). In this sub section, I present two of these tenets, that of pre-conceptions and that of saturation, and address some of the difficulties they presented and how I departed from the "classic grounded theory" in dealing with them.

The first tenet that the originators of GT advocate to is going into the field without preconceptions in order to truly be open and immersed in empirical evidence. They recommend that the researcher should avoid presuppositions, hypotheses and previous research studies (Glaser & Strauss 1967). This tenet is perhaps the most criticised, of all GT tenets, from both a methodological and practical view point. During my first PhD years, it was the one tenet that most discouraged other PhD students in my year from using GT. Blumer (1984), contends that this is difficult to achieve and ignores the way that researchers conceptualise research problems. From a practical view point for purposes of funding, ethical and other approvals, such as graduate studies admissions and official research permission, researchers need to be familiar with literature in the field of their research problem and hence have presuppositions. Although in my case, funding provided very few limitations on what I could do, I did not go to the field as *tabula rasa*[12]. As pointed out in Chapter 1, my professional experience in the energy sector prior to embarking on this research, starting in 2001, and especially work I undertook for ENERGIA (Matinga 2005a, b) means I was already familiar with the literature, the debates and the theories in the energy sector. Inevitably, such familiarity involves 'taking stands', and having pre-suppositions about the area of research. Secondly, I conducted literature reviews aimed at defining my problem statement, for practical reasons such as discussions with potential supervisors. This was crucial in

[12] To be fair to Glaser and Strauss, on page 3 of their 1967 book they do say that a researcher does not come as *tabula rasa* but has perspectives that are relevant for selecting data in the field and abstracting from it. Still they insist on being free of pre-conceptions in later chapters. Glaser however has been unmoved by an critique of GT and has reacted aggressively against any diversions from 'the classic version'.

focusing the study on areas that had not been truly addressed in literature[13]. In a later publication (which Glaser dismisses), Strauss & Corbin (1994) concede the usefulness of being theoretical sensitive from experience and/or literature. Nevertheless, I partially fulfilled of this criterion without being bound by it, in two ways.

Firstly, as mentioned stated already, my research question evolved in accordance to on-the-ground data. I was open enough to let this data guide what questions needed to be asked rather than forcing the questions which represented a valid but etic gap in literature. Secondly, by coincidence, because I come from a technical background, I was not aware of theories from sociology and social studies in general[14]. This meant that as far as social theories were concerned, I came to the field closer to a *tabula rasa* and I read most sociology theories after field work. An effect of not reading theory in advance, for novices, is that at analysis, one is left with much reading to do. Personally, it was only as I searched, tested, discarded and adopted theories that I realised how much more there was to do. A lesson therefore for those electing to read theory after fieldwork for PhD work is to be aware of this and the huge amounts of time required in post-field work[15].

Another aspect of GT that was problematic in some aspect was that *of saturation*. Saturation guides whether or not the sample is adequate, and is reached when data does not yield new themes and categories. However, in settings with large populations such as a village, knowing that categories are exhausted is not straight forward – some are more obvious than others. The key persons who have contributed to the development of GT have used it in smaller settings such as a school, a hospital setting, or other smaller populations such as Charmaz's chronically ill persons. In this research, certain categories appeared because of specific events such as weddings or circumcision parties, and although this suggests they are rare, they turned out to be important in explaining unconscious and conscious practices that I observed. Further, the search for saturation became complicated when sensitive issues emerged as part of categories. For example, in 2007 in Cutwini, I suspected high rates of HIV but no one acknowledged having or knowing a person with HIV until late in my study, and similarly in Tsilitwa, people were reluctant to disclose their HIV status. Other respondents even challenged me about the existence of HIV, explaining it in terms of witchcraft or in terms of a conspiracy by out-going apartheid agents since HIV came into the public arena at the end of apartheid. For others, disclosure was difficult because of the stigma of being HIV positive. After over 75% of what came to be the total of number households

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[13] Few researchers have the luxury of figuring their area of research out from "zero" focus since contracts have time limitations. This requires that they narrow down to problems that have not been adequately addressed.

[14] I however spent a lot of time learning about various qualitative methodologies as well as reading classic ethnographies such as Duneier's Slim's Table: Race, Respectability, and Masculinity (1992), to be familiar with the qualitative and ethnographic approaches. Later, as a moved from analysis to writing, Bourdieu's epilogue to his 1999 book entitled "Understanding" was crucial in helping me understand the process I had gone through and that of transforming people's experiences into academic text. Moreover, in 2008, I attended a set of courses on qualitative research (By Cresswell,) and on GT (by Charmaz) in New York to make sure that I was well versed in the methods. GT should therefore not be used as an excuse to go to the field without a clue. As Charmaz puts it, there is a difference between going to the field *open minded, and going to the field empty headed* (Charmaz, 2006).

[15] Reading Glaser and Strauss's work, I had a feeling that their methodology assumes vast amounts of time and ignore constraints of real world research especially for students. This 'method in a vacuum' or 'method in paradise' approach is dealt with slightly by Strauss's later approaches.

interviews, two women (separately) and much later one man reported that they were HIV positive and that this was affecting, and was affected by, their work, particularly firewood collection (for the women) and smoke from sitting in the kitchen (for the man). Thus even though the categories had appeared to be saturated earlier on, such disclosures that late into the fieldwork brought about new categories. These categories did not develop any further for the rest of the field study in 2007 and I 'rested' them as unsaturated. In 2008 there was the first ever in-the-village HIV testing camp. When I returned to the field in 2009, more people, some of whom had known their HIV status even in 2007, discussed how it affected their firewood collection and changed their perceptions of smoke. Meanwhile Glaser and Strauss do not provide advice for dealing with saturation in the case of such sensitive topics, neither do they acknowledge that some categories may never become well developed, *i.e.* saturated because of their nature. Instead, they advise the researcher not to go back to coding because if category is important, it will saturate as the researcher continues to code (Glaser & Strauss, 1967). Further they advise the researcher not to wait in the field until something happens (in terms of data for unsaturated categories). Only after finishing coding present data, Glaser and Strauss urge, can the researcher go back and reassess the unsaturated categories (1967)[16]. Following this strictly would have left HIV and illness as an 'undiscovered' aspect of changes in perceptions and responses. It is therefore my assertion that theoretical saturation is highly subjective, difficult to demonstrate and difficult to achieve with certainty, particularly when samples are potentially large, diverse and include sensitive aspects of life[17]. A solution then is to assess the linkages of such a category to further develop it or at least to make propositions of how, if saturated, it could affect one's explanations. Secondly, if the category has not saturated but appears important, to provide explanations as why it may not get saturated (in this case, sensitivity and stigma associated with the topic). A year after my first field study, I had a discussion during a GT methodology training by Kathy Charmaz (2008), one of Glaser's former students who is credited with the birth of constructivist GT (which Glaser puts down and suggests that she "*thinks that way because she is a feminist*" (Glaser 2002). I asked her about how a researcher would know with certainty that categories have reached saturation, particularly in potentially high population situations. She too, expressed her doubts on how to ensure saturation with certainty except that a researcher should develop as much as possible, the properties that limit and delimit the categories. The conclusion for this critique for other researchers daunted by GT (as I and my fellow PhD students were at the start of our research), is then not to use GT

[16] The advice is valid in itself otherwise the researcher would be caught in a never ending web of coding as the world turned and changed. However, the criticism of insufficient advice on saturation for complex situations remains valid.

[17] Although one might consider the topic that gave birth to GT – dying – a sensitive topic, it is not sensitive in the way that being HIV positive is in that being HIV positive has a stigma resulting from moral accusations that HIV has. In contrast, dying is sensitive because people are uncomfortable loosing loved ones – whether because they are dying and leaving people, or they are losing someone through death.

haphazardly but with pragmatic departures from *scientistism*[18], and from what Janesick (1994) would call *methodolatry*[19].

Being and living in the field: Ethics

Ethics

Various ethical guidelines exist to help researchers to undertake research that is morally sound and as much as possible reduces participant harm (Flick 2002; Kvale 2007). This means using humane methods, a part of which is ensuring that participants are well informed of how the research can affect them. To this extent, I explained the purpose of the research, key aspects of the questions and the time burden, *i.e.* an approximation of the time it would take to ask the questions, before asking for the respondents consent and ensuring confidentiality. During the interviewing itself, I also continuously asked consent in areas which were sensitive for example incomes and health. I emphasised my everyday role as a student to reduce any perceived power differences that may "force" people to give consent when they were unwilling. This, I believe has become particularly important in developing countries were many researchers come through villages with promises (whether real or unreal, intentional and unintentional) of development, and it is hard for *the researched* to distinguish the different kinds of researchers and their intentions. In this sub-section, I want to discuss the issue of consent within such (mis)conceptions, and because the notion is conceptualised in one cultural context and applied in another.

My RA initially wondered why I insisted on explaining what I was doing and how I would use the results. Similarly, with respect to explain the purpose of my study, once the academic reason for the research was understood, the respondents often asked how they could not help me with getting the data for my work when it was going to help me [get my PhD qualifications][20]. Others even pointed out the fact that researchers before me had not asked for consent and the households had neither benefited not been harmed, so that they found my basis for asking for consent unnecessary. Although I tried to explain the many reasons for informed consent, I am convinced that their interpretations of consent and its value were, at times, different from mine. This brought me to question whether the consent I was getting was the same as the consent that my readers would interpret. I have no answers for dealing with this but include it here as a warning for other researchers to always reflect on such differences in interpretation.

The second issue is that of ethical stance, as it relates to the issue of the researcher's rapport in the field. Flick (2002) describes the position of the researcher in the field in four phases; the stranger, the visitor, the initiate and insider. Whilst the phases of initiate

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[18] In itself, ironic since the aim of Grounded Theory was to answer to the scientism of quantitative methods and yet its originator insists on the possibility of discovering a specific theory, *i.e.* explanation, using only one specific way. According to Bryant & Charmaz (2007), this reflects Glaser's positivist background.

[19] Janesick (1994) uses this term, a combination of method and idolatry, to describe the pre-occupation with selecting and defending methods.

[20] I realise that this 'confession' opens me up to ethical challenges. However, I doubt if there is any research especially undertaken among marginalised groups that is without is power differential issues and therefore questions of whether people felt an obligation or the hope that this will directly and immediately bring benefits, or have a different cultural understanding of consent. My hope is that such encounters are revealed more and discussed to find solutions rather than present clean unproblematic research settings and processes.

and insider are exciting for research because at this level people are more open, they entail changing ethical frameworks that differ from the first two phases. As an initiate, I was sometime tested, for example being given *Makoti*'s work at funerals (which the women had expected me to refuse since I was not a *Makoti*). As an insider, in my late stages particularly in Cutwini, I was told of situations in other homes that could be considered private matters, such as HIV status of other people, marital problems of a couple, and who is cheating and with whom. Although some of such information is always rich, it raises problems that the person talked about did not consent to it and therefore questions of whether and how to include it when it can elucidate findings. The most problematic to me however was information on HIV status either from others, or from my own suspicions. In both villages I suspected that many of the weekly funerals were because of deaths related to HIV/AIDS. In other cases, I saw women and men exhibiting, what I would call, all the signs of HIV: a partner who had died after long term unnamed illness, signs of what appeared to be *Kaposis Sarcoma*[21], TB and wasting. Two women for example showed all these signs and both believed that they had been bewitched. The dilemma for me was then whether to say anything about the need to get tested and access ARVs or to stay silent because I am not a doctor, knowing all the while that such a discussion might save a life. In the two cases where both women exhibited multiple signs, I had long chats with them over HIV but did not explicitly suggest that they get tested.

[21] *Kaposis Sarcoma* is a type of cancer common among immune-suppressed persons. In recent decades it has been on the rise in Sub-Saharan Africa because of HIV/AIDS. It is characterised by dark purple patches and nodules on the skin or other places. Kaposis Sarcoma is said to be 300 times more common in HIV patients than in patients kidney problems (another vulnerable group) and is considered to be an AIDS defining illness. Although I have no medical qualifications, coming from Malawi, a country with high rates of HIV, I, as have many people, have learnt to recognise its signs.

Appendix 2

Day at the mobile clinic in Cutwini

Cutwini village has no clinic. The allocated clinic for Cutwini is the one in Malangeni village (which is in another ward[22]) according to government officials I interviewed. However, there is no transport that goes to Malangeni and if one wanted to go to Malangeni Clinic from Cutwini, s/he would first have to go to town in Lusikisiki then get a minibus to Malangeni and vice-versa on return. This would take a day or two because transport options are very irregular, often going once in the morning and returning in the evening. Villagers therefore go to TEBA and Getway clinic or St Elizabeth Hospital, all of which are in Lusikisiki, 30 km away, at the cost of R12:50 (R10 in 2007) one way trip. However, one cannot go to St Elizabeth Hospital before being issued a reference letter from a clinic; an issue that presents other problems to be discussed later. To alleviate the problems of lack of a clinic, a mobile clinic goes around to villages without clinics, like Cutwini, once a month. In 2007, these visits were irregular and in the three months I was in Cutwini, the clinic came once and may people missed it because of confusion in dates. In 2009, people told me the clinic service was more regular than in 2007, which my observations confirm.

When I interviewed the nurse in charge at St Elizabeth Hospital, she cited lack of staff and medicines as a key challenge in meeting health needs of people in rural areas. This was well illustrated in 2009 when I observed a clinic-in-action on 27th July 2009. The clinic operates from the home of one of the villagers. I arrived (with three other women) at 11:05 and there were five women in side a pastel green round hut and three others outside. By 11:20, the green grass space around the hut was filled with women with children, chatting and three men standing on the edge of the group. At 11:24, a white Toyota Hilux 4x4 twin cab vehicle with a black tarpaulin covering the back and Eastern Cape Health Department logo on the sides arrived. The man driving the car came out and after stalling the engine for about 10 minutes, told people that they will not treat anyone because the engine will not switch off the engine (a joke). Later they switched off and a female nurse, in her late 30s or early 40s came out and apologised to the crowd, saying there are no medicines except for those that are on *"treatment"* (*i.e.*, regular medication) medication and children's vaccines. I noted that when she called out the regular repeat treatments she mentioned diabetes and hypertension but not HIV for which people also get *"treatment"*. I wondered whether this was part of the silence around HIV, an effort not alienate HIV positive people (so as not to be classified as being HIV positive due to stigma) or whether they did not have ARVs as well. She also specified that they did not have medicines for coughs, chest problems (*isifuba*), back pains and headaches. One woman asked if then they could come earlier next month but the nurse said the schedule was full. Another woman behind me murmured that chest problems and back pains were what every one suffered from. Of the three men present, two left, leaving one young man behind. Most of the women stayed, saying they will try; there might be some medicine after all. Other women helped with removing black

[22] Wards in this case are the political administrative areas that often include several villages. Cutwini belongs to ward 23

boxes from the car and I tried to look at their labels without success. Five minutes later the clinic started in earnest, I got inside and sat next to the lady I will call the 'nurse's assistant', who was dispensing medicines after prescriptions from the nurse. In total there were four people from the health department, two men and two women. One man sat with the nurse at one table. Both prescribed medicines, asked what is wrong with the patient/client and took blood pressure. Another man sat at a separate table, wrote a log of all the people who came in and their ailments, while the second woman dispensed medicine on another table. Two female community members helped in controlling entry. One of them was a clinic committee member the other is an *igqirha* (traditional doctor) in the village and was key in graduating an *igqirha* at a *ukuphuma igqirha*[23] ceremony I attended the day before. The two different roles the woman assumed in these two days illustrated just how fluid the use of Xhosa and Western medicine is.

As I sat inside the hut, the nurse's assistant asked what I was doing, a woman next to me leapt to explain before I could finish saying my name; "*she stays in the village and learns everything we do, even going to collect wood. Like white people do sometimes and then she will go and write her own things. Don't worry she knows everything she is the one who is taking care of us*". I laugh saying I really don't take care of them but I am doing energy and health research and I am here to observe how health care services work as I had already discussed with the nurse heading the delegation. "*Yes, but she knows us all and we all know her. She is one of us now!*" The nurse says "*You see the conditions in which we work? No medicine. Even for coughs*[24]*. It is really bad but Eastern Cape is worse. We are neglected! Is it like that where you come from? And then we are supposed to help these people*". I say I understand but it is probably worse in Malawi. They are sceptical and tell me not to forget to write this in my report. I am surprised that over the next two hours, indeed I know every one except three of the people that walk through the hut. I greet them all or they greet me by name, which surprises the nurses.

As I do my observation, I help the nurses with minor errands. Taking the nurses jersey and hanging it when it gets too hot, wiping off spilled medicines, pouring water in cotton balls, directing confused women to the right tables, helping one lady get an explanation why her child, whose eyes have had a problems since I have known her in 2007, has still not been referred to an appropriate doctor and remains untreated. During this time, I take the opportunity to look at the box labels; Vaccines for children, Chronics[25], Family planning, Mobile[26] and Miscellaneous[27]. Most of the older women are given Prexum, medication for cardiac disease. Middle aged women often get

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[23] *Ukuphuma igqirha* is a ceremony where a person who has been going through the process of being *igqirha* (a traditional doctor) is finally introduced to the community. The process, called *ukuthwasa* often takes one month but can be as long as three months. On 24th July 2009 a young man became an igqirha and I taken the ceremony.

[24] This is something I have heard at every health establishment I have been to. At one interview, nurses were discussing how the whole of Eastern Cape had not had cough syrup since last year and there was none at the medical stores. That was March. The nurse had gone on to challenge her friend to call somewhere where they had cough syrup and if she finds it, if it wasn't old though she doubted the chances of finding it.

[25] This box contains medication for chronic diseases such as hypertension and diabetes.

[26] This was an empty pail in which the nurse dumped used vials and syringes. I am not sure whether it was sterile because at the very beginning of the children's vaccines, a needle fell into it and the nurse picked it up and used it. Also the nurse did not wear gloves even for injections, which is something that surprised me.

[27] This box contained cotton balls, bandages and other kinds of dressings.

Moxypen 250mg and 500mg, an antibiotic. Another medicine available today but rarely dispensed is Enthromycin 250 mg, also an antibiotic. Three women get about a table spoonful each of *"rubbing stuff";* a Methyl Salicylate ointment popular for back pain and then it is finished (nurses had mentioned earlier that they do not have this). Four other women get iodine liquid and iodine based ointment for wounds. Many children are given Zentel, a de-wormer and told there is not medicine for coughs. Some medicines I cannot make out but I note at least one HIV positive woman (she disclosed her status to me in 2007) and an HIV positive 4 year old come in and I hope they get their ARVs. After the first lot of treatment of women and children, I go outside and note many women who already received treatment are still waiting. Soon they line up for children's vaccines. All goes smoothly with exception of one teenage mother who has trouble holding her baby and gets a short, angry lecture from the nurse. In total, about 17 children are vaccinated. As the last children are vaccinated I go outside again to check for remaining patients. Again many women are waiting. I ask one of the ladies I know, what they are waiting for now; *"family planning"* she says. Meanwhile, one of the men (the driver) who came with the nurses is distributing condoms. I note that he does bother to give to the young man sitting waiting to be treated. This situation is similar to the one at community meetings where condoms are distributed and it is almost only women who request and get condoms. Some children think the man is distributing sweets and they start crying for the condoms, triggering much laughter and banter. Then the women form another line in the hut. They are first given vials and needles and they shake their vials whilst waiting their turn to be injected. Later on, the medicine dispensing woman comes and helps the nurse at her request. The assistant injects the needles in the shaken vial in advance. The clinic starts packing up when the young man comes in. The nurses tell him he is too late and the *igqirha* who has been helping says he was outside, respecting the women so that they get treated first. An argument ensues and a woman who escorted the young man starts to cry silently. We are all asked to go out so the nurse can talk to the young man. Other women outside are called to help pack the car. The clinic officially ends at 13:34.

Attending the clinic I realised first, how efficient the clinic was in getting people in and out. About 100 clients have been attended to in two hours and ten minutes. Within this efficiency, which is in sharp contrast from the long, unattended lines I often encountered when I visited St Elizabeth Hospital (four visits), was also a question of effectiveness. I noted that the nurse would ask clients what was wrong with them and then proceed to write medication where necessary. Many of the clients took about 2 minutes or less[28] with the nurse. It resonated with some of the perceptions I had encountered;

> *"The nurses don't tell you anything. They ask you want the problem is and proceed to give you medicine".*

The only diagnostic equipment available on the clinic day was a blood pressure monitor. Also there was very little discussion or explanation, if any, between client and service provider. A fact that explained some of the basic questions I have received from

[28] In one incident, an old lady in her late 80s asked the woman dispensing to repeat the instructions as she was hard of hearing. She said, "*it is written there, as a child who lives with you to read it for you and remind you"*. When the old woman said she lived alone and can no longer see well enough to read when and how often she has to take medicine, the assistant said she just has to drink the medicine.

some of the community members after their hospital visits. Many community members had expressed lack of awareness of causation of their illnesses even when taken to the hospitals because once they describe their symptoms they are given medicines without explanations. For some, it was the reason they then resorted to *Igqirha* who could provide some explanation for their suffering. This "disconnect" and lack of explanation showed itself at an incident I observed during a community meeting on 12th July 2009.

While waiting for the meeting to start on this Sunday morning, boxes of condoms and surgical gloves were distributed[29]. Many picked up a packed of ten condoms and a pair of the surgical gloves. Most of the men did not pick any of these but more interesting was what people were doing with the gloves. I noted many wore their gloves right there at the meetings. Others were blowing them up like balloons. Over the next two to three days, which were cold, I noted people walking around wearing surgical gloves, mothers blowing them up for their children. I also asked some women what they thought the surgical gloves were for and what did with them. Four out of the 13 I talk to knew why the surgical gloves were given although not that they should be sterile and even then they did not use them for their intended purpose. The three most common uses were; for making *"balloons"* for children, for keeping hands warm and for protecting hands during work such as cutting down invasive species. The assumptions of the health department seem to be that persons are aware these surgical gloves are for working with ill persons (mostly for persons with AIDS and wounds or cuts) and have to be kept sterile until used. The women's actions during these few days when I made the observations suggest however that people are not aware of why they are provided with surgical gloves.

[29] Condoms were before being left at the shop where people could pick their own but many were not picked. When the person in charge of this died, the responsibility for condom distribution was given over to the Sibonda's household and the household decided to distribute them at community meetings and interestingly, they are all always taken up, almost exclusively by women. It should be noted here that the shop where they were left before is most frequently attended by young men playing pool which may have deterred others, especially women to stop by and request condoms. In addition, HIV/AIDS awareness has dramatically rose since a mobile clinic came to the village around November 2008 to test people.

Appendix 3

A day in the life of a homestead in Cutwini

An introduction

This appendix contains details of home stays which I undertook using the focused participant observation techniques referred to in appendix 1. The data is part of the collection of field notes from these focused observations. While the time stamped details remain unedited, the introductory part has been lightly edited to reduce the size of the text. In each household, I concentrated on one key person, who was selected because she or he was the person who was most available around the homestead and undertook most of the energy related activities. Other observed activities within the homestead are then recounted around this key person. All names used here (unless stated) are pseudonyms.

In the observations plan, the idea had been to identify two homesteads and spend two nights in each homestead. The basis of the selection was that one household represent a complex homestead[30] where there is also a married woman (*Makoti*) who stays at her 'married home', with her parent(s)-in-law and her husband and any other available household members. The second homestead would reflect the common situation where most women are head their own homesteads being either *idikazi*; having never married or *umhlokazi* (widowed woman) or having an absentee (migrant) husband. The homesteads initially selected reflected these two criteria with the single female headed homestead being one where a woman had never married. However, due to unavailability of the couple in one home (with parents in law and a *Makoti*) and conflicts that had arisen about where I would stay on this visit, I made changes to the homesteads that I stayed in. The first homestead was Zihle's homestead, which is a single, female headed household. The second homestead is also female headed but has higher income than the first homestead. The third homestead is headed by homestead owner who lives in Durban. Below, I will describe the homesteads through its members and characteristics, as well as its kitchen. After the homestead discussions, I have used my observations there and the observations of the homestead I stay in to provide an amalgamated picture of a typical day in Cutwini.

Zihle's homestead

Zihle's homestead comprises two blue *rondavel*s, one which is used as a kitchen and another as a bedroom. Both *rondavel*s are showing their age, slightly leaning and with a few visible cracks on the outside. There is no toilet and like almost all homesteads in the village, there is no bath hut. The kitchen has bricks lined up against the left wall as you enter it. It has one 'window' which is an open space to the western side, about 25cm^2 that was deliberately left out during construction; a common practice to let light in. It has no glass or any other covering. This allows some light throughout the day and some

[30] I use the term complex homestead to denote a homestead whose members include more than one parent and more than one set of biological kids.

ventilation. However, both these functions are inadequately fulfilled since the kitchen is often dark and smoky throughout the day. The door, which is split in half by design, allows more light and air in. It is always open when there are people in the kitchen and the lower half is closed to ward off animals when people are outside but nearby. In the far end of the kitchen are two tables draped with plastic table cloth like all the *rondavel* kitchens I have visited. Typically, there are four pails of water on top of the table and a paraffin stove which is placed just in front of the table on the floor. In the centre is iziko, the fire place.

For income, Zihle, who is 38 years old and lives with three of her daughters (none of whom share a father) aged 16 years, 11 years and two years and a niece aged 16 years, depends on brewing and selling traditional beer. When I arrive, her brewed beer is in two 200 litre blue barrels in the bedroom, which fills the bedroom with a yeasty smell. Other than that, she depends on child grant. This month she has been given a sheep by her brother, which she tethers to a post throughout the day since she has no *"boy to look after it"*. Of the three homesteads where I did my observations, her household is the poorest.

In terms of health, Zihle is HIV positive but healthy and taking ARVs and all household members report to be well. Her 2 year old daughter however fell the day before I arrive and cannot use her right hand. When I take a look at it, it is very swollen especially around the biceps. I gently feel it and can feel a crooked bone and I suspect she has a green-stick or complete but not open fracture. I ask the mother if she took or will take her to the hospital and she says she has no money so early next day I give her some money but she decides she will not go[31].

Time spent at Zihle's homestead

Day 1

- 9:40 a.m.: Arrived at house and put my bags in bedroom. Apart from a two year old who has an injured arm, all other children have gone to school. After greetings, I am asked if I can accompany Zihle to collect water. A man arrives to buy beer and they discuss about her "new" sheep
- 9:50 a.m.: We collect water at a spring (*umthombo*) which is 3 minutes away from the house in 20 litre pails. The time at the river itself was about 5 minutes and includes washing pails. I note that the rivers have been dammed by a small bit of the concrete apparently by the government soon after election.
- 10:03 a.m.: We leave to buy bread from a bakery that has just opened in the village. A young man who worked in the city is back in the village with an array of businesses including bread-making
- 11: 07 a.m.: We come back, make tea on a paraffin stove and sit down in the kitchen to drink then sit around and chat 2 elderly women come in and start drinking. The fire in the kitchen has been long since died and has been cleared so that customers can drink in a space without smoke
- 12:13 p.m.: School children drop by during a break. We are very close to the school and can always see school children play
- 12:50: We put water for making pap on the stove

[31] She went to the hospital about four days after the accident because the child seemed in pain and the arm was put in a cast. She told me *"it was not broken, just bent and they put cement on it" i.e.,* it had a greenstick fracture.

- 13:43: The pap is done and we sit outside in the sunny but breezy day and eat pap and cabbage. The cabbage has simply been sauted in oil and “spices” have been added to it. The spices which I encounter in every kitchen are there too; a mix whose ingredients are salt, MSG, maize flour and herbs and spices. I suspect just flavourants. You can taste the MSG
- 14:17: I go back to the river with a neighbour while my hostess chats with beer drinking women on the grass. Soon after we return, we leave to go to the neighbour’s who is moving house. She is the school headmistress and has just built a two-room flat in the village so that she and her husband can practice animal farming she tells me. We help scrape the floor with a shovel to get rid of plastering splotches. School children have been helping move various things and are now sweeping the floor. The girls brought a range of household items which they carried manually in their hands or balanced on their heads. The boys come with a moving pick-up truck, sitting in the back with beds and other furniture items. Most of the removing of the smaller items from the car to the house is done by girls while both boys and girls help with removing the things such as beds from the pick-up truck to the house.
- 15:30: We are back at the house and I am sent to buy vegetable for the evening meal. I try to look for tomatoes but cannot find any in the village. The lady who sells spinach first tells me there is no spinach but eventually goes in the garden and after a while, I get a plastic bagful of Chinese cabbage for R5. She also instructs a boy to get us 8 oranges which he does.
- 16:30: I am back at ‘home’ where my hostess and a number of women are still sitting where I left them, still chatting and drinking beer. More men have arrived and are sitting in the kitchen.

A girl (16 years old) is making a fire in a shielded place outside because people are drinking in the kitchen. My hostess and another woman, the two year old toddler of the homestead and two male visitors are sitting in the bedroom *rondavel* chatting. There is almost no space for me to sit but soon, one of the men leaves.

I wash the vegetables and I am told to remove all stems even though I protest that one can eat the white stems of Chinese cabbage. A woman who teaches at the crèche comes into the bedroom where I am washing vegetables and starts eating cold pap and the veggies from lunch. She declares my food very bad because I do not put enough salt and put too little oil. I look at her, sitting on the bed opposite me and interestingly, she (in my opinion) is over weight.

- 17:33: I cook the Chinese Cabbage for just a bit longer than the 4 minutes I am used to and the pap is ready. Zoleka arrives for a visit. My food and Zoleka’s is dished by the rest of the spinach is cooked again for another 15 minutes. More salt, spices and oil are added. Once again, my cooking is failed on account of my short cooking times, lack of oil and salt. As the paraffin stove is taken outside to be put out, the male visitor expresses his disgust at the paraffin stoves, saying he never wants to see it because it kills people. A short discussion (recorded elsewhere) ensues. Women seem to be backing the stove, the man says if his wife used it, they would have conflicts. We eat our dinner in the bedroom.

20:30: We go to sleep. There are two beds and six people. I sleep on one with one teenage girl. On the other is the oldest daughter in the household and an 11-year old girl. Zihle sleeps on the floor with her two-year old girl. There is one more person who comes to request beer as we are about to sleep.

In the night, the two-year old, who did not eat any supper wakes up crying and is fed. This happens twice.
Twice, people wake up urinate in the wash basin. At around 14:00, the 16 year old wakes up and stirs the beer.

Day 2
- 4:38 a.m.: Zihle wakes up and asks who will wash the dishes before school. She asks the time and I tell her
- 4:56 a.m.: There is a knock at the door and a request for beer. The eldest girl wakes up, stirs the beer and serves it in a beaker. Then she goes off to clean the kitchen and wash dishes by candle light. We chat, lying in beds until 7:30 a.m. when children leave for school.
7:30 a.m.: to 10 a.m.: Zihle, baby and I go to kitchen where there is a fire and two women soon arrive and start drinking beer. No work is done around the house except we all sit around the fire chatting while the women are drinking. I leave for second homestead at about 10 a.m.

Sobahle's homestead

Sobahle's homestead comprises one *rondavel* under construction and two other old *rondavel*s. One of the *rondavel*s is used as a traditional kitchen and the other is used by Sobahle's elderly mother as a bedroom. There is also a shack of about 2.5m by 4m made of corrugated iron sheets that is not used for anything specific but is occasionally as a shade where customers who come to drink beer sit, drink and talk. A modern flat built in an L-pattern dominates the space and has a kitchen, a bedroom and a dining/sitting room.

Sobahle is a 35 year old single woman who lives with her mother and her 12 year old son. The father of her son lives and works in Johannesburg but supports the child. The child's paternal grand parents are a rich and respected family in the village. As indicated above, there are two kitchens in Sobahle's compound; a modern one and a traditional one. The modern kitchen is equipped with a four-plate gas stove connected to a 19 kg gas cylinder, another 10 kg gas cylinder which is kept as a supplement as well as for the fridge, and a paraffin heater which is often used as a stove for eating water or simmering foods. Sobahle uses the modern kitchen only and only uses gas or paraffin for cooking while her mother prefers to use firewood to cook in the traditional round kitchen. Because her mother rarely cooks, the traditional round kitchen is rarely used.

Sobahle's homestead has at least four sources of income; Her mother's old age pension at R950, her son's child grant at R250, her son's child support (varying) from his father who works in Johannesburg and Sobahle's proceeds from her shop which sells bottled beer, soft drinks and frozen chicken packs. The homestead monthly income exceeds R2000 although what they use from the business is not always clear. Sobahle describes her homestead as having no health problems except that skin sores that do not heal well.

Time spent at Sobahle's homestead

Day 1
17:30: Arrive at new homestead. My hostess and her friend are sitting around a paraffin stove, warming themselves up even though it is a warm [for me] evening.

There is a kettle of water on the fire. Food has been cooked; Boiled chicken and pap. We eat and chat.
- 19:30: A man walks in and sits at the table and starts proposing me. He seems to have been drinking. The mother of my hostess walks in and they start chatting. She is also drunk. She walks out after about 15 minutes before coming back a few minutes later. The propositions have now gone on too long and we are now joking about it
20:17: Mother of my hostess went away and came back after about an hour. She asks man to go with her to her hut or leave the room but he doesn't want. The situation is getting tense and I am told to move from where I was sitting. My hostess and the male visitor start a verbal fight which goes on for 20 minutes. After being repeatedly asked to leave, the visitor finally does so. Its 21:10 when the man finally leaves.
We continue to chat and people continue to come and buy beer. At about 21:30, teacher leaves
We leave for the bedroom and I am shown my bed. My hostess's son hasn't slept yet. He says he is writing something he was supposed to have done in the afternoon at school. When he finishes, it is about 10 pm and then he goes to bed.
There have been a request for cigarettes and beer just before 10:30 p.m. and then the door is locked and we get in bed to sleep
-1:48 a.m.: Someone knocks at the door, asking for beer. Hostess refuses to get out
-2:10 a.m.: Another knock and request for beer and once again, the hostess refuses
- 4:14 a.m.: A knock and request for a beer. This time it sounds like a young man, probably a student. He says he has been sent by a man to buy beer. Hostess refuses and he stands outside for a while – about 5 minutes or more then leaves.
- 6:00 a.m.: We get up. Hostess is reluctant for me to do anything. She goes to the kitchen to boil bath water.
- 6:24 a.m.: A paraffin heater is brought into the bedroom with a kettle of water on top. Son first refuses to get school food container then changes his mind and asks his mom to pack his lunch box and make his tea.
- 6:47 a.m.: I take my bath and I can hear men arriving and asking for beer
- 7:00 a.m.: Men have now filled the lounge area, drinking beer while son leaves for school at about 7:15 a.m.
- 7:39 a.m.: Women start arriving but sit outside for beer. One of the first ones to arrive is a 30-something year old woman whom I almost always find her either at a drinking place, or coming from a drinking place. She calls me her sister-in-law. Last night I could hear her, drunk and shouting what I later learnt were insults to no one in particular, on the streets of the village.
- 8:10 a.m.: there are four women who are later joined by two more women. The men have finished drinking and have moved on. One of the men drives a minibus that takes people from the village to town at between 8.00 a.m. and 8:30 a.m. so I am guessing the men are now off to jobs and ukuvakasha.
- 8:30 a.m. to 10 a.m.: I make breakfast comprising boerewors (i.e., farmer's sauage: South African long sausages) which I am told I must put in gravy and old home baked bread. We wash last night's plates and eat. Hostess washes and scrubs gas stove parts with steel wool. The six women continue to drink beer outside.
- 10 a.m. to 12 a.m.: There is nothing being done around the homestead except chatting and drinking. The hostess is dosing in a chair, only occasionally standing up to get beer for the women customers drinking it outside. One of the women, the

regular, is now asleep on the lawn since 10 a.m. She was the first to arrive for a drink. I start cooking to make sure lunch is ready by 12 p.m.
12:30: I finish cooking and tell my hostess. I am told we have to wait until later. Hostess goes to bedroom and continues sleeping
- 14:10: Hostess comes and dishes food which is by now cold and I am set up fro lunch in the kitchen. She eats with me for about three minutes then goes outside then to her bedroom where she finishes her meal.
- 15:15: Two women leave saying they will go elsewhere for some beer. There are about 5 1 litre beer and cider bottles on the grass and some more in the crate. I cannot tell just how many bottles have been drunk but no one appears to be very drunk. One woman continues to sleep on the grass.
- 16:30: I leave for next homestead

Monelisi's homestead

The Monelisi homestead comprises four blue *rondavel*s set in one line, with doors facing the north-western side of the village. The first *rondavel* is used as a bedroom for a young couple and their child, the second *rondavel* is a bedroom for the sisters and the third is used as a kitchen. The fourth *rondavel* is used as a bedroom for the parents and a grand child. Mostly the mother and when the father visits occasionally[32].

The Monelisi household has the ideal configuration of a Pondo household as depicted by Kuckertz (1990). The *m'nene 'mzi* (homestead owner), Monelisi is a migrant worker in Durban and his wife lives in the homestead with their sons, daughters, daughter-in-law and her grandchildren. Her other two sons, including the oldest, work in Durban. The last born of the family is a 7 year old daughter who lives with her father's sister nearby. They live so close that during my two-day stay the aunt and the daughter ate all meals except one lunch in Monelisi's homestead.

In side the 3m diameter kitchen is dark because one window has been blocked by a pile of bricks so that they have taken up half of the kitchen space. Two tables are set against the back wall of the kitchen and as is often the case, they have four pails of water on top of the table and an array of pots, plates and kitchen utensils. A paraffin stove is set on top of the brick piles. Below the one open window, on the floor are small cobs of maize reserved for chickens that sleep in the kitchen. The fireplace is not in the true centre of the house but rather offset because the *ntsika* - the central pole that holds the roof during construction was not cut off - and therefore it occupies the place where the fireplace would have been located.

The household income is highly boosted by the seven child grants that children in the household receive, bringing income from child grants alone to R1750[33]. The household also sells beer and gets some money from the father working in Durban. They are the

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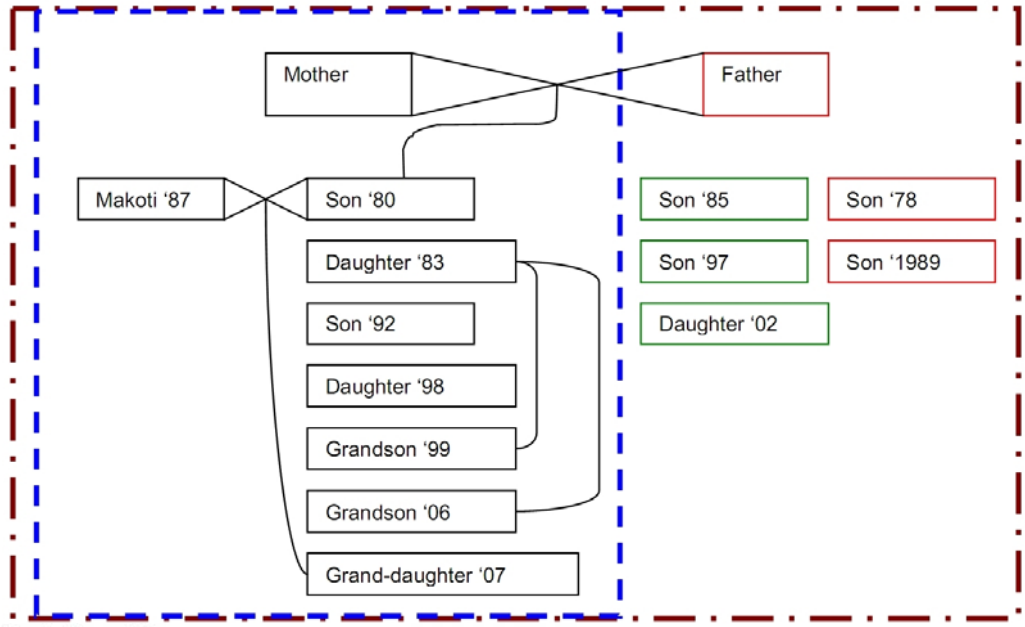
[32] While many migrant men visit their homes once a year at Christmas, the Monelisi household said their father visits more regularly and up to once every three months on average.

[33] Several women and at least one male told me that women now felt that it is better to have more children to benefit more from the child grant. According to the women, one child only gets you R250 which is not enough for one child. But if you have more, the money can be pooled and be more like a salary. Thus for example, five children get you R1000 which is like a salary of a well paid driver and more than someone working at a tea plantation. Also older people increase their age by five to 10 years so that they start receiving the pension grant earlier and receive it for longer. There is however no evidence that women deliberately have more children to get more grant money since I am unaware of any comprehensive research on this matter.

only household, of the three, that's owns cattle. They own a substantial stock of over 20 cattle.



Key to Figure A.1

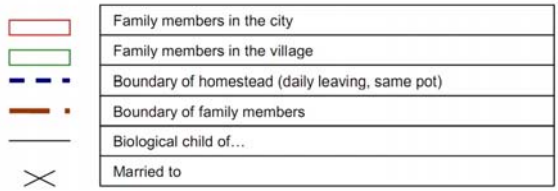


Figure A.1: Monelisi's homestead and family. Also showing an example of a complex homestead

Time spent a Monelisi's homesead[34]

Day 1

- 16:35: I arrive at Monelisi homestead. There is a large fire outside, protected from wind on one side by a corrugated iron sheet and with a row of young women on one side on a bench and one young man in dreadlocks and a hat on another bench set at right angle to the first. One woman, the Makoti of the homestead, is standing over the pots and stirring. They are brewing beer. I am taken by one of the young women to a bedroom where I leave my bags.
- 16:35 to 17:47: We are chatting outside while the makoti works on mixing and boiling beer. I eat the pre-fermented beer porridge and which taste like there is lemonade in porridge and has a nutty flavour. One girl, a neighbour keeps trying to say words in Chichewa- she once had a Malawian boyfriend. The young man in dreadlocks keeps asking to sleep with me. He wants to be my boyfriend. After 30 minutes of proposals, I am getting rather irritated and ask where his girlfriend is. When the young woman sitting next to me reveals that the makoti working on the beer is on fact his wife, the man gets upset and angry with her for revealing this but

[34] I had expected to find both parents at home but when I arrived, I was told the mother was away in Durban.

his wife does not comment. He is slightly but not completely drunk. At some point I am so annoyed I tell him I am running away from him and move to the kitchen. The kitchen is dark and smoky. He follows me there and I go outside again. Only to be confronted by another man with his own advances before the man in dreadlocks joins us again.

- 19:25: A neighbour has joined us and I ask the men to respect this older woman and to stop proposing me. It doesn't work. The makoti now has put her baby on her back and we are all struggling to breathe because of the smoke. The man in deadlocks then starts threatening the wife and tells her he will beat her because she is exposing the child to smoke. After some silent resistance, the wife goes into the round kitchen (which is smokier than the outside) and the man then commands us all to go inside the kitchen despite our resistance. We give in but the makoti has to continue to go between the hut and the fire outside, making beer and cooking supper.

Because I am a first-time guest, they slaughtered a chicken for me and I am served first with some pieces of gizzard and liver (as per tradition) by a young man while the rest of the meat continues to boil.

- 19:27: When the meal is done, we eat umqusho, cabbage and chicken. Dinner is served in the dark, candle-light kitchen. We chat for another 40 minutes or so while makoti continues to work. She has finished boiling the beer and transferring it to various containers to which she adds umthomboyi (sorghum malt) to ferment it.
- 20:30: we move to our respective bedrooms. The couple, in the first rondavel in the east, we go in the one next to them.
- 6:19 a.m.: Makoti's husband knocks at the door to get something. He is going to the veld to get cows
- 6:41 a.m.: Makoti, makoti's sister-in-law (hence forth called Nomvela) and I are awake and we go to the kitchen and start sweeping (me), making fire (her) and preparing for the day. The fire is started using a plastic bag.
- 7:15 a.m.: Makoti, Nomvela and I go to the river, about three minutes down hill to collect water in 20 litre buckets We return at 7:23 a.m. to find boy (12 years old) locking up goat in a pen and girl (11) giving maize to chickens. The 11 year old girl has not gone to school. She says it is because she is tired.
- 7:27 a.m.: Paraffin stove is switched on and water for porridge is set on it.
- 7:30 a.m.: I take a bath in 'our bedroom'. School going children are leaving for school. We all sit around in the kitchen chatting.
- 8:30 a.m.: We eat porridge which I cannot finish because too much was dished out. The fire is dying now but the room is still smoky. As we finish eating porridge at 9:00 a.m., the fire is resuscitated. Outside there is strong wind and it is raining lightly. It is a cold day with temperatures around 6 degrees.
- 9:17 a.m.: Other children are back from school. They have been told that their teacher has gone away and they should return on Monday. I start teaching a 7 year old girl basic Arithmetic and English.
- 10 a.m.: The paraffin stove is re-light and a kettle is set on it. We have tea at about 10:30 a.m. and the stove is switched off. We sit in the kitchen as makoti works.
- Nomvela has collected dung and starts plastering the floor with it. A third of the way through the plastering, makoti joins her. They finish in about 45 minutes

I help makoti by bringing mthomboyi into then kitchen and onto the traditional grind stone but when I try to help her with stone-grinding it, I am too slow so after 10

minutes she takes over. It takes her about 30 minutes to grind all the malt she needs and then she adds it to the beer.
- 12:36 p.m.: Makoti and I take a container of maize to a homestead across the road where we grind it finely. It is the consistency of fine bulghur wheat or couscous. She is going to make umqa, which I had said I like when they were asking me what foods I like. I am humbled by all this effort and feel a little bit guilty.
- 13:00: Husband of makoti is back with livestock. We continue to chat around the fire. He leaves about 15 minutes later (he does not return home until the next day).
- 13: 33: Makoti takes a spoon and scrapes the skin off the pumpkin before dicing it into cubes.
- 14:26: Makoti puts a pot of diced pumpkin on the fire. We continue to chat.
- 14:56: The pumpkin is deemed cooked enough and three cups of the finely ground maize is added without agitating it. The pot is covered for about 20 minutes and then the pumpkin and the maize are mashed up together before covering the pot again.
-16:10: The umqa (pumpkin and ground maize mash) is taken off the fire and dished. It has taken about 1 hour and 44 minutes to cook the umqa and we finally get to eat lunch. The fire is kept going. There is a three legged pot next it with bread dough inside. Makoti goes outside and splits some firewood
- 16:41: The pot with dough is finally put on the fire. Various burning pieces of wood are put in top and others underneath. About 30 minutes of raging fire has left the crust blackened. The fire is the reduced and the bread baked for approximately another 30 minutes.
- 18:10: The bread is taken off the fire and allowed to cool while we sit around the fire as it burns itself out.
- 20:30: Makoti slices off burnt crusts off the bread. I am given a slice of the bread since I asked to taste it. Everyone says they are not hungry and we go to bed at about
- 21:00. Makoti's husband and brother did not come back since leaving at around 13:30.
- 6:42 a.m.: It is windy outside and there is a knock on the door. Makoti walks in (with a breeze of cold wind) and puts her baby on Nomvela's bed. She is going to collect firewood in one of the major forests. "In this wind?" I ask. She laughs and goes out.
- 7:00 a.m.: We are fully awake and go to the kitchen. A fire is made, kitchen is swept and then we take our baths.
8:00 a.m.: Nomvela goes off to wait for cars by the road side. Her parents are coming today from Durban where mama was visiting her husband. Tomorrow the parents will go to umombolo[35] ceremony in another village
- 9:10 a.m.: I'm, makoti returns from would collection. She is cold and quickly makes herself a cup of tea and sits by the fire.
- 9:25 a.m.: Makoti takes a netted bag and asks the 12 year old boy to hold it over an empty blue barrel. They start straining the beer, a task which takes about an hour to complete.

[35] A ceremony where a widow takes off the black clothes she has been wearing since her husband's death. If the death was after an illness, she will wear the clothes for 12 months. If it was sudden, for example in a car accident, she will wear the clothes for 6 months. It is also known as *umkhululo* especially in Tsilitwa. There was a big debate especially in churches in Malawi in the late 1990s and this practice has almost disappeared.

- 10:40 a.m.: Makoti starts transferring beer from barrel to pail. She then carries the pail on her head to the next rondavel. She carries over ten pails in about 40 minutes. I offer to help but she is afraid I will hurt my neck because the beer is heavier than water. In the end, we hold a pail in between us and she finally finishes her job. Makoti's beer work has left pools of water on the mud floor. She goes to the kraal, collects dung and proceeds to plaster the portion where the water was. It's a 15 minute job.
- 12:10 p.m.: Her husband arrives with friends and Makoti serves them beer. I go to a neighbouring house three minutes away to leave my phone for charging (they have a solar panel and charge mobile telephones for a R4 fee). When I return about 10 minutes later, there is a four year old in the kraal. He has collected dung and can barely pick the basin himself. His mother, who sent him on this errand, is in the kitchen chatting

I start preparing for today's meal. I will cook the meat and Makoti will cook the rice. As I cook meat on the paraffin stove, more men have arrived and are drinking. Makoti is washing clothes for her child.

- 14:00: I make a fire for Makoti and 15 minutes later, she sets the pot of rice on the fire.
- 15:00: The parents return with Nomvela and Nomvela's child who had also gone to Durban with them. I greet them and leave to collect my cell phone from the neighbour's. More visitors arrive whilst I am away. One is the sister to Nomvela's mother. She is here to show her new baby who has just exited fukwini. The baby is picked up and circled around the head to make her "free" in this homestead I am told. Makoti is making tea and I start saying my good byes.
- 15:48: Tea is served and I say my good byes for a second time. I know it will take an hour or more before I can actually go.

16:21: Rice and meat are served. The kitchen is now crowded with people eating and drinking beer.

- 17:13: I finally leave for 'home'.

Nowezile's homestead

Nowezile's homestead comprises one *rondavel*, which serves as the kitchen and two modern "flats". One of the flats is being rented out to seasonal workers working at Ntsubane plantation and the other is used by the family as sleeping quarters. The modern flat used by the family has two bedrooms, a "bathroom", a dining room, a sitting room and a kitchen. The kitchen in the modern flat was, in 2008 fitted with a gas chest freezer, a four plate gas stove and a row of cupboards. A 20kg gas cylinder is used and is alternated between the fridge (which also stores chicken, polony and drinks for sale) and the gas cooker which is often used to cook when there are special guests and sometimes used for family meals. There is a dining table with seats in the middle of this kitchen. Despite the modernity and relative comfort of this kitchen, the main kitchen (*i.e.*, the most frequently used) is the *rondavel* close the entrance of the court yard. It is here that Nowezile and her 16 year old daughter make meals for the family. Here, around the wood fire, the family sits together and eats meals, chats and sometimes prays and sings after meals. In addition, visitors and customers come to the kitchen to chat or *"borrow"* necessary items such as candles, paraffin, baskets or request the of use of the *ilitye lokukweca* (traditional grinding stone) or *litye lokuguba* (cast iron manual

grinder[36]) are undertaken. As with many homesteads, there are two tables draped in plastic table cloth, on top of which are pails of water, plates, pots and an array of kitchen utensils. In front of the table, on the floor is the paraffin stove locally referred to as the Flame stove. In the centre of the 3m diameter round hut is the *iziko* fire-place which on most days is flanked on both sides by long low benches where the family and visitors sit down around the fire. Two other low benches are pushed against the walls; one on the eastern side for male visitors and another on the western side for female visitors.

Nowezile is 35 years old and has five children aged 16, 14, 12, 7 and 2 years old. Her husband is a brick layer. The household income includes five child grants at R250 each. Nowezile also has a business selling drinks, meat and other groceries as well as clothes and beddings (about once a month) which buys wholesale from Durban.

[36] Such a grinder is sometimes presented to a woman as a wedding gift. It is expensive at about R1800 excluding transport and few households have it. People therefore often visit friends who have it to request its use

Appendix 4

A day in the life of a homestead in Tsilitwa

Makhulu's homestead

The compound comprises eight huts; starting, as you enter the compound from the right; there are two *rondavel* huts and then a small square hut. These are sleeping huts for young men. Next is the kitchen, which looks rather old with repair patches in earth colour contrasting against the light blue of the hut. Then there are two rectangular huts that face a third rectangular, with a narrow passage between them. These other huts are bedrooms for females with a wall partition and then a bedroom for other boys in the adjoining room. Opposite the long rectangular hut is a short metal hut for goats (See picture A.1)

Picture A.1: Huts on the eastern side of the homestead, three sleeping huts and part of the kitchen on the left

Picture A.2: Bedrooms on the western end of the homestead, also showing a metal hut for goats and sheep

There is a garden at the back of the house. In it are a variety of old fruit trees, some look productive others are probably too old. It is full of weeds and waste; mostly bottles of vodka (over 50 of them are vodka bottles and there are brandy and other liquor bottles). I count seven disused paraffin stoves. There are old tires, old spokes, blankets, bottle tops of baby food and an assortment of odd metals. It does not look like it has been ploughed in recent times although I am told this is the case. There is no sign that it has been ploughed recently and the bottles are from last year's *mkhululo*[37]. At the front end of the garden as one goes towards the back of the huts, a hut that used to be a workshop for now deceased man of the house (*tatomkhulu* or grandfather as he was referred to by family members) and now acts as a stable for the homesteads lone horse. The horse is however left to roam around the village and rarely brought home. It also occasionally acts as the outside kitchen. Its main purpose now however is storage of disused things; there are old mattresses, tools and bicycle parts in it and evidence from droppings that chickens sometimes sleep here. When dung is collected, it is left here to dry before being used on the outdoor fireplace. Next to this workshop-cum-stable is a toilet. It only has a half door leaving the upper body of the user visible. A wire fence separates the "garden" space and the main homestead space. Then there is outdoor fireplace and about 3 metres from this, a place for sawing wood.

Picture A.3: The garden, showing bottles, paraffin stoves and other waste.

The kitchen faces away from the garden. Makhulu, who is the head of this household, always sits on the left side, not far from the fireplace where when she is not making mats on her weaving frame, she sits or lays down by the fireplace. Moving clockwise from Makhulu's place, there are empty basins on the floor, a half-filled bag of maize and a big black four-plate stove. Directly opposite the door is a table draped with a plastic cover on top of which are a TV, buckets of water, pots, coffee tins, canisters and other kitchen ware. Frequently, one will also see a cell phone being

[37] Also known as *umombolo.*

charged since directly above the table, on the wall, is a compact ready board and sockets for electrical appliances. Also above the table on the wall, is a television signal receiver. In front of the table on the floor are 2 big 3 legged pots. Continuing clockwise; against the wall besides the table is a 100 litre blue barrel in which water is poured every evening. This water is then heated as bath water the next morning. Then there are pails side by side or stacked together depending on whether or not they have water in them. Most of the pails are 10 litres and 5 litres. This back-end on which the table and stove are set against is called the *entla* – the back of the room. Next, there are three benches almost opposite Makhulu's place and finally the door. In the centre of the floor is the fireplace. Usually, an old three legged pot with a big whole at the bottom marks the fireplace and is used as the 'three stones' for balancing pots. A tripod is put on top of the old pot.

Picture A.4: The *entla*[38], showing a four-plate shove, the fireplace and the table on which kitchen ware and television are set up on

This household has a few surprises for me. When I first came, it looked and was classified as a relatively poor household because they depend on government grants and have no livestock but many children. But being here, there are other things to take into consideration. There is a washing machine, a microwave, a video game console and accompanying video games, a DVD player and I count four broken television sets and two broken DVD players. And later I discover that they have a maid who comes in every week day. These signify a well-to-do household as far as this village is concerned. Other things however are still indicative of poverty. The children's clothes look old, the beds are sinking and breaking and the beddings are old. The situation should not contradict the initial categorisation of the household as poor because in many ways it is a poor household. Rather it shows two issues. First, is the transient poverty that many households find themselves in. Makhulu and *Makoti* support this observation when they

[38] In traditional Xhosa architecture, the entla is associated with juniority, the hearth, ancestors and women. The association with the hearth and the woman is maintained here in a modern setting with the stove position

frequent refer to better days and the current dark days during our discussions. For example, I asked Makhulu where her son (*Makoti*'s husband) was because I had planned to observe a family with a man and wife;

Makhulu: *O! Mntwanam* [my child M.N.M], *you just missed him.*

When we said yes you could come, we thought he would be here but he just got a phone call to go and report for work. He was without work for a year. So he went.

Magi; *Yes, I met him once when I was here. He was just going out as I entered. How long was he sitting here (i.e. unemployed)?*

She counts the months and it turns out he was unemployed for twenty months.

Makhulu; *He has started work, things will be better again!*

Later on, I asked how they got all the electrical equipment they have;

Makhulu*; Oh when my son was working, things were ok. But when he did not work, we suffered. I had to do everything with my pension, buy the food,* [buy things for M.N.M] *the school children, it was bad. Hayi, Mntwanam* [my child, M.N.M], *things were bad. But now he has a job, he can send money and things will be better again. He was just sitting here for months!*

Magi; *So he bought everything here? The fridge, the stove…*

Makhulu*; He is the one who takes care of us, who buys the things you see! Everything!*

Picture A.5: Teenage grandchildren of Makhulu help her with mat weaving

The current income of the household remains mainly from the old age pension but will soon change as remittances are sent to the family again. There is also child grant for two children. Makhulu also makes mats for sale. A mat sells for R50 to R100 depending on size but most people prefer the small size that costs R50. In the time I am there, she completes one mat with the help of her grandchildren; the male grandchildren string the frame for her while the female grandchildren take turns to help with the actual mat making. It takes them an average of 2.5 days to finish a mat. However, orders for mats are irregular.

Time spent at Makhulu's homestead

Day 1

- 12:38: Makhulu and a woman they call Auntie with a child of two years welcome me and I sit in the kitchen on a stool on the men's side. The women's side is almost full. The TV is on, as has always been the case each time I come to this homestead (I have been here three times before) but no one is paying attention to the program. There is no fire as is usually the case in Tsilitwa homes at this time of the day *i.e.*, on a warm midmorning to afternoon and when schoolchildren have left for school. A contrast to Cutwini homesteads. Makhulu sends the two year old to call *Makoti* who is having a bath, supplementing the errand by a shout to *Makoti* that the guest has arrived – just in case the enthusiastic toddler doesn't call her.
- 12:54: *Makoti* comes in, greets me and says she hasn't had a bath yet but was preparing to have one. She goes off to have her bath and I sit and chat with Makhulu who wants to know whether we have cows in Malawi? Are they good ones? Do they have long horns? What about other livestock? Chickens? Are people wealthy (how can they be poorer than in this village?) Are many young people dying like here (She doesn't ask, but I tell her about HIV/AIDS in Malawi anyway), how much *lobola* do we charge (my response that many tribes, like my mothers do not charge any *lobola* shocks her. More shocking to her is the idea that the woman can take her husband and live with him in her home village). *Makoti* tells me Auntie, is her other daughter who lives elsewhere and comes here everyday for company.
- 13:28: A male visitor comes in with a stick in his hands[39]. I have moved to the women's side by this time because Auntie is working around the homestead and there is space. Makhulu and the visitor chat for some time and he says he is going to the fields to collect cattle. He looks very poor and I later learn he is Gugu's brother. I leave the room at 13:30 to help Aunt with her work. We collect twigs in the garden. Some of the ones I collected are removed because "*they are wrong*" and cannot be burnt for cultural reasons. We take the twigs and add them to the fire which is burning a combination of dung and twigs. There is a pot of *umngqusho* (samp and beans) on it and Auntie brings a pot which has big chunks of frozen meat it in. We also get some dung from the workshop/stable hut. The dung is very dry and surprisingly difficult, rather cumbersome to break. It feels like a *Papier Marché* and I seem to only break small useless pieces so I resort to break it with a short axe. Auntie discreetly smiles, amused at my incompetence.
- 13:45: I return to the kitchen and the visitor is gone. We sit around chatting. Makhulu repeats everything I say to *Makoti* whenever she returns. I am a bit

[39] Men in Tsilitwa often walk around with a *knobkerrie* (stick) in their hands, which is something one rarely sees in Cutwini. The sticks signify they are 'real' men. Uncircumcised men must not carry such a stick because they are still boys as long as they remained uncircumcised - no matter what the age is.

confused because Auntie, who is supposed to be Makhulu's daughter and thus in terms of work allocations, would do less work than *Makoti*. Here she is doing most of the work while *Makoti* sits with us and chats. This seems to be different from other situations I encounter. I try to press on the relationship with Makhulu "*So after your son, then came Auntie?*" the answer is rather vague so after trying a few more angles, I let it pass – for now.

- 14:12: The youngest of *Makoti*'s sons who is eight years old, is nicknamed Pizza (because that is what he eats when they go on a special trip to Umtata and before, when they went to see his father in the city), arrives from school. Soon after, we are served with food- *umngqusho* and beef. It is tasty but there is too much food and at 15:04 I finally give up and say my thanks
- 14:30: Makhulu goes out and returns at about 15:18, coming back with meat wrapped in a catalogue paper[40]. She also has some *incema* (sedge Scientific name *Juncus Kraussii*) for weaving mats. She sits outside carefully selecting the grass by size and quality, and removing the calyx carefully laying them carefully by her side. She shows me the frame for the making the mat which she had explained earlier to me. I help with removing the calyx but leaving the grading to her since I am unaware of what quality criteria she is using. She very keenly explains a lot of things to me and we chat about the differences between the Malawian and the South African culture, poverty, politics and death and disease.
- 16:25: *Makoti* brings out a keyboard which I had seen earlier in one of the boy's bedroom and hand held controls for a video game, sets it up and starts playing the video game.
- 16:30: One of the girls who returned from the school has to go to the river and asks me if I want to go. I am told to take the 10 litre bucket. I protest, saying that I know that *"women my age carry a 20 litre bucket"* but I am told this is how they do it in this household because the river is far. When the taps are working, they sometimes take the 20 litre but often use the 10 litres because it is very near and they can go several times. The daughter, Nosi, who goes with me, takes two 5 litre pails
- 16:37: We walk for seven minutes to the first of the water points. Then we move from one pool to another- there is either too little water or too many people waiting for water to fill a small pool so that they can start collecting it. The water was closed off this week because of the electricity bill since the pump uses electricity. People here refuse to pay R50 per household every few months to sort out the bills and so water is often cut off. The pool water, fed by one river is full of algae and rather dirty. We visit three pools before returning to the first water point where there is now more adequate water and only a few people before us (many others were pool-hopping). As we wait and talk, I ask each of the young persons at the pool who they are, their ages and what they do. The oldest girl (apart from me) was 18 years old and the youngest was 6 years old. There is also a lot of flirting between the young girls and boys. One particularly aggressive 14 year old girl 'borrows' a phone from a 15

[40] When a cow is slaughtered, the homestead slaughtering it will invite neighbours and friends *"to taste"*. The neighbours and friends will leave with a portion of fresh meat (occasionally roast meat) to *"take home to the children"*. This is a very important aspect of village life in both Cutwini and Tsilitwa. It is inconceivable for a neighbour not to share such meat. The sharing itself is valued as it signals the strength of ties and often provokes much discussion *i.e.*, who was invited, which households have been sent parcels of the meat and which parts, the quality of the meat and why it has become available *e.g.*, whether it died on its own or whether and why it was slaughtered.

year old boy. On our way back, she discusses the flirting with a friend (a 13 year old girl) who was also flirting with the same guy. They calmly agree that the older girl should pursue the boy. She has kept his phone to make sure they speak again when he wants the phone back, which causes much laughter in the group.
- 17:41: I arrive home (I am surprised it has taken us over an hour to collect 20 litres of water between the two of us) and the family's young men are stringing the weaving frame for Makhulu, who is still sorting the grass at a slower, restful pace. She has sprinkled some of the grass with water and wrapped it in newspapers to make it more pliable. As we sit chatting in the kitchen, young girls take turns to go behind the bedroom and collect water from the rain tank (which is now storing water from wells too) in 20 litre buckets and pouring it in 100 litre barrels in the kitchen. It is in preparation for tomorrow- their bath water. One of the older boys comes in with a handful of sawn wood pieces for the fire, Makhulu thanks him and he goes out.
- 18:02: A fire is made (for the first time since I arrived) and after a while water is set on the fire on a Size 2 (6 litres) cast iron three-legged pot. Makhulu sends the boy who brought the wood to go and get *imphepo* (*Helichrysum* species or *Kooigoed* in Afrikaans. English name: Everlasting). He feels he is coming down with a cold.
- 18:10: He brings a bunch of dried *impempho* which he puts in the water. Nosi is leafing through her note books and I ask to look at for some. She has many good grades for maths and commerce but bad grades for English. The English teacher has also marked several this as right even though they are wrong. I am surprised that they have some music lessons even though they have no instruments.

Pizza is asked to take one of the twigs from the small wood bundle I had brought in earlier and throw them away. "*It is never burnt in the house, you will forget [and burn it*]" I am surprised at Makhulu's passionate reprimand and ask her why *Makoti* didn't know this because she let me collect this type of wood "*It has bad smoke, it finishes*[41] *the homestead*". I tell Makhulu that I had used it in the afternoon and had specifically asked because there were other twigs I had been told to leave out. "*No Magi, you were making a fire outside* [so you can use these species there M.N.M]. *This can be burnt outside but not inside. It's Mbelebele. It's bad very bad",* shaking her head to emphasise the point. I am a bit surprised by the passion with which the woods are guarded and separated in 'burnable and un-burnable woods'.

- 18:17: The fire is raging and the water quickly boils and the Bhuti gets a 5 litre pail fills it with the hot water and takes a cupful of cold water in the other hand and goes out to another room to "*futha"* the steam. When I ask him what for, he says – pointing to he sides, he has *amahlaba* (sharp side pains in the chest) and *umkhuhlane.*
- 18:43: Pa (Makoti's husband) calls and speaks first to his wife, then the youngest son and then asks for his oldest who is away, treating his *amahlaba*. The phone is so loud I can hear everything. He then speaks to Nosi, all his nieces and then his mom before once again speaking to his wife. Mostly, he asks after their health, about school and tells them he misses them. I am impressed because I have encountered so many children with absent fathers whose children cannot remember the last time they called or visited. This father has been away for three days only. I ask Makhulu if he

[41] The term used in this sense means 'to kill off'. The belief is that using this wood inside a house brings about bad luck and people die from its esoteric effects.

calls often; "*every day. He wants to speak to everyone before he sleeps. Now he is missing the little one because she is away at her mother's. He asked me to give her his greetings in the morning"*
- 18:53: Makhulu is complaining that electricity units do not take a long time (to be used up) and that electricity is very expensive and they are always buying it.
- 19:01: Bhuti has finished *ukufutha* and the moment he walks in the kitchen, *Makoti* texts and in less than a minute, Pa calls to speak to his son, he has already been told by Makhulu that he is ill;

> Pa: *Did you futha?,*
> Bhuti: *yes*
> Pa*: Is it very cold there,*
> Bhuti: *Yes it is*
> Pa: *Get lots of blankets,*
> Son: *Yes I will,*
> Pa: *Tomorrow get gum tree and make some medicine*
> Bhuti: *Ok Sleep well, Pa*
> Pa: *You too Bye Bye my child*

Makhulu, *Makoti*, her son and I eat home baked bread. The rest say they are still full from the late lunch and do not eat anything for supper. We chat for a while and then I am to tired and start dozing off.

- 20:20: As if on cue at 20:00, we have two young men to visit and the other children make space for them- it is time to start watching Generations™, I keep drifting in and out of sleep during the next 30 minutes. I am woken up after Generations™ which ends just before 20:30, and Makhulu, Nosi and I go to bed. I sleep with Nosi on the same bed. At first I am surprised because she sleeps with all her clothes on. Soon I realise it is freezing cold and I too go and wear an extra layer of clothes but can still feel the cold. We sleep at 20:52. Somewhere after 10 pm, Siphelele, joins us, sleeping on the same bed with Makhulu. The next morning when I check, temperatures had fallen below freezing point.

Day 2
- 6:30 a.m.: We wake up and Nosi immediately goes outside. Makhulu and I are chatting as we get dressed. The air is quite stale and there is condensation on the corrugated iron sheets which drips down on us, on the blankets and on the floor.
- 6:47 a.m: We go to the kitchen. The TV is off which initially surprises me but I soon realise there is no electricity; "*we don't want to buy it in the village because it is too expensive here*" Makhulu says. I ask how much they spend a week and they tell me R20 takes them a week, then she starts counting; "*if I buy today (Friday morning) then I will use it till Monday. From Mzamo, it's R28 till Monday because we use TV, microwave, fridge, washing machine"*[42]. I tell them they will have to spend more

[42] The cost of units of electricity varies considerably, with Mzamo's shop being the most expensive. Boxer supermarket in town is the cheapest. Also many people are not aware how much they spend on electricity a month because several family members will buy electricity depending on the meter reading. Many buy electricity in units of R10 and R20 but as already said, the actual amount bought varies depending on where it has been bought

because I know that it is only Mzamo who has units this week and Mzamo shop is much more expensive than Mankhentsi's shop.

> Magi: *If you see someone going to town, just send them*
> Makhulu: *And wait till the evening? We will be lonely without the TV.*
> Magi: *May be they can sms the meter number*"

She does not seem to have understood how this will work, but it strikes me in this discussion how electricity and TV have become indispensable parts of daily life here. Despite the fact that we are going to be four adults and a toddler in the morning, joined by several teenagers in the afternoon, Makhulu still feels it will be lonely and too quite. In interviews, the reply "*I like TV most because then I am not lonely*" is also a common response in people's rating of the electrical appliances.

- 7:00 a.m.: The fire is raging on and the water is hot. School going children start taking hot water; first Nosi gets hers and goes to wash in the bedroom, then the rest take their water and the younger girls Siphelele and Nomazizi wash in the kitchen. One of them brings in a briefcase with her cosmetics; lotions, creams, soaps, deodorant and a bit of underwear. Here modern life, advertised on television and in leaflets distributed on streets in town, is never too far from traditional life. They then iron their uniforms, help with mat making for a few minutes and have their tea and bread before heading off for school.
- 7:50 a.m.: All children have gone off to school and it becomes rather quite. I ask *Makoti* about her husband and she says he was without a job for over year and they were suffering a lot, depending on Makhulu's pension only. When I ask her about *amagoqo*, she says she also has a similar custom where she comes from in Comfivaba – She is not a Hlubi Xhosa but a Xhosa from the Thembu group.
- 8:10 a.m.: *Makoti* goes outside and makes dung fire there for bath water
- 8:17 a.m.: *Makoti* sprinkles water on the floor and starts sweeping. Sprinkling the floor with water will reduce the amount of dust that will be agitated by the sweeping.
- 9:06 a.m.: Auntie comes in with her daughter and immediately starts helping around. *Makoti* tells her water is already heating outside. She helps to arrange things in the kitchen then she goes outside to sweep around the courtyard.
- 9:38 Auntie is sent out to buy electricity. She has been given R20 to buy it.
- 10:02 a.m.: I am called by the Councillor who has arranged an *impromptu* meeting to discuss developments with the VDF.
- 13:07: I am back home and school children are back from school[43]. Nosi changes into shorts and we go to get water. The TV is on and there is a soap opera playing and the four-plate stove is also on, I cannot tell what they are cooking. Auntie is still working around the home. Nosi gets busy with other things so I end up talking to Makhulu while I wait for Nosi to get ready for a water collection trip. As often, we end up discussing marriage and death.
- 13:20: Two girls take over the mat making as Makhulu wraps strips from candy and crisps packets around the sedges for her design. I take a picture of the mat and say I have to take more pictures of the whole family together on Saturday so that we can

[43] On Friday, many government departments close at 12 midday. In Tsilitwa, the clinic could close as early as 10:30 a.m. on a Friday

include Auntie. Siphelele says she will not be here. When I ask her why, she says *"it's because she doesn't work on Saturdays"*. I ask her a few more question and it is then clear that Auntie is a domestic helper here. Many homes will call domestic helpers Auntie out of respect. This is why Makhulu had been vague about the relationship. The fact that Auntie is a paid domestic help explains why her work load is more than that of Makoti.

- 13:36: *Makoti* is sitting down for a rest, auntie has finished cooking and is taking out and arranging plates we used last night so that she can wash them. We then sit down and eat, watching TV but barely paying attention. I go outside, collect kindling and dung and set a pot of water for me to bath later.
- 15:37: We finally go to collect water at the river, leaving *Makoti* and some of the kids playing TV games. There are 9 girls there waiting for water and the oldest, by far, is 15 years old. The youngest is 7 years old
- 16:10: We are back at home. Some of the kids are still playing video games while *Makoti* is washing clothes and Makhulu is resting. I go to look at my bath water but the pot falls over and puts out the fire. I have to start over again. It takes me about 10 minutes and my throat is dry from blowing the fire continuously. *Makoti* finishes washing at 16:27.
- 16:30: A visitor comes in and they chat with Makhulu until 16:54. We then sit down and chat in the kitchen. The boys are away *ukuvaksh*a and for us women, the day is spent in the kitchen or just outside, chatting and doing odd jobs.
- 18:15: Makhulu asks the girls to switch on lights for all huts in the homestead. This is something that I also noted in Cutwini – that people will light up all rooms, even the ones that are not being used. It is partly meant to deter any intruders, who cannot be sure whether or not there are individuals in a particular room.
- 18:42: Children bring chicken for Makhulu because she does not eat red meat, which the rest of us will eat. After eating it, starts discussing *eSuthwini* (circumcision hut/ceremony) and the plans for her grandson to go there next year with me and her grandson. The initial part of the discussion centres on what will be needed (cows, goats, sheep for celebrations) and who will have to be informed. This then triggers a discussion about 'reciprocity', in reply to the grandson's questions about the number of sheep and who will come. Makhulu is narrating for me and Bhuti the importance and intricacies of *ukugidilana* (dancing/partying or 'ceremonising' for each other). She tells us many cases; what she gave, what she received on a reciprocal occasion, the to-and-fro of gift giving seems endless, spanning years and occasions, from sorrowful ones, to joyful once to petty ones. Sheep, dresses, baskets, food and "*being the first one when you hear there is something* [need for assistance M.N.M]". She mainly explains how this strengthens relationships and how not giving back during another family's *umgidi* can ruin years and even generations of friendship and interdependence. She keeps interspacing her narrative with appeals for Bhuti not to forget these people even when she is gone (*i.e.*, the network of friends when she dies). The fact that she remembers who came to which evens over 20 years ago and what they brought shows how important it is to keep track of the networks and how seriously they are taken.

When the son goes out, I ask her to clarify about the relationships of the young men in the home, to her and to each other. "*The one who has just gone out is my grandchild. I have raised him since he was very small because both his parents were always sickly. Then they died within a year of each other and he has lived*

permanently with me since he was two years old. I am so proud that he will be writing his matric now…" This is a familiar story for grandmothers. She goes on to explain the rest of her grandchildren and where their parents are. Her son who is the 'owner' of this homestead has two children while the rest are from other children who are either working in cities or have died.
- 20:00: Once again, two young men come in to watch the TV show, Generations™. We watch it and go to bed soon after. Before sleeping, Makhulu gives Nomazizi a brush and she massages her back with it. We left the males to continue to watch TV and well after midnight, I can hear them open and close doors.

Day 3
I wake up at 5:30 a.m. but no one is awake so I remain in bed, Makhulu wakes up just after 6:30 a.m. and asks why I am awake. At 6:55 a.m. Makhulu and I go to the kitchen, leaving the young girls asleep.

- 7:20 a.m.: Young girls and boys start drifting into the kitchen and by 7:30 a.m. all are in except *Makoti*. Makhulu asks where she is and is told she is still sleeping.
- 8:27: a.m.: *Makoti* comes in and a few moments later, she puts a tea pot on the electric stove to boil water for tea.
- 9:10 a.m.: A woman in her late 50s- Lefa, comes to borrow a wheel barrow of sand and give back another in two weeks or R50. Makhulu seems reluctant. Lefa presses on then lets go and starts chatting about other things.

I briefly go to the bedroom, and passing Bhuti's bedroom, I realise the boys are in bed, with the TV set on the bed on top of them, watching DVDs.
- 9:17 a.m.: I return to the kitchen. Tea is ready as is always the case Pizza is the first to get breakfast, then the guest who asks where the milk is. Makhulu says that "*there is none, days are dark*". I am next to be served and as usual, I attract much curiosity; *how can you drink tea without sugar, Are you ill?* I am given six lemons to put some in my tea and to take the rest home. There are more negotiations about the sand, updates about who is ill, who has died and funeral dates. The discussion about Lindiwe is interesting in its avoidance subtext;

> Lefa: *She's so ill, she has been ill for a long time.*
> Makhulu: *What illness is it?*
> Lefa: *I don't know, it's the illness they're* [people in this village M.N.M] *ill with.*
> Makhulu: *I don't know either but I'm afraid for her, today something is wrong, tomorrow its another thing then another, another.*

- 9:25 a.m.: Lefa reminds Makhulu that she is here for a wheel barrow of sand. Lefa says she will use the sand for building a stand for her rain water harvesting tank. She says she is fed up with constant water shortages. Makhulu calls her son and tells him to give Lefa a wheel barrow of sand and she goes out with him.

I leave to go and wash and return at 10:20 because Nomazizi insisted on braiding my hair. Every one else was watching children play video games.

- 10:27 a.m.: A young girl comes to discuss with Siphelele about going to the fields to collect maize. I ask if it is their field*; "No the Bhulu (boers/Afrikaners[44]) ploughed it, we just go and get a little"*.
- 11:03 a.m.: In the bedroom, the DVD/TV is still on, laying on bed covers but there is no one in the room. I go back to the kitchen. We sit around doing nothing so I start walking around, taking in more of the surroundings. They fear I am getting lonely so I return to sitting around

Siphelele is helping Makhulu with mat. It is in the final phases now. *Makoti* is basking in the sun.
- 11:14 a.m.: *Makoti* moves from the sun and starts scrapping the bottom of a pot with a spoon, feeding the removed bits to dogs, who have to fight chickens and goats for it. I watch children from various household - mostly girls - walk past with *vascoms* of clothes to wash in the river. Some of the boys at home have friends who came over to visit and are playing cards.

Makoti makes a fire outside and puts a pot of water on it. I start walking around again, taking pictures. Siphelele tells me they have peaches and *tolofiya* (prickly pear) which she wants to show me so we go in the garden (Nomazizi accompanies us) where she starts showing me the plants there. It is obvious she is proud of her deceased grandfather who planted these trees; peaches, grapes, prickly pear, plums and lemon. With the exception of the lemons and the prickly pear, most of the trees look too old to bear fruit. I ask Siphelele about *uMhlonyane* [which I have heard cited as medicine for respiratory infections) and she shows it to me, crushing it and rubbing it together before presenting it to my nose to smell it. She also shows me various medicinal plants including *ifiya* and *intelezi* (traditional medicines). I ask about the waist strings that all the girls in the home have but the question is tactfully avoided, just as Makhulu had avoided it earlier. She explains the spirit bottles (they were discarded in the garden after a ceremony to take of mourning clothes which took place in 2008*),* and she explains useful plants such as sedge *(juncus kraussii)* called *incema* in Xhosa *liqwili (Alepidea amatymbica)* and *liyeli* (Scientific name not known). *Liyeli* is strung around children's necks to prevent illness. We also go to a pond of stagnant water within the premises where they collect water for washing clothes.

We return to the home soon after 12 midday, I have taken some of the plants to ask Makhulu about their uses. She confirms Siphelele's descriptions, occasionally adding a few more uses to some of them. I also ask about a tuber I had seen in the home – its *libatheka* for protection against witchcraft.

- 12: 07: *Makoti* puts water on fire and then adds samp. Later on at 12:32 she adds beans to the pot.
- 12:12: Siphelele and Nomazizi go and collect dung, they change into their night dresses and start plastering, asking me if I know how. Unfortunately I do not have the right clothes to try it. Collecting the dung about 300 meters from the homestead took about 15 minutes.
- 12:58 Nomazizi asks one of the boys to help her collect water, at first he seems like he will accept and then asks why she is asking him to do her job and why she did not have enough water before starting to plaster. Eventually, he refuses. The boys finish

[44] In truth, the field has been ploughed by the government under the ASGISA program. This is the week that the government has started harvesting and it seems some homesteads want to take advantage

playing cards and go to the room with the TV on the bed. The radio, which has been playing since about 9 a.m. is still on

- 13:07: The girls finish plastering the floor and go to change their clothes as I start saying good bye.
- 13:35: I finally leave, escorted by Siphelele and Nomazizi, until the post office which is about 400 metres from their home.

Gugu's homestead

Gugu works at the school as a cleaner and lives with her two grown up sons Omdala and Omncinci and her 13 year old daughter Ntombazana. Her three other children, a young woman and two young men live elsewhere. Gugu has raised her children, who have three fathers between them, alone and constantly talks about how the absence of the fathers affects her personally.

Her homestead comprises of a rectangular flat on the edge which has three rooms, one occupied by two students who rent it and pay R50 per student per month for the room. Omdala and Omcinci occupy the two other rooms respectively. After that is a 'modern' house that is nearly complete. It has an in-built kitchen, a lounge and a bedroom. She occasionally sleeps here with Ntombazana but does not like it because she prefers the traditional *rondavel* for cultural, aesthetic and practical reasons. As to the practical reasons, the *rondavel* is warmer with its thatching compared to the modern flat which uses corrugated iron sheets for roofing. After the *rondavel*, just behind it is a small square hut which sometimes acts as a kitchen but also serves as a chicken coop.

The yard is generally bare although there are some bricks, wood and bits of rubbish on the front part. The fence is incomplete in some places. Beyond the front fence is a garden and as is often the case, the toilet is located there.

Time spent at Gugu's homestead

Day 1

I arrive at 16:40 Put my bags in the corner and join the chatting in front of the TV. The first few programs are American talk shows that no one is really watching.

Today there are women's day discussions on TV and there is a discussion on TV focussing on violence against women.

- 18:30: The program Asikhulume™ (meaning Lets talk) starts with particularly depressing [for me] statistics on violence against women; rape is said to be occurring at the rate of 99 incidents per day said to be the highest of any country not at war. They also discuss *ukuthwala*[45] in Lusikisiki and many others issues related to violence against women. The young girl, Ntombazana is washing a pot and Gugu is peeling a pumpkin. I am told they normally do not eat dinner but are making dinner because of me.
- 18:47: Gugu gives instructs her younger son- Omncinci to chop some wood plants and also explains my visit. Her son comes in and greets me. He seems very quite and shy that its tough to imagine he is on trial for murder.

[45] Forced marriages called *ukuthwala* were originally a trick for a woman to force parents to allow her to get married to her boyfriend and involved a staged kidnapping. These days, girls as young as 15 years old are forced into marriages, often by parents or other parental figures who then receive cash or benefit in other ways.

- 18:48: Gugu cuts another pumpkin. She feels the first one is not good enough, she is going out of her way despite my protests, so remembering Zoleka's advice, I go along with it. Ntombazana is mixing flour, sugar, yeast and water for steamed bread. They say they will make steamed bread for breakfast. They will make it tomorrow not today but will leave the dough to proof overnight.
- 18:49: We go to the outside kitchen or *mkhukhu*[46]. There is a small window but it is closed. The kitchen also acts as a chicken coop as per the evidence of chicken droppings. We put some pumpkin in a pot and on the fire, sit around, attending the fire but I can barely breathe. It is too smoky and we return to the main *rondavel* at 19:05.
- 19:10: Gugu prepares her snuff and sits down and starts snuffing; snuff and blow, snuff and blow which she blows on her scarf and wrap. Ntombazana is kneading dough for the bread. I ask about the young men and I am told they are out (of the homestead).
- 19:29: Ntomabazana finishes kneading the dough and Gugu tells her to cover it with another basin. She is just finishing snuffing herself. She says, contradicting herself - the snuff helps with headaches but she doesn't think it helps.
- 19:39: The pumpkin is done and Gugu mixes a few handfuls of flour for 3-4 minutes and lets it simmer while Ntombazana sets plates. At 19:44 we start shelling maize for *Umgqusho* tomorrow. Omncinci keeps coming in and out of the kitchen, my guess is that he is checking if food is ready. He does not talk to anyone
- 20:12: Omncinci finally brings the pot with *Umqa* from the *mkhuku* and Gugu mashes it a bit more before dishing out. It has taken just over an hour to cook. I am given a very big portion despite my protests that it is too much. We eat and finish just after 20:30. The elder son, Omdala walks in just as we finish eating. He is drunk and starts talking to me for what feels like a long time, asking me questions, first to prove I can speak Xhosa and then in English, which I have problems understanding because he can't speak it well. He leaves at 21:05. Gugu puts water in the *Vascom* and starts washing herself.
- 21:10: Son wants to come in for water they are about to give him a cup of water when he says he wants to bath. An argument ensues as Gugu tries to explain that there isn't enough water in the house. He starts opening the door and Gugu gets angry because she is still washing and he leaves after much arguing. Gugu finishes bathing at 21:29 and asks her daughter to rub "*rubbing stuff*[47]" on her back. She tells me she has chronic upper back pain.
- 22:17: We sleep but the TV is still on. I ask about that but I am told its ok, they will leave it on as they sleep - for a while I wake up and 22:30 after a short doze and switch off the TV and return to bed.

Day 2

- 6:55 a.m.: Gugu wakes up and complains that she has *umkhuhlane*, five minutes later, her daughter wakes up, lingers in bed for a while then folds her blankets at 7:07 She then takes off to go to the river. Gugu asks me not to go. It is a holiday today because yesterday was women's day but it was a Sunday.

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[46] A kitchen that is not a *rondavel* but is not integrated in the main house is called *mkhuku* or if referred to locatively, *emkhukweni* – at/in the kitchen. Such a hit will normally be made from iron sheets but sometimes as in Gugu's case, from mud bricks.

[47] Methyl Salylicate used widely in Cutwini and Tsilitwa for back pain

- 7:22 a.m.: Ntombazana returns and I am surprised it took her so long. When she says she is going back, I accompany her. The river which is a small trickle from just under the top surface has buckets and one has to wait a couple of minutes to fill a bucket. There is a blue barrel catching water under the trickle but Ntombazana takes it off and puts her pail in its place. There is one other pail on the ground, waiting for its turn. She puts my bucket besides it and we return home. This is why they didn't want me to accompany her; because she would put a pail under the stream and go and chat or return home.
- 7:22 a.m.: Back at home, Gugu has made a fire in the *mkhukhu* and has has filled a pot with water and padded the bottom with dried maize stalks. We talk around the homestead while inside the *rondavel*, the TV is on but no one was particularly watching it.
- 8:05 a.m.: The pot is put on fire and maize husks are put on top of the stalks. Gugu divides the dough in four balls, each about 10 cm in diameter and carefully arranges them on top of the stalks. This way the bread will steam quickly she says, comparing with the method when the entire dough is put in a plastic bag and steamed. She then puts the pot on the fire. We go to the kitchen and she starts snuffing again. I can hear her struggling with breathing and jokingly tell her she is addicted. She says she must be and continues snuffing. I note that there are many snuff containers on the floor and ask her how many she uses a week. She says about 9 and she buys each for R4, which means she spent R36 per week for snuff.
- 8:33 a.m.: Omncinci comes in with the basin used for kneading which had been left outside he then goes outside and at 8:39 a.m. starts chopping wood and continues for about 10 minutes. Gugu keeps talking about how much Omncinci helps her with household work.
- 8:47 a.m.: Omdala comes out of his room while Omncinci continues to tend the fire, then scraps left over food back into pots, separating the edibles and the non-edibles, at 9:00 a.m., he takes the pots outside.
- 09:09 a.m.: Ntombazana comes back with a second pail of the day. She is complaining of back ache and Gugu rubs her back for a few minutes before she goes out again.
- 9:37 a.m.: Omncinci is helping with looking after the cooking pot. Omdala is making medicine by shaving a red wood on a stone. I ask him what it is for and he says he wants to *phalaza* (induce vomiting). He has a hang over and the medicine he is using is called *iXonya* (*Khiphofia Uvaria*). Ntombazana is washing her clothes. I go to the guesthouse to get some onions and wash clothes and return at 10:40 a.m. to find Ntombazaba running errands.
- 10:51 a.m.: Omncinci brings up a pot of steamed bread and after waiting a few minutes to cool it, he starts cutting it up while Gugu is sweeping the room. Omdala has gone off to drink and *vakasha.*
- 11:17 a.m.: We have breakfast, tea and steamed bread, which unfortunately I fail to eat much but eat a slice. We sit around doing nothing for a while.

Just before 12, Omdala comes and eats, asks me many questions again, most of which he asked last night but cannot recall because he was drunk.
- 12:18 p.m.: Ntombazana brings a suitcase of clothes which were on the washing line and starts sorting and packing them away. Omdala leaves at 12:30. We are still chatting.

- 13:43: I am hungry and my sugar is low. I go to the guesthouse, eat and shower and return at 15:21 Gugu has just finished bathing. They give my bath water to Ntombazana since I have already showered
- 15:37: Gugu and I go to the neighbours with the maize we shelled last night and graded in the morning. She wants to ask for the use of the pestle and motor but the old lady cannot find it. The traditional, artisan made wooden pestle and motor has almost disappeared here. At most people will have a wooden pestle. Mostly though, they put together metals such as the discarded shaft of a car and a pipe with a plate welded at the bottom and this becomes the pestle and motor. Many households don't have any so there is a lot of requesting use from neighbours and friends. Its just one of the male tasks and skills that I have noted disappeared.
- 16:30: We return home and sit around, Gugu wants to asks Omncinci to split firewood but realises he has gone to *Vakasha*. She goes and splits the wood and makes the fire. We are deciding what to eat. Finally she sets a pot of beans on the fire.
- 16:47: I am alternating my time between looking after the fire and beans and starring at the TV with Gugu and Ntombazana. Soon Ntombazana says she is going to Ntombifuthi's house (one of her friends) to bake. Their 'life orientation' teacher has asked that each female student takes a day to bake cakes, which will then be tasted by the whole class. This seems to be an exercise that goes on for the whole month if not more. I am amused because this is the class where they learn about the importance of gender equality although my chats with student has revealed many shocking patriarchal views; like that HIV/AIDS affects men less because they are the more superior gender!
- 17:30: Gugu is going away and asks me to look after the beans. The TV is on and I am watching it vaguely. Ntombazana is still away baking
- 17:55: Ntombazana is back – she did not bake because they told her she has to buy the electricity with which to bake. She flips through channels before returning to the talk shows. I ask her if Gugu has returned from her social visit she says she has proceeded to go and get water.
- 18:30: We all sit around watching the soap Isidingo and talking as we wait for the beans to cook.
- 19:00: The beans are almost done and they have been switched to the hot plate so that the fireplace in the *mkhukhu* has be used for rice. There is rice on the fire. Gugu tells me the target is to eat while watching Generations™ (the popular soap) at 8pm.
- 20:00: Generations™ is now on and we all sit around watching it. The beans are not yet done and neither, it seems is the rice. For sometime, rice and beans are forgotten as we all divert our attention to Generations™.
- 21:12: We finally eat and go to sleep soon after. Gugu and Ntombazana exagerratedly tuck me in. Completely wrapping me around in blankets. I feel like an Egyptian mummy, only alive.

Day 3
- 6:05 a.m.: We are awake immediately since today is a work day and start preparing breakfast and for the day. Tea from yesterday is heated up and bread is served.
- 7:10 a.m.: Just as we start to eat, Pumza – a girl from one of the neighbour's house comes in to borrow a sieve for sieving beer. I ask why she isn't getting ready for school. "*She finished but did not pass. Actually, I am not sure if she wrote her exams*

*(*Ntombazana: *She did mom but failed) Now she has a baby and sits at home. There are no jobs"*. Ntombazana leaves soon after 7:30 a.m.
- 8:10 a.m.: We start off, me for the guesthouse and Gugu for school. Gugu is late because school starts at 7:45 but she often cleans the classes the day before.
- 12:17 p.m.: I have been shadowing Gugu at her work place at school, helping her and watching her. For a large part of the morning, she wraps herself in a blanket and chats with women that come and sell candy at the school and chases cows and goats that enter the school compound for grass. I leave her and go to work.

Ntombifuthi's homestead

Ntombifuthi is newly divorced after 8 years of separation. She has been dating a new man since February this year, got the divorce in May and in June, she moved out of her home (Where she was living with her four children and seven nieces and nephews) and moved to her new boyfriend's home. They are talking about a wedding soon. As I observe Ntombifuthi, at whose initial home I have slept for several days, I am struck by how her day has changed. In her home, she woke up at 5:30 a.m. and started texting and calling. On of the children brought her bath water with which she washed before they came to take it away. She would then get dressed (sometimes asking the children to iron her clothes for her) and the breakfast they had prepared and eaten before going to school. She returned from work, often 19:00 after many detours to see friends or earlier if a friend was visiting. She would head straight for the bedroom to make calls if she came in at around 19:00 or sit down to talk to guests and watch gospel music DVDs if there was a visitor around. In the bedroom, a child would bring her food while she made calls and ate. At 20:00 when she would join everyone to watch Generations™. After that she would go to sleep, waking up several times during the night to make phone calls and send text messages to friends before the telecommunications tariff went up again.

In her boyfriend's homestead, she has embraced the role of a *Makoti*; getting up earlier, doing most of the work around the homestead and cooking every meal. Despite their ages – Ntombifuthi is 41 years old and while her boyfriend is 51 years old, it appeared important that they confirmed to social expectations.

Appendix 5

Health landscape and common illnesses in Cutwini

An introduction

In this memo, I briefly discuss what I call the health landscape of Cutwini. In this discussion, I describe issues of health in terms of how the community, homesteads and individuals produce and maintain health. While the thesis is grounded in emic perspective, I discussing my own perceptions helps explain some confounding issues that a reader may notice from the narrative.

This discussion is important to the thesis as it provides a picture of how people perceive and address health issues. It also has examples of treating body pains, has as well as a specific case of treating respiratory infections which are some of the reported impacts of wood collection and use in energy literature.

Arriving in Cutwini in 2007 – Funeral weekends

I first arrived in Cutwini on a Sunday in July 2007 and after a week of exploring the village, I spent my very first Saturday at a funeral. A man, estimated to be in his mid-thirties or early-forties at most, had died, leaving behind a wife, young children and his already widowed mother. The scene at the funeral was at once laid back and brisk; women cooking several large three-legged pots at once, chatting while men roasted meat close to the *Sibhaya* (cattle byre). Later on, both men and women enter a white stripped tent for final preaching before burial.

Over the next couple of weeks of my stay, this scene repeated itself with almost the same flow, except different households. On Friday midday after working in the morning, I would borrow Zoleka's *pinifa* (women's apron or pinafore worn permanently by married women and during community work by all other women) and with my hair tied in a *doek*, join women at the homestead of the bereaved where we would collect water, bake bread in large three-legged pots over wood fire, cook rice and cabbage. We would serve the bereaved family with tea while the food was stored for the evening when mourners arrived to spend the night. On Saturday between 10 am and midday, I would join groups of women, returning to the bereaved homestead to cook rice, potato, *umngquso*, meat etc, collect water and attend the funeral. Again, women would sit around pots, chatting and working (the *Makoti* in the village did the most work) and men would roast meat on an open fire. During these chats, I always asked; who had died, how old was s/he? Had he been ill or not? For how long has s/he been ill? What had the problem been? Was the deceased male or female? The answers soon became predictable. Of about 6 funerals that I attended, only one was an older person; a 71 years old man who had died after suffering from a "*shaking liver*" for a long time. The rest were young men, estimated to be between the ages of 23 and 40 years old. All of them had had long illnesses, in most cases involving TB and/or wasting. From the symptoms and discussions I deduced that most, if not all the young deceased had been HIV positive. From the community members, few were willing to discuss the possibilities of HIV. Many indicated to me that these people had been bewitched. This has also the case in the funerals that I did not attend during these months. Later own,

soon after and months after my visit, at least three people that I knew to be HIV positive died; a young man aged 28, a young woman aged 23 years old and another woman in her late 30s, both were mothers of young children. Such occurrences paint a broad picture of a village under siege from HIV/aids. However, this may be misleading in that AIDS, although probably the most devastating in terms of fatality, is neither the only illness nor the most common.

In 2007 when I first went to Cutwini, many people questioned the very existence of HIV/AIDS. According to interviews and discussions with key informants including those that were open about being HIV positive, while discussions on HIV/AIDS were available on radio and in Lusikisiki town, the clinic had not discussed it at public meetings in the village. There had never been a government extension service to discuss details about HIV/AIDS and a few people who in 2007 disclosed their HIV status in interviews depended on going to town for all related services. There were many theories to explain why so many young people were succumbing to long illnesses and dying and most of these illnesses were believed to be as a result of witchcraft because of jealous or because a young woman or man had been bewitched by a partner she or he was cheating on.

Household interviews and health issues in Cutwini

During household interviews, I asked respondents to name the main health issues and illnesses that affected their households. In general many households reported to be in overall good health. The most common illnesses cited were coughs, bones and body pains, TB and high rates of worm infestations among children. The overall rate of TB reported in interviews is likely to be lower than the actual rate because several people reported that they had never been tested for and because there is stigma attached to TB since it is often a co-infection with HIV. Another common illness were epileptic fits or convulsions among persons of all ages, while several women were diagnosed with hypertension and/or diabetes. It must be noted that men and young women generally are not tested for hypertension and diabetes so the rates of these two illnesses are likely to be higher than reported when these untested men and women are taken into consideration. In fact from my observations, men rarely go to the clinic or hospitals unless *"seriously ill or injured"* as observed both at the hospital and clinic in Lusikisiki and as observed at the mobile clinic in Cuntwini.

Coughs were attributed to "*cold getting in the body*" or as *isifo sabantwana* (children's illnesses), but was also said not to be an illness but "*just how things all*" or "*this is how children are"*. *"Bones"* (skeletal pains) and body pains were reported between both men and women but were higher among women. This was attributed to too much work, carrying too much and stress. Worms were attributed to children playing with soil and sometimes to the poor quality of drinking water. Respondents also did not know the cause of TB, why or how it spread except that "*it is because these days there are many illnesses*". Many reported that they did not know the cause of hypertension but others suspected that it may be *"things in the food"* that they eat *i.e.,* new kinds of diets and additives, the times they live in or the stress that they live with on a daily basis. Women in particular cited the stress about children and specifically teenage pregnancies. No one knew the reason for epileptic fits (including the head nurse at St Elizabeth hospital) or diabetes.

Low levels of diarrhoea surprised me because of a number of health issues that I observed, that as an outsider, had thought would increase the rate of diarrhoea. People

generally do not wash hands before eating or preparing food or after visiting the toilet. Children can be seen, un-rebuked, playing in kraals and these children will often touch the dung and soil. I have even observed a four year old child sent by her mother to collect dung for floor plastering in the kraal, after which we ate and the child's hands were not washed. Similarly if an infant or toddler or indeed an adult touched a freshly plastered dung floor or dung, they can and often proceed to handle food without washing hands. Water is never boiled or treated in any other way although water points are unprotected and one can sometimes see animal dung close by and other people use bushes (occasionally close to water points) as their toilet. Only one household reported treated drinking water with bleach. The head of the household, a woman aged 32 reported that she treated her water because she is HIV positive and wanted to protect her health but also the health of her grandchildren. Once brought indoors, drinking water is rarely covered to protect it from animals, dirt or humans. So what accounts for the low rate of diarrhoea?

In my first field visit, drank the untreated water throughout most of my stay and I got ill twice, once with an amoeba (often a result of low hygiene). I sometimes discussed the practice of boiling drinking water and was told such measures would only make one sickly because ones stomach becomes *"soft"* and more vulnerable. Drinking untreated water would however make your stomach stronger. Others said the water in Cutwini was of good quality even better than tap water in Durban;

> *You see, the abankenkenti (tourist) when they come here they always get diarrhoea if they drink water or eat our food because bathambile (they are soft)".*

Twice I was challenged as to how one can boil that water:

> *Zo: How can one boil all that water we collect?*
>
> *MM: You don't have to boil all the water you have collected that day. Just what you need to drink then cover it until cool then kept it in a closed container that will be kept away from dirt hands*
>
> *Zo: Yho! Magi, and you just sit there waiting for it to boil?*
>
> *MM: Yes, after all, we often sit around the fire in the afternoons or evenings with nothing happening, just burning wood. So we can boil water that time*
>
> *Zo: Hayi ngeke! That's too much work*
>
> *MM: But you would be chatting around fire as we already do. Only now we would be using the fire to boil water. Which is would be good, no?*
>
> *Zo: No, people in Malawi, you have too much time*
>
> *MM: Did you not learn that in primary school or from health educators. You can even just add some bleach or some water disinfectant. They sell that now in Malawi because people were not sure about bleach. They are trying to encourage this.*
>
> *Zo: No! But sometimes they say because now there is a cholera out break. But, eish Magi?!!!* (Discussion over cholera bill boards in 2007)

Later I triangulated the data about diarrhoea from interviews by frequently asking women how their young children were, and observing them whenever I visited their homesteads or when they visited 'my home'. Almost all had more frequent episodes of diarrhoea than reported in interviews. In one of the homesteads I visited, after several discussions, it turned out that most members of the household had diarrhoea at least once a month or more and that the two year old toddler had diarrhoea episodes at least two times a month. An explanation of the discrepancy between reported diarrhoea and observed diarrhoea may be due to reporting only serious cases of diarrhoea. I also

observed that diarrhoea was rarely treated even in the young child. Indeed my offers of Oral Rehydration Salts (ORS) were often silently dismissed, sometimes in favour of an enema. Another reason for low reports of diarrhoea may be that the first survey was done between July and October before the summer, which is also the rainy season and therefore has more surface run off affecting rivers, set in. Problems of recall may also be an issue especially since the diarrhoea experienced is often considered mild.

During interviews, households listed the following as the most common health problems that members suffer from, ranked according to most frequently mentioned health problems.

Table A7.1: Most frequently occurring health problems as cited by residents of Cutwini

Among children	**Among women**	**Among men**
Worms	Body pains	Body pains
Skin infections/Sores	Hypertension	Respiratory infections
Respiratory infections	Headaches	TB
Fever	TB	Hypertension
Diarrhoea	Diabetes	-

Appendix 6

Health landscape and common illnesses in Tsilitwa

An introduction

This appendix details the health landscape of Tsilitwa and compares it with the one in Cuntwini.

Arriving in Tsilitwa in 2007 – The clinic

My very first interview in Tsilitwa was with the nurse-in-charge at the Tsilitwa Clinic. It was at around 14:30 and the clinic was empty with exception of the nurse in charge, an assistant and a group of four village health workers representing the villages of the clinic's catchment area.

The clinic is a highly modern setting with a reception that is spacious when one considers the size of Tsilitwa. This reception area is furnished with benches for patients to sit on.

The clinic's pride is in its telemedicine facilities which enable consulting with the bigger hospital of Sulenkama. Telemedicine facility for example enables dermatological consultations using video relays. Looking at articles in Tsilitwa or ICT for development in Africa, this technology takes centre stage and the government aims to replicate it in other rural areas, having already established it in four villages. What is not mentioned is that the technology has had no adequate support particularly for internet connection. It therefore does not function most of the times. Currently, the digital camera for aiding the diagnosis (through imaging) is not working. Also batteries are a problem. When asked what batteries are used, I was told they are regular Sharp™ batteries and they are not rechargeable- a factor that contributes to high cost to the high costs of running the telemedicine facility. According to informants at the clinic, batteries are rarely provided for in the government budget and so the Nursing Sister buys them using her own money. Still the technology has, when functioning, made good contribution to health care.

Since the clinic does not have a laboratory of its own, a van from Mhlontlo municipality come to the clinic once or twice a week to collect patients' histologies for testing at health facilities that have laboratories such as in Umtata, in Tsolo or at Sulenkama, thus providing a wider range of testing possibilities than those available physically at the Clinic. These lab tests are often related to TB and HIV. In addition to providing regular services to patients, on Tuesdays, the clinic provides ante-natal services for pregnant women while on Wednesdays it provides services targeting children under the age of five, such as vaccinations and growth tracking.

Funerals weekends

Like in Cuntwini, weekends and particularly Saturdays are days for funerals. Although it appeared that taking into consideration the size of the village, there were fewer funerals in Tsilitwa in 2009 than in Cutwini 2007, few weekends were without a funeral. Perhaps because of the size of the village, there was also more likely to be more than two funerals in Tsilitwa than in Cutwini. For example, there were four funerals on

one weekend. The dead on that weekend included a young man probably under 30, a mother who was a teacher of about 32 years, another young man man of 28 years of age and an 80+ old woman who died due to late diagnosis of diabetes. Later, two women whose children were buried on this particular weekend reported that their children had died on HIV related illnesses.

Any apparent differences in the number of deaths per 100 persons between Cutwini and Tsilitwa is likely to be as a result of access to health care, particularly access to ARVs. As stated earlier, in 2007 when deaths were very frequent health services had not had in village HIV testing or counselling campaigns. In 2009, the deaths were noticeably less and key informants confirmed this, suspecting that after the 2008 in-village testing and counselling, more people had access to ARVs in 2009 in Cutwini than in 2007. I however did not conduct a systematic comparative analysis on access to ARVs.

Access to Sulenkama and Qumbu

Tsilitwa is 20 km from Nessie Knight Hospital, also called Sulenkama Hospital. Nessie Knight Hospital was established in 1927 by Scottish Missionary Reverend Sterling (who recruited Doctor Robert Patterson and his wife Nessie *née* Knight) (Dekeda, 2007). Dr Patterson established health centres and mobile clinics around Qumbu. From thatched huts, the 'dispensary' has grown to a 177-bed hospital that serves as a critical health satellite for Qumbu area, including Tsilitwa (Dekeda 2007). As of 1966, Nessie Knight Hospital was a 200-bed hospital with two doctors and seeing 30,000 patients per year (Stewart, 1966). Stewart cites TB, Kwashiokor, malnutrition and gastro-enteritis as the illnesses that doctors dealt with. Nessie Knight was at this time a paying hospital, at 2 Shs 3d for children and 5sh for grown ups with average income of £3 (Stewart 1966).

This relative proximity to health care services for the last 82 years ago may have had a profound impact in Tsilitwa. Residents of the current Tsilitwa had good access to Nessie Knight hospital such that at least two informants in their 60s reported that they were born at that hospital. One informant aged 80, was trained as a nurse at Nessie Knight and reported that she met and was trained under Dr Patterson[48]. According to informants, many people had felt that Nessie Knight was close enough and gave birth there and also had other ailments attended to.

The particular date of arrival of a clinic in Tsilitwa is unknown, interviews with 3 persons aged 61 years, 52 years and 80 years would suggest that a clinic may have been available in Tsilitwa as far back as 1940s, probably with efforts from Dr Patterson, although one date suggests the clinic might have been available as late as 1978. The clinic was based at the homestead of the Jafta family[49], who had a shop and by the looks of the (now) crumbling homestead left after their departure were affluent. Nurses were also resident in the village. In 1981/82, a clinic was built such that health services were no longer provided *emzini* (in a homestead) but in a dedicated building. Until 1986, the clinic was made of *"card board"; i.e.* shipping containers that have been converted to offices. The clinic was upgraded 1987 by relocating to a brick and motor structure and expanded in 1989 in a new site where the clinic was also built using cement blocks. In 2006, the clinic was once again rebuilt and fitted with a number of modern facilities. Thus unlike Cutwini where people have only recently had access to modern health care

[48] Dr Patterson left Sulenkama in 1951 due to stress-related mental illness but his wife continued to raise funds in Scotland for the hospital.

[49] The descendants of the Jafta family left the village and could not be followed up.

facilities within the village in form of a once-a-month mobile clinic, Tsilitwa residents have had an in-house clinic for over 30 years.

Table A7.2: Most frequently occurring health problems as cited by residents of Tsilitwa

Among children	**Among women**	**Among men**
Worms	Body pains	Body pains
Diarrhoea	Hypertension	Chest pains and congestion
Fever	Diabetes	TB
Respiratory infections	TB	Hypertension
Skin infections/Sores	-	Kidney

Appendix 7

Energy use for cooking and income groups, extended version

Income group	Elect1	Elec 2	Wood 1	Wood 2	Paraf 1	Paraf 2	Gas 1	Gas 2
Group A Up to R1000 n=18	8	5	11	4	2	4	1	0
Group B 1001 to 2000 n= 22	7	8	15	2	0	4	0	1
Group C 2001 to 3000 n = 10	1	7	8	1	4	1	1	0
Group D >3000 to 6500 n = 3	1	2	3	0	0	2	0	0
Group E >10,000 n= 9	7	1	2	5	0	0 Paraf3=3 Paraf4=1	2	2 (Gas 3=3)

Key

Elect1: Electricity is most frequently used energy carrier for cooking

Elec 2 : Electricity is second most used energy carrier for cooking

Wood1: Wood is most frequently used energy carrier for cooking

Wood2: Wood is second most used energy carrier for cooking

Paraf1: Paraffin is frequently used energy carrier for cooking

Paraf2: Paraffin is second most used energy carrier for cooking

Paraf3: Paraffin is third most used energy carrier for cooking

Paraf4: Paraffin is fourth most used energy carrier for cooking

Gas1: Gas frequently used energy carrier for cooking

Gas2: Gas is second most used energy carrier for cooking

Appendix 8

List of interviewees and dates of interviews

Name/Title	Interview Date	Location
Councillor - Tsilitwa	Various dates	Various locations
Manager ESKOM Southern Region	June, 2007	ESKOM
Mbulelo Ncetezo	2010	NER, formerly, TESCOR , Email correspondence
Village based key informers	2007, 2009, 2010	Various
Village Health Workers	27th February	Tsilitwa Clinic, Tsilitwa
2 X Community Liason officers - Health Promotion	20th April 2009	Mhlontlo LSA Offices, Qumbu
Community Health Nurse	15th April 2009	St Elizabeth Hospital/ Gateway Clinic
Program Manager - Environmental Health	20th April 2009	Mhlontlo LSA Offices, Qumbu
Program Manager - HIV/AIDS prevention	20th April 2009	Mhlontlo LSA Offices, Qumbu
Program Manager - Integrated Nutrition Program	15th April 2009	Mhlontlo LSA Offices, Qumbu
Program Manager - Mother and Child Health	20th April 2009	Mhlontlo LSA Offices, Qumbu
Program Manager - Occupational Health and Chronic Diseases	20th April 2009	Mhlontlo LSA Offices, Qumbu
Program Manager - TB Program	20th April 2009	Mhlontlo LSA Offices, Qumbu
Program Manager -ARV	20th April 2009	Mhlontlo LSA Offices, Qumbu
Chief Nursing Sister/ VDC Member	9th February 2009; 2nd July 2009	Tsilitwa Clinic /Tsilitwa Guesthouse, Tsilitwa
Councillor/Party Secretary - Cutwini	9th July, 2009	Lusikisiki Municipal Offices
Strategic Municipal Manager	9th July 2009	Municipal Offices, Flagstaff
Forestry Officer - Cengcane	26th August 2009	Cengcane Forestry Office, Tsilitwa
VDC Meeting	21st August 2009	Qumbu Technical High School, Tsilitwa
Andrew Marquard	2nd September 2009	University of Cape Town
DME officials	10th September 2009	Pretoria
Tony Davies	11th September 2009	Johannesburg
Elizabeth Cecelski	11th May 2010	Skype Interview
GTZ Program Manager	17th May 2010	Email
PASASA Executive	6th May 2010	Skype interview
Prof C.T Gaunt - University of Cape Town	15th May 2010	Amsterdam and Email
Rob Bailis	4th May 2010	Amsterdam