Contextual Water Management

A Study of Governance and Implementation Processes in Local Stream Restoration Projects

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CONTEXTUAL WATER MANAGEMENT

A STUDY OF GOVERNANCE AND IMPLEMENTATION PROCESSES IN LOCAL STREAM RESTORATION PROJECTS

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LIST OF ABBREVIATIONS

AIS	Alien Invasive Species
AM	Adaptive Management
AOC	Area of Concern
BWTA	Boundary Waters Treaty Act
CA	Conservation Authority
CAP	Common Agricultural Policy
CIT	Contextual Interaction Theory
COFSP	Canada-Ontario Farm Stewardship Program
DLG	Dienst Landelijk Gebied
EA	Environmental Assessment
EDA	Economic Development Administration
EFP	Environmental Farm Plan
EHS	Ecologische Hoofdstructuur (National Ecological Network)
ESA	Environmentally Significant Areas
EU	European Union
GLWQA	Great Lakes Water Quality Agreement
ha	hectare
HCA	Hamilton Conservation Authority
HHWSP	Hamilton-Halton Watershed Stewardship Program
IADF	Institutional Analysis and Development Framework
IJC	International Joint Commission
ILG	Investeringsbudget Landelijk Gebied (Investment in the Rural Area)
IWM	Integrated Water Management
IWRM	Integrated Water Resources Management
LRIA	Lakes and Rivers Improvement Act
MOE	Ministry of Environment
MNR	Ministry of Natural Resources
MOU	Memorandum of Understanding

NGO	Non Government Organisation
OMB	Ontario Municipal Board
OMMAH	Ontario Ministry of Municipal Affairs and Housing
OSCIA	Ontario Soil and Crop Improvement Association
RAP	Remedial Action Program
SAP	Stewardship Action Plan
WECI	Water and Erosion Control Infrastructure
WFD	Water Framework Directive

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> "When we become more fully aware that our success is due in large measure to the loyalty, helpfulness, and encouragement we have received from others, our desire grows to pass on similar gifts. Gratitude spurs us on to prove ourselves worthy of what others have done for us. The spirit of gratitude is a powerful energizer." ~ *Wilferd A. Peterson*

CHAPTER ONE: INTRODUCTION TO STREAM RESTORATION AND WATER GOVERNANCE

1.1 SCIENCE BEGINS WITH CURIOSITY

There are many challenges associated with the sustainable use and management of water. As a result, a plethora of international and national policies have been developed in order to address water related issues. The water itself is not directly affected through policies, but through what happens as a result of them being put into action; in one word – implementation. According to Montjoy and O'Toole (1979) policy implementation is made up of the decisions that take place in carrying out a policy and make clear that this is different than the impacts of the policy, which are the ultimate target. The water resources are in this case the ultimate target and are affected by the decisions that get made and the actions that are taken, or not, in relation to the policies that are formed. Policy implementation is seen more generally in this thesis as a process that involves "the whole of all activities that are connected to the employment of a preconceived set of policy measures" (Dinica and Bressers, 2003: 2).

The curiosity of the author into the topic of sustainable water resources began during a period of study related to water governance in the Great Lakes region of Canada. The research results made a number of points of concern quite clear in the overall governance context of water resources in the region. Practitioners, academics and experts in different areas of management recognized a number of governance issues that were impeding improvements in quality and quantity management. The governance context caused directly observable obstacles for water managers in their day-to-day operations. This context included both supportive and hindering aspects that the managers felt explained a number of the inadequacies experienced in the process of implementation related to various water management goals.

Though no system for natural resource management is without its problems, the Great Lakes region had once been considered a front-runner in terms of progressive water management. The Canada-US Great Lakes Water Quality Agreement of 1978 was a shining beacon of the modern efforts thought to be part of effective and sustainable transboundary water management. Since this time, a slow regression has taken place in the perceived ability of the regime to protect the water resources against the increasing threats due to global and local industrialization and urbanization. At the same time, efforts being taken in the European Union were viewed by experts to be outpacing those of their North American counterparts in embracing flexibility and other progressive efforts as a means of safeguarding and improving national and transboundary water resources. Examples such as the European Union Water Framework Directive showed possibilities for improving the sustainable use of water resources in a number of different contexts

with a single (though detailed) progressive policy document. A particularly interesting example was seen to be the implementation efforts taking place in the Netherlands, a country where water management has a long history and importance in the daily lives of its citizens.

One size in policy making however, does not fit all. The context that water management takes place within, has a great deal of impact. The characteristics of this context thus warrant a better understanding and investigation. This context has both content and structure, both of which are influential. Further, the dynamics of the implementation processes are understood to influence the involved actors. These actors are not solely at the mercy of their context and can hence play an active role in terms of how the context influences the resulting implementation. An important aspect of understanding these processes deals with unearthing the enabling factors related to these actions.

An interest in providing insights into the influence of contextual factors on water governance processes led to the current doctoral study at the University of Twente in the Netherlands. Understanding these processes in a country recognized as a world leader proved to be a good starting point for understanding the intricacies involved in the whole of the process. The opportunity arose to investigate a long-term program that was taking place in the Twente region dealing with the restoration of the Regge River. The Regge River is a 52 kilometre tributary river in the Rhine basin that is embedded in a multi-level governance context. The restoration project deals with a wide range of actors and groups including agreements with riparian farmers and connections made to the EU Water Framework Directive. The study of this implementation process forms the main portion of this doctoral thesis. The results of this study have already been published in a co-authored book with Hans Bressers in 2011 entitled "Complex and Dynamic Implementation Processes: Analyzing the Renaturalization of the Dutch Regge River". This thesis builds upon this work from a theoretical perspective and includes an additional case study related to the Canadian context.

1.1.1 DEVELOPMENT OF THE THEORETICAL FRAMEWORK

The theoretical framework used to study the chosen implementation processes needed to be able to 1) be inclusive of the holistic processes occurring 2) shed light on specific interactions taking place that affected the implementation process and 3) connect this to the influential characteristics of the governance context. As a result, the Contextual Interaction Theory that was being used and developed in Twente was built upon by adding several new elements that made it apt for studying the impact of both the governance context and the actor's abilities to enable successful implementation in a complex and dynamic interaction process. This provided a framework with which to study the Regge Restoration process.

Given that the original curiosity was inspired by the Great Lakes water governance situation, an exploration of the possibility to make a cross-Atlantic comparison is logical and appropriate. In order to assess what lessons could be carried across to the Great Lakes context, a smaller case study for comparison was undertaken. Scoping of a number of different projects in the region led to the discovery of a quite similar process occurring related to the Spencer Creek in Hamilton, Ontario Canada. Although the context was different, the stewardship action planning project being taken on by the Hamilton Conservation Authority was seen to exhibit quite some similarities to the Regge Restoration. Thus, the same theoretical framework was applied to the Spencer Creek case to make maximal use of the local similarities in actions that were taking place, yet under a different contextual setting.

1.1.2 RESEARCH QUESTIONS

The following research questions were developed as a result of the above understandings and interests:

1. What specific challenges are faced in the implementation processes of the selected river restoration programs? What actions and strategies were carried out that enabled realisation and surmounting of these challenges?
2. What qualities of the governance regime have impacted these implementation processes and through what means?
3. What characteristics of the leading actor organisations have impacted these implementation processes and through what means?
4. What are the observable differences between the two cases? What do these differences imply regarding the previous two questions?

Answering the above research questions requires both theoretical and empirical work. The first three questions are initially dealt with through a further theoretical development of the Contextual Interaction Theory (CIT). CIT provides the basis for analysing the connection of regime qualities to the interaction processes taking place between local actors. In Chapters Two and Three, the most recent CIT framework will be borrowed and expanded upon as is deemed necessary in order to include the key concepts that guide the empirical studies. The following chapters deliver the empirical descriptions of the cases studied and illustrate the theoretical concepts developed in Chapters Two and Three. These chapters provide the evidence that will be used to answer the previously posed research questions.

The following portions of this introductory chapter will be used to place the research in the setting of the current state of global water problems. Following this, a summary will be provided of the relevant research available on water management approaches as they relate to river basins. In the concluding section, an overview of the specific chapter contents will be provided in more detail.

1.2 WATER AS AN ESSENTIAL RESOURCE: LIVING WITH WATER

"Water, water everywhere, nor any drop to drink"

"The Rime of the Ancient Mariner" Samuel Taylor Coleridge, 1863.

Despite the world's surface being covered mainly with water, freshwater makes up only slightly more than two per cent of all the Earth's water resources. What is additionally astonishing is that 99.5 per cent of all surface freshwater is located in continental ice and thus unavailable for direct human use. Freshwater is a scarce resource, and is often a limiting factor in the development and functioning of societies. The quality of this freshwater is impacted by industrial and residential pollution from both direct and indirect sources. Issues surrounding water quantity can be related to water scarcity as well as over-abundance. Water resource availability and sustainability are both challenged by a changing climate, an increasing water footprint of societies and land use changes that disrupt the natural water cycle.

Managing water resources for human interests in the twentieth-century has largely consisted of water policies that enable and support the construction of massive infrastructure in the form of dams, aqueducts, pipelines, and complex centralized treatment plants. This is referred to by Gleick (2003) as a "hard path" approach and recognizes that it has resulted in a great reduction of water related diseases, expanded the generation of hydropower and irrigated agriculture, and moderated the risks of devastating floods and droughts. It has also resulted in a series of often-unanticipated social, economic, and ecological costs. The enormous displacement of people from their homes (World Commission on Dams 2000) and the threatened extinction of freshwater fauna populations (Ricciardi and Rasmussen 1999), are only a few of the unintended or undesirable consequences caused by this hard path. Gleick (2003) mentions regional and international water conflicts, the dependence of many regions on unsustainable groundwater use, the growing threat of anthropogenic climate change, and our declining capacity to monitor critical aspects of the global water balance as new challenges that are inadequately addressed through these traditional approaches. The increasing costs of these large-scale infrastructure projects are also being recognized due to the improved understanding and use of full cost accounting measures.

An alternative, and increasingly supported approach to water resource development, management and use is referred to by Gleick (2003) as a "soft path," and is defined as

> "one that continues to rely on carefully planned and managed centralized infrastructure but complements it with small-scale decentralized facilities. The soft path for water strives to improve the productivity of water use rather than seek endless sources of new supply. It delivers water services and qualities matched to users' needs, rather than just delivering quantities of water. It applies economic tools such as markets and pricing, but with the goal of encouraging efficient use, equitable distribution of the resource, and sustainable system operation over time. And it

includes local communities in decisions about water management, allocation, and use" (Gleick 2003; 1526)

Although there is still a great need for hard path infrastructure, it is this type of soft path that is seen as the way forward for substantial advances in water management in the context of this thesis.

Water issues can however vary based on the geographic, social and economic context of the area within which they are being studied. The context of deltas is one that is increasingly important in light of increasing sea levels due to climate change as well as the expected increases in the extremes of water flows entering these often highly populated areas from in-land water sources. Though particular problems vary from delta to delta, these areas are often subject to hard path solutions for water management given their precarious positioning and high value as industrial, residential and agricultural lands. Well known examples include the levee systems in place in Louisiana, the Mekong Delta transportation development projects and the Delta Works in the Netherlands. The density of human populations, the value of the natural ecosystem functions and habitat as well as recreation and tourism are of the multiplicity of interests that are directly related to the water in these areas and its use. The value of these areas often makes them even more threatened by over-use and accelerated human development. The direct human uses such as housing, industry and transportation have been addressed in the past mainly through the "hard path", but the softer uses such as recreation and tourism, social cohesion, natural habitat and aesthetics require indeed something more akin to Gleick's "soft path" approach for protection and development.

A more appropriate way to deal with water management as a society is thus, not to set the use of water as one of society's goals, but the improved social and individual well-being that can be garnered by the use of that water (Gleick 2003).

At the tributary river basin scale, the "hard path" approach has contributed to reductions in the natural ecological as well as aesthetic qualities of rivers. In the case of the Regge River, infrastructural "enhancements" made in the past to increase drainage speed left the river to be viewed as merely providing waste discharge capacity to the industrial and residential inhabitants of the area. The restoration efforts taken as part of the Regge Restoration process are aimed at reversing this process and restoring the natural value back to the river.

1.2.1 WATER RESOURCE GOVERNANCE

This transition to a softer approach to water management is generally associated with the increase in the number of values and interests that are included in the efforts to manage water. As water issues are acknowledged by even the most technically oriented minds not to exist in isolation from other societal problems and goals, the degree to which these additional goals should be integrated into traditional water management contexts has

been developing over some time and is still subject to much debate. The most well-known approaches in this area are integrated water management (IWM), integrated water resource management (IWRM) and adaptive management (AM) (Lulofs and Bressers 2010).

Up until the 1980's water management was mostly sectoral by nature and integration of water management was mostly an integration of functions and measures in the water system. This Integrated Water Management (IWM) approach can be labelled as a form of internal integration. In the following two decennia (the 80s and 90s) a development took place in many European countries towards having a more open view on the relations of the water body with other aspects of natural and human uses, for instance its role in the support of natural ecosystems in the river basin area and its role for recreation and tourism (Bressers and Kuks 2004). This integrated water resource management (IWRM) approach is itself a form of external integration with issues other than just water. The real implication of the widened scope however is not taken therein. This implication is namely that this kind of externally integrated water management cannot remain one-sided: as a kind of optimization process in which the water manager simply considers additional issues before deciding what the best "policy and management response" would be. From 2000 onwards however, water managers have started to realize that the logic of the integration implies that the incorporation of water goals into the various policies that affect or are affected by the water system of all partners involved is actually essential.

Kuks (2005) sees water as a part of the environment, as well as the social context and as such many other interests in addition to water should be taken into account. When water managers do not adequately consider these interests, then the water goals themselves become unfeasible. Water management requires the involvement of various stakeholders who possess their own socio-economic, aesthetic, cultural, and even ethical values attached to water. These values need to be integrated into the scope of the activities considered to be part of the management of water. Therefore water goals should be developed in interaction with partners in the environment and society at large, not just by the organization responsible for managing water. Balance between the values and interests of these partners and the urges of the water system should be continuously sought, in a permanent cooperative interaction, aiming at synergies (Kuks 2005).

Water goals can as such not be implemented in a blueprint type process that does not take the differences in context into account. Space for variation is necessary and supportive in many cases. Expected outcomes become less "certain" from the onset however an "optimal" water system will never be attained this way. In fact it's the best, maybe even the only, way to realize as much of each and as many of the water goals as possible (Kuks 2005). Modern literature is very supportive of the use of adaptive processes for the sustainable management of natural resources (Folke et al. 2005). Adaptive water management must then be able to in some way handle the basic unpredictability related to the degree of complexity and dynamics inherent in the process.

Adaptive water management actually turns water management from a modelling, decision making and management process into a multi-actor interactive policy process. Despite the undeniable value of well-informed measurement and water system model calculations, it is essentially a "social interaction process" in which taking the different contexts into account is crucial for its success.

What enables this sort of adaptive management? How does the governance regime influence this process and what is required from it? Are there certain characteristics of actors in these processes that enable them to successfully participate in these processes and achieve their own goals?

The above characterization and problem statements set the stage that urges the undertaking of the previously stated research questions. This thesis will address these issues through the development of an appropriate theoretical model and by exploring two separate cases with it.

1.3 CHAPTER STRUCTURE AND CONTENTS

CHAPTER TWO: CONTEXTUAL INTERACTION THEORY

Implementation processes are seen as a chain of interactions that connect the outputs of regime policies to their eventual targets. A number of factors can be seen to influence this process. In this chapter a brief overview is provided of the current and past literature that has attempted to bring clarity to understanding the mechanics of implementation. Following this the conceptual model that has been used as a basis for this research is explained in detail – Contextual Interaction Theory. This chapter concludes by summarizing the key values that using CIT can offer when performing this type of research as well as some important limitations that were present and related to its use in this thesis.

CHAPTER THREE: A DYNAMIC TWIST TO CIT AND METHODOLOGY

Complex and dynamic implementation processes related to water governance must cope with a changing regime domain and contents (both exogenous and endogenous) as well as local contexts (geography, demography, economics, relationships, etc.). This chapter explores the special mechanisms at play in these processes and shows how they fit into the model described in the previous chapter. It then provides a number of "expansions" to CIT, which allow for a more appropriate examination of the influences on the relevant interaction processes, which affect their outcomes. The capabilities of using the adapted CIT model to assess the inter-regime (an inter-regime is defined later based on a collective set of influential regime elements) impacts on stream restoration projects are then summarised. This leads into the introduction of the methodological design which details

the methodological underpinnings and choices used to explore the applicability of the model to the empirical cases.

CHAPTER FOUR: THE REGGE RESTORATION GOVERNANCE CONTEXT

The major case study included in this thesis is the Regge Restoration Process. This chapter delivers a thick description of the governance context associated with this project, from a multi-level perspective. The main international, national, provincial, municipal and water management specific policies and actors are described in order to develop an understanding of the various context related influences from a traditional hierarchical perspective.

CHAPTER FIVE: THE REGGE RESTORATION IMPLEMENTATION PROCESSES

The overall restoration process of the Regge River has progressed as a series of interconnected sub-cases. These projects were developed through a strategic and opportunistic general approach that resulted in different cases with different scales, actors, time lines and goals. This chapter explores each of these separate sub-cases from an actor oriented perspective in order to uncover the underlying characteristics that have been instrumental in the implementation processes as well as which factors from the external context where actively involved and influential. Each sub-case description is followed by a preliminary analysis of the actor characteristics and the governance context.

CHAPTER SIX: PROCESS SETTING, STRATEGIES, RECEPTIVITY AND INTER-REGIME QUALITIES OF THE REGGE RESTORATION

Following upon the detailed descriptions in Chapter Five, this chapter pays more attention to the supplemental aspects of the theoretical framework developed in Chapters Two and Three. This more thorough analysis is focused on the observed interaction processes and inter-regime influences. The governance inter-regime is explored by looking at important qualities and the interaction processes are examined in terms of the receptivity and boundary spanning qualities that were exhibited by the actors involved.

CHAPTER SEVEN: THE SPENCER CREEK STEWARDSHIP ACTION PLANS

The Spencer Creek Stewardship Action Plans refer to the coordinated set of actions being taken by a large number of stakeholders with the purpose of improving the health and resilience of the Spencer Creek. This chapter provides a sample case for comparison of the lessons learned from the Regge Restoration research and analysis. A relatively brief description is given of the Stewardship Action Plans and the context under which they are taking place. One particular case is described in detail in order to draw comparisons in the following chapter with the Regge Restoration cases. A selection of smaller projects occurring under this umbrella program are also explored to uncover commonalities and

generalisations regarding the nature of interaction processes taking place as well as examples of where the governance inter-regime is seen to influence this.

CHAPTER EIGHT: CONTEXTUAL WATER MANAGEMENT IS A BALANCING ACT

This concluding chapter reflects on the theoretical framework as it was developed and applied over the course of this thesis. How did the addition of the new attributes to CIT allow for the discovery of additional influences on, or improved understanding of the interaction processes? Included are some pragmatic suggestions and perspectives on generalization opportunities that can support the development of further research or support the practical application of the lessons learned in this study. The four research questions posed in this thesis are used to structure the conclusions found in this final chapter.

CHAPTER TWO: CONTEXTUAL INTERACTION THEORY

2.1 PREAMBLE

Contextual Interaction Theory has been developed over the years through application and re-assessment based on different research efforts. This chapter serves to explain how this thesis understands and uses the basic elements of CIT.

2.2 INTRODUCTION

Contextual Interaction Theory (CIT) serves as the underlying theoretical framework of this thesis. CIT has its roots in understanding and explaining the implementation of policy instruments (Bressers 1983), and as such this chapter begins with a discussion on relevant pieces of implementation literature. CIT has gradually been refined over the last thirty years by various scholars working alongside Bressers (e.g. Bressers and Klok 1988, Bressers and Ringeling 1995, and O'Toole 2000). Taking Bressers (2009) as a starting point, Part One of this chapter concludes by exploring how CIT relates to current and previous discussions on implementation theory. CIT contends that the context under which these implementation processes operate is significant in understanding their progression. This context can be separated into two separate but interacting parts: the internal and external context. Both influence the social interaction processes that are at the heart of implementation. Parts Two and Three of this chapter discuss the internal context and the various actor characteristics that are theorized to influence the central interaction processes. Classified as being part of the external context, the CIT framework also offers a means of studying the impacts of the collectively relevant regime qualities (referred to as inter-regime qualities) on implementation processes. The details of this framework and how they enable an understanding of the influence of governance inter-regimes is dealt with in Part Four. Part Five concludes by reiterating the usefulness of CIT in studying implementation processes and opens it up to some scrutiny on its applicability and suitability for understanding these same implementation processes from a more complex and dynamic perspective.

2.3 PART ONE: IMPLEMENTATION

2.3.1 PERSPECTIVES ON IMPLEMENTATION RESEARCH

The most recent texts on Contextual Interaction Theory (CIT) view policy implementation as "the process(es) that concern the application of relevant policy instruments" (Bressers, 2004: 284). Dinica and Bressers (2003) expand this slightly and define the implementation process as "the whole of all activities that are connected to the employment of a preconceived set of policy measures" (Dinica and Bressers, 2003: 2).

Both definitions view the policy as an input to the implementation process. It is as such important to first broadly discuss perspectives on implementation research and where this thesis conceptualizes CIT to be placed within it.

WHY STUDY IMPLEMENTATION PROCESSES?

Hjern (1982) develops the normative viewpoint that implementation research should aim to enable the achievement of societal goals or improvement. In this thesis, this viewpoint underpins the importance for researching both the means and ends of policy design and implementation. An inherent link is then necessarily present between politics and administration. The segregation between these two fields has been quite common in past pieces of significant implementation research literature (Pressman and Wildavsky 1973; Mazmanian and Sabatier 1983). This segregation is at the heart of many criticisms between and amongst various authors and experts (Barrett 2004, Goggin et al. 1990). Linking the achievement of societal goals into implementation research requires a perspective where no real dividing lines exist. There are however, in practice, many benefits and drawbacks of aligning theory and practice in this research field (O'Toole 2004a). There has been much disappointment and disillusionment from scholars about the past applicability of theory to implementation practice. O'Toole (2004a) does offer some optimistic support for further intentions despite general feelings of frustration. The complexity and diversity of implementation arenas is proposed as one factor that contributes to the inability (and undesirability) to comprise a general underlying theory of implementation. The development of various heuristic models is considered to provide more promise for the future of the field.

The inclusion of sustainable development as an over-arching policy goal provides further difficulty in understanding the connection between theory and practice in implementation studies. The importance of sustainable development is increasingly being included in most policy arenas as a basis for "good governance". Sustainability is based on the long-term and inclusive management of the economic, societal and environmental pillars. As time passes, perspectives, technological capacities and environmental realities alter. Governance for sustainability must develop alongside an inconsistent and dynamic level of information and with a varying level of certainty of the future at any given decision point in the policy process. The perspective of this thesis and particularly of this chapter is taken from what has generally been described as the implementation phase of the policy process, though the general conception is along a much less strict understanding of what happens through the process from policy intention through to realization (Hill and Hupe 2002: 7). Forcing a strict distinction between the different phases of policy implementation in implementation research risks providing results that include unforgiving simplifications or misrepresentations of reality. Despite the benefits of using a staged framework for research, the typical understanding of these stages needs to be rethought and applied contextually to any given piece of research. In reality, "policy is being made as it is being administered, and administered as it is being made" (Anderson

1975: 79). The following section outlines how the implementation literature has developed over the years to take into account new ideas and perspectives originating from various scholars.

2.3.2 THREE GENERATIONS OF IMPLEMENTATION RESEARCH

Through studying the development of implementation literature and theory, it is possible to differentiate three generations of implementation theories. For a thorough review of the historical progression of the field see O'Toole 2000, Goggin et al. 1990, Barrett 2004 a/o. In this section, an overview is provided of the relevant aspects of these three phases as is necessary to understand the current form of Contextual Interaction Theory and the policy process.

THE FIRST GENERATION

The first generation, or classical implementation theory, envisions implementation to behave in a linear manner. The policy that is formulated by the government is either implemented, or not, into practice by the implementing officials (Sabatier and Mazmanian 1980). The beginning of this first generation can be seen to have originated with the publication of the seminal work "Implementation: how great expectations in Washington are dashed in Oakland" by Pressman and Wildavsky (1973). In this book we are given a clear example of top-down single authority implementation research. The authors very simply viewed the resulting implementation processes as having failed due to poor policy planning. It is introduced here as an example of a good, clear and well written piece of work which illustrates the common perspectives of this first generation of implementation research. This work is also important as it set the stage for the future debates regarding different perspectives on implementation research. O'Toole (2004b) describes it as the "brave and promising opening to the systematic investigation of… <implementation research >" and as such it serves well to highlight in the following paragraphs the prevalent aspects which will also be referred to later on.

The Pressman and Wildavsky case study was based upon the book "Oakland's not for Burning". It detailed the apparent success of a program implemented in the United States by the Economic Development Administration (EDA). The program involved funding infrastructure jobs in Oakland in order to combat social unrest in the urban area. In 1966, the US Federal government dispersed $23 million (USD) in funding through the EDA with the purpose of creating about 3000 jobs in urban Oakland. This was intended to spark better social cohesion and reduce the threat of rioting that was feared to begin erupting in the city (as well as many others in the USA). As of 1969 there were two contrasting views of the success of the program: one which touted the program as successful in bridging the gap between the ghettos and the urban business groups and the second reported that only about 20 jobs had been created and that only about $3 million (USD) had been spent, mostly going to architectural fees. The authors suggest that the implementation of the

program was much more difficult than expected in the program/policy design phase and that is what resulted in such poor results. Pressman and Wildavsky explain this with an in depth unearthing of numerous issues that were witnessed throughout the process:

1. The EDA was not designed to work with cities (but had entered the project because a top administrator thought that that was where the impacts would be the greatest);
2. A strong time constraint required large sums of money to be spent quickly so that approvals could be received in the budget year and budgets for next year would not be cut;
3. Fragmentation existed within the government authority at the local level;
4. A council-manager government model that had many resources given to the manager and few given to the council (the council were not even paid full time salaries and had minimal administrative staff allowances);
5. Limited leadership capabilities existed within the implementation bodies; and
6. The lack of politically oriented interest groups limited support and information about policy issues and causes.

The promises of "Creative Federalism" that were made in which the EDA would enable flexibility at the local level and use guidance from above were in the end not fulfilled. There were insurmountable difficulties seen in reaching the number of minority positions that were set as goals, as well as keeping the projects under budget. The final conclusion of the authors was that "chains of unanticipated decision or "veto-points", requiring numerous clearances by different actors, had provided the occasions for frustrating delays to develop. The hopeful "experimental program" of 1966 had become a painful example of the problems of implementation" (Pressman and Wildavsky 1984: 69). This chain of decision points supports their main theoretical claims that the higher the number of these "veto points" or opportunities for decisions that exist to be made against the progress of the project or implementation of the policy, the lesser the chances are for successful implementation. If these decision/veto points can be reduced then the opportunities for success are increased and so they should be limited at the policy design phase.

THE SECOND GENERATION:

Pressman and Wildavsky's thorough description of top-down implementation brought to light a wealth of different possible perspectives which the next generation of researchers used as they developed the literature and research that would become known as the "bottom-up approach". This second generation of implementation studies built upon and contested three main aspects that were demonstrated by Pressman and Wildavsky: the extensive "causal factor" exploration technique, the top-biased attention and the focus on control oriented solutions. For example, Pressman and Wildavsky's research clearly highlighted the complexity involved in attempting to implement large programs that require various levels of government and which have varying target groups and many underlying causal assumptions. The tendency of this first generation of literature was to

focus on and disclose (too) many independent variables. These variables were of course present in such complex implementation processes yet it did not enable an easy (or even possible) transition to a more parsimonious contribution to the research field. The next generation of researchers believed that it was possible to go beyond this simple understanding and that they could offer more than suggestions to "increase control" as a way of improving implementation practices. This was the very basis for a change of focus away from hierarchical top-down implementation and towards understanding the underlying complexities of implementation processes known as second generation or "bottom-up" implementation.

A very influential name in the second wave of bottom up literature is that of Benny Hjern. In discussing the role of implementation research in political science he states:

> "It is by now a truism of the implementation literature that the objectives of public policy are often vague and even absent; more than that, even when initially specified they are frequently redefined during the course of implementation (symbolic politics). Whence the objection of how can one speak of implementation if the very thing to be implemented is indeterminate in the first place… Implementation research will in fact need to draw heavily upon public administration and other subdisciplines within political science for the insights which they offer into objectives, strategies and resources of actors such as political parties, interest organizations or central and local government administrations. Implementation research will also need to cross the traditional boundaries of political science for insights regarding actors without ostensible policy functions and objectives but which nevertheless participate in the policy process (e.g. firms)… Thus the ordering principle of implementation research is not policy problems as defined and addressed by the formal political system but as defined and addressed by relevant societal actors (who, of course, include those of the formal political system). Thus the unit-of-analysis problem becomes a central issue in, and a defining characteristic of, implementation research" (Hjern and Hull 1982: 114).

It is clear from the comparison of the above statement to that of Pressman and Wildavsky's work how Barrett (2004) relates the changes of perspectives of researchers towards a bottom up approach as resulting from the normative difference of opinion about the role of policy makers and executing agents. Top-down research focused on an ideal situation for reaching overarching societal goals where the administrative structure was to leave policy making to the political "top" and there would be clear and executable goals for the lower level agents simply to execute. From this perspective implementation studies could clearly identify reasons for non-compliance and hence provide recommendations to increase compliance. In the transition towards the bottom-up approach much more attention was paid to the different manners in which policies were handled and manipulated by actors charged with their implementation and as such "considered implementation as part of the policy-making continuum in which policy evolved or was modified in the process of translating intentions into action..." (Barrett 2004: 21). Returning to the Pressman and Wildavsky realization that the various

complicating factors lie indeed at the lower stages, the bottom uppers believed that better understanding these complications would lead to improvement of outcomes. Bottom uppers were however criticized for lacking a real ability to prescribe realistic improvements for practitioners or those charged with policy design. Although in first instance it could appear to be a more sympathetic approach to those in society who are at the mercy of the political system, it can also in fact be seen as a quite conservative approach. Critics of the research from this normative perspective suggest that it leaves too much opportunity for the interests of the most powerful lower level implementers or actors to trump or completely obliterate the initial intentions and role of the policy makers which are there to improve the general state and well-being of the constituents.

THE THIRD GENERATION

Following the difficulties experienced in the field of implementation described above, a new generation of implementation studies developed in the late 80's and early 90's with the aim of combining the insights of both top-down and bottom-up implementation research approaches (Matland 1995). This generation of research cannot be clearly defined by any clear approach however most of this "third generation" research can be seen to acknowledge that policy making and policy implementation affect each other throughout the policy cycle. The back and forth relationship between implementers and policy makers gives way to a more dynamic interaction process between actors.

From this more dynamic perspective one could thus say that the program studied in the Pressman and Wildavsky case suffered from inappropriate development and design. This only became visible at the middle and local level processes due to the use of non-integrated and relatively inflexible policies that did not align well with the local context. This was able to be somewhat overcome in the beginning phases due to a project champion, but the inherent problems did eventually arise (after the champion left). The lack of coordination at the top enabled various desires at the bottom to manipulate the program for their own benefits and ended up reducing the effectiveness of the project. A more integrated approach that recognizes implementation as a multi-actor process that requires cooperation and coordination between multiple institutional and non-institutional actors (O'Toole 2000) is thus necessary to provide the parsimony needed to understand these complicated implementation processes. Contextual Interaction Theory, the conceptual lens of this thesis, is one such approach.

CIT AND THE THIRD GENERATION IN PRACTICE

Differences can exist between the stated goals of local projects and those of the policies that govern them, even when they both claim to be addressing a similar policy arena such as nature management, economic development or social justice. Each actor's set of goal ambitions is set under different contexts and understandings of the problem. Differences are also expected in terms of how the different actors conceptualize the solution sets that

are available and appropriate. The context of the implementation process is however unlikely to be the same in different locales. Different actors, capacities, hindrances and opportunities will exist and it is thus proposed that it will in most cases be more efficient for higher levels of government to first consider how their programs and policies can be designed to align with the local context specific opportunities than to impose strict controls over an incomprehensibly broad field of middle and lower level implementers.

Goggin et al. (1990: 8) state, "One of the most promising ways to make sense of the causal complexities of policy implementation is to adopt a more "scientific" search for the patterned regularities as well as the idiosyncrasies of implementation decisions and actions. This search extends across time, policies, and units of government." They further describe the implementation context as complex and dynamic and criticize second-generation implementation studies for their lack of use of an explicit theoretical model. They suggest this lack of rigor accompanied by small N, high variable cases has limited the ability for replication and generalizability of results. They focus their efforts at addressing the greater need for a more rigorous attempt to develop and test explanatory and predictive implementation theories.

Their "Communications Model of Intergovernmental Policy Implementation", is one model for "third generation" implementation research and study. It incorporates the specific context of the implementation in order to help understand the differences seen in implementation of federal policies in different states. It enables the researcher to analyse what they call inducements and constraints that come from both above and below the chosen level of attention (the state level). Though conceptually similar to the needs of this research, the level of perspective chosen for this research is the project level. The stream restoration cases chosen have a number of different actors and the context under which they operate is quite dynamic, being partially determined by the local context and actors. This is where the mix of different policy arenas is particularly visible and while the Communications Model of Intergovernmental Policy Implementation is quite similar, the Contextual Interaction Theory (CIT) of Hans Bressers is chosen as being a more appropriate heuristic model from which to analyse these local processes.

2.4 PART TWO: CONTEXTUAL INTERACTION THEORY: THE BASICS

Contextual Interaction Theory (CIT) is rooted in "instrument theory" and has shown usefulness in comparing the efficacy of different policy instruments (Bressers and Klok 1988). CIT's full definition of implementation states that it consists of "the process(es) that concern the application of relevant policy instruments, including the realization of projects to achieve physical changes (buildings, infrastructure, landscaping). The relevant activities and interactions are pursued for one part by actors - organizations and people - that are officially commissioned with promoting the envisaged measures (the 'implementers'), and for another part by actors that are necessary to realize them (often so-called 'target groups')" (Bressers 2004: 284). The basic premise is that the operation of policy

instruments needs to be understood in relation to the circumstances of where and how they are or will be implemented. Policy instruments thus cannot be seen in isolation from the circumstances in which they are applied. The circumstances (referred to as the context) are translated to the actions of the actors through a set of three characteristics. The focus is therefore given to actors and their interaction processes within the implementation problematic. The implementation process is described in terms of how the policy instrument (as being a particular part of the context) is able to affect the motivations, cognitions and resources of the individuals involved. If it does not affect these attributes, then it has not impacted the final result of the interaction process in any distinguishable way. In essence, these three characteristics and how they appear in social interaction processes are at the heart of any implementation process and as such it is in line with the third generation of implementation literature previously described in this chapter. It does not however suggest that external policies and the administrative structure of the implementation are not relevant. It is precisely this that contextualizes and sets the stage for the existence of the various actor characteristics that are witnessed in the given interaction process.

CIT and the following supporting concepts are quite well established in available literature. Segments of the text found in the rest of the this chapter are derived (with permission) from Bressers and Kuks 2003, Bressers 2009, and Bressers, Fuchs, and Kuks 2004. Chapter Three contains the modifications and additions to CIT that have largely been developed in this study.

2.4.1 CIT WITHIN SOCIAL SCIENCE LITERATURE

This section provides an understanding of how CIT fits into a number of well-known and documented areas of social science literature. CIT itself has developed over the years and has been used in various ways with various types of results. Given that no text book or all inclusive model exists outside of the literature where it is directly related to some empirical question, it is important to state here what aspects of CIT are understood to be relevant to this thesis. To begin with, there is a great degree of similarity between a number of social science disciplines and the three actor characteristics mentioned above. Bressers and Kuks (2003) found that the core principles of a broad range of social science disciplines (as included and paraphrased below) could be used to provide a backdrop over which to elaborate the main arguments of CIT.

To begin, economic theories place the scarcity of resources and the decisions and bartering that result from this as the centre of analysis. Rational behaviour has long been a cornerstone of this discipline. Although rational behaviour in its purest form is unlikely to ever be practiced by actors, this manner of understanding how decisions are made forms the basis of the first argument. ‘Argument A: that which gives the greatest benefit will be chosen.’

Political science research has a strong focus on the social aspect of the distribution of resources. The power of one actor over another is important when determining who is going to dominate the interaction. 'Argument B: Whoever has the most power has more freedom to make choices.'

Sociology understands social problems and psychology through the ability of people to collect and process information. 'Argument C: What is believed to be real is real in its consequences.'

Social psychology and communication sciences make use of the transfer of information in mutual communication processes for their understanding of human behaviour. The collection and processing of information enables the making of choices and the development of power relations and values. 'Argument D: Interpretations of reality are the product of a social construction.'

In the study of philosophy, the roles of morals and ethics provide for the understanding and evaluation of human behaviour. ' Argument E: People should want what is good.'

Those studying social systems at a higher level of abstraction recognize the importance that imposing values on others has played in the development of society. This need has led to the importance of understanding the impacts that rules and laws have on the behaviour of individuals. 'Argument F: Rules provide guidelines to what is accepted.'

The three actor characteristics that form the basis of CIT are supported at the individual and social level. This is highlighted by placement of the main arguments (from above) into Table 2.1. The perspectives of CIT that are highlighted with respect to this wide assortment of disciplines are shown here in order to support the value placed on the three main characteristics.

Scientific Perspectives	Individual	Social
Resources (power)	a. Choosing the greatest benefit	b. Those with the most power can choose
Cognitions (information)	c. It is not the facts that are important but instead the interpretation of what is observed	d. Interpretations of reality are the product of social construction
Values (objectives)	e. People should want what is good	f. Rules provide guidelines to what is accepted

Table 2.1 Perspectives of the social sciences. Adapted from Bressers and Kuks 2003: 77-78.

Given this understanding of the three main actor characteristics, the following sections describe what role they play in the context of implementation processes.

2.4.2 CIT AND THE PROCESS OF IMPLEMENTATION:

In order to understand the connections between external contextual factors and the outcomes of the implementation as determined by the three actor characteristics, a number of different phases of the process are identified. To begin with, the policies to be implemented belong to the set of inputs to a multi-actor process. The process that is identified here is not a physical process, but one undertaken by activities and interactions of actors and is termed an "interaction process". Such interaction processes take place in what is labelled an "arena", of which the issue, actor, rule, space and time boundaries are explicitly or implicitly understood by those involved.

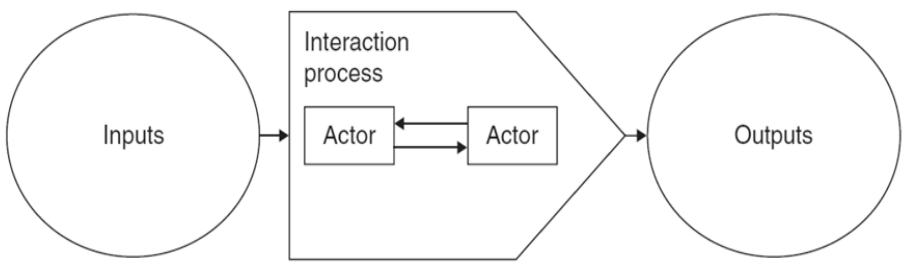

Figure 2.1: Simple model of interaction process as conversion of inputs into outputs. Source: Bressers and Lulofs 2010: 22.

The interactions are visualised here as being based on two actors though there are many cases where multiple actors are involved. According to Owens (2008) even when many interacting processes and multiple issues are being considered, often there will only be two sides per issue, which can be described as two groups of actors. It is posited then that these groups often include background actors in the actor network that do not participate directly in the (inter) actions, but give forms of support to actors that do.

As was dealt with in earlier sections of this chapter, the shift in attention from the vertical to the horizontal relationships can be seen as the essence of the bottom-up rather than top-down focus (cf. Torenvliet 1996). Often such a bottom-up perspective is accompanied by an ideological preference for bottom-up solutions no matter whether they address the purposes of the policies involved. One of the basic ideas behind Contextual Interaction Theory is that the bottom-up perspective is more informative as an analytical tool even when the researcher adheres to the top-down policy goals. These policies will inspire the evaluation criteria of the researchers, however it is wise to analyse the process not only in terms of compliance to these purposes. It is considered paramount to begin with an understanding of the interactions and only then to build upon this initial understanding of goals and interests. Becoming increasingly aware of the intricacies and complexities discussed above with respect to the iterative nature of real life implementation processes, it is easy to understand the marked reduction in popularity and use of the term "policy

implementation" in the 1990's. A debate later ensued about whether the subject is still relevant in this new age of "governance" and "network management".

The perspective of this research is that "implementation" can be seen as neither achievable nor desirable when it is too heavily connected to the ideals of top-down steering. Implementation studies should not be considered out-dated as they have much to contribute to new understandings and methods of societal governance. Governance concepts of all forms need to provide stimuli for action to the individual stakeholders since their effectiveness will likely erode rather quickly if defection has no consequences. Attention to implementation in policy analysis is far from superfluous in modern governance (Bressers 2004). Correctly, authors are increasingly revisiting the field of implementation (e.g. Hill and Hupe 2002), and although it may be out of fashion, it is still alive and relevant (Saetren 2005) and it can bridge the missing link between policy and governance models (Waters, Robichau and Lynn 2009).

All processes, like implementation processes, are part of an infinite fabric of other processes and their inputs and outputs (labelled below as (system) "elements"). The level of detail with which one "maps" the system is of course dependent on the number and detail of the processes taken into account in a study. Very much like with geographical maps there is no single "best" level of abstraction, as this depends on what the user intends to do with the information. The Regge Restoration project implementation process and the Spencer Creek Stewardship Action Planning process, the two empirical cases focused on in this thesis, can for instance be seen as one process, or as a combination of several sub-processes that take place in parallel. Each process can be "parsed" into sub-processes of more detail and vice versa.

When the process(es) which are regarded as relevant to the study are identified in this way, various options exist in terms of how to deal with them (Bressers 1983). The first way is to recognize the process character, yet nevertheless deal with the relationship between the phenomena that this process produces as merely a causal relationship. This can be done for instance for the purpose of quantitative modelling. A second way of analysing such a process is to further divide the process up into sub-processes and sub-elements. This way one "zooms in" into the part of the domain one wishes to concentrate the analysis on. In fact there is no 'right' or 'wrong' level of abstraction. Like with geographical maps it is just what serves the purposes of the user best. Figure 2.2 illustrates this approach graphically, this time without separately depicting the actors involved.

While zooming in can reveal more detail in description it does not necessarily provide an improved means of explanatory analysis. As an alternative for quantitative analysis and modelling a more qualitative actor-oriented approach, which can enter into the process at a chosen level, is a third option for analyzing processes. This approach signals a more interpretative or "qualitative" method of analysis. Contextual Interaction Theory can help

to systematize such an analysis, although more quantitative uses have also been recorded (e.g. Grimberg et al. 1989, Owens 2008, Bressers, De Bruijn and Lulofs 2009). The next part of this chapter goes further into detail on the way in which these variables work together and can be used to understand implementation processes.

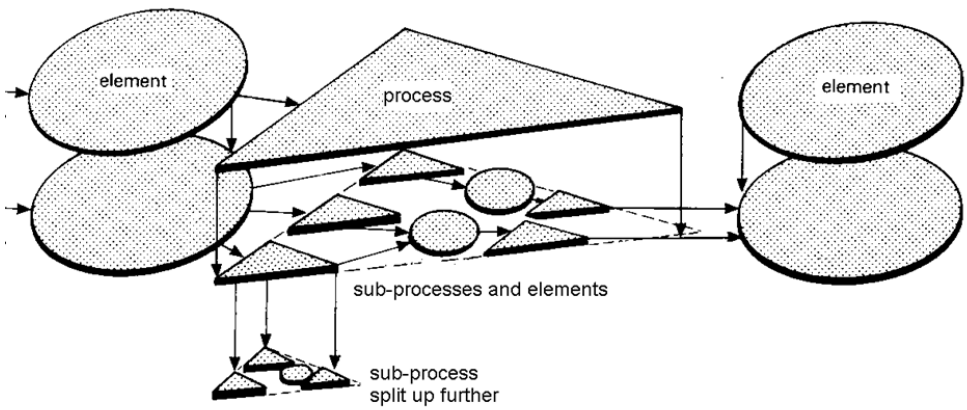

Figure 2.2: "Zooming in" into Social Domain Map. Adapted from Bressers 1983.

2.5 PART THREE: ACTOR CHARACTERISTICS AS THE ULTIMATE PROCESS SETTING

2.5.1 ARENAS AND SOCIAL INTERACTION PROCESSES

Viewing implementation processes as social interaction processes that are ultimately driven by the actors involved, makes it sensible to place them and their main characteristics central stage in the analytical model. Any further explanation of the course and results of the process can be built upon this perspective. Typically the field of implementation research deals with the proposition of crucial success factors to be used to analyze various cases. In the context of this research, isolating or "discovering" one new variable from the others that are found to be present is not seen as particularly relevant or interesting. The collective influence of the interacting factors is the reality being faced by the actors in the process and these are the relationships that are focused upon. Thus, elaborating on the core internal factors of the actors is a more parsimonious manner with which to begin the analysis. These internal factors are depicted in Figure 2.3. The inputs and outputs of the process are not shown in this figure for the purpose of increased clarity.

The characteristics of actors in the process are conceptualized as the ultimate driving forces of the process, rather than mere consequences of the "arena" in which the process takes place (cf. Ostrom 1999). In addition to the resources of the actors, that provide them

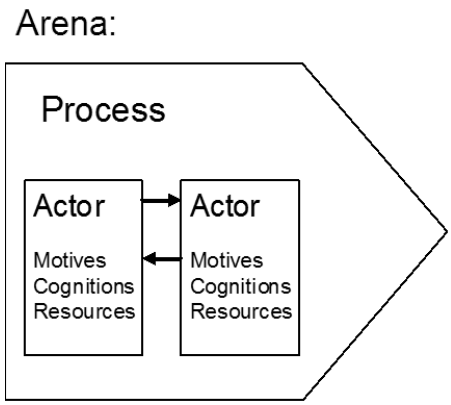

Figure 2.3: Process model with the actor characteristics used in Contextual Interaction Theory. Source: Bressers 2009.

with capacity to act and power in relation to other actors, motivations and cognitions also play an important role in creating productive or non-productive settings for the process. Resources only get meaning in the context of the co-existing cognitions and motivations. These three core actor characteristics are not just a subset selection from several other equally important ones. They represent different perspectives on social interaction processes, which have proved to be quite useful in explaining the dynamics of such processes. Owens (2008: 44-50) demonstrates this by categorizing the implementation success and failure factors identified by nearly 80 references that were reviewed by O'Toole (1986).

The "actors" which possess these characteristics are in the end, always people. Quite often however, these people represent organizations, groups or different parts thereof. In many analyses such organizations rather than individual people are considered as "actors". In terms of the process, the relevant characteristics of representatives are often determined to such a large extent by the organization or group they represent that a change of individual in most cases doesn't greatly change the setting of the process. "Where one stands depends on where one sits" (Allison 1971: 176). One should not forget however about the potential impact of characteristics of individual people, such as their diplomatic skills (or lack thereof), creativity and the degree to which their task-driven motivation is supported by personal enthusiasm. Productive "chemistry" between individual people and other positive and negative emotions can also occur.

From Bressers (2009), the dynamics of social interaction processes are alike in character to the implementation processes that are involved in the realization of the activity of nature and water restoration. The following assertions are thus taken from CIT as part of the framework for this thesis:

a. Policy processes are not mechanisms, but human social interaction processes between a set of actors (people, parts of organizations). This includes policy implementation management and project realization.
b. Many factors can have an influence on the activities and interactions of these actors but only because and in as far as they change relevant characteristics of the involved actors.
c. These characteristics are: their motives (which drive their actions), their cognitions (information held to be true, with which the situation is interpreted) and their resources (providing capacity and power) (see also Bressers 2004).
d. These three characteristics influence each other and cannot be restricted to two or one without losing much insight.
e. The characteristics of the actors shape the process, but are in turn also influenced by the course of and experiences in the process and can therefore gradually change during the process.
f. These influential sub-factors are specified in the boxes in Figure 2.4, including how they influence the core actor characteristics. These factors can in turn be influenced by numerous other factors from within or outside the system.

On the basis of these assertions a probabilistic predictive part of the theory has been constructed based on the combinations of actor characteristics that will create a particular kind of interaction atmosphere and result (Bressers 2004). Flowcharts have been developed that predict the type of interaction and implementation results that will arise for each combination of actor characteristics of two actors or actor groups. A differentiation is made between the likelihood that a certain policy will be implemented at all and the degree of adequacy of such implementation. The reason for this is that the three key actor characteristics may very well differ when one considers for instance motivation and resources to implement a policy in some form (e.g. providing licenses), compared with the implementation that keeps the incentive strength of the policy fully intact (e.g. with strict conditions and enforcement) (Bressers 2004). The predictive part of the Contextual Interaction Theory has been successfully tested in, among others, a study of forty-eight wetland restoration cases spread across four different countries (Owens 2008). It has also been applied to a variety of policy fields, as diverse as the enforcement of environmental permits in the Netherlands (Van Veen 2004), to the implementation of Clean Development Mechanism criteria in Cameroon (Minang 2007) and anti-HIV programs in China, Indonesia and Vietnam (Spratt 2009).

2.5.2 THE CORE ACTOR CHARACTERISTICS: MOTIVATION, COGNITIONS AND RESOURCES

Going further into detail about the relationships between the core actors can begin with Figure 2.4. To explain these relationships, Bressers (2009: 133-135) is paraphrased in the following text.

< *Start of Citation* > Compared to Figure 2.3, Figure 2.4 also shows process development (change processes – in the form of the processes over time). The actor characteristics are more thoroughly elaborated here, though not visualised as being linked to specific actors and for presentation reasons placed outside of the process box. This depiction enables the mutual influences between these factors and the process itself to be more clearly shown.

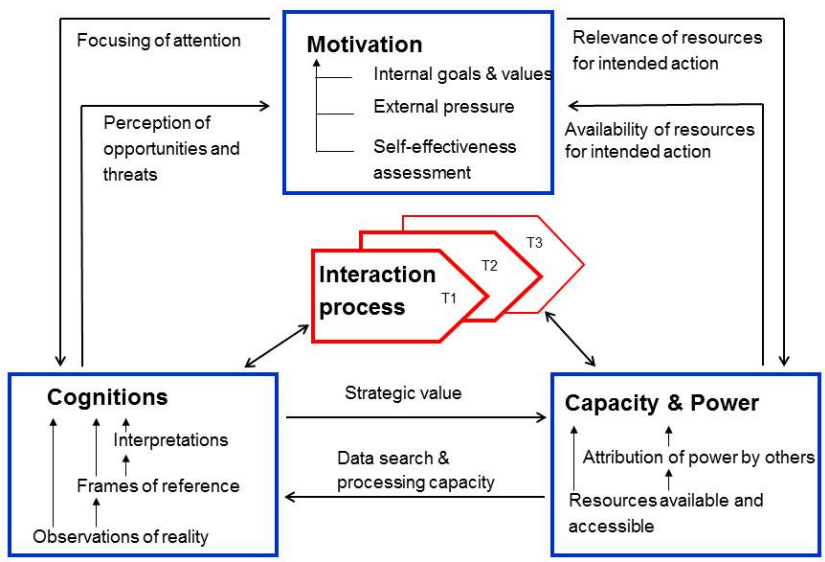

Figure 2.4: Dynamic interactions between the key actor characteristics. Source: Bressers 2009.

The "motivation" box seeks the origins of motivation for behaviour, including for the positions taken in interaction processes, in first instance due to one's own (personal, internal) goals and values. Self-interest, like in many economic theories, plays a strong role here. More altruistic values can also lead directly to genuine personal goals (Gatersleben and Vlek 1998). External pressures can also be a motivating force. As with all motivational factors they could in principle also be conceptualized as belonging to one's "own" purposes. However, the likelihood is great that in practical analysis this type of conceptualization will lead to them being forgotten or underemphasized. These pressures can be based on force, but will more often be in the form of softer influences stemming from normative acceptance of the legitimacy of such external wishes. The 'self-effectiveness assessment' can also exhibit itself as a motivational factor (Bandura 1986) and can play a large role. This concept points to the de-motivational effect that can occur when an actor perceives its preferred behaviour as beyond its capacity. It shows part of

the relation between motivation and the availability of resources, which can be personal/internal resources or those made available by others.

The "cognitions" box is based on the recognition that the cognitions of actors (interpretations of reality held to be true) are more than simply observations and information processing capacity. These aspects are certainly important and as a result of the information technology revolution they can enable emerging developments to change our understanding of problems and potential solutions. In policy sciences the so-called 'argumentative turn' (Fischer 1995), reflects a variety of approaches that emphasize that knowledge is produced through mutual interactions, based on interpretations of reality of actors, that themselves are mediated by frames of reference. Such frames of reference are termed by Axelrod (1976) as "cognitive maps", by Schön (1983) as "frames", by Sabatier and Jenkins-Smith (1999) as "policy core beliefs" and "deep core beliefs" and by Termeer (2001, 2007) as "configurations", each emphasizing specific aspects. Dryzek (1997) speaks of "discourses", thereby also stressing the language dependency of understanding and the role of words, one-liners, stories and the like to guide, but also to restrict and bias understanding. For some, "story-telling" related to people and the way the material world presents itself to us, is the essence of creativity and understanding (McLean 2009). While these approaches are quite different in their conceptual understanding and methodology of reconstruction, they also share some understandings: that cognitions are not just factual information, but more so interpretations of reality, and such interpretations are influenced by filters, frames and interactions with other actors. Only this "common ground" between the theoretical approaches is incorporated in the cognitions box of CIT. The relevant cognitions relate to the tasks in the process as well as the motivations, cognitions and resources of the other actors in the process. This includes content knowledge and the relational knowledge that is of utmost importance in interaction processes.

Resources as an actor characteristic are important to provide the capacity to act. In the relational setting of an interaction process they are also relevant as a source of power. Therefore this box is labelled "capacity and power" in this figure. The relationship between power and resources is not always direct. Actors exhibit power in first instance largely as a result of attribution by another actor. However this attribution of power is not stable when real resources do not support it. The resources that are the root of these powers encompass much more than formal rules (though legal rights and other institutional rules can be an important component). Skilled people, time and consensus are also important to have in addition to resources such as money (Klok 1995, Knoepfel and Imhof 1991). For instance, skilled process managers or "boundary spanners" can make a lot of difference, by making optimal use of the organisations available resources and creating synergies that make the resources of others available to be combined with their own. The resources that actors themselves possess as well as the resources belonging to other actors upon which they are dependent can shape the balance of power. A classic example is the dependency of authorities on the jobs created by industry, which

industry then uses as a source of negotiation power. Resources not only shape power relations, but are also a prerequisite for action as such, determining the capacity to act of any actor. The resource base for action can be greatly enlarged by engaging in interactions that increase mutual dependency with other actors with relevant resources. This increased resource base often comes at the expense of autonomy and thus – in some cases – power. Whether a specific resource contributes to an actor's power depends on the actions that they intend to engage in. Resources that seem irrelevant to get certain things done might be essential in other situations.

Mutual relationships exist between the three key actor characteristics just described. Every change in one of the three has influences on the other two. While motivation is typically handled first when constructing the make-up of the actor characteristics, it is also possible to begin with the way reality is cognitively filtered and understood and the way that problems and chances perceived. Similarly, it can be reasoned that it is best to first understand whether some technical information is available (pertaining to technology, economics, social or environmental information), as a prerequisite for motivation. It is important to keep in mind that the influence is mutual: without certain interests and values, available data may be overwhelming and too time consuming to process. The development of information requires attention to be focused (creating selective perception as a bias). Achieving the actions for which an actor is motivated requires resources, and the availability of those resources is bound to influence the actors' ambition. While 'knowledge is power' may be an exaggeration in some contexts, it is certainly true that information can serve strategic purposes and hence can be used as a form of power. On the other hand gathering and processing data is also an activity that needs resources. In addition to the relations between the core factors, the three factors shape and reshape the activities and interactions that happen in the process. *< End of Citation >*

The development of trust is an example where reshaping of the process occurs (cf. Vinke-de Kruijf 2010). Trust can be a resource for those in possession of it, but also takes the form of a cognition for the ones who grant it. The existence of mutual trust can be a strong motivational factor and enable many productive shortcuts in the course of the process. It can begin to develop following the exhibition of reliable and honest behaviour of actor A, or in response to a mutual interaction of actors A and B that in turn is observed by other actors. When this observation is accepted and internalized in the perceptions of the involved actors then this will attribute the trust resource to actor A (or mutually to all involved in the initial interaction). The presence of this supportive cognitive state, can deliver more opportunities and fewer threats. It can also influence the actors' personal goals, including the desire to maintain good network relations and improve their self-effectiveness assessment. A higher self-effectiveness assessment can arise because of the high level of trust involved and this then acts as a lubricant that allows other resources to become available for mutual use. This pooling of resources for joint or accepted purposes results in more resources being made available for use within the process. Consequently,

the higher motivation levels will further stimulate the process. Ideally all of these interactions take the form of positive feedback loops and create even more productive process settings later on (T2 and T3 in Figure 2.4). These examples show the case of a positive spiral however a negative spiral can also develop. As will be explored in the later empirical chapters, trust is indeed a very important factor in river restoration processes (Lundin 2007, Vangen and Huxham 2003).

2.6 PART FOUR: THE EXTERNAL CONTEXT

2.6.1 LAYERS OF CONTEXT AND THEIR RELEVANCE

The three main actor characteristics are not only intrinsic to the actors and influenced by the process, but are also influenced by many external factors from a multi-layered context. Part of that context is the case specific context. This involves factors such as the characteristics of the geographical place where the project is realized (Kotzebue, Bressers and Yousif 2010), as well as various kinds of other circumstances. A special category of these external circumstances is that of the case history, which consists of previous decision-making and issue framing incidents and interactions. This sets the institutional arena for the process, which influences which actors participate, to what extent and with what legal resources and expectations. While CIT does not maintain, that the arena determines the process and its outcomes, as is done in the Institutional Analysis and Development Framework (IADF) (Ostrom 1999), it is considered to be relevant. It is important to note that the approaches are not comparable in their entirety here since this thesis does not aim to explain collective choice issues on the use of natural resources, as is done with IADF. The purpose is to explain the course and outcomes of implementation processes – even though these might ultimately affect such collective choice processes on natural resource uses. Moving beyond the case specific context, a further layer of context is the structural context, which is made up of the different elements of governance (described in the next section) and the relevant property and use rights (Bressers and Kuks 2004). Lastly, there is a less specified layer of the wider context, which includes the culture, and economic and technological developments and political system (Brynard 2005: 659).

Although there is some resemblance with the three levels of analysis that are used by Ostrom (1990: 50-55) - operational, collective and constitutional -, the important difference is that the CIT model is implementation oriented, rather than resource use oriented. Ostrom's operational rules are viewed as contexts for both the "street-level" implementation process and the resulting behavioural change processes. As a consequence the collective level doesn't really match the chosen governance level since parts of what Ostrom would gather under the constitutional level also belong to the governance model of this thesis (compare also: Hardy and Koontz 2009). In the wider context only the characteristics of the political system are included in Ostrom's IADF. A

further difference is that CIT does not only include institutional, rule-based factors, but also a wider variety of factors that are broadly labelled as "institutional". This again reflects CIT's basic actor-based approach, within which the rules are just one of the relevant inputs to the context. Nevertheless, both Ostrom's IADF and CIT discern three contextual layers, even though they are differently demarcated. The two frameworks are also similar in how they perceive the reverse relationship of the specific context, back towards the wider context. Both CIT and IADF propose that the specific context is much more adaptable than the structural one and the wider context is even less so. This is not to say that the structural context does not change over time, just that these changes are more likely to be the emergent result of many different actors and factors.

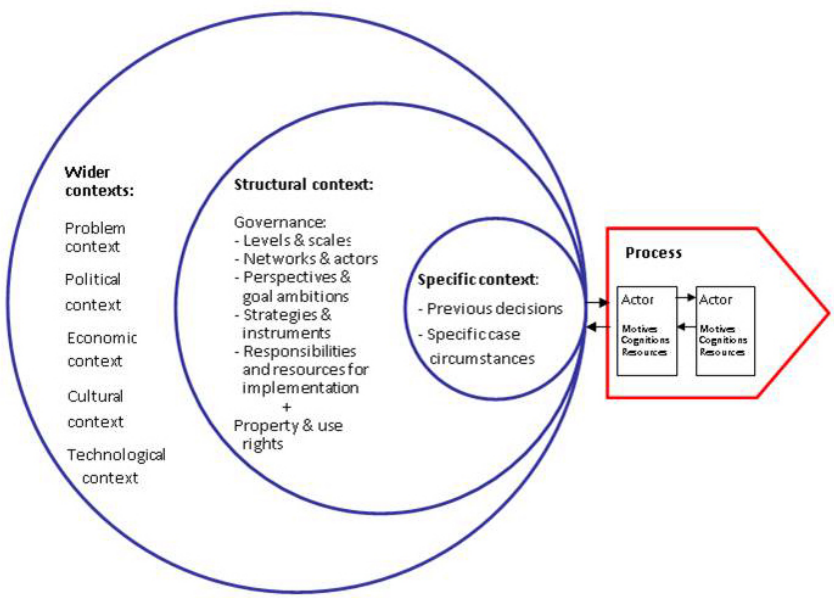

Figure 2.5: Layers of contextual factors for actor characteristics. Source: Bressers 2009.

The emphasis of this thesis is placed on understanding how implementation processes are influenced by the structural context as is shown in Figure 2.5. As such, the remainder of this section describes the importance and influence of the structural context.

2.6.2 THE STRUCTURAL CONTEXT

As described above, the structural context encompasses what is generally considered to be the governance influence. This can be separated into two parts which are 1) the legal and informal rules related to property and use rights and 2) the "five elements of governance" developed by Bressers and Kuks (2003). They do not use governance as a normative concept or as a hypothesis of developments in government-society relationships (Howlett

2011: 7-10), but as a neutral, yet enlarged understanding of the scope of policy. The concept has been elaborated on the basis of a variety of policy studies literature (Allison 1971, Axelrod 1976, Baumgartner and Jones 1993, Davis and Lester 1989, Dror 1971, Dryzek 1987, 1997, Fischer 1995, Fischer and Forrester 1993, Hogwood and Peters 1983, Kingdon 1995, Kiser and Ostrom 1982, Milbrath 1993, Ostrom 1990, 1999, O'Toole 2000, Sabatier 1988, 1991, 1999, Sabatier and Jenkins-Smith 1993, 1999, Scharpf 1997a, Schön 1983, Schön and Rein 1994, Zahariadis 1999) and specific governance literature (Björk and Johansson 2000, Blomquist and Schlager 1999, Jordan 2000, Kooiman 1993, Lundqvist 2001, Lynn, Heinrich and Hill 2000a, 2000b, Marks et al. 1996, Peters and Pierre 1998, Rose 1980, Rosenau 2000, Smith 1997, Scharpf 1997b, Young 1994). The five elements of governance are described by Bressers (2009: 126) in the following paragraphs:

"1. Multiple levels of governance. Which levels of governance dominate the policy discussion? What is the accepted role of government at various scales? Which other organizations are influential in the governance activities on these levels? Who decides or influences such issues? How is the interaction between various levels of governance organized?

2. Multiple actors in the policy network. How open is the policy arena? Open to whom and when, precisely? What role do experts play? How do the various governmental and other organizations relate to each other?

3. A multiplicity of problem definitions and other policy beliefs. What are the dominant maps of reality? To what degree do the actors accept uncertainty? Is the policy problem regarded as something individuals must deal with, or is it a problem for society in a collective sense? Where coordination is required with other fields of policy, what are the links accepted by the actors?

4. Multiple instruments in the policy strategy. Which (other) instruments belong to the relevant strategy or strategies? What are the target groups of the instruments, and what is the timing of their application? What are the characteristics of these instruments?

5. Multiple responsibilities and resources for implementation. Which organizations (including government organizations) are responsible for implementing the arrangements? What is the repertoire of standard reactions to challenges known to these organizations? What authority and other resources are made available to these organizations by the policy? With what restrictions?"

Similarly to the discussion on the stability of the various contextual levels, the governance context (referred to generally as the structural context in this study) at the national level is likely to be more stable than the specific case context. The structural context will to a far lesser degree be influenced back by individual implementation cases. In fact it is the essence of the difference between the specific and the structural context that the latter

holds for in principle all similar cases and not only for any specific case. Nevertheless, it too will gradually change over a larger time period than the case does, but through the similar dimensions of motivational, cognitive and resource developments in response to external influences and internal frictions (Bressers and Kuks 2003: 74-83, Costéja 2003). These developments need not always be coherent across the various elements of governance (compare Howlett and Cashore 2007). Examples of these types of developments of the national governance context of water management can be seen for France, Switzerland, The Netherlands, Belgium, Spain and Italy in Kissling-Näf and Kuks (2004) and Bressers and Kuks (2006), for Greece in Kampa and Bressers (2008) and for Romania in Vinke-de Kruijf, Kuks and Augustijn (2010). The elements of governance also influence each other as new situations arise. For instance a change in the degree of interconnectedness and cohesion of the network relations will influence the characteristics of instruments in instrument selection processes (Bressers and O'Toole 1998, Ligteringen 1999, Bressers and O'Toole 2005).

2.6.3 GOVERNANCE WITHIN THE STRUCTURAL CONTEXT

The specific case context is not entirely determined by the structural context. In the case of any local project where multiple goals can be achieved, formal and informal degrees of freedom exist that enable a degree of choice with regard to determining the main policy or policies that will guide the project. For instance, if the national governance level is characterized by a lack of interconnectedness and cohesion of the network relations, this need not be replicated among the constellation of actors that participate in the project. More generally in the specific case context the structural relations between levels, actors, goals, instruments and resources will be adapted to the specific case in as far as the actors strive for this and it is possible. In the case where the process continues on for an extended period of time, or is a process in a series of similar processes that together provide sufficient time, adaptation is feasible and worthwhile in order to build for instance better network relations among the actors involved in the series of processes. Such collaborative policy implementation networks have important self-reinforcing characteristics (DeLeon and Varda 2009).

The second component of the structural context is comprised of the valid property and use rights system that are present related to land, water and other relevant resources (e.g. Ostrom 1999). The relevant structural context is thus a combination of both public governance and property and use rights (Knoepfel and Nahrath 2005, Knoepfel et al. 2007). These two aspects encompass both the possession of titles, the bundles of rights connected to the property title and the exclusion of uses and the access of users (Fuchs 2003, Bressers, Fuchs and Kuks 2004). The question then remains, what determines the "relevant" aspects of the structural context? The next section describes how the case specific context enables a clearer depiction of how the relevant governance inter-regime is assembled.

2.6.4 MULTIPLE MOTIVATIONS, COGNITIONS AND RESOURCES

Further expanding the understanding of the structural context must occur due to the various interests of the multiple stakeholders that have been accepted as being a key part of local processes. The structural context should be viewed through a multi-actor and multi-level perspective in order to align with the goals of local processes as well as the key tenets of sustainable development. Both local and global issues are relevant if long-term improvements in the state of the natural environment are to be reached. From an implementation perspective, difficulties will often develop in achieving alignment with fluctuating circumstances and goals because accountability measures are often not in line with flexible outcomes. Accountability procedures attempt to judge how effective the processes are at achieving the initially identified objectives so that improvements can be identified and inform future decisions. Despite these difficulties and the transitioning required from traditionally ideal implementation processes, it is imperative for sustainability and natural resource protection research, that policy and local goals across traditional policy borders and lines are considered in an integrated manner and as inseparable from each other.

This integration is also necessary since the numerous activities people partake in consume multiple resources at once. This is increasingly visible within the context of an increasing population and fixed land area. Practices used for governing these resources slowly adapt over time as populations and activities evolve. Many studies have emphasized how institutional resource regimes with well-developed property and use rights can guide people into responsible use of natural resources (e.g. Ostrom 1990). Regimes governing natural resources are based on property and use rights as well as the various policies that are connected to the interests involved and as a result have a multiple and complex character. Characterizing the influence of these regimes based on which aspects improve their ability to provide for more sustainable resource use is an important step towards further improvements.

2.6.5 THE INFLUENCE OF REGIMES

According to Young (1989), the topic of regimes relates to specialized arrangements concerning quite well defined activities, resources or geographical areas that often involve subsets of international society. Though this is perhaps the more commonly referred to definition, Krasner (1983) has much earlier defined regimes as they relate to the facilitation of a convergence of expectations. He further proposes that they are constructed of institutions, which possess norms, decision rules, and procedures. This second view provides the basic understanding used in this thesis as the convergence of expectations relates to the desired management of a natural resource by multiple interests. This focus supports the attention given to the practical implementation issues seen taking place as a result of regime influence. Regime theory has been well developed in the literature and is seen to be in essence quite similar in meaning to the previously

discussed structural governance context. In the following chapter, this field of regime theory is further explored and parts of it are used to support the understandings of the structural context thus far developed in this thesis. Here it is only briefly included in order to help frame the discussion and importance of the structural context.

REGIME FRAGMENTATION

Various issues related to water management being undertaken in a relatively fragmented and specialized manner is what typically constitutes the governance of water resources. The management of water from an institutional perspective has been reactive by mainly addressing problems once they have arisen. Examples include regulating water pollution from industrial sources, shipping rules to address concerns over navigation, flooding management through improving infrastructure for higher amounts of runoff and ballast regulations to combat alien invasive species. Clear problems have warranted the development of clear solutions. Deciding upon programs and actions to take becomes more difficult when the types of issues that are being faced are not as visibly or conceptually clear and involve longer chains of influence.

THE NEED FOR AN INTER-REGIME PERSPECTIVE

In order to be able to capture these aspects of governance, this research covers the recognized water governance regime contents as well as any influences that other regimes such as agricultural development, economic development, transportation, etc. can have on the resource since they have real-world consequences and influences (both direct and indirect). In an increasingly integrated global economy and environment, the actions taken to address any given problem will most certainly have impacts outside of the intended issue area. This phenomenon is sometimes referred to as institutional interplay (Underdahl and Young, 2004). In this thesis an inter-regime is conceptualised as the combination of the different components of the relevant regimes associated with the main goals of the project being analysed.

A recognizable inter-regime is likely to develop with respect to any less easily defined issue area and particularly for resource issues that involve some aspects of sustainable development. Making an exhaustive inventory and analysis of the contents of such an inter-regime is an enormous task. It would be highly dependent on the judgement of the researcher to determine what is and what is not relevant to the management of the resource. The inventory can be somewhat simplified by choosing to define the resource use in a very narrow and precise manner, such as choosing a specific geographical area and bounded time frame. Additionally, the characteristics of the inter-regime and their influence on local actors can be used in order to assess the connection between the governance and sustainability of the resources that they impact. The contents as well as the structure and character of this inter-regime are thus important. The decision to use

CIT enables this sort of examination as it provides a framework that looks further than the direct impacts of the contents of the governance inter-regime.

In summary, some further important assertions of CIT are:

a. Specific case characteristics, like the characteristics of the geographical place and the history of the process, form a first layer of context. This context is also partly dynamic over time, caused by experiences in the process itself and by targeted actions of those involved.
b. The structural context (also referred to as the governance inter-regime) is a wider and more general level of the external context that influences the characteristics of the actors. It consists of elements of public governance and private property and use rights. The structural context will to a far lesser degree be influenced back by individual implementation cases.
c. Another more encompassing circle of political system, socio-cultural, economical, technological development and problem contexts surrounds the structural context; this is referred to as the wider context.
d. Each aspect of the wider context not only influences the narrower ones, but can also directly influence the actor characteristics.

The previous sections have elaborately described the content and workings of the external context, which CIT denotes as being influential on the implementation processes that take place. The following sections describe the framework of CIT that can be used to understand these influences in a structured, encompassing and integrated manner.

2.6.6 THE QUALITIES OF THE STRUCTURAL CONTEXT

The structural context influences implementation processes not only through its direct contents, but also through its qualities of extent and coherence (Knoepfel, Kissling-Näf and Varone 2001, 2003, Bressers, Fuchs and Kuks 2004). The extent refers to the completeness of the regime while the coherence is the degree to which the various elements of the regime strengthen, rather than weaken each other. These two concepts are further elaborated upon this section, which is based directly from the writings of Bressers, Fuchs and Kuks (2004: 35-36).

EXTENT

<*Start of Citation*> As a regime increases its extent it consequently becomes more complex. More layers and scales become involved, more actors are involved, more perceptions of the problem and accompanying goals are involved, and more instruments are part of the policy mix and more organisations share responsibilities for implementation. The most eminent feature of extent is however the gradual increase of the domain of the regime, which consists of the uses and users regulated by one or more parts of the regime. With it also comes an increase in relevant property and use rights. This is then viewed as an

increase in the crucial variable of extent. Regimes with an insufficient extent are by definition weak as guardians of sustainable use, while some relevant parts of the domain go unregulated.

An increase in complexity is related to how governments attempt to address developing issues. Societies in modern times have generally grown towards increased complexity. Increased populations, borders, overlaps, activities, rivalries, etc. are a fact of our current living environments. A growing complexity in governance can be viewed as a logical adaptation to that development (Gerrits 2008, Teisman et al. 2009). Many external change agents, such as technological developments, add new scales, new actors, new problem perceptions, new instruments, and new responsibilities to the existing ones.

COHERENCE

While the term 'integration' is common in most policy papers (e.g. those on 'integrated water resources management'), coherence is used here instead, for the reason that, in most policy papers the term integration (e.g. in 'integrated water management') is used in a sense that implicitly or explicitly includes an increase in the domain of the regime (the extent increased to all relevant users and uses). Therefore, integration as it is used in the policy sphere is a combination of extent and coherence. For the sake of conceptual clarity and the possibility to adapt to the meaning of the term integration in policy practice, these terms are used when appropriate, and 'integration' is reserved for the combination of the two.

Coherence of the public governance component means: When more than one layer of government is dealing with the same natural resource (as is often the case), then coherence means inter alia that the activities of these layers of government are recognized as mutually dependent and influencing each other's' effects. Likewise if more than one scale is relevant the interaction effects between those scales should be considered. When more than one actor (stakeholder) is involved in the policy, coherence means that there is a substantial degree of interaction in the policy network, and preferably productive interaction providing coordination capacity. When more than one use or user is causing the problem of unsustainable resource use for example, coherence means that the various resulting objectives are analyzed in one framework so that deliberate choices can be made if and when goals and/or uses are conflicting. When the actors involved have problem perceptions that start from different angles, coherence means that they are capable of integrating these to such an extent that a common ground for productive deliberation on ambitions is created. The same holds for instrumental strategies that are used to attain the different objectives, as well as for the different instruments in a mix to attain one of these objectives. Coherence within the implementing organisation means that responsibilities and resources of various persons or organizations that are to contribute to the application of the policy are coordinated, or these actors themselves are coordinated.

With more coherence in the public governance component of the regime, the goals of the implementers and target groups involved in the implementation process can be expected to be less likely in discord. All elements of a more coherent regime can be assumed to contribute to a lowered degree of experienced uncertainty, an increase in information exchange, and a lower degree of distrust. Coherence also means that there will typically be fewer possibilities for target groups to play implementers off against each other and more standard operation procedures for the solution of conflict. Additionally, there is a reduction in confusion of local level implementers in terms of which procedures, policies, guidelines, etc. take priority over others and can thus perform their tasks more efficiently. This implies that a more coherent public governance component of the regime can outperform a regime with an equal degree of extent, but more fragmentation. This is expected to be the case, not only through the direct effects of more mutually reinforcing and less mutually destructive side effects on the resource use, but also through indirect effects on the quality of the implementation process < *End of Citation* >.

Regimes with an insufficient extent are by definition weak as guardians of sustainable use and are unlikely to prevent unsustainable interventions, since some relevant parts of the domain are unregulated. Regimes that are more complete in scope may not be coherent, and can be fragmented. Instead of synergy of the various elements of the regime, fragmentation causes actions that undermine the results of other actions. Stalemates can reduce the ability to make good management decisions. If these decisions are taken without great respect for possible conflicts and synergies with other governmental policies then difficulties may be seen during implementation: competition for resources, finger pointing and distrust between the different silos in their efforts to promote their silo specific policy options (Earley, 2005).

This leads to two further assertions:

e. Regimes with a deficient extent will be more likely to lead to degradation of water resources or an inability to protect the ecological functions of the natural resource, than regimes with a larger extent.
f. Regimes with a large 'extent', but with low coherence will more likely lead to degradation of natural resources or be unable to protect the ecological functions of the water resource, than regimes with a similar extent but a higher degree of coherence.

2.6.7 THE EFFECTS OF EXTENT AND COHERENCE ON SUSTAINABILITY AND IMPLEMENTATION

These last assumptions were tested as hypotheses and confirmed to be generally sound in a six-country (twenty-four case) study on tributary river basin management (Bressers and Kuks 2004). However the relation between the growth of the extent of the regime and the sustainability improvement estimates proved to be rather weak and hardly significant. The relation between the general assessment of regime change towards more integration

(extent and coherence taken together) and the assessment of sustainability improvements was however much stronger. Of the separate regime aspects, by far the most important factor was the coherence of public governance. It correlated even more strongly with the assessment of sustainable resource use than the general regime change. The CIT relationships between extent and coherence of governance regimes, the motivation, cognitions and resources of actors and the implementation results were also confirmed in a separate study on Greece and the implementation of the EU Water Framework Directive (Kampa 2007).

These results were found in cases where water resource management was itself the dependent process, not – as in the cases studied in this thesis of long-term implementation of physical resource changing interventions. Nevertheless, a more coherent regime can outperform an equally complex but fragmented one not only through the direct effects of more mutually reinforcing and less mutually destructive (side) effects on the resource use, but also through the indirect effects on the quality of the implementation process.

The final assertions are thus:

g. In the implementation process, the additional fragmentation that is typical for complex regimes will tend to lead to more discord between the actors (goals), more uncertainty (cognitions), and more stalemates (power) and, thereby, can hamper implementation.
h. In the implementation process, coherence of the structural context (the regime) will tend to lead to less discord (due to more 'win-win'- solution creativity), less (subjective) uncertainty (due to more exchange of information and less distrust) and less stalemates due to fewer possibilities for target groups to play the implementers off against each other and more standard operation procedures for the solution of conflict.

2.7 PART FIVE: CONCLUDING REMARKS

2.7.1 CIT AS A FITTING CHOICE BASED ON THE EMPIRICAL FOCUS

Carpenter and Gunderson (2001) find that a sustainable relationship for managing resources can only be reached with an experimental approach that takes into account the competing interests of the different social groups. Typically, local resource management projects have to reckon with a wide array of old and new interests and perceptions and draw resources from a combination of policies from various levels of government (Bressers and Rosenbaum, 2003). In the cases described in this thesis this has led to a context that has a complex multiplicity, is highly dynamic and is consequently plagued with uncertainties. Blue print planning and attempts for straightforward project implementation under such circumstances have different consequences under different contexts. Adaptive management is one activity that is seen to be present in many contexts as it enables the actors to see around obstacles and combine arising windows of opportunities. The activities observed to proceed in this way are labelled as "boundary

spanning" (Bressers and Lulofs 2010). Adaptive management relies heavily on the availability of feedback mechanisms to adjust and change the system of governance (Berkes and Folke 1998, Berkes et al. 2003, Ollson et al. 2004). Continual learning is present and is needed to improve the opportunities for future management of the resource. Moreover for adaptive management or boundary spanning it is very important that the governing inter-regime allows and facilitates opportunity driven implementation.

The context just described is based on a pragmatic lens of implementation and its complete set of circumstances, rather than an isolated one. This natural level of complexity poses difficulties for theory formulation. "CIT aims to make this complexity 'manageable' by distinguishing two sets of independent variables. These are the 'core circumstances' – the factors that have a direct influence on the development of the processes; and 'external circumstances' – the factors that have an indirect influence via their influence on the core circumstances. The applied policy instruments can be included among these 'external circumstances', as with all other contextual factors. The theory indicates how the core circumstances jointly influence the development and results of a given process. External circumstances, including characteristics of the policy instruments that are to be employed, are taken into consideration when estimating the value of the core circumstances. In this way many contextual circumstances can be taken into account without increasing exponentially the complexity of the theory" (Bressers 2004: 289).

It has been an important goal of this chapter to present a framework which is consistent with the practice seen in local natural resource management processes so that the links to policy, administration, governance, resource sustainability and local actions and needs can be taken into account and studied. For this research, the interactions taking place at the local level are central to the interest into natural resource sustainability. It is the results of these interactions that will affect the final use and management of the resource.

Understanding the various impacts from different perspectives and influencing vectors – particularly in the highly complex policy realm of sustainable development – is highly dependent on context. The task stressed here is to develop an approach which is useful in understanding 'what works, where, when and how in local natural resource management processes?' By being open to a large variety of contextual factors, but nonetheless channelling them through a limited number of 'core characteristics' that build a deductive explanatory framework, the approach that is used strives to achieve an understanding of the implementation processes which is simultaneously more concise and more generally applicable. The applications of the theory chosen in the empirical portion of this thesis– the local effects of the inter-regimes that develop around stream restoration projects – illustrate the relevance of the approach.

Previous attempts at applying this framework have shown it to be quite useful in explaining the processes that occur in policy implementation processes (see Owens 2008 for an example of how the model has been applied in its predictive capacity to forty-eight

small studies on wetlands restoration projects in two European states and two US states). The choice for using CIT as a basic framework within this research is that it enables the influence of different policies from different regimes to play a prominent role in the final product without attempting to cancel out the important local effects. Additionally, CIT does not reduce the local context to only be important in as far as how it impacts the original intent of the policy but recognizes its importance in the expectations that are part of the locally preferred outcome. Local impacts can also be seen to be in a complimentary and contradictory relationship relevant for the precise context in which they are seen in the cases used in the study.

This form of utility is seen to be key to understanding the process and influences on the given actors in the projects. The general premise of this research is that policy implementers (as viewed from a top down perspective) are in reality actors trying to please a number of vectors of influence in a dynamic atmosphere.

Modifications to CIT are required however (referring to the 2004 and 2009 versions as is mostly done in this chapter) since it is seated too heavily in a static conceptualisation of the interaction processes and the context that surrounds them. It is adapted to the understanding of the interactions in terms of a two-actor model with limited links established between the actor characteristics and the contexts where all "external" factors stem from. The next chapter deals with the particular needs of processes that have high complexity (multiple purposes, rules, actors, etc.) and that are long term and thus more dynamic and unpredictable.

CHAPTER THREE: A DYNAMIC TWIST TO CIT AND METHODOLOGY

3.1 PREAMBLE

This chapter provides two contributions to the theoretical underpinnings of this thesis. The first is to elaborate on the "new" features that have been included into the Contextual Interaction Theory framework for analysing complex and dynamic implementation processes. The methodological underpinnings that were necessary to connect these new features to empirical cases and how results can be obtained are thus added to the end of this chapter as opposed to being placed in a separate chapter.

3.2 INTRODUCTION

The previous chapter delved into the basic understandings of governance and policy implementation as conceptualized by Contextual Interaction Theory (CIT). CIT has been used in previous studies to provide insights at various levels of abstraction into various governance related case studies. One in particular that can be seen as related to this study is that of Owens (2008). In her thesis she was interested in understanding the influences of the actor's main characteristics and how they could explain the implementation outcomes of forty-eight water resource management projects in Europe and the USA. The results showed that indeed the actor characteristics could be seen to be able to predict or explain the effectiveness of the implementation processes in a number of cases.

In Owens (2008) as well as many other previous works employing the use of CIT as an analytical lens, the research takes on a "before" and "after" nature. This simplification can be helpful in identifying links between context and actions in a situation where many different influencing factors and actors are present. There are important reasons to pay attention to and systematically analyse these links and how they influence local processes. Over the last few decennia, societies have developed to meet the needs of population growth, increased development and increasing resource use. Sometimes these changes are made as attempts to address locally prevalent issues and sometimes they result from high-level attempts to stave off or deal with issues at a broader scale that have not necessarily been experienced at the local level. In many traditional cases, actions have been designed to address what were accepted as being clear and straight forward problems. For example, flooding concerns were met through dams, dykes, canals, etc. and projects were implemented to address these concerns. When water quality was threatened through industrial effluent, laws were put into place limiting discharges.

There has however been significant development in the way that society understands the types of issues being faced with relation to water management and governance in more recent times. Solutions are now expected to meet numerous goals through smart project

design and adaptive management and implementation. Public participation is required for most projects of a decent size, which increases the knowledge required of the project leaders with respect to the different interests and concerns of the stakeholders in the area. The overall societal understanding and concern with sustainable development adds an additional (and often inexplicit) expectation with respect to the deliverables of projects (particularly those funded with public resources). Referring back to the five elements of governance discussed in Chapter Two, the characterization of the governance influence on projects can thus include a number of different levels, actors, problem definitions, instruments and responsibilities and resources for implementation related to their domains. Additionally, in contexts with a relatively high legal and bureaucratic framework, there are a number of changes that take place following the initial project idea. Several rounds of negotiations and consultations take place which lead to the final implementation process (Teisman 2000). This is an iterative process that is often required in order for the involved actors to succeed in attaining the necessary permits, resources and support to move forward. Thus, studying the process with a tool that does not deliver a specific analysis of this complexity and naturally dynamic structure is likely to be oversimplifying and can overlook some important factors that can be used to improve the understanding of the underlying processes at work. When looking at local water management processes, the implementation process is sufficiently complex and dynamic to justify moving beyond a static analysis. This chapter explains the nature of this special context and develops a number of additional insights that build upon the CIT framework and improve the way in which it can be used to study the specific nature of these types of implementation processes.

Part One explores the complex nature specifically as it relates to the governance inter-regime and its influence on the implementation process. This is followed in Part Two by a discussion about the dynamic nature of implementation processes and what types of actions it requires from the involved actors. Part Three focuses on the internal dynamics of actors that operate under these complex and dynamic circumstances and how they work within the constraints and take advantage of the opportunities available to them.

3.3 PART ONE: COMPLEX INTER-REGIMES

Given that the focus of this research is on policy implementation it is important to first ask the question of exactly which policy or policies are being implemented. As has been explored in Chapter Two, local natural resource projects are often related to a number of different policies based on the high number of interests and issue areas involved. In local water management projects for example, it is common that in addition to the relevant water policies, nature and agricultural policies are also relevant and need to be taken into account. Since the nature of the project can change over time, the policies that are relevant can also change. In addition to the increasing complexity of the projects, it is likely that the

sheer number of policies that simultaneously apply and are incorporated into the project can increase considerably as the process moves forward.

How many and which policies are involved in a given project is partially influenced by the actors in the project themselves (Jones and Jenkins-Smith 2009). As was discussed in Chapter Two, actors can choose to include different interests based on their desire to increase their available resources or perhaps to open up new avenues or avoid obstacles seen in the implementation process. This produces the likelihood of increasing complexity through the combination of multiple governance contexts that are responsible for addressing the various involved interests. It is thus necessary to analyse the implementation process from the perspective of the multiple inputs to the local management project.

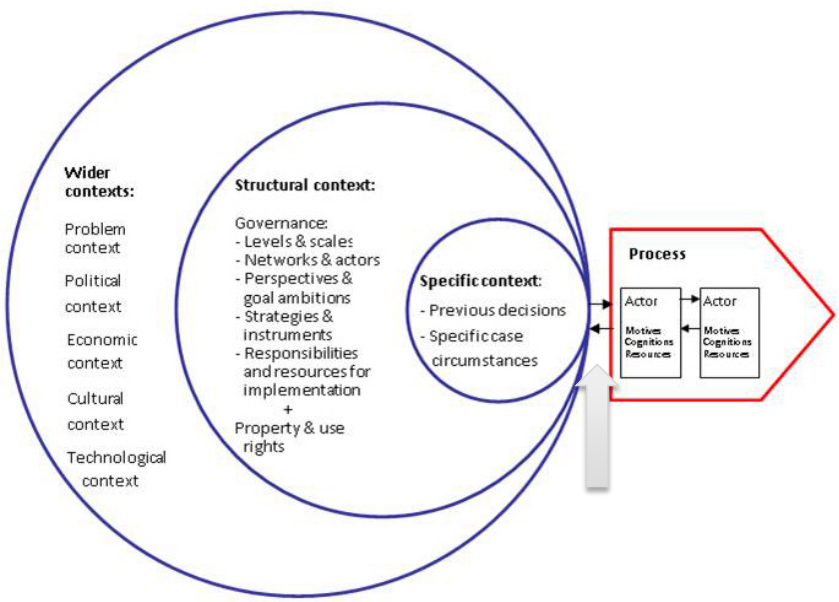

Figure 3.1: CIT model with additional focus

These two arrows of the basic CIT model represent the implementation process whereby the context influences the project and the project influences the context.

3.3.1 INTER-REGIME INFLUENCE ON LOCAL PROJECTS

As was discussed in Chapter Two, the theoretical conception of regimes begins with Young (1989), where he bases his study on specialized arrangements presiding over quite well defined activities, resources, or geographical areas that often involve subsets of

international society. This thesis uses a more broad definition, which constructs the regime from institutions, which possess norms, decision rules, and procedures as is done by Krasner (1983). The reason for this was the need to recognise the importance of the convergence of expectations of actors, which is particularly appropriate for local management of natural resources. In these cases, many different stakeholders are involved in the development of ideas and approaches to address their individual interests through one project. The solutions that are envisaged for the project are dependent on this development of convergence. This is logically so, but it is important to state since this also means that the point to which ideas will eventually converge is unknown from the start of the process.

The selection of the ideas, which gives structure to the implementation process, is according to Kingdon (1995) based on the criteria of technical feasibility, value acceptability and anticipation of future constraints. The selection of ideas thus determines the policy instruments that will be relevant to managing that resource. Including these aspects as being part of the governance inter-regime is necessary due to the focus on the real implementation issues seen taking place at the local level. This conceptualization of the governance inter-regime reflects the way in which actors themselves structure their governance system in the way that makes sense to them (Cash et al. 2006). Including this aspect into a simplified version of the CIT model results in Figure 3.2.

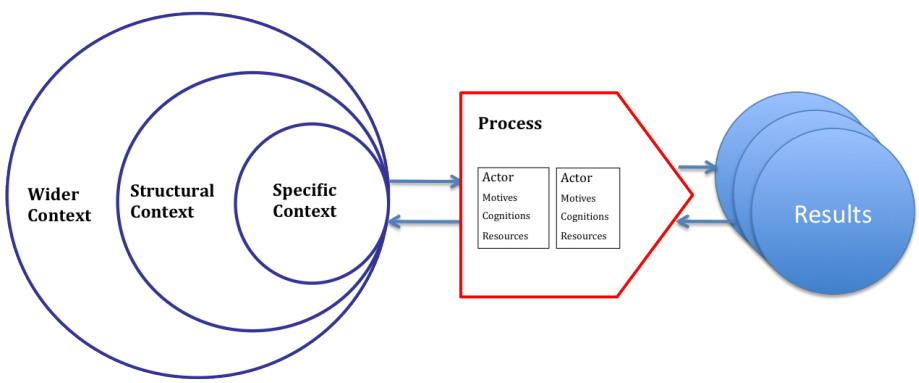

Figure 3.2: Project results feed back into the interaction process.

When studying stream restoration processes, it is thus also extremely important to study the recognized water governance regime contents as well as any influences from other regimes such as agricultural development, economic development, transportation, et cetera where they have observable consequences and influences (both direct and indirect) on the implementation process. As has been discussed, the actors in the process determine the main goals of the project and thus it is these decisions that will determine the sectors associated with the governance of the resulting project. When the different components of the relevant regimes are combined based on the main goals included within the project,

this is defined as an inter-regime. This inter-regime can develop with respect to any issue area given the interconnected nature of many policy programs instituted by governments. This description recognizes that by integrating various issues from different policy sectors into a single project, the burdens and opportunities related to those sectors become jointly relevant for the project.

3.3.2 HOW TO DETERMINE THE COMPONENTS OF THE INTER-REGIME?

In order to help conceptualize the inter-regime, this section uses the description of Underdahl and Young's (2004) regime as a starting point. When trying to assess a regime, one first needs to determine the issue area that is of interest. They describe this issue area as a socially constructed understanding of the nature of the problem to be solved. Once this has been defined, the regime can be identified and is graphically conceptualized in Figure 3.3.

Figure 3.3: Governance Regime related to a well-defined issue area. Based on Underdahl and Young 2004.

Traditionally regimes are thought of as being a result of an international or national political decision or agreement to take action against a common problem or concern. Generally they will be constructed of a number of proposed goals and a set of tools with which to accomplish them. The five elements of governance that are discerned as being a part of the structural context are a further elaboration of this concept (Bressers and Kuks 2003). Following the establishment of these programs, both deliberate as well as some broader consequences are likely to occur as is shown in Figure 3.2. In an increasingly integrated global economy and environment, these actions taken to address the target problem will have impacts outside of the intended issue, a phenomenon referred to as institutional interplay (Young et al. 1999, Young 2002). Nearly twenty years ago, Runge

(1994) characterized this as a growing concern. There is as of yet no standard taxonomy for characterizing regime consequences, yet Underdahl and Young (2004) suggest four ways with which to differentiate them: 1) cross-regime effects, 2) domestic consequences, 3) systematic consequences and 4) impacts on international society. In the process of implementation, these consequences can overlap, conflict and produce redundancies as the target actors attempt to integrate them into their ongoing activities and opportunities. As such, the institutional interplay seen to be most important to the focus of this thesis is related to the convergence of different regimes and can best be described as consisting of cross-regime and systematic consequences.

It is extremely difficult to evaluate the effectiveness or efficiency of governance regimes. Causal chains that link the operation of a regime and the effects of that operation become increasingly difficult to ascertain as the length of the causal chain lengthens (Underdahl and Young 2004). This becomes further challenging when the stakeholders in the implementation process deem multiple regimes as relevant for a certain project, which were not developed with integration in mind. Legal and political limitations make an overarching integrated regime an impractical and inefficient solution for the governance of local resources.

In addition, the issue areas related to these local resource issues are not always well defined. The external influences that will play a role contain portions of regimes that are more easily and clearly defined through the afore-mentioned process of institutional interplay. Therefore it is better not to try to define the relevant regime combination or "inter-regime" from a top down perspective, but to work backwards from the perspectives of the actors in the process. This can be done by first defining the boundaries of the project that is being studied in terms of the actors that are involved (while recognizing that this can change over time). Involvement can be based upon the mutual agreement of the different parties. To ensure that important actors are not left out, the researcher can also look to the resources being affected by the project and make an educated hypothesis about the groups who may have an additional claim for involvement, whom have not (yet) been included in the interaction process by the leading parties.

The issues that these actors include in their project and what sectors they make relevant for their (inter) actions define the inter-regime. The included sectors will initially stem from sectors that relate to the main goals as identified by the project, such as water quality and nature development. The inter-regime will also include aspects from sectors that affect the project by means of their broader consequences. An example of this could be the sector responsible for the development of industrial or residential areas. Working backwards from the local issue area, for which no well-defined regime exists, results in Figure 3.4.

As Figure 3.4 illustrates, the inter-regime develops based on the combination of the content of the various regimes that are relevant to the chosen issue area as defined by the

relevant actors. The structural influences of the regimes must also be integrated at the target level and provide the structural context of the inter-regime that is experienced at the project level. These factors form the framework of the inter-regime and include both deliberate and broader consequences of the more widely recognized separate regimes.

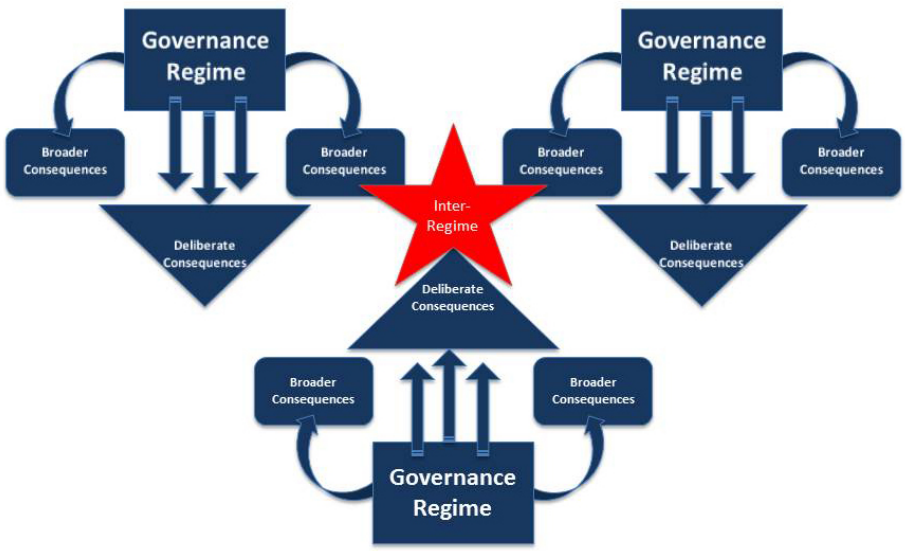

Figure 3.4: The Development of an Inter-regime.

3.3.3 THE ROLE OF BOUNDARY JUDGEMENTS IN INTER-REGIME DEVELOPMENT AND IMPLEMENTATION

The inclusion of different policy instruments and structures into the governance inter-regime of a local project occurs at least partially based on the personal delineations of the involved actors with respect to what issues they believe to be relevant. The ideas and goals held by the participants are however not static notions upon which solutions are designed from a static perspective of success, but evolve over time and in interaction with the other ideas which surface throughout the rounds of negotiation and discussion (Howlett 2000). There are generally many different ideas with some commonalities and some differences at the beginning and it is unknown in which forms these ideas will overlap with the final output once the implementation process is complete. The policy process thus takes on an evolutionary form, where certain ideas will survive and flourish and others will fade away (Kingdon, 1984). The choices within these rounds will be based on internal delineations of relevancy and contribute back to influencing the direction in which the implementation occurs. The resulting interaction arenas and the overall direction which they steer implementation, increases the difficulty of discerning boundaries between the traditional implementation phases and issue areas. This section deals with how the blurring of

boundaries is connected to implementation that takes place in the presence of a complex governance inter-regime.

DIFFERENT FORMS OF BOUNDARY JUDGEMENTS

Boundary judgments are the definitions of systems and problems by the actors involved in a given process. They delineate what the actor considers as relevant and not relevant to the process at hand. When local actors work towards integrating policies into a jointly understood inter-regime within which they feel they can progress in achieving their goals, boundary judgments can begin as similar among the actors involved in some ways and can differ in others. The boundary judgements of the actors can also be transformed through their continued experience in integrated projects and exposure to new information.

Numerous types of boundaries exist so it is important to be able to describe what kind of boundaries are important to complex and dynamic implementation processes. To begin with, boundary judgements can take place across three different dimensions that give form to the domain that can be used to analyse and compare them across and within cases. In addition to the multi-sector aspect explained already which leads to the formation of the inter-regime, judgments are made with respect to the appropriate scales and levels, and time lines.

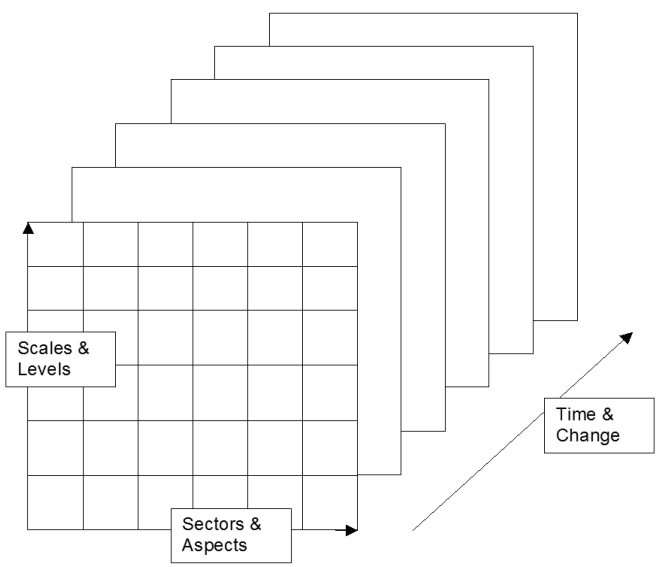

Figure 3.5: Three dimensions over which boundary judgements take place. Source: Adapted from Bressers and Rosenbaum 2003.

These dimensions can be used to determine how the boundary judgements differ or align across actors with respect to a certain implementation process. These are important

dimensions since they are also related to the dimensions over which boundary judgements specifically related to sustainable development are made.

The scales and levels of boundary judgements reveal themselves by choices and understandings of who the relevant actors are and where they are located in the external governance structure. This can be demonstrated by the choices that are made in assigning responsibility for managing resources. In the example of managing water resources, different perspectives exist over whether this could be best done by river basin based authorities or by those based on municipal or other jurisdictional boundaries.

VARYING BOUNDARY JUDGEMENTS REQUIRES BOUNDARY SPANNING

A particular local issue can be perceived by separate actors as belonging to a number of different issue areas and hence be connected to different regimes. For instance a river restoration project can be considered as a nature, social or economic improvement or development project. The bundle of associated sectors and aspects can in some cases be broad and in others quite narrow.

Boundary judgements related to time can be regarded as being inclusive of a rather limited period or alternatively as a permanent evolution far into the future. The same project can be seen as having a clear beginning and completion date, or as being part of an ongoing and permanent effort to improve the quality of the natural resource. Actors and procedures that are regarded as relevant will differ accordingly.

These three dimensions are further related to each other by how they demonstrate themselves. The time aspect of a boundary judgement can behave differently at various scales and levels, with different speeds. Natural resource regime developments taking place at the national level could for instance be best described in long periods of decennia, covering a hundred years or more, while practical cases could be described in periods of a decennium or even shorter periods.

Within each specification of scales, sectors and time a number of (sub-) processes take place. The number of processes that are identified depends partly on the degree of detail with which the analyst can and chooses to discern them from each other. Without the existence of any boundary judgements, the observable set of sub-processes and elements include the infinitive fabric that covers all processes on earth. When boundary judgements are made, they separate the processes into those that are immediately relevant, those that are related to these processes through some similar aspect and those seen as completely separate from the domain. Different perceptions will exist regarding the relevant domain, its boundaries and how they should be handled (compare Bol, Edelenbos and Teisman 2009: 10-12).

The appropriate domain can be further defined in a number of ways. One manner is to concentrate further on a specific process. The rest of the domain is acknowledged yet is

also regarded as just a context within which implementation takes place. This is labelled an "operational" project or programme definition (see Figure 3.6). A second manner with which to deal with the processes in the domain is a "chain perspective", in which prior and

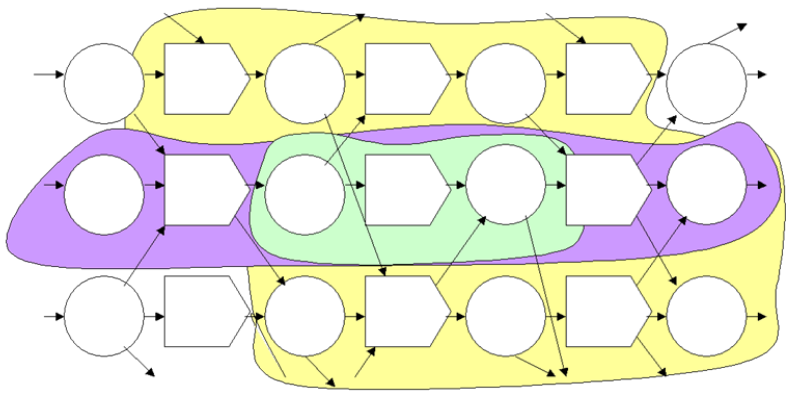

Figure 3.6: Domain boundary perceptions
Green: operational project / programme definition; Lavender: chain perspective definition; Yellow: multi-sectoral (or -level, -time, -geographic space, etc.) integrative definition

post processes are also included as being important for consideration. Chains can operate in sequence or in parallel and can also be integrated into a joint process where additional issues and actors are confronted with each other. The added complexity of this perspective is purported to balance the avoided complexity of incorporating transitions from one process to another (Geldof 2004, Evers 2011, compare also Teisman 2000). In a third way of dealing with the domain the most "integrative" perspective is exhibited, in which processes from various sectors, scales or time horizons are pragmatically combined in the way the actors operate in the domain. Lafferty (2002) sees both horizontal (between sectors) and vertical (between scales) policy integration as essential for any well-functioning sustainable development programme. Often this will imply at least a partial blurring of the traditional boundaries between processes.

The integration of the extended multiplicity of issues, procedures, and actors as described above is exhibited through adaptive implementation. This is highly relevant for implementation when several policies are involved and need to be integrated into concrete projects.

An optimum point between increasing complexity and pragmatic simplicity for implementation exists for each process based on its specific characteristics. There is no perfect number of scales, length of time or variety of sectors that is appropriate for each implementation process. Strong consensus on the boundaries of the domain can shut out new information from sources that are external to the specified domain. As a result, opportunities to incorporate and integrate issues held by unknown or non-consulted

opponents could be missed and could then obstruct progress at later stages. Alternatively, supporting excessive openness can lead to an unmanageably high degree of system change and flux that frustrates joint actions. In both of these circumstances, the choices made by the actors affect the resilience of the process within the inter-regime. These choices are based on a number of considerations and factors related to the implementing organisations. Given the existence of an inter-regime, it is actually quite likely that different actors with different perceptions of relevance (boundary judgements) will be working collectively under a common framework. The elements from different regimes need to be integrated and sometimes reconciled by this team and thus one needs to use "boundary spanning" strategies in order to move beyond the differences and toward accomplishing common goals. Boundary spanning cannot take on a "the more the better" framework, but needs to be tailored to the exact circumstances under which it is being applied. Good boundary spanning actions are based on experience and this is necessary for working adaptively within a complex inter-regime. The next section explores the place of adaptive implementation in the interaction processes taking place at the local level.

3.4 PART TWO: PROCESS DYNAMICS WITHIN AN INTER-REGIME

In the previous section it was shown that a complex inter-regime develops for local issue areas that are not clearly defined at higher levels of governance. The types of issues that can be understood at the level of detail necessary by higher levels are certainly different than locally defined issues. Local and often geographically grounded issue areas involve the actions of local actors who have no choice other than to integrate the different relevant policies associated with the sectors included within the inter-regime. These various influences will vary and either address much more general issues or those only partially overlapping with their own. These actions take the form of boundary spanning when they consciously look outside their previously understood relevant context in order to support the various phases of the implementation process. This can be done for a number of reasons at different stages of the implementation process. Actors can be trying to progress with the achievement of their core tasks, it can be done in order to develop consensus about the project plan or how to handle the emerging issues faced during realization. Local level projects also require the actors to respond to the corresponding changes that will take place due to changing problem perceptions, opportunities and goals. Even though the inter-regime conceptualization makes use of an at-times static understanding, it was shown to have a very complex nature. In cases where the broader consequences of distinct regimes are included, assessing the effectiveness of the actions itself becomes an overwhelmingly complex task for the researcher. What makes this further daunting is that the inter-regime context is not static. From the moment each regime "takes effect" the problem or issue area as it was conceptualized continues to change. This is happening due to outside influences as well as feedback from the implementation processes associated with the resulting projects.

Within such complex systems innovative and interesting developments may appear to be just "coincidental" results. When quite unpredictable consequences of a multiplicity of factors and circumstances lead to a desired outcome, they are better referred to as emergent developments (Van der Walle and Vogelaar 2010). Quick reactions to spontaneous circumstances is one of a number of skills that are associated with being able to take advantage of and be successful when working in a complex and dynamic implementation context (adaptive implementation). Additionally, various strategies can be used simultaneously and can be designed to include a degree of "redundancy" in order to create fall-back options when one of the strategies does not have its intended or desired effect (Constanza 2001, Low et al. 2003, Ostrom 2005). While it is important to keep various options open as long as possible, it is also important to provide a sufficient degree of accountability towards the actors' internal organisational representatives. It is thus also necessary to work within an agreed dynamic framework at various stages of implementation (Koppenjan, Kars and Van der Voort 2009). Increased accountability need not be achieved at the expense of organizational capacity. Performance criteria that are under reflexive adjustment and do not remain fixed regardless of the development of new situations can also provide a substantial level of accountability (Pires 2011).

This discussion raises the question as to how complex a context needs to be in order to suit the use of adaptive implementation as a main driver for actions. Berman (1980) discusses the differences between what he calls programmed and adaptive implementation. Programmed implementation is followed when the process chosen is based on the assumption that problems can "be made tolerable, if not eliminated, by careful and explicit pre-programming of implementation procedures" (: 205). He contrasts this by saying that adaptive implementation develops according to the view that "policy execution can be improved by processes that enable initial plans to be adapted to unfolding events and decisions" (: 206). He continues to say that neither is normatively better, but that the implementation approach needs to be matched to the policy situation and that likely the best solution will be a combination of both approaches. It is also important that the policy implementers are able to "recognize the different types of situations intrinsic to the context within which the policy is to be implemented" (: 206). In order to provide good water management it needs to be recognized that water managers have complex duties (Figuères, Rockström and Tortajada 2003). Thus, it is acceptable that the implementation processes described in this thesis are set within a context that is likely to most often support more adaptive approaches to implementation.

Water managers and their partners thus need to be able to act in a boundary spanning and adaptive way in order to deal with complexity and dynamic developments in the process of implementing water projects. It is important that the inter-regime possesses qualities that enable rather than hinder them to do so. Understanding these qualities requires going beyond the extent and coherence of the regime that was dealt with in the previous chapter. The following section outlines these qualities and explains what additional value they have in bringing clarity to the influence of governance inter-regimes.

3.4.1 INTER-REGIME QUALITIES FOR COMPLEX AND DYNAMIC PROCESSES

In practice, the direction of an implementation process changes as the various influences reach the actors and they react to them, internalize them and make decisions that are relevant to the progress of the case at hand. At the same time feedback mechanisms are in place that alter the external context. This happens in a much slower manner, yet should not be eliminated from the model used to understand the process.

What is additionally relevant is the influence of the actor's own expectations and visions regarding the outcomes of the project in influencing their actions. As the shared vision and expected outcomes change due to the successive interactions between the participants, this has an influence on their perceived chances of success, failure and ways in which it can be accomplished. The process can be significantly altered when there is a positive (or negative) shared attitude with respect to the likelihood of success. This belief in the expected gains that will be received by the successful (or unsuccessful) outcomes will influence for instance if the actor feels motivated to acquire or make use of certain resources for the process. Including this type of feedback requires a broadening of the CIT framework to include dynamic variables to characterize both the inter-regime and the actors involved. The interaction process, which is targeted here for further examination, occurs between the organisations that are responsible for implementation and those with whom they choose to work in order to accomplish the goals of the project. As was expressed in the previous section, including these aspects into the conceptualisation of the implementation process gives it a very dynamic nature of the type that requires the use of adaptive management strategies from implementers who are faced with these changing conditions.

The previous chapter outlines how the qualities of extent and coherence are used by CIT in order to describe how the inter-regime can support sustainable management of resources. The use of adaptive strategies influences the course of the implementation process itself as well as its setting. This has implications for how the inter-regime qualities can be used to describe the influence of the inter-regime. In a highly dynamic process situation in which success depends on quick and timely adaptive action, the flexibility of the inter-regime is hypothesized as being an important and influential quality.

Much scientific research on the success and failure of dynamic spatial projects and policy implementation in complex situations in general, concludes to the importance of adaptive implementation. The external context is seen to be more than a field of obstacles. It is viewed as a terrain of potential and often unexpected opportunities where every "window of opportunity" can be used to bring the ultimate purpose closer to realization. In adaptive implementation, the process involves "modification, specification and revision in order to address the unfolding interaction of the policy within its institutional setting" (Berman 1980: 210). Therefore it is essential that the somewhat static qualities of extent and coherence be supplemented with the quality of flexibility, indicating to what degree the

relevant actors have formal and informal liberties and stimuli to act. The flexibility of the inter-regime is considered from this perspective to be essential for supporting sustainable development.

FLEXIBILITY

Flexibility is defined here as "the degree to which the inter-regime elements support and facilitate adaptive actions and strategies in as far as the integrated ambitions are served by this adaptiveness". Consequently it is also the degree to which hindrances for such adaptive behaviour are avoided. The addition "in as far as …" is needed to discern implementation that is just weak from a genuine attempt to improve the existing situation.

Flexibility is supported by a certain degree of coherence within the inter-regime. When it takes the form of extensive discretion and self-reliance for implementers there is a high risk that a fragmented and weak form of implementation would result. As with extent and coherence, the nuances of how the quality of flexibility within the inter-regime can be understood can be found through examining it with the five elements of governance of Bressers and Kuks (2004). In the following few paragraphs, flexibility is explained in terms of how the five elements of governance relate to it.

An inter-regime is more flexible in as far as the relationships between the levels and scales involved are based on decentralization of power, without support for implementation being withdrawn by higher level government agencies. This is closely related to empowering rather than controlling relations, and thus on trust. A similar feature describes flexible inter-regimes in terms of actor relations in the policy network. The combination of giving leeway to each actor group to optimize its contribution to the whole program while still viewing the program as a joint effort qualifies as flexibility. In terms of general problem perception and goal ambitions, flexibility does not imply that they are integrated into the lowest common denominator. Mixtures can differ in emphasis according to the opportunities of the context in the various specific situations. This implies some acceptance of uncertainty and openness to emergent options, which again relates to trust. The instruments and their combinations in policy strategies are more flexible in as far as means from different sources (like public policies and private property rights) may be used. A flexible inter-regime also includes indirect means that open or improve options for using resources that more directly serve the goals. Lastly the flexibility of an inter-regime can be measured by the discretion provided to local actors to pool resources such as funds and people with those of others to serve integrated projects. These actors can also be held accountable on the basis of the balanced virtues of the achievements (as in an integrated project), rather than on the basis of separate performance criteria.

INTENSITY

The presence of flexibility in an inter-regime is portrayed above as an enabling quality that actors can choose to take advantage of. It has thus a relatively passive quality. The second

quality that is added to the CIT framework is the intensity of the inter-regime. It relates to the pressuring or change seeking nature of the inter-regime. Intensity is defined as "the degree to which the inter-regime elements urge changes in the status quo or in current developments". The "amount of change" can be measured in analogy with Newton's "law of inertia"; the energy required in producing a change. In systems theory, induced changes will typically meet negative feedback loops and weaken their impact, while in other cases positive feedback loops can develop and create permanent dynamics (True, Jones and Baumgartner 1999, Bressers and Lulofs 2009). In policy studies terms intensity is related to the size of the task required to create new dynamics by creative cooperation, or conflict. Consequently this can result in incentives being present that are designed to change conservative motivations, the use of power to overcome them, the changing of cognitions to include a widening of boundary judgments regarding the issues at stake, and the development of new availabilities and combinations of resources.

In terms of the five elements of governance, intensity is greater in as far as 1) upper levels are deeply involved and committed to the issue area, 2) actors that are also powerful in other domains are more deeply involved in the relevant policy network for the issue at stake, 3) the issue plays a larger role in the public debate leading to a greater openness to try to push developments away from a business-as-usual track, 4) the instruments made available to be used include those with an interventionist nature, and 5) the amount of resources made available for implementation is larger.

The intensity and flexibility of the inter-regime work together with the extent and coherence and influence the behaviour of local actors involved in implementation processes. Each quality gets its full meaning only when seen in combination with the others. The next section discusses how the set of inter-regime qualities needs to be further assessed based on the context of the implementation process that it is influencing.

3.4.2 BALANCING INTER-REGIME QUALITIES

The tension that exists between the two qualities of flexibility and intensity is related to the dilemma of the "quest for control" based on distrust or uncertainty, versus the "learning while doing approach" based on trust and understanding. When an actor wants to deviate from standard operating procedures this can increase the tendency to try to increase control in a top-down fashion, which can result in a decrease of flexibility. In complex and dynamic situations decreasing flexibility can contribute to implementation challenges; potential opportunities can be missed and obstacles are less likely to be avoided. Despite this, when there is sufficient trust that the implementers' motivation is in line with that of the policy makers', increased flexibility can support efficient implementation.

When the desired change is of a multidimensional nature, e.g. involving multiple policy sectors, synergistic solutions provide opportunities to achieve win-win situations. In

contexts where trade-offs are required, taking a longer-term perspective of the goals to be achieved can support acceptance. The additions made thus far to the static model of CIT described in the previous section are summarized as:

a. Extent and coherence are crucial qualities of the structural context when the main purpose is to stabilize and protect a certain situation. New qualities should be studied when the process lasts for an extended period of time, when the goals, actors and resources of the process change and the creation of new resources is at the heart of the implementation.
b. The flexibility of the inter-regime is the degree to which it allows and facilitates the case-specific variation and boundary spanning strategies of actors needed for adaptive management in as far as the change ambitions are served by adaptive behaviours. When the implementers have sufficient motivation and when sufficient inter-regime extent and coherence exist, more flexibility will lead to better adaptive strategies and thereby to improved results.
c. The intensity of the inter-regime is the degree to which the inter-regime strives for change away from the "business as usual" governance model. A highly intense inter-regime will in some instances face increased resistance that requires action to overcome (negative feedback loops), and in other cases it will support the development of enthusiasm (positive feedback loops).

Flexibility is an important aspect of a inter-regime because each local project has specific requirements for successful implementation. National and provincial programs are by definition designed to meet the needs of a wide and ranging population. When high-level institutions responsible for their design do so with a narrow view or through very prescriptive means they run the risk of unnecessarily hindering local projects that are governed by these agendas and regulations. This is of course different than weak (or even a lack of) enforcement of the inter-regime(s), which can also result in the reduction of inflexibility related hindrances to the impacted project. This is not however considered to be an intended output of the designed/developed inter-regime. The set of hypothesized configurations from the various possible combinations of the inter-regime qualities are dealt with in the next section.

3.4.3 COMBINING INTER-REGIME QUALITIES FOR COMPARATIVE PURPOSES

As was done in Bressers and Kuks (2004) it is important to look broadly at the inter-regimes and hypothesize about the expected outcomes of the various combinations of inter-regime qualities. Given the two new additional qualities of flexibility and intensity, the construction of even the most basic schematic that contains each inter-regime quality (only as being either present or not) leads to the possibility of 16 different inter-regime classifications. Although mathematically this may be possible, the inter-dependent nature of the qualities eliminates a number of combinations from being valuable in this study.

For example an inter-regime with a low extent will not likely be incoherent (to any significant degree), yet can exhibit the other characteristics. Within the scope of this thesis, only well-developed inter-regimes are being explored since they face a specific set of issues and are understood as having different basic characteristics of interest related to policy implementation (complex and dynamic implementation arenas). As such, the cases where the inter-regime has a low (or non-existent) level of extent are not of interest here and are not included in the following set of configurations.

1. Coherent, Flexible and Intense – This combination of qualities forms the theoretically ideal case where the inter-regime supports the implementation efforts of the involved actors towards achieving a shared process outcome. Higher levels of government provide clarifications to help actors understand the connection between general policy vision and integrated interests. Flexibility is given to innovative policy implementation processes designed to manage case specific contexts and higher levels of government provide the necessary tools and support.

2. Incoherent, Flexible and Intense – In this set the major drawbacks of incoherency are minimized in their impact on local actors through the other qualities. Actors are not forced to abide by the policy tools and instruments that are not in line with the goals of the integrated inter-regime. The administration required for this inter-regime is considered to require less effort from higher levels of government in terms of administrative burden and provides the local level actors with the authority, flexibility and support to address their own issues (inside a given boundary).

3. Coherent, Inflexible and Intense – This inter-regime quality set is considered to be very strict as it tries to force change through pre-dictating the processes that are followed to achieve the desired results of the upper governmental levels. This combination may have the perception of high efficiency and accountability, though this will in practice depend on the manner in which the requirements fit the local context (for instance local capacities and geographical circumstances). Chances are increased under this scenario that "high expectations with be dashed" (Pressman and Wildavsky, 1973).

4. Incoherent, Inflexible and Intense: This is an extremely inefficient combination for the local level actors, yet is the easiest manner for upper levels to appear to be in control and to be delivering high accountability to the public on a specific set of policy goals.

5. Coherent, Flexible and Weak: When this combination of qualities exists local level implementers must seek out the support required in order proceed with implementation. They are not confronted with pressure or given strong incentives through resource opportunities from higher government levels. They must understand the goals of the inter-regime and insert them into their program plans and are self-motivated to pursue such goals. The government develops coherency across the policies and sectors and this provides a clear vision of broader goals and enables implementation that is fit to the local context. There is the possibility that this is perceived as weak in terms of accountability

and unlikely to work where local goals and inter-regime goals are not able to be easily reconciled or when resources cannot be adequately mobilized at the local level.

6. Incoherent, Flexible and Weak: This set of inter-regime qualities is seen as likely to develop in the case of limited governance capacity. Flexibility is given to local actors to enable them to overcome issues associated with incoherence. However, since the inter-regime is also weak, opportunities will exist where the incoherence can lead to undesired (and unnoticed) defections from the intended goals.

7. Coherent, Inflexible and Weak: This inter-regime set supports implementation based directly on its stated goals yet does not put much emphasis on enforcement of these expectation. This inter-regime set is hypothesized as being unlikely to support successful implementation, except in the presence of highly skilled actors and a highly motivated local implementation group.

8. Incoherent, Inflexible and Weak: In this case the inter-regime is considered to have developed into the worst-case scenario. It is unlikely to support the effective and efficient implementation of policy goals in any measurable way and only reduces the ability of local actors to achieve their own goals and can even trigger additional resistance.

These qualities are not likely to be ever either entirely present or non-existent. What is important to consider is that there is an optimum value that is related to the specific context of the local situation. The changes that occur in the direction of these qualities can be used to assess whether or not inter-regime changes are likely to improve or decrease their support of adaptive management and sustainable development within a given case. This way of characterizing the various possibilities also enables a basis for comparison across cases.

Thus far, the actors have been examined as the recipient of the influential qualities and characteristics of the governance inter-regime. Moving the attention back to the actor characteristics and the interaction processes of the CIT model requires the development of another issue related to the characteristics of the local actors. In addition to the governance inter-regime context enabling adaptive boundary spanning for coping with the complex and dynamic nature of the process, the actors themselves should also be capable of doing this. A dynamic perspective requires a further exploration of these capacities. It is thus further important to understand how internal processes within these actor organizations support alignment with the policy implementation processes described thus far. This description takes place in the following section.

3.5 PART THREE: RECEPTIVITY AND INTERNAL ACTOR DYNAMICS

When the context involves dealing with uncertainty in both problems and solutions related to sustainable development, “learning while doing” is a necessary strategy. Being open to adopting and integrating lessons learned during implementation does not reduce

the importance of being able to learn from previously employed strategies that have shown elements of success (Rose 1993, Geldof 2004, Koppenjan and Klijn 2004, Hommes 2008). The qualities of the external and internal context that stimulate this learning require an "uneasy marriage" of both sufficient openness to let new disturbing knowledge and challenges in and sufficient capacity for consensus building or at least accepted decision-making (Arentsen, Bressers and O'Toole 2000, cf. the participative and integrative political system capabilities of Jänicke 1997: 18). As we have seen with respect to boundary judgements, emphasis on one extreme can be detrimental for the sufficiency of the other under different contexts.

This section details the important characteristic of receptivity that determines how well the organisations are able to work with and within their external context and integrate the various motivations, cognitions and power and resources that exist within it.

3.5.1 RECEPTIVITY

The development and design of implementation strategies within the contexts described thus far can be aided when the actor possesses the right attitude and skill set. The actor can develop these attributes through consciously preparing him or herself personally for working in complex settings. This conscious effort is labelled as an attempt to increase one's receptivity. Jeffrey and Seaton (2003/4) coined the term receptivity as not only dependent on the degree of exposure to new knowledge, but also more specifically on the way the actor can associate and exploit new knowledge around existing knowledge, activities and objectives. This happens when the actor actively seeks out ways to enable the external context to influence their own internal characteristics. This can be accomplished through opening and regrouping their understandings to include and take into consideration the new knowledge and its impacts. Receptivity is not a form of passivity or weakness. It is a form of alertness and openness towards the context that enables well-targeted innovative and adaptive action by self-confident people and organizations.

Receptivity plays a major role in enabling actors to recognize and take advantage of the opportunities of an enlarged domain perception and to create synergies with the activities of other actors. If both parties perceive the potential for synergy, which would provide for chances to cooperate, boundary spanning is more likely to create productive linkages (Bressers and Kuks 2004: 259–262). Boundary spanning reinforces the degree of openness towards enlarged domain boundaries. If one or both parties consider the relationship between them to be purely conflicting, attempts to reinforce existing boundaries or bring up new boundaries may be made in order to keep the domains apart or to separate them. Thus, in addition to the support provided to the previously described governance inter-regime qualities, the receptivity of the actors' organisation is also important for enabling the successful incorporation of adaptive boundary spanning strategies into the implementation process.

Jeffrey and Seaton (2003/4) discern four aspects of receptivity: awareness, association, acquisition and application (cf. Bressers 2011). In the cognitive system these can be linked to, respectively, the observations, the filtering through frames of reference (including boundary judgements on what belongs to the subject of the process and what not), the interpretations of reality and the impacts of the cognitive system on motivation, capacity and the process itself.

The concept of receptivity is expanded somewhat further for use in this thesis as "the ability to combine new information to enhance existing cognitions, recognize new goals as matching existing motivations or the values behind them and to recognize opportunities to use emerging resources alongside existing resources to optimize their capacity and power". An increase in receptivity is directly related to the likelihood of the development of interaction processes that contain more productive combinations of motivations, cognitions and resources of the actors.

Becoming aware of relevant new information, relating it to existing understandings, turning it into enabling new knowledge and ultimately making good use of this, form together the abilities connected to the quality of receptivity. These qualities can be observed at the individual as well as organisation level. While receptivity is here mostly referred to as an organizational characteristic, it should also be acknowledged that the role of individual boundary spanners who act within these organisations contributes greatly to the overall receptivity of the organisation. The receptivity of an organization is in turn important in enabling them to fulfil this function.

The basic model of receptivity is shown in Figure 3.7, where the four categories of receptivity should be read as in principle relevant for, yet different among all key actors in the process, even though the figure shows them as relevant for one actor. In the empirical part of this thesis, they will be applied to two organisations: the relevant water management authorities.

As with the arena and constellation of actors and their characteristics, the receptivity of an organization is not entirely fixed and can thus be altered over the course of time by external factors and deliberate internal strategies. If organizational philosophies are oriented towards external cooperation then it supports the overall receptivity of the organization and will increase its resilience for succeeding under a complex and dynamic inter-regime. Specific strategies that align with the receptivity seeking philosophy are those that would reward project managers that are communicative, flexible and entrepreneurial. Honesty and openness towards the more senior level administrators concerning the riskiness of proposals, new developments and the general project progress is seen to improve the likelihood that the organisational support won't disappear following the occurrence of a setback in the project.

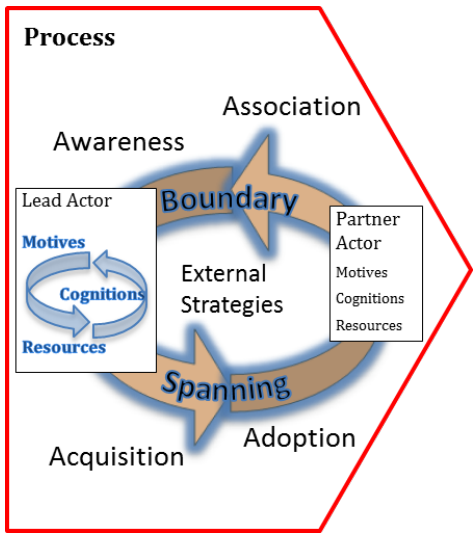

Figure 3.7 Conceptual model of receptivity

Some further assertions that follow from the above discussion are:

a. The setting of actor characteristics that impacts the course and result of the process is not only dynamic due to external factors, but can also be manipulated by clever external strategies of the actors during the process (these are often forms of "boundary spanning" – see Bressers and Lulofs 2010).

b. Since adaptive boundary spanning strategies often require concerted actions by more than one individual person, this draws attention to the internal organization of the actor ("actors" in most analyses are in fact "corporate actors": organizations or parts of organizations). Here the receptivity of these actors and actor organizations is relevant.

c. This receptivity can also be positively influenced by the internal strategies of actor organizations, which promote continuous learning, consciously dealing with uncertainty, and stimulating mutually supportive intra-organizational relations.

3.6 PART FOUR: DISTILLING THE MODEL

Inserting the several advancements that have been suggested in this thesis into the Contextual Interaction Theory framework results the revised conceptual model of Figure 3.8.

This new representation is appropriate due to the non-static understanding of the external context. This model can be used to describe the various interactions and influences between the actor (organization) of interest and other actors, inter-regime contents and qualities under dynamic conditions and gives an improved focus on the impacts of these

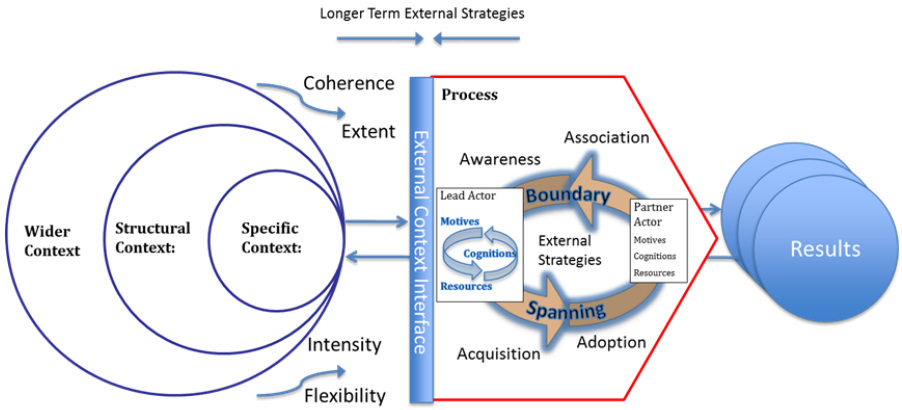

Figure 3.8: CIT model for use in Complex and Dynamic Implementation Processes

dynamics. The external context is compiled of the aspects described earlier to belong to an inter-regime and the new qualities of flexibility and intensity. The interaction process that occurs between the external context and the implementing actors is blown up to show how the receptivity (characterized by the awareness, association, acquisition, adoption) of the key implementing organization and its boundary spanning strategies can work as catalysts to align the external and internal contexts to enable successful implementation.

In broad terms, the process of interest in this thesis is the interconnection of governance and practice in the form of implementation. Changes in context occur continually in any implementation process, regardless of the complexity of the inter-regime or the dynamic nature with which actors interact. Simplifying the study of these processes to a before and after context is extremely useful under many circumstances. The purpose of this chapter has been to elaborate on the types of circumstances where added value can be attained through incorporating specific tools into the theoretical framework that enable the influence of the complexity and dynamics of the process itself to have an influence on the outcomes. The CIT framework inclusive of the additional points of influence that have been described in this chapter is better suited for use in studying implementation projects which incorporate active adaptive management strategies and which are not subject to a clearly defined regime. This framework is used in the remainder of this thesis in an exploratory manner to examine if these additional points of interest can help to explain and understand similar kinds of processes in different contexts. Special attention is given to the role of the central actors therein. The chosen actors are important not only because they are the lead agencies but also because they have been identified as having exhibited some level of adaptive implementation, boundary spanning and receptive behaviour. This makes it possible to study these behaviours and uncover any connections that may exist between them and the characteristics of the inter-regime and the organisations themselves.

3.7 PART FIVE: METHODOLOGY

Methodology is an important ingredient in any research effort. It can support the achievement of the research goals by providing a roadmap to the desired information as well as a sober second thought to the way in which data is gathered, analysed and communicated. Even the best-designed research will give rise to opportunities for mis-interpretation and there is no *one* perfect research methodology. However, a good design will enable clear criticism that can further improve upon the understanding of the phenomena under scrutiny. Thus, research methodology is most valuable when implemented in an earnest and educated manner, which takes into account the benefits and drawbacks of the chosen approach. It is not a goal in and of itself, to produce perfection in the methods used in this thesis. Methods are tools and are used in this piece of research as a thoughtful collection of different elements which combine to form an appropriate level of insight, abstraction and confidence in the results.

3.7.1 RESEARCH DESIGN

Chapters Two and Three contain the contributions made to the theoretical development of Contextual Interaction Theory. The empirical portion of the study, which is found in the following chapters serves as a preliminary validation of the additional concepts offered in the preceding chapters. Doing so deepens the understanding of how these theoretical contributions can be used in analysing a particular type of implementation process. The context of river restoration is considered to contain quite complex social (as well as natural) phenomenon and is an appropriate and important empirical venue. This chapter provides the basis upon which decisions were made with respect to the methodological choice for a case study approach and the data acquisition procedures that were required to support the empirical aspirations related to the research questions.

As was discussed in Chapter One, the research process began with the discovery that flexibility was seen to be an important governance quality that could help overcome difficulties in the management of the local and transboundary water resources in the Great Lakes region (Krantzberg, Manno and De Boer, 2007). Going beyond this initial research, this thesis strives to uncover how robust this thinking is when applying it to a different context. In particular, the research is designed to examine whether this flexibility is visible in a context where water governance is considered to be progressive and advanced and what sort of role this plays in implementing water governance measures. In order to connect this inter-regime quality with local implementation processes, some intervening factors are identified and thus included into the research design – adaptive implementation and receptivity. Intensity is also introduced as a complimentary inter-regime quality that gives greater balance and coverage to the overall understanding of the governance inter-regime character. This chapter describes the underlying logic in the research design used to guide this research.

THE CASE STUDY APPROACH

There are a number of circumstances that best support the use of the case study approach: 1) when how and why questions are being posed, 2) when the investigator has little control over events and 3) when the focus is on a contemporary phenomenon with some real-life context (Yin 2003). As such the research questions posed in this thesis are quite well suited for case study research since the investigator has in this case no control over the events, the interactions are certainly contemporary and the focus is on the real-life context that surrounds the phenomenon of interest. Yin suggests that the average methodology critic would accept that the case study is certainly appropriate for the exploratory phase of research. Beyond this it is common to see surveys for example as being more suited to the descriptive phase and that experiments are necessary in order to develop explanatory results or causal connections. Referring to this as the "hierarchal" view, Yin further states that there are many examples where these methods have been used for various phases of research and that all can be used for each purpose: exploratory, descriptive and explanatory.

How and why questions are said to be able to address operational links that need to be traced over time, as opposed to counting frequencies of actions or incidences. Case studies are quite well suited to deal with a wide variety of evidence such as documents, interviews and observations; all of which in complex systems can relate to and explain different parts of the events and actions that lead to a particular outcome. This does not however leave out the option to embed other types of research strategies into the case study; for example the use of a survey to further describe one particular aspect of the case being studied. In this dissertation, the case study is the main strategy followed to explore how the various qualities of the inter-regime influence the implementation processes connected to the restoration of the Regge River and the Spencer Creek. A survey or other quantitative methods could be a valuable follow up to this piece of research but are not included herein.

The case study is used in this study to provide an in-depth understanding of the different actors and their inter-relationships in order to expose new insights regarding how their behaviours are modified and targeted towards achievement of their goals. The understanding and explanation of the theories as they are laid out in the previous chapters guided and focused the attention in the analysis of the empirical study and consequently the resulting discoveries made. Where applicable within the text, it is made explicit which concepts are used as the conceptual lens.

GENERALIZABILITY

In terms of generalizability, Yin (2003) points out that case studies are generalizable to theoretical propositions and not to populations or universes: it has the goal of expanding and generalizing theories (analytic generalization) and not to enumerate frequencies (statistical generalization). The case study is to provide a "generalizing" and not

"particularizing" analysis (Lipset, Trouw and Coleman 1956: 419-420). The results of the research being performed here can be used to understand the characteristics of the inter-regime that are at play in any implementation process where various issue areas are involved and where adaptive management practices are employed.

Research that emphasizes the impact of the context on the event/interaction/ decision/process is unable to be undertaken by methods that purposefully separate the interaction/event from the external context. The aim of this piece of research is precisely the opposite; to understand how particular aspects of the context are involved in the interactions and decisions that result from activities involved in river restorations. Further, case studies are necessary when the boundaries between the phenomenon being studied and its context are unclear and changing.

With the external context behaving to some degree as the independent variable in this research, case contexts were chosen with "most different" characteristics of importance, while being not so entirely different that they are incomparable. The basis characteristics of the contexts include being wealthy developed countries, with a high capacity for water knowledge and technology usage as these are considered to be necessarily stable and consistent across the cases. It is expected that large differences in these variables would overtake a variable such as the flexibility of the water governance regime when analysing the impacts in the field. This first filter removes cases where overarching differences limit valuable comparison related to the topic at hand, water governance regimes. The remaining "most different" aspects are seen when looking at the other "wider context" aspects such as culture, population density, political system, geographical topography which influence perceptions about water, and other aspects of the problem context such as the organization and financing of water management. These context variables are of interest because differences seen in them can be linked more concretely to results in water management at the local level. Controlling more strictly for the presence of the necessary conditions of the dependent variable (the adaptive implementation actions of the local water managers) allows the research to present cases that have higher levels of complexity and exhibit dynamic characteristics. This highlights the existing relations between the flexibility, receptivity and implementation processes.

Thus: This thesis aims to discover some aspects of the generalizability of its hypothesis related to water governance in wealthy and developed nations with a high capacity for knowledge and technological advancements and implementation. Countries not falling into this category are seen to be subject to more overwhelming variables such as poverty, corruption, lack of social and organizational cohesion at such a more basic level, that any findings are likely to have deeper more structural causes than can be handled through this piece of research. As such, any other remaining independent variables of interest related to the external context are found to be of a "most different variety" in the two cases chosen – Canada and the Netherlands.

Adaptive implementation is an important approach when attempting to successfully implement projects in contexts that are complex and dynamic. This statement is in line with a number of streams of literature (as is dealt with in Chapter Two). At the local case level context, the most similar aspects that are important are the presence of longer-term, integrated and multi-purpose projects where adaptive implementation is part of a modern approach to water management. The basis case of the Regge Restoration was thus paired for comparison with a most similar type of project in the Canadian Great Lakes region: the Spencer Creek Stewardship Action Plans. Both exhibit an approach that is considered to be adaptive and long term in nature and operate in a complex and dynamic context as a result of the nature of the multi-purpose projects they are undertaking. In this way, the dependent variable of a visible adaptive management approach to stream restoration is seen to be present in both cases.

This combination of most similar and most different context variables provides for a maximally plausible result: if a relationship between 1) flexibility and successful implementation practice and 2) receptivity and successful implementation practice can be demonstrated empirically in both cases these relationships likely hold across the range of complex and dynamic water projects in highly developed countries. While additional cases could provide additional information upon which to judge the robustness of the hypothesis included in this thesis, a two case comparison was seen as being appropriate in order to show both a high level of within case detail and provide some level of cross case comparability for discussion. If additional research were to be performed, the results of this thesis could be operationalized and applied to a higher quantity of cases to test more specific hypothesis related to inter-regime variables and implementation processes.

UNITS OF ANALYSIS

It is important to define the cases as precisely as possible that will be included as part of this piece of research. Given the research question, the cases should be defined in such a way that the research questions can be sufficiently addressed through their study. In this thesis, the units of analysis need to consist of adaptive actions, implementation processes and interactions of actors. All of these activities can be analysed if the cases are connected to the river restoration programs of the two rivers. Each program is led by a single group that actively includes other groups into the process. It is the actors (staff) involved in these organisations (The Hamilton Conservation Authority and the Water Board of Regge and Dinkel) as groups that are required to steer the development and implementation processes. Each group possesses qualities from the group level as well as the individual level. Thus the unit of analysis is the set of actions of the group of people involved in stream restoration from each of the leading organisations that are intended to contribute to the restoration of their respective rivers. The time boundaries are best set around the official start dates of the programs. When specifying the context, the time is important since the changing context is key to understanding the actions of the two groups.

SUB-CASES

Within the cases, numerous relevant sub-cases are discerned. Although they are included and treated as sub-cases, they contribute to the richness of the more general cases and of the observations that can be drawn from them. The sub-cases within the separate cases involve the same leading actor, the same general governance context and are undertaken under the same umbrella programs and thus share overarching motivations, goals and resources. There is thus limited within case comparison since the variables of receptivity and the actor characteristics are quite common across them. Also, the flexibility aspects of the governance contexts are related due to the interconnected nature of the different sub-cases. The sub-case specific actors and issues can and do differ but not sufficiently to warrant a separate within case comparative analysis. Differences can however on occasion be seen to highlight the sensitivity of the hypothesis to intervening context variables, as would be expected since the relationships sought in this thesis are not causation oriented. They serve to increase the robustness of the analysis of the primary relationships with varying issues and actor constellations. This additional insight is delivered through preliminary analyses that are provided directly following each sub-case in the following empirical chapters.

According to the above logic, each level of analysis thus has its own basis for inference. The value of these multi-layer analyses is discussed in the concluding chapters of this thesis.

DATA COLLECTION

It is also important, as Yin (2003) notes, that the case study inquiry copes with the technically distinctive situation in which there will be many more variables than data points. This results in the researcher needing to rely on multiple and varied sources of evidence. Triangulation and the use of prior developed theoretical propositions are then used to collect, converge and analyse the data. The data collection process for this study involves the use of documentation, observation and interviews.

The informational sources gathered include numerous national, provincial, municipal, Conservation Authority and Water Board policy papers, white papers and maps. Background documents used for political decision-making were an additional informational source that further developed the understanding of the relationship between the various actors. In addition, magazine and newspaper articles, publicity material, and information from websites from well-known organizations, such as the involved Provinces, the Water Board of Regge and Dinkel, the Hamilton Conservation Authority, municipalities, the prominent nature NGOs and the like were used.

Strongly supporting the written material were many in-depth interviews with various active participants in these projects, people from municipalities, the province, the water boards, the conservation authorities, nature organizations, estate owners, landscape

architects, and farmers. The first round of interviews began in the Netherlands in the spring of 2009. They began with the project leaders from the Water Board of Regge and Dinkel, who provided a list of the projects that were included within the restoration plans. This formed the basis for setting up an initial interview round with municipal employees, farmers, landscape architects, provincial and NGO staff who had been involved in the set of projects. A snowballing method was then followed until in total thirteen interviews were performed in the Netherlands. The procedure ended when many of the accounts about the nature of the processes began to be repeated in similar manners by the various actors. The process for determining the necessary interviews in the Canadian case was somewhat more complex given the less systematic and large-scale nature of the projects included within their stewardship plans. Twenty-two separate interviews were performed related to the Hamilton implementation context in three separate rounds. The first round performed in the fall of 2009 was to assess the scope of the stewardship action plans from the perspective of the Hamilton Conservation Authority and to determine its appropriateness for comparative purposes with the Dutch case. Once the Spencer Creek Stewardship Action Plans proved to be an appropriate case for study a second round was set up with the various partner organisations. One final round was employed that included actors from a less direct influence from the relevant inter-regime organisations, such as the Province of Ontario, the Great Lakes Remedial Action Plans, the Bay Area Restoration Council and Conservation Ontario. This was sufficient to confirm that the few projects chosen were typical of the broader stewardship planning process and that no new actors were mentioned by the various interviews. Most factual information could be both supplemented and corroborated with the information from the written sources (Miles and Huberman 1984, Verschuren and Doorewaard 1999).

The interviews were tape-recorded and elaborated on that basis. In order to prevent mistakes and premature interpretations the descriptive information in the chapters on the course and results of the various sub-projects' processes has been written on the basis of these transcripts. It is however at times supplemented by the information collected from written material. For the main case of the Regge Restoration, these descriptions deal with six completed or advanced subprojects and six intermediate starting or less advanced project areas, which make up the whole of the course of the Regge River. In two of the intermediate stretches two small projects are situated that will also be described separately. For each advanced sub-project the description is followed by an interpretation on the basis of the theoretical concepts explained in this chapter. This is also performed for the intermediate projects, though much more briefly and concentrating mostly on the strategies used by the actors involved and the governance inter-regime inflexibilities that were mentioned and illustrated to have played a role in these cases. In the Canadian case a slightly different approach was taken given the differences in size and scope of the restoration process. With the Spencer Creek Stewardship Action Plans, one sub case in particular was seen as being most similar to the sub-cases observed in the Regge case. This case is described in detail along with a few shorter descriptions of accompanying projects

taking place within the scope of the project. It is believed that this, in addition to a description of the overall development of the projects as a whole provides the right level of detail upon which to base the comparative portion of this study.

It is also important to be aware of the difficulties that can exist for researchers attempting to do research and collect data in different cultural contexts. The two countries in this study, Canada and the Netherlands have indeed quite different cultures of government and societal action. It is of utmost value that the research in the Netherlands was performed by two co-observers (Cheryl de Boer- Canadian and Hans Bressers- Dutch). This had the value of having one native citizen involved in order to be able to increase the level of cultural understanding and be able to fluently speak the language of the research. The main language of the interviews performed in the Netherlands was Dutch, and English in Canada. Having one Dutch person and one Canadian as the interviewers also has the advantage of having an "outsider" perspective available to reduce the cultural bias of the native researcher by asking questions formed from a more naïve perspective of the operations and actions of the study areas. Mainly the Canadian researcher performed the Canadian interviews, however the interview questions were developed with support from the Dutch researcher and the results were jointly discussed to assess the level of comparability to the Dutch context.

The causal relationships between the concepts as stipulated in the theory cannot be tested in a statistical or even comparative manner in this study. While several sub-projects are present, a within case comparative analysis is not sufficiently plausible because the sub-projects are not independent from each other. Consequently the nature of within case analysis is: theory guided explanatory research in non-controllable social subsystems. Most of this study follows the usual case study approach of gathering data from multiple sources (documents, literature, media, interviews, personal observations) to produce a "thick" or rich description that enables the presentation of an in-depth picture of the case, its circumstances and the developments therein (Eisenhardt 1989). This is followed by an analysis of the data from the perspective of the theoretical framework (Dente, Fareri and Ligteringen 1998).

3.7.2 EXPLANATION OF RESULTS

Making causal inferences in qualitative case study research requires a logic that goes beyond the usual experimental logic. Even a quasi-experimental logic is in most cases not possible (Cook and Campbell 1979, Mohr 1995). In fact, it is common to find oneself in situations where the developments can be explained by a set of individually non-essential and non-sufficient factors, but together forming one of the sets of factors that can cause the phenomenon (Mackie 1974's INUS conditions, compare the notion of karma in Buddhism and Hinduism or several western philosophers, Tacq 1984). The contribution of individual factors is thus essentially and necessarily difficult to establish. Nevertheless, the pattern of observed actions and interactions of actors and factors can be compared with

the theoretical framework that guides the study (Yin 2003, Gerring 2007). The pattern must at the very least make sense given the theoretical framework to increase reliability of the suggested causal relationships in the storyline of the cases. If for instance a certain inter-regime inflexibility issue is blamed for lack of progress, it should be clear that for the specific form of lack of progress this inflexibility matters. The reconstructed story of the case needs to have its own internal logic.

More specifically: the theoretical framework developed in Chapters Two and Three is used in this study as an aid in pattern recognition. This is possible by on the one hand using the conceptual logic to assess what impacts an explaining variable (e.g. a strategy used) would likely have, through what pathway, on the affected variable and looking to see whether such intermediate and characteristic side-phenomena are mentioned in documents and interviews or observed in practice (Scriven 1976). On the other hand an empirical backward mapping logic (Elmore 1980) can be used that starts with the explanations given by the practitioners and looks to see to what degree they match with the explanatory factors stipulated in the theory (Patton 1980). An additional basis for causal inference is established when both methods converge. These two ways of thinking are combined in this study to arrive at the final conclusions.

DATA ANALYSIS

In order to illuminate the role of each of the various theoretical concepts in the sub-projects in the next three chapters, a qualitative though systematic contents analysis of the descriptive texts is used. The descriptive texts of the sub-projects, which are closely based on the transcripts of the interviews and written material, were scrutinized multiple times, each time with a specific focus in mind: the results, the motivations, cognitions or resources of actors involved, the external strategies used, and the inter-regime qualities (extent, coherence, flexibility and intensity) that the actors experienced. While doing so, the specifications of these concepts as given in this chapter were used as indicators to recognize relevant statements.

A portion of the information relayed in the interviews addressed the restoration processes in general. This more general description of the Regge restoration was similarly analysed and used in combination with overviews of the information from the sub-projects for the analysis found in Chapter Six. The structure of Chapter Six reflects the structure of Contextual Interaction Theory and each section ends with concluding remarks that provide an overview of the observed events regarding these concepts in the Regge River restoration process. For the Canadian case of the Spencer Creek, a more streamlined analysis of both the general process as well as for the individual sub-cases is found within Chapter Seven. Chapter Eight answers the four research questions posed through a comparative analysis of the two countries and looks to see how the results of the analysis in the Netherlands are supported or refuted by the Canadian case.

3.7.3 FINAL REMARKS ON THE FOUR RESEARCH QUESTIONS:

The four research questions posed in Chapter One have provided the basis for the decisions made and elaborated in the previous sections related to research design, data collection and analysis. Below, each question is revisited and the connection is made to the manner in which it is addressed through the efforts taken as part of this thesis.

Question 1: What specific challenges are faced in the implementation processes of the selected river restoration programs? What actions and strategies were carried out that enabled realisation and surmounting of these challenges?

The answer can be found beginning in the empirical descriptions of the cases, which support classifying them as "complex and dynamic" in their implementation challenges. Additionally, these thick case descriptions include the actions and associated challenges. This question is thus addressed in a predominantly descriptive manner yet is aided by the concepts included in the theoretical basis of the research.

Question 2. What qualities of the governance inter-regime have impacted these implementation processes and through what means?

Pattern recognition guided by the theoretical concepts developed in Chapters Two and Three is used on a case and cross case level to seek insights related to this question.

Question 3. What characteristics of the leading actor organisations have impacted these implementation processes and through what means?

This question is addressed through the detailed descriptions at the sub-case level given that the same organisation is observed to be leading the process across all the sub-cases.

4. What are the observable differences between the two cases? What do these differences imply regarding the previous two questions?

The differences and similarities related to the degree of support for the flexibility-implementation and receptivity- implementation relationships are assessed for the two cases in the final chapter. The individual results are compared to see how robust they are in situations with substantial variations in certain aspects of their wider and structural (governance) contexts.

CHAPTER FOUR: THE REGGE RESTORATION GOVERNANCE CONTEXT

4.1 PREAMBLE

The contents of this chapter are taken from De Boer and Bressers 2011, with edits only included for additional clarification.

4.2 INTRODUCTION

In addition to the concerns associated with the protection of delta areas from the sea, the Netherlands has particularly immediate needs regarding the increasing frequency of high and low water levels taking place as a result of climate change. This awareness has warranted a drastic change of approach to water, land and nature management towards a strategy that uses nature's resilience to provide for both human and natural environmental needs. Most notably in the parts of the Netherlands that are above sea level, water management is performed through a multi-stakeholder process. In various projects seen here, many goals apart from solely water quality and quantity management are being integrated. Water retention, nature, recreation, economic diversification, agriculture, and cultural history are often involved which then involves each of the responsible organizations and NGOs. This arrangement of relationships often creates the need for boundary spanning between actors, as well as rules and resources to cope with the complexity and dynamics of the process.

This chapter provides the contextual setting for the actions that are being studied in relation to the Regge Restoration Project and the influencing aspects of the governance inter-regime within which it operates. Increasing space for rivers and the connection of natural areas are two of the many additional interests that are strategically combined alongside water goals in order to enable a broader level of goal achievement and to ease otherwise challenging implementation hurdles. These efforts are at the heart of new initiatives in the Dutch rural areas that address European and National habitat and water quality and quantity goals.

The Regge River is a fifty-two kilometre Dutch tributary river located in the eastern part of the country. Project managers apply adaptive strategies and seek governance regimes that provide stimuli for implementing their innovative developments. The whole of the Regge restoration process is embedded into water buffering policy plans and corridors connecting nature areas on a larger scale. The Regge project is however also structured as a collection of various smaller scale projects. Likewise it is being undertaken within a certain time period, through which relevant policies can undergo relevant changes. The Regge restoration can be characterized as multi-sectoral and long term and is thus a "complex and dynamic" implementation process. The first part of this chapter begins with

some of the relevant information on the organisation of the Dutch government, which is followed by a description of the relevant regional policies and their development as part of the context for the Regge restoration process. The second Part of this chapter provides a brief introduction to the Regge Restoration process.

4.3 PART ONE: SPECIFICS OF DUTCH GOVERNMENT ORGANIZATION

With approximately one quarter of the area being located below sea level (21 per cent of the population) and three main rivers running through the Netherlands, flooding issues have long been an important matter for Dutch society. At this moment important tasks are completed by the relevant state agencies and their regional branches (sea dikes, management of big rivers) however, independent regional water governments (the Water Boards) also play a major role. Due to the urgent and timely nature of responses to flooding, local bodies were the earliest structures framing the development of the authorities delegated to manage these threats to loss of life and land. Water Boards were set up beginning in the 13th century to manage the water that was being held back in the interest of agriculture and security. This generally happened in a 'bottom up' fashion through the actions and interests of farmers who had a large stake in trying to keep their 'feet dry'. The Water Boards largely dealt with the maintenance and security of polders (a low-lying tract of land enclosed by embankments, with man-made drainage systems) as well as water levels outside the polders. The Water Boards are the oldest democratic institutions in the country and are still governed according to the interest-taxation-representation principle in which groups paying for their 'services' are represented and have to work together in the governing board. This experience has also influenced the general decentralisation and communal cooperation of Dutch Government. They are responsible for management and maintenance of water barriers, waterways, proper water levels and surface water quality through wastewater treatment within their territories. In 1955 there were 2480 Water Boards spread across the country, though through amalgamation actions it has been reduced down to a total of 25.

Alongside of the Water Boards, there are three administrative levels of government: national, provincial and municipal. All four tiers of government are rooted in the constitution, making the Netherlands a decentralized unitary state. The Netherlands is, in principle, also a constitutional monarchy where the position of the monarch, the head of Council of the State, is provided for in the Constitution. The monarch and the ministers form the government, which is referred to as the "Crown". The Council of State is the government's chief advisory board and the Crown appoints councillors for life. The Council of State is also important for restoration since it also acts as the highest administrative court where appeals against land use changes are eventually dealt with when pursued by the opponents.

4.3.1 NATIONAL BACKGROUNDS AND POLICIES

In the national government policy document "Agenda for a Vital Countryside" (Dutch Government 2004), it notes that the character, use and appearance of the Dutch rural area are all undergoing change. The document shows that the Netherlands is covered by nearly 80% rural landscapes and although agriculture is the main occupier of this land, it is no longer the main occupation or main economic base of the rural areas. Industry is increasingly attracted there and the traditional dividing lines between urban and rural are fading. The perception of the countryside is changing from one of a physical space for food production to a space to be used for consumption and one that contains authenticity, naturalness and quality for all Dutch citizens, not just rural dwellers.

LAND USE AND NATURE

The steady dwindling of natural areas since the early 1900's has been only recently halted. By contrast, the area of woodland and forest remained constant for the first half of the 20th century and increased gradually thereafter. From 1900 until about 1950 the agricultural area increased. Prior to 1940 this was primarily as a result of land reclamation and after 1945 because of the poldering of the Zuiderzee (South Sea). The main causes of the decrease in the agricultural area since the 1950s are residential and industrial development, and infrastructure.

With the exception of forest and woodland, there has been a sharp fall in the area set aside for all natural forms of land use. At the beginning of the 1900's the majority of the 'wild' nature in the Netherlands had been destroyed in the development of the land with ditches, dykes, fields, tree paths, etc. From the 1900's onward, land consolidation programs significantly fragmented the nature of the countryside. Additionally, since 1900 nearly 95% of all of the streams have been straightened. In such land consolidation projects generally the interests of modern agriculture prevailed, which resulted in much larger fields and new roads, erasing much of the small scale landscapes that had developed over centuries.

NATIONAL NATURE POLICY

In the 1970's there was a major shift in the environmental policy of the Netherlands. Previously strong agricultural powers and related planning models began to shift in favour of a more protectionist manner for nature. In 1972 the Netherlands Society for Nature and Environment was founded and was indicative of the new outlook of the environmental movement that was pursuing cooperation amongst old and new actors. Particularly important was that agriculture that was inclusive of wildlife was included as a part of vision on nature, which had been difficult during the booming period in agriculture. The desire to involve private landowners is also observed to be present following the formation of the "Relationship Document" in 1975. This government initiative provided subsidies for nature-friendly extensive agriculture from the Ministry of Landbouw, Natuur

en Voedingskwaliteit (agriculture, nature and food quality), the Ministry of Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (housing, spatial planning and environmental management) and the Ministry of Cultuur, Recreatie en Maatschappelijk werk (culture, recreation and social work) (Bogaert and Gersie 2006).

In 1989 there was an even more significant shift as a result of the institutionalization of the first real nature policy in the country. The National Ecological Network (in Dutch - Ecologische Hoofd Structuur or EHS) is a very progressive Dutch policy instrument that served as an inspiration to the Nature 2000 initiative at the EU level. Given that the Netherlands is a very densely populated and ecologically fragmented country the government agencies started to attribute a significant amount of importance to linking the areas of ecological importance to create the highest possible value of biodiversity. Nature development in the Netherlands is generally promoted in the context of completing the National Ecological Network. Political support for developing the linkages has been stable from approximately 1990 however it has suffered greatly recently due to an increase in economic concerns.

The National Ecological Network is comprised of existing natural areas, nature reserves and connection zones, agricultural areas with potential for agricultural nature management (management areas) as well as large water areas (such as the coastal zone of the North Sea, the IJsselmeer and the Wadden Sea). The policy aims at completing these main ecological links and the other parts of the National Ecological Network by 2018 in a series of phases. Until the beginning of 2009 the acquired area of new nature for this purpose had risen to more than 80,000 hectares, of which about half was already transformed into nature. An additional 40,000 still had to be acquired (Planbureau voor de Leefomgeving 2010: 168-9). This national ecological network is being realised in cooperation with provincial and municipal authorities, water boards, nature conservation organisations, civil society organisations, farmers and private parties. Although the central government had made some rather unsuccessful attempts to replace the efforts to develop a multiplicity of ecological corridors with larger “robust corridors” (Turnhout 2009), the central idea of the policy had remained intact for two decades. In the new coalition government agreement of October 2010, parties however agreed to stop with the further development of the linkage zones due to changes in funding as a result of shifting government priorities at the national level. It is still unclear what this will mean in practice, though the various local parties are actively looking for alternatives to continue the projects of river restoration. Furthermore, water boards still face the task of realizing more water buffering capacity and restoration of rivers is still considered the most sensible way to achieve this.

The government has often attempted to reach out to and cooperate with farmers and other rural landowners through funding for the design and management of nature reserves. What was more common in the past was that the government would buy the land of interest for the realization of the National Ecological Network (EHS). This was done

through the Agricultural Land Management Agency - part of the Rural Service Area (Dienst Landelijk Gebied- DLG).

Most of the EHS is administered through the Rural Area Investment Budget, which entered into force on January 1, 2007. This 'budget' is a 7-year agreement with the Provinces on the establishment of the rural area. Desiccation, eutrophication and fragmentation are the most persistent challenges for biodiversity conservation in the EHS. The European Habitat Directive is also used to help determine the priorities in establishing a healthy EHS. Land managers, water boards, municipalities, provinces and the state all use the EHS and the EU Birds and Habitat Directive to guide implementation. The usefulness of this approach increases as all these parties can come to common agreements on the implementation of the EHS and the monitoring data.

Nature 2000 sites located within the EHS are more strongly subjected to regulations regarding protection and use. The Ministry of Agriculture, Nature and Food Quality is responsible for approving any plans that affect these areas. There are certain conditions that can allow for specific exceptions that are related to whether or not the development serves an overriding public interest or that no alternatives exist. Within the EHS legislation there are opportunities to compensate when mitigation is not sufficient. The Ramsar Treaty also protects wetlands and the plant and animal species that are associated with them. All Dutch wetlands submitted to the Ramsar agency are also designated as Nature 2000 areas.

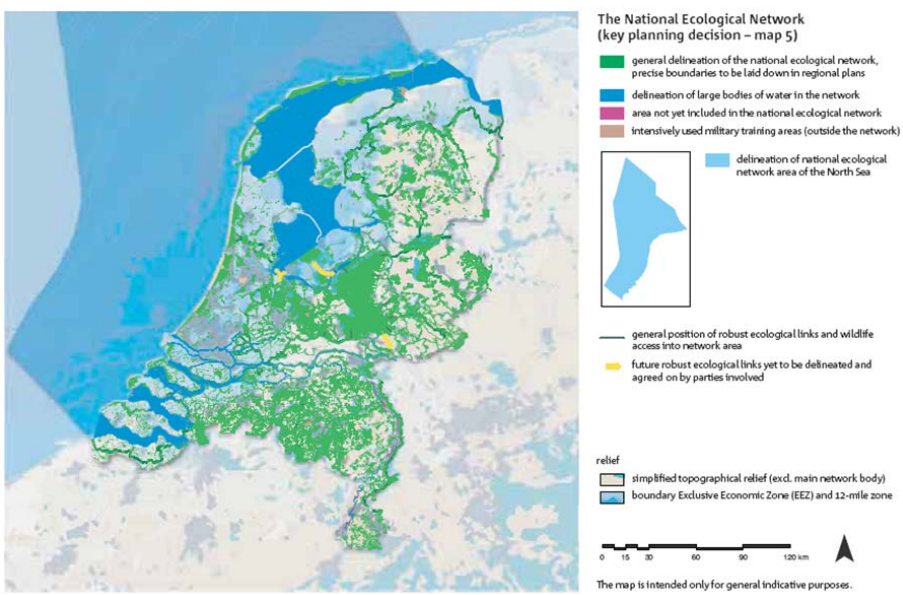

Figure 4.1: Nature Conservation in the Netherlands. Source: Ministry of LNV 2005.

One of the earliest legislative acts relating to nature was the Birds Act of 1936 and this Act was updated/consolidated in 1994 and further repealed by a change of the Flora and Fauna Act in 2002. This Act was responsible for prohibiting the killing and trapping of protected birds. The only exceptions were for birds that were otherwise included in the Hunting Act of the time. The Flora and Fauna Act deals with the protection of wild animals and plants in terms of meeting international commitments as well as more adequately protect them in an integrated and effective way.

LOCAL PLANNING

At the municipal level, the local government is required to submit zoning plans which are to incorporate the various needs of the national and provincial goals. Specific species protection legislation and protection of national landscapes must also be included in these plans and developed in an integrated approach. A special characteristic of Dutch local zoning plans is that they are detailed to the plot level and directly legally binding. Thus all other land uses than those that are specified in the zoning documents are restricted.

WATER MANAGEMENT

The regulation of the water system accompanies restoration to such an extent that it is in fact of equal importance to many restoration projects as the restoration policies are themselves. This is the case particularly due to the desire to create more buffering capacity in the water system as a way to prepare for climatic changes. Two-thirds of the population live in flood-prone areas in which the land is below sea level and requires permanent protection or areas that need protection from temporary inundation by the sea and the rivers. During the 1990s the Netherlands experienced serious river floods in 1992, 1995 and 1998 that necessitated evacuations and caused extensive material damage. Maintaining open space around the rivers is necessary not only for safety reasons (to allow rivers to rise and fall without risk to human life or harm to economic interests), but is also important for the ecological development of the river. Increasingly, water interests compete with other interests for the limited remaining space in the Netherlands. As a way to reduce the negative impacts of these additional uses, Dutch water policy is working to make water and its natural movements a key determining factor in spatial planning (Wiering and Immink 2006). This renders decision making difficult, particularly for Water Boards and Municipalities. The Water Boards have an interest in considering water as a guiding principle in physical planning and to leave areas undeveloped if a risk of inundation exists. The Municipalities however have a prominent interest in economic and urban expansion and have final decision-making power with respect to physical planning (Smit et al. 2008, Woltjer and Al 2007). Being required to submit their land use plans to a ‘water risk assessment’ before adopting them is seen as a significant challenge for the regional and local authorities in the next decades (OECD 1995).

Regulation of the water cycle has a very long and complicated history in the Netherlands. For nearly the last 1000 years it has been integral to the development of the society. The democratically formed Water Boards began as early as the 13th century due to the land subsistence problems encountered after peat and clay were extracted from delicate lands. The water boards are responsible for surface water management, are autonomous and have the power to collect taxes for their operations (Havekes et al. 2010). These operations are however partly coordinated by the Provinces and they are also closely linked to the central government, because the management of the main river systems such as the Rhine and Meuse occurs at that level. Recently (following World War II and more specifically the 1970's) their scope of responsibilities has broadened; initially broadening to include water pollution, and then ever increasingly relevant aspects included in integrated water management. They have a profit-payment-participation based structure with a representative general council including farmers, landowners, industry and inhabitants.

Water policy at the state level is the responsibility mainly of the (former) Ministry of Transport, Public Works and Water Management (V&W) including all of the main navigable rivers and waters. Water quality management is a co-responsibility of the Ministry of Housing, Spatial Planning and the Environment at the state level, though it is coordinated through the Ministry of V&W. The Ministry of Agriculture, Nature Management and Fisheries is also involved in national policy-making regarding water for obvious reasons.

4.3.2 THE PHYSICAL WATER SITUATION IN THE NETHERLANDS

In the Netherlands, where a large part of the country is a river delta and is partially below sea level, water policy has generally been focused on the interventions into the natural system for flood protection, in order to achieve water security and to protect land uses. Construction of dikes, storm barriers, and even land reclamation are intended to keep the water under control. The traditional use of drainage systems to develop agricultural and urban development areas resulted in land being reclaimed from the sea and the permanent extraction of water through continuous pumping. These uses are still important for the country, and are currently on the increase due to an increase in the demand for land for urban expansion and infrastructure. In rural areas more than half of the drainage capacity is used to allow the water to be removed out of the more developed areas. The physical water situation is well described in the following text taken directly from Kuks (2002: 5-9) with the most appropriate aspects for this thesis taken directly out.

<*begin citation*> "The Netherlands is situated at the downstream end of three European river basins (Rhine, Meuse and Scheldt). The inflows of the Rhine and Meuse are the country's main freshwater resources… About 30 % of the total surface area of the Netherlands lies below sea level, protected in the west and north from the sea by barriers of dunes and dikes…The combination of physical circumstances and human pressures has

led to a technically unique system of water management: the flow and level of almost every water body in the country is under human control.

Nowadays, there is a heavy rivalry between urban expansion and leaving floodplains undeveloped for water storage purposes in times of severe rainfall due to inundation risks and the resultant damage to property. As a reaction to growing urban development and land reclamation, compensation in the form of space for water storage is requested; space is however also increasing in value due to a growing scarcity in the Netherlands. This compensation has become extra urgent since climate change is having and will continue to have the effect of delivering more rainfall at irregular periods, and having higher and more frequent peak water levels and droughts.

River restoration is seen as the best way to achieve more water buffering capacity given the future climate expectations. It is also seen as a way to answer the call of the EU Water Framework Directive to achieve high ecological water quality standards. To a large extent this vision and its implementation can be viewed as undoing the recent past" *<end citation>*, in which canals were dug out of waterways and were used to increase drainage capacity.

4.3.3 WATER GOVERNANCE DEVELOPMENTS

The governance system for water management in the Netherlands has thus gone through a series of developments in which gradually more and more issues have been taken into account. This has had important consequences for the public policies and property rights involved (Kuks 2004a: 118-120, Kissling-Näf and Kuks 2004: 122-124). In 2001 the central Government and the three national associations representing the Water Boards, Provinces and Municipalities concluded a first agreement on the implementation of such policies and each of their roles therein. Later in 2003 they concluded the National Administrative Agreement on Water (Nationaal Bestuursakkoord Water) that elaborated upon the responsibilities and resources for implementation mostly regarding the water buffering aspect of water management. This national agreement was evaluated in 2006 and updated in 2008. In 2008 also the report of the national Delta Committee was issued in which ambitious plans for flood safety in an era of climate change were developed (Deltacommissie 2008). Nevertheless the transition towards this new paradigm was (and is) not without disputes and has required the "contribution of policy entrepreneurs" (Huitema and Meijerink 2009). Despite these disputes, these changes can be seen to have taken place in a somewhat easier manner than in other European countries (Kuks 2004b: 364).

4.3.4 RIVER RESTORATION AS A COMPLEX AND DYNAMIC PROCESS

The Netherlands has been investing large amounts of resources (hundreds of millions of Euros) into the construction of the National Ecological Network (EHS) and in the

restoration of rivers and creeks. Precise numbers regarding the exact investments into these restoration projects are hard to ascertain, since most projects are multifunctional and thus funded by a variety of layers and sectors of government and various subsidy schemes from the EU and other outside sources. Currently the majority of nature restoration activities take place in conjunction with the EHS. Although most of the financing for these activities originates at the national level it is mostly filtered down to the relevant provinces for implementation. The high level of importance that has been placed on these activities is exhibited by the large proportion (nearly two thirds) of the total budget for investment in the countryside (4 billion Euros) that was set aside for restoration activities (Slangen et al. 2008).

The potential flooding damages that are removed through prevention-oriented means are also hard to quantify. They involve decreasing the risks of serious flooding by improving the likelihood of regular flooding of areas that are opened and prepared for that function. When towns are flooded high costs can be incurred, but this has not happened along the Regge in recent times.

In terms of the relevant stakeholders in these types of projects, the Dutch Water Boards have a national association in The Hague (The Union of Water Boards), as do the Provinces and Municipalities. The farmers have both national and regional associations. Estate owners are a bit less organised, but also have clear regional networks. The relevant nature organisations consist of Landscape Overijssel (Landschap Overijssel), a regional organization (though Provinces outside of Overijssel have similar bodies and in total they have some 300,000 members), the State Forestry Agency (Staatsbosbeheer) and the national NGO Nature Monuments (Natuurmonumenten) which has a large membership of over 750,000.

4.3.5 RIVALRIES AT THE NATIONAL LEVEL

The main rivalries in the case of stream restoration projects are those between the use of the riparian land for farming and urban activities and those of natural flood control and habitat. One topic over which this debate takes place is regarding different perspectives on flood control methods. There are those that feel that the traditional technological solutions can maintain the flood waters at reasonably safe levels while not disrupting development and use of the land for agriculture and other industrial or urban type activities. The water board interviewed for this study feels that more natural means are a more effective manner that provide more opportunities to create surplus value of the water body as well as a number of tools with which to regulate these rivalries. Land purchasing in areas that are desired for floodwater storage has been used successfully to overcome these use rivalries in different projects throughout the country. Many provinces use Green and Blue Service payments to finance the efforts of farmers that support the flooding management system, the habitat desired for the EHS and biodiversity.

The debate surrounding these restoration projects takes place in a multi-layered format. Discussions taking place over the national level goals include some disagreement about the basic principles of connecting natural areas as an efficient way to meet flooding, habitat and biodiversity goals. These opinions however have not taken on an important role in the general media and policy debate. There is a relatively high level of dissatisfaction with respect to how the national government prioritises the setting aside of enough means (both money and political resources) to enable a good pace of progress for the required implementation. This tends to be less true for the water aspect of the projects since they are important to the nationally significant interest in managing "flood security".

LAND USE PLANNING AND PROPERTY AND USE RIGHTS

Restoration activities take place on both public and private lands. The properties involved in achieving the connection of nature areas were owned to a significant proportion by the Society for the Preservation of Nature Monuments as well as some of its regional partners: some 50,000 ha in 1970's and 180,000 by 2005. These areas cover 70 per cent of the natural land in the Netherlands (Bogaert and Gersie 2006). As the creation of new corridors claims additional land, purchases of new land by these partners are often undertaken in a coordinated fashion to meet National Ecological Structure (EHS) and other goals.

However, as prices for land have begun to increase and since the agricultural interests insisted that the sales be voluntary in nature, this method has become increasingly difficult. Additionally other instruments such as zoning appeared to be too weak or clumsy to produce the necessary zones for the EHS. Consequently the proponents of restoration projects such as the water boards, municipalities and NGOs developed improved skills in creating coalitions that enable the gradual voluntary increase of the re-naturalised area.

Zoning is an important issue that affects the property rights of an individual and in the Netherlands this is very closely tied to land use planning (Van der Cammen and De Klerk 2008). Though currently most land use planning changes are done through a voluntary process that takes place through consensus-based negotiation, there are experiences in the past where mandatory participation was involved. Land consolidation was one area where this happened with more frequency. The 50's and 60's saw a major reconstruction of the countryside with land consolidation projects. Following World War II large parts of the countryside were drastically changed. A very telling aspect on the issue of property rights can be seen in the voting procedure that was followed in the land reconsolidations: farmers that didn't show up to the meetings were assumed to have voted in favour of the plan. This indicates that their property rights were regarded as being subordinate to the national reconstruction and progress project. This was not only the era of large scale intervention, but also intervention was stronger than ever in forcing the old adagio of separation of concentrated cities and towns in an open countryside. Separating these uses

as much as possible with sharp boundaries was seen as very important in such a densely populated country.

It is not uncommon that municipalities have not made or updated local land use plans for their non-built-up areas. In principle they could have used this instrument as a very powerful means to specify permitted land uses that are directly legally binding on the level of individual plots of land. Provinces have their own non-binding land use plans and must give approval to the local plans before they can become officially binding. The procedure to design and approve them is quite elaborate and changes have in principle to follow the same procedure. For the use rights connected to the property rights of land ownership this has considerable limiting consequences, since changing land use is quite difficult and without it landowners are limited to the specified use. This can also be seen as protection against day-to-day policy interference. The procedures under the spatial planning law have consequently always had some short cuts with somewhat smoother ways of approving changes than a full change of the land use plan. Even those however require multiple approvals and have ample possibilities for appeals.

Public pressure resulted from the more environmentally progressive perspectives of the 1970's and led to other land uses and ecological values being given more attention at the national level. The strong Dutch stance in spatial planning (policies, laws, procedures) had been until then mostly only relevant for the countryside due to the indirect implications of city planning for rural areas. Under this new era, it also began to increasingly lead the governance of spatial developments in the countryside. The "Structure Sketch Rural Areas" of 1977 was the first devised national vision on the development of rural areas from a spatial planning perspective. Until then of course the strong policy of separation of the built-up area and countryside was relevant, even when it was implemented from the perspective of urban planning. What is very interesting is that already in this very first vision the multifunctionality of large parts of the rural area – especially the sandy soils of the East and the South - was "planned" as a desirable development.

For the National Ecological Network (EHS), the Provinces are responsible for determining the areas which are to be used and the municipalities are tasked in zoning the areas and providing the appropriate legal protection. The national government has however largely financed the purchase, installation and management of the land in the past. Linking the ecological corridor of passage into a river restoration project that the regional Water Board wants to promote, has the great advantage that sources of money, expertise, legitimacy, etc. can be combined. To enable this, the goals can be made to overlap significantly by clever project design.

With respect to water, the historic private property rights were under the public domain per the Constitution of 1814 and the Civil Code of 1838. There is also a common property aspect for regional waters which was given to the water boards. Later expropriations were made in the name of navigation, flood protection and land reclamation in which

compensation was provided for the effects on private property. Although expropriation is avoided as much as possible in most restoration projects, intervening in property rights for the sake of water management has a long tradition of use in the Netherlands.

4.3.6 PROVINCIAL POLICIES

The administration of the Province of Overijssel is an important stakeholder in the Regge River Restoration processes. It is in principle the key coordinator of all spatial developments. It has developed together with the Municipalities and the two Water Boards located in the area, a Provincial Living Environment Vision 2008 (in Dutch "Omgevingsvisie" 2008), in which environmental, spatial planning, nature and water policies are combined. In this white paper the zoning of the Province is detailed on a large scale. What is interesting about this is that it encourages multifunctionality in various areas and hence contributes to a very dynamic project approach. The Dutch zoning regulations are very strict and have in the past provided the additional benefits of curbing urban expansion into the rural areas. There is however a new direction being taken in Dutch spatial planning policy that is intended to encourage more development through taking a less top down perspective and leaving more of the decision making about spatial planning to the lower levels of government.

The Regge also plays an important role in the creation of the ecological pathway system in Overijssel for which the Province is responsible for implementation. The policy strives for the creation of 'robust linkage zones' between existing nature areas, in addition to those of the national EHS system, in order to create much larger habitats than the scattered areas themselves can offer. In addition to the EHS, there are provincial documents that map out areas intended for agrarian culture landscape, urban areas, 'lust and leisure' areas, nature and development perspectives, landscape development perspectives, infrastructure, networks, etc.

The relationship between agriculture and nature in land reconstruction is a topic of discussion in Owens (2010). In contrast to old land reconsolidations it is not only a matter of increasing agricultural efficiency and the separation of functions; controlled multi-functionality is a quality especially striven for in large areas. Within the provincial plans, all of the various types of areas are incorporated into the landscape. Agricultural extensification[1] areas are placed in more sensitive areas and more intense agricultural activities are given their own space. These two types of areas are often separated by designated "weaving" areas that support the recognition that space is needed in between intensive and extensive agriculture in order to adequately meet each of their differing needs.

[1] Agricultural extensification refers to farming activities that incorporate a variety of goals related to the improvement of the natural and social environment through the use of less "intensive" farming methods.

The Regge plays an important role in the creation of the National Ecological Network and the 'robust linkage zones' between existing nature areas in Overijssel.

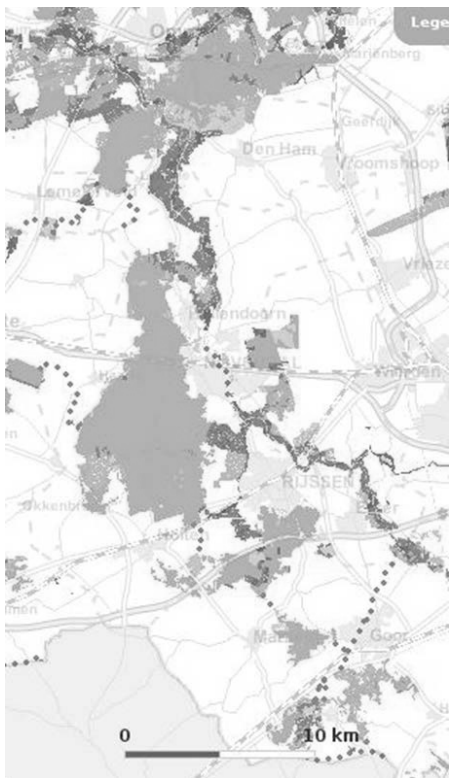

Figure 4.2: National Ecological Network in the Regge valley – legend in text below
Source: Province of Overijssel – Omgevingsvisie 2008.

Figure 4.2 shows in green the existing nature areas and in purple the ecological linkages. The dotted lines are corridors where the exact location is not yet fixed. Plots of the darkest purple have already been realized, and they are in fact only a small proportion of the overall objectives. In addition to general land use and nature development the Province also pays attention to the qualities of the area for recreation and tourism.

4.3.7 PROVINCIAL WATER INTERESTS AND POLICIES

Part of the Overijssel "Omgevingsvisie" is the Water Annex (Province of Overijssel 2008). This part serves as the official provincial water plan, though it was drafted together with several partners including the Water Boards. In addition to the more general goals it also specifies context and goals for separate rivers and stretches. It states that the Regge is characterized as a slowly flowing normalized river located on sandy soil.

With respect to the goals for the Regge, the Omgevingsvisie states that "to achieve a "good ecological status" (the goal for natural waters of the Water Framework Directive) the whole water course would need to be re-meandered, the disconnected trajectories would all need to be reconnected, some watercourses would need to be deadened, the drainage level raised and a naturally responsive water level management introduced. These measures would cause significant damage to agriculture, industry and buildings. For that reason the water body is labelled as "strongly modified" and the ecological goals are adapted to this. (compare Kampa and Hansen 2004). These goals are consequently not very ambitious. Even so, the plan does not foresee that these goals will be fully reached before 2015 (the EU target date), since part of the measures will be implemented after 2015. Similarly un-ambitious wording is used regarding other water courses, which helps in reducing the strict targets against which they can legally be measured against by the EU (Raadgever et al. 2009). Nevertheless, the plans for the Regge that remain are quite substantial, both in terms of investment and land use change. Though the provincial vision document gives an overall picture of relevant policies, the Province is by no means the "policy maker" and the Water Board and municipalities its "implementers". The Province's role is more a coordinating one than that of a higher authority. Water Boards and municipalities have equally important domains of their own.

4.3.8 THE ROLE OF THE WATER BOARD OF REGGE AND DINKEL

The Water Board of Regge and Dinkel (the Water Board responsible for the Regge River as well as the nearby Dinkel River) is nationally seen as innovative and progressive towards the new demands of water and nature restoration tasks. With respect to the Regge River Basin the Water Board of Regge and Dinkel (referred to from now on as the Water Board) considers it to be relatively large and quite suitable for water retention. They participate with various nature organizations in the purchasing of available land in this designated ecological linkage zone while they are searching for a more overall coherent and strategic approach.

The Water Board, in collaboration with the national agency for rural areas (DLG) and the Province of Overijssel, initiated and issued the Regge Vision in 1998 (Reggevisie 1998). This vision provided the initial foundations for the actions that would return the Regge River to a more natural state. The arguments in favour of such restoration work were various and highlighted the interest in supporting the multifunctionality of the area. The Regge Vision set the agenda for further consultation and concrete decision-making related to integrated aspects of water quantity and quality, nature, agriculture, drinking water supply, recreation and landscape. All of the local and regional, governmental and non-governmental actors were involved. While it provided a clear vision, the accompanying implementation actions were left very open.

The Water Board is responsible for reducing the susceptibility of the Regge to increasing climate change related circumstances and does this in cooperation with different

inhabitants and organizations. The awareness that the pre-existing collaborations between the partners were too small scale to achieve catchment level results pre-empted its pro-active attitude. They strongly consider the water system, ecology, recreation, archaeology, economic diversification, public support and landscape as important factors when considering how to move forward in more coordinated and effective actions.

The Water Board is also responsible for adapting the water system within its area to the expected demands of climate change. These actions take place in cooperation with numerous other stakeholders. Providing the necessary storage capacity is expected to require increasing the scale of partnerships active in the past to the scale of the whole catchment area (WAVE-magazine 2009). Discussions with the Water Board staff made it clear that there is a strong push from within the organisation to work pro-actively and collectively with other stakeholders towards a strategic agenda that will include the various interests associated with the water of the Regge. The Water Board is also involved in an EU project that it is using to support innovative measures being taken to increase the natural values of the Regge. Minimizing undesirable drought and periodic flooding in the river's basin and simultaneously reinforcing the different functions of the water is a key goal being supported by the WAVE project (WAVE-magazine 2009).

The Water Boards more specific relationship and influence on the Regge Restoration process will be provided in the sections dealing specifically with the case specific context.

4.3.9 MUNICIPAL POLICIES

There are a number of different municipalities involved in the Regge restoration projects; they include Hellendoorn, Ommen, Wierden, Rijssen-Holten, Hof van Twente and an outlying part of the Municipality of Twenterand. The region in general is considered rural and has a considerably lower average income than the rest of the country.

Dutch municipalities are involved in all spatial planning and development issues within their territory. They participate for instance in the development of land restructuring and land elaboration projects. The municipalities of Ommen, Hellendoorn and Hof van Twente were observed to be the most heavily involved in the Regge projects throughout the time period included in this research.

The Municipality of Ommen in the north of the region is a highly forested area. According to the municipal staff interviewed, this provides both opportunities and challenges. Some felt that there was sufficient natural area and that it should not be increased. The tourism industry, which includes dozens of campsites, is already at its maximum desirable size according to municipal policy documents. Furthermore, the efforts of Ommen are generally spent developing relationships with other municipalities that are located west and east along the Vecht River and less downwards along the Regge.

The Municipality of Hellendoorn in which several of the realized projects have been completed has, on the contrary, adopted its wealth of nature (including forests, wetlands and the Regge valley) as an asset that makes it more attractive for both people and industries. Consequently it is more active in trying to further the restoration projects. The Municipality of Hellendoorn has its own Water Plan (2007), which was made in collaboration with the Water Boards of Regge and Dinkel and Groot Salland (part of its western surface is in that Water Board's area). In this plan the Municipality of Hellendoorn supports the various aspects of the Regge restoration and emphasizes its own desire to add recreational facilities.

The Municipality of Hof van Twente is also a municipality with a relatively high percentage of natural area. Its nature plots are often relatively small because they belong to the attractive patchwork that is characteristic of the many estates that cover a large proportion of its area. Generally, this municipality has a very traditional and attractive landscape that it sees as worthwhile to protect and strengthen rather than weaken. Together with its neighbouring Municipality of Haaksbergen it developed a "Landscape Development Plan", that was confirmed by the Municipal Council in May 2005. The Municipality of Haaksbergen has a number of tributary creeks to Regge River. Even though the Twente shipping canal cuts off most of these creeks, this creates a unity with the Municipality of Hof van Twente in terms of landscape. Apart from the aesthetic, water and nature aspects cultural history also plays an important role.

4.4 PART TWO: THE REGGE RIVER

In this section the Regge River, its basin and the river restoration project are briefly introduced. The Regge River is the most important river in the western part of the Twente region. Numerous smaller rivers and creeks flow into this river. In the periods 1848-1879, 1894-1913 and 1925-1935 the Regge suffered from piecemeal canalization efforts. This was done mainly to facilitate shipping and agriculture, although the shipping industry has long since died out. It resulted in nearly all of the meanders being removed from the river. Over the years the Regge was in this manner changed from a meandering river into a water course that was confined by narrow shores with paths for "maintenance" (e.g. dredging). In the context of the Water Framework Directive all waters contained within this watershed are labelled as 'strongly modified'. This is the basic context that serves as the starting point for the Regge Restoration Project.

4.4.1 THE REGGE RIVER BASIN

The Regge valley is a particularly rural area of the Netherlands that is a historically rich area for farming activities, though the overall area used for traditional (intensive) farming is decreasing. It belongs to the region of Twente, where, despite having a high population density most of the inhabitants are concentrated in a line-up of cities, leaving the rest of

the region quite “rural” as compared to other areas in the Netherlands. The Regge valley is an area with an increasingly interwoven combination of agriculture, recreation and tourism, towns, and both wet and dry nature (Nature 2000 areas), with a quickly diversifying set of resource uses. There are large investments in recreation and wetlands and creek restoration. This has created various physical planning issues.

There are also a relatively high number of estates remaining in the area that date as far back as the medieval times. These estates are now either under private ownership or managed by foundations that are governed by a board of directors. Their large size makes them an important player in the development of the landscape. They also contribute to the relatively large number of natural lands seen in this region of the country (recognizing of course that the large majority of natural lands in the Netherlands are actually man made). Campsites and holiday parks are an increasingly popular use of the land.

Figure 4.3 shows how the Regge river basin is part of a much larger Vecht river basin (all of the coloured areas in the map). The Vecht River flows eventually into the IJssel Lake in the centre of the Netherlands (with the narrow purple mouth on the left of the map), just after being connected to the Ijssel River, one of the branches of the Rhine. The Vecht is a middle size rain fed river, which originates in Germany. The total length is one hundred and sixty-seven kilometres, of which sixty kilometres are located in the Netherlands. This Dutch portion of the catchment is used more intensively than the German part (Lulofs and Coenen 2007). The size of the Dutch part of the catchment is twenty-four hundred kilometres squared, the elevation in the area ranges from zero to eighty-three metres above sea level; however the total decline of the Vecht itself is just ten meters.

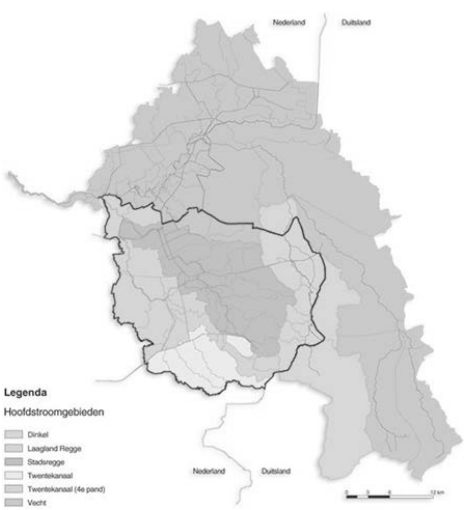

Figure 4.3: Transboundary German-Dutch Vecht river basin.
Source: Deltares 2012.

The reddish area in the middle-left is the Lowland Regge basin that predominantly consists of rural waters. The darker red area to its right is the urban portion of the Regge basin in which the waters are mostly of an urban nature. This water is kept separate and discharges into the Vecht. Not all of the water in this area is urban however. A large project (the Breakthrough – see Bressers et al. 2010) will reconnect the rural creeks in this part to the main Regge River. The light yellow area just below the previous two is partly disconnected by a large shipping canal, the Twente canal. The watercourses are mostly led underneath the Twente canal (the watercourse entering the Twente region from the southwest), but discharge into the canal in case of high water levels. Despite this, it is the watercourse in the west that is regarded as being the start of the upper Regge.

A large proportion of the area in the region is 'verwevingsgebied' (weaving of functions area). There is a wealth of new activities in the countryside, both by farmers and by others that use the area for recreational types of activities. They can be grouped into categories such as museums (nature park visitor's centres, 'zomp' boats that were previously for transport but now serve recreational purposes, wooden shoe-, radio-, tin can-, village-, lifestyle fun-, farm-, and 'agricultural nostalgia'- museums), activities (canoeing, survival, holiday farms, farm campsites, miniature golf, archery, shooting, corn labyrinths), special agriculture with guided tours (winery's, nuts), festivals (open air plays, harvest feast, 'trekkerslep' (tractor games), flower parades, fruit parades, religious praying sessions), as well as extended opportunities for hiking and cycling along marked paths. New care-taking farms arise where groups such as children and the disabled can find day care.

The Regge area also contains two major nature reserves: the forest near Ommen in the north and the National Park Sallandse Heuvelrug in the west. The Sallandse Heuvelrug was established as a national park in development in August 2000. Its designation as a national park means that the area can be more effectively protected and the relationship between the different sections of the park can be strengthened in coming years. The entire area measures approximately thirty-five square kilometres. The Dutch State Forestry Agency, Nature Monuments, and a number of private owners strive to preserve and improve the features of the park for nature and recreation by means of the national park system. The area also boasts a network of signed bicycling, walking and horseback riding routes. Since nature-oriented recreation is one of the explicit goals of the park, much attention is devoted to the quality of the facilities, although much has already been done for visitors. There is a visitor's centre, with a fun and educational play forest, and an information hut.

A major side effect of the grazing of sheep and goats in previous times was the destruction of forests. This system ultimately resulted in the nearly total deforestation of the Netherlands. At the start of the last century, the Sallandse Heuvelrug was covered almost solely in heather. In some areas, the pasturing was so intensive that even the hardy heather disappeared and was replaced by drifting sand. It was at that time that the Dutch State Forestry Agency was assigned the task of afforesting the heathlands and drifting

sand. A number of campgrounds and holiday bungalow sites are located around the area, in addition to various food service facilities.

Many of the projects described in the following chapter are at least partially situated in the Municipality of Hellendoorn, which consisted of thirty-five thousand inhabitants at the end of 2010. The northern part of the Sallandse Heuvelrug is part of the Municipality of Hellendoorn. The Hellendoorn Adventure Park is also a very busy tourist attraction. There is consequently an extensive tourist infrastructure, including an impressive network of marked paths and eating and drinking facilities.

The rather large forest area contained mainly within the Municipality of Ommen is designated as an EU Habitat protection area. A portion of the forest lies between the Regge and the Vecht and another portion lies on the other side of the Regge to the southwest. The visitors' centre near the Regge River is a cooperation of the State Forestry Agency, Nature Monuments, Landscape Overijssel and the Municipality of Ommen, who are together the owners of the nature area. The Vecht valley, the woods and the hills attracted many tourists, particularly in the periods following World War II. Consequently there is a significant supply of campsites and recreational infrastructure available.

Twickel is the largest private estate of the Netherlands, and apart from the castle and surrounding parks, it possesses about 300 farms, restaurants, hotels, schools and a home for elderly people. The whole area has an interesting small scale landscape that the foundation and farmers are determined to preserve. Recognizing they cannot compete on the world market in this small scale landscape they work to find other sources of income, such as green and blue service payments from the Province and Water Board, respectively. In the Twickel area, farmers rent their land from the estate, which maintains the property rights. These rents can be transferred from one generation to another ("erfpacht"). However, even in those cases, the Board has a lot of power in governing all aspects of the areas that farmers "rent".

There are several other estates, which are also involved in numerous Regge restoration projects. They coordinate informally with one another and play an important role in the restoration activities due their large land areas and the general suitability of their lands for restoration activities.

4.5 CONCLUSION

This chapter has provided a general understanding of the various levels of government and different stakeholders that are involved in the Regge Restoration projects. These projects have developed to serve an integrated and multiple set of interests. The next chapter will go into greater detail about the interaction processes that have occurred during the development and implementation of the wider Regge Restoration as well as the individual projects. The information provided within this chapter is meant to provide the

general external governance context for these processes and will be seen to influence them at various places in the different projects.

CHAPTER FIVE: THE REGGE RESTORATION IMPLEMENTATION PROCESSES

5.1 PREAMBLE

The contents of this chapter are taken mainly from De Boer and Bressers 2011, with edits only included for additional clarification.

5.2 INTRODUCTION

The Water Board of Regge and Dinkel is tasked with realizing around ten thousand hectares of 'retention area' (to buffer stored water at peak levels) and a large proportion of this challenge is to be realized in the Regge valley. These actions are intended to significantly decrease the size of the area that suffers periodically from drought. The area also contains portions of the National Ecological Network (Ecologische Hoofd Structuur – EHS), the Dutch policy program to increase the interconnectedness of the various natural areas in the Netherlands. The inclusion of so many interests within the project area has led to numerous levels of government, different nature organizations, farmers, companies and citizens becoming important stakeholders. The Water Board of Regge and Dinkel (further referred to as the Water Board) believes that working synergistically within this project based on the stakeholders' similar and overlapping goals is the ideal implementation approach. It is the intention of the project leaders to increase the multi-functionality of the landscape to the fullest extent possible, in order to take full advantage of any and all opportunities to create valuable projects.

This chapter is intended to provide the reader with a detailed understanding of the social interaction processes that have taken place as part of the Regge Restoration Process. Part One describes the general background and approach taken by the lead agency, the Water Board. Parts Two, Three and Four give detailed descriptions of the various subprojects separated by their geographical arrangement related to water flow – Upper, Middle and Lower, respectively. The contents as they are provided here contain preliminary analyses of the various sub-cases immediately following the process descriptions. These sections summarize the aspects related to each of the theoretical concepts that form the basis for the analysis of the data included in this thesis: actor characteristics, receptivity, boundary spanning, adaptive implementation, and any observations of influences related to the four inter-regime qualities of extent, coherence, flexibility and intensity. This is done on a per-case basis in this chapter while a more detailed analysis is provided for the case as a whole in the following chapter.

5.3 PART ONE: PROJECT DEVELOPMENT

5.3.1 THE INITIAL COALESCING OF INTERESTS

In 1998 the Water Board, the Rural Areas Agency (Dienst Landelijk Gebied – DLG) and the Province of Overijssel worked together to develop a process that would enable them to cooperatively achieve a number of water and land based goals in the Regge River basin. With the Water Board being responsible for the surface water quality and quantity in the region and the DLG working on land development projects for various environmental, water, economic, spatial, sectoral and social policies in the rural areas, it was clear that the two bodies would better serve their longer term goals through an integrated visioning and strategy framework.

It was decided that the vision would be as clear as possible in terms of goals, though specifics on implementation and planning would be foregone. In the resulting document, the Regge Vision, they provided information on the ideal situation towards which they would work, difficulties and complexities they would encounter as well as possible measures they could use to reach the defined goals. They also mentioned the various institutions that they expected to be key partners in its accomplishment as well as a number of accepted criteria for various measures such as acceptable drainage and water quality.

Given the large scale of the project, it was realized early on that spending too much time in the planning stages would be seriously detrimental to the achievement of the overall goals. It was not considered efficient to spend and energy attempting to develop one perfect plan that would meet all of the goals for the entire area. They chose to adopt an opportunistic approach at the beginning of the project. By this it is meant that instead of working methodically from beginning to end they would wait to see what projects would develop on their own and then work to include as many aspects of the vision as possible. They left ample room in the Regge Vision for coincidences and opportunities to determine where they would focus their short term project efforts.

The Water Board and its partners have initiated a series of new projects that together they have labelled Regge restoration projects, under the heading of “Natural Regge” which began in 2000/2001. The first project began as a pilot project in the Municipality of Hellendoorn (referred to as the Velderberg Project) where a natural area would be reconnected to the canalized Regge. The initial interest in taking on this project came from the Water Board as it would increase the overall water storage capacity for the Regge. The nature organisations were concerned that as a result of the project the high nutrient levels of the Regge water would negatively affect the health of the natural areas that they were managing. Discussions were had and an agreement to move forward with the connection was agreed upon and the project was very successful. Lessons were learned in terms of early communication with stakeholders, looking for common desires and sharing of

information. Based on the high level of communication, the involved actors began to view this project based on its overall goals of creating a more dynamic river system and not solely for how it would affect their separate interests. Lessons were also learned from this small-scale project that would improve their rain models and how they could better include cycling paths desired by the Municipality alongside the nature development goals. Had these various interests not have been actively included in the early stages of project development, the project most likely would have taken much longer or would have been prevented from being completed all together, due to local opposition to the land use changes. The Netherlands' highly prohibitive development and zoning laws make it relatively easy and hence quite common for all land use changes to be subject to some form of legal opposition.

The nature organizations, the Province and often the Municipality have goals that are mostly in synergy rather than in conflict with the Water Board, and accordingly a new joint project can be rather easily created. Inhabitants and landowners often have goals that are more difficult to integrate. Various parties can have different interests and different perceptions about what constitute as uses with high spatial quality (Driessen 2005). Recurring partners in the project include a few relevant municipalities, and the nature organizations Landscape Overijssel and Nature Monuments. These nature organisations currently hold large amounts of land, are active in the purchasing of land and cooperate with one another in the region. The negative impacts of agricultural operations along the Regge have often been addressed through the purchasing of the land where the intensive farming is taking place and then changing its use function to a mixture of nature and recreation. This tactic was used in a few cases where a farmer had expressed interest in leaving his operation, which made land exchanges possible and able to progress in a relatively seamless process with few dissidents.

Following the many successful projects completed along the Regge the Water Board is now discussing with the various partners to determine where important gaps exist and how they can plan to address them and which parties will be responsible for which actions. The national and provincial policies supporting the completion of the ecological linkage zone have been very helpful as co-drivers for change, as these planned linkages zones overlap with the whole of the Regge. The Provincial partner feels that they should have the leadership role in both nature development and the coordination of spatial development. Close collaboration between the Province and the Water Board began strongly due to their well aligned goals however the capacity exhibited by the Province in terms of participation in the projects has been reduced more recently due to national discussions on the division of competencies. Larger scale "area development" projects, which are associated with various resource use issues, are becoming increasingly utilized as a setting to enable the scaling up of the projects and the associated benefits.

From the perspective of Landscape Overijssel the Regge restoration has accomplished quite a lot, yet has until now not realized its full ecological and landscape potential. They

recognize that many possible pitfalls are associated when land use changes are included within these projects and as such the smaller work-intensive projects that were realized in the beginning were essential to overcome hesitations and build trust in the process. The existence of the broader overarching Regge Vision is seen to enable these small successes to spread to other areas. The process and resulting projects have improved the reputation of the Water Board in terms of behaving in an ecologically conscious way. Previously they had had a poor reputation for only pursuing traditional high tech and infrastructure based water projects. The positive results in terms of water quality improvement in the Regge are already being seen due to this new approach.

The projects that now belong to the Natural Regge collection are included in the following list. In the brackets are the municipalities that are involved as government actors, in addition to the Water Board of Regge and Dinkel and the Province of Overijssel.

1. Estates of Diepenheim (with Hof van Twente)
2. Veldkamp (with Hellendoorn and Wierden)
3. Groene Mal (with Hellendoorn)
4. Kalvenhaar (with Hellendoorn)
5. Velderberg (with Hellendoorn and Ommen)
6. Onderland (with Ommen)

In addition to these projects there are a number of intermediate projects, which at the time of the interviewing process, were still in various phases of development. Two projects were also retroactively included since they were already in development in the early stages of the Regge restoration program. They are thus considered to be pilot projects from which a number of lessons were learned and incorporated into the Regge Vision document and processes. These two projects are referred to as Exoo and Tatums.

5.3.2 CHARACTERISING THE REGGE RESTORATION PROJECTS

Restoration cases are typical 'boundary spanning projects'. Complexity arises from the fact that not only the context, but also the projects themselves are best served by increasing their level of multi-functionality. This can increase their chances of successful progress by opening up new opportunities for receiving funding or easing legal approvals. Consequently the regime involved, is not only the regime regarding a specific activity, but the "inter-regime" of policies and rules regarding many activities, even when the starting point is just a singular issue (see Chapter Four for a more detailed description of what is included in the inter-regime). In these cases, the multiplicity of actors and "their" policies involved in polycentric regulation regimes can sometimes pose problems of legitimacy and accountability (Black 2008, May 2007).

The projects are also typically multi-level by nature. Classic decentralization concepts (including the European 'Subsidiarity' and the American 'New Federalism') often search for the "right" level of regime: the lowest one that is apt for solving problems. The local

level is however involved in all stages of the policy process (Bressers, Kuks and Ligteringen 1998). Multi-level governance is based on the acknowledgement that all levels and scales influence a certain situation simultaneously (not necessarily to the same extent) and that all levels influence each other. Upper governance scales can have direct impacts on local governance regimes (Andersson and Ostrom 2008). This does not occur only in either a top-down or bottom-up fashion, but in both ways and can also skip some steps in between (Bressers and Rosenbaum 2003). Though the projects studied are local by nature, abundant relations with upper levels (including the EU and world climate change arrangements) and lower levels (kitchen table conversations with individual citizens) are at centre stage.

Inevitably projects of the size and ambition of the Regge River restoration are "complex", but moreover they are also dynamic. The period through which they are implemented is sufficiently long to allow ample room to "play the game", but also long enough to try to continuously modify the context of the game. As such, analysis of the processes needs to reckon with the fact that not only the process, but also its contexts evolve and are made to evolve.

Thus the water and nature restoration projects require that attention be placed on the analysis of multi-policy implementation in complex and dynamic social interaction processes. When one studies the Regge restoration processes these (inter)actions of the actors involved form the main portion of the story. The processes in focus will operate in a complex and dynamic, and thus unpredictable and uncertain environment. Given this context, project management strategies and methods which are linear in nature and do not "plan" ways to respond to the changing and arising situations, significantly increase the likelihood of hitting roadblocks, missing opportunities and eventual project failure (refer to discussion on programmed implementation in Chapter Two). In order to increase the chances of successfully integrating multiple legitimate and desired uses, multiple actors' consent, sectoral policy schemes, funding rules, time frames and scale issues, members of project teams need to be skilled "boundary spanners" (Williams 2002) and able to see, use and sometimes create "windows of opportunity". Consequently the narratives of the (inter)actions are highly informative on what strategies are used to achieve good results under various contexts. For that reason, the characteristics of the actors in these implementation processes are a vital part of the study. This includes how the actors are influenced by both inter-regime qualities and the strategies they or others in the process apply to make the most of these contexts.

PROJECT BY PROJECT

Shortly after the completion of the Regge Vision white paper, the Water Board began to search for opportunities and prepare for the eventual development and implementation of Regge restoration projects. In the following three Parts each of the various projects are introduced in the sequence of the river flow, from upstream to downstream; first the

upper, then middle and finally the lower Regge. A chronological approach to introducing the projects could provide a better sense of how these projects have developed. The included projects do not however have clear start and finish dates, which would allow this kind of reporting. The true nature and integrated process followed in the development and implementation of these projects in fact precludes this sort of logical, linear approach. As such, a geographical approach was chosen and every effort is taken to explain within the cases when they are seen to have taken place in the overall project process as well as how this place influenced the interactions that took place during implementation.

5.4 PART TWO: UPPER REGGE PROJECT IMPLEMENTATION

5.4.1 ESTATES OF DIEPENHEIM

A number of beautiful estates and castles are situated in the wooded areas in and around the town of Diepenheim. Such estates however, often have problems with their water systems. Canals dry out, woods and nature areas suffer from drought and agricultural fields can become either too wet or too dry. Following an inventory made of the problems experienced by each estate, various projects have been developed in conjunction with the Regge restoration process in order to address them. The "Estates of Diepenheim" is one of these projects.

Under the umbrella of the Regge Natural projects, the castles of Weldam, Warmelo and Nijenhuis and the 'houses' of Westerflier and Diepenheim are working together with the Water Board of Regge and Dinkel to address some of their water related issues. The Diepenheim Mill Brook, the Leide Brook and the very upper stretches of the Regge have been restored to their more natural states as part of this project. As a result of a voluntary land exchange, a seven hundred meter stretch of the Regge River between Westerflier House and Warmelo Castle has been set for restoration. The potential to restore migration opportunities for various fish and crawfish in the area has additionally drawn interest from other stakeholders to include the creation of an ecological pathway. The proactive seeking out of complimentary interests located in the areas enabled the development of these additional features. At a somewhat later stage in the project, the Regge Garden project developed and would become an important contributor to the Estates of Diepenheim projects. The additional tourism and recreation opportunities available due to this new garden are important aspects that will be improved upon through joint developments.

INTERACTION PROCESSES AND RESULTS

Before there was any official cooperation between the Water Board of Regge and Dinkel and the Estates in the Diepenheim area, efforts were already underway to better arrange agricultural activities located on the estates in a way that would improve the overall landscape and ecology. A number of the estates located around the village of Diepenheim

were independently active in trying to "re-shuffle" the placement of various tenants in the hope of accomplishing these goals. It was some time later that they would solicit the help of the Water Board to help them simultaneously improve upon the natural qualities of the Regge and the waters surrounding the castles. The Water Board was happy to support these efforts since they aligned well with their general vision on water management. The resulting projects would address water concerns, add nature to the area and allow more space for water retention.

A third major influencing partner on this project was the Regge Garden project, which was concurrently taking place within Diepenheim. The Water Board had been aware for some time that this project was underway, yet had waited for the right time and opportunity to express its interest in collaborating with the ongoing efforts. They had deliberately waited approximately a year and a half to begin official discussions with the Regge Garden project leaders. They associated the accessibility of public art, tourism and recreation as being valuable traits of projects with which they would like to cooperate. Following the initial discussions with the Estates of Diepenheim, they believed that there was now a possibility to develop a synergistic project between the two groups. The final result included artwork in the project area along the Regge, and various kinds of gardens including butterfly, winter, marsh, and aroma gardens, as well as many walking paths.

The timing of interactions is seen to have played an important role in this project. The Water Board made the initial contact with the local municipal staff with this idea for an integrated project. The Municipality had also already had an interest in participating in the Regge Garden project. When the project started to materialize, the Water Board and the Municipality contacted the artists and other stakeholders to discuss different options for the project. This process not only produced synergies that would help the Water Board's interests to materialize, but also opened up additional venues for subsidies. Working together with the other parties (particularly the art community) made them eligible to receive sponsorship from the Mondriaan Foundation for which they otherwise would not have been eligible. The Water Board refers to this deliberate combination of goals from different sectors to the projects as "schakelen" (coupling). They view it as a strategy that produces synergy ("added value of water") and enables the combination of various resources to support the project. They are thus also willing to accept (where and when necessary) the added complexity this brings to project organisation and implementation.

In this case the initiative was not just a matter of coincidentally finding shared interests. A local individual who had ties to the various organisations gave advice to the project team about different opportunities and interests present within the community. He was a council member of the Water Board, was the "rentmeester" (manager) of some of the estates and was also the director of the landscape architect consultancy firm Eelerwoude. Through his inclusion in the project he was able to provide advice in advance about what opportunities there may be to work together with different actors. The estates initially entered into the project by asking the Water Board to help improve their water quality.

The Water Board took this opportunity to work with them to re-naturalise areas as part of the overall Regge Restoration. Nevertheless it took years to prove to the estates that it would be in their best interest to cooperate as they continued to exhibit in this case their "wait and see" attitude. The original interest of the estates was in raising the water tables due to the fact that the foundations of their castles can become unstable if they become too dry.

The Estates have a number of different interests that influence their decisions regarding land use and development. They have conflicting interests that on the one hand necessitate taking new opportunities for economic development and on the other hand they want to maintain their traditional land management style. From the perspective of the Municipality, the highly valuable nature areas, aesthetic landscapes and small rivers of Diepenheim have a great capacity to support tourism. Nevertheless, difficulties have been experienced in the past when the Estates have been approached to participate in projects such as extending a bicycle path along a river which conflicts with their desire to maintain their traditional landscape. The Water Boards however are generally supportive of increasing recreation possibilities. As a result of this difference of perspectives, efforts to create a cycling path project were halted by the estates' unwillingness to open up their lands to the public, despite the efforts the Water Board and the Municipality were making towards the development of a larger integrated cycle path system. This has led to irritations at the Municipality since they have the responsibility of preparing land use decisions and feel frustrated by a refusal of the estates to cooperate.[2]

Collaboration was further extended based on the recognized overlaps between the Water Board's water goals and the nature development goals of the EHS (the National Ecological Network). Over the last 10 years the Province has sought out parcels of land in order to complete the ecological linkage zones. In terms of ecology, the area along the Regge is ideal for the EHS due to the special biotopes found in the river. The surrounding woods and small-scale landscapes further increase the attractiveness of the area for nature development. Participating in the development of the EHS is a voluntary process. This is a positive aspect from the Estate's position since according to the Municipality the estates like being able to keep their options open for a variety of land uses. This form of participation aligns with the lack of coercion mechanisms present in "area development" restoration projects. Although this reduces tensions between the partners and enables more free discussions regarding cooperation, the resulting behaviour creates uncertainties for others in the planning progress. This causes further concerns because the project is considered to be part of an "area development" and is an official project that is

[2] Although estates are generally not development oriented in their long term approach, there are examples where they have acted otherwise. A pilot project is developing in another part of the Municipality where two estate farmers want to switch to a more organic farming approach. In this project, nature and landscape development and maintenance are set at the core of a new form of agriculture, and is being sponsored by several governments. The farmers have been mostly hindered in this by their current lack of capacity and knowledge of organic practices.

supported by EU funds. It is however still voluntary in nature because the government bodies will not use expropriation of lands as a tool to enforce cooperation. If projects supported by EU funds do not reach their targets according to stated timelines, it is possible that the EU can choose to withdraw the funding which has been designated for these purposes.

The difficulties seen in working cooperatively are further aggravated by how the interests in nature development have different priority levels by the different partners. In addition to nature development, the estates' choices in designating land uses in certain areas depends on their relationship with the land owner and future expectations for the types of agricultural products they will sell. In earlier periods, economic exploitation of the estates was made through wood production. Attempts are being made to switch their operations to meet the demands of larger scale modern agriculture, which has brought to light the conflicts that this has for their traditional land use management methods. This type of decision-making process is directly relevant for water issues, since the link between nature development and watercourses is broken when considerations other than proximity to the watercourse are decisive for citing nature development areas. This has caused problems for the Province since they would like to organize the EHS linkage quickly, and thus have specific interests in the lands adjacent to a continuous zone. The local government prefers to stay out of these negotiations because they recognize the ease with which conflicts arise. The EHS belongs to the Province's jurisdiction and thus the local government prefers that they take the lead.

The Water Board sometimes requires that water levels be set higher in conjunction with the restructuring of the water system. There are a number of farmers who feel higher water levels negatively affect their ability to farm. This causes significant issues when these more traditional farmers are located near to other farmers who are interested in providing nature as an environmental service on their lands, which is generally believed to require higher water levels. Research is ongoing about the effects of the water levels on farming, nature, fauna, and other rural land uses. This is economically important because the Blue and Green Services programs, which are provided by the Water Boards and Provinces respectively, support environmental services. These are forms of payment for ecosystem services. The higher water levels thus increase the profitability of some farmers while reducing that of others.

Interests that come from outside the local context also influence these projects. The Diepenheim Area Commission and a special committee on the exchange of lands that is responsible for pursuing the completion of landscape, water and nature goals of the area have both been involved to various degrees. In principle, legal instruments are available which force non-voluntary land use changes however they were avoided in this project. The reason for this lies in the historical background of the area. In the late 1990's a voluntary form of land re-allocation called the "Ruilverkaveling Administratief Karakter" was initiated. These processes had not proceeded very far when at the beginning of the

last decade, a new Reconstruction law was prepared that put the future of this tool at risk. This further halted local project actions, as they were unsure of what the future plans for the area would be. When the plans were finally developed, the Ruilverkaveling Administratief Karakter had indeed been removed as a tool that could be legally used. The local government and the farmers did not want to engage in a full-fledged non-voluntary land reconstruction project, because of experiences from other nearby areas like Rijssen and Haaksbergen, where land reconsolidation projects had lasted for 20-30 years. The project teams involved in these processes had been working together for so long that they were able to celebrate when they had had their 500th meeting. The actors in the Diepenheim process did not want that sort of planning and program and as such they chose to operate on a completely voluntary basis. This was considered appropriate because the area had many small-scale plots that they felt needed special attention so as not to destroy the landscape.

The real discussion was however not about the voluntary or involuntary nature but basically about whether or not the other parties that represent the landscape, nature, etc. should also be involved in the discussions regarding the exchange of land. This is important because legally all stakeholders must be involved in the process. This significantly increases the time required for the project. The alderman in this case made a strategic decision based on the recognition of the strong bargaining power of the farmers. The general opinion was that it was likely that the farmers would in the end be expected to alter their practices to conform to the new plans. This expectation reduced the enthusiasm with which the farmers would participate with an open mind, and increased the chances that they would take an approach designed to minimise the resulting restrictions on them. He solved this issue by conveying the situation to the farmers in a way that emphasized meeting the needs of the other groups. He suggested that the farmers should make their own proposal for how the different interests could be addressed. In such a way they needed to seriously consider how their proposal would impact the other parties. By giving the farmer's the opportunity to make a plan with integrated solutions that would suit everyone's needs, they were able to get things moving and to get them involved in a constructive attempt to propose win-win solutions. They predicted that otherwise they were not likely to participate openly and would continually be preparing for resistance to any proposed actions. The local NGOs agreed to this process since their experience in the past was that the farmers would continue to plague the process with complaints for a very long time (10 years in one case) and would in the end eventually succeed due to their strong bargaining position. They too saw this as an opportunity to include the farmers in a positive way in a joint process. The government provided a significant amount of money to perform the land exchanges, which significantly aided the process. This proved to be a good position to work from and overcame the previous concerns about the conflicts between nature, landscape, agriculture, etc. This voluntary method also had the benefit of getting things done more quickly because of the reduction in red tape. The risk of proceeding in this way is however that by compromising amongst various local goals you

may not meet the requirements of the EU programmes. In this case, the Netherlands would be required to pay some of the money back that was received for nature and biodiversity development. The risks associated with using involuntary measures can however also be significant and can include stalemates, increased court time and fees and reduced trust amongst the parties.

The national Soil Exchange Commission has independently taken the same approach as that given to the farmers in the Diepenheim case. They have chosen to develop their own plans for land exchanges and until now they have been successful in getting general approval and consensus. The farmers are aware that they have to agree with the decisions of the commission and that in general the farmers are well represented by this. The estates have however remained a bit outside of this process since they generally do not exchange land except when it improves their position according to their own deliberately stated interests. There are examples of where the estates could have contributed to collective problem solving of this sort and they have chosen to abstain. In one case, they chose not to contribute to the construction of a bridge that would directly benefit one of their farmers.

As mentioned earlier, one large disappointment occurred in this process where the estates did not want the proposed cycling paths to go through their properties. The Municipality wanted to create the possibility for continuous cycling all along the Regge. At that time cyclists had to travel partly along the road and instead the municipality wanted to provide a route that followed nicely along the river. The estate owner continued to refuse to participate because she was concerned about the effects of too many tourists and the negative impacts of the trash they would generate. Generally it was experienced by the Municipality of Hof van Twente, that the estates have limited interest in going beyond what they are required to do by law and are not supportive of collectively seeking what is possible to increase recreation and tourism. There are other areas however such as in the adjacent Achterhoek region where the estates are actively changing and are opening up their castles and increasing tourism (including restaurants and terraces). Some castles however feel like they can still survive with their traditional ways and choose to avoid going in this direction.

Another example of where these issues have arisen is the Kunstwerk Diepenheim ("Artwork of Diepenheim") project. This project supports both the Municipalities' and the Water Board's goals (tourism and "experiencing water") and great efforts are aimed at further enlarging it by involving many new gardens and artwork. It is part of a 10 million Euro innovation project. The involved artists want to create a historical connection to the Huize Diepenheim and its gardens. As part of this they want to build a bridge and the Water Board has offered to help fund it. The overall goal is to connect the various historical features in the area through a network of walking and cycling paths. The castle owner is concerned about the extra traffic and garbage that will result. It was made clear that this feeling was shared by Mr. Schimmelpenninck (an influential estate manager in the area) and thus backed informally by other estate owners. Additionally in case of the

project of Eelerwoude, Mr. Schimmelpenninck's influence was visibly exerted. The estate manager involved at the beginning with the Water Board, allowed the negotiations with the farmers to be conducted almost exclusively through Mr. Schimmelpenninck. The actions taken in the preservation of the estate interests have caused issues in the development of the overall nature and water planning of the Water Board and the Province. The estates necessarily play a strong role in many projects because of the large land areas that they control.

Timelines are also a concern in terms of the land exchanges that take place. The Regge restoration project members had set a deadline of 2011 to complete all land exchanges with the estates in the realization of the water goals. The Province has committed to completing the EHS (the National Ecological Network) by the end of 2018. There are still discussions taking place regarding the implementation methods and rates between the Municipality and the Province. The Municipality expects the Province to cooperate more in terms of providing the means to accomplish the tasks that have been asked of them. At the time of the interview (spring 2010) the provincial staff member that was interviewed was still under the assumption that the Province would continue to try and do whatever they could in the next few years despite the project not being on target to meet their goals. Money was not considered to be an issue for these investment projects due to the availability of reserve investment funds[3] that could be used even as budgets shrink. Later however, in view of the national budget cuts and low priority given to restoration by the new government that came into office in October 2010, the Province has decided to temporarily stop investing money in buying land for restoration purposes.

In the Netherlands the EU Nature 2000 regulation was translated into the Nature Protection Law. One area protected under this legislation (a designated Habitat area) is located close to the Regge on the Estate of Weldam. This estate has beautiful gardens and has had large problems with increasing the size and intensity of their farms because of the Nature 2000 designation. The estate owner claimed that had he been aware of this consequence of the designation as a Habitat area he never would have suggested that this area become protected. The Municipality of Hof van Twente sees results such as this as potentially disastrous when there are no options for flexible implementation at the local level. Negotiations are still taking place with public administrators in the capital city of "The Hague" on this issue. The Hague is then required to work with the EU representatives in Brussels to come to an agreement. The Borkelt is another habitat area in the vicinity. As a result of the designation there is a 4-kilometre area surrounding it that is restricted for development. A large-scale agricultural area exists there and cannot be expanded despite it being officially designated as an "agricultural intensification" area under the provincial planning strategy.

[3] The reserve funds are actually known as "Essent money" which is a financial reserve that was previously earned by the Province through the selling of their shares in a large energy company.

In terms of the Water Framework Directive (WFD), there is an inherent risk that if the project remains voluntary that people would not feel the urgency of the nearing WFD implementation deadline. Even as the deadline approaches, the Water Board will not have the ability to use legal instruments to realize their goals. The Water Board is at this point in time fortunate that there are other processes happening in the area like the art project that they can connect with.

PRELIMINARY OBSERVATIONS

The actors involved in this project have been analysed through the specific motivations, cognitions and resources that impact their (inter) actions. It will be shown throughout this chapter that many of the motivations, cognitions and resources are similar throughout the Regge restorations projects. This section first provides a preliminary discussion of observed actor characteristics specifically for this sub-case, followed by a description of the strategies observed and how this relates to the receptivity and boundary spanning of the stakeholders. Following this, the role played by the inter-regime qualities is identified.

MOTIVATIONS:

The estate owners often think in terms of continuity over hundreds of years. They recognize and support changes that are occurring; however this takes place on a much longer time scale. Their basic underlying motivation is to maintain control over these changes to ensure that they occur along the lines of what the Estate considers key to its core values. Their initiatives are often responses to changes that are induced from the outside, for example the inclusion of dry moats due to water drainage. They are motivated to improve the natural value of their properties, but not at the expense of their traditional approach to land management. The Estates are also subject to conflicting internal motivations since their desire for economic development is being perceived as infringing upon their traditional approach to landscape and maintenance operations. The Municipality also sees itself as the governor of the area and perceives the estates' visions of reality as insensitive to the recreational needs of the modern citizen.

The Water Board interacts based on its motivation to improve water-buffering capacity in the area. The process of restoration allows this motivation to overlap with the motivations of improving ecology of the Provinces, Municipalities and Estates. This also appeared in the Regge Garden project where their common motivation of improving the natural value of the area enabled them to develop a joint project, which also improved water buffering capacity and the cultural capital of the community.

The farmers' motivations were seen in this project to be influenced by a more general concern for protecting the overall amount of agricultural land and intensive farming practices. It was the recognition that this motivation would influence their behaviour at the project development meetings that led to them being given the coordinating role.

COGNITIONS:

The cognitions of the Estates with respect to tourism have had a strong influence on the implementation process. Their belief that allowing recreation and tourism on their lands will harm the natural value of their traditional and privately managed lands has limited the amount with which they have cooperated alongside the interests of the other parties. The Water Boards hold an equally strong cognition that recreation and improving nature go hand in hand since providing access to nature increases the level of public support, which is needed for the projects.

Most parties believe that official non-voluntary processes take too long. This is based on previous experiences in the community. This has played a strong role in supporting voluntary approaches for project development. A shared cognition also exists related to the farmers holding a powerful lobbying resource, and thus it was seen as better to work on having a positive as opposed to adversarial relationship with them.

The different perceptions of how to best improve nature are sometimes incoherent at the different levels of government, often this has to do with different perceptions of the appropriate scales with which a given project is seen to relate.

RESOURCES:

The Estates have a strong resource position in these interaction processes in the form of lands that are well suited to be part of restoration efforts to improve both natural buffering capacity and ecological connectivity in the region. The estate managers have the power to influence the activities and placement of landowners within their domain.

The Artwork Diepenheim project team was able to attain significant monetary resources through the combination of goals. The project team also had access to a strong informational resource that supported smooth implementation through the provision of local knowledge of opportunities and interests from a well-connected inhabitant. The EHS is also a substantial policy and financial resource that the Water Board uses to support water buffering goals alongside the various nature management and cultural capital building projects.

The municipality lacks the resources it needs to implement the type of land use planning it would like, since the estates have the power over the desired land resources within their domain.

STRATEGIES AND RECEPTIVITY

An interesting development has taken place over time with respect to how the Water Board operates. Their previous approach of executing strictly engineering oriented water projects has developed to one where they include “coupling”, linking and producing synergies from various interests as part of their core business. This is what they call

contextual water management. This approach is not intended to reduce the importance of their water goals, but is about recognizing that working with rather than against other stakeholders avoids stalemates and produces more "value of water" to people. The Diepenheim projects were approached in a considerably advanced stage of this transformation of self-conceptualization.

The project initiators could in principle choose to set the project up under various types of agreements or "rules of the game": voluntary on a case-by-case basis, a voluntary "area development" process or more legally specified forms of land reconsolidation. The last option was deliberately not chosen and only the first two were used. A setting that on the one hand appears to be stronger with more public authority (legal land reconsolidation) can be on the other hand perceived as risky and conflict prone. Preventing opposition is regarded as superior to overcoming it.

In the case where the farmers were given a lead role in the decision being made about land use, this act is observed to be an exhibition of high receptivity to the power balance in the actor constellation. The project team altered the implementation arena to prevent a negotiation style interaction. Instead, in Diepenheim they tried to "dissolve" rivalries through a voluntary approach that would not evoke fear and preliminary anger and instead tried to create win-win package deals that would satisfy all stakeholders.

The Water Board was observed to exhibit high levels of receptivity in this sub-case through its approach of searching for and listening to external interests that could be coupled with water buffering goals. It was willing to couple actions in a way that enabled access to the land under the control of the estates as well as funds that were assigned to supporting art development. Going beyond the inclusion of the traditionally included partners, the Water Board also included active boundary spanning in its approach to achieving its goals. Being receptive to the timing constraints and opportunities inherent in the various instruments and policies of the governance inter-regime was part of the Water Board's strategy to work in harmony with different symbiotic projects in the community. Allowing internal development of the Regge Garden project to take place before it decided to participate was also a deliberate part of the Water Board's overall approach and allowed it to acquire additional resources (both land, social and financial) to achieve its goals. Accepting and expecting additional complexity by increasing project partners and scope of interests into one project (Regge Garden and Kunstwerk Diepenheim) was a deliberate choice made that was seen as necessary for adaptive implementation in this context.

Coupling of goals enabled art funds and nature funds to be used in the Regge Garden and Kunstwerk Diepenheim project, which better served both interests and enabled multifunctional land use. The result was seen to have a higher value added than would have otherwise been the case under separate actions. Further coupling was limited by the estates negative motivation to participate in tourism related actions. This occurred

because of the cognition that public recreation opportunities will lead to trash and reduced value of their property.

A wealth of strategies were observed to be used by the actors in the Diepenheim cases to create a maximum likelihood of achieving a positive setting for the institutional arena, actor constellation and the actor's characteristics of motivations, cognitions and resources. The intervention points for these strategies are presented in a summarized version in Figure 5.1.

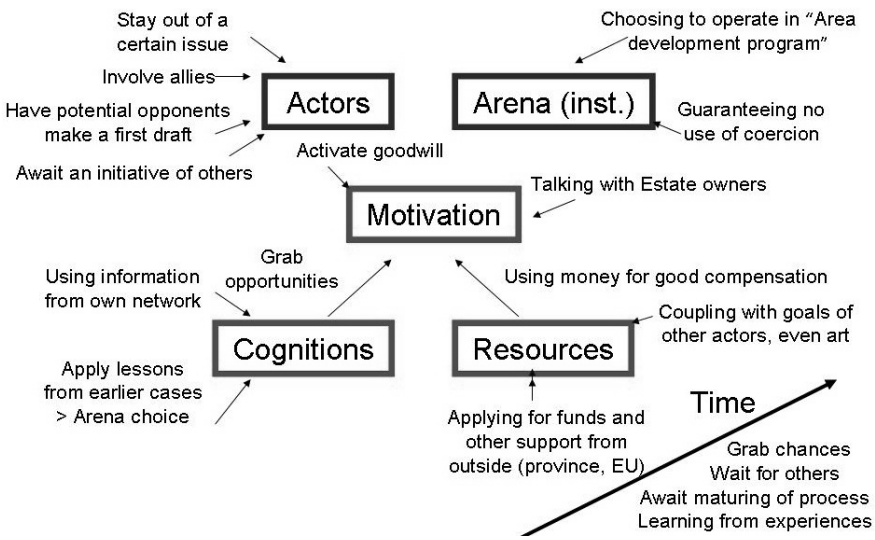

Figure 5.1: Overview of external strategies used in the Diepenheim cases

INTER-REGIME QUALITIES

The extent of the inter-regime is not generally seen as a limiting factor and was observed to be sufficient to enable the strategies seen at the project level. In terms of coherence, the successful coupling of goals into local projects suggests that coherence was also not a strong limiting factor and thus exists to a sufficient degree across the different policies and programs. The only mention of difficulty was related to the influence of the Nature 2000 policy, which was experienced to limit the intentions of the restoration actions through being too restrictive for new actions. This can be seen as a result of the inflexibilities associated with its protection-oriented nature. There was also some incoherence experienced due to the influence of the Green and Blue Service Agreements and the subsidies associated with supporting market driven agriculture. Agriculture activities that support the maintenance of low water levels are supported by public incentives and publicly provided funds are also provided to encourage higher water levels that support nature.

The voluntary process chosen by the project champions increased the experienced flexibility of the inter-regime, yet in some ways also reduced the intensity. The recognition that land expropriation is possible provides some level of intensity, yet was seen to reduce the flexibility by so much that the increase in intensity is not sufficient to justify it.

Aspects of flexibility were also observed within the inter-regime based on the ability of the project leaders to be able to choose to develop different project designs to meet (or not) different project goals. This is generally the case when operating within a grant-based system of support.

Incoherence was also experienced between the EU instruments that urge scheduled completion and implementation according to the previously approved plan and the more flexible instruments associated with the voluntary implementation processes. The EHS is seen to be highly flexible, but lacks some necessary intensity. The EU Nature 2000 policy was often mentioned as a source of fragmentation and inflexibility from a regime level. This was shown to influence the aspects of this sub-case where the estate owner was limited in making improvements to his land based on the Habitat Area designation received. A high level of intensity was observed related to the social part of governance inter-regime that strives to include all stakeholders.

5.4.2 INTERMEDIATE AREA: PLAN UPPER REGGE GOOR

Downstream from the Diepenheim estates project, the next initiative is considered to be intermediate and as such was not yet realized during the interviewing process. This is a project that is intended to improve the upper Regge River north from the underpass under the Twente canal and through the town of Goor that belongs to the Municipality of Hof van Twente, through to the area where the next project is situated.

This project was not yet listed as one of the Regge Natural projects because no final decision had yet been made about how the project will proceed. Here the Municipality of Hof van Twente and the Water Board found out about each other's interests as a result of a call for projects from the Municipal Water Task. This call aligned well with the ideas of the Water Board regarding making the Regge more visible and enjoyable, partly in response to the Water Framework Directive and to limit the risk of flooding. Both organizations commissioned a study together regarding what kind of project they could best work on. They then developed project descriptions relating to various levels achievement – Gold, Silver and Bronze based on how much "extra" they would do to advance various goals. Bronze projects dealt mainly with flooding, Silver projects also aimed to improve the qualities of the riverbanks and Gold projects dealt more broadly with additional aspects and possible benefits of the area, as a sort of Area Development program (Gebiedsontwikkeling).

The boards of the different project members signed a Declaration of Intent to aim towards development of a Gold level project. While this implies that more opportunities and

investments available would be made available, it would not be possible to realize Gold status everywhere due to financial, spatial and time constraints. The Water Board is now involved in developing a communication plan together with the Municipality of Hof van Twente and each will contribute to supporting the project. Additionally, they are seeking a commitment from a housing corporation that is interested in selling some of its property. Housing prices are not strong in the current market so it would be in their interest to have a more aesthetically pleasing river adding to the value of their property. There is also a company that currently has land on both sides of the Regge. The restoration could also provide value to this company through changing the riverbed in a beneficial manner around this property. In this case, a contribution would be expected from the company. This is the way in which additional financing is sought. All in all, this project is developing in the same way as an area-development (gebiedsontwikkeling) and could generate a substantial economic impulse to the area.

The local government is very interested in the project because it passes right through one of its more urban areas and is an opportunity to improve the appearance of the town. The project will be accomplished with money from the local community, the Water Board and hopefully the Province. In this project they are trying a new method for acquiring funds known as community funding. This idea has been adopted from the United States and its basic principle involves finding partners who are interested in the area as a whole – farmers, banks, housing corporations, individual people, etc. The Municipality consulted with the various parties, then they made a matrix out of their individual interests and put the ones that were similar together and three main lines developed. The Municipality of Wierden also performed this procedure in their part of the restoration area and attempted to arrange various interests (for instance at the industrial estate of Goor) and make deals amongst the different organizations and people. They basically opened up a market where different interests in the area could be brought together and the Municipality operated as a broker to help make deals that would support achieving them. The Rabobank is one of the largest banks in the country with strong roots in agriculture and the rural areas in general. In connection to these projects, the bank offered to donate a very small contribution to an area development fund when local inhabitants set up an account with them. Those people would then get to decide what would be done with it. The Municipality has suggested that they should increase the size of the area to increase the pot of money available. Another project idea developed to use the motorway passing of the Regge as a formal entrance to Twente and to have a nice sign and landscaped area there, making the Regge restoration project a billboard for the Twente region.

5.4.3 INTERMEDIATE AREA: ELSENERBROOK - BOVEN REGGE

This project area is a Reconstruction Area near the town of Enter and is located in the municipalities of Wierden and Hof van Twente, where part of the National Ecological Network is to be realized. The Water Board is not the main actor in this project, but one of several trying to get its own interests realized as part of the process (Janson 2009). This

project has proceeded somewhat differently from the others as there are still discussions occurring regarding the assignment of the different roles and responsibilities. An important aspect is the ecological pathway that is at the core of the Province's interest; however it also poses restrictions to the inclusion of the ideas of the others. The municipalities were somewhat restricted after the decision was made by the project team not to use land expropriation in order to gain lands desired to complete the project.

This project began with the initiative of a group of inhabitants who were supported by the Stimulant organization (which is itself supported by the Province) to undertake a community development project. Their primary initiative was met with some scepticism and so they decided that to gain support they would need to be able to show concrete results. With the support of the Municipality they were able to realize a walking and cycling path through the upper Regge area. This in turn created more trust, among many stakeholders including the farmers that the group was capable of achieving results. On this basis of trust and support a new plan for river restoration was developed.

In this same area a local foundation was pursuing the "Area Development Elsenerbroek" project, which had a number of water-related goals included as part of it. In this project, the Water Board started out with a strong focus on strictly water related improvements. They had already purchased approximately ten hectares of land to improve their land ownership position in the area. Some of the area is designated as being agricultural, other parts are identified as "weaving areas" where the Province supports efforts to accommodate multiple functions in the area (in Dutch "verwevingsgebied": a multifunctional area where the functions weave through each other). This area is considered as being economically in decline and as such the project, including the work by the Water Board, could contribute to its revival. In late February 2010 a "walk in meeting" to communicate the various ideas had been organized.

5.5 PART THREE: MIDDLE REGGE PROJECT IMPLEMENTATION

Not only has the Regge been severely canalized in the past, a very large part of its catchment area in the eastern part of the Twente region has been disconnected from the system. A large part of this area, which consists of a number of relatively clean creeks, will be reconnected in 2013 by the creation of a new river that will flow into the Regge River a bit north of the town of Enter in the Municipality of Wierden. This project is not dealt with here (see Bressers, Hanegraaff and Lulofs 2010), but instead the restoration of the river itself is described. Apart from the Municipality of Wierden, the Municipality of Hellendoorn has been a very important partner in restoring this part of the Regge.

5.5.1 INTERMEDIATE AREA: LAND RESTRUCTURING PROJECTS ENTER AND RIJSSEN, INCLUDING THE SMALL REALIZED PROJECT OF EXOO

The next area along the Regge where the Water Board has been able to achieve some of its goals is the Enter project. This small area of Exoo is a predecessor to the Regge restoration projects. A landowner had taken the initiative in this case to ask the Water Board whether they wanted to re-naturalise the river and surrounding area. The Water Board was interested since they regarded it as a good opportunity to develop a demonstration project. The new thirteen-kilometre long river (the Breakthrough or Doorbraak in Dutch, as discussed at the beginning of this section) will reconnect a large portion of the urbanised Regge area quite near this Exoo project. Further downstream another stretch will be re-naturalised in the context of the Rijssen land reconstruction project.

In this area the Water Board has fully integrated its efforts into the work of the "landinrichtingscommissie" (land restructuring committee). There are two separate committees assigned for the stretches and areas near Enter (Municipality of Wierden) and near Rijssen (Municipality of Rijssen-Holten). The portion of the project located in Enter is progressing with more difficulty than that of Rijssen. This is mainly because there is already a substantially large nature development effort taking place in the area. The farmers in the area feel that there is an excessive amount of area being claimed for nature and have thus stated they will not support the process. This stance is expected to significantly slow down the process. Most of the nature development comes from provincial efforts associated with implementing the national National Ecological Network (EHS).

This is a good example of how in a number of these areas, the EHS is an overriding policy that is helping to steer the various projects in the Regge Vision. The Province has various types of plans for different land parcels that are related to the various characteristics of the land; ownership, geography, topography, resources available, proximity to connection areas, etc. are all taken into consideration when planning the EHS in terms of land opportunities.

As in other places and projects along the Regge, attention in the Enter area is given to developing/preserving the cultural history: in the past commercial boating activities took place on the Regge with traditional flat bottomed boats called zomps. To build upon this cultural history a boathouse was built, where they can build new boats and also have a visitor centre where tourists can take boat rides. The Water Board provided some financial support for this project. In addition to this development, the Water Board worked with a landowner in the project area who had a teahouse and wanted to improve the natural quality of its surroundings. New nature and water retention features were combined to improve the area's aesthetic and ecological value.

At the time when these project development talks began the Regge Vision was not fully completed however they already knew what direction the new policy would take. The

landowner's ideas were seen to align well with the intended actions, and created an option for a "show case" project. The further integration with the Regge River will likely be part of the Landinrichting Enter project.

The Landinrichting Rijssen project, which is taking place just above the town of Rijssen along the Regge, has a separate commission apart from that of the Enter area and seems to be encountering fewer problems. Consequently this project is likely to develop more quickly. In both cases the Water Board does not plan on acting separately from the land reconstruction projects but just working along with them. The newly restored Elsenerbeek creek will feed into the Regge in this area. It has been planned in a nature friendly manner and realized in the context of land reconstruction. In addition to these actions, a new bridge has been built, a new major river will begin to feed into the Regge (the Doorbraak which is still under construction) and yet another small new river (the Wendel) will serve to reconnect previously disconnected parts of the river basin.

5.5.2 VELDKAMP

This area lies near the town of Nijverdal and here the Regge has been reconstructed over a length of twelve hundred meters, creating a wide river valley arrangement with a surface of about fifteen hectares. The grounds that are being used are under the ownership of Landscape Overijssel, the Water Board Regge and Dinkel and the Municipality of Hellendoorn. The Water Board was already in the possession of two hectares of land (the Regge and its shores) and then bought an additional three hectares from a nearby farmer. Most of the rest of the land was already owned by Landschap Overijssel. An additional hectare was obtained for the project by exchanging a parcel for another outside of the area. The present Regge and the additional secondary parallel river course are both to be partly drained and used as secondary courses, which will function only at extreme peak flows. Next to them a new meandering Regge have been dug and at extreme peak levels the whole area will serve as a water-buffering zone. Approximately one third of the area will be flooded yearly. As much as two-thirds of the area can be used to store water in extreme circumstances.

Previously, the area used by the project was an extensive meadow area. The farmer was no longer very active and the grounds themselves were considered too wet and low for more intensive use. In the past they were regarded as relatively fertile because of the nutrients found in the silt of the Regge, but due to the use of industrial fertilizer this is no longer the case.

Through carefully arranging the project area it was also possible to create part of the National Ecological Network. The whole project site is now maintained as one singular area, predominantly by grazing. The partners in this project have developed a joint plan, alleviating the need for a formal agreement. In order to increase the landscape value of the Regge, a number of areas with a clear view of the water were re-established. Dense scrub

on both sides previously blocked views of the river and so by cutting and thinning of the brush, these views became visible once again. Some additional hiking and cycling paths were created in order to strengthen the recreational infrastructure of the area. There is a new seventeen hundred meter foot and cycle path with a new cycle bridge around the area in the east and south. This allows for additional visual enjoyment of the area.

On the west shore people are permitted to engage in sports fishing. Of the fifty residents with adjoining land, a number have made a low earthen wall where they can enter the area from their garden. It is also possible for the general public to enter on the north side. A sign is posted that warns visitors to be careful due to the vulnerability of the area. Fishing is the only activity that is permitted; all other activities including picnicking are forbidden.

The neighbourhood inhabitants were generally supportive once they understood why the project was important and how it would be beneficial. As one interviewee stated: "Of course, when you have fifty neighbours there are always some that don't see the importance of the project and think that it is an over-spending of tax money". The project cost approximately nine hundred thousand Euros in total. Buying and exchanging four and half hectares of land incurred about two hundred thousand Euros of the costs (the rest of the area was already in the ownership of the partners) and the balance of the money was spent on the works themselves.

INTERACTION PROCESSES AND RESULTS

This project, predominantly in the Municipality of Hellendoorn and partially in Wierden, has been fully realized. The Water Board worked together with Landscape Overijssel both in the preparation and implementation phases of this project. The Water Board already owned the west portion of the project area (which they had bought previously in preparation for these types of purposes) and the Landscape Overijssel owned the eastern part. Additionally, a farmer in the area was interested in selling some of his land that Landscape Overijssel was then able to purchase for this project. The Regge lies directly in the middle of this area and as such they were able to completely alter it for the purpose of restoration and flood control. They made new high water ditches on the spot where the old Regge used to be. On the west side there were lots of houses and gardens very close to the Regge and so lots of correspondence was necessary in order to bring the people up to speed and to get their approval on the project.

There was some opposition in the beginning due to the uncertainty about what the project would entail. However the project leaders took the approach of having conversations with all the stakeholders, walk in meetings, home visits, etc. and by doing so they were eventually able to satisfy everyone. They developed a newsletter to keep people informed and also used a well-known water maintenance person to go house to house to inform people about the project. It has been experienced that this form of communication works well – one person/household at a time, "living room visits".

The meetings were important to understand all of the different interests (different kinds of gardens, sheds, etc.) and to overcome them in a cooperative and voluntary manner. The Water Board performed much of their communications through the Municipality because other issues that the Water Board was not dealing with would tend to also come up in these communications. An important issue to the community turned out to be the presence of paths. The inhabitants wanted an existing path between their gardens and the Regge plain removed, partly for reasons of privacy, partly because dogs walking with their owners had led to a lot of barking between the dogs. A different proposed path near other houses was removed from the plans after a representative of those households explained that that path would most likely become a shortcut for youngsters from the bus stop to their residential districts after the bus has brought them back from a visit to a large disco in the other town of Rijssen. They feared that the dark path would become a place that teenagers would use for a night hang out and did not want the burden of the noise and any other inappropriate behaviour likely to occur.

In the Veldkamp project there was generally not much conflict experienced between the parties. The main issue was the recreational use of the area. The history behind the situation was that there had been one year in which the reconstruction works were somewhat delayed, following the departure of the involved farmer and the removal of the fences. During the interim period the people had free access to the plains and the Regge shores and had been using the area for fishing, sunbathing and dog walking. Landscape Overijssel took the position that the ecological linkage zone retained for nature here was quite narrow and would not be able to bear recreational co-use of this sort. They thus erected barriers on the natural lands that were also partly intended to keep in the bovine animals that the nature organization uses as a natural and inexpensive way of maintaining the area. As a result, this prevented the inhabitants and other people from being able to walk through the lands. The direct neighbours however still desired access to the area from their gardens (as they previously had), although the Municipality found that it would be inappropriate to give some people access while denying others. Landscape Overijssel believed that open access would be a problem due to the relatively urban location that would see a lot of cyclists and hikers and so more than acceptable numbers of people and pets would use the areas. On one occasion a member of the city council that was visiting the area saw a dog enter the area and proceed to chase and kill small hares. This clearly visualized the problem for the majority of people and after this explanation they were adequately convinced of the necessity of the closure.

When the area was frozen in the winter, Landscape Overijssel chose to open the gates and allow people in to skate. In winter, damage to nature is less likely to occur and by supporting this popular national pass time they showed that they were willing to try and work with the interests of the public and that they took the wishes of the people to also enjoy the area seriously. New cycle paths were made around the area and also a wooden bridge that was left over from another project was re-used for that purpose, also enabling people to overlook the area. Access to the water has been re-created at a spot where a

sports field was already coming close to the Regge on one side. A connection has also been made from the floodplain, away from the Regge into an adjacent residential district park, enabling bovines from the plain to sometimes wander and graze in view of a number of houses.

Another way in which the Municipality tried to create support was by reusing some old pipes that were once used to bring the river flow underneath roads. The removal would have been as expensive as this new use: creating a bat habitat. Old oak trees located nearby already formed a good part of such habitat and the moisture of the nearby river plain is also very good for bats. The pipes were used, covered with sand and a door was added as an artificial cave were the bats could retreat and sleep. Re-use, ecology and raising the support of the people were combined in this project and such creativity is seen as essential by the present officials. They hope to be able to pass this orientation towards creative project development onto their future successors.

The Water Board distributed a survey to the residents after the completion of the project in order to get information on how the people involved had experienced the way in which they were involved in the development and decision making. The picture was mixed though there was certainly a recognition that the efforts put into the doing the survey in and of themselves were seen as going above and beyond what was required and were as such appreciated.

Downstream from the project, the Regge flows through the town of Nijverdal. There is as yet no project there, but the Water Board has already started what they call "relation management" with adjacent industries in order to get into a better starting position when ideas and opportunities do arise.

PRELIMINARY OBSERVATIONS

In this case many of the *results* realized are similar to that of the Diepenheim cases and are in fact quite typical for all of the river restoration projects examined here. In this case numerous and diverse added values to nature and landscape, recreation, water storage capacity, and infrastructure were realized. The *motivations, cognitions and resources* of the actors involved were generally well-aligned in this project and similar to the sub-cases discussed above. They are summarised briefly below.

MOTIVATIONS:

The Water Board is again in this case motivated to improve flood retention and water quality, Landscape Overijssel wants to increase the amount of protected natural area in the region and the citizens want increased recreation capacity. The close inhabitants however were somewhat negatively motivated against the project because they wanted to maintain their previous access to the water.

COGNITIONS:

The main influence on the process related to cognitions, is how education about the benefits of limiting recreational access to support nature was used to overcome the inhabitant's negative motivation towards the change of land use.

RESOURCES:

In this case, both the Water Board and Landscape Overijssel started with the possession of land resources in the area and were able to increase this by purchasing additional land from a farmer who was willing to trade his property in a transaction that left him better off. This sub-case is an example of where having reserve land resources enabled a land exchange to free up land for use in the desired area.

The inclusion of recreational opportunities that are sensitive to the needs of nature was used whenever possible in order to increase the public support resource. This was enabled because the Water Board was in possession of a great deal of knowledge about the interests of the local inhabitants due to its intense form of communication prior to the development of the proposal.

STRATEGIES AND RECEPTIVITY:

The *strategies* used proactively to create the generally productive setting were (1) again buying lands for exchange purposes, and (2) involving an ally, Landscape Overijssel, from the beginning (actor constellation). In response to the process, with (3) various forms of personal communication with neighbours (walk in meetings, home visits, newsletter), people's uncertainties and negative motivations were minimized and the project managers could learn from their preferences and cognitions. A survey was held for similar reasons: to learn, but also as a sign that the inhabitants were being taken seriously. Also various forms of (4) creating goodwill (various adaptations to the plan, skating in winter, bat home) were used to achieve the best possible contact with the inhabitants. It was again chosen to operate in an (5) informal, yet clearly outlined relationship related to maintenance, which built upon the harmonious goals of the actors and resulted in a win-win situation. It is considered remarkable that no official objections were filed, given the large scale of the project so close to and influencing the properties of local inhabitants. A proactive strategy for the future is (6) investing time and effort into relationship building with the industries downstream that should be involved in next steps.

INTER-REGIME QUALITIES:

This sub-case is assessed as having proceeded in quite a straight forward manner, and as such no real limitations related to the extent were observed. No notable issues related to incoherence, *inflexibility or lack of intensity* were encountered in this process.

5.5.3 GROENE MAL

This Regge project is a part of an ecological pathway that runs close to and partly within the built-up area of the town of Nijverdal. Providing more space for the river's natural path is part of the planned nature development for this area which will be implemented in different phases. A few years ago the first phase began when an athletics court was being designed to fit into the landscape. This *development* served as a showcase of what the reconstruction project as a whole was going to look like. Alongside the present main watercourse of the Regge a naturally landscaped side course was to be constructed. This would serve not only normal daily water drainage needs, but also increased buffering capacity at peak water flows. The landscaping of the project is designed to decrease the visual intrusion of two major roads. In this project the Water Board cooperated with the nature NGO Landscape Overijssel, the Province of Overijssel, the environmental NGO Natuur en Milieu (Nature and Environment) Overijssel, the State Public Works Agency and the Municipality of Hellendoorn.

INTERACTION PROCESSES AND RESULTS

This project has three different sections all located within the Municipality of Hellendoorn. The middle portion of the project is still in progress while the two areas located before and after it have been completed. The Water Board is working together with the Municipality to discuss matters on a higher strategic level over an area located in the middle of this project. Here, a number of developments can be seen to have come together into one project. Additional issues that must be overcome in the area however are the presence of a sewage treatment plant belonging to the Water Board and a tunnel plan (deepening of the train track) coming from Nijverdal.

Ultimately the Regge will go underneath this deepened train track. Due to the large scale nature of the development, it was seen as necessary that the Municipality take the lead. As a result, there was a lot of space created for different initiatives in cooperation with the Water Board. To enable this level of cooperation a lot of boundary spanning occurred at both the administrative board and civil servant official level. While the initial ideas regarding restoration activities in the area were originally from the Water Board (as part of the Reggevisie) the concrete plans originated from within the Municipality. The Municipality had a number of more urgent plans such as the tunnel plan to address transportation issues, and other developing interests underway and the Water Board decided it was best to link in with these plans in order to realize its own purposes.

Despite the very cooperative atmosphere of "doing it together" being prevalent from the very beginning of the project, a lot of time was still necessary to develop the project. The discussions began initially at the civil servant level to exchange ideas, express desires and then to figure out how they could work with each other to combine all the various goals over so-called "charcoal sketches", allowing for and supporting out-of-the-box thinking.

For this congenial way of working to be successful it is essential to effectively decide who to include and who not to include in the exchange. There is a natural limit to what extent other actors' interests can be drawn into the project plans. Where and how the boundaries are drawn in determining who the members of the project teams will be (aside from the Water Board and the Municipality) is an important question. Even when the general interest is to include as many aspects as possible and that one should not exclude stakeholders with essential resources, it is often impossible or unproductive to include everyone that has a stake at the early stage of project development. In practice, this is done initially on the basis of land ownership and who is going to pay for the resulting developments. It is also important to include whoever is going to manage the area after the project is realized; in this case this was the Landscape Overijssel.

When the funders come together with their initial idea they can then decide to take their idea to higher levels (the Province for instance) for additional funding as well as to see what other parties should be involved (in this case Rijkswaterstaat – state public works agency - and ProRail – state company for railway exploitation – needed to be involved because of the train tunnel project). There are no initial project plans available in these cases which clearly define who should be in or out, however this kind of "snowballing" can be regarded in general as the chosen model for the growth of the project team. In this project there has not been any instance in which there were concerns that the progress would be blocked by objections from any side. Generally, after reaching an agreement on all contents matters, the division of costs is always the trickiest point of debate.

Now, returning to the beginning of the project it is important to know that it was initiated based on the developments of a twenty year long discussion about what to do with the east-west state highway that runs right through the town centre; considered to be an undesirable situation. The highway was in fact connected to the development of the city; since it was there that it crossed the Regge, and attracted industrial development, textile being the most notable. Long discussions resulted in the discarding of various options in which the bypass road trajectories would disrupt the Salland Hill range forest, and in the end it was decided that a deepened and tunnelled road at the same place as the present road was an acceptable "liveability" variant. The resulting implication was that the present main north-south connection road would need to be redesigned, since it connects to the tunnelled portion. The only option was to move it westwards, however this would require it to cut through part of a residential district, valuable agricultural lands, two estates with cultural historical and aesthetic value as well as come extremely close to the pending robust ecological linkage zone and the Regge River. In fact, when the hard "red line", containing urbanization including infrastructure developments in the land use plans of the several layers of government would be adhered to, not a single solution remained as being possible. They referred to this situation as being trapped in a "Red Mould".

At this point in the process two Deputies of the Province and the Mayor, two Aldermen and an involved civil servant from the Municipality held a special meeting and decided

that rather than deciding upon a solution that would maximize some interests (nature, water liveability of inhabitants, mobility, etc.) at the expense of the others, they would choose a solution that would satisfy all interests. This implied that they would need to encroach over the "red line" and somewhat intrude upon the nature and water interests that it protected. A problem that naturally needed to be addressed was: how to avoid that this would become a precedent for many other cases? This was assumed to be best dealt with by ensuring all interests were better off "on the whole" and that this would become a requirement for any future "intrusions" against the development boundaries. In this instance they decided to include the road trajectory within an area plan that would indeed encompass all the issues concerning that area in an integrated way. They borrowed the idea of a Green Mould from the environmental NGO Nature and Environment. As the red lines create a "red mould" to contain urbanization, the "green mould" would cradle integrated developments which give high priority to nature and landscape qualities. The process style in this vision would not be defensive in nature, through the protection of separate interests, but instead would focus on optimization and creativity, using a give and take mentality. An Administrative Accord (a voluntary agreement between governments) including the Water Board, the Municipality, the Province and the NGOs Landscape Overijssel and Nature and Environment Overijssel then became the solid basis for the project moving forward.

In terms of the give and take and pragmatic mentality, it was recognised that within the town, some of the more natural places had a high probability of suffering from gradual urbanization[4] like horse riding meadows, road linkages and similar urban uses. These were instead safeguarded and improved to be parts of the natural area with this new plan. The enlargement of the neighbouring district that occurred at the expense of the nice outskirt area was able to provide an additional open walking area to replace the one that was removed.

A new river known as the Doorbraak (Breakthrough) will contribute considerably to the water flow of the Regge in the near future by (re)connecting a large creek area to the river. The previous situation had decoupled nearly half of the Regge basin. The old path of the river ran through a very built up area and was highly confined with man-made walls that made it very narrow. Buildings line the edges at many places, including a factory which is seeking expansion. Furthermore, pressures from recreation are strong as would be expected with a river running through the built-up area. Given this starting situation, there was very little chance to be able to make this portion a part of the ecological linkages structure. The clever solution was to dig an additional watercourse for the Regge somewhat further into the rural area. The new river bed will become the main one in terms of water flow and will have natural areas around its banks to produce the

[4] This is often referred to as "cluttering of the landscape" to indicate the growing fragmentation and ugliness of the landscape.

appropriate environment for the linkage zone and sufficient water storage capacity to prevent floods in the built-up area.

The old Regge bed will remain and will get increasingly urban leisure functionality. The greater depth of the river is important for the "Zomps", the cultural-historical riverboats from the town of Enter in the south in order to be able to reach Nijverdal. As part of the resulting developments, a riverfront recreation centre has been developed that organizes canoeing as well as many other recreational activities. The local authority regards the recreational co-use of the developments as crucial for the support of the people and the Water Board also sees it as an opportunity to ascertain a necessary basis relationship with society. The new Regge bed also creates the need for a new bridge for the state highway to prevent the "natural" river from being interrupted. As part of the multi governmental endeavour, the State Public Works Agency promised to build two bridges instead of just one, one for each river course, if they would be able to get clarity about the plans in time; which they did. They further needed the cooperation of the municipal government in the adaptation of the land use plan for the new road. It was felt that at least partially due to the process, that there was no "quid pro quo" atmosphere experienced, but a genuine feeling of cooperation to optimize the project for all of the parties involved.

PRELIMINARY OBSERVATIONS

The *results* of the Groene Mal project are not certain as the project itself is still under development. Nevertheless they can be characterized as being quite varied in nature. They include: linking nature areas, additional water drainage by the addition of an additional river course for some stretch of the river and also additional water buffering, allowing urbanization and new road and train infrastructure without compromising nature and landscape on the whole, and a new bridge. Recreational facilities are created for sports and hiking and by allowing zomp boats to sail the old Regge watercourse, as well as canoeing and other water recreation. So, at the expense of some financial resources and agricultural land, room has been created for water, nature, recreation and last but not least housing and infrastructure.

MOTIVATIONS:

In addition to the previously mentioned motivation from other sub-cases (improving water storage and quality, improving nature and recreational opportunities) the Municipality is motivated to achieve its goal for improving the transportation infrastructure in the city to provide for a more liveable city environment.

COGNITIONS:

It was recognised early on by the various parties that the project would be necessarily complex due to the various interests and issues included within the present situation.

RESOURCES:

Due to the large size and scale of this project, large amounts of financial, land and administrative resources needed to be combined. The stakeholders involved were chosen initially based on their possession of the necessary resources to proceed with implementation. For example Pro-Rail was involved because they were the only actor that could provide the necessary support for adjustments to the rail line.

STRATEGIES AND RECEPTIVITY:

To date, the various *actor characteristics* in this process match remarkably well. This is partly a consequence of very careful *strategies* regarding the actor constellation and institutional arena's used. The process involved working from a small circle of project group members that have already learned to know and trust each other in previous projects. Working together from the beginning and paying attention to the inclusion of internal and external interests reinforced the availability of trust and enabled more creative solutions. The Green Mould developed from this receptivity to real context, and allowed them to work based on supporting interests and overcoming unnecessary hurdles set in place to protect lesser valuable areas.

Some further strategies included linking the water, nature and recreation in combination with the urgency to create new infrastructure for trains and cars. This further multifunctional nature of the project increased complexity but at the same time it was clear that this complexity was unavoidable due to the nature of the interests and starting condition. The special high-level consultation round resulting in a multi-governmental administrative agreement was also a strategy of arena and actor constellation management that was adaptive to this situation. This again required the use of internal strategies and receptivity to be possible, since not only the civil servants, but also administrators needed to go beyond their own domains (boundary spanning) and be able to commit to a joint solution rather than sticking to a position that was based on optimizing their own institution's goals.

INTER-REGIME QUALITIES:

Although a lack of extent is not seen to play a strong role in the project it is valuable to point out that the redlines that were part of the land use planning instruments were replaced by a "green mould" that supported a solution for nature and landscape that would be at the very least, equally beneficial. Related to this the main inter-regime *inflexibility* that had to be overcome by this agreement came from these redlines which were confining development within a "red mould". They were designed to protect rural landscape, however in this case they were creating the impossibility to protect the Regge valley and were thus incoherent with goals to improve the overall livability of the city (in light of the development of this multifunctional project). Thus, a conclusion for this case can be drawn that the main inflexibility of the regime was indeed proven to be

surmountable by clever concerted action of the involved actors. The level of intensity is supportive since the influence of the redlines provided some minimal amount of protection for some natural space. They were however overcome based on the efforts of the project team that showed that the new approach would in fact improve upon the liveability of the city as a whole.

5.5.4 KALVENHAAR AND VISSCHEBELT-KOEMASTE

The Kalvenhaar project was realized during the years 2005 and 2006. In this particular area the primary goal was to decrease the likelihood of future flooding. Space for nature development was planned within this area that also provided an option to create water retention capacity and restoration of the natural characteristics of the river. Two old river arms were restored and put back into use, recreating a natural meander in this part of the Regge. Landscape Overijssel is the body generally responsible for the nature development in the area. This project is located on the east side of the river while directly on the other side of the Regge they are currently in the planning process for the area of Visschebelt-Koemaste project.

INTERACTION PROCESSES AND RESULTS

Kalvenhaar is a fully completed project near the village of Hellendoorn. The project began when the Water Board became aware that the Municipality was dealing with a problem with a farm that lay right in the middle of the village of Hulsen. In a cooperative effort amongst the Water Board, the Province and Municipality they were able to buy this farmer's property as well as the lands of a relatively nearby farmer who was planning on moving to Portugal. Since the first farmer wanted to continue farming, they were able to move him to the second area. This area was made more suitable for both nature and farming once they turned the lower ground into a nature area in combination with water storage and the upper ground into the farm, inclusive of farmhouse for the Hulsen farmer. The Water Board has now successfully realized this project and the nature area is now under the management of Landscape Overijssel.

Another project, Visschebelt-Koemaste, is developing opposite to this area, on the east side of Hellendoorn. Through the adaptation to new subsidy requirements the Water Board and the Municipality found an opportunity to combine two projects in a way that enabled them to be eligible for these funds. The Water Board was mainly active in the south of the area (Visschebelt) restoring Regge meanders and the Municipality worked in the north of the area (Koemaste). Each have their own name for their portions of the project, but both see them as complimentary and in fact one project. In this area plans for a north-south by-pass road have created dynamics that are seen as an occasion and thus opportunity to do something in terms of restoration of the area as well. The work that took place on the other riverbank in the Kalvenhaar project enabled the Water Board to become informed of the plans for this area and thus enabled the creation of this project.

The Municipality has devoted 1.5 million Euros for working the new road into the landscape and the Province is also willing to devote a similar amount of money from the Essent money reserves (obtained by selling its share in a large energy company). The hope is that by using this 3 million Euros to begin these kinds of works now they can show that the new road will be built attractively into the landscape and reduce the chance for legal appeal against the plans. This could speed up the process of road construction to be completed within two years.

Very near to this area is a Unilever Ben and Jerry's plant. There is a specific interest by this plant to build the tenets of sustainability and environmental stewardship into their processes as the Ben and Jerry's label strongly markets its environmental stewardship. For instance: the milk used comes from the various farmers in the direct surroundings. The factory already had a visitor's center but they would like to make it much bigger and to have it overlooking the river plain. They would also like to turn the current facility into something that more resembles an old factory. This projected centre would lay directly on the shores of the Regge and so the Water Board, the Landscape Overijssel and Ben and Jerry's have had preliminary discussions about the plans and funding and have decided to progress further together.

A new north-south road as discussed earlier also plays a role in this project. While the Municipality was able to achieve agreements with the farmers involved regarding the plans, some house owners objected to the new road coming too closely to their houses. They stated a preference for having it planned further away, in fact right through or closer to the Regge valley. This was however unacceptable for the Municipality, the Water Board and also the Province given that they see this area as part of a planned ecological linkage zone. A variant of this plan including the Ben and Jerry's factory at the urban side of the new road would still intrude too much on this area, and in addition would make it impossible for the factory to have a visitor's centre overlooking the river plain and the grazing cows that they actually get their milk from. The Municipality has developed a plan that would turn the present street into a parallel road and the new main road would be set behind some natural brush, a solution that was able to satisfy the households that are adjacent to the present north-south road. The only place where it is not possible to accomplish this is right in front of the Ben and Jerry factory, for which money has been made available to erect a noise screen that would also remove the view of the factory and its traffic. In this process, the households are to a certain extent allowed to "shop" for what they would like in order to improve their situation with the money made available. The company itself also wants to contribute to the improvement of the situation by relocating its truck entrance to the side where it can be connected to a roundabout to decrease the already present nuisance for the adjacent houses. The Municipality is also collaborating with the factory and supporting its idea to make the plant a sustainability showcase because they believe that it could be decisive for the future of the ice-cream production in the Municipality by this multinational and thus for a lot of direct and indirect jobs.

Even though municipal elections were very near and thus political sensitivity was higher than usual, the project team held a "walk in meeting" in March 2010. The reason being that they felt it was very important to do this before the plans became too elaborated and because it was not an option to delay the preparation since both of the main subsidies (EU WAVE project of the Water Board) and provincial reserve funds required that the works started before the end of 2010. They tried to use their knowledge of the area and the people to develop aspects in such a way that would give them a sense of co-ownership over the project. For instance they knew that the neighbouring village of Hellendoorn has many associations that are interested in the rich cultural history of the area and so they deliberately invited them to give their input. The organizers of the village's Easter Fire (a very old tradition in Overijssel) were invited because there is a debate happening surrounding the smoke blanket caused by the large fire that is carried over the village by western winds and the project area offers possibilities to improve this situation. Ben & Jerry's was also invited and considered it to be a good opportunity to explain their vision and position to a wider audience than just the neighbours and officials that were directly involved. All of the issues that were brought up were noted and attempts will be made to resolve or explain them. In this way the project team hopes that appeals by the community that could block the progress of the project can be avoided. In actuality, there were no appeals in any of the Regge restoration projects in the Municipality of Hellendoorn, which is quite extraordinary for such projects in the Netherlands.

PRELIMINARY OBSERVATIONS

Infrastructure, recreation and eco-education benefits are present in this project in addition to the usual *results* in terms of water buffering, nature development and landscape. The elegant manner in which the new infrastructure, a north-south connection road, is worked into the landscape, will hopefully help speed up the realization of the road by reducing any negative feelings towards the project by the community. The area is a relatively appropriate one for holding the regional and traditional Easter fires and so supporting this through reducing the negative impacts is another example of a side benefit that has been provided by the process taken. The creation of a visitors centre for the large ice-cream factory in the project area also serves to underline its own green image. In turn, the municipality hopes that this will reinforce the attractiveness for further investment in the plant by the head company. This would thus also improve the strength of the economic basis of the town.

MOTIVATIONS:

The motivation of the Water Board to fulfil its water management tasks through river restoration was supported by a number of others in the area. One farmer was motivated to stop farming, and another to continue but in another place. The Municipality wanted the farmer to be moved to a more suitable location, and build a new road that would be accepted by citizens in the area. Landscape Overijssel was interested in adding to their natural protected area in that region. Ben and Jerry's wanted to expand their visiting

centre and the inhabitants were against having their landscape and quiet atmosphere further disrupted by additional traffic and a road within closer proximity to their houses.

COGNITIONS:

One aspect of cognitions which stands out is that the inhabitants were very concerned about moving the road closer to their houses because they believed that this would be seriously detrimental to their living environment in terms of noise and pollution. This was addressed through the public walk in meetings where they showed the different options that could be taken to minimize this and as well different options for compensating them in other ways. Though at the time of the interviews the procedure was not complete, it looked like this would succeed in causing the neighbours motivations to become neutral.

RESOURCES:

As mentioned above, resources were exchanged in different ways to influence the interaction process. Ben and Jerry's for example were willing to contribute additional resources in the form of additional road work and infrastructure to prevent their residential neighbours from using their main power resource against the project and appeal the project to the courts.

STRATEGIES AND RECEPTIVITY:

Strategies used were the inclusion of the plant management in the project and in the information meetings on the project (actor constellation). This information meeting was not postponed even though it was election time because of the pressure of subsidy deadlines and because they felt it was important in terms of getting information for the initiators themselves. Local knowledge is very important to be able to see new opportunities, for instance inviting the organization of the Easter fires to use the area, and creating further goodwill. Local knowledge about the wishes of landowners and other people had also already been gathered while working on the Kalvenhaar project on the other side of the Regge.

In order to work within requirements of the funding structure, the project team chose to divide the project into two parts (officially). To prevent the two parts from becoming incompatible with one another all of the established intensive communication and trust (receptivity of the project team) that had developed in the (still joint) project team was fostered and maintained.

INTER-REGIME QUALITIES:

No major issues related in a lack of extent of coherence were observed that are specific to this sub-case. A specific inter-regime *inflexibility* issue – apart from subsidy term deadlines – was the split in different subsidy streams that urged them to specify a single goal for each of the separate projects. Concerns about delays were strong because of the strict

timelines associated with the EU funds being used for this project. As such, since these concerns led the project team to operate a communication strategy at a potentially risky time (during elections), the intensity of these instruments is seen to be relatively high. Though this is not the case for the inter-regime overall, since no other real pressures were seen to move the project forward or backward.

5.5.5 INTERMEDIATE AREA: AREA DEVELOPMENT OF EELEN EN RHAAN, INCLUDING THE REALIZED PROJECT OF TATUMS

Downstream from Kalvenhaar an "area development" will take place via the Eelen and Rhaan project. Such a project is in fact quite similar to a land reconstruction project, with the important difference being that it is informal and only voluntary measures are possible. The restrictions and possible distrust that an official land reconstruction project can evoke are avoided by choosing to proceed in this way.

A "gebiedsuitwerking" project (area development, or: land use 'elaboration') is more or less similar to a formal land reconstruction procedure, except that it has no formal status and the various needs are taken into account to develop the project on a voluntary basis. The disadvantage is that formal instruments such as expropriation or requiring that a proportion of all land changes must leave on balance more room for nature are not available. The advantage is that the process invokes less fear by the participants, thus making a constructive attitude somewhat more likely. This project is only in the very early stages of development and so the Water Board is just in the process of gathering resources for future use, by acquiring land or land use promises along the Regge.

The Tatums project is also situated along this stretch of the Regge although it is not listed on the Water Board website as one of the official Regge Natural projects. An old meander of the river is restored in this project, but not reconnected to the main stream, which remains unaltered.

INTERACTION PROCESSES

Tatums is located in the Municipality of Hellendoorn and is one of the fully realised projects. In the area belonging to the Tatums project the old Regge has been more or less restored – meanders have been re-established and connected to the main Regge. The old Regge bed will be partly maintained to contribute to the buffering capacity. However, the meanders will not enter into full use as part of the stream until the project ideas on the other side of the "gebiedsuitwerking" are also in sight. Landscape Overijssel was already the owner of the majority of property in the Tatums area and the rest was purchased as part of the project development. A heavily protected plant grows on the sand storage dunes that are under the management of the Water Board located in this area. They together actually tried to avoid encouraging it to grow since that would have increased the regulations covering the development of the area (due to the EU habitat directive). It was

believed that this would have really prevented them from moving forward in work that they wanted to do.

Tatums did not begin as a recognized Regge restoration project. At the start, in line with the older perspectives on water management, the goals were to improve water quality by the sanitation of polluted riverbed soils and by doing so also increasing the river capacity by making it deeper. Nevertheless, it developed into a Regge restoration project and was able to teach the project members a number of lessons that would be used later on. The first problem encountered was that there was a sand depot needed to temporarily store the sludge from the riverbed. This was difficult to manage however they were able to work out a deal with an adjacent farmer who was unsatisfied with his lands and wanted to move to another Province to have more space to expand. The Water Board was willing to contribute a fair renting price for the use of the grounds to store their sludge, however with that money and money from a nature development fund, the complete farm could be bought and the grounds used for a few years as storage.

Some of these newly purchased grounds could then be used as part of an exchange for land near the Regge that could be used directly for the project. In addition to this, the state agency that buys lands on behalf of Dutch governments (DLG), held not only lands for exchange but also a farmhouse and sheds. These were considered (too) expensive to hold onto and thus they wanted to re-sell them as soon as possible. It was discovered that a local inhabitant wanted to start a goat farm and was interested in these lands and buildings since the stable was far better for that purpose than his own was. Someone for whom it was a better place to keep young cattle then took this man's old farmhouse near the Regge. Further, someone who trades and renovates motors from all over the world then took that farmer's former property. These dynamics all started with the first buy out and led to people being relocated to areas where their surroundings were more appropriate for their individual interests and activities. The only thing that the project manager had to do was to keep closely in touch with what people in the area had as interests. Such interests are not seen as potential obstacles to be dealt with in a defensive manner, but as potential opportunities. That was a lesson well taken.

The Municipality and Landscape Overijssel cooperated to add a bicycle path with a bridge over the Regge in the area. The path attracted many more recreational visitors, and the bridge also allowed a more convenient connection of two small villages across the Regge, contributing to the "basis" of good will among the nearby inhabitants, which then viewed the project with more interest and mildness. The increased numbers of visitors made one of the nearby farmers decide to start a tea-house with a tin museum which now provides his major source of income, and attracts coach buses full of senior citizens. The project team involves the tea-house in occasional presentations of the project and stimulates cooperation between the new activities, e.g. having visitors of the tea-house visiting the goat farm as well. The farmer with young cattle now has them grazing in the Regge plain meadows in accordance with Landscape Overijssel's guidelines. When the pastures

became too large for his cattle as the project proceeded, he arranged for a colleague to fill the capacity. This chain reaction did not only enable the Water Board and Landscape Overijssel to get all the grounds they needed, but also diversified the rural economy with recreation facilities, special farming with goats, having cattle grazing as maintenance for the nature instead of maximizing production, and offering space for a small workplace.

5.6 PART FOUR: LOWER REGGE PROJECT IMPLEMENTATION

In this chapter the most downstream portion of the Regge River is addressed. As a result of the previous canalization efforts, the river now flows in large streamlined curves. The municipal boundaries between Hellendoorn, Ommen and Twenterand actually twist around and across the river, revealing the old natural course of the river that separated the old towns. Near Ommen the river flows as a tributary into the Vecht River.

5.6.1 VELDERBERG

For the first time in 100 years, the water of the Regge flows through an old passage near Velderberg (literally: 'Velder mountain') close to the village of Hancate. In the beginning of 2006 the first part of the canalized Regge was dammed and the old meander was reconnected to the Regge. The dammed and canalized part was then slowly drained and transformed into a natural plain with ponds, which may regularly flood in the future. As an additional recreational feature a new walking bridge was added to the area. Jan van Klompenburg, the project leader on behalf of the Water Board, said that: "By restoring the old meanders in the Regge, space for water buffering, river dynamics and nature development is created. The adjacent nature area is allowed to flood which decreases the likelihood of water problems in built-up areas in the future."

In the subsequent phases of the project a number of other meanders in the areas that are owned by the nature management organizations Nature Monuments and Landscape Overijssel were excavated and re-connected to the Regge. Hardened shorelines were also removed and relocated and new hiking and cycle paths were created. The project is co-sponsored by an EU agricultural subsidies fund which was in operation until 2007.

INTERACTION PROCESSES AND RESULTS

Velderberg served as a Regge restoration pilot project for the Water Board. The area involved is mostly within the Municipality of Hellendoorn, but also enters Ommen due to the straightening of the river across the municipal boundary that still "meanders" as the Regge once did. The Municipality of Ommen's interest in this project was mainly restricted to the implementation of a cycling path. The costs of this project to the Water Board exceeded what was strictly necessary, however they considered it to be a good investment in developing public trust as well as an opportunity to learn how to approach these types of projects in the future. Various land reallocation ("ruilverkaveling") projects had been

implemented around the nearby villages of Den Ham and Lemele and as a result a lot of ground had become new nature. Although these areas were still outside the direct Regge area, the nature organization that owned these lands (mostly Nature Monuments, and secondly by Landscape Overijssel) feared that the nutritious Regge waters would reach the area and disturb the improvement of the nature that was being supported there. Despite these concerns, the parties agreed to go forward and the concerns proved to be ungrounded in that the nature area did not suffer from water quality issues and was able to become a part of the water system.

In terms of process, the Water Board began by deciding that it wanted to communicate with the people at Nature Monuments that thought in terms of natural systems and their dynamics, as opposed to the people who they considered to be more concerned about for instance the isolated protection of a specific plant. Together they were able to develop a pilot that should prevent the disturbance of any nutritious mud accumulation and that developed into a trusting relationship.

Responses by the nature organizations on the resulting situation have been very positive. Mud did end up accumulating a bit at some places, but as there was a notable change towards systems thinking, people were more willing to overlook small reductions or changes in light of the benefits of the overall nature development.

The Water Board was able to improve their rain models as a result of participation in this project. Their calculations about how the water system would respond after the intervention ended up being very different than what was experienced. The predictions for January 2007 showed water levels that were too high, and so this was something that they then had to fix. Upon restudy, they realised that the flood prevention capacity of a low dam in the system had been calculated much too optimistically. As a result, they chose to leave an old part of the Regge intact to be used as a sort of high water overflow option. This resulted in the necessary addition of a number of operations and tasks to the project. The model calculation mistake did not affect the relationship between the actors, since the problem was regarded as an internal Water Board issue which only affected their flood control goals and was able to be solved internally. Additionally, the Municipality of Hellendoorn was able to realize a desired bicycle path.

The Velderberg pilot also taught the Water Board a lesson in project management that they were able to use to their benefit in developing later projects. Before it was specified as a procedural requirement, the project group held “walk in meetings” during the afternoon and evening (e.g. 4-9 PM) where at any time at least two organizations were represented. This ensured that all of the neighbours in the surrounding area could receive specific attention to their questions and interests. This proved to be a much better way of contacting people than the standard evening presentation of the plans in a room filled with all of the interested parties together in which typically one or two highly critical and often distrustful people set the collective tone. In this setting, all of the questions and

doubts from all of the people could be noted separately. Following this, they held "kitchen table conversations" at the houses of all the people that had serious issues in order to discuss what would and would not be possible by the project team in order to address their concerns. Specific issues such as concerns over how the water level on their grounds would change and whether they would need new access routes to get to their lands, etc. could be better addressed under this format.

PRELIMINARY OBSERVATIONS

In addition to the water and nature *results* that have already been shown to be common to these restoration projects, this project generated various recreation facilities including a new walking bridge and new hiking and cycling paths. Important managerial lessons were learned by this early project that supported future development processes.

MOTIVATIONS:

Generally motivations were in line with improving the natural resilience of the Regge since few stakeholders were actively involved other than the Water Board and NGOs.

COGNITIONS:

There were however differences in cognitions with respect to the overall value of the changes being proposed to the Regge. Landscape Overijssel was concerned that changes would negatively affect downstream nature. These cognitions were changed however once the project proved to be successful and the staff at Landscape Overijssel became more supportive of the actions. Since this was one of the earlier projects, a sense of trust also began to develop between the two organisations.

RESOURCES:

The Water Board used resources as a way of developing good will with the other stakeholders. This was further done to secure additional goodwill for future projects.

STRATEGIES AND RECEPTIVITY:

The careful selection of a communication point within another organization (1) was an important strategy used (actor constellation) as was the decision to employ openness (receptivity) when including other goals like nature and recreation (2). As this was one of the early projects, it was not yet obvious that this would be a successful strategy. Interesting special "results", were that they were able to learn how to improve the accuracy of the rain and water flow models, as well as that mud accumulation would in the end not harm the water quality in detached meanders that were part of the existing nature area. The pilot also lead to the build-up of mutual trust, which is an important resource since it interacts strongly with the cognitions and motivations involved.

INTER-REGIME QUALITIES:

This project was kept very simple and voluntary, and as such very little interaction was had with the various inter-regime qualities. There were no notable influences related to extent, coherence, flexibility or intensity.

5.6.2 INTERMEDIATE AREA: NIEUWBREKKEN TO NIEUWEBRUG

In between Velderberg and the next Regge project an important extension of the National Ecological Network needs to be realized. This area is partly included in the context of a land reconstruction project (Damscholte) and also lies partly outside of it (Nieuwbrekken to Nieuwebrug). The relevant stretches of the Regge are all within the Municipality of Ommen. While the general direction of restoration is clear and the Water Board has already identified certain spots (though without clear demarcation) where they most likely will want to intervene, the more concrete project ideas are still quite premature. The area is thus currently in a preliminary research and decision phase regarding how to invest in the necessary future resources. The general strategy is to buy land where possible and stay open for opportunities for land exchange. This is a form of blind investing, but with a reasonable certainty that eventually it will pay-off as ultimately they want to have the right land at the right place when they are ready to proceed.

The DLG (Dienst Landelijk Gebied – an agency of the ministry of Agriculture) has taken a partnership role with the Water Board in this project in acquiring the necessary lands. They are the agency that officially administers the purchases and agreements on behalf of the Water Board. The Water Board chooses to be more active in these strategic land exchanges because the Province (a previous partner) can no longer buy land outside of where it will be directly used for the extension of the EHS (National Ecological Network). The Water Board considers the purchasing of land for agriculture outside of the project areas to be an important part of the strategy. Having a large enough pool of lands for exchange creates the optimal land reallocation position necessary for achieving their various goals. As a result of the Province's change in policy, the Water Board now has to pre-invest much more in order to create a similar level of flexibility. This is so important because in some cases the only way they can achieve their goals (in a timely fashion) is to become a major player in the area through land ownership and the key ownership rights that come along with this. The public governance rights of the Water Board as a government body are not considered to be sufficient enough to provide the necessary opportunities.

Officially, the area is considered to be an "area elaboration", and thus has a rather informal and non-obligatory structure. The Municipality of Ommen would like to see a more binding approach since they regard the acquisition of enough land in the area to be quite difficult. Thirty different campgrounds are located within the Municipality of which one is located at a place alongside the Regge. The project leaders would thus like to include this particular campsite as part of the project. Generally, the Municipality is against increases

to the overall number of camping spaces available since they feel that they already have enough to satisfy the desired level of camping. However they chose to make a compromise in this instance since by allowing the owner of this campsite to expand he agreed to allow them to turn the piece of land of interest into an area reserved for nature and water development. This was in fact a difficult decision to make since making special exceptions to one business owner could result in a reduction of trust between the Municipality and the other campsite owners. In fact no one complained in this case, but there was still an awareness that they should be prepared to deal with these sorts of concerns because the campsites do participate in normal market competition.

When the Water Board had the opportunity to purchase 10 hectares of land within the Municipality of Ommen, they quickly seized the opportunity. The property's owner, Pauw, had at one point in the past erected a stable on these lands. This is important, as new regulations are generally very strict regarding the building of new structures in the rural area. However, on the basis of a separate regulation which permits building a new structure on rural land when another nearby structure is taken down (the so-called "red-for-red" regulation) they were able to help the Municipality of Ommen out in another deal. Ommen had committed to helping a fruit dealer arrange a place of business in the area that was made possible through tearing down the old stable. So in a "pre-stadium" situation there are opportunities to establish good will and future coalitions between the various actors. The Water Board is also working towards this kind of relationship with the Estate owners, Nature Monuments and other landowners in the area, through building frequent and close relationships. The Water Board expects that projects will start in this area before 2013.

5.6.3 ONDERLAND

The Onderland plan was produced together by Staatsbosbeheer (the State forestry agency), a private owner of part of the area and the Water Board. Taking place in the Municipality of Ommen, the construction began in 2006. The main goal of the project is to create space for water and the reconstruction of a more natural Regge water system. The undertaken measures will allow flooding to occur a few times per year. In extreme situations (such as occurred in October 1998) that are expected once or twice per century, a maximum of 400,000 cubic meters of water can be stored here. The goals are similar to the other projects: restoring natural meandering river courses and river dynamics, buffering water in the original outer banks area, partly by removing levees, and increasing the nature and landscape value. The measures taken are described below in some detail in order to show how and with what sort of issues in mind the restoration of these kinds of projects are designed. This is a translation of text provided from the Waterschap Regge en Dinkel website:

"The levee on the eastside is removed, the riverbed made somewhat narrower from 20 to 15 meters to increase the flow speed and produce more river dynamics to allow natural

processes to then take over. The newly created stretches initially follow a natural pattern with very shallow marshy places and stretches with steep embankments developing at other places. The latter also provide good habitat for *Alcedo atthis* (king fisher) and *Riparia riparia* (sand martin).

The western side remained almost untouched. The former natural water levees (forest sides and dirt roads) will regain their flood protection role as much as possible. These levees were already high enough to prevent flooding for an area that extends outside of the project area. Where they are not sufficiently strong or high enough, they are enhanced to the necessary level within the scope of this project. To protect a few residential dwellings that are situated at too low of an elevation near an old meander and the forest fringe, extra measures are taken for protection. The measures are also designed so as to fit into the landscape with the appearance of a sort of river dune. Ecologically this creates good habitats for some rare plant species that belong to such river valleys, like *Dianthus deltoids (*Steenanjer) and *Gallium verum* (Geel walstro). By making the Giehemer Church path somewhat higher this cycling path will also be able to improve flood protection.

The old meander in the area of Onderland was in the past a part of the meandering Regge. It is still visibly present, but is now isolated from the river. Over the years highly valuable natural areas with rare vegetation and good water quality have developed here. This good water quality is partly caused by percolation (a sort of well) originating from the more highly elevated wooded area to the north. The soils of the meander will be cleaned where necessary and some parts that have filled up with mud and sand in the past are to be dug out and restored. The old meander remains disconnected from the Regge and the surplus water that was discharged to the Regge is not discharged to the water buffering area. A meadow that is enclosed by the meander is stripped from its top layer to make it less nutrient rich and create chances for rare vegetation.

The rest of the area gets its original relief back, which is in accordance with the characteristics of a river valley area and will be apt for temporal water buffering. Eventually the Onderland area will form a dynamic and resilient river system. The area gives water the required space and creates sufficient chances for the development of nature" (website Water Board Regge and Dinkel 2011). Of the approximate 40 ha of land, all but some 3 ha are meant for retention area. The 3 ha is an area near the vacation bungalows that is now protected by a higher strip of land with a very slight slope. Yearly flooding is expected and it will have a storage capacity of about 150,000 m^2 of water. In extreme cases, all of the 37 ha will be flooded with 1 meter of water depth (2 meters is possible in some areas), temporarily storing some 400,000 m^2 of water.

There are still a number of places within the area where agricultural land has not been purchased. One existing farm occupies about 17-18 ha of the total 40 ha of the project area. This previous dairy farmer wanted to stop active farming and has accepted Blue and Green Service payments as support for doing so. For the "blue service" of allowing the use

of his area for retention, he received a one-time payment of about 100,000 Euros. For the switch of his lands from agriculture to nature he receives the price difference of the value of ground for these two purposes over a thirty year period, about 550,000 Euros. Apart from this he receives yearly allowances for the maintenance activities he performs. The Green Service program was first implemented by the national government, but is now done by the Province. The total project costs are estimated at 1.2 million Euros. This includes 12 ha of land bought for the completion of the EHS by the state agency. The costs for the Water Board were around 800,000 Euros, including the 100,000 Euros for the blue service payments. The 1.2 million is exclusive of the 550,000 Euros for the green service payments, which is transferred as an allowance over a 30-year period. Of the 12 ha bought, one field was previously crop land (corn), and the other was meadowland. The (fertilizer enriched) corn land was not stripped of its topsoil, because that would have created too much sand and would have been too costly to remove from the area. It is grazed extensively now and will gradually loose its high fertilizer content. One land exchange changed the location of a pony meadow from a place where the water levels would become higher to an area at a somewhat higher elevation.

INTERACTION PROCESSES AND RESULTS

This project was able to develop because the Water Board had the knowledge that a farmer (by the name of Blikman) in one of the areas desired for flood water retention wanted to quit farming. The State Forestry Agency also had grounds in the area that they were prepared to have used for water retention and they added to this by the purchase of additional grounds of other private owners in the area. The Regge has been mostly left as it was in this area, except for a bend that the Water Board added to the river. Most importantly they removed a levee which would allow the area on that side to be flooded during high water levels.

Blikman's farm had not been used very intensively in recent times and so the Water Board felt that it would be a good place for additional water storage. In fact the farmer was already receiving payments from the Ministry of Agriculture, Nature and Food Safety for allowing and helping nature to develop there ("agrarisch natuurbeheer"). In addition to this, the Water Board provided him with a payment for using the land as water storage when necessary. These payments were provided under the "green and blue service" programs respectively. In the Regge valley area this is the only time in which the "Blue Service payment" option has been made use of so far. The farmer received a "lump sum" payment from the Water Board whereas the ministry pays its contribution every six years, with the amount depending on the quality of nature development in the area.

It is also important to note that it is unknown whether or not the farmer would have received the same amount from the Water Board if the payment would have been determined under the current schemes because the standards have been changed. Under the slightly older system, a flood every 100 years was considered the maximum to be

expected, and thus surpassing this risk was grounds for compensation. Currently for built up constructions on agricultural land the flooding expectation is still 1 time per 100 years, but for nature it is 1 per 10 and for crop fields it is 1 in 25 years.

The Municipality of Ommen also has a plan for Green Service payments although there is some discussion about what an individual or group can be expected to do on their own and what to let others do in terms of nature development. There is a landscape development plan for the "white" areas (areas where most of the rural people live and that is made up of mainly farms and not significantly apt for rare nature) which are not already the responsibility of others. The Municipality chooses to concentrate its stimuli to protecting landscape issues in these areas.

The provincial "red-for-red" legislation, which allows new buildings to be constructed in the rural area in exchange for removing old unused buildings such as sheds and stables, was not yet implemented in the Municipality of Ommen and thus played no role in this case. In March 2010 the first red for red agreement was to go to the City Council, however due to the strong personal connection between the Board of the Mayor and Aldermen and the citizens, the Council was generally reluctant to oppose them. According to some observers there is room within this new legislation for local interests to bias the implementation of the spatial planning in a manner that contrasts with the overall goals of the Province. It is easier to say no to citizen requests from the perspective of the Province than it is for the local aldermen. In light of this new avenue, the Province should keep a good overview of the implementation of spatial planning otherwise this could happen more often (as it has happened in other areas) and lead to undesirable and unforeseen changes in land use over the long run.

From the perspective of the Municipality of Ommen they did not play a satisfactory role in the process in this case area, but feel that despite this they were able to learn a lot. When in 2005, the Water Board approached the Municipality to begin project development discussions, the Municipality was sympathetic to their plans and was interested particularly in the nature aspects that could be developed. The affected landowner was interested in selling some land and so his lands and that of the State Forestry agency were taken into the project. This project was also a good fit for the Regge Restoration because of the EHS goals of the Province in the area. It is a very beautiful place and improvement opportunities were available. Despite all of these opportunities, the project was only initiated due to the interest of the Water Board and its efforts at including the other partners.

The role of the Municipality in the planning process was as such, limited to their facilitation of the plans from the Water Board. Although the nature goals of the Province are also reflected in the plans, they were not really involved in the process themselves since their concerns were mainly just in its final completion. The Province is generally happy to enable others to implement the plans that it sets for the EHS. The DLG is

generally concerned with whether or not the plan has the right type of nature included within it.

The Municipality of Ommen has a lot of natural area and two points of view exist in the community related to this issue: 1) we have enough, maybe so much that it is restricting our development, so we are not going to go to a lot of effort for creating new nature and 2) that the large availability of nature is something to capitalize and improve upon in order to further increase the tourism value of the area. Nevertheless, a limited role for the Municipality is common since the Municipality simply doesn't have the staff or expertise to really get involved in the discussions.

Two main issues arose in this case. First of all the municipal land use plan for the rural area was very old. They could thus not respond to the request of the Water Board to allow a provisional shortcut to the land use plan change procedure and so the full procedure had to be followed. This includes lots of formal steps such as designing a new plan, getting the approval of local politicians, the Province and eventually the courts considering that appeals will likely be made. Municipalities are supposed to make a new municipal land use plan (bestemmingsplan) for the non-built-up area every 10 years, though this might not even be often enough to keep up with changes. The plan in place at the time that the Water Board approached the Municipality in 2005 was from 1984, and at that time no one had ever heard of Regge restoration projects, so there was no way to make this project fit into it.

Realizing that making a new rural land use plan could not be postponed any longer the Municipality worked hard to create a new one that made full use of the flexibilities that can be brought into such plans nowadays even though they are legally binding on a plot level, so in principle very restrictive. The new style of municipal land use plans can have two kinds of maps. The first kind of map has general designations – for example agriculture (A), nature (N), etc., that are legally binding. There is an arrangement that creates the possibility to allow deviations from the plan (under "article 19"), though even these procedures are quite elaborate and involve several decisions that could attract appeals. However in a new style plan it is also possible to have a second layer where it can be made explicit for some or all of the area which land use changes are acceptable, for instance turning agricultural plots into new nature. When the plan goes through its elaborate approval procedure that layer is also considered and implies that once the plan is set, the ways in which you can change within these areas are included. This also enables short cuts to be made without Article 19 (which are formal exemptions for changing the plan from the Province) and which are even shorter since Article 19 still requires a formal exemption. With these flexible layers, even more flexibility is provided and as well as a way to reduce the time needed to change the plans without greatly increasing the fear of negative developments. Only a decision of the municipal mayor and aldermen, agreed to by the city council, is enough for allowing such changes of land use in individual cases. These kind of multi-layered plans are now quite common in the Regge area. The Provincial

Living Environment Vision acts as a framework that guiding their planning process and as a basis for evaluation when the Province must approve it. For the Regge restoration projects this implies that the required land use changes are now accommodated for in the land use plan.

As a second major problem there was an instance where some local landowners made a court appeal against the Onderland project. This was one of the rare instances of conflict. In the period during which the Regge was being modified, a number of homeowners have built new houses (recreation) quite near to the shores and so it was not possible to reverse the Regge directly back to the previous situation. A new plan was necessary in this case that would improve the nature of the river but also enable these houses to stay. The homeowners had made an official appeal to the plans, though the argumentation used was varied. Some claimed that the plan wouldn't help to make the area safer; especially not the direct surroundings of the retention area where the appellants had recreation bungalows. To support this statement, they hired their own experts from Delft University. The Municipality was however confident that they would win against these complaints because all of the national and Water Board white papers regarding the room for the river, Regge vision, etc. and the science on which they were based were supportive and these counter arguments were considered to be outside of the generally agreed upon understanding. The court ruled that although the experts disagreed, the Water Board had sufficient ground based on the majority of science to assume that the general interest was served by the project and rejected the appeal. These issues did not harm the resulting schedule extensively since the actual landowners were in favour of the project and so the concerns/complaints of the others had less traction against the project, only about 1-2 years.

The Municipality assessed that the appellants' main problem was that they were afraid that a new embankment would harm their nice outlook over the area. The legal objections that were given, such as that the project would not protect them, were considered to be by the interviewee only excuses used to try prevent the project because of aesthetic reasons. There was no compensation offered to the concerned party, the Water Board did however alter the plan a bit to help appease their concerns. Upon visiting the area it was noticed that indeed there was very little visual impact on the houses which in fact had a wide view over the re-naturalised area. The parties were eventually successful at meeting both the needs of the Water Board and the citizens.

An exemption was needed from the Flora and Fauna Law due to the expected presence of a protected species. This was entirely managed through the Water Board and was not seen as a "problem" in this case. It appears from the letter of exemption that it was relatively easy to work with this law. However, if it were to have been a Nature 2000 area, in the Netherlands translated into the Nature Protection law, it would have been much more difficult to move forwards. It is considered as being especially difficult because no one really knows how to deal with it. As a consequence of this, the courts tend to ask for

additional information and studies to be sure that no "substantial harm" is done to the ecological balance. In the Flora and Fauna Law, you only have to take care of certain specified species of animals or plant. However when it is a designated Nature 2000 area you have to incorporate the integrity of the ecosystem and measuring the effects of the project on the habitat area as a whole is extremely complicated. There was even difficulty in dealing with the uncertainty of Nature 2000 areas for example in a project where everyone knew that water and nature would on balance improve. Project initiators are required to do a lot of research and following this, the civil servants are generally still uncertain about the results. There is a strong focus on judicial significance, as each appeal easily makes it to the highest administrative court (Council of State - Raad van State). In this case however, the area was not designated a Nature 2000 area, and thus the Water Board was able to ask and get permission to "possibly" affect one plant (groundling) and one animal (loach) species with the warning that if they would come across a ring snake (grass snake) that they would have to stop all works and ask for an additional exemption for that species.

Apart from the land use plan not being suitable and the development of the court case, the Municipality has one issue of regret in the Onderland project. There are lots of recreation and tourism opportunities in the surrounding areas, however in Onderland they have hardly any. The project actually diminished the future possibility for creating walking paths; this happened because they forgot to ask the Water Board to include it and so it was neglected. They feel there are lots of possibilities for recreation in the area (bicycling, boating, etc), so to be more aware of their interests in the future they have tried to make a plan that highlights the various goals for recreation and nature (and where they should and should not be combined).

PRELIMINARY OBSERVATIONS

The *results* of the project are quite varied. Natural meanders were restored, improving drainage and buffering and allowing for more water percolation from a wooded area to the North. Levees were removed which enabled natural flooding in one area and the creation of river dunes to protect low lying houses (initially recreational). Landscape development plans (initiated as a result of landowners' opposition) affected the placement of embankments for flood protection. Elsewhere a cycling path was altered to function as water barrier. Agricultural land was turned into nature – providing green and blue services for which fees were paid. All of this also increased the habitat for rare and protected plant species and made the area apt to be a part of the EHS, connecting it to relatively large natural lands. While the availability of walking paths was somewhat diminished, opportunities still exist for cycling and boating. In terms of the *actor characteristics* involved the situation in the Onderland case is a bit more complicated than in most of the previous cases.

MOTIVATIONS:

The Municipality was more neutral (divided) than positive, even though in the end they cooperated well. On the other hand the farmer and landowner was in this case not the most difficult to manage, but on the contrary a driving force. Real opposition came from some of the neighbouring inhabitants (owners of secondary homes) that are most likely to have feared intrusions to their view of the landscape, but brought the case to court (this case exhibited the only occasion that this resource was used in the Regge restoration up until now) with an argument that challenged the value of retention areas as such.

COGNITIONS:

A cognitive clash is discernable in this case as the secondary home owners saw the project in isolation rather than as part of a restoration of the whole river, showing a different spatial "boundary judgment".

RESOURCES:

In terms of resources they hired scientists to support their claim against the general opinion among water engineers that more space for rivers is an unavoidable and/or efficient measure against flood risks. Another resource issue was the lack of an up-to-date rural spatial plan, which first had to be developed before the Municipality could act. Furthermore the Municipality sees itself forced to set priorities due to its lack of human resource capacity and wanted to concentrate its attention onto the "white" areas which other layers of government do not target in their policies. This partially explains its rather inactive participation in the actor constellation.

STRATEGIES AND RECEPTIVITY:

Compensation (1) as a *strategy* was observed in the use of the green and blue service payments to the farmer involved. This is was yet the only example of PES (Payments for Environmental Services) along the Regge, even though the instrument is often seen as being of major future importance. In the meanwhile the governance context has changed in such a way that the standards for the degree of risk that should be compensated have been reduced. Under the new scheme the farmer in this case would probably not have been entitled to a "blue service" compensation payment. Another strategy was the timely stepping into the "window of opportunity" (2) when it was discovered that the farmer in the area wanted to quit. A rather interesting strategy by the Water Board was to deal with the opposition of the neighbours, not by being responsive to their official complaints, but instead to the objections that they presumed to lay behind them, and adapting their plans in such a way that the view from the secondary homes would be improved rather than hindered (3).

INTER-REGIME QUALITIES:

The inter-regime in this case is quite broad since various different programs and policies have come into play. One aspect of the extent that was missing and negatively affected the project was the lack of an up to date land use plan by the Municipality. The flexibility of the inter-regime at the start was quite low. The spatial planning regulations required a new local spatial plan to be developed before any permission for the project could be given. In the Netherlands local spatial plans have direct legal regulatory impact and deviations without extensive procedures are in principle forbidden. They were able to address this through the creation of a new plan that made full use of opportunities for flexibilities even though it is legally binding on a plot level, and so in principle very intense.

Within the layer of the present situation another layer of acceptable changes is included, which are mostly changes from agricultural to nature designations. The present layer as well as the "acceptable changes" layer are approved in the extensive procedure including approval from various boards and councils and with formal complaint and objection opportunities by citizens. After this approval, changes to increase nature in the allotted areas require only the approval of the city council. In this case permission was required under the Flora and Fauna Law to work in an area where rare species might be present. While in this case the conditional permission was relatively easily obtained, the interviewees made clear that such would not have been the case when the area involved would have been protected as a Nature 2000 area and permission under the Nature Protection Act would have been necessary. While there is still much uncertainty at the court level about the EU regulations involved they tend to require extensive studies to be done before any changes or development is permitted.

The influence of the Blue and Green Service payments are seen to be quite coherent in terms of improving nature and flood protection. In addition the "Red for Red" legislation protects the watershed from incurring too much development. There was however seen to be a lack of intensity related to this legislation since it was believed to be possible for local interests to negotiate around it.

5.6.4 INTERMEDIATE AREA: DOWNSTREAM AREA FLOWING INTO THE VECHT RIVER

This final stretch of the Regge is again a Landinrichting related project, named Dalmscholte. Progress is slow here as many farmers are quite reluctant to sell their grounds. Further downstream, the Regge comes close to the Vecht River. The estate of "Landgoed Het Laar" is in this area, a castle estate which is nearly entirely owned by the Municipality of Ommen. The estate area could hold as much as one-and-a-half to two meters of water for water retention. The Water Board is currently doing some research about whether the old trees located there could survive such occasional flooding.

The Water Board is also responsible for the high water levee that is located alongside the south bank of the Vecht. They consider it to be too low and although they need to make it higher, the works are still in the preparatory stage. The Municipality of Ommen has become involved in this project because they have a city center development plan in which they plan to replace a bridge over the Vecht River. The bridge is rather narrow and this forces the water level to go up at peak flows. The Municipality would like to make a deal with the Water Board that would allow for the easing of the requirements for raising the levee if they would increase the width of the bridge and hence reduce the effects on the water level. In response, the Municipality proposed that the Water Board could invest the money gained by this as a contribution to the new, wider bridge.

At this point, the Regge jurisdiction ends. Along the Vecht the provincial program Space for the Vecht (Ruimte voor de Vecht) guides any development and management actions, which includes the Province, 3 Water Boards and 5 municipalities. In general the Municipality of Ommen focuses more of its attention on the Vecht than on the Regge. As such, they tend to work with their neighbours to their east and west and not those to the south. A bus trip was once organised with the Municipality of Hellendoorn staff along the Regge, and it was noticeable that they hardly knew the people from the other Municipality. This helped them to realize that they should also pay attention to the Regge to be able to incorporate their interests into new projects.

5.7 CONCLUDING REMARKS

The purpose of this chapter is to describe the detailed interactions that have taken place along the Regge River which have developed from the original intention of increasing the flood storage capacity of the river basin. The main actor, the Water Board of Regge and Dinkel were urged by their past experiences in working with land use changes that it is best to actively cooperate with a wide array of stakeholders in order to open up opportunities and to avoid obstacles. While providing advantages, this manner of working also brings up issues related to uncertainty and timing.

The various strategies highlighted in this chapter can be seen as working with and within the governance inter-regime of the implementation processes. They are also examples of how the various characteristics of the actors involved are important in either supporting or hindering the implementation processes. The following chapter elaborates more systematically as to how the various aspects of the governance inter-regime have influenced the implementation processes by applying the theoretical framework developed in Chapter Three of this thesis.

CHAPTER SIX. PROCESS SETTING, STRATEGIES, RECEPTIVITY AND INTER-REGIME QUALITIES OF THE REGGE RESTORATION

6.1 PREAMBLE

This chapter offers an extended analysis of work done in De Boer and Bressers 2011, with additional attention paid to the inter-regime qualities developed in Chapters Two and Three of this thesis.

6.2 INTRODUCTION

This chapter makes use of the material presented in the two previous chapters through an exploratory analysis of the overall Regge restoration process. The purpose of doing so is to see how the theoretical contributions developed in Chapters Two and Three can be of use in identifying the ways in which the governance inter-regime impacts these local implementation processes. The results as identified here are not specifically applicable to any given sub-case but are treated as common practice across the various projects included within the Regge restoration process as well as the principles that have guided it. To begin, a brief overview is given of the more general actor characteristics as they were observed throughout the research. Following this is a discussion of the receptivity of the main actor organisation and the boundary spanning behaviour that was observed throughout the implementation process. The receptivity is not seen to have varied significantly across projects but more so over time as is reflected through the learning process. This more general examination includes the interactions with actors that are relatively less active participants in specific projects, but do have an important role regarding the restoration as a whole. In Part Two of this chapter, the focus is switched to the inter-regime qualities. All four of the inter-regime qualities are described through an assessment using the five elements of governance in order to uncover how the qualities of the inter-regime impact the implementation processes.

6.3 PART ONE: ACTOR CHARACTERISTICS AND CAPACITIES

6.3.1 MOTIVATIONS

The Water Board's internal primary motivation in completing these projects is mainly related to storing water in times of water abundance. Landscape Overijssel is an ideal partner since the interests they have are quite similar in the sense that realization of the goals of the one, makes realization of the goals of the other easier, not more difficult. Cooperating with Landscape Overijssel and having them take on the management role of

the area after the completion of the project suits the interests of the Water Board regardless of their ownership stake in the land.

Densely populated countries are likely to exhibit higher than average levels of land use pressure. A large number of the projects in the Regge restoration involve agricultural lands. Since this is still an important land use for the Netherlands, the restoration projects to try to combine this as one of the different goals as often as possible in order to maximize the value of uses coming from the limited resource. Most frequently observed were attempts to combine water goals and the development of nature in areas where farming once existed as the dominant land use. Where current farms were still operating, and combinations could not be made efforts were spent on trying to relocate the agricultural activities to more appropriate areas.

Despite the interest of a farmers' representation organization in protecting agricultural land, some benefits of expropriation would accrue to its members under certain circumstances. Expropriation guarantees that a fair price for the land is received by the farmers and ensures that they are able to continue their businesses elsewhere. The risk of using formal (legal) instruments can be that it encourages undesirable behaviour to arise in farm owners; if they know that their land will likely be purchased eventually through this instrument then they are more motivated to hold off selling until a higher amount of money is offered. It is also desirable from a societal perspective (the high importance of food production) to enable farmers to continue their business in appropriate locations. The partners in the Regge restoration projects often believed that it was most valuable to cooperate with the local farming community since entering into a conflict-oriented negotiation can lead to increasingly worse outcomes for both parties. This level of cooperation resulted in arrangements that required the farmers to think along with the projects and to influence them in that way, as opposed to negotiating from a more defensive standpoint. The farmers' organization is partially motivated by their concern that there is a continuous decrease in arable land, nationwide. The proportion of this caused by restoration is however very small compared to the chunks of arable land taken away by urban, infrastructural and industrial expansion. The loss of farmland is expected to increase, however the best places for nature are not often the best places for modern agriculture and so nature development is less likely to harm agriculture as compared to developments from other land uses.

According to Landscape Overijssel multifunctional farming has become more difficult in the context of developing and managing a given area. Modern agriculture has become so intensive, that combining functions is not often feasible. This is not necessarily true on the scale of an individual farm, for instance under circumstances where Landscape Overijssel has dealt with farmers that actively combine recreation and care-taking functions as essentially belonging to the natural zone. According to Landscape Overijssel such cooperation with farmers is very normal in the Regge valley. It is important to remember however, that this concept of the natural zone is different from "real" nature. For example,

there is a large patch of open land belonging to Landscape Overijssel where a farmer is allowed to graze his cows subject to the times and amounts that Landscape Overijssel feels are appropriate. This is more landscape management than real nature. Nevertheless in terms of the social interaction process one can say that farmers who have chosen to become multifunctional in their business are motivated in similar ways as are nature organizations with respect to restoration, and defect from the ranks of farmers that want to continue with world market oriented intensive farming.

Landscape Overijssel treats small scale, mixed function farmers as being supportive of nature, but not as a solid base for management. When the farmers do take on land management roles, they are no longer considered farmers, but to be actors on the side of landscape and nature conservation. There is a step-by-step progression towards this becoming a more common occurrence. Recreation is an important economic driver in the areas with high natural and ecological landscape value.

6.3.2 COGNITIONS

Another stumbling point in these processes can be the different perceptions (cognitions) of the different parties regarding the desired future land use. Historically, farmers in the Netherlands have perceived themselves as being good landscape managers, however in modern times their operations are more large scale business-oriented and so this is no longer the case. Landscape Overijssel thinks that most farmers are in favour of further canalizing the Regge, as there has traditionally been an inclination by the agricultural sector to bring nature under their control. Although much of the present landscape has been developed by farming over the last century, in the new sphere of modern business, only if landscape and nature values were more economically valuable for the farmers would they be left intact. In the Provincial Vision statement normal agricultural areas are labelled as areas for “the beauty of modern agriculture” which has evoked some distrust of the Province’s intentions from the environmental and nature oriented communities. Landscape Overijssel’s experience is that some farmers still distance themselves from the other actors in the rural area, but that the nature groups are further along in accepting that they can benefit and work with each other. Frequent and open communication is seen to be one of the only mechanisms that can overcome this clash of fundamentally different “readings of reality”.

In the Netherlands, the general public will become involved in these projects particularly when changes in land use are included in the project plans. Lots of public interest has been present in the completed Regge projects. As a result of the successful nature of these projects, a feeling has developed amongst the citizens that the river is alive again which highlights for them what possibilities there are for further improvements. Ten years ago the Regge was generally considered as a stream that mainly served a waste removal role in the region and as a result was not adequate for swimming, visiting or fishing. There was

lots of participation in the planning processes associated with the individual projects, which was valued greatly by the people involved.

6.3.3 RESOURCES

As was seen in a number of the sub-cases, the motivations of the parties are not necessarily contradictory, but can differ in a number of ways. It is thus not unlikely that conflicts could arise related to the parties investments in many different types of resources: financial, and policy resources such as rights, prestige, time and effort, etc. The strategies employed are crucial in enabling actors to take advantage of the setting and include influencing the rules in operation of the "action arena" (as it is often referred to by Ostrom; Ostrom 1999: 42-44). One type of strategy observed was the forming of connections between organizations at the right level and time. As part of this strategy, the first contacts made between the organisations are at the civil servant level, which also enables the actors to find the "right" counterpart in the other organization. In the case of the bridges in the Groene Mal sub-case they were able to find supportive ecologists in the State Public Works Agency with whom they could coordinate and develop joint actions. Having the right contacts in place that are sympathetic to the issue can be a very valuable resource and can support the process by relaying valuable information.

Another important strategy was actively avoiding entering into discussions involving political administrators in cases where insufficient evidence existed about whether or not they would be supportive of the intended actions. Similarly, the project leader can support the strength of the team by ensuring that the appropriate credit is given to all of the members involved. Another aspect of this strategy suggests that before a proposal is made internally, one should be reasonably convinced that the rest of the money that is required can be obtained from the other necessary parties and subsidy schemes.

6.3.4 STRATEGIES

COUPLING GOALS TO OVERCOME DIFFERENCES

Competing claims for land use are not always mutually exclusive. An essential feature observed in all of the Regge projects was the coupling of several goals stemming from various policies and stakeholder's interests. When as a result of this, multiple policies, arenas and actor constellations are included in the implementation process; the multiple governance contexts also need to be joined together in what is labelled in Chapter Three as an inter-regime. When the goals are similar, overlapping, mutually reinforcing or even unrelated, important synergies can be discovered. The nature organization for instance accepts that the Regge projects' main priorities are often related to water, landscape and recreation development, since they are confident that nature development will follow as a result of improvements in the other three. When the development of these synergistic projects also includes compromises, the resulting package as a whole can end up being

better for everyone. Accomplishing this without falling into the traps that prevent achieving the best outcome was understood and practiced as a key concept in moving towards a successful project. This section provides the general setting within which the inter-actions involved in the implementation processes developed. It provides the basis for understanding the key strategies used to move forward with successful implementation as are described in the next section.

AVOIDING COMPETITION GAMES

In all of the Regge projects the Water Board made strong use of direct personal communication, which they regard as essential to preventing future issues. They promoted the slogan of: "two days of drinking coffee in kitchens and living rooms is better than two years in court dealing with unnecessary legal consequences". This also reduces the risk of spending months in litigation and halting the project. It is thus felt that, using the most direct options for communication is the most productive strategy for cooperating with private landowners and inhabitants. The importance that the Water Board places on this aspect was exhibited through its efforts to have research performed about the people involved in one of the projects regarding how they experienced the program, the communication process and their level of participation.

With respect to institutional stakeholders there is a similar way of ensuring everyone gathers at the table even when interests are perceived as being different. It can be that their positions are not really in opposition but that they are only dissimilar and so partnership was not previously considered to be a strategic way forward. Creating the right atmosphere in which the actors do not begrudge gains for the others and getting everyone's goals achieved to the greatest extent possible is sought, is considered a good strategy. Persistent communication and approaching each other as equals is the preferred method of undertaking these projects. It is believed that it works best when parties really attempt to do their best in helping to achieve each other's interests. This creates upwards spirals of trust and in the end leads to higher rewards for all parties involved.

The development of a team atmosphere was one way in which they were able to accomplish these synergistic activities. An interesting example of how this was experienced externally was when an alderman of the Municipality of Hellendoorn was unsure whether someone that had been contacting landowners was working for the Municipality or for the Water Board. The project team saw this as a major compliment to their efforts at building a cohesive team mentality. The reverse situation was also experienced where the Water Board staff member was considered to be "one of us" by the Municipal staff that was involved. When actors feel and appear to be primarily members of the project team more so than representatives from their individual organizations it allows them to see the interests of the project as their own. This adds greatly to the likelihood of an optimal project design for all involved parties.

The determination of the actions or setting that lead to the development of this sort of "cooperative-game" situation and the avoidance of competition is an important task. In the Netherlands there have been examples of projects that did develop into the sort of competition situation that is actively avoided in the Regge projects. In this way they still see the process as a sort of game but more so where one can only benefit or win at the expense or detriment of the other players (parties). Even when this game is played in a fair way, this preconception influences the likelihood of achieving a well-integrated arrangement or agreement. "Who is getting what and who gets the most" becomes the central question. The question that must be asked is "how do you get the people to adopt this more inclusive frame of mind which revolves around joint project development?" Integrated project teams are thought to be of key importance in the process. The art is in finding the right and most important players to make up the team. Various parties and their goals will always need to be realised however it is observed to be most important for the strategies of the Water Board to discuss and work them out within the project team.

It was noted by one interviewee that the Water Board is regarded as having a high capacity for implementation and that this is beneficial to the success of the chosen process measures. Categorizing the efforts as "projects" suggests a strict adherence to planning and coordination, but that doesn't reflect the reality. They actually adhere more to the themes of "timing, tone, tempo, toneel" (toneel = theatre stage, tone or: choice of the arena; attempting to reduce the feeling of competition). Tools other than money are also available, which is of course important when addressing various needs. For instance, efforts put into winning trust can be pursued through consciously accepting a slightly disadvantageous outcome that benefits the partners in the first round of planning or negotiation.

Cooperation in future projects is eased through repeatedly coming into contact and working with the same parties on various projects. Participants already know each other, have built up trust with one another and they have also learned important information about each other and their organizations. Learning also occurs in the sense that they have learned what to do differently in their successive involvements with the project members. This makes it easier to find the right people to talk to and can also make certain processes less formal (and in many cases more efficient).

These high levels of well-established cooperation can also be extended to other relationships. In the Municipality of Ommen there was a general atmosphere that supported a general reluctance to push boundaries. A common phrase such as "If you want to do something then just apply for a permit" summarises the general feeling of apathy towards innovative change. Collaboration has been improving as a result of the Water Board's general strategy to build up as much contact as possible with all external actors active in the area. A specific strategy in developing this was to organize a bus tour along the Regge. Instead of having only the Water Board staff, civil servants and the alderman from Ommen, they also arranged that the civil servants and alderman from Hellendoorn

(who had a long established and very close collaboration and enthusiasm for the Regge projects) would join the tour. This is seen to have helped to open up the perspectives in Ommen to the potential of participating further and with more interest in the overall Regge restoration process.

The actors involved, such as the Water Board, the Landscape Overijssel, the Province and the municipalities have learned that it is important not to become entrenched in the beginning behind internal goals since such positioning strongly hinders one's ability to participate fully in the process. When the relocation of a proposed bicycle path by fifty meters in one direction would help to realize the goals of one of the other parties it is seen as counterproductive to stick too strongly to previously defined plans. This is indeed a well-known story related to the surplus value of package deals, which are more easily discovered when parties trust each other in the negotiations or discussions that take place particularly at the start of the project. Trust is thus seen as crucial to the process.

6.3.5 OVERVIEW OF OBSERVED EXTERNAL STRATEGIES

The separate sub-cases in the previous chapter showcased a wealth of strategies that were used to prepare and modify the direct context of the process, including the actor characteristics of the actors involved, to increase the likelihood of productive processes. These strategies are identified as actions that relate to the actor constellation, the institutional arena and indirectly or directly to the actor characteristics of the actors involved. Proactive, responsive and reactive use of such strategies is what separates them from the typical set of actions that are associated with policy and program implementation. These strategies influenced the process through numerous pathways and were not seen to have developed in isolation from one another. These identified strategies are listed separately below however they are understood to have been used in practice in a synergistic way that reinforces each other's efficacy.

1. Openness to synergies

The wealth of combinations of policies, goals and interests that are observed in these projects is presented as a strategy as such. Openness to synergies is not only a way to make the most efficient use of public money from various sources, and of scarce space in a dense country. It is also a way to increase the likelihood of achieving actor constellations with supportive characteristics for the progress of the process.

2. The management of relations

This strategy relates to the building of relationships and trust with other relevant actors before the project begins (actor constellation, timing). Often there is a choice of institutional arena, an option that exists because there are different legal and voluntary possibilities for framing. It was chosen on a number of occasions to refrain from using institutional settings that include legal coercion options because they are hard to use and

can easily cause widespread resistance. Choosing a voluntary approach (arena) can thus also be seen as a strategy to improve the likelihood for the development of sufficient trust and commitment.

3. Blurring phase boundaries

In many examples certain actors that would otherwise typically only appear at later phases of the process (actor constellation, timing), were instead involved at the very beginning. This occurred by asking landowners in the area and neighbouring citizens very early on in the process what their wishes for the development of the area were. What was very important in a number of the projects was the early involvement of Landscape Overijssel (or other nature organizations that would end up managing the project area). The traditional distinctions between the various phases of the implementation process are deliberately blurred through this process. While this can increase complexity when done in an extreme manner, it can also prevent situations in which the later involvement of new actors blocks the process or provides other unpleasant surprises. One way to reduce the additional complexity is by dividing the project into smaller geographical sub-projects. This is exactly what was observed to have happened in the Regge restoration process.

4. Transferring the leadership role

The Water Board also found that on a number of occasions it was not optimal to start a project on its own, but to wait and to latch onto an existing initiative or Area Development project/plan (arena, actor constellation). The Water Board would not become the leader of the process, but instead the Municipality would. This can have disadvantages under adversarial conditions, but was seen to have mainly advantages for the Water Board when their goals were in accordance with one another.

5. Seizing opportunities

There are also good examples of where the timing was used advantageously: opportunities that would support the broader restoration vision were taken as soon as they occurred. Actions that would enable the project to move forward with quick wins were taken in order to build momentum, leaving issues related to tougher areas for a later time when more resources would be available.

6. Learning to build trust

Trust is also of key importance in the relationships between the members of project teams. Learning from past projects plays an important role: who to ask (or not), how to build trust, how to build informal contact. Likewise, good cooperation can be presented as a positive example in support of the development of relationships desired in the future. More generally, conceding on some issues can be used as a calculated risk to help to build a level of shared trust that will have returns later on.

7. Knowing the context

Proactive information gathering can result in acquiring information on municipal plans, which when received early enough can in turn enable cooperation on further studies that can be used to help inform decision makers. Getting acquainted with local knowledge can improve the projects, as it is generally very useful to be aware of various types of opportunities. Chances to create goodwill (altering cognitions) in ways that can be included into the project without much difficulty are then made more likely.

8. Aligning characteristics

Once knowledge of the context is obtained and the motivations of the people involved are understood, it becomes increasingly possible to influence them. A rather interesting strategy practiced by the Water Board related to this was to deal with the opposition of some neighbours, not by being responsive to their official complaints, but instead addressing the objections that they presumed to lay behind them. They adapted the controversial plans in such a way that the concerns of the inhabitants regarding their loss of view of the river were removed. Following the denial of their initial legal appeal, the proponents accepted the decision without pushing the case up to a higher court level. This was actually the only case in the Regge Restoration projects in which a legal objection was brought to court. This is considered to be very successful since in the Netherlands court cases regarding land use changes are quite common. Actively investigating the interests of groups in the community is also done in order to increase resources in an innovative way through access to other types of "community funding".

9. Direct personal communication

The lead actors believed that is was very important to have as much direct personal communication with stakeholders as possible. Speaking with farmers and neighbours was viewed as the only way to overcome clashes of fundamentally different "readings of reality" (cognitions). Open consultation was also important when dealing with institutional stakeholders. Creativity was an important characteristic in enabling support for each other's interests and thus creating an upward spiral that would eventually result in the development of other valuable resources, such as trust. Consequently this strategy was not just a matter of communicating, but also of being open and really trying to advance others' interests whenever they could be made sufficiently compatible.

10. Advanced Positioning

Purchasing land in the time preceding project development in order to hold a private landowner resource position in the area was also often used as a strategy. Sometimes this was a matter of stepping into a "window of opportunity" at the right time such as when a farmer decided to quit farming and was willing to sell their land. In several ways this kind of resource can be put into use during later phases of the process; the land itself can be

used for the project, although it can also be exchanged for other lands that are needed for the project. Buying land in advance of a yet-to-be-determined project is of course a risky investment, but it also has the benefit of avoiding both resistance and possible price pressures compared to buying when a project needs to be realized in a specific area.

11. Traditional Compensation

Compensation as a strategy to influence motivations through transferring resources (not including land purchasing) was observed in the use of the Green and Blue Service Payments to compensate an involved farmer. There has only been one example of PES (Payments for Environmental Services) along the Regge River, even though the instrument itself is often seen to be of major future importance.

This section has reduced the numerous case-specific actions into a set of 11 more general strategies seen to be common and applicable to the majority of cases seen within the Regge restoration process. Building upon these, the next section assesses the level of receptivity that has been exhibited by the Water Board in developing and implementing these strategies.

6.3.6 RECEPTIVITY: INTERNAL BACKING FOR REPRESENTATIVE ACTION IN A MULTI-STAKEHOLDER SETTING

Working in integrated project teams requires decisions to be made regarding numerous issues of finance, maintenance, responsibilities for public consultation, etc. The project team needs to make these decisions internally, as they relate to the project, and they also need the support of the organisations that the team members are representing. In a number of cases, the Water Board and Municipalities, made agreements that involved the contribution of their internal resources. These agreements first required approval at the board and then council level before they could officially be agreed to externally. The degree of freedom and trust upon which the representatives may operate is thus an important factor in these interactions. A high degree of this resource strengthens the team working atmosphere and can help to avoid additional delays in the decision making process. The strength of the board members and how they are positioned in their organizations is an important contributing factor: their perception of their own influence, how they show leadership and how convincing they can be towards their own councils.

There are large differences between how different Water Boards handle internal communication. The Water Board of Regge and Dinkel allows and often encourages informal discussions and direct communication across hierarchical and civil servant–administrator lines, whereas other Water Boards have strong measures in place which make internal communications much more formal.

This level of internal support is regarded by the Water Board of Regge and Dinkel interviewees as a risk management approach and as an indicator of how well an

organisation is prepared to deal with risks. Unavoidably there will be mistakes made and failures will occur. When this is not openly acknowledged at all levels in an organization, when officials are very narrowly restricted or when entrepreneurial risk taking is made impossible, this provides additional obstacles to developing and implementing programs in an efficient way in complex multi-stakeholder settings. Strict procedural and hierarchical organizations that rely too heavily on detailed procedures will see additional difficulty in achieving efficiency in implementation and as a result, highly complex and integrated projects will become increasingly difficult to accomplish. Seeing this relation from the opposite perspective provides guidance for positive actions that can be taken to improve the likelihood of efficiency under these types of circumstances. This primarily includes the recognition that the project staff requires room to manoeuvre within their efforts at achieving the goals of the organisation. This removes some of the negative pressure related to project development and implementation. Thus, a fully programmed implementation approach (refer back to Chapters Two and Three) is perceived by the Water Board to reduce the real chances of effective implementation in the Regge Restoration program. This attitude towards risk has developed from experience in undertaking traditional, formal land reconsolidation projects. The results of which were often projects that were delayed for such a long time that by the time the project was finished, its basic assumptions and vision had become outdated. It is also a risk that the partners interested at the beginning of a process lose their sense of trust and hence commitment to the project as time passes and hurdles continue to arise.

Another concerning factor arises when Water Board, Provincial or Municipal councils and boards are renewed after elections and the priorities change as a result. This can also slow down or stop projects. Newly elected governments come with the risk of implementing cuts to standing municipal funding agreements, which adds some uncertainty about the longer term availability of funding which has been earmarked for these projects. As a project team member there is often not much influence available to manage the political or macro-economic situation aspects that affect the project.

This is relevant for the Water Board as they attempt to create the necessary flexibility for future restoration projects not only by “relation management” but also by for instance investing resources in buying land without knowing exactly what its final purpose will be. Some fractions of the council that are generally very critical with respect to expenditures (and consequently tax levels) will tend not to be in favour of this kind of spending. Whether the other fractions will agree depends on the degree to which the board can convince them of the importance of acting in this pre-emptive manner. These stakes become clearer in terms of their importance when project developers consult increasingly often with the board. By doing so, the board members can better assess the risk of their plans not being accepted by the council. At the board level (within the Water Board) there is generally a reasonable degree of consensus. There may be some cases of diverse opinions, however the board acts as a collegial administration, and hence comes forward as having a common voice.

In the case of the Water Board as well as for the other actors involved, the internal organization and relationships are often crucial for providing the capacity to act adaptively in a complex and dynamic setting. In the central Municipality of Hellendoorn the aldermen regularly visit the municipal officers, not only at official meetings, but also informally. This has been normal practice over the years and is thus not dependent on the present composition of the municipal board. This is not however the case in all municipalities or Water Boards. This regular contact enables the officers to keep the alderman informed about complex processes and on the other hand to get a good understanding about the interests of the politically responsible administrators and what they would and would not be willing to agree to. In other words: both explicitly and implicitly it gives the officers a sense of direction and degree of freedom in pursuing specific plans when they are in regular contact with officers and administrators from other organizations. Compared to a more hierarchical model in which all contacts between the civil servants and the political leadership are funnelled via one or a few key persons or procedures, this greatly improves the dynamic capacity for action in multi-stakeholder settings and improves the motivation of the civil servants themselves as well. The mutual understanding that develops and the lessons that are learned can be quite subtle: i.e. "it is better not to use certain words to describe what we want right now because our council has not yet dealt with the matter and they shouldn't hear about it from outside", "when you contact your colleague administrator please tell him that we are largely following advice from his own officer in this", and so on. In a sense the administrator not only uses the officers as key chess pieces, but also and even more often this happens the other way around. This is not contradictory to the expectations of their position as long as the administrator recognizes that this is an effective way to achieve the desired results.

If the officer is still uncertain about their degree of freedom to negotiate an agreement, they first "shop at home", which means that they need to consult and obtain advanced approval for participating in various actions. Nevertheless, officers sometimes go beyond what they had before considered to be their agreed upon degrees of freedom in order to strike a deal or make good use of a temporarily open "window of opportunity" which they do not want to miss. This is indeed a form of risk taking behaviour regardless of how good the relationship is between the administrators and the officers. They are generally confident that they have enough support to take such risks when it is clear that their proactive behaviour is producing substantial benefits. Furthermore it is seen as prudent for the staff member to have one or two reserve plans in case the expected internal support does not emerge or the results prove disappointing. An organization that is internally fully devoted to control is considered unable to perform adaptively in this kind of a dynamic setting.

6.3.7 RECEPTIVITY EXHIBITED THROUGH INTERNAL STRATEGIES

Complex external settings as described above provide both opportunities and threats. Being able to take advantage of these opportunities while circumnavigating the threats are is a valuable skill for actors or organisations working under these conditions. Receptive behaviour is theorised in this thesis to be one such competency. To briefly reiterate from the discussion in Chapter Three; receptivity is related to how the organisation can consciously associate and exploit new knowledge around existing knowledge, activities and objectives. It is the ability to alter internal characteristics to harmonise with the influences coming from external factors. Understandings of reality are malleable, actions are well-targeted, innovative and adaptive and the actors involved are alert and open. It is proposed that exhibiting this type of behaviour increases the likelihood of successful boundary spanning and thus opens up additional opportunities and helps to overcome and avoid upcoming hurdles. Jeffrey and Seaton (2003/4) developed four aspects of receptivity: awareness, association, acquisition and application. Translating these ideas into the language of this thesis, these aspects are linked to, respectively, the observations, filtering incoming information through frames of reference (including boundary judgements on what belongs to the subject of the process at stake and what not), the interpretations of reality and the impacts of the cognitive system on motivation, capacity and the process itself. As such, the main definition used here for receptivity is

"the ability to combine new information to enhance existing cognitions, recognize new goals as matching existing motivations or the values behind them and to recognize opportunities to use emerging resources alongside existing resources to optimize their capacity and power".

An actor actively searching for and becoming aware of relevant new information, relating it to existing understandings, turning it into enabling new knowledge and ultimately implementing it, is exhibiting receptive behaviour. These qualities can be observed at the individual as well as organisation level.

The receptivity of an organization is very dependent on not only the quality of its members, but also its internal organization and culture. Undertaking a successful adaptive role in these complex and dynamic processes, is enabled when actors are part of a group that has an organizational philosophy oriented towards external cooperation. This includes building relationships and interacting with potentially relevant actors even when no immediate issue is calling for attention (strategic networking). The remainder of this section highlights where the Water Board exhibited receptive behaviour in the development and implementation of the Regge restoration process.

REPRESENTATIVES AND THEIR HOME ORGANIZATION

Some degree of freedom and backing for representatives in their external communications with other actors is an important enabler for receptive behaviour. This includes having the

freedom to deviate from the "normal" linear process of planning – realization – operation. Entrepreneurial risk taking is supportive for successful project development, which includes stretching the recognized degrees of freedom (for instance making use of a "window of opportunity"). The project managers working on the Regge restoration projects experienced a very high level of internal backing as they developed and implemented the projects. This was expressed often in comparison to operational conventions at other water boards within the Netherlands. Using resources to secure lands prior to the specific needs of any given project was supported by the internal organisation. Project managers often made agreements (if only informally) directly with other partners before gaining official internal consent.

PROJECT MANAGERS AND BOARD MEMBERS

The success of these projects is affected by the level of direct informal communication that occurs between civil servants and board members in an organisation. Increased communication improves the chances that opportunities will develop to include additional staff members from the organization in the various sub-processes (and hence enabling them to support each other's actions). It also creates a high level of knowledge of the process conditions and the leeway that the board allows. In a receptive organization the civil servants are cognizant of misusing or overusing the board members. Within the Water Board of Regge and Dinkel they consciously invite the administrators to become involved only when it is felt that there is a good chance of success. Similarly they will only ask them to propose a project plan to the council if they are confident that they are able to find the necessary additional resources that are required on top of the budget that has been asked for. The level of interaction across levels was seen as being high compared to the average Dutch water board.

BOARD AND COUNCIL

In order to deliver the necessary support for such adaptive strategies, the board and the civil servants need the political backing of their administrative councils. "Higher" authorities do not focus too heavily on the details related to costs and instead are encouraged to recognize the potential overall gains from an adaptive management approach. There is a balance that needs to be found for the issues concerning leeway and control. There is thus an optimum level based on the particular circumstances, which needs to be determined case-wise and regularly reassessed based on previous experiences. Interviewees were often cognizant of this balance and were generally successful at acquiring the necessary support for their initiatives.

PROJECT TEAMS

Receptivity can also be a characteristic of the project team in which representatives of several organizations cooperate. It is important to make strong project teams with well-chosen people from different organizations that can develop a shared feeling of loyalty to

the project. The members should feel that they are part of a team working towards a common product or goal. Creating such teams can be regarded as a proactive strategy towards overcoming future unexpected obstacles. This was exhibited through the intimate nature with which the project teams were seen to operate. On a few occasions team members were recognised first as being such, and then only secondly as being representatives from their home organisation.

LEARNING WHILE DOING

Lastly a learning process will result from first being open and alert to coincidental and occasional opportunities, to actively looking for them, and further to ultimately assessing the situation and the other actors for possibilities to create new opportunities. This involves making good use of the important element of timing. The high frequency of strategic communication between Water Board staff and other organisations and citizens is evidence of this. These communications were not related directly to any project, but specifically at gathering knowledge for future use in the development of projects.

In numerous ways, as exhibited above, the Water Board has exhibited very receptive behaviour. What is unknown for certain is how the projects would have developed in the absence of these actions and behaviours, if for example they had used a more straightforward and traditional programmed planning approach. The theorised benefits, as stated, are that this enables additional opportunities and avoidance of obstacles. There are a number of factors that can be used to make an educated discussion on this matter.

First, there have been a relatively low number of court cases that have developed throughout the projects thus far. Typical project planning which involves high levels of land use changes are frequently subject to court cases by interested parties in the Netherlands. The Water Board's approach to overcoming this has been to consciously collect a wide range of external information related to various types of projects (boundary spanning) that would be influential in how it could approach and develop its implementation process for water buffering projects along the Regge. The resulting projects have only been subject to one court case. The Water Board was successful in winning that particular case against their proposed actions, and was as well able to adapt their plans to meet the needs of the citizens. This is thus an example of where the receptive behaviour is seen to have contributed quite substantially to the avoidance of expected obstacles.

Secondly, the resulting projects have included many aspects that are considered to be quite unrelated to flood water retention. Examples include the Art Gardens, the many recreational cycling and hiking paths, improvement of local tourism options (tea shops, additions to the Ben and Jerry's tourist centre), bat caves and canoeing and boating facilities. Given that flood retention projects that were developed prior to the Regge Natural vision and goals had not included this level of multi-functionality it is logical that their new approach was imperative in enabling this to occur.

The opportunities and threats discussed above are related to local circumstances as well as to the external governance inter-regime. The two are certainly related since the characteristics of the local context are also influenced through the structural (or governance) context. As the scope of the projects widen and the interests increase, the make-up of the governance inter-regime adjusts accordingly. So while the actors themselves can implement strategies to address the various aspects of their context, it is also valid to look to the context to see how it influences the process and thus make some suggestions for how it could better support the processes; provide more opportunities and fewer threats. The next section describes the external governance inter-regime context in terms of the four inter-regime qualities so that it can be assessed in terms of its influence on the Regge projects.

6.4 PART TWO: GOVERNANCE INTER-REGIME SETTING

6.4.1 EXTENT

The Regge restoration projects typically contained a wide array of policies and actors that were drawn into the singular projects. This increases the extent of the governance aspects that are relevant for the particular project. The number of water related goals included outside of retention capacity increases (e.g. health of the aquatic ecosystem, water quality, etc.) as well as non-water goals. The non-water specific goals were numerous and included nature development and protection, spatial planning (creating close links with the municipalities), land reconsolidation projects and other policies that are relevant for agriculture, rural economic development, recreation and tourism (e.g. tea houses, zomp boats, hiking and cycling), incorporation of town extensions and companies (e.g. Nijverdal, Ben and Jerry's plant) and new infrastructure (road, bridges, cycle and hiking paths), cultural history (e.g. archaeology, estate houses, water mill, zomp boats), sports fishery, environmental education (like displays with explanation alongside the projects), art and culture (Diepenheim) and issues of Water Board taxation and the investment multiplier (estimated to be 1.3 by Van der Veen and Kalfagianni 2006) of the projects.

The momentum of the project creates a process that is similar to that of a slipstream, pulling additional actors in behind it in relation to their extended involvement. The projects demonstrate a tendency to include all actors that are relevant in any stage of the projects almost directly from the start (Interactive Implementation – Geldof 2004). These are often actors that have a high likelihood of inclusion due to the requirements of certain procedures such as the change of land use plans. They can also be involved as part of the implementation or development of water and nature policies. This highlights the extension that occurs to the set of relevant governance fields related to the problem definitions and goal ambitions within the project(s). The extension of policy fields and thus governance fields as a result of these multifunctional projects increases the scope of the people involved. This occurs at the various scales and levels of governance. Each of the

water and nature policies already has components that range from the EU to the very local level, which results in the extent of the projects being very high in terms of the levels element. This active involvement diminishes rapidly going up from the local and regional (Water Board) level. Including the perspectives and goals of so many policies also implies that the projects need to reconcile themselves with, but also take advantage of the various instruments and resources that come with them. The "multiplicity" of these various elements of governance is a characteristic for singular policy fields. When different policy fields are combined as in the case of river restorations, the complexity becomes even greater. This collection and connection of traditionally separated regimes develops in response to multifunctional projects and is indeed an example of what is recognised in Chapter Three to be an "inter-regime".

The extent of this inter-regime is high. This is seen to support the implementation of this project since a significant lack of policy or programs guiding, supporting or regulating the chosen actions was not encountered. A lack of extent would have been experienced in a case where a use was going unregulated and there were no official or unofficially accepted manners of dealing with it. There was one case where the local land use plan was out of date and thus did not enable a streamlined manner of changing land uses. Updating the plan and adding a number of clauses that supported changes of land use in a way that was supportive of nature addressed this concern. This was not experienced to be a large impediment in any of these projects.

6.4.2 COHERENCE

The increased complexity that results from incorporating various policies typically decreases the coherence of the inter-regime, unless deliberate action is taken to guard against this (Bressers and Kuks 2006: 241-243). At the higher levels of the inter-regime such coherence is relatively low. The various policies are only partially connected through white papers on for instance space, water and nature. Despite efforts at harmonising different policy documents they still have predominantly their own perspectives that are instilled from the different Ministries who must take the lead. A good example of this integration occurring at lower levels is the recently developed Provincial Living Environment Vision (2009). While the Regge Vision has played a very important role in creating openness towards other fields, it still is predominantly a water policy document. The different policies at the national level also create a separation of instruments and responsibilities and resources for implementation, which are not always well adapted to one another. In fact it was observed that in the sequence of EU, national government and further provincial implementation of EU subsidy schemes that a certain re-fragmentation has taken place. On the other hand, per sector there are important attempts to establish inter level coherencies, for instance with the first National Administrative Agreement on Water (mostly on water retention capacity). All in all it is concluded that the inter-policy coherence of the governance inter-regime is mediocre. This hasn't prevented the

extraordinary degree of coherence that was experienced within the projects themselves and as such demonstrates its "bottom up" character.

In the Netherlands it is seen as important and (until recently) to some degree self-evident to transfer extraneous agricultural land to nature, as opposed to for instance the German perspective, which is more heavily based on the protection of current nature areas. Initially, the Regge restoration projects were part of a natural connection plan to Germany, however this was changed and the project perspective now ends in Twente (despite the existence of forested areas which lie on the other side of the German border). The German authorities and nature groups are beginning discussions about developing a similar planning activity to that of the EHS. These discussions will necessarily take a long time and hence it is not wise for the Dutch plans to wait for them to develop further in order to act in a coordinated fashion. International negotiations are taking place with Germany regarding the implementation of the European joint border projects. This brings to light the different capabilities and views from the different situations, since the Netherlands is focused on making new nature and the Germans are focused on nature protection. There are also differences between the different German states, because they have separate governments with different priorities. There is as such a high level of incoherence between the policies affecting the Regge restoration from the Dutch and German institutions. This incoherence is being handled through actions of the involved stakeholders to proceed despite it. The next section begins to discuss the ability of the inter-regime to support actions which can overcome obstacles and support adaptive implementations by means of flexibility.

6.4.3 FLEXIBILITY

The adaptive nature of the Regge Vision requires that implementation not be "planned" in the manner of a singular project. Doing so would result in a project whose scale would be beyond the capacity of any organization in the Netherlands. Instead, as has been highlighted thus far, they chose to leave ample room for coincidences and the creation and seizing of opportunities. The Water Board learned through this process which opportunities were available in the various areas, often due to their participation in past projects. They began through taking coincidental opportunities and then proceeding to determine what further opportunities there were by searching systematically for more ideal projects in terms of their goals. The projects then began to develop through searching for ideas, plans and goals of others that might produce promising dynamics and allow for opportunities for final goal achievement.

One strategy that the Water Board attempted to use to overcome problems related to high prices and demand for land was, when possible, to hold the ownership of at least part of the lands involved in their projects or have them be in the hands of nature oriented projects partners, such as the various nature organizations. This made operating within the project easier as opposed to when ownership is dispersed over many private owners.

What are the barriers to efficient implementation in these circumstances and how can they be dealt with? First and foremost, it is important to acquire land or at least the permission to use the lands in the area. Here the project implementation is tied to the property and use rights of the landowners. Prior to the project development, farmers often own the grounds and there is as such significant economic capital contained in the ground. When farmers leave their grounds, they generally expect to be provided with the possibility to continue farming at another location. These spaces are however quite hard to find in the Netherlands. Patience is thus an important part of achieving these goals: waiting for chances such as a farmer to stop his business while still ensuring that the overall goals (and timelines) are kept in mind. One strategy employed was to increase the size of the project by including additional players into the process. This increase in complexity is seen to increase the chances of being able to find opportunities for different kinds of appropriate activities to include into project designs.

One way that the Water Board attempted to achieve this situation is through the purchasing of land without the intention of using it for the creation of nature, but instead as a means for exchange. This created a stronger resource position from the perspective of the initiator for an essential resource that has only a limited ability to be interchanged with other resources such as legal rights and money. The Water Board, the Province and some nature organizations like Nature Monuments have been successful in performing such actions. The widespread nature organization Landscape Overijssel however cannot since they are not a particularly well-funded group.

Under increased financial concerns and scrutiny, as well as pressure from the National government, the Province decided to no longer purchase pieces of land to use as bargaining chips. Instead they will only purchase land when they can use them directly in the area where they are most needed for nature protection and completing the EHS. As a result it is very difficult for the project teams to perform the land exchanges described earlier and thus it could take extra time and money to complete some of the projects. This reduced flexibility in terms of land acquisition was experienced and observed to makes things more difficult in terms of completing the EHS on time. In terms of implementing policies and regulations from above, one provincial interviewee remarked: “It is always a big struggle – I have worked a long time doing this, and it is getting more complicated, there are more regulations and it is difficult to find a way in it – you see this in every policy field”. He believed that the greatest decrease in flexibility in the governance inter-regime was in this new limitation in the ability to purchase land as they used to. There is also a reduction in the clarity given on which lands they should continue to work on at the Province. In the eyes of the interviewee, the Water Board has been quite effective in working around these issues.

Difficulties also arise in matching the budget times associated with the committed funding to the project times. This is generally an issue with normal annual government budgets, though it is especially problematic for adaptive implementation. Processes that have been

a part of the Regge restoration have been impacted when for instance subsidy grants from European programmes require specific beginning and end dates for project realization. There is often reason for concern that the money will be taken away if these targets cannot be realized. For straightforward and simple projects that have a clear beginning and end targets available, the budget can be relatively easily and appropriately scheduled. With more complex and opportunity seeking projects with a high dependency on the willingness of actors to cooperate, the opportunities are not often present in the beginning to be able to include them and develop them in the planning. When no land is available for use for example, the project cannot officially begin. Patience is seen here as being again important, otherwise the project team can face increased costs for the land. There is also the risk that the future interactions with farmers whose lands have been targeted, will be influenced by this result and will expect a similar agreement. Organizing the surrounding environment (arena) to increase the ability to produce and use opportunities to proceed has been a successful tactic for the Water Board. In the past, construction companies have been paid in advance to circumvent such times pressures, although nowadays such actions are more strictly restricted. These types of strategies that try to soften the impact of inflexible deadlines are no longer permitted, which increases the sharpness of these requirements. Multiple subsidies with conflicting deadlines can make the financial foundation of a project look like a house made out of playing cards; if one card falls, the others come quickly after it. The intent of deadlines is of course to encourage projects to be efficient and effective and increase the ability to hold grantees accountable to their funders. Depending on how the deadlines are treated in practice these obvious benefits can be outweighed by the costs of missed opportunities, inefficient use of resources and the inability to attract the right stakeholders in the time period given.

There is some uncertainty associated with the political situation due to the focus placed on large budget cuts. This status also impacts the certainty of being able to the 2018 deadline to complete the National Ecological Network (EHS). Given the current pace, it is very unlikely that it will be achieved on time. The Province has only a few options for moving forward (1) provide more money to the projects; unlikely since there is not enough money available to purchase all desired lands unless they decide to use their financial reserves for such a purpose, (2) adjust the timeline, or (3) adjust the goals. This situation has raised some concern about the stability of the present policy against using expropriation. Although it is more expensive to expropriate lands, which makes it unlikely to be used in difficult financial times, ironically, in times of recession there are also more opportunities to buy farms at reduced prices.

The integrated projects described in the previous chapter were influenced by the greater emphasis that the national government placed on having the Provinces and other funding recipients provide increased accountability to different budgets and policy programs. They thus became increasingly responsible to meet targets that were segregated based on the different sectoral goals. This decreased the ease with which the project Water Board project managers felt they could develop integrated projects. Since a large number of the

Regge restoration projects started before these new hindrances came into play the key players had already had the time to become acquainted with, respect and trust each other. The new complexities associated with these separate subsidies and accountability goals were cleverly circumvented by making internal agreements on "who is responsible for doing what" that enable each partner to only spend money for purposes that they are allowed to, while still maintaining the joint project perspective. In the past the Water Board could co-finance a stretch of bicycle path at the area where they were working, but this is no longer the case. They are now encouraged to let the Municipality pay for it and then re-compensate them with some action that otherwise the Municipality would have done on their account (yet is also defendable when it is included as part of the Water Board's budget). For long standing multi-actor project teams it becomes much more complicated this way, but can be overcome in ways as was just described. However new situations that arise where new people must come together will likely face difficulties reaching such a high level of coherence due to the disincentives that the separate money streams provide to them.

The only policy plans that the Province considers to be necessary to reconcile actively within the Regge restoration projects are the National Ecological Network, the Water Framework Directive and Nature 2000. When inflexibilities in the inter-regime are concerned, interviewees often referred to Nature 2000, which is implemented in the Dutch context in the form of the Nature Protection Law. The precise nature of how Nature 2000 is supposed to be implemented is however still not completely clear.

The EU Nature 2000 and Habitat and Bird Directives have been translated nationally in the Netherlands into the Nature Protection Law, though they were often mentioned as being inflexible and coming directly from Brussels. A large part of this perceived inflexibility occurs as a result of uncertainty about the precise requirements related to infractions on the habitat of certain species. The manner in which the protection of species habitat is handled falls victim into expecting that "ever more science" will eventually deliver the appropriate actions. When the level of science desired is not available, uncertainty continues and actors are cautioned about attempting projects that can end up in a time-consuming legal process that is unlikely to have clear outcomes. This happens at various levels, including the courts, and results in the potential to create large delays.

In terms of the relationship between the nature development that is taking place to establish the National Ecological Network and the implementation of the Water Framework Directive there is some discussion about where the most importance should be placed. There are certain developments that are good for nature but perhaps not as good for 'purely' natural water management. For instance making the Regge fully natural would imply that it is allowed to dry up occasionally, which would destroy all of the water loving nature that has now developed there. The Water Board staff members responsible for connecting their water programs to broader water management requirements (as set by Provincial, National and International governance elements) were still unclear about a

number of requirements under the Water Framework Directive. The Province, the Water Board, and the European decision makers are thus still in discussions about the exact requirements for implementation.

To what extent does the Water Framework Directive (WFD) create flexibilities or inflexibilities? At the Water Board they basically have translated the WFD into two types of requirements: (a) management of the buffer strips alongside the water and (b) providing fish passages. They consider for the time being that by doing this the ecological targets will be attained. They have designated the Regge as a water body that is "mid–level modified", in terms of artificiality and thus ecological ambition. Implementing projects strictly according to the WFD would mean that in the short run they only have to maintain natural shores on five meters on each side of the river. The WFD doesn't refer at all to the creation of water buffering capacity. The Water Board staff expects that the five meters of natural conditions that are required can be easily surpassed with the present restoration ambitions and so they feel as though they are already meeting and exceeding the requirements of the directive. Making the weirs in the river passable by fish is however considered to likely pose a problem for them.

6.4.4 INTENSITY

Purchasing land in absence of a direct use has certain risks associated with it. The capacity and support to do so despite these risks, is indicative of a certain level of intensity in the inter-regime towards accomplishing these projects. Releasing the necessary funds necessary (and hence making these funds unavailable for other goals) supports actions that go beyond the status quo. Recent policy changes put into place based on the advice of the national government blocked has these purchases and has had a number of impacts on the restoration process. The Province withdrew from its previous way of operating together with the Water Board in that they would no longer purchase land other than the land they need in the area where nature will be developed as part of the EHS. This previous process was considered as investing in future flexibility to enable adaptive behaviour in these complex projects. Thus now the Province is (forced to be) only concerned with its own interests, and hence no longer delivering its contribution to generating a flexible resource basis though exchangeable land ownership. The Water Board is in a sense losing partners that previously had a very strong interest in these projects and played an important role for them in the integrated teams.

The ability to choose between voluntary and involuntary mechanisms for dealing with private landowners was shown to be a significant source of flexibility in the previous section. The current flexibility described in the above section with respect to choices on voluntary and involuntary measures for eliciting cooperation from stakeholders resulted from many examples in the past related to river restoration. A highly intense aspect of the inter-regime (land expropriation) that was used in order to increase expediency of process, backfired in many ways such as increasing costs and reducing the level of trust

between the government bodies and the people. This is one example where the inter-regime has had a reduction in one form of intensity that led to a higher level of flexibility and was supportive of the adaptive implementation processes.

Sometimes increasing requirements to meet budgets and time lines can improve efficiency, but here this quality of intensity of the inter-regime does not align with the specific needs of adaptive implementation and decreases the necessary flexibility to enable such complex projects. Intensity is important to achieve efficient progress however when done without adequate understanding of the local context, it can be counter-productive and further restrict the ability of the project team to meet its objectives. The Dutch Flora and Fauna Law places restrictions on the timing of works in the development and project areas. During realization this can imply that things cannot be done in the most convenient periods (due to the mating or birthing habits of particular species), but this generally does not result in much more than causing delays.

As can be seen in relation to the influences described above, there has been a general tendency in management to increase "accountability" which also easily develops into a re-fragmentation of interests, an exaggerated need for statistics and number crunching. For instance, a new subsidy scheme that has been developed for these kinds of projects is the ILG (Investeringsbudget Landelijk Gebied). In this scheme there are separate PMJP goals, quantitative goals for each separate aspect of interest in the project (PMJP is the provincial multi-annual programme). This results in each partner becoming more concerned with achieving their own portions of the project and that they need to see their results exhibited in a way that can be clearly measured. This can be the death of integral projects where aggressively striving to attain one's own goals reduces the ability to be creative to achieve an optimal mix for all partners. It is politically attractive to say that projects are being made more "accountable", but in fact if done in this way it can force partners to pursue only their own goals resulting in much more rigid boundaries and in fact imposes huge barriers onto such projects. During the restoration process, the Ministries of Agriculture and Nature, the Ministry of Spatial Planning paid for the majority of the implementation required under the ILG (Investering Landelijk Gebied) program and a small contribution was provided by the public works agency Rijkswaterstaat. Nevertheless the new dividing lines between the various goals were mostly issued at the provincial level, not by the national government. Under the most current structure, all partners in a project have their own portions to take care of – for example water, nature, buffering needs, and a specified number of new meters of walking paths, etc. If a project proposal does not fulfil all of these objectives separately, for instance buffering capacity, while it delivers on some of the other goals much more, then it is less likely that it will be supported by all the necessary partners. In fact it is contradictory to the very idea of integrated and multi-functional land use projects, because it takes an unrealistic top down perspective to policy implementation. Not only the Water Board, but also municipalities have recognized this problem. The Province staff interviews highlighted that the

accountability requirements are increasing towards target completion, but they are not aware of how this affects the Regge restoration.

Beginning in 2005, the Dutch government has put much more emphasis on more strictly implementing the Archaeology regulation (Treaty of Malta). This required that before a project can begin, extensive research must first be performed everywhere there is a chance of an archaeologically valuable aspect being discovered and if necessary careful excavation must take place. The interviewees claimed that this sometimes leads to delays and costs that aren't understood by the population and other stakeholders. In the Regge valley there may indeed be a lot of archaeological value though little is known regarding this. Following this regulation fully can have a negative impact on the reputation of the project leaders if the people begin to view them as not being efficient in their project implementation, even though they are simply following legal obligations.

The Archaeology regulations can also put works on hold for a longer time, which adds to the requirements of the other regulations and their deadlines and is not at all understood by the local stakeholders that become concerned and frustrated when they see public works falling idle. This instrument is thus rather quite intense and has negative consequences for the projects. This in and of itself is however not necessarily the problem, as it is only seen to cause a problem since its goals are quite separate (and in this case incoherent) from restoration. The lack of flexibility and high intensity may be in the interest of cultural heritage from one perspective but is being somewhat detrimental from the perspective of being able to effectively bring back the natural characteristics of the Regge.

The Habitat Directive areas are defined geographically but the management plans are not yet clearly set and so there are still many questions about how the surrounding areas will be affected. When an area is designated as a "Habitat Area" the legal framework becomes complicated and actions, which could harm significant aspects of the area, can be restricted, regardless of other potential improvements that they could enable. A major difficulty here is the uncertainty about the term "significant" which is used in the regulation, and is very difficult to define in terms of the necessary habitat. Government officials are in the process of trying to clarify this and implicitly make decisions though it has tended to result in the development of lists of things that are 'probably' significant. Practically, it is up to the Province to determine what they think is significant and in the case that someone disagrees with this, litigation can be sought. The final decision is thus often with the courts. Since a precise understanding of what is significant is still absent, a typical court response is an order to assess whether or not possible relevant aspects have been studied and if not, then to require further study ("ever more science" as a response to uncertainty – compare Arentsen, Bressers and O'Toole 2000). In comparison, these problems do not occur regarding the implementation of the National Ecological Network. This program is less strictly regulated than Nature 2000, which makes its implementation appear to be occurring more smoothly.

With respect to the Water Framework Directive, there are no issues foreseen that endanger their ability to meet the quality requirements (industry, etc.) along the Regge. There is still some uncertainty as to whether or not they are interpreting it correctly. They do not know for instance what kinds of plants and animals might be required to accommodate the EU policies at some point in time later. As for the ecology implications, the most effective measure would probably be to remove all of the weirs from the river that now retain a certain minimal water level even in dry periods. The single most important river characteristic for ecology could be that the river always flows however. This would have tremendous impacts on both human use and water life. The Water Board is still struggling with this issue. If the weirs are removed then the area-related functions for nature areas and agriculture for instance cannot be fulfilled anymore, because more often extreme dry and wet periods will be experienced. At the moment, the "mid-level modified" designation doesn't pose very ambitious new goals (relatively low level of intensity), but it is uncertain how much extra time this will grant them, since ultimately all water is intended to be revived to having its fully natural qualities. Uncertainty for the Water Board staff remains related to how strictly adherence to the text of the WFD will be required. As for now it is presumed that it will not be necessary to restore the river back to a fully natural state, because the consequences of doing would be too intense in their consequences (i.e. letting the Regge run dry in summer, destroying all of the present nature development).

The new policy framework related to the EU Common Agricultural Policy (CAP) has not yet been implemented, but it has already been announced and changes continue to be discussed. The recently altered requirements for receiving supplements from CAP programs will likely increase the chances that some farmers who choose to perform highly intensive farming will discontinue their operations. Some who are not comfortable providing more natural services will eventually stop farming since they will no longer be eligible to receive subsidies. In that sense it could certainly contribute to and facilitate adaptive implementation and the other way around adaptive implementation might be the best way to make optimal use of these opportunities that are generated by the CAP reform. This change in the CAP is seen as highly intense development given the large amount of subsidies that are involved and the quite prominent change in intention compared to previous versions of the CAP.

6.4.5 CHARACTERISING THE INTER-REGIME

In the various cases and also in the more general descriptions of the Regge restoration process various forms of inter-regime extent, coherence, flexibility and intensity have been identified that have either supported or led to problems for adaptive management. What can be seen throughout the discussion above is the inter-related nature of the various elements and how they work together or against each other in different contexts.

The increase in "accountability measures" is a prime example of the inter-regime developing in such a way that it fixes the expectations of several requirements in a quantitative manner that are unlikely able to all be realized when done separately, which forces their respective implementers to compete rather than optimizing their joint outcomes. These new division lines between the goals did not stem from the EU or national levels but were mostly included at the provincial level. This attempt to improve effectiveness, which is intended to increase the intensity of an inter-regime's influence, can under particular contexts destroy the integration of projects through an unrealistic top-down perspective and hamper implementation. As a result of their use of the previous levels of flexibility of this aspect of the regime, some parts of the Regge restoration have somewhat of an advantage in dealing with these newer unrealistic demands. This is due to the mutual relations, trust and past learning experiences (improving the receptivity of the project teams).

Comparing the governance inter-regime as a whole as it has been described and understood thus far and comparing it to the hypothetical classification in Chapter Three provides a number of insights. The ideal classification is considered to be a Coherent, Flexible and Intense Inter-Regime. As was previously stated, this combination of qualities supports the implementation efforts of the involved actors towards achieving a shared process outcome. Clear visioning is provided to help actors understand the integrated interests, flexibility is given to innovative policy implementation processes designed to manage case specific contexts and the necessary tools and support are provided by higher levels of government.

A number of these characteristics can be seen to be a part of the Inter-Regime governing the Regge Restoration processes. It is however quite clear that there is a transition happening that is related a great deal to broader, systemic efforts at increased accountability and resource efficiency. The inter-regime as it was at the beginning of the Regge restoration has changed in that the once flexible instruments available for land purchasing are becoming less available and working towards achieving optimal integrated outcomes is being challenged in light of increased intensity directed at specific and measurable deliverables (hence making it less intense towards achieving the integrated goals). As such, the inter-regime as it was at the beginning of the Regge restoration process could be classified as being quite close to the ideal (though perhaps could be challenged on its mediocre levels of coherence and intensity). It is categorized to have placed somewhere between Inter-regime type 1 and type 2 at the beginning of the process. Type 2 (Incoherent, Flexible and Intense) was hypothesized to overcome the negative impacts of incoherence due to the presence of sufficient flexibility given to local actors. However, at the end of the research period, the inter-regime began to become weaker, and as such opportunities will exist where the incoherence can lead to undesired (and unnoticed) defections from the intended goals. Being still relatively flexible, it has become weaker and less coherent. The relevant inter-regime components are focused on achieving sectorally relevant processes and goals of the upper governmental levels. As was noted,

the Type 6 inter-regime (Incoherent, Flexible, Weak) may have the perception of efficiency and accountability (as it requires few resources and addresses more specific and measureable goals), though it has the possibility to "in practice" depend on the manner in which the requirements fit with local capacities and for instance geographical circumstances. As was predicted and elaborated upon in Pressman and Wildavsky (1973) the chances are increased under this scenario that the initial "high expectations with be dashed" due to a reduction in capacity for the inter-regime to adequately support integrated projects that fulfil multiple goals.

6.5 CONCLUSION

This chapter has provided a summary of how the processes related to the implementation of the Regge restoration projects are viewed through different lenses of analysis: actor characteristics, strategies and receptivity and the qualities of the inter-regime. These elements influence each other through the interaction processes of the different actors and are as such never entirely stable. Actors are continually influencing their context through the choices they make and the strategies they pursue, and the context provides opportunities and the arena in which the implementation processes take place. The degree to which this external context can be used to support the internal goals of the organization is seen in this and the previous two chapters to be reliant on the organization's capacity for receptivity.

What is important in making use of the assessments provided in this chapter is remembering the importance of context for the applicability of the results. In the following chapter, a new case is introduced as a means of assessing how generalizable the various results of the Regge restoration process are in different contexts. Following a similar, yet more restricted description of a Canadian stream restoration process, the aspects discussed in this chapter will be revisited in Chapter Eight to reveal some of the context specific attributes that are important when making recommendations based on these initial findings.

CHAPTER SEVEN: THE SPENCER CREEK STEWARDSHIP ACTION PLANS

7.1 PREAMBLE

As was discussed in the Introduction Chapter and Methodology section of Chapter Three, the purpose for inclusion of a Canadian case study is both academic and connected to the original interest in the research topic. Given that the primary case study is the Regge River restoration, this smaller, less extensive portion of the research is collected into one chapter, as opposed to the three chapters taken for the description and analysis of the Regge River restoration. It is used here as a first exploration of the strength of the assessments made for the Regge River case study and how they are applicable under a different regime context. Corresponding elements of Chapters Four, Five and Six can however be found in Parts One, Two and Three of this chapter. The material has come from personal interviews, literature, government documentation and personal experience working with the Hamilton Conservation Authority, for the City of Hamilton and as volunteer Board member of the Bay Area Restoration Council.

7.2 INTRODUCTION

This chapter provides an overview of the structural context within which actions related to the protection and restoration of the Spencer Creek have been undertaken by the Hamilton Conservation Authority. The Spencer Creek is a large creek system located mostly within the limits of the City of Hamilton in Ontario, Canada. It consists of many fingers, some initiating in urban lands, others flowing through agricultural areas and others falling over natural waterfalls that make up the ecologically, recreationally and culturally important Niagara Escarpment. There are also marshlands and swamps that provide important ecosystem functions within the watershed area that have been subject to many past and present threats. Given the complex nature of the interactions between this local area and various governance instruments and levels to which it is subjected, Part One of this chapter is dedicated to elaborating on the relevant aspects of the International, Canadian and Provincial level structural context for the Stewardship Action Plan activities which are intended to restore and enhance the Spencer Creek. In Part Two, the specific context will be sketched in terms of the past developments and actions that have influenced the various aspects and characteristics of the Stewardship Action Plans that are at the heart of this case analysis. Attention will be paid throughout to the interconnected policy and program elements that together influence the planning and development of this locally implemented and managed project. A few key example projects are explored in this manner. In Part Three, an exploration of the four inter-regime qualities is provided in order to understand how they have played a role in the implementation processes included within the Stewardship Action Plans. A brief discussion about the observations of

receptive behaviour from the main actor organisation is included to support the comparative discussion that takes place in Chapter Eight. The chapter concludes with a summary of the main actors in the program and how they have collectively worked together within the context that is described.

7.3 PART ONE: INTERNATIONAL, CANADIAN AND ONTARIAN GOVERNANCE BACKGROUND

7.3.1 THE STRUCTURAL CONTEXT (GOVERNANCE INTER-REGIME):

When it comes to fresh water supply, Canada is considered to be one of the wealthiest countries in the world. Approximately seven percent of the world's renewable freshwater supply can be found in its rivers and streams while the Great Lakes contain eighteen percent of the world's surface freshwater. These seemingly high amounts combined with Canada's relatively small population, have certainly contributed to what is considered the "Myth of Plenty" when it comes to the state of Canada's water resources. The abundance of water is quite unevenly dispersed over seasons and geography. The Canadian response to this over the years has been to store, divert and move water to align its availability to the needs of Canadians (de Loë and Kreutzwiser 2007). These century-long efforts have resulted in massive numbers and scales of power generation, transportation, agricultural irrigation and flood protection projects. These developments have also however led to a decreased level of natural health for many watersheds across the country: decreased water storage capacity, increased erosion, decreased fish and wildlife habitat, reduced overall eco-systemic health and resilience by canalization and in-filling of wetland and marsh areas. Recognition of these negative impacts has resulted in actions from governments of all levels. Despite its importance to Canadian society, responsibility for the management of water is not expressly mentioned in the Canadian Constitution Act. In fact, it has been described as a "fugitive resource," which means that it has not been clearly divided into federal and provincial jurisdictional responsibilities (Pearse and Quinn 1996). The federal government does have specific jurisdiction related to fisheries, navigation, federal lands, and international relations (Environment Canada 2012), which are certainly related to the general management of water. Within the federal government there are over 20 different departments with different mandates related to developing and implementing programs and policies related to its water management responsibilities. Environment Canada is the broadest and most encompassing ministry and works on the most water management issues. It collaborates with other federal departments to strategically address nationally significant freshwater issues. Based on the complexity and lack of clarity in the Canadian constitution with respect to governmental jurisdiction, describing the governance regime (let alone the inter-regime related to a particular river resource) is not a straightforward discussion. It is particularly interesting based on its constant state of transition and dynamics. As such it is first important for this section on the structural

context of the governance inter-regime for stream restorations, to have a general discussion on exactly what water governance in Canada has consisted of and how this is on the move.

TECHNOCRATIC TO MULTI-STAKEHOLDER WATER GOVERNANCE

The large scale advances made in Canadian water control were the result of mainly top-down technocratic decisions being made by federal and provincial level government officials concerned with the improvement of the water related services their constituents expected them to provide. The Canadian constitution provides the federal and provincial governments with certain responsibilities (note that under the Constitution Act of Canada, local governments have no official jurisdiction of their own and rely on their provincial governments for assignment of duties and responsibilities). These constitutional roots have changed very little over the years, however the societal expectations over who is responsible exactly for what have shifted back and forth (Paquet 1999). This is of course always the case since issues of societal importance are never completely unrelated to one another and different levels of government often make agreements with each over how to best address them. This is perhaps somewhat more complicated when it comes to the governance of water resources. The special place of water in the functioning of society, the seeming retreat of the state in fulfilling its traditional role combined with changes in authority and power associated with increasing globalisation (Strange 1996) has led to an increasing number of Canadian actors who are participating in the decisions being made related to the management of this resource. Increasingly there are examples of partnerships and collaborations that blur the lines and responsibilities away from the traditional government actors and towards more local and NGO actors (de Loë and Kreutzwiser 2007). This sharing of responsibility is better in line with the special needs of the increasingly complex manner with which the implementation of water management related actions is taking place. In recent developments in Canadian water policy documents and discussions, the silo approach to water management is meant to give way to a more inclusive perspective, which places the ecosystem front and centre of the policy agenda. The devil is of course in the details, and there are a number of aspects related to this transition that will be important in ensuring that the governance inter-regime is able to support sustainable development of Canada's water. Leading up to the mid 1990's, this transition had actually resulted in water as a main policy field being nearly dropped as a priority (Booth and Quin 1995). This shift of focus away from water management and towards ecosystem management coincides with the transboundary policy and program developments to address the shared water resources of the Great Lakes. To address water quality and quantity concerns, the national governments from both the US and Canadian governments signed the Great Lakes Water Quality Agreement of 1978 (referred to in the following pages as "the Agreement"). In 1986, 43 Areas of Concern (AOCs) were established that had been particularly degraded and that would receive extra attention for clean-up. This is particularly relevant for the case study in this thesis since Hamilton Harbour, which is the eventual outlet for the water of the Spencer Creek, was designated

as one of these AOCs and as such, the waters and the lands surrounding it have been subject to special attention since this time. As in many other AOC's, the increasingly stringent regulation on water quality in terms of industrial effluent, increased sewage treatment capacity, and increased prevention activities against Alien Invasive Species (AIS), have significantly reduced the daily impact on watershed health and they have seen great improvements in overall water quality. Great attention was given in the Agreement to the need for an eco-systemic approach in the basin. It is expressed through the goal statement

"to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem." (International Joint Commission 1978: Art. II)

This ecosystem based approach appeared in the updated agreement in 1987 which was influenced by research that discovered the importance of the land-based human activities in determining the water quality in the lakes (for example that of excess phosphorus loading). This transcendence is seen by Booth and Quin (1995) to have occurred with such force that water management itself became so fragmented that it was hard to determine if in fact, the federal government was performing its water related duties. This was mirrored by the Ontario governments of the time who were busy reducing the size of government bodies responsible for water management and hence further reduced the presence of the government in the field.

This increasing fragmentation of the federal role in water governance as described above is somewhat contradictory to one of the main perceived values of the federal influence: the ability to facilitate trans-jurisdictional issues related to cross-provincial conflicts and differences, particularly concerning the extra-provincial character of aquatic species and hydrological cycles (Saunders and Wenig 2007). As said before, the Constitution Act of Canada does include references that are intended to delegate certain responsibilities related to water management to both the federal and provincial governments. The federal government is responsible for the management and protection of fish habitat and as such cannot be left out of the discussion and decision making structures related to water management. Further, the moral significance of maintaining freshwater resources implies that the federal government should treat it as a national concern. These issues cannot be managed exclusively from one another and cooperation across the different areas of constitutional authority must take place.

The debate over the level of provincial autonomy is not only visible in the case of water management. Due to the vague nature of the Constitution Act, there is a never-ending struggle between the federal and provincial governments over the lines of authority and responsibility. Understanding this, the following section moves on to describe the various federal and then provincial policies and programs seen to be important in the inter-regime related to stream restoration.

7.3.2 THE FEDERAL ROLE

The Canadian federal government's role in the governance of surface water located in the Great Lakes Basin is influenced primarily by its status as a transboundary resource. This is largely due to the long history of working bi-nationally with the US federal government in the co-management of the lakes. At the turn of the 20th century, both Canada and the US formally recognized that a concerted bi-national effort would be needed for the preservation of the trans-boundary water systems. Hence, in 1909 both American and Canadian (British) Federal Governments signed the Boundary Waters Treaty Act (BWTA). The Treaty states that its purpose is to "provide the principles and mechanisms to help resolve disputes and to prevent future ones, primarily those concerning water quality and quantity along the boundary between Canada and the United States." The Treaty also provided for the formation of the International Joint Commission (IJC) whose role was to aid in the resolution of any disputes that may arise between the two countries in the governance of the shared waters. Six Commissioners, three of which are appointed from each of the Canadian and Federal governments, head the Commission. These Commissioners are required to behave in a non-partisan manner that puts the interests of the lakes first and foremost. Their institutional support consists of more than 20 boards, made up of experts from the United States and Canada, to help them carry out their responsibilities. According to the Boundary Waters Treaty Act and the Great Lakes Water Quality Agreement, the IJC's main responsibilities are related to authorizing uses while protecting competing interests in accordance with rules in the Treaty. One example mentioned on the International Joint Commission's website (www.ijc.org) is that of the application procedure for dams or canals in these waters. The IJC must provide an assessment of such a project and if it is approved, the Commissioners can further set conditions to limit water levels and flows. This could be to protect shore properties and wetlands, the interests of farmers, shippers and others.

In the early 1960's, severe water quality deterioration forced the two governments to issue a reference for a study and recommendations from the IJC. A reference is the formal request (which must be agreed upon by both governments) by which the IJC is allowed to intervene in the decisions made regarding the management of the waters. Without an official reference, the IJC is limited to an information and communication role. This important reference resulted in the discovery that excessive phosphorus loads from anthropogenic sources were causing severe eutrophication[5] in Lake Erie and Lake Ontario. The 1964 reference led to the creation of the 1972 Great Lakes Water Quality Agreement (GLWQA), one of the most significant contributions of the IJC to Great Lakes revitalization (Krantzberg, Bratzel and McDonald 2006). The Agreement "set general and specific water quality objectives and mandated programs to meet them, however it gave priority to point source pollution from industrial sources and sewage plants" (International Joint

[5] Eutrophication is a process related to the deficiency of oxygen in water that leads to reductions in fish and other animal populations.

Commission 2005: 1). The Agreement was successful in alleviating eutrophication (due to excessive nutrient inputs) and was revised in 1978 to better meet the emerging issues primarily related to persistent toxic substances. The second amendment in 1987 included the development of Remedial Action Plans for geographic Areas of Concerns (AOC's), of which Hamilton, Ontario is one, in the Great Lakes as well as Lakewide Management Plans. Specific commitments for nonpoint source pollution, contaminated sediment, airborne toxic substances, pollution from groundwater, and research and development priorities were also included (International Joint Commission 2005). Despite the inclusion of text and dialogue on the importance of the ecosystem approach, the Agreement has continued to enable newly-developing concerns to be handled through a fragmented and issue specific targeted approach: new actions are reactive in relation to each new and emerging threat. Thus ecosystems and water management do not form the basis for actions, but rather specific issue areas lead targeted actions. Managing invasive species, specific pollutants or water levels required for transportation are specific actions that are taken in the belief that together they will result in important improvements that are necessary in achieving a more holistic and inclusive approach to sustainable development.

Expert interviewees and workshop participants of the study performed by Krantzberg, Manno and De Boer (2007) substantiated the lack of a coherent and coordinated vision that aligns North America's protection and management strategies for the Great Lakes. For example, industrial operations, energy production, private consumption and recreational uses have different and often discordant requirements for water quantity and quality. Further, "mature issues" that have already been in the public spotlight for some time such as water pollution due to sewage and industrial by-products continue to occur. New issues of concern are also continuing to arise, such as the presence and possible effects of pharmaceuticals and personal care products into the waste stream, air pollution and the ongoing introduction of new exotic species.

From a water quantity perspective, pressures exist to divert water from the Great Lakes to areas both within and outside of the region. The Great Lakes Charter Annex 2001 (Council of Great Lakes Governors 2001) was signed by the Governors of the eight Great Lakes states and the Premiers of Ontario and Quebec to obtain a better understanding of and develop effective criteria for addressing the individual and cumulative effects of water withdrawals from the Great Lakes Basin ecosystem. This led to the signing of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (2005), which focused on collaborative approaches to water management across the Basin. The 1987 Federal Water Policy was put in law in order to protect and enhance the quality of the water resource and to promote the wise and efficient management and use of water. The Canada Water Act (1970) provides the framework for cooperation with provinces and territories in the conservation, development and utilization of Canada's water resources. Even more indirectly Health Canada plays a role by developing the Guidelines for Canadian Drinking Water Quality in partnership with the provinces and territories. Infrastructure Canada, a department established in 2002, is a focal point for the

Government of Canada on infrastructure issues and programs within the larger Transport, Infrastructure and Communities portfolio (Environment Canada 2012). In addition to the GLWQA, there are a number of national pieces of water related legislation that indirectly affect the Spencer Creek. These include the International River Improvements Act, which provides for licensing of activities that may alter the flow of rivers flowing into the United States, the Canadian Environmental Protection Act (1999), Fisheries Act (1985), Navigable Waters Protection Act (1985), Canada Shipping Act (2001), and the Dominion Water Power Act (1985).

Despite the existence of these various pieces of legislation, impacts are still however occurring that reduce water quality entering the waters due to poor land use practices seen in the watersheds that the agreement is not affecting. Federally supported funds such as the "Great Lakes Sustainability Fund" have been set up to further help in addressing these issues and to improve the quality of water entering the Areas of Concern (AOCs). This fund supplies money to local groups undertaking actions that improve the desired functions of the watersheds and areas located in all the Areas of Concern. In the local communities surrounding the AOCs, Remedial Action Plans were required in order to develop plans for improving the water quality.

With respect to the international considerations of water management related to the Spencer Creek, in this case taken upon by the US, only the Canadian federal government can officially negotiate with the US government. This causes an interesting problem institutionally given that the Provincial government has constitutional responsibility for a number of important water aspects that are involved in these transboundary discussions. As a result, the provincial and federal governments entered into the Canada-Ontario Agreement, which sets out the common goals and objectives for both levels of government to restore and protect the Great Lakes basin ecosystem. This new agreement is used to support the federal government's ability to meet its commitments under the Great Lakes Water Quality Agreement (Ontario Ministry of the Environment 2012). The following section describes the various aspects of the inter-regime most associated with the Provincial level of governance, though certainly there is a great deal of collaboration between the federal and provincial government in many areas.

7.3.3 PROVINCIAL CONTEXT

In addition to cooperating with the federal government in implementing the requirements of the Great Lakes Water Quality Agreement, the Province of Ontario has its own constitutional responsibilities related to water management. Again, water management jurisdiction is not specifically laid out in the constitution but rather the provinces' jurisdiction over water has generally been derived from the four provincial powers listed in the Constitution (Walkerton Inquiry 2002)

- municipal institutions in the province (section 92(8))

- local works and undertakings (section 92(10))
- property and civil rights in the province (section 92(13))
- generally all matters of a local or private nature in the province (section 92(16))

Building upon these responsibilities in Ontario, non-profit nongovernmental organizations called Conservation Authorities exist for the purpose of "ensuring the conservation, restoration and responsible management of Ontario's water, land and natural habitats through programs that balance human, environmental and economic needs" (Conservation Ontario 2009) and hence play a large role in water management in the province. They were established in the Conservation Authorities Act of 1946 and were most closely connected to their main funding body, the Ontario Ministry of Natural Resources. Under this Act they were assigned certain powers, though as the years passed government funding has been significantly reduced and they are currently funded through self-generated funds, municipal levies and other provincial and federal grants.

The 36 Conservation Authorities (CAs) in Ontario are arms-length watershed based organisations which are responsible for delivering a number of services such as flood protection through dams, dykes, channels and erosion control and also do modelling and forecasting, issue flood warnings and also work with local governments and landowners to regulate flood prone zones, protect ecosystems and wetlands (for flooding benefits as well as others) and education programs. They own large tracts of land that they use for a number of socially and environmentally responsible purposes, including recreation, while they also work with farmers and landowners to provide information and support to improve the overall health of the watershed. Conservation Ontario is the network organisation of the different CAs, which supports the coalition of watershed goals and is itself a non-profit non-governmental organisation.

The actual responsibilities of the CAs have evolved over the years. "In 1946, agricultural, naturalist and sportsmen's groups openly expressed concerns over the state of the province's renewable natural resources … This was felt to be a result of poor land, water and forestry practices during the 1930s and 1940s. The combined impacts of drought and deforestation led to extensive soil loss and flooding … This was the culmination of years of pressing arguments being made for conservation and wise resource management by organizations such as the Ontario Conservation and Reforestation Association, the Federation of Ontario Naturalists and individuals writing for The Farmer's Advocate" (Conservation Ontario 2011). An integrated approach to natural resource management was seen to be the way to deal with the unprecedented scale of erosion and water issues. The Conservation Authorities Act enabled the formation of watershed based Conservation Authorities through cooperation between the Province and the Municipalities. Programs for natural resource management at a more local scale could now take place through the CAs.

According to the website of Conservation Ontario there were three fundamental concepts of this new approach embodied in the Act:

" 1. Local Initiative - A Conservation Authority in any area could only be formed when the desires of the residents reached the point where they were willing to request the government of Ontario to form an Authority. In making the request, the local people had to face up to the responsibility of contributing financially to the works of the Authority and also agree to assume the burden of running the corporate body known as the Conservation Authority. This latter task involved burdens and responsibilities similar to the running of a municipality. The local initiative requirement meant that people living close to the problems were required to recognize and solve them. It also meant that solutions would not be imposed from above and an Authority would only undertake those plans that it could manage economically, culturally and democratically.

2. Cost Sharing - The Conservation Authorities Act stipulated that the costs of projects should be shared by municipalities and by the provincial government. This proved to be one of the soundest ideas in the Authority movement. It has meant that an Authority can flourish only when the local people have enough enthusiasm and conviction to support it financially.

3. Watershed Jurisdiction - Conservation Authorities were to have jurisdiction over one or more watersheds. This stewardship was to cover all aspects of conservation in the area. This has meant that a Conservation Authority has been able to handle such problems as flood control in a complete and rational basis. By its power to establish regulations, an Authority has been able to protect life and property, river valleys from building encroachment and erosion problems." (Conservation Ontario 2011)

Following Hurricane Hazel in 1954, the Province of Ontario delivered a mandate for stronger flooding and erosion management and the CAs were the most logical body to take on this responsibility. As the years went on, the relevant scope of policy goals that would be filtered down to the CAs increased. As the CAs were comprised of multidisciplinary teams and they were able to make connections up and down stream, they were generally tasked with handling newer, more integrated issues. The municipalities began to realize that they could work with the CAs as a way to take care of the upstream issues without having to deal directly with the other municipalities. In this way the CAs became a clearinghouse for addressing environmental issues that crossed municipal boundaries. The CAs have become involved in a wide range of activities as a result of the resource management concerns of local residents, member municipalities and the Province. Table 7.1 can be found on the Conservation Ontario website summarizes the range in program development which is seen across the various CAs in the province.

• Community Relations	• Provincial Water Quality Monitoring
• Niagara Escarpment	• Ground Water Monitoring
• Erosion Control	• Rural Drainage
• Outdoor Recreation	• Heritage Conservation
• Fish and Wildlife Management	• Streamflow Monitoring
• Private Land Extension	• Network Hydro Generation
- reforestation	• Tourism
- soil erosion/sedimentation	• Municipal Plan Review
• Windbreaks and Shelterbelts	• Urban Stormwater Management
• Flood Control	• Natural Area Preservation
• Floodplain Management	• Waterfront Development Flow
• Flood Warning	• Wetlands
• Forest Management	• Water Supply/Low Flow
• Fish and Wildlife Habitat	• Augmentation
• Great Lakes Shoreline Management	• Environmentally Sensitive Areas
	• Watershed Strategies

Table 7.1: Range of Program Development for the Hamilton Conservation Authority

With such an increasing scope of governance instruments that guided their increasingly multi-functional activities, they began to adjust their performance management and accountability structures. Detailed performance management evaluations had been mostly absent in the past since efforts were directed at the immense amount of work that was to be done. This continued without real opposition due to the presence of a widely and commonly held belief of those involved in watershed management over how these problems must be addressed. As the scope broadened however, the path forward became less clear and the concept of integrated watershed management developed and became popular across Ontario. As a result of this new approach, aspects such as performance measures, targets, timelines, measures and costs were all more heavily assessed and criticized by the public sector. An example that illustrates this is that of the Credit Conservation Authority (Credit CA). In the early 1990's the water resources budget for the Credit CA was $500,000. During the next 20 years, the Credit CA worked to develop watershed plans that covered 80 per cent of their watershed. At the end of this period the budget was close to 10 million dollars. This was not seen to have happened as a result of conscientiously increasing their responsibilities. It occurred as a result of the watershed plans, which enabled other groups with various responsibilities to approach the conservation authorities to help them meet their goals. These external groups would provide them the funds to do so, in accordance with the watershed plans. Thus, when this more interconnected web of responsibility developed (as it has to varying degrees in different watersheds), the accountability targets and measures began to become increasingly important and the conservation authority staff took on a larger role as project/business managers. This was seen by the staff as a natural development due to the increasingly complex world they were operating in where money and resources were becoming ever more scarce. In order to operate under this increasingly complex context, many CAs had to present more thorough business plans and convincingly state what they

had and would accomplish with the funds that they would receive. This increase in responsibility is also tied to the reduced stable funding provided by the province and thus more funding is tied to specific programs and targets for which they are responsible.

Alongside the CAs there are a number of other bodies that support different aspects of the water management in Ontario and who often contribute to the projects and programs delivered by the CAs, including the Stewardship Action Plans. The Trillium Foundation (a body of the Government of Ontario) provides funds for investments in community based initiatives, Ducks Unlimited which has goals of species and habitat protection, and the Source Water Protection Funds that are available to help implement the new requirements of the Clean Water Act have all provided funds to the program to help implement the various activities. The Clean Water Act is a particularly important piece of legislation that follows a disastrous event in Walkerton Ontario in 2000, where an E.Coli outbreak caused by contamination of the water supply by farm runoff killed 7 people and 2500 became ill. A large inquiry into the matter resulted in a whole new layer of requirements for source water protection where communities are required to create and carry out planning to identify risks to local drinking water sources and develop strategies to reduce or eliminate these risks.

A more voluntary approach was taken in a joint effort of the Provincial and Federal Governments to develop a set of guidelines to help local project implementers determine what is necessary to have in terms of a well-functioning ecosystem through habitat restoration or protection activities. These guidelines termed "How much habitat is enough" are intended to provide for a more coherent and well-functioning nature protection and rehabilitation program across the various programs. The 1998 framework was revised in 2004 to include new scientific information and has been referred to as a very helpful reference to local practitioners.

Within the Province of Ontario, many different landscapes and demographics exist. In the area referred to as the Golden Horseshoe within which Hamilton is included, the highest population density exists[6]. It is also an area that is growing in population at a rate four times faster than the rest of Ontario (Statistics Canada 2007). In these areas, more specific legislation has been enacted to protect valuable natural areas from the pressures of developments. The Oak Ridges Moraine and the Green Belt are two such plans that have a lot of emphasis on water as well as natural heritage. This is indicative of the importance put on these two features by the provincial and local governments in the area. Agriculture is certainly still very important to Ontario's economy and so alongside these actions, the government also intentionally involves itself in ensuring the continuance of farming in the Province. Subsidies exist for farmers to purchase pesticides and fertilizers to further increase the productivity of their business both for domestic and foreign markets. There are however also programs that attempt to reduce the negative environmental impacts of

[6] The City of Hamilton specifically has a population density of 465 people per square kilometer, while that of the Province of Ontario is 14.1 (Statistics Canada 2011)

these activities such as the Environmental Farm Plan which provides funds to help those farmers who desire to implement sustainability enhancing projects on their farms. The Green Belt Plan (2005) is important for protecting the natural heritage of water and is also intended to protect agricultural and environmentally significant land from urban intrusion. It is intended to support recreation and tourism, the rural community and sustainable approach to resource and infrastructure use/development. In effect it states that there is to be an area of permanently protected green space located in the Province that connects the Oak Ridges Moraine and the Niagara Escarpment Protected Areas. The area covered is greater than seven hundred thousand hectares, though it can be extended from formal requests.

Each of these plans is connected to a set of supportive legislation, and the Province has received complaints about how the layering on of these new documents without integrating or harmonizing them is affecting the effectiveness of the governance support and influence. Based on discussions with government officials, this is something that they are very aware of and agree with. It is seen to have occurred due to the high speed at which they add new policy tools, which has not allowed for the right amount of integration. One government official interviewed stated that they are now trying to work on integration of the different policies. One aspect that is continuing to cause friction is the province's goals for population growth, which are seen to be conflicting with most policies aimed at reduction of impact and protection of green spaces. They are not entirely conflicting but from a planning perspective this goal can be seen as only putting additional stress on other efforts. There are also policies that encourage the Gross Domestic Product growth, which of course can also be seen as conflicting with all of the other policies aiming at minimizing negative environmental impacts. These policies don't exist in the more Northern parts of the Province where population density is not a problem.

7.3.4 MUNICIPAL PROVINCIAL RELATIONSHIP IN LOCAL ISSUES

There are also conflicts across the different levels of government relating to the tensions between provincial and municipal jurisdiction. In Ontario, municipalities can be structured in a number of different ways depending on the areas' size and history.

A local municipality can take the form of a city, town, township or village (also referred to as "lower tier" municipalities when there is another level of municipal government like a county or region involved in providing services to residents). Where there is only one level of municipal government in an area, it is called a single tier municipality. Hamilton is an example of a single tier municipality. In addition there are also upper-tier municipalities that provide services over an area that includes more than one local municipality (Association of Municipalities of Ontario, 2011). What is interesting about Hamilton is that it was recently involved in a municipal amalgamation which has been encouraged by the provincial government guided by the belief that this arrangement provides services in the

most cost-effective and efficient way possible (Association of Municipalities of Ontario, 2011).

The Provinces have in many cases shared responsibility with the various Municipalities as is laid out in the Municipal Act, 2001. This Act distinguishes municipal from provincial issues and describes which services the municipality is responsible for offering its inhabitants. It has recently been revised for the first time since its inception in 1849 to ensure that local governments have the powers and flexibility that they require to deliver municipal services. These revisions are proclaimed by the Province of Ontario to improve the relationship between the two bodies in terms of respect, consultation and cooperation and shifted the previous prescriptive approach to one that was more permissive of Municipalities administering and organizing their own affairs (Municipal Act 2001). This relationship is important given that the Planning Act of Ontario relies on the Province having influence over spatial planning issues that are dealt with by the Municipalities. Hamilton is only one of many cities whose local interests support growth outside the urban boundary and which are in contradiction to the Provincial directives. Most planning processes are tied to the Planning Act and are built around local development.

The municipal Official Plans have to be updated every five years to reflect provincial requirements. When this occurs, negotiations often occur between the two government bodies that balance the local versus broader provincial interests. If there is an appeal to a decision made during this process, the case is referred to the Ontario Municipal Board (OMB). The OMB is an independent tribunal that is used in cases related to land use planning, development, land expropriation, municipal finances or other municipal issues.

The CAs are also involved in land use planning through their implementation role in cooperation with the cities. The way in which the funding arrangement between the Municipality and the CA is organised however has led this process towards conflict-ridden negotiations. The cities have in some cases threatened to disband or cut funding to CAs who do not support their interests. This difference in perspectives and goals can develop for various reasons. Provincial Policy standards always lag behind technical developments. This is important because the CAs are often encouraging development within the cities and rural areas to incorporate new forms of Low Impact Development, however the municipality or the development companies tend to push against these requests and can use the lack of provincial requirements as support. In general the housing and industrial development industry in Ontario is not very progressive in terms of implementing innovative techniques and are more geared towards large scale, quick housing construction.

In Ontario, efforts related to ensuring a healthy natural environment emphasize protection as opposed to restoration. Partnerships with NGO foundations and other grass roots efforts are however beginning to develop and offering up more opportunities for different types of environmental development. There are also efforts at the provincial level to

maximize environmental value by overlapping natural heritage and water resources. Recreation is encouraged at a small sustainable scale because of the importance of personal experience in gaining local support for environmental and natural development. There are examples of farmers who allow access to their property along the Bruce trail in a managed way. Natural protection and development plans also require some sort of recreation planning to occur to avoid damage to sensitive areas from un-guided local use. Agricultural interests and stakeholders however, generally do not participate in integrated land use planning. Transportation is also a concern due to the sparseness of public transit arriving in rural areas, but efforts are generally made to try and provide the necessary transportation infrastructure with as little impact as possible.

Official Plans developed by local municipalities are required in order to gain the approval of the provincial government before they can be passed into local by-laws. The approval process is undertaken according to a Memorandum Of Understanding (MOU) that has been agreed to by seven ministries in addition to the Ontario Ministry of Municipal Affairs and Housing (OMMAH), which leads the process. The Ministries included within the MOU are the Ministry of Agriculture and Food, Ministry of Natural Resources, Ministry of Environment, Ministry of Tourism, Culture and Sport, Ministry of Northern Development and Mines, and the Ministry of Infrastructure and Transportation. Each new official plan is checked by each of these ministries, however on a more general basis, OMMAH deals with as many as 20 different ministries. When there are conflicting comments that come from the different ministries, OMMAH deals with them internally and provides a singular response to the municipality. These conflicts are supposed to be dealt with through an analysis of the public interest. Only under certain special circumstances does the plan get subjected to the political arm of the government. The bureaucratic arm, not the political one, is responsible for the undertaking of the general process of approving municipal Official Plans. According to one provincial interviewee, planning isn't just about science, though they certainly use it as an input. The process involves professional judgement based on looking at a combination of different variables –some scientific, some economic, and some social.

The monitoring and performance measurement of the actions associated with improved land use planning is difficult to get funding for, and as well there is a temporal lag associated with these actions. Following the approval of a plan, there is as much as a 10-year lag in the development seen at the municipal level. There is a performance measurement framework for the Provincial Policy Statement that aims to come up with appropriate and measurable indicators. Another challenge is the data necessary to make these assessments, which lies mainly with the Municipalities. There is no requirement for the Municipalities to share their individual information with the Province and there are often reasons that they choose not to do this. The Province is thus reliant on the census for gathering the necessary information (which has been diminished in scope under the recent government).

There is however a strong movement forward towards a more integrated way of looking at land-use planning at the Provincial level. They are currently working together with a private company to layer the policy areas, developments, open land, etc. in a free and open viewing visual format so that people can see what the intentions are of the government through its different policy and programs components. With respect to opportunities for improvement on the level of policy integration, the association of Municipalities of Ontario came to the conclusion that there are 40 key pieces of provincial legislation that affect them, with a sub-set of 18 related specifically to planning. The Water Opportunity Act requires that a municipality have a sustainability plan in place in order to receive funding from the province for water infrastructure related activities. There is however no real definition of a sustainability plan as it relates to all of the things that are required under other pieces of legislature.

Based on the above characterization of the water governance context within which the Spencer Creek lies, it can be seen that there is a high level of complexity present. This complexity has been on the rise as a result of various influencing factors, including a gradual retreat of the federal government (de Loë and Kreutzwiser 2007) and has resulted in the establishment of an increasingly involved and responsible level of governance at the local level. The following part of this chapter develops the interactions taking place within this complex governance context that are aimed at providing an improved manner of stewardship and restoring the Spencer Creek.

7.4 PART TWO: SPECIFIC CONTEXT

7.4.1 LOCAL ACTIONS

The Spencer Creek Stewardship Action Plans are the set of collective actions currently aimed at improving the overall health and sustainability of the Spencer Creek in Hamilton, Canada. They are being led mainly by the actions of the Hamilton Conservation Authority (HCA). The HCA is responsible for the watershed containing the Spencer Creek and is the area's largest environmental agency. Under Regulation 161/06 of the Conservation Authorities Act (Government of Ontario 1990), the HCA is responsible for providing permits for any activities on private or public land that interfere with wetlands or alter shorelines or watercourses. They also have the policy of protecting open space including "floodplains, wetlands, Niagara Escarpment lands, creek valleys, designated federal and provincial environmentally significant areas, groundwater recharge/discharge areas and significant Lake Ontario Properties" (Conservation Ontario 2009). They also consider protection of corridors to be of particular importance to their work. They own, lease and/or manage over 4000 hectares of land for this purpose.

Beginning in the early 1990's a locally oriented small project based approach to altering land management by private and public bodies was desired by the Hamilton and Halton

Conservation Authorities and the Bay Area Restoration Council. Halton is a bordering regional municipality and the Bay Area Restoration Council is a community not-for-profit group that assesses and promotes clean-up projects in Hamilton Harbour and its watershed and is the responsible watch-dog group for the Hamilton Harbour Remedial Action Plan. They together initiated the Hamilton-Halton Watershed Stewardship Program (HHWSP), which has resulted in providing voluntary agreements that cover 2,900 hectares of significant wetland and upland habitat. In addition, there have been countless other organizations providing valuable services to improving the watershed and taking advantage of various funding opportunities to do so.

In order to realize their goals of protecting, enhancing and restoring the environmentally significant natural areas and watercourses in the watersheds the HHWSP would become reliant on a broad range of funding organizations. Its initiating agencies, the Conservation Authorities of Hamilton and Halton remain as the program's main funders. The HHWSP would continue to seek additional funding and support to implement the projects required to address the increasing urbanization, intensive agriculture, nature and recreation activities in the watershed. The Environmental Farm Plan is an example of one program that the HHWSP would seek help from in order to engage the various farmers in the area. This joint federal-provincial program would provide funds to help those farmers who desired to implement stewardship actions on their properties. An additional hindrance that the HHWSP needed to overcome was the historical distrust of government environmental agencies that many farmers had developed. Patience and partnership building was a necessary component of the contacts made in the farming community. The intermittent and instable mechanism of grant applications would further challenge these relationships. Through the years of operation the HHWSP would find the fragmented (though clearly not always contradictory) desires and requirements of these various funders and their associated regime influences to be extremely challenging to meet in their day to day operations given there was no stable base for funding the necessary staff positions. Granting agencies wanted to fund projects, not staff costs, but in most cases the staff were required to fund raise for their own salaries. This is not considered to be the most effective manner of project implementation and provides very little stability. This is a major issue since the HCA staff needed to overcome the trust issues that existed between the landowners and the government/HCA officials. Interviews with project implementers suggested that the disconnect between the time the grant money is available to implement proposed projects and when the landowners are willing to participate has hindered the development of solid working relations.

Funding agencies also generally desired to participate in projects that were clearly linked to an overall planning structure, which was difficult to develop due to the intermittence and uncertainty of the various funding organizations.

7.4.2 THE SPENCER CREEK STEWARDSHIP ACTION PLANS

During the many years of the developments described above a stage arrived in 2005 when the HCA met with community groups about concerns that they had about Chedoke Creek (a sub watershed of the Spencer Creek). As a result of this meeting it was confirmed that there had not been much success in terms of implementing a previous planning attempt for a more organized effort to restore the Spencer Creek made by the Conservation Authority in 1997. They decided that a new approach was needed in order to make real progress. Sub-watershed plans had typically been developed by the Conservation Authority to help deal with the effects of urban development and help identify areas that would be able to best handle it. They recognized that in order to make an adequate and integrated plan they would need to include urban, rural and their combined effects on the watershed. The HHWSP and the HCA consulted with staff and citizens, the City of Hamilton officials and staff, the Bay Area Restoration Council and the Remedial Action Planning Office. The procedure involved a very exhaustive exercise of identifying the various "stresses" present in the watershed and from here they would identify the responsible authorities and/or stakeholders. Following the public outreach phase they would develop a comprehensive and integrated plan that would be used to address the many threats from different sectors, activities and geographical and physical situations present in the watershed. It is important to note here that this was necessary since they felt they would not be able to meet their goals for watershed restoration in the business as usual manner; meeting the various needs of the granting organizations in order to garner the amount of funding needed for project work on a one-by-one basis.

The success of this process was also challenged by the fearful nature with which some groups participated. The approach required that participants openly identified issues on their properties or with regards to their operations. At the beginning, the level of trust was not yet present to fully overcome these concerns. There were also drawbacks due to the sceptical nature of certain stakeholders of the possibilities or value of these works. As such, even though the process brought to light a number of the problems that were present in the relationships between the stakeholders, it was also an avenue that was used to improve these relationships by increasing contact with each other. In the early meetings for example, the City of Hamilton representatives participated in a supportive manner, though they were not able to provide full commitment at the meetings and were limited in their capacity. Often at the meetings, stakeholders would take the opportunity of having City officials present to bring up a number of un-related issues that they felt the City had not handled well. Overcoming this somewhat hostile environment would be a challenge for the HCA.

As a result of these efforts they were able to identify 27 different types of stresses present in the watershed. Some issues are related to land use in the area, some to infrastructure problems and some to external sources of pollution. In connection to each of these stresses, they identified related stewardship actions such as awareness, special study or

restoration opportunities. Most stresses have all three opportunities for stewardship action. The HCA was careful not to include information about issues into the public domain for fear of further alienating the stakeholders that they wanted to work with in remedying the underlying problems.

Addressing stresses in the past manner was an ad hoc and voluntary program with landowners where they often had to fight for grant dollars. The final plan was created so they could look at things with their staff through focusing on targeted landowners to justify getting grants. Through the Stewardship Action Plans, the HCA and the HHWSP have tailored their entire Spencer Creek program to better operate within the fragmented and incoherent funding opportunities available to them. The activity of tailoring their organizational structure to the needs of the granting organizations was seen as a way in which to more successfully participate in the granting programs and that it would also have an organizational benefit of focusing project work to targeted areas. They have thus participated jointly in a number of activities and programs that meet both their desires and those of the partner organizations. Many actions under the plans are aimed at increased education and changing daily practices though there are examples also of land use changes.

The following sections will provide detail into the processes of a number of projects included as part of the Spencer Creek Stewardship Action Plans. These projects are grouped into two categories: larger scale land developments and smaller projects with individual landowners. The first category of projects includes two larger scale projects that are undertaken with the HCA as the main project leader. In these cases however due to their size and impact, a larger number of different stakeholder and agencies are included. The first of the two cases included in this section concerns the removal of a small dam. This particular dam had become important as a recreational and cultural spot for some local inhabitants but was in serious disrepair. The HCA as a result began the process of decommissioning and the case description shows the complex social interaction processes that developed as a result. The second case involves efforts to repurpose a decommissioned gravel pit into a nature and recreation area and collective actions that occurred in order to enable this to occur. The second category of projects identified is related to the HCA working on an individual level with local landowners; in both cases the landowners are farmers. In the case of the Betzner farm a new pasture was provided that removed 100 head of livestock from an environmentally Significant Area in Dundas and restricted their access to the Spencer Creek. The second case is a traditional-turned organic dairy farmer who has completed over 10 different projects with the support of the HCA.

The dam decommissioning case is given significant room for description in order to provide the reader with a background of the involved policies as well as to understand the manner in which the HCA operates in fulfilling the stewardship actions. This first case is also one of the more integrated projects of the Stewardship Action Plans (SAPs) and is

used since it is most similar to the efforts seen in the Regge restoration cases. The following three are dealt with more briefly and serve the purpose of providing additional examples of the types of projects included with the SAPs and also the types of influences seen to be common or dissimilar.

7.5 CASE NARRATIVES: LARGER INFRASTRUCTURE PROJECTS

7.5.1 CROOKS HOLLOW DAM

According to the Ontario Ministry of Natural Resources, the Crooks' Hollow Dam is one of nearly 800 dams located in the province of Ontario. It was built on the Spencer Creek in 1916, near the community of Greensville. It is one of a number of historic dams built to provide power to gristmills, sawmills and paper mills. The Crooks' Hollow Dam initially supplied water to the community of Dundas, though when a municipal water supply was established the dam served no further official purpose. The dam's continued existence did enable a few new uses to become established such as a source of irrigation for the Dundas Valley Golf and Curling Club as well as for recreation including hiking, fishing and limited boating by local citizens. In 2001 the Town of Dundas and the surrounding small communities were amalgamated into the City of Hamilton. It was decided that the ownership of the dam and the surrounding 9.9 hectares of land was to be transferred from municipal hands to the Hamilton Conservation Authority given that the status of the dam was now more recreational than water supply oriented.

Concerns about the integrity of the dam began in 1968 and improvements and repairs were made in the years 1977, 1987-88 and 1994-95. In 1993 a study concluded that the dam would not be able to withstand a major storm event if the dam was operated at its normal operating water level. A Dam Stability and Assessment Study was performed by the HCA in 2005, and confirmed that the dam required rehabilitation, modification or removal based on concerns over its ability to safely endure predicted future storm conditions. Given the large number of dams in the province, the large impact that these constructions have on the natural and social environment and the commitment of the Ministry of Natural Resources to manage these dams safely, there are a number of procedures, funds and regulations present that correspond to these types of actions.

Following the completion of the Dam Stability and Assessment Study, the HCA initiated a Class Environmental Assessment (Class EA) to review the options for the dam. Environmental assessments are required in the province of Ontario for large-scale, complex projects undertaken by municipal and provincial governments or related public organisations that have the potential for significant environmental effects and that require ministry approval. They contain a very strict and elaborated process of consultation and impact assessments related to social, economic and environmental criteria. There is a companion piece of legislation and procedure currently required at the federal level that is

triggered when a federal agency is involved in some way. It is currently being proposed by the federal government that this requirement be removed as part of a number of changes to the federal Environmental Assessment Act. There is great discordance between the public about this matter. Many environmentalists view it as a retraction from the federal government's role in protecting the natural environment, while the government refers to it as redundant legislation given that the provinces have their own legislation to ensure the proper assessments are made.

The EA procedure is quite common though its application and detail depend on the type and size of the proposed development. The review required for the Crooke's Hollow Dam identified a number of alternatives and involved consultation with stakeholders, the neighbouring community and the public. During the process of the EA various studies were done regarding the sediment, the up and downstream effects of dam removal, cultural heritage values and any economic impacts. A public meeting was held in order to communicate the issues at hand to the public and to get feedback regarding the possible options. During this phase it became clear that a group of citizens had attached a large value to the bridge and dam in terms of its cultural and recreational contribution to the area. They were against the removal of the bridge and began a campaign to "Save the Dam". This involved the signing of petitions and placing articles in the local newspaper. As well, a number of citizens used what are known as "Part II Order Requests" through the Environmental Assessment process. The HCA was intending to proceed with a Class Environmental Assessment, which is a more streamlined version of the full Environmental Assessment that can be used when the project is expected to have predictable and manageable environmental effects. A Part II Order request can be filed by anyone who feels that a higher level of assessment should be carried out. This request is intended for use when the requestor feels that there are outstanding and significant environmental issues that the class EA process will not resolve. This request is made directly to the Minister of the Environment who then has a number of options following the review procedure. The Part II Order can be denied, conditions can be imposed, the case can be referred to a mediator or a full individual environmental assessment can be required. In this case the requests were denied, although the Ministry added additional conditional requirements.

As a result when in May 2009, the Minister of the Environment (MOE) finally approved the Class EA, it had the additional condition that a Sediment Management Plan would need to be developed to show how sediment would be managed during and after the dam removal. The MOE then reviewed the Sediment Management Plan prepared by the HCA and indicated in October 2010 that it was satisfactory, acknowledging that further details would be provided during detailed design. Thus, the final EA supported the decision that decommissioning the dam and restoring the creek in the area was the preferred alternative.

The conclusion to remove the dam was mainly to address the safety concerns related to the dam's deteriorated condition, and to eliminate the long-term operating and maintenance costs. Additionally it would enhance the local and downstream environmental conditions and would likely have no net long-term negative impacts for the area's environmental health. The EA also reports on the expected costs of the various alternative designs. The expected $1 million cost of the dam removal was however lower than the alternative of rehabilitation, which had an expected total lifecycle cost of $1.2 million. Thus, not only was the new arrangement safer, it was also the more economically efficient solution for the HCA.

In terms of financial resources, it was agreed that the $1 million removal cost would be equally shared between the Ontario Ministry of Natural Resources (MNR) and the City of Hamilton. Conservation authorities are a subset of the MNR and up until 1995 the majority of their funding came from the MNR (as was also the case for most other CAs). After 1995, the provincial government made a series of significant cutbacks to the point where the survival of the CAs was seriously threatened. In order to survive, most CAs had to develop new business plans to see how they would be able to continue functioning. The result was that CA plans were very much focused on municipal level issues and could thus work to support (and be supported by) local governments. As described earlier, when the Conservation Authority Act was enacted in 1946 it required a majority of support within the watershed when agreeing to develop a Conservation Authority in order for the province to support one. Over the years, the municipal part of the funding for the CAs has also grown because of the significant role that they play in maintaining the health and functioning of the natural system (flooding is a major part of this). The MNR still maintains the responsibility for overseeing the province's dams as recently renewed under the Lakes and Rivers Improvement Act. The MNR's WECI funding program (Water Erosion Control Infrastructure) has a $5 million per year budget to support the various Conservation Authority's efforts to undertake works and studies within their watershed on existing Conservation Authority owned water and erosion control infrastructure such as dams, dykes, and flood/erosion control works. The Crooks Hollow Dam project was successful in acquiring the money that they had applied for, knowing however that the funding rules require that only half of the project costs are to come from the WECI funds and that they must locate the final half of the funds elsewhere. Each year, the request for funds exceeds the availability limit and so project proposals are measured against a set of criteria. The scoring system ranks the projects based on the purpose of the structure, protection to life and property, urgency, risk if repair is not completed, population, and other data. Thus each year, various CAs must compete to receive the limited funding available under this program.

The HCA approached Public Works at the City of Hamilton for the remainder of the necessary funds. Given that the dam was originally owned by the town of Dundas (pre-amalgamation), they were aware of the consequences should the dam become unstable and recognized it as being an important city issue, worth receiving the funding. The City of

Hamilton was thus prepared to pay the remaining 50 per cent of the cost as it recognized the responsibility it had to the protection on the downstream properties and its historical ownership of the dam. It viewed it as infrastructure work that the HCA would take over responsibility for and thus had the obligation to contribute to the costs. Despite these obvious alignments of many different interests towards the deconstruction of the dam, the public was a significant bottleneck in the process of the design and development of the project. The experienced staff at the Ministry of Natural Resources stated in interviews that the biggest hurdle in dam deconstruction projects tends to be from the private landowners who do not want to lose the pond that they have enjoyed as a result of the dams. To address this, normally the CAs supplement their reasons for decommissioning with pictures of what the new area will look like. This is done in order to try to sell the merits of the projects and outline what the costs will be covering.

At the time of interviewing and of the initial rounds of public consultation, the impacts as a result of the detailed design had not yet been fully determined. Impacts were expected to be experienced on the flood plain and flood plain management activities. The HCA staff feels that the provincial oversight puts a strong impetus on protecting people proactively from flooding and erosion risks. The Conservation Authorities have this as one of their main responsibilities (as given in the Conservation Authorities Act), and there are as well flood plain management requirements in the Provincial Policy statement that address the issues in areas where there are historical concerns. Thus, the process undertaken by the responsible bodies attempts to be as proactive as possible while recognizing the rights of current landowners who reside in the affected areas.

Following the public consultation, the HCA realized that indeed the surrounding landowners were not concerned about impacts to their property but rather the general impacts to the area and their access to the water. There would be no impacts to private property as a result of the deconstruction (other than improved downstream water quality, safety). The residents were solely interested in preserving what they thought to be the natural beauty of the area, which they did not want to lose access to.

POLICY INFLUENCE

The Conservation Authorities operate very much on a grass roots based approach, despite their government agency background and connections. The Conservation Authority Act guides their operations and speaks of the need to provide protection on a watershed basis. Thus, each project has to be developed under this perspective. Locally, they have a great deal of knowledge and expertise in terms of the environmental context and are thus capable of providing quite multi-disciplinary teams of in-house experts to handle project development. The resulting projects are often considered from a multi-objective, multifaceted approach. This is also a result of the nature of the projects however and further leads to the extensive set of policies that end up influencing projects from inception to completion. This wide range of legal instruments and tools can each have

different influences at different stages of the project. Understanding to what extent this has actually occurred can begin with looking at what role these numerous policies played in the decision to move forward with the project.

Most visible in its impact is the Environmental Assessment Act, which is to ensure that a stringent process is followed through all stages of the decision making process so that the relevant impacts are identified (environmental, economic, etc). It is intended to be a very technical, objective, analytical approach however it was recognized that emotions do come into play and can have impacts on how the process develops. There is also concern about the options to streamline the EA process in specified cases in order to reduce cumbersome assessments for projects that are quite common and have well recognized impacts. There is a large threat perceived by citizens and environmental protection groups that these options are used simply to by-pass otherwise hefty regulations, penalties and eventual stoppage of projects with unacceptable negative environmental impacts. The EA process is quite complicated and even the experts at the HCA have troubles meeting the detailed requirements and understanding the process that needs to be followed. As a result, it is not surprising that citizens are unaware of how the different concerns are taken into account and thus that much misinformation develops in the public sphere.

Following the EA process and the final decision to move forward, how are the policies experienced as working together? The perception is generally that despite the good intentions of the various policies, they are very difficult to work with in practice. There is little awareness of any actions from the government level to integrate them. One statement heard a number of times was that in Ontario it seemed like there was a different objective coming out every Monday morning. One example of a recent contradiction in the visions of the policies was between the Provincial Policy Statement and the Growth Strategy that suggests the need to increase the number of people living in one area, and the Green Belt Act that rejects development in the same areas. As a result, the local level agencies are expected to provide the integration attempts in a context where it is very difficult to make things fit. As a result of the CAs having had years of experience in working with the different types of acts, and that different people with different agenda's and different concerns are often involved, they have developed skills related to being an integration agency in response to this complex policy context. Specifically what they have done is to try to develop action plans that reduce the possibilities for the actions to be guided away from the original intentions. This is thought to have contributed to reducing conflicts in the case of Crooke's Hollow, though they also recognize that the issues that they have seen have been mostly with a finite number of residents whose envisioning of the area as a place for recreation and enjoyment is endangered.

HCA staff reported that in total about 13 different approvals are required from different agencies that need to approve the dam removal in some way. Their current list was also not considered to be exhaustive since some of the agencies listed act as a clearinghouse for other ones that are involved, ie. the Drainage Act from the federal government is

circumvented by Fisheries and Navigable Waters. Under this regulation, they will eventually be required to contact the coastguard for comment and approval. Dam removals have generally only occurred in the past once they have failed, and so all of the processes start from this point. In this case, the public is involved, the dam is still intact and there is a contamination issue.

Issues are foreseen with the Ministry of Environment (MOE) regulation on sediment contamination that has just recently changed to include lower levels of acceptable heavy metals. The acceptable metals requirement of the sediment management plan that was approved earlier on in the process is now subject to these more strict criteria. Unfortunately for this project, some of the metals are naturally occurring due to the geological conditions. Thus, before they can start the detailed design of the dam the HCA needs to go back and deal with this issue in consultation with the MOE. During the interviewing process, the HCA staff was preparing to address this with the MOE from the perspective that this new regulation will in this case cause perhaps more harm than good. The sediment would likely need to be removed which would be cause for concern in terms of the significant amount of destruction that that would do to the system. It was recognized as yet another situation where the intent of the regulation is good, yet it is not appropriate everywhere based on the local situation/conditions. This regulation is seen to be too "black and white" and they hope to be able to overcome this through discussions with the MOE. The expectation based on previous experience is that these sorts of issues will continue to arise throughout the process.

USE CHANGES AND INTERACTION PROCESS

The pre-demolition state of the dam supports the following uses: some natural habitat, landscape, canoeing, recreation and a minor flood control component which is redundant due to the up-stream Christie Dam. In the summertime however, there are odour issues related to stagnant water. This stagnant water is also a concern because it attracts a lot of non-native wild life such as carp.

Post reconstruction, the area will exhibit more natural system dynamics under the natural channel design principle and restore the previously flooded area. There will still be access from the surrounding area and there will also be some sort of linkage across the creek in the form of a bridge. The concerns that people have regarding use are basically that they believe that the changes won't be as aesthetically pleasing. The way in which this concern has been handled has been to choose to raise the sort of issues that were felt to gain more or stronger public or legal support. For example concerns were raised about the nesting habitat for geese, despite the fact that this has all been addressed through the EA as not a concern. From the HCA perspective the removal of the dam will certainly be better for habitat and better for drinking water. The flood protection capacity will not be impacted in the downstream flood plain and so this use of the dam is not a concern regarding the new changes.

For Crooks Hollow, they do not feel as though they have very clear scientific goals for the completion yet, however it is seen to be well connected to the strategic planning of the HCA and is thus expected meet the stated goals of the HCA in terms of the benefits as well through all of the reporting that has already been done on potential for failure, contaminants, etc.

In order to improve the relationship with the public regarding the dam, the staff felt that they could have further increased public engagement. Some people were upset about having the plans posted on the website as opposed to having them sent directly before. They were also caught off guard by some of the documents that people requested to see, which they had thought were too obscure to be posted for the public. They followed the EA process as specified, and in hindsight they felt that they should have thought to go beyond this. This being said, they don't think that even this would have changed the minds of the people that were against it. It is again important to mention that the process (EA) itself is very complicated. It is difficult for people to understand and hence they can feel like they are being left out of the process and this further reduced the ability for people to listen openly to each other. It was also recognized that the public meetings are not conducive to getting people out to discuss if they don't have a real stake in it, or are really concerned. Now that the EA process is finished, efforts are going to be placed into helping people to accept the outcome and to get involved in the development of the plans for the design of the new area.

No detailed studies were required in terms of the positive economic influence of the work that would be done. If they were, they could have looked at the indirect improvements such as water quality, which affect the overall quality of the Dundas valley which is a huge recreation and tourism draw however they don't really know what the cost/benefit is. The general level of understanding of the cost/benefit of environmental services is seen to be lacking in North America. The $1 million cost for the dam was in this case justified solely from the risk perception and no other cost benefit was needed.

7.5.2 FLETCHER CREEK ECOLOGICAL PRESERVE

The Fletcher Creek Ecological Preserve is a conservation area in the northern part of the HCA's watershed. It is a unique natural area that contains a recreational trail system that has additional interpretive panels to describe the areas special features to visitors. In the late 1970's two members of the Hamilton Naturalists' Club spearheaded a cooperative process between themselves and the HCA to preserve the value of this property through entering it into public ownership. Together they were able to purchase approximately 60 acres (in two separate transactions), which lead to the establishment of the Puslinch Wetlands Conservation Area. This area was viewed as having sufficient value and support and as such the HCA was able to justify acquiring another 300 adjoining acres. After this addition, the nearly 400 acres area became known as Fletcher Creek Ecological Preserve.

Within this property, there was a century old abandoned quarry. The quarry work left a deep pond and during the 1970's and 80's the area was a popular swimming hole and recreation spot. In the last decade the quarry has been significantly changed by HCA into a shallow wetland and the limestone cliffs have been transformed into gravel hillsides that are quickly being re-vegetated by nature. The rehabilitation of the quarry was initiated in 2002 due to concerns about trespassing and its impact on the sensitive wetland habitat and groundwater quality. Safety issues and the disturbance of neighbouring property owners were also concerns. As a result, the HCA has incorporated research from McMaster University and the University of Guelph to support the natural development of the area. To increase the authorized recreational capacity of the area, paths and boardwalks around the old quarry were installed. Over time, it is expected that the ecological improvements at Fletcher Creek will be significant and include the expansion of a fen plant community. This is the most rare form of wetland in Ontario. Additional habitat for rare plants and animals already in the area is also taking place. Plans to introduce a mix of coniferous and deciduous trees to provide necessary shelter for wintering birds and mammals is being accomplished in conjunction with community tree planting days held at the site (McMaster Daily News 2005).

A research team from McMaster University worked with the Ontario Aggregate Resources Corporation to create a 'living lab' that could determine the best ways to rehabilitate this and other aggregate quarries into functioning wetlands. Additional funding was received to implement experimental wetland laboratories to study the "complex, interacting effects of climate and land-use change on ecosystem function, pollutant behaviour, environmental health and societal attitudes toward land use change" (McMaster Daily News 2005).

In addition to their academic interests, the McMaster researchers were glad to be a part of the research since they saw the wetlands could serve "a function to address both water quantity and quality problems that are often a consequence of urbanization and resource extraction… Although wetlands are crucial ecological and energy linkages in the landscape, they have been all but lost in southern Ontario" (McMaster Daily News 2005).Thus, this project has taken over 30 years to develop and has been supported by a number of different interests and resources.

The re-opening and restoration of Fletcher Creek was made possible by sponsors including the Ontario Aggregate Resources Corporation (TOARC), the Ontario Trillium Foundation, Lafarge Canada Inc., McMaster University and Puslinch Township. "TOARC provided the HCA and McMaster with $166,821 in grants to fund phase 2 of the site restoration and fen wetland research. The Ontario Trillium Foundation provided an additional $54,500 for passive recreation and interpretive features such as trails, lookout points and a boardwalk. Puslinch Township partnered with the HCA to apply for this grant and also provided council and administrative support for the project. Lafarge Canada Inc. (a cement company which is involved in the gravel extraction) gave an in-kind grant of $16,594 by supplying the crushed stone and screenings for the service road and newly-

created wetland edge. McMaster University also donated $62,023 in student researcher time in 2004" (McMaster Daily News 2005).

These two projects are of the more integrated Stewardship Action Plan projects. In both cases, the property was owned by the HCA although there was significant interest in the land from external stakeholders. In the first case, the additional interest came due to concerns from the public that the HCA was negatively impacting the dam area and in the second the community became more involved since it saw the actions of the HCA as being valuable and wanted to participate. The next two cases have taken place on private land and the descriptions below show how the actors are encouraged and discouraged by the instruments and policies available in the governance inter-regime.

7.6 AGRICULTURAL LAND USE CHANGES

7.6.1 BETZNER FARM

The HCA staff often travel through different parts of the watershed doing "Water Fall Inventories". Hamilton is Canada's waterfall capital and thus much attention is paid to identifying and communicating the various areas where they exist. When they were visiting the farm owned and operated by Gary Betzner and were looking at a waterfall on his site they noticed that the cattle were freely grazing in a portion of the Dundas Valley Environmentally Significant Area. The cattle had free access to two coldwater tributaries of the Spencer Creek that pass through their woodlot. The banks of both creeks were trampled and eroding. There was no riparian buffer along the southernmost tributary because of the frequent access that the cattle had into the creek. The cattle had grazed the lower branches of the trees and most of the plants on the forest floor. Minimal quantities of native species were regenerating on the forest floor.

The project manager at the time suggested that Gary and his wife seek further contact with the HCA so that they could help them to work to improve this situation. Following some discussions with the HCA, they contacted the representative for the Ontario Soil and Crop Improvement Association who delivered a cost sharing program. The particular program of interest was delivered by the Canada-Ontario Farm Stewardship Program and is associated with the Canada-Ontario Environmental Farm Plan (EFP). Both of these programs are funded through the Growing Forward Best Practices suite of policy and program instruments, which are then supported by Agriculture and Agri-Food Canada (federal) and the Ontario Ministry of Agriculture, Food and Rural Affairs (provincial). The programs support farmers who undertake best management practices and often require the completion of an Environmental Farm Plan.

The Canada-Ontario Environmental Farm Plan (EFP) is a voluntary educational program. It involves a confidential self-assessment that farmers can perform in order to assess their operations from an environmental perspective. Workshops are given in local areas to help

farmers understand the requirements and opportunities related to preparing one. If they are successful (as judged by a peer review process) then they are eligible to receive cost-share program assistance. After the representative met with Gary on their property they went over the various options to relocate the cattle away from the creek and closer to their barn and a water source. The cattle were allowed to graze there because it provided water and a shady area for them to rest. As with most small scale farmers in the area, the Betzners have little time to familiarize themselves with the various program options available to them. Each of them hold jobs outside of their farm business and thus have little additional time and capacity to seek out programs to improve their operations, let alone implement them. The Betzners were willing to participate with the help of the local HCA staff and so they went ahead with the project. They felt that with the support of the HCA they would be able to reduce the impact of their operations, which they felt was instinctively the right thing to do. They thus had up until that time, the latent feeling that it is important to be responsible landowners, they just lacked the capacity to act on it. What was considered interesting was that it was not a site that had been previously identified within the action plans (which was indicative to them that the inventory that they have is clearly not exhaustive). This is an example of where the multi-functional work that the HCA staff is involved in, allowed them to recognize stewardship opportunities even while this was not the task of the waterfall inventory team. The HCA staff is often actively looking for stewardship opportunities while implementing other duties.

As the HCA operates on a watershed, sub-watershed and city scale, they are very open to work on projects like these when the opportunities arise. Through their cooperative work, they were able to jointly access funding which was available through the Canada-Ontario Farm Stewardship Program, Greencover. As a final result of their work in the area, the livestock pasture has been relocated to a fenced in area behind the barn, removing the cattle from the Dundas Valley Environmentally Significant Area and restricting their access to Spring Creek (a direct tributary of the main arm of the Spencer Creek). Forty acres of forest habitat and 11 acres of meadow habitat had been improved as well as 1010 metres of riparian habitat. This project has allowed vegetation to regenerate in the riparian area along both tributaries, thereby preventing further erosion of the creek banks and sedimentation in the creek. Also, by removing the cattle from this area of the property, this project has eliminated the occurrence of nutrient loading into the creek and has contributed to the restoration of the fishing potential in the creek.

7.6.2 THE BRUNSVELD FARM

John and Mary Brunsveld are the farmers involved in a second cattle relocation project that has taken place in the Spencer watershed. They have undertaken 10 different projects with the CA over the last 15 years. He had initially received MOE funding for a project 10 years ago to put a cement pad exercise yard as an addition to his barn. The program used to fund it was the Clean Up Rural Beaches program instituted by the rather socialist

government in power in Ontario at the time. Numerous old cattle barns had been built on streams and so the affected riparian areas were in extremely poor conditions. This was in effect a manure storage program and marked the beginning of the Environmental Farm Plan.

Following this project, the Brunsvelds started becoming more aware of the environmental impacts of their farm. Thus, although the project enabled an improvement in the conditions of their operations they did not feel that that they had yet adequately reduced their impact. This lead to a number of projects taking place that would further reduce the negative impacts of the farming activities and improve the health of the ecosystems and habitat on the property. The farm was converted to organic operations in 2008. Mr Brunsveld is able to undertake innovative improvements to his work through keeping himself up to date with new technologies in the international community. He is thus less influenced than others by what is happening around him. For example he is storing his cattle in the compost area of his barn since it had been shown in other areas that by doing so the quality of life is improved; they are warmer and they have less hoof problems. The HCA is interested in how they can increase the uptake with other farmers and have considered using his operation as a showcase. He is also quite good at talking to his neighbours and encouraging them to go and get the same kind of money he does for different farm improvements (EFP, etc). The HCA recognizes that within the local farming community it is important that information comes through farmers, since it is often better received through their peers.

A few years ago the HCA was forced to give him an official citation because he put a culvert through a Provincially Significant Wetland area and mowed a passage for his cattle so they could access his north pasture (as he needed more space for his cows since he sells organic dairy). The HCA officer first let him know that he was going to be reported but that they would apply for some funding to help get a proper design in place and further correct the issue. The surrounding area is entirely agriculture, yet their farm area is situated at the headwaters of a coldwater stream system and so they enjoy quite high quality water.

As previously discussed there are a number of funding and support programs for farmers which are intended to improve the environmental quality and reduce the negative impacts of their operations. The funding that is available has become much more sought after by farmers in recent times. Mr. Brunsveld and his wife have developed a good relationship with the representative from the Ontario Soil and Crop Improvement Association (OSCIA). OSCIA is a non-profit farm organisation that works directly with farmers to help facilitate their efforts to manage their soil, water, air and crops in a responsible and economically supportive manner. They develop and communicate innovative farm practices and support farmers in making use of available government programs and subsidies. The federal cost share program known as the Canada- Ontario Farm Stewardship Program for example is so in demand that there was a pre-approval process used to facilitate the long process. Applicants would apply in anticipation of the next years funding and when the

government would finally release it, they would be able to officially submit their applications on a first come first serve basis until the money ran out, which was always the case. Despite the popularity amongst a number of farmers for these sorts of actions, there still exists what was referred to as an "inbred fear" of the conservation and environment movement in the culture of many local farming communities. This is the reason for the anonymity of the EFP; if it were not so, the farmers would fear opening themselves up to facing additional regulations.

Mr. and Mrs. Brunsveld both possess postgraduate educations, which is not entirely uncommon for farmers, but still only occurs in a minority of cases. Mr. Brunsveld did not feel that this was the sole or even major difference between him and his less progressive neighbours. He felt that he and his family were heavily impacted due to their close proximity to the Valens Conservation area. They had seen it close down a few times due to environmental impacts and so they felt somewhat responsible to take advantage of programs that worked towards their own general goals and that would also reduce their impact. As was said, the majority of the rest of the farmers in the area are not university educated. There is however an increasing awareness in the agricultural programs taught to those who follow them in the hopes that this information will slowly enter into the agricultural community. The older farmers often exhibit behaviour that is intended to hide their operations from the incoming regulations as much as possible.

The Brunsveld farm was able to go entirely organic as of January 2009. The conversion process requires a 3-year transition program. Although this is a very difficult transition to make economically, they felt that their choices for survival in the farming business were either to go into the niche markets or go larger scale. They had also seen a number of farmers in their community involved in heavy spraying develop a number of severe illnesses (cancer, leukaemia, etc). This in addition to the precautions that needed to be taken by those operating with these chemicals spoke to them about the dangers involved. Mr. Brunsveld stated, "if the majority of the public knew about what was happening with respect to agricultural practices, they would be very surprised". He had the general feeling that if they are such a great danger to your health, then they should obviously only be used when necessary. This line of reasoning along with what he knew to be the trends in modern agriculture, led him to the conclusion that "once you are going to go that far, you might as well go all the way and get a premium for it". In order to make the transition he enlisted the help of an experienced organic farmer to provide him with the best available knowledge about which technologies can be used to achieve his goals. He then entered into an official mentoring program through the cooperative that the milk is sold to. He was introduced to this cooperative through a farmer friend of his who had done the same. He had a general feeling of confidence that he and his family would be able to make the changes work.

Mr. Brunsveld believes that the farm has likely suffered some loss in overall income yet his sense of satisfaction knowing that he, his family, his cows and his product is healthier

seems to be adequate compensation. Additionally, making these changes has also renewed the couple's interest in farming. They had felt quite frustrated with the systematic routine of the more modern farming approach. They have a family history of farming and are the successors of the family farm. They do however consider themselves to be quite business oriented, just with an environmental touch. In Canada there is a milk quota system that only allows them to produce a pre-determined quantity of milk. In the first year their production dropped by approximately one third through the switch to organic. The transition period is a large deterrent to farmers concerned about their yearly financial status and there are additional obstacles to farmers who are later on in years. He noted that the amount of peer pressure in certain areas of the Province is even stronger than in his area.

As a result of their long relationship with the HCA they feel like the staff are reasonable people and they have a great appreciation for the field workers who have shown themselves to be flexible and understanding in their dealings together. The Brunsvelds try to be as progressive as possible and this helps them work well with the HCA who they see as a group of people who can give them ideas about how to further improve their operations.

Due to this and all of the other complexities experienced in the governance inter-regime, the Brunsvelds rely on the CA staff and the people from the other related programs to help them overlap the programs to develop good solutions for them. This is particularly necessary for small farmers since many of them have additional jobs that support the more uncertain farm incomes. They thus have little time left over after taking into account their church life, their kids and the conservation and organic efforts. They have also expanded their operations to do secondary farming on properties owned by people moved there from cities and who don't want to do the farming themselves. This is a good market for them since the owners are also generally against the use of pesticides. Despite his time limitations, Mr. Brunsveld takes on an informal role of communicating with other farmers about the benefits of the Environmental Farm Plan and explains the help that is available from the HCA and Ontario Soil and Crop Association with the hopes of encouraging other in the community to follow suit.

These case descriptions have served to characterize the interaction processes and the governance inter-regime influences that have taken place as part of the Spencer Creek Stewardship Action Plans. There are numerous cases that have not been included in these descriptions that are seen as being mainly similar and in line with those described above. The following part of this chapter will follow the process taken with the analysis of the Regge, however in a much more condensed version. This is done to the level of detail just as is necessary to be able to discuss the transferability of the lessons from the Dutch case to the Hamilton context.

7.7 PART THREE PROCESS SETTING, STRATEGIES, RECEPTIVITY AND INTER-REGIME QUALITIES

As was done in Chapter Six for the Regge Restoration process, the main actor characteristics will be dealt with for the Spencer Creek Stewardship Action plans in a way that highlights how they influenced the actions of the main actors in implementing their programs. Following this, the strategies and receptivity will be discussed and the chapter concludes with an overall classification of the inter-regime.

7.7.1 ACTOR CHARACTERISTICS:

MOTIVATIONS:

The HCA has highly motivated staff that personally aims to achieve improved natural resilience in a broad manner as it relates to sustainable ecosystems. They are not very interested in just implementing programs and policies, but happy to use them to achieve their goals. This can be seen by their active manner of seeking out opportunities to perform stewardship actions in any areas that they can, and searching through all available resources to enable them. The land owners in the two cases were also seen to be highly personally motivated given that participating in the SAP's for private citizens requires significant amounts of effort above and beyond their day to day activities. Thus both farming families had a high level of latent motivation, but had a low self-effectiveness assessment as well as minimal resources prevented them from action without the initial support of the HCA. In both cases, the interactions and successes experienced working alongside the HCA supported their motivation through increased information and resources.

The HCA has as its main motivation in the Crooke's Hollow project to ensure the safety of the public against water induced disasters. The possible damage caused by the breaking of the Crooke's Hollow dam was thus their initial interest in this project. As the project developed they were able to use the project to accomplish additional goals also related to improving the natural resilience of the watershed and improving relations with the local inhabitants. The citizens involved are motivated by their desire to have a nice place of recreation, though some are also interested in preserving the historical value of the dam. The governmental organizations involved (the Municipality and the Ministry of Natural Resources) are mostly concerned with ensuring safety of the citizens from the possible failures to the dam infrastructure, but are also motivated to listen to the desire of the individual citizens (which occurred through their communication with the media and their intervention into the Environmental Assessment process.

In times when the CA is in disagreement with the actions of the municipality, the dispute is handled through the Ontario Municipal Board. Their decision to take this sort of action against the Municipality is often tempered against their need for support from the

municipality. In Hamilton, the Municipal level of government is often the source of funding for a lot of the work that the CAs do and there have been incidents of threats of funding retrenchments. The public support has however shown to be greater for the CA following years of efforts at educating them to understand the choices and impacts that they include in their decisions.

COGNITIONS:

Cognitions play an important role in many of the Stewardship Action Plan (SAP) efforts as well as the general project development. The willingness for local farmers and other landowners to participate in implementing the SAPs alongside the HCA is to a large extent based on the level of trust they have that the HCA staff will be able to support the actions with the necessary funds and that by participating, they will not open themselves up to penalties for actions they are doing which are contra to the goals of the HCA. In the Crooke's Hollow case, the perceptions of the local stakeholders that the removal of the dam would mean less access to the natural environment in that area was based on a lack of trust that the HCA would adequately take their interests into account. This lowered the level of effective communication between the two groups and has significantly added to the time and cost associated with the dam removal.

It is also generally believed that education is a preferred manner with which to influence people's actions, as opposed to more formal forms of persuasion. This is related to the perception of the limited powers of the HCA to be able to (with a reasonable level of effort) succeed in overcoming the strength of the individual rights of the landowners.

Within the HCA's overall vision, the demolition and restoration of the Crook's Hollow Dam is mainly considered to be a water project (at least in terms of how it is portrayed to the public, as this is the forcing factor). In reality it is a multifunctional project and even though it is being led through the water management section, the on staff ecologist will determine how the Spencer Creek will end up in terms of fish, wild life and habitat, biodiversity, flora, fauna. Recognizing that the CAs are special in that they are watershed based, and that they tend to bring in all aspects of the environment, the project leader believed that if the HCA (and perhaps other CAs) was more water focused then they would have a much stronger position since the policies and legislation are considered to be quite weak on the ecological side.

The major problem related to cognitions was a difference of opinion about the best solution for the dam. The local actors who wanted to see the dam rehabilitated, used their power to slow down the process. By providing pictures of the new opportunities that could be included following decommissioning, the HCA tried to show how they align the project to the cognitions of the local stakeholders.

RESOURCES:

The level of resources available to completely implement the identified stewardship actions is simply not available in terms of HCA funding. This was one of the main factors present in encouraging the HCA to move forward with a much more deliberate manner of implementing their programs. Following the development of the Stewardship Action Plans, the HCA was able to target landowners with the support of a more in-depth understanding of the various partners and their available resources. By undergoing this exhaustive work, the main actors became more confident that their resources were being made use of in a more effective way that avoided redundancy and built upon overlaps.

7.7.2 STRATEGIES AND RECEPTIVITY

The above description highlights a number of ways in which the HCA is becoming an organization that is more receptive to its external context. This has become necessary as opportunities present themselves in a complex implementation field where they have limited resources. As such they are increasing the energy spent on developing relationships with various partners and are more aware of the degree to which they share goals and thus are able to address their joint or overlapping priorities. The size of the organization is however still not big enough to address the needs of the watershed and so they need to become even more strategic. This is seen to be necessary at every level of the organization since they are so small. They attempt to communicate with the public in a strategic way that also supports their general educational goals. They expect that the increased education will help them to gain the support that they would not get under the normal (standard EA) process. The next few paragraph deal specifically with strategies observed in the Crook's Hollow project.

In terms of the involvement of the various stakeholders, they felt that it was important to keep the group small at the beginning so that they would be able to effectively make a decision to proceed. Thus, the HCA, the Ministry of Natural Resources and the City of Hamilton were the main players that began the development of the project. Following this, the nearby residents were heavily involved as well as the Royal Botanical Gardens and Trout Unlimited who provided support to the project. NGOs have become a very strong player in the province, sometimes stronger than the agencies.

The engagement process as part of the EA, commenced with the project notification phase which involves announcements in local papers, etc. as well as direct contact with all of the key agencies in the area. Additionally, there was interest from a local kayaking group who were curious to see how their interests could be included. As the project began to develop, the HCA involved a consultant to help determine how and which of the various interests could be included in the final design. The process that they prepared for doing this began with deciding upon some basic principles from which they would conduct this project. One key principle was that of the adaptive environmental management approach. This

recognized that when you are dealing with the natural environment, the general level of uncertainty goes up because it is a dynamic system, subject to a lot of external forces, precipitation, temperature, etc. Having chosen this as one of the basic principles, they then had to develop a design that best addressed this. They also placed a strong importance on the monitoring requirements over time to check that the earlier hypotheses were appropriate (or not) and make changes, as the process would proceed. Concerns were noted about the public's perception of this, recognizing that explaining this to the public enables that this uncertainty can come across to some as incompetence and that there is a fine line in between. Understanding this risk, it was still the intention to move forward with the long-term vision that this is an aptitude that must be developed in the public that they work with.

The precautionary and sustainability principles were also set as being foremost which meant that they would aim to build a resilient natural system given the additional requirements that they still need to deal with growth and climate change in this area. The knowledge and concerns of a varied group of people including engineers, biologists, project mgmt. etc. were all included in the development of their main requirements.

There is a strong connection already in place between a large sector of the public and the HCA. A large number of citizens see the HCA as a neighbour that they can rely on to make the Spencer Creek healthy. They hope that this goodwill will help them win support for this project by the people. The HCA also feels that the development and maintenance of this trust is an investment into future relationships and support for future projects.

At the time of the interviews the HCA was still developing the details of the future engagement process. It is desired that the other NGOs and interested parties will be able to behave as good ambassadors for the project and will complement the process. The HCA is aware of the existing concerns from the various parties and they have promised to address the concerns in the Part II order requests (even the aspects that were turned down by the MOE). Typically, the process involves meetings, mail-outs, building up portions of the website for the project and making themselves available to people who want to come in and talk. They try to show positive examples of projects that have been successful in other areas to develop a sense of excitement about what could be accomplished within the project. Overall, the HCA is committed to involve citizens in a meaningful way while making it clear that the dam will be removed. The various ways in which the area will be developed will be heavily dependent on public input.

The process did take much longer than the HCA had anticipated due to the time consuming nature of public consultation. Every project is different due to the local circumstances and so a great deal of the process must be adjusted to this. In Ontario, there are a large number of governmental agencies whose policies and instruments must be coordinated with. The HCA has a current business plan entitled Leading Conservation Forward – a strategic plan from 2007-2011 – to safeguard all water, natural environment and recreational facilities.

Within the water management section the Crooks Hollow project is quite prominent which is thus very supportive in terms of how the project efforts fit into the overall work of the HCA.

COUPLING GOALS TO OVERCOME DIFFERENCES:

The properties described in this chapter are generally located close to or in the headwaters of the system, and as a result the water quality is in general quite good. The landowners are thus not necessarily personally affected by poor water quality or flooding concerns. Land developments are not generally a problem in that part of the watershed and so flooding and erosion are not seen as a major concern. The major variable that they are trying to impact through these type of water quality and flooding improvement projects are thus not necessarily high priority goals of the actors with which they need to work. The intended benefits of the actions from the perspective of the HCA are downstream in the watershed. It can be seen that the HCA has used programs from a number of different sectors to help reach out to and get participation from the local stakeholders. In the farming cases, the actions taken to improve the water quality also needed to improve the general situation for the cattle and the farmer. In the Fletcher's Creek case, they recognized the opportunity to use the existence of the valuable and endangered fen plant as a study area to increase support and the funding available for protecting the area.

Coupling of goals was also observed to occur with respect to common desires to access different funding programs. This can be seen in different groups and individual landowners participating in the Stewardship Plans because they then had access to more funds. This can be done when the actions are developed in such a way that they meet the criteria of different granting programs (for programs which allow co-funding to be acquired by other federal and provincial programs). This was done in the Crooke's Hollow Dam when the HCA opened up the design process that would decide what the final area plan would be to different area stakeholders. By incorporating the opportunity for different types of recreational opportunities into the plan they were able to ease some people's negative connotations and even active rejections to the project. It was also seen to occur in the Fletcher's Creek Conservation Area when the HCA altered the public use from swimming, to passive and more restricted hiking in order to improve the protection of the sensitive flora and fauna while improving the public's (formally encouraged) access and understanding of the value of the natural area.

The HCA staff was often able to use a number of different funding programs in conjunction in order to implement a single project on the lands of the farmers. An example of this was seen when they coupled funding from the federal Environmental Farm Plan with additional funding from the provincially implemented Green Cover program when working within a provincially identified ESA (Environmentally Significant Area) that was labelled as both a water quality and habitat improvement project.

The relationship between the HCA and the partners seems to be generally quite strong, though previous issues have developed on a more general scale due to the low level of contact coming from the City of Hamilton. High turnover and lack of commitment to HCA issues has been common in the past. Despite this, it was recognized that the staff from the City are trying to improve relationships and partnerships between them.

AVOIDING COMPETITION GAMES:

Prior to the SAPs, the approach of the HCA in protecting and restoring the Spencer was based mainly on improving the relationships between the landowners and HCA so that more landowners would feel comfortable coming to the HCA staff with opportunities to do stewardship on their lands. This was supported by providing education and information opportunities in a non-threatening way. This was successful over the long run, but based on the wide variety of issues still developing and the varying degrees of impact that they had, it was felt that it was not an efficient way to spend resources. The general approach thus changed over time and eventually developed to take the form a strategic assessment of the various stresses seen to be occurring in the watershed followed by an identification of the associated and responsible actors (the SAPs). The actions identified are mostly aimed at education, study, and working with individual landowners to reduce impacts which negatively impact watershed health. The majority of the projects themselves are less complex than those seen in the Regge cases and involve fewer stakeholders. The most common projects involved fencing out of cattle from sensitive areas, removing online ponds and other obstructions, channelization, invasive species, insufficient riparian buffers, etc. Identifying the most prominent stresses and the responsible actors in the strategy was meant to move beyond the fragmented nature of waiting for landowners to contact them and was thus more progressive than before.

In terms of inherent conflicts that are likely to develop amongst the stakeholders working on local water resource management projects and programs, competition for funds and resources was of great importance in the development of the SAPs. The recognition of limited resources available for restoration and protection activities was part of the context that led the CA to initiate a coordinated approach within the watershed. Additionally there is a natural competition between the actions of the residential and industrial development industry, which changes the natural lands in a way that has been detrimental to nature but meets the desire of people to have housing and other developments in these beautiful areas. The efforts that are being spent at reducing this competition can be seen to be taking place mostly at the provincial and municipal level where official plans are made. The local groups then try to use this governmental and legal setting to achieve their own goals.

The HCA went beyond the EA public participation requirements in the Crooks Hollow Dam case because it wanted to minimize the amount of public pushback that may occur if people did not have the right amount of information upon which to base their opinions

and judgement. So even though the actions were taken on HCA land, they used the opportunity to try and build up trust and good will with the public to help them in future interactions (as well as to be able to develop this project in the most positive and beneficial manner possible). The HCA also encouraged the farmers involved in SAP projects to communicate with other farmers about their experiences. They recognize that the messages are taken much more openly when they come from within the community.

The summary of strategic and receptive behaviour provided in this section will be further discussed in the next chapter. A comparative story is provided that relates these actions to the inter-regime qualities present in the implementation processes.

7.7.3 INTER-REGIME QUALITIES

Based on the elaborated description of the various parts of the structural context connected to the Spencer Creek Stewardship Action Plans, the following section provides a preliminary examination of its qualities as a governance inter-regime.

EXTENT

As has been seen in the above cases, there are many different types of policies and programs that have an influence on stream restoration projects based on the local context and the interests of the landowners and other stakeholders. The following is a sample of the relevant policies and programs that have been associated with these projects: Environmental Assessment Act, Provincial Policy Statement, Green Belts Act, Water Erosion Control Infrastructure (WECI) program, Oak Ridges Moraine Act, Provincial Growth Strategy, Lakes and Rivers Improvement Act, Great Lakes Water Quality Agreement, Municipal Drainage Act, Conservation Authorities Act, Sediment Management Act, Canada-Ontario Environmental Farm Plan, Growing Forward Best Practices, Canada-Ontario Farm Stewardship Program (COFSP), Greencover, Environmentally Significant Areas (ESA) legislation, and the Fisheries Act. Thus, the assumption that this inter-regime falls into the category of those with high extent is well founded.

The level of extent of the inter-regime appears at first glance to be very high due to the numerous and extensive levels and scales, actors, problem perceptions and objectives, instruments and policy strategies included within it. Despite this, a number of issues related to the perception of the extent (ie. the scope of issues taken into account, completeness, comprehensiveness) were uncovered in the interviews and workshops of Krantzberg, Manno and De Boer (2007). What is interesting is that most concerns about extent were generally related to the idea that there are so many policies and programs dealing with water that are relatively unclear, that it is too difficult to identify where the actual gaps are in terms of governance of the resource. A real lack of clarity was also stated as hindering the responsibilities and resources for implementation available, which could improve the governance. This is strongly seen at the federal level.

The insufficient scientific information available and limited fact finding efforts (resulting from the reduced presence of the federal government in the general field of water management) reduce the ability to adequately define the issues that are part of the problem and hence the objectives are nearly impossible to describe in a manner where different groups or individuals can me made accountable. One key problem is that the instruments do not adequately require the polluters/beneficiaries to pay and hence do not adequately govern the resource. Further, the resources are not available at the local group level to support the place-based action. This lack of resources and general lack of clarity reduce the ability of the inter-regime to support adaptive water management.

The numerous plans, policies and programs that were seen to influence the Crooks Hollow Dam removal is a good confirmation of the characterization of the inter-regime as having a high extent. It also made clear the problems that can arise from having a very high extent which through high levels of administrative burden can partially reduce the effectiveness of this otherwise important characteristic by de-motivating and otherwise unnecessarily hampering expedient action. Market influences were also seen to have a direct relationship to the ability of the Conservation Authority to implement their policies. On the one hand, the higher value of organic products helped to influence the Brunsvelds to make the transition to organic operations, which was supportive of the SAP actions that they wanted to implement on their lands. On the other hand, farmers generally feel pressure from the traditional market to produce high yields per acre, which makes it more difficult to convince them to implement projects that reduce the amount of arable land on their properties.

COHERENCE

As seen above, there are a large number of government levels, institutions, NGOs and the public involved in the governance inter-regime. This is an extremely important characteristic of this inter-regime. It has developed at the federal level partially due to the understanding that it is a bi-nationally shared resource and thus the more people that are involved, the less likely it is that one of those bodies will take from the resource in an unsustainable way. As was seen in the previous section however, this can have other than the intended results. The following sections highlight how these numerous instruments can work against the sustainable management of the resource through a reduction of the overall coherence of the inter-regime as well as efforts being taken to reduce this.

The Canadian constitutional complexity in terms of water management has resulted in a mismatch of levels and scales when negotiating agreements. Additionally, there are no clear connections across the border regarding alignment of responsibilities for procedures, indicators, and the roles of fed/state/provincial levels. Logistically, there appear to be just too many levels and scales involved for effective negotiations to take place when all the parties who have a stake are involved since the issue itself is considered to be so large. Increasing decision-making at the local level over aspects important to the

success of transboundary water governance has also reduced the faith in proper accountability and clear progress. The strong presence of a silo mentality is considered to even further contribute to the lack of coherence across the levels and scales.

A large number of the actors in the network have similar interests, although this is certainly not the case across the board. A general difficulty in bringing the actors together in consensual network relations is certainly a strain on the coherence of governance. This is seen to take place at the provincial as well as federal level.

The sustainability oriented Great Lakes regime goals are not perceived to be in line with the current conservative economic agenda. The incoherency visible at this wider contextual level reduces the ability of the agencies involved to implement the actions as has been agreed upon. Due to a lack of clarity, different actors use different definitions of the ecosystem approach as is outlined in the Great Lakes Water Quality Agreement and what is included within it. Thus the use of this term in defining the solution to the problem (or that the problem is a lack of ecosystem based management) in such an unclear way certainly adds to the incoherencies witnessed.

US and Canadian policy instruments and strategies differ and thus make joint agreements on measures more difficult (note that this is especially difficult where increased regulative detail is sought as opposed to focusing on a guiding vision, the achievement of results and the use flexibility to accomplish them). In addition, the manner of appointing the IJC is not delivering confidence in its impartiality that it once did. Concerns are strong that the recent politicizing of the IJC appointments has reduced the ability of the IJC to effectively act as an instrument to manage the lakes binationally. There are also constraints to integrating binational decisions into domestic law on both sides of the border.

The effects of these inter-regime incoherencies are strong when looking from the perspective of by whom and how the inter-regime is implemented. As discussed above, the role of the IJC as an impartial bi-national organization is under question. Overlapping jurisdictions, poor institutional funding structure and having the responsible persons for implementation not in line with those able to provide resources for implementation are all part of the characteristics of the inter-regime that highlight the lack of coherency. The incoherencies continue further down the implementation trail. One example is that municipal governments have the responsibility to enact the GLWQA but are not given the resources to do so, and are requested to fit these actions into their agendas.

The additional information from the cases shows that there is an additional incoherency that has developed related to the use of and understanding of the ecosystem approach. From the initial understanding of the inter-regime, it appeared that the swing of the inter-regime towards more ecosystem based actions (or at least the intention to) would have the impact of reducing the intensity with which water goals would be implemented (due to a lack of clarity in responsibility at higher levels). It would seem however that the local actors involved in the Stewardship Action Plans experience that water is still a quite

strong aspect of the inter-regime. It seems like this is the case because the implementation and evaluation of the achievement of water goals is more easily and clearly definable and measurable which makes it more popular in terms of local goal and policy setting.

The watershed-based approach to ecosystem management is quite coherent with the natural system, however when properties do not align themselves with these boundaries some of the institutional incoherencies across organisations were seen to come into play. The differences in policies across the Hamilton and Halton Conservation Authorities were however able to be overcome by the willingness of the staff involved to work together and to provide the landowner with a coordinated project proposal. The process of developing official plans at the local and provincial level is an attempt to increase the ease with which the various policies and legislation are implemented. The internal process taken within the Provincial government to ensure that local plans meet the various ministerial goals and requirements, along with their efforts to provide data to the public in a more geographical and user friendly way are currently the most progressive aspects of the approach taken to improve the coherence of the overall governance inter-regime in Ontario.

One aspect of the inter-regime that was seen to heavily influence the dam removal process was the Environmental Assessment requirements. This legislative requirement is evidence of an important aspect of the inter-regime that forces the local actors to consider the integrated uses of the land. This is seen as a positive influence on the coherence of the inter-regime, however as will be discussed in the next section, it has less positive effects on the quality of flexibility.

FLEXIBILITY

As has been discussed earlier and in many other texts relating to water management, it is a highly complex and dynamic process situation in which success depends on quick and timely adaptive action. The word flexibility was used extensively in the discussions with interviewees who were looking at the inter-regime from a broader water management perspective. It was generally regarded as something that is lacking in the overall inter-regime. In the sections below the degree to which the problems in the inter-regime indeed relate to its degree of flexibility is illustrated.

An inter-regime is more flexible when there is a decentralization of power that is supported by upper levels of government. This is closely related to empowering rather than controlling relations, and thus relies on trust. The high stakes that the two federal governments hold for the control of the shared waters is seen to inhibit the reform of the higher levels of the inter-regime towards supporting solutions that can come from local adaptive actions. Thus, the lack of trust across levels and the desire to hold decision-making power at the upper levels reduces the flexibility of the inter-regime for local stakeholders and thus hinders their ability to act closely in relation to addressing local contextual issues. This is seen to be changing at the provincial level through changes being

made to the Municipal Act. It is specifically mentioned that there is a need for additional flexibility at the more local level to address issues specific to their context. There is also a desire to increase the strength and trust in the relationship between the province and the municipalities.

Flexible inter-regimes can also be characterized in terms of actor relations in the policy network. The combination of giving leeway to each actor group to optimize its contribution to the whole program while still viewing the program as a joint effort qualifies as flexibility. References to the prevalence of silo mentality within the inter-regime are relevant as this generally limits the opportunities to work symbiotically towards a common goal at the expense of sector based/ministerial ambitions. This causes fragmentation of the policies (which was seen to be influential under coherence) and also restricts the leeway stakeholders have in compromising in order to optimize joint results. This results in sub-optimal results in overall governance and implementation when viewed from a Great Lakes perspective.

In terms of general problem perception and goal ambitions, flexibility implies that these are not only integrated into a sort of common denominator (like with coherence), but also that these mixtures are allowed to be different in emphasis according to the opportunities and needs of the context in the various concrete situations. This implies some acceptance of uncertainty and openness to emergent options, which relates to trust.

The strategies and instruments are more flexible when means from different sources (like public policies and private property rights) are available and can be used in creative ways to achieve the desired goals. This aspect is difficult to assess, as there are indeed numerous varieties and types of instruments available as a result of the broad issue areas that are related to water management. There were many occasions within the Stewardship Action Plans where projects used a combination of resources from different policy instruments in order to implement a project.

Lastly the flexibility related to the responsibilities and resources given by the policy program(s) can be measured by the discretion available to pool resources like funds and people with those of others to serve integrated projects and to be held accountable on the basis of the balanced virtues of the achievements (as in an integrated project), rather than on the basis of separate performance criteria. Numerous grants available for stewardship friendly projects require that the proposals involve a collection of groups and resources from different sources as co-funding. The Great Lakes Sustainability Fund for example has a granting structure that is biased towards integrated projects with combined interests. Additionally, the lack of concrete goals at the inter-regime level reduces the stress put onto individual organizations to meet particular, independent and clearly defined goals.

Generally it can be said that flexibility is generally discouraged from the top level due to a strong history of using command and control methods to ensure that the implementing agencies are accountable to the interests of the government. This is as well the case from

the lower levels due to a lack of trust in the overall inter-regime. Increased flexibility can support a more coherent and well-functioning overall inter-regime under conditions where it is aided by the presence of trust and alignment of cognitions and motivations between the various levels of policy and implementation.

There are certain characteristics of the Environmental Assessment process that can provide flexibility (ie. different classes of projects which require different levels of evaluation), though overall the process is quite heavily prescribed and reduces overall flexibility once the process has begun.

The influence of the sediment management requirements in the Crook's Hollow case bring to light how integrated the various characteristics of the inter-regime can be when looking at implementation of policy goals at the local level. The fact that the legislation was not flexible to exclude naturally occurring metals from preventing restoration works shows how policies meant to reduce the negative impacts of development can also hinder actions being taken by processes outside of the intended arena.

INTENSITY

The scale as well as the dynamic and change-oriented nature of the water management inter-regime requires energy to move forward and overcome current obstacles. With respect to the intensity actually present in the inter-regime there are a number of concerns. Political will to act in the bi-national interest is seen as very weak against the lobbying interests of specific interest groups and sectors related mostly to industrial and economic desires. The various institutions and instruments that are in place to prevent this are seen as not adequate to meet the sustainability goals of the inter-regime.

A conscious lack of effort is spent using science to develop policy based on strong influence of politics. Concern is however perceived to be greater from the Canadian side regarding being participative and a good partner and this is seen to reduce their desire to press contentious issues. The general strength and influence of international law is important in underpinning some of the perceived lack of intensity of the inter-regime. There is certainly no consensus with respect to the "binding" nature of the Great Lakes Water Quality Agreement as the political will of the day is seen to be what gives the various instruments real importance and chances for successful implementation. The funding connection between the IJC and the federal governments alters the ability of the IJC to be impartial and hence force difficult decisions in the direction where they are more politically safe. The responsibility for enforcement of the GLWQA is unclear and so the lack of desire at the federal level to enforce environmental obligations and provide the necessary resources for implementation (partially as a result of incoherent problem definitions and objectives) causes this to significantly reduce the intensity of the inter-regime in protecting the lakes.

Furthermore, the alterations made to the IJC as a result of the 1987 Protocol removed its resources that enabled the coordination function and data collection opportunities for reporting on progress. It was the belief of a number of experts that this was done in order to reduce the accountability of the two governments to meeting the goals of the GLWQA (this has not been verified but was seen to be regularly referred to). The responsibilities for reporting and data collection were transferred to an internal government group, which is by definition less likely to be openly accountable since the government is now responsible for reporting on itself, as opposed to an outside organization

Overall, the intensity of the inter-regime towards achieving a common goal is scattered. Certain elements are quite strong and other increasingly weak. This is propagated by the rather high intensity of other regimes (such as economic development) which influence policy makers to put efforts elsewhere and the lack of appropriate instruments by which to determine progress and thus support at the local/grass roots level communities. Given the dwindling capacity that has taken place in the grass roots community over the past decades, these reductions in intensity at the inter-regime level are even more dangerous to the sustainability of the lakes. Botts and Muldoon (2005) expressed that as of 2005 there was great concern that the governments of the Great Lakes are not sufficiently mobilized for coherent action and that there needs to be a revitalization of the binational sense of community amongst these neighbours for the future good of the Great Lakes. One example that is cited of the breakdown and distrust in the current decision and policy making structure is the withdrawal of the US Environmental Protection Agency and Environment Canada from the institutional arrangements managed by the IJC in the 1990's.

The measurement of the impacts is a difficult task due to a number of reasons. The HCA and other groups do have monitoring stations in the area but they don't have enough historical data to do a meaningful trend analysis that could adequately attribute improvements to their more recent projects. There have actually been dozens of projects in the watershed due to the Farm Stewardship projects run by the EFP, but the HCA is unaware of them since they are anonymous. This makes it even more difficult for the HCA to attribute improvements seen in for example water quality due to the implementation of their projects. On the other hand, their limited access to private properties reduces their ability to adequately identify and address certain issues. For example, there is one area where they know they have a problem (an area the size of about 2 concessions) where the water is good going in but the water going out is degraded. They try to use that as method for targeting landowners where possible but it is difficult and time consuming. Developing project opportunities that couple different interests to address a specific issue becomes a very challenging task when little information is available related to the actual water quality and use status of particular areas in the watershed.

There is also a strong mechanism related to the Environmental Assessment process (Part II order requests) that enable the private stakeholders to influence the process in cases

where they feel certain interests have been left out. The intensity is somewhat weakened by the confusing and complex nature of this mechanism, and thus the value of the intensity provided to the inter-regime by this instrument is reduced.

The governance inter-regime related to the stream restorations has many intense elements but most can be seen to be decreasing in their influence. This is the case for those that once supported adaptive management of the resource as well as those that were aimed at achieving accountability for the achievement of specific goals.

7.7.4 CHARACTERISING THE INTER-REGIME

As highlighted in this chapter, numerous agreements, protocols, and action plans have been developed over the last few years to try and compensate for the lack of an effective governance structure. Where the political infrastructure is lacking, citizens groups and local governments have taken it upon themselves to protect their particular interests in their lakes and waters. All of the work and interest in the preservation of the shared waters have not provided an adequate transboundary water management system that is inclusive, coherent, flexible and supportive. The continual addition of new actors, policies and programs without clear management and evaluation has eroded the possible gains in effectiveness and results and resulted in superfluous complexity.

The incremental policy formation which has been followed by the two governments has developed from the decision making structure which was initiated when the number of stressors were understood to be limited, and is no longer appropriate for today's myriad of pressures on the system. It is a classic example of what is described in the regime theory mentioned of relatively simple regimes that experience several layers of add-on policies and programs without considering the resulting fragmentation. Given the complexity of threats challenging the integrity of the Great Lakes basin ecosystem, the approach to Great Lake management is inadequate to create coherent governance. The institutions involved in the governance inter-regime need to be able to support improved coherence and enable the right amount of flexibility to be used. The right level of flexibility is important to enable a strong governance presence while allowing local actors to provide innovative solutions to pressing issues.

Based on the above characterization, there is only a medium level of coherence of the inter-regime. This is seen as sufficiently low to be able to make the impact of the positive aspects of intensity and flexibility less attuned to sustainable development. There are indicators shown that good intentions at improving the flexibility to local groups and to address emerging issues, to act on an ecosystem based and hence more holistic basis are being put forward. Despite this, they are not really providing the setting for sustainable development due to the recognized incoherency and lack of clarity of the policy goals. These negative attributes at the high levels are somewhat minimised due to the Official Plan processes of the provincial government in the area of official plans as well as the

overarching responsibilities assigned to the Conservation Authorities. Thus the inter-regime is characterized as most closely relating to a Type 7 inter-regime (coherent, inflexible and weak). As was hypothesized, this is an extremely inefficient combination for the local level actors, yet is the easiest manner for upper levels to appear to be in control and that there is high accountability to the public to a specific set of policy goals.

7.8 CONCLUSIONS

When reflecting on the results of this analysis, it is important to be reminded of the interconnected nature of the inter-regime qualities and that they are all relative to the specific context in which they are being applied. There is no normative benchmark against which they can always be measured and thus any evaluation of the role played by the inter-regime qualities should be contextually oriented. A more thorough analysis of how this arrangement of inter-regimes qualities is experienced in the SAPs is provided in the next chapter alongside the Regge in order to provide this necessarily relative perspective.

The case descriptions provided in this chapter provided a number of examples of the strategies and capacity for receptivity. The next chapter also compares the responses of the two implementation organisations, the Hamilton Conservation Authority and the Water Board of Regge and Dinkel in terms of how they have responded to their respective inter-regimes in attempting to develop and implement policies and programs aimed at stream restoration.

CHAPTER EIGHT: CONTEXTUAL WATER MANAGEMENT IS A BALANCING ACT

8.1 PREAMBLE

This concluding chapter provides discussions on the four research questions posed in Chapter One. Given the importance placed on the context of the setting in the theoretical framework, each question is answered for both countries and includes comments and observations related to the comparability of the individual results. Thus, even though the majority of the research efforts took place developing the Regge case study, the Spencer case is brought into the final discussion to improve the precision with which the results can be expressed. Chapter Eight serves both a comparative and conclusion function within the thesis. Thus, the comparative ambitions included through the posing of the fourth question are to a great deal answered within the contents of the first three sections. The section reserved to answer the fourth and final question will be used to highlight some specific issues related to the comparison from the perspective of the lead organisations.

8.2 INTRODUCTION

Complexity arises when projects incorporate multifunctionality in order to take advantage of useful opportunities and avoid the hurdles that accompany different scales and sectors. The projects studied in this thesis are both multifunctional and multi-level by nature. Classic decentralization concepts (including the European 'subsidiarity' and the American 'new federalism') focus on finding the "right" level of regime to address the issue. The lowest level that can be used for solving problems is preferred for reasons of legitimacy. The concept of multi-level governance is incorporated into this thesis since it acknowledges that all levels and scales influence a certain situation simultaneously (though not necessarily to the same extent) and that all levels influence each other (Bressers and Rosenbaum 2003). Upper governance scales can in this way have direct impacts on local governance regimes (Andersson and Ostrom 2008). Although both projects studied are local by nature, the abundant relations that develop between upper levels (including the EU, Canadian federal and world climate change arrangements) and lower levels (kitchen table conversations with individual citizens) are at centre stage.

Inevitably projects of the size and ambition seen in this thesis are "complex", but moreover they are also dynamic. The period through which they are implemented is sufficiently long to allow ample room for actors to adjust and alter their actions. It is also long enough to allow for continuous modification of the context of the external influences. As such, analysis of the processes needs to reckon with the fact that not only the process, but also its contexts evolve and are made to evolve. Given that the processes operate in complex and dynamic, and thus unpredictable and uncertain environments, programmed

implementation is a recipe for failure. Following an adaptive implementation approach requires integrating many different existing and desired uses, multiple actors' consent, sectoral policy schemes, funding rules, time frames and scale issues. Members of project teams need to be skilled "boundary spanners" (Williams 2002) who are able to see, use and sometimes create "windows of opportunity" to progress and meet project goals. The narratives of the (inter)actions are highly informative on what strategies have been used to achieve good results under various contexts. For that reason, the characteristics of the actors in these implementation processes are a vital part of the study. This includes how the actors are influenced by on the one hand inter-regime qualities and on the other hand the strategies they or other actors in the process apply to make the most of these contexts. This final chapter thus looks back through the descriptions and analysis provided in the preceding chapters and provides final answers to the four main research questions of this thesis.

8.3 QUESTION ONE: PROGRAM CHALLENGES

What specific challenges are faced in the implementation processes of the selected river restoration programs? What actions and strategies were carried out that enabled realisation and surmounting of these challenges?

Water is a natural resource whose nature brings to light the limitations of sectoral policy programs. It crosses manmade boundaries and influences social, environmental and economic interests. Adaptive management enables a more adequate manner of aligning the needs of this resource with the actions taken to protect and manage it in a sustainable way. The two projects studied in this thesis include numerous actors, the acquisition of various types of funding resources and strategies. These characteristics support the alignment of different cognitions, motivations and resources present within the actor constellation. They also justify classifying the implementation contexts faced by both cases as being "complex and dynamic". The thick case descriptions included in Chapters Four, Five and Seven highlight examples of these actions and the associated challenges.

Similarly, the concept of Contextual Water Management (Kuks 2005) starts by acknowledging that water is not a sector that can be set apart from others and dealt with in isolation. As much as water influences many aspects of human society and natural life, they also influence it in return. Good water management is therefore necessarily integrated water management. The various uses and users, their needs, as well as the impact of their actions all need to be taken into account. This implies that water management cannot operate in isolation from other relevant policy fields. Water management needs to take the developments in other policies into account and the other way around. When this interaction between water management, human activities and policies is not well guided, it will likely result in a continuous struggle in the implementation of water policies. Often, implementation projects that require scarce

resources such as space and funding will come to a halt when the mutual dependency between the various policies and activities at stake is not recognized and incorporated.

The research reported on in this thesis supports the claim that it is indeed possible for local implementation organisations to recognise and incorporate the existing mutual dependencies between various stakeholders to the benefit of the involved interests. While the natural characteristics of the water system impose a specific context which its management needs to reckon with, there is room to balance the "optimum" solutions across the purely water management goals as well as the other interests that are involved in the projects. The social context is no less important than the natural context of the water system's characteristics. It is a source of demand for water-related goods and services and is as well a source of burden to the waters, as is acknowledged in many integrated water management concepts. It is important to fully understand the social context to inform the problem-solving side of the system. Management is not only a concern for managers, it is a complex multi-actor process. Interacting with the social context in the implementation of water policy is inevitable. As a result, contextual variation of solutions is normal while attempting to fix the approach in advance of the interaction process (programmed implementation) only restricts options for finding solutions.

MULTI-PURPOSE RIVER RESTORATION: EXCEPTION OR THE RULE?

How generalizable are the cases of water management projects included in this thesis? How common are such complex and dynamic interaction processes? The level of energy put into and skills employed in coupling goals to overcome differences was seen to be higher in the Regge case than in the Spencer. In order to understand the opportunities for generalizability, firstly the degree to which the multi-purpose character of these projects is common in the Netherlands needs to be addressed. The extent to which multi-functionality of water management projects is an exception to the rule is examined in a related study by Bressers, Coenen and Van Tilburg (2009). The results were based on surveys sent to the elected councils and board members of the 26 Water Boards in the Netherlands as well as Water Board civil servants that were working either in projects or in relevant policymaking fields.

The data was further elaborated in De Boer and Bressers (2011), and shows the relevance for inclusion of a number of various policy fields. The results show a remarkable array of sector issues that were deemed as relevant to be included in what can also be viewed as water management projects. A majority of respondents from both groups deemed twelve of twenty-five different listed sectors to be highly or at least mostly relevant for inclusion in water projects. The general idea of combining goals from various policies with water management projects is thus frequently supported. Vast majorities of both political governors and officials see several sectors as apt for this. For these actors, water projects are certainly not just about water. Spatial planning is regarded as being more relevant

than coupling of the projects with water goals other than those initially expressed. Several sectors that are important for agriculture, like integrated area programmes, land reconstruction and to a somewhat lesser extent rural development were also considered to be highly relevant.

The increasing importance of nature development for the work of the Water Boards is not only demonstrated via the nature aspects that are already incorporated into integrated area programmes and land reconstruction. The survey reported that high scores were as well given for nature development, nature protection and environmental protection. Rural development, as well as recreation, tourism and economic development are goals that address the economic vitality of the area. They were as well deemed to be mostly relevant for inclusion in water projects. It is furthermore quite striking that somewhat less obvious sectors like cultural history, (sports) fishery and environmental education are also seen as relevant. Only in the cases of questions related to minority integration policy and crime safety did a majority believe that there was simply "no" relevance for water projects.

A high degree of openness towards the inclusion of other sectors into water management projects and including water management goals into projects that are initially driven by other goals was shown to occur through the survey results. It is also stated in De Boer and Bressers (2011), that this coupling of multiple policies into single projects is actually experienced in practice in the Netherlands. The results of the survey data show that the respondents have already had quite broad experiences with these inter-sectoral couplings. Not only did the respondents regard the coupling of other policy sectors to water projects as relevant, it was also seen to widely take place in practice.

Generally, it was shown that there is a strong correlation between the degree to which a sector is seen as relevant for inclusion and the degree to which this has been experienced. The causality can occur in both ways in this relationship: 1) what one has experienced as being successfully included will be regarded as more relevant and the other way around, and 2) what one sees as relevant will be more accepted to become realized. The general openness towards the inclusion of other goals and the general level of experience of the Water Board administrators was also exhibited.

All things considered, their analysis showed that complex water management projects like the Regge River restoration studied in this thesis are by no means exceptions, at least not in the Netherlands. Following the interests of this thesis, it is also important to determine if this is also true for other areas where high density or spatial pressures are seen. While Canada in general cannot be characterised as highly dense, there are certainly conditions exhibited in the local context of Hamilton that are similar to those of the Twente region in terms of population and surface area.

Deliberately coupling goals to overcome differences was observed more often in the Regge River case than in the Spencer Creek case. This can perhaps be attributed to the more corporatist governance structure that is characteristic of the Netherlands. The inclusion of

different interests is understood as inevitable and part of normal societal processes, and as such efforts to overcome the expected conflicts that will develop throughout the consensus oriented debate are well established based on experience (Arentsen, Bressers and O'Toole 2000). If the Netherlands governance framework is considered to be on the corporatist end of the corporatism-pluralism continuum, then Canada would place more closely to the pluralist extreme (alongside the US) (Siaroff 1999). The lack of such co-coordinated and co-operative management experienced at the federal and provincial levels may suggest that fewer interests are sought from the beginning of implementation processes in general in Canada. This being said, it is however reasonable to suggest that stream restorations are generally somewhat multi-purpose given the broad range of goals which are part of the Conservation Authority mandate. Thus, the question in the Canadian case is not related to how water projects are multi-goal oriented since the projects are not undertaken by organisations that are tasked solely with water management. Instead they are water management projects being taken on by multi-purpose organisations. From this perspective the Hamilton Conservation Authority is certainly seen as the rule, given all Conservation Authorities in the province of Ontario have similar mandates. This question is further handled by showing that the specific challenges faced (outside of those common to general implementation issues) are connected to the special needs of water management – the importance of context and the need for adaptiveness. These challenges are discussed in the next section from the perspective of contextual water management, which also describe the way in which the actors handled these specific challenges.

8.3.1 CONTEXTUAL WATER MANAGEMENT AND CONTEXTUAL INTERACTION THEORY

The approach of Contextual Water Management (Kuks 2005) is rooted in the observation that until the 1980's water management was mostly sectoral by nature and integration of water management was mostly integration of functions and measures in the water system. This Integrated Water Management (IWM) approach could be more appropriately labelled internal integration. In the following two decennia (the 80s and 90s) a development took place in many European countries towards having a more open view on the relations of the water body with other aspects of natural and human uses, for instance its role in the support of natural ecosystems in the river basin area and its role for recreation and tourism (Bressers and Kuks 2008: 175). This Integrated Water Resource Management (IWRM) approach is itself a form of external integration with issues other than just water. The real implication of the widened scope however is not taken therein. This implication is namely that this kind of externally integrated water management cannot remain one-sided: a kind of optimization process in which the water manager simply considers additional issues before deciding what the best "policy and management response" would be. From 2000 onwards however, the period of the Regge renaturalization process, water managers have started to realize that the logic of the integration implies that the

incorporation of water goals into the various policies that affect or are affected by the water system of all partners involved is essential.

According to Kuks (2005) water is part of the environment, as well as the social context and as such many other interests in addition to water should be taken into account. When water managers do not reckon with them, then the achievement of water goals becomes unfeasible. Water management requires the involvement of other stakeholders. All of these various stakeholders have their own values attached to water, including socio-economic, aesthetic, cultural, and ethical values that need to be brought into the scope of the activities. Therefore water goals should be developed in interaction with partners in the environment and society at large, not just by the water managing organization. The balance between the values and interests of these partners and the urges of the water system should be continuously sought, in a permanent cooperative interaction, aiming at synergies. As a consequence the water goals cannot be implemented in a similar way across the board. Different contexts urge differentiation and thus, within practical limits, there should be space for variation. This makes the outcomes on paper less "certain" from the onset and supports the claim that an "optimal" water system will never be attained this way. In fact contextual water management is the best, maybe even the only, way to realize as much of each and as many of the water goals as possible.

This turns water management from a modelling, decision making and management process into a multi-actor interactive policy process. Despite the undeniable value of well-informed measurement and water system model calculations, it is essentially a "social interaction process" in which taking the different contexts into account is crucial for implementation. When judging a project proposal Water Board administrators regard the knowledge of other involved actors, practical experience, water system knowledge, and experiential knowledge of the local circumstances as most important, and only by a large margin thereafter technical, natural science and procedural knowledge (Bressers, Coenen and Van Tilburg 2009). This makes the use of Contextual Interaction Theory appropriate for organizing and describing the main guidelines of Contextual Water Management. The actions of the Hamilton Conservation Authority and the Water Board of Regge and Dinkel that were employed in order to address the challenges they faced are described below.

8.3.2 RESULTS AND CONTEXTS: OPTIMIZING A JOINT SET OF VALUES

When considering a longer time perspective the prospective and later partially realized project results shape the cognitions and motivations of the actors in the process. They become an important part of the context. Past experiences (including both positive and negative achievements) inform the actors about the level of support that can be expected to come from the previously influential governance inter-regime elements. These experiences also influence future choices about which actors will be approached for inclusion in the later stages of the implementation process.

In the Regge River restoration process the project managers were open to including numerous interests and actors into the project in cases where they felt some promising synergy with water and nature goals could be expected. Their acknowledgment of the heavy inter-dependency of various stakeholders supported making the project into a joint effort that was aimed at realizing important benefits for all of the actors involved. To optimize the synergy and minimise impacts due to conflicting interests, the core interests of the project were first developed by the Water Board, the National Agency for Rural Areas and the Province of Overijssel and agreed upon within the Regge Vision document. While it did not impose narrow boundary judgments upon the Water Board and other partners, it was clear from the onset that a more natural Regge River and river plain were at the core of their chosen perspective. Combining an inspirational guiding vision with the space for very adaptive implementation was shown to provide the best conditions for making optimal use of scarce space and funds. This is in many ways similar in intention to the Stewardship Action Planning process. There was recognition from the start that it was important that the involved stakeholders recognised the overlapping goals. While they did not go as far as the Water Board in eliciting the participation of "out of the ordinary" stakeholders, they did try to frame the issues in ways that enabled more coordinated, goal oriented work from a more jointly held perspective than had been done before. Additionally both groups made use of annotated maps and sketches at different points within the process in order to bring people's visions into alignment over joint goals, issues or values of the different types of projects. Finally both the Conservation Authority and the Water Board engaged in forms of active compromise in order to develop the sense of trust between themselves and other actors that they were indeed partners with similar goals and not adversaries that would take advantage of each other in order to achieve their internal goals. In the Regge, this type of approach is understood as working towards win-win situations.

Generally it is important not to dismiss the essential water goals in the beginning of the process, yet on the other hand acknowledging that refusal to compromise probably won't provide the desired results. The idea of "giving in" is generally not considered to involve the core goals, but instead the side-goals. Even those however should not be given up too easily, since a better chance to realize them may not occur again. Sometimes waiting for a better chance in the future is indeed a wise thing to do, as was observed in this study. In this case, keeping it on the agenda and not forgetting about it in later projects or discussions is essential.

8.3.3 PROCESSES: INTERACTING PROCESS PHASES AND MANAGEABLE SCALES OF OPERATION

Planning, design, realization and maintenance are the phase sequences associated with traditional project planning and implementation. In a complex and dynamic context where adaptive management is being used as the guiding approach, adhering strictly to these

phases reduces the number of opportunities that are available to circumvent hurdles inherent within the implementation process. Geldof (2004) speaks about "cold welds" that are inherently fragile and thus promotes the blurring of boundaries between project phases by involving actors that normally would enter the scene in the later phases and calls this "interactive implementation".

The additional complexity that this produces must be managed somehow. In the Regge projects it involved not trying to implement the whole project everywhere and at once, but instead breaking it down into a multiplicity of smaller (sometimes very small) sub-projects. These sub-projects could then be dealt with both in parallel and in sequence. In this way the actual work is captured in units with a manageable scale of space and time. The arenas, actors and resources remain reasonably simple per sub-project, even though inputs from all of the different sides are included. It enables learning while doing, which was encountered several times as part of the Regge River restoration process. It enables the promotional use of intermediate areas which serve as good examples of successful projects in order to convince landowners and citizens in other places that it is worthwhile to participate and cooperate. In the Spencer, the step of bringing the actors into the planning process was the approach taken in order to reduce the unforeseen hurdles in the realization portion of the process. By jointly developing the various actions that would be considered part of the process, this limited the uncertainty associated with such a large scale planning process. Partners were more committed to achieving the joint goals since they were involved in the initial phases of development where they could also influence the process in ways that would reduce conflicts with other internal interests.

Contextual Water Management promotes separating large projects into smaller pieces and working forward in a piecemeal fashion as being inevitable and helpful. Ensuring that the scale and complexity of the process remains manageable is also an issue when weighing the luring prospects of coupling extra sector goals into one project (inclusive of the associated resources, actors and rules) or being restrictive due to the human and financial capacity of the organization. While the total project load of the Water Board (as measured in yearly investments) has always served as a measurement for project management load, has grown at a slow pace, the complexity of the projects has increased much more significantly. As a consequence the issue of capacity needs regular consideration. This is comparable to the changes being seen at the Conservation Authority, as they work on increasingly integrated projects that lead them further out of their comfort zone. There is an awareness from the Conservation Authority staff that they need to be careful not to step too far from what is considered their jurisdiction so as not to endanger their relationship with organisations who may feel that they are over-stepping their bounds and intruding onto someone else's territory. Moving beyond these boundaries can be accomplished by the creation of a closer more trusting relationship with actors from the other organisations through continuous and productive interactions.

8.3.4 ADAPTIVE AND OPEN INTERATIONS FOR ALIGNING MOTIVATIONS, COGNITIONS AND RESOURCES

In the implementation process most of the efforts are aimed at seeking alignment of the cognitions, motivations and resources of the actors involved with the goals of the projects and vice versa. As the typical situation is not one of overwhelming power on the side of one of the participants, the interactions in the process should be strongly considered when arranging a supportive setting of actors and their characteristics. It is important to combine clear playing ground limitations for each actor with the openness to include options for synergy and creativity to find or create such options. This requires a generally open, participative, and in any case communicative approach that is inclusive towards the social environment of other actors and that supports learning from each other. It is of crucial importance to become aware of the characteristics of the other actors and to monitor whether anywhere or at some point in time productive settings of motivations, cognitions and resources of actors arise (Bressers 2004). It is equally important to show not only openness, but also reliability and determination during the entire process (Bressers and Lulofs 2010: 200-203). The Regge River restoration projects that were described in this thesis show many examples of this combination of openness and determination, not only from the side of the Water Board, but also regularly from the side of the municipalities involved. In the Spencer, early communication was taken in the form of unsolicited door-to-door campaigns when the Hamilton-Halton Watershed Stewardship Program staff would communicate what types of activities the Conservation Authority could work together with them on. The drawback of this approach was the low level of inherent trust shared between the landowners (particularly farmers) and environment related institutions. The fear of penalty and regulations was stronger than most desires to improve the quality of nature on their properties. Thus, the change in approach to one of increased education and more outreach was intended to increase the overall level of trust and help bring the people to them. The Conservation Authorities waterfall program for example allowed them to make a positive contact with a landowner which later led to stewardship actions on their property. In both the Spencer and Regge programs, open public meetings were had on a number of occasions in order to address a wider group. These types of events are important to avoid instances where actors would feel left out if they were not specifically targeted based on previous information held by the project teams.

The choice of whether to consult with actors on a one-to-one basis or in network meetings is based on the local context, though often both forms of communication are valuable. There is also a balance needed between responding to the actual developments in the case situation and continuing to move forward in the interests of the long-term perspective. Even though the risk of becoming overly occupied with short-term chances is recognized, these two perspectives are not mutually exclusive. When the long-term vision is kept

firmly in mind, taking opportunities wherever they occur is a core part of adaptive management as seen in both restoration processes.

8.3.5 DYNAMIC STRATEGIES: BALANCING BETWEEN FIXING OPTIONS AND KEEPING THEM OPEN

Multi-goal implementation processes are complex by nature and time consuming, regardless of how they are managed. In a democratic society where funds and space are scarce it is beyond the capacity of any regional government to realize them overnight. Under these circumstances, the time dimension can be turned into an ally. This does not only hold for the direct learning process of the actors involved. Numerous aspects of the specific case context, such as the actor constellation and the institutional arena can be modified through the application of careful strategies (and are actually bound to change as an emergent result of the complexity of relevant actions in the absence of such deliberate strategies). In this research a number of external strategies were identified which were used to make the most of existing situations as well as aimed at improving the setting at a later point in time. The sequential nature of the line-up of sub-projects also creates ample space for improving network relations in the actor constellation as well as trust building. Clever actors can acknowledge this option beforehand and invest pro-actively in building such relationships, as was seen to take place by the Water Board as part of the land reconstruction projects. This aspect was less intensely seen to be part of the approach followed by the Conservation Authority. An important factor in this is the lack of stability afforded the project staff based on the granting system that underlies the majority of their work. Without a stable arrangement of resources at their disposal, entering into longer-term, voluntary projects is an approach with too high a level of uncertainty. Thus, the cognitions and resources of the Conservation Authority staff affect their motivation to develop projects that allow for too much uncertainty and require them to have more clearly defined deliverables from the beginning stages of the particular project.

When the necessary time and resource stability are available, learning while doing can also make use of the frames of reference of the actors involved. Departing from a purely functional approach to water management requires very different skills and attitudes from the people in the various organisations. In the Regge case, the Province was at first quite reluctant to become any more deeply involved past their role as a promoter of the ecological network. They provided support for this and only later realized that they were forgoing a guiding role in what essentially had become an integrated area development process. When they re-defined their frame of reference in such a way, they came to hold the cognition that this was indeed also part of their responsibility.

Many implementation processes are bound to fail, get stuck at some stage or only proceed after substantial alterations of the initial plans have been made along the way towards completion. Contextual Water Management doesn't increase uncertainties; it brings them into the process at an earlier stage instead of waiting for them to emerge later on. This is

related to being able to accept the inevitably of facing uncertainties, or at least unforeseen complications or complexity. This dealing with uncertainties requires a continuous balancing act between stability and adaptiveness. Fixing partial decisions that have been agreed upon with the partners in order to create clarity and a basis for action is just as important as leaving them open and flexible to maintain the necessary space to include new attractive options and reconcile plans with the potential opponents. This is precisely the sort of dilemma that is faced in practice. Good water management and implementation in general is not only a matter of obeying certain "dos and don'ts", but also involves the careful balancing between too much and too little, too early and too late. Thus, the dilemmas of adaptive management in implementation situations are not related to choices between options, but instead: when, how and how much can different options be integrated?

To what extent is it better to make 'informal and flexible' or 'formal and fixed' agreements? The importance of formalization can increase when there are some differences perceived between the interests of the involved actors. Formalization in that case prevents one actor from easily defecting from the agreements when their own circumstances change. Similarly, formalizing agreements can create a clear record of the status of the project and help to get commitment in times of organisational and political uncertainty. Lastly increased formality is important when the magnitude of the interests' involved increase as often happened in the Regge sub-cases as the project development process proceeded. On the other hand, informal agreements can be used as a means of keeping some flexibility on both sides and as a way of expressing trust in partners. Close contact between partners is also important in order to continuously weigh the development of the various pros and cons.

8.4 QUESTION TWO: INFLUENCE OF INTER-REGIME QUALITIES

What qualities of the governance inter-regime have impacted these implementation processes and through what means?

The entrance point for analyzing the observable impact of the governance inter-regime on implementation processes is through an assessment of the inter-regime's extent and coherence. In Chapter Three the two additional qualities of flexibility and intensity were added to enable elements of the inter-regime's influence to be uncovered that are related specifically to complex and dynamic implementation processes. It was also recognised that the influence of these elements operates in an integrated way. Within the course of the research it was encountered frequently that one inter-regime quality gave meaning to the process based on the particular presence or lack thereof, of a second (or third) quality. In this section, the four inter-regime qualities are reflected upon in terms of how they were observed to have impacted the decisions and actors involved in the process. Although the inter-regime qualities do not act in isolation, each one is treated separately below as it was

seen to play a role in the cases and examples of where the other inter-regime qualities came into play are mentioned.

8.4.1 EXTENT

The quality of extent was assumed at the beginning of this thesis to be sufficient in both cases, and set as a necessary quality of the inter-regime. This was done because it provides the platform upon which complex and dynamic interactions can take place. An increase in the extent of an inter-regime is generally followed by an increase in its complexity. If a significant lack of extent is present, the actions of the project staff could be fulfilled in a more localized way, influenced by few levels and scales from outside the specific context. This provides for simplicity, however it does so at the expense of opportunities that could contribute to a more innovative implementation process that provides added value to a larger group of stakeholders. A lack of extent is also generally accompanied by unregulated uses of the resource that can undermine the work of integrated, voluntary and cooperative project teams as was exhibited in the study cases. An inter-regime with a full extent provides an institutional setting that gives confidence to the actors to work towards a commonly acceptable outcome.

The extent of each of the inter-regimes studied are considered to have an overall sufficient level of extent, but the complexity related to their fullness was experienced differently. What was observed in the Regge River case was that as the Water Board included more and more actors into the constellation of actors involved in restoration of a particular stretch of the river, that numerous aspects of the five elements of governance became involved from previously separated regimes. More layers and scales, perceptions of the problem and accompanying goals, and more instruments became part of the policy mix. Additionally, more organisations shared responsibilities for implementation. Thus, a gradual increase occurred in the domain of the inter-regime, which consisted of the uses and users regulated by one or more parts of various regimes. From a static context, an increase in complexity of a governance inter-regime is generally related to how governments attempt to address developing issues. They add on additional policies or instruments to increase the influence on the users and use rights of the resource. In the Regge River case, the additional relevant regime elements became important due to choices made at the local level that increased the complexity of the approach to address the management of the resource.

The second case of restoration in the Spencer Creek sub-watershed also attracted many different types of policies and programs to become involved alongside the interests of the landowners and other stakeholders. The recognition by the project management staff at the Conservation Authority that the Crooke's Hollow Dam would require permissions from approximately twelve different legislative avenues was a clear indication of the complexity of the inter-regime connected to that particular sub-case. One difference that can be seen

in the make-up of the complexity between the two governance inter-regimes is actually that the choices of the Spencer Creek project team had less influence on this complexity.

The policy sphere in Ontario is quite dense. There is a thick cloud of regulatory and incentive type instruments that apply to the project, even when the actions of the actors in attracting new interests into the project were much more limited than that of most of the Regge River projects. A culture that has looked negatively upon the removal of previous legislation (for fear of reducing the effectiveness of the extent quality by reducing oversight of users and opening up the resource to over- or mis-use) has enabled an over-burdening of those attempting to improve the natural infrastructure. The environmental assessment process has played a major role in forcing a broad scale of instruments and actors to become involved in local level projects. Both inter-regimes included aspects from nature, and agricultural influences. What was more prevalent in the Dutch case was the stronger influence of the recreational/tourism governance instruments and vision. This can be attributed to the Dutch having a more experience-oriented interest in nature. Thus, the value of being able to experience nature (due likely to its scarcity in the Netherlands) is a key aspect for developing support for efforts aimed at developing it.

The Conservation Authority staff experienced the high extent of the inter-regime to be in itself a hindrance to efficient implementation. As mentioned in Chapter Two, the extent does not follow a "the more the better" pattern when it is not coupled with the necessary coherence. The many (in some cases unclear) policies and programs dealing with the Spencer Creek led to an overburdening of local staff capacity. The transition of the transboundary governance approach at the national level to an ecosystem approach (away from water as a focus point) made it difficult for stakeholders to identify if actual gaps exist in terms of governance of the resource. This uncertainty has led to more concern about the sustainable management of the resource. The perceived lack of extent is important since it was observed that there is a lack of trust in the federal intentions towards the protection of natural resources when it competes with more short-term economic interests. This was seen most clearly by the reductions in funding and support for information gathering, monitoring and accountability to a clear set of targets for improvement.

The positive influence of a high level of extent is thus seen to be sensitive to the cognitions of the actors who are affected by its instruments and goals. Without the provision of a clear vision by the governing bodies, and the presence of trust that other interests will not supersede their commitment to achieving overlapping goals, the positive influence of a high level of extent can be seriously eroded. On the other hand, when the inter-regime is deliberately expanded, this can provide additional opportunities and resources that would otherwise not be available. When this is done in a manner that is conscious of the additional complexity that comes along with it, the benefits of a supportive and high level of extent can be experienced.

8.4.2 COHERENCE

Bressers, Fuchs and Kuks (2004) predict that the existence of such a wide level of extent as in both the Spencer Creek and Regge River cases would be in danger of incoherencies limiting the support that this provides to sustainable water management in general. This would be the case under the normal circumstances associated with the natural progression of a regime, unless efforts are taken to address this at a higher level. In the two cases included in this research, the various projects have not entirely withered away due to excessive fragmentation. This can be seen as indicative of the presence of at least a minimal level of coherence though beyond this very different levels of effort to overcome inter-regime incoherencies were observed across the two structural contexts. Actions to address the incoherencies that develop between separately accountable levels and scales of governance were taken on by different levels of actors and groups. Incoherencies found at the inter-regime level were in some cases addressed by the local project teams through the clever design and implementation of integrated projects.

It was observed in the study of the Regge restoration that there have been various attempts to address and overcome incoherency at different levels. The European Union is set up according to a traditional 'policy silo' approach and despite some processes that are in place to minimize clearly conflicting aspects of EU directives (for example some elements of the EU Cohesion Policy), incoherencies are likely to be experienced across the various levels and scales within which they are first translated and then implemented within the member states. The initial translation of EU directives into national policies or legislation requires further efforts to reduce incoherencies across national scales. This has occurred for instance in the implementation of the Water Framework Directive. This EU directive has driven the national development of water quality goals, which then needed to be aligned with national water quantity goals since the two are considered to be inseparable from an implementation perspective.

The problem is that such inter-level coherence, which also affects goals, instruments and responsibilities and resources like funding, has been for the most part established based on the separate sectors. In the examples above, relatively high levels of coherence are likely to be found given the similarity of the policy goals. It is more difficult to increase the coherence across the different *types* of actions being taken by different policy streams. Most notably, the strict protection oriented instruments related to the Dutch Flora and Fauna Act (the translation of the EU Habitat Directive) and the progressive integrated planning aspects of the national integrated ecological network (EHS). This has as a consequence that the coherence has to be constructed at a regional planning and local implementation level. Although this has been generally very successful in the Regge River restoration projects, it leads to potential vulnerabilities in terms of intensity and flexibility as are discussed in the next sections. Within the Groene Mal project, the strict development rules that were set in place by the Province to protect open space from urban development were circumvented by being taken into an inclusive planning project. This

showed that it is possible to overcome incoherencies of the structural inter-regime by building trust amongst the different interests and that win-win situations can result from flexible implementation of the structural context.

Incoherence within the Canadian case was experienced as being more of a structural issue, which is common to the policy sphere in general due to the dense policy environment. There is a general perception that new policy development was used to address all new concerns. The incoherency is further experienced due to the separate and still disputed constitutional issues about jurisdiction, with no intervening body to force harmonizing efforts (such as is done by the EU). It is also important to note that the increased extent found in the Dutch case developed due to deliberate actions of the actors (self-imposed with awareness of the pros and cons), and that this could have contributed to them not feeling the same level of disdain related to the influence of this quality of the inter-regime. This can be seen to be related to the level of receptivity of the two organisations and is further developed in the discussion on the following question.

The efforts taken towards employing an ecosystem-based approach in the Great Lakes region could have had (and were intended to have) a positive effect on the coherency of the governance inter-regime by encouraging a more holistic approach to governance. Though the ambiguity of how this approach was to be implemented has resulted in very little progress actually being made in terms of addressing coherence issues between the various sectors.

It was also noted that there are incoherencies present across administrative (national and provincial) boundaries that have influenced the policies and instruments available for implementation in both cases. In the Spencer Creek case, this occurs due to federal and provincial responsibilities that both impact the management of water resources (fish habitat, transportation responsibilities for example) as well as across the international border. In the Regge River context, there are incoherencies present between the approaches used for nature management across the Dutch-German border and there are a number of areas of vagueness with respect to how certain EU level policies are to be implemented alongside the program goals. In the case of the EU Habitat Directive, it is seen to limit development in areas where improvements are desired to meet EU Water Framework Directive goals. This cannot yet be described as incoherent since there is still a great deal of uncertainty about how each of these directives are to be interpreted in the local contexts.

Within both contexts numerous changes are occurring which attempt to increase coherence but at the same time increase accountability directed at singular policy goals. Various efforts have resulted in both improvements and declines in overall coherency as experienced by local actors. It is thus difficult to suggest a clear way for improvement, other than to make a note here of the obvious value of flexibility and intensity measures of the inter-regime to overcome this natural tension between a coherent and accountable

inter-regime given the current structural context. It is also important to note the examples of where a high level of receptivity is able to reduce the negative impact of a certain level of incoherence on a given implementation process (revisited in Question Three of this chapter).

8.4.3 FLEXIBILITY

In many of the projects discussed in this thesis, examples of inflexibilities in the governance inter-regime were provided as they were identified and experienced by the practitioners working on the realization of the projects. It is however still possible to begin this concluding section on flexibility with the statement that in the Regge River case the overall degree of flexibility of the inter-regime was quite reasonable during most of the period under study. On the other hand, a gradual increase in experienced inflexibilities was observed that is seemingly related to the desire to control the particular outcomes related to other policy goals. This is perhaps occurring in an attempt to safeguard the various sectoral goals, a typical reflex which is fundamentally based on distrust and top-down thinking. On the other hand this can also be attributed to the gradual increase in the fragmentation of the upper and middle levels of governance. The synergies achieved by the project groups in many of the projects are however only conceivable when there is ample leeway available for dealing with separate objectives to optimize the shared results. The Groene Mal project (green mould) that is based on an administrative agreement designed to overcome the spatial planning restrictions that are posed by “red moulds” is a good example of how inter-regime inflexibilities can be overcome by the use of bottom-up strategies.

The Water Board and the Province of Overijssel often took opportunities to purchase pieces of land outside of the recognized restoration areas. This was done to improve their bargaining position with landowners in the targeted areas along the Regge River. In the later stages of the restoration process, a lack of support from the Province developed related to the advanced purchasing of land that reduced the availability of flexibility enhancing instruments. This further reduced the opportunities to support the implementation process to overcome contextual barriers related to timing of available land, reducing costs and increasing the expediency with which a project can be developed and implemented.

The quality of flexibility can be greatly influenced by the time related characteristics of the inter-regime elements. The timing requirements associated with different grants and subsidies for instance does not always match the requirements of adaptive implementation. When funding for internal projects comes from external organisations (such as the EU, national and provincial ministries, private funding groups), these groups generally include some measures for determining the accountability of the receiving organisations with respect to the effective use of the money and the achievement of the goals for which they were provided the funds (or other resources). One common measure

is related to setting and achieving a certain time schedule related to the development and implementation of the project. Since the Conservation Authority is heavily dependent on external funding for projects, they are particularly influenced through the limitations imposed by strict timing responsibilities. The natural tension between being open to opportunities and providing clarity and stability to potential project supporters and stakeholders arises again here. When little room is provided for staff to significantly change course during the implementation stages of the process, there is less incentive to try to be open and alert to new information or opportunities for increasing complexity as a way of achieving a broader set of goals. Thus, the timing elements related to the dependency on external granting organisations is seen to make the longer term more opportunity and innovative projects not even in the scope of possibilities for the Conservation Authorities. The Water Board is less sensitive to this since they have a greater percentage of internal funding available and are thus less responsible to external timing restrictions. There was however a few examples of where funding requirements were seen to put additional pressure on the processes of implementation related to accomplishing the network of ecological connection zones. Despite this pressure, the processes still choose to operate in a voluntary manner and run the risk of the funding being taken away.

The incoherence between the Dutch Nature Protection Act and the efforts at river restoration is mostly seen to have led to problems in implementation due to the lack of flexibility inherent in the strict protectionist nature of the law. This is one example of where the impacts of the inter-regime qualities are best understood by recognizing their mutual influence and how the alteration of one aspect related to a particular policy can affect another.

During the interview process of those involved in the Spencer Creek Stewardship Action Plans, the idea of flexibility was understood to be somewhat in the eye of the implementer. This was explained in terms of how the inter-regimes elements can be interpreted differently by the actor who is responsible for its implementation into the local context. There were a few occasions where the Conservation Authority felt that indeed a policy was quite inflexible as written but that there were opportunities (hopefully) to work cooperatively with the enforcement agencies (Ministry of the Environment in the case of the sediment management rules). From this perspective, the rules are in place to be inflexible so as to ensure protection, but that exceptions could be made given strong arguments that the overall benefit is served by circumventing them. This also occurred in the Groene Mal case where the incoherencies of the development restrictions with the goals of the restoration were overcome through negotiations over the “greater good” that would be supported in allowing the restrictions to be bypassed.

8.4.4 INTENSITY

Immediately following the empirical research of the Regge River restoration in 2010, the newly elected government officially ceased supporting all efforts associated with the connection of natural areas through nature corridors. Previous efforts aimed at developing a national ecological network had been going on for nearly 20 years and so this is seen as a significant drop in the intensity of the inter-regime for this pillar of the restoration projects. This policy pursued the creation of ecological linkage zones between the scattered Dutch natural areas, allowing species to migrate freely through changing climate zones and had been the inspiration for a similar European Union policy. It is still not yet clear how serious the long-term consequences of this reduction in intensity will be. As a result of this change in policy a substantial part of the financial resources for projects like the Regge restoration have been withdrawn. One particular consequence is that the projects (as they were originally conceived) are considered by some to go (too far) beyond the scope of what is needed to accomplish the nature and water goals. If a new government were to resume the policy and support in the future, the current halt put on many of the on-going agreements will likely have caused severe and long lasting damage to the relationships and momentum that are so integral to these projects. Some of the agreements will likely need to be re-established and the trust of the farmers involved is at risk of being harmed for a longer period of time after this experience. From the national government's perspective they have simply made a different choice in parts of the overall national nature policy. From the perspective of these projects, this intervention into the current system is damaging a complex inter-policy cooperation process in which not only financial, but also an enormous amount of non-financial resources of many actors has been invested over the last decade. This low level of intensity is more common to the projects undertaken by the Conservation Authorities, and as such there is always a relatively high level of uncertainty of the stability of the underlying arrangements that support their projects. The funding retrenchments of the 1990's that severely reduced their operating capacity as well as the lack of certainty that many of the longer-term funding projects will be re-established from year to year reduces the incentives to enter into longer term, integrated projects that are reliant on a number of different funding sources and actors.

The role of voluntary versus involuntary measures is an important part of the context related to the intensity experienced by the project implementers (particularly in the Regge River case). The choice to act under mostly voluntary arenas with the different stakeholders significantly limited the intensity that would have otherwise been experienced (and perceived likely to have been in a negative manner) by the project teams. Intensity in and of itself is not a negative concept, except when it is coupled with inflexibility and incoherence within the inter-regime. It was believed (and experienced in the past) that the highly intense nature of land reallocation plans excluded possibilities to make use of specific interests and increased the negative impact of specific hurdles. This

happened because the instruments were also inflexible and incoherent with a number of local interests.

8.4.5 SUMMARY OF THE INTER-REGIME QUALITIES

Overall, the previous discussions about the influence of the qualities of the inter-regime brings to light how important the interactions are between the different qualities in terms of how they are experienced by the local actors involved in implementation processes. The receptivity of the projects' leading actors, the Conservation Authority and the Water Board is seen to be key in how these qualities filter through to the development and implementation of the projects themselves. The resulting influence of the inter-regime is thus a combination of integrated aspects of the extent, coherence, flexibility and intensity and how the local actors are able to proactively manipulate this combination of qualities to achieve their own goals. The specific aspects of the inter-regimes seen to be key to understanding how the implementation processes were influenced in both cases are summarized in the Tables8.1,8.2, 8.3 and 8.4.

Spencer Creek Stewardship Action Plans	Regge River Restoration Program
High (yet unclear) The high extent is mainly a result of a highly dense policy environment and the required involvement of all actors based on the Environmental Assessment Act. Many types of instruments and resources are available though there is some lack of confidence of effectiveness of extent due to lack of clarity in the problem perceptions and goal ambitions.	High (slightly decreasing) The deliberate actions of the Water Board to increase the multi-functionality of the projects have resulted in the wide involvement of various sectors and the associated regime elements. Many types of instruments and resources are available though there has been the recent removal of important instruments linked to stream restoration.

Table 8.1 The Comparative Levels of Extent of the Inter-Regimes

Spencer Creek Stewardship Action Plans	Regge River Restoration Program
Medium The different ministries generally operate in a silo nature, though efforts are made, particularly at the provincial level to reduce the impact of the coherencies through local official plans. Despite the efforts, actual coherence is only mediocre due to the numerous policies that need to be integrated. Some of the more command and control type instruments are incoherent with the focus on ecosystem management (since it requires an adaptive approach). The responsibilities of the Conservation Authority are not well supported by a high availability of stable resources from the regime. Their resources are derived from sources that often have different goals than those of stream restorations.	Medium The different ministries generally operate in a silo nature, and most efforts at integration are taken at the local level. The increasing existence of instruments which increase incentives towards a programmed planning approach are seen to be incoherent with the voluntary agreements that are used to implement projects. The problem perceptions and goal ambitions of the different levels are becoming less supportive of each other due to more sectorally based accountability measures. The responsibilities for land use development belong to the Province, though due to quite coherent goal ambitions, high levels of cooperation and sharing of resources has occurred.

Table 8.2 The Comparative Levels of Coherence of the Inter-Regimes

Spencer Creek Stewardship Action Plans	Regge River Restoration Program
Medium The policies originating at the higher levels are generally aimed at controlling management processes as opposed to outcomes. Grants are provided to local groups in order to implement the various goals of the Ministries and policies. The Conservation Authority is dependent on others for funding and thus has limited flexibility in how it implements projects. There is some leeway for negotiation about the manner in which the policies are implemented between the ministries and the local agencies. There are opportunities to jointly use different resources for joint purposes. There is some competition for resources due to the large number of local NGO's and due to their dependency on external resources, competition between them minimizes the incentive to encourage others to take over contributions to overall program.	High (decreasing) The overall flexibility provided is quite high. Power to make and implement policies and programs according to local conditions is diversified. Resources can be pooled into integrated programs to serve joint goals. This quality is however being reduced due to more sectorally responsible instruments and the pulling away of leeway to purchase land without direct intent by the Province.

Table 8.3 The Comparative Levels of Flexibility of the Inter-Regimes

Spencer Creek Stewardship Action Plans	Regge River Restoration Program
Medium-Low The higher levels are aware of the benefits of the ecosystem approach to water management, but they are not highly involved in the process, and the amount of resource are not made directly available for these type of projects – the initiative comes from the lower levels based on their belief in the value for water management.	High (becoming medium) In the beginning of the research there were a high level of resources made available. Both provincial and Water Board administrators were openly in favour of the value of such programs, and there is the availability of interventionist instruments to encourage compliance to restoration goals. This level is decreasing based on the increased importance placed on sectoral goals and short-term budget savings.

Table 8.4 The Comparative Levels of Intensity of the Inter-Regimes

Based on the above overview tables, it can be concluded that the Regge River Restoration Inter-regime began as Medium Coherent, Flexible and Intense (this places it somewhere between 1 and 2 in the Hypothetical Inter-Regime Types). Recent changes to the character based on the withdrawal of instruments and support for stream restoration have affected the extent, flexibility and intensity in a negative way. The most serious impacts are seen due to the resulting reduction in intensity that had been present before and provided both stability and support for the integrated actions that now take place in a much more fragile and uncertain environment. The complex and dynamic aspects of the context have become much more harmful to the smooth progression of the implementation process due to the reduced amount of support at the various levels and scales. The Spencer Creek Stewardship Action Plans has an inter-regime that is Medium Coherent, Medium-Low Flexible and Medium-Low Intense. From the list of hypothetical inter-regime cases this type of inter-regime is experienced as most closely to that of Type 7 – Coherent, Inflexible

and Weak, since the expected context is quite similar to what was seen in practice - implementation is expected to occur according to goals determined by higher levels of government yet there is insufficient effort bestowed on ensuring the results are achieved and given minimal support for doing so. The level of coherence is a hindering factor, but is itself not the major quality affecting implementation. In the presence of higher intensity, the level of incoherence experienced could be easily overcome. Thus both inter-regimes are quite similar in terms of coherence and they both have mid-level flexibility. The largest difference between the two can thus be seen due to the overall higher level of intensity offered in support of the Regge River restoration Program. Should the various elements of the Spencer Creek inter-regime be interested in increasing the effectiveness of stream restoration plans it would be recommended to increase the multi-level support and resources for these types of projects. This involves increasing the stability of funding resources, recognizing and supporting innovative locally tuned implementation process through flexible and supportive instruments and communication. Similarly, the impacts of a low level of intensity on the restoration efforts related to the Spencer Creek can be used to highlight the dangers of following the current path towards a reduction of the intensity of the inter-regime guiding the implementation of stream restorations in the Netherlands.

8.5 QUESTION THREE. ORGANISATIONAL CHARACTERISTICS

What characteristics of the leading actor organisations have impacted these implementation processes and through what means?

The actors' characteristics and actions define the eventual impact of the qualities of the governance inter-regime on the implementation process. Their receptivity was observed to be of key importance in this translation and operated as a catalyst. Using this analogy is intended to bring attention to how the actors can modify the manner in which inter-regime qualities influence the process. This modification occurs through two types of channels. The inherent characteristics of the actor or organisation (motivations, cognitions and resources) are seen as the basic variables that determine how the policies and instruments contained within the inter-regime will be implemented in the local context. The capacity for receptivity that lies within the actor enables the deliberate actions that were seen to occur in the earlier chapters as different sorts of strategies. This section provides a comparative discussion of the receptivity exhibited by the two main actor organizations in relation to the impacts seen from the two separate inter-regimes.

8.5.1 RECEPTIVITY AS A SKILL FOR BOUNDARY SPANNING

The analysis in this thesis has illustrated the importance of consensual project teams being able to perform adaptive strategies in a sometimes less than supportive governance context. This is however not only an issue at the project level. At the organizational level and the level of the individual people involved, it requires that the orientation towards

external cooperation is valued and supported. In the previous chapters a variety of prerequisites and internal strategies have been identified that have been used to increase the organizational receptivity. At the individual level there are enthusiastic people that can remain supportive for their organization's mission while also being adaptive enough to realize the benefits of involvement and participation in cooperative games (cf. Scharpf 1997a) or taking on the role of street-level bureaucrats (Lipsky 1980). Such constellations become far more common when there is open communication among the participants. Additionally important is a strong focus on collaboration, communication and networking. It goes without saying that such an organizational development is highly dependent on the willingness of the organization's leadership to facilitate it and to provide the staff with sufficient leeway and trust.

Support for the continuous learning processes of the staff is also very important. This does not only imply taking courses as a wealth of practical knowledge is built up during the involvement in the projects. It involves stimulating the exchange of views and practical experiences among colleagues, both within the organization and with colleagues of other organizations. As Contextual Water Management is not only a matter ascribing to "dos and don'ts", but to a large extent is a matter of careful judgment in what could be labelled informed dilemmas, mutual learning of each other's experiences creates not only sharper insights but also a team spirit with a joint set of possible actions and outcomes.

It was observed in the study of the Spencer Creek Stewardship Action plans that both on an Ontario-wide level and concerning the Hamilton Conservation Authority, a steep increase in tasks and responsibilities has urged the Conservation Authorities to perform ever more boundary spanning activities, between sectors, between other governments and stakeholder organisations and between different scales, from individual land owners to their contribution to the southern Ontarian Green Belt Plan. The external inter-regime context was not only challenging because of that, but also because accountability requirements and program budgeting simultaneously decreased the stable finances of the organisations and directed a large proportion of their capacity towards fundraising. While both in size and in complexity the challenges put before the organisation increased, they had to develop the receptivity needed to deal with this under challenging conditions and the results of their efforts are by no means trivial. The organisation continuously sought new coalitions and funding opportunities that would enable progress towards its goals. The introduction of the Stewardship Action Plans can be viewed as a way to prevent the segregated accountability measures from leading to insurmountable incoherence, as well as giving a more coherent and attractive outlook to future developments to stakeholders and sponsors. A further example of the dilemmas that exist for the Conservation Authorities is that between their role as a permit giver for activities related to the alteration of the natural resources in the watershed and their dependence on landowners for progress in restoration and protection activities. They engage in a permanent balancing act to satisfy the legal requirements that should e.g. prevent new disasters like

the E. Coli outbreak that occurred in Walkerton, Ontario in 2000, while trying to build a trusting relationship with the farmers.

For the Water Board and their partners, their boundary spanning strategies resulted from a high receptivity to the changing character of the external context. They had a high awareness of the increasing opportunities at the EU level for funding related to multi-functional projects and experience related to how they could use integrated project design to access these funds. This helped them to meet their own water management goals. Past experiences with concerned citizens and NGOs who raised obstacles to the implementation process, urged them to be more inclusive and open in the project development stage and led them to adopt a more risk taking approach to "innovative and complex" projects and relationships. Though not self-evident from the start of the projects, this receptivity to opportunities and threats of the external context would result in the adoption of boundary spanning strategies. Support for continuous learning, stimulating exchanges of experience among colleagues and supporting a healthy level of risk taking serves to stimulate that all staff members become "reflexive practitioners" (Schön 1983) and thus capable of implementing adaptive management principles in an effective way into their project development. In the Regge restoration projects a learning process resulted from just being open and alert to coincidental and occasional opportunities, to actively looking for them, and further to ultimately assessing the situation and the other actors to look for possibilities to create new opportunities. It is not difficult to recognize herein the sequence of awareness, association, acquisition and application of the receptivity concept.

8.5.2 REFLECTIONS ON RECEPTIVITY

While both organizations show a fair degree of receptivity that enables them to unfold the potential of boundary spanning strategies, there are a few differences in what appear to be the main contributing factors and reasons for this. The Conservation Authority seems to have undertaken changes in their approach in order to overcome their adverse circumstances. The changes in the make-up of the external inter-regime over time threatened their ability to be able to achieve their vision. They experienced a reduction in stable funding and became more aware of (and responsible for) integrated problem and solution sets. Both of these issues were seen as likely to hinder their effective operation if they would not take the necessary actions to address them. This served as the driver towards executing a new more integrated approach that addressed these changing circumstances and gave more resilience to their operations. The external context that the Water Board was facing seems to have been addressed in a more opportunity driven manner since they had the power and resources to continue (at least in the near future) with traditional, relatively non-receptive approaches. Risks were taken to deviate from the norm, which happened alongside the development of wider boundary judgments regarding the potential values of water. This allowed them to access good funding

opportunities and has increased political support by other public and private organizations. This reduced the expected opposition that would have (likely) been experienced without it. The Water Board did not need to re-invent itself because its legitimacy was questioned, but nevertheless faced the challenge of the complexity they had engaged in by opening up to other societal goals than water quantity and quality.

The Water Board and the Conservation Authority are each quite progressive in terms of their receptivity, as compared to their brother and sister organisations. In comparison with other Water Boards, the Water Board of Regge and Dinkel is considered to be quite open and flexible, which is somewhat owing to their direct lines of communication between board members and staff. The Hamilton Conservation Authority is also considered to be one of the more active and alert Conservation Authorities in the region, even though they have been confronted with fragmented accountability requirements from policy programmes and sponsors.

While the learning capacity and thus receptivity of organisations depend on a certain degree of organisational open-mindedness it is interesting to see that both organisations responded in similar ways (with boundary spanning strategies) to their changing situations. Both sufficiently large opportunities and threats can spur receptive organisations into action. When a receptive organisation starts to engage in multi-stakeholder processes, it is likely to result in positive feedback from the other stakeholders that further enhance their learning processes and abilities to explore the new possibilities of such strategies. For organisations with low receptivity and who are less likely to adopt such processes to begin with, the frictions that can develop from boundary spanning strategies can be overwhelming. Having an internal tendency towards an approach with more “paper” security (more formal, less uncertainty perceived) in the form of programmed implementation planning and clear hierarchies limits the likelihood that the value in adopting the less well-defined requirements of such multi-stakeholder processes will be positively perceived. This negative perception of the risks associated with a contextual water management based approach would then confirm their original strategy. However, the Conservation Authority and the Water Board have shown that across different institutional and governance settings, organizations with sufficient receptivity can evolve into real “boundary spanning organizations”. The Table 8.5 provides a general overview of the level to which each of the lead organization was observed to exhibit the four different capacities associated with receptive organisations.

Despite having different drivers, both organisations have exhibited high levels of receptivity. In addition, the Water Board employees have had a great deal more experience and support in implementing projects that are more innovative and hence make more use of the receptive capacities of their staff. The Conservation Authority staff is thus likely to continue to experience the additional value added due to their high awareness and association, though will continue to be limited in opportunities for application. If efforts at acquiring increasingly broad and supportive actors and resources

Receptivity Capacity	Hamilton Conservation Authority	Water Board of Regge and Dinkel
Awareness	High Exhibited awareness of the fragility of support for fragmented projects, adapted their process to make use of overlapping interests and goals.	High Recognised from past experiences with implementation that hurdles could be overcome through increased participation from additional sectors at all stages of the process.
Association	High The natural multi-purpose nature of the Conservation Authority supports associating different issues towards one approach for implementation.	High Increasing experience in integrating different actors and interests has led to the ability to see opportunities for collaboration.
Acquisition	High Implementation process was adapted to make use of overlapping interests and goals; limited to "usual suspects" based on awareness of concerns from opposition over stepping "too far" outside of jurisdiction.	High Often uses strongest partners available to provide necessary support for more risky actions. Invests in relations to increase the likelihood that they become aware of possibilities to create or join opportunities for projects.
Application	Medium Limited by level of experience and support for efforts aimed too far from the organizational objectives.	High Beginning small, they developed expertise as boundary spanners and effective integration of multi-interest projects; they have a high success rate with limited opponents.

Table 8.5: Receptivity Attributes of the Two Leading Actor Organisations

into their actions continue, this could alter the perceptions and receptivity of other actors involved in the implementation processes and provide additional opportunities for application. The Conservation Authority already has a great deal of experience working with the public through education and outreach programs, and this provides a good basis for opening up the perceptions of the public to support more innovative and progressive projects. This is an area that the Water Board staff members have not yet entered into since they have been able to achieve the desired level of support for projects, by limiting it to the directly involved actors (with the exception of placing signs up at recreational areas that are part of the projects). This is something however that they may be forced to do in a more serious manner in light of the changes to the intensity of the inter-regime in supporting these integrated projects.

Increased receptivity of the Water Board staff was exhibited before and after the initiation of the Regge Vision. This is for instance seen to be a leading factor in the reduction of court cases associated with river restoration projects. Further examination is warranted however to more precisely reveal how different levels of receptivity impact the successful implementation of adaptive management projects.

8.6 QUESTION FOUR. OBSERVED VARIATIONS

What are the observable differences between the two cases? What do these differences imply regarding the previous two questions?

Despite the many differences in the wider cultural, geographic and political contexts between the two countries, many similarities have been brought to light in terms of the implementation processes followed by two watershed based management organisations. This last section discusses the general strategies followed by the two programs and how this impacts the recommendations that can be made based on the results delivered by the analysis. In the following graphic, the general strategies are depicted as they were seen to be employed by the Hamilton Conservation Authority. These strategies were used to deal with the various impacting inter-regime elements that became relevant based on their actions towards improving the sustainability of the Spencer Creek. The situation before the development of the Stewardship Action plans was considered to be complex and fragmented in terms of available resources and the policy arena. The HCA felt that they would better be able to navigate through this context by developing a detailed planning document and implementation plan that would encourage increased funding of their projects through increased visibility of goals, measures, etc. and as well help them to focus efforts in terms of being less ad-hoc in addressing the multitude of stresses that are present in the Creek's watershed. Figure 8.1 interprets the key points of their process and includes the various inter-regime contributions to their decision-making and action processes.

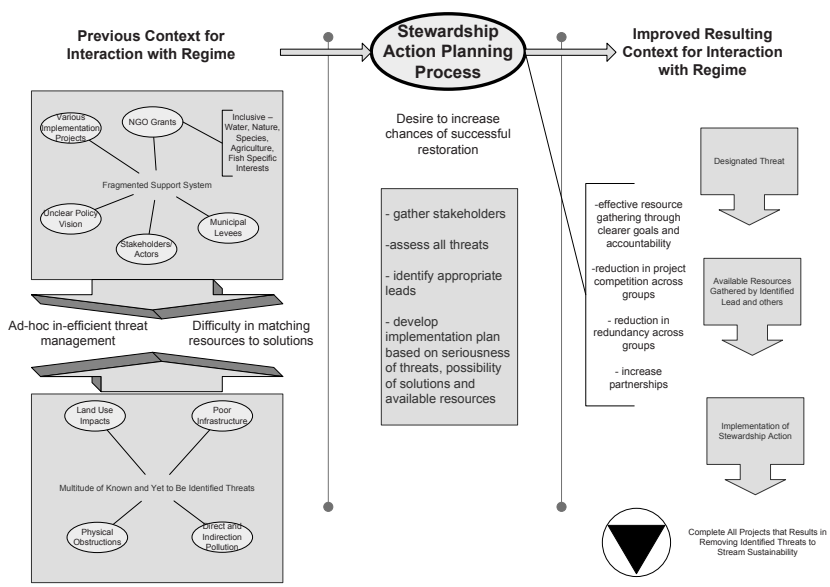

Figure 8.1: Overview of Spencer Creek Stewardship Action Planning process

The Water Board approached the Regge River restoration projects from a different perspective. Experience from within the group led them to a process that started in a very visionary manner to engage participants through small projects to increase knowledge, relationships and the level of trust in the community. Following this, a more proactive and targeted approach is performed with the value of experiences behind it and a greater likelihood of eventual project success. This thought process is characterized in the overall strategy for the Regge River restoration projects as can be seen in Figure 8.2.

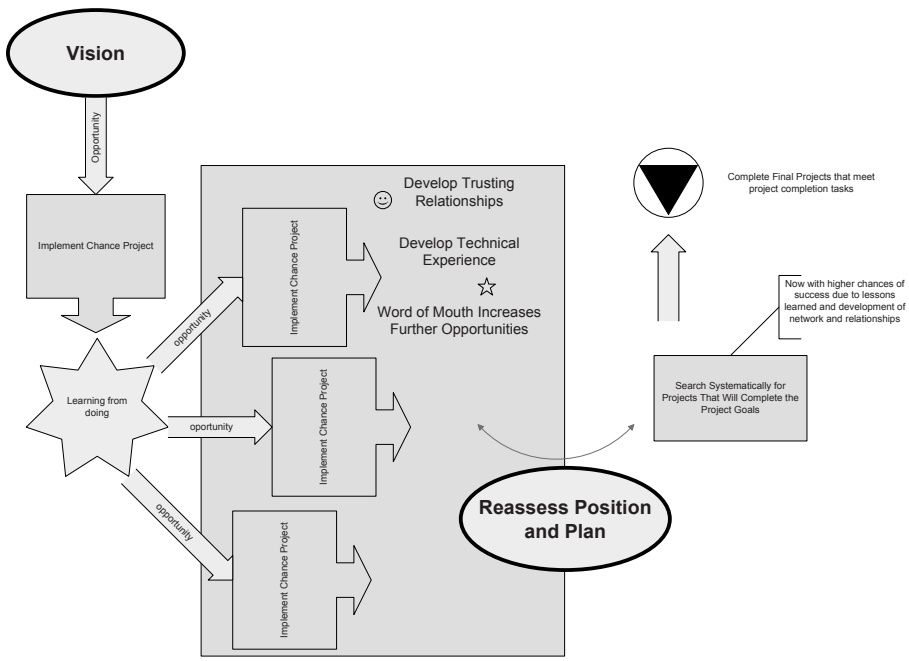

Figure 8.2 Overview of Regge River restoration processes

The issues faced that impact the health and value of the rivers are seen in slightly different ways by the two leading organisations. The Conservation Authority regards the issues to be largely fragmented, originating from poor land use practices, instances of aging infrastructure and lack of maintenance and up-keep. The Water Board sees the issues as mostly related to the physical condition of the riverbanks and the ability of the surrounding nature to provide ecosystem functions. Also, due to the highly involved citizenry contributing the Spencer context (which exists due a lack of trust in the government to protect and manage the natural environment), there are a wide variety of involved NGOs at the local level with similar motivations to the Conservation Authorities; to improve natural resilience, sustainability, habitat, etc. In the Regge context, there are only a few larger organisations that the Water Board partners work with to achieve larger more innovative projects. Citizens do tend to become involved when a particular project in

planned in their area and will have impacts on their enjoyment of the natural environment.

8.7 GENERAL CONCLUSIONS AND REFLECTIONS

In both cases, the local groups attempt to improve the quality of their environments through stream restoration activities and are confronted with obstacles and provided with opportunities at the hands of their relevant regimes. Both the Water Board and the Conservation Authority find themselves looking for ways in which to work together with the various stakeholders to develop trusting relationships and to develop land use solutions that both restore the natural health of the watersheds and prevent future harm. The types of activities required to do this, integrated project development and management, are complicated tasks. Given that the Water Board of Regge and Dinkel has less monetary and property rights constraints, they have been able to work with more involved and innovative projects. They also appear to be a bit further down the road in terms of timelines, having begun the planning for the Regge Restoration as early as 1998. The Dutch history of land expropriation and intrusion into property rights also makes landowners and farmers in the area more willing to come to the discussions on new projects and participate in the decisions that will be made regarding the use of their lands and the surrounding area. As such, the collection of projects developed alongside the Regge River and Spencer Creek appear to be moving along the same path, just with different contexts and starting points.

The following paragraphs contain reflections from the perspective of the theoretical framework used in this research on the practical issues related to the implementation process.

8.7.1 LOOKING FROM THE BOTTOM UP

Studying the governance inter-regime in this thesis was undertaken by beginning with the real life processes that take place and starting the reasoning from there ("backward mapping" – Elmore 1980). The results of this became the starting point from which to describe the process as it is seen when paying attention to the motivations, cognitions and resources of actors. Further, these actor characteristics were studied in terms of how they were addressed and accommodated but also how they changed over time and ultimately what inter-regime elements hampered and supported this process. This approach enabled a realistic and practical study of the relevant inter-regime elements.

8.7.2 SETTINGS AND STRATEGIES

Generally the implementation settings, which consist of the constellation of actors and their characteristics, resulted in productive projects in terms of improvements in nature,

water and landscape quality and quantity, as well as providing more flood safety. This was seen at a higher level in the Regge River case, but was still recognizable as a general goal of the Spencer Creek Stewardship Action Plans. Both programs required great patience in order to await the right timing, prudence in minimizing the risks of entering into settings that escalate towards conflict, preparation of the setting in advance to enable the opening up of other actors' motivations, cognitions and resources and accommodation and perseverance in overcoming continuously arising issues. Many of the strategies used are seen to fall under the category of boundary spanning efforts.

8.7.3 RECEPTIVITY AND DILEMMAS

Following from the above statement, the level of receptivity of an organization is seen to be a product of both the environment and the willingness to take advantage of opportunities for use within that environment. This means for example, that it is more likely that an organization will develop the capacities related to boundary spanning when it undertakes boundary spanning related projects. It is more likely to do so under contexts that provide additional opportunities for implementation when doing so. For many of the actors in the Regge River projects, it was not self-evident from the start of the projects that they would need to use the resulting strategies. They were not trained in advance to think and behave in this way though they were able to learn rather quickly as the clear benefits of doing so were being realised. Internal strategies enlarged the receptivity of both the individuals and the organizations and thus enabled them to better handle these challenges. They became more aware of the dilemmas that often evolve from the use of external strategies. Many of these options do not have a "the more the better" character, and thus must be carefully dosed in time and place.

8.7.4 CONTEXTUAL WATER MANAGEMENT

This chapter has reviewed the cases of the Regge River Restoration and the Spencer Creek Stewardship Action Plans according to an analytical framework that integrates a wealth of approaches to policy implementation. First an overview was given of the most interesting aspects of the policies that are combined in these multi-functional projects. Looking towards the actors, the analysis showed a remarkable variety of strategies that practitioners employed to cope with many different specific case contexts. The overlapping of project goals, open communication and adapting to different opportunities are seen as being key aspects of successful stream restoration projects taking place in a complex and dynamic context. The study also found that having both flexible and coherent governance inter-regimes enables projects to meet local requirements and work towards a sustainable situation by synergetic win-win situations, constructive and cooperative planning and implementation and the development of a high level of trust. The comparison of the two programs showed how important a sufficient level of intensity is in supporting the implementation processes. It also highlighted how this can help overcome

the inherent obstacles related to inflexibility and incoherence that are natural to a structural context reliant on various Ministries who set different policies, numerous instrument sets and budgets for the achievement of specific goals not directly aligned with stream restorations. The research illustrates and concludes that natural system resilience is dependent on factors that provide "governance system resilience" through both the inter-regime qualities and characteristics and capacities of local actors.

Contextual Water Management is a balancing act.

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CONTEXTUEEL WATER MANAGEMENT:

EEN STUDIE NAAR GOVERNANCE EN IMPLEMENTATIEPROCESSEN ROND REGIONALE RIVIERHERSTEL PROJECTEN

Het streven naar duurzaam gebruik en management van water gaat gepaard met vele uitdagingen. Als gevolg daarvan is er een breed scala aan internationaal en nationaal beleid ontwikkeld gericht op allerlei aan water gerelateerde onderwerpen. Zulk beleid beïnvloedt het water echter niet rechtstreeks, maar door wat er gebeurt als gevolg van het in de praktijk brengen ervan, kortom door de implementatie ervan.

In dit proefschrift wordt verondersteld dat de governance context verantwoordelijk is voor waarneembare obstakels en kansen voor waterbeheerders in hun dagelijkse werk. Twee verschillende contexten worden bestudeerd: het Reggeherstel proces in de regio Twente in Nederland en de Spencer Creek Stewardship Actieplannen in Hamilton in Canada. Beide hebben een multi-level governance context die van belang is voor de inspanningen van lokale groepen om de veerkracht van hun respectievelijke water-systemen te verbeteren.

Deze contexten hebben zowel een inhoud als een structuur, die beide van belang zijn. Ook de dynamiek van de implementatieprocessen zelf zal van invloed zijn op de betrokken actoren. Deze actoren zijn echter niet slechts de marionetten van de kenmerken van hun context en spelen dus een actieve rol bij hoe de context de implementatie beïnvloedt. Dit proefschrift probeert de factoren die hen daartoe in staat stellen boven water te krijgen. Het Reggeherstel project is de hoofdcasus van deze studie. In de onderzoeksperiode bood de context veel steun voor het project, maar de implementatieprocessen hadden desondanks zeer dynamisch en complex karakter Vervolgens worden de Spencer Creek Stewardship Actieplannen gebruikt om de geldigheid van de bevindingen te exploreren in een redelijk vergelijkbare maar ook op punten verschillende context.

Het theoretische model dat in deze studie wordt gebruikt om de gekozen implementatieprocessen te bestuderen is de Contextuele Interactie Theorie, waar echter op voortgebouwd is door er verscheidene nieuwe elementen aan toe te voegen. Deze aanvullingen maken de theorie meer geschikt voor het bestuderen van de gevolgen van enerzijds de kenmerken van de governance context en anderzijds de capaciteiten van de actoren zelf om succesvolle implementatie mogelijk te maken in complexe en dynamische interactieprocessen.

Van de onderzoeksvragen werd de eerste gericht op het begrijpen van de specifieke uitdagingen die de implementatieprocessen in de gekozen rivierherstel programma's stellen en wat voor acties en strategieën daarbij werden gebruikt. De tweede vraagt naar welke kwaliteiten van het governance regime effect hebben gehad op deze implementatie-processen en op welke manier. De derde vraagt welke karakteristieken van de

organisaties van de centrale actoren effect hebben gehad op de implementatieprocessen en op welke manier. En tot slot vraagt de laatste onderzoeksvraag naar de waarneembare verschillen tussen de twee cases en wat deze verschillen betekenen voor de antwoorden op de twee voorgaande vragen.

In hoofdstuk 1 wordt een inleiding gegeven op het onderzoek en het proefschrift zelf. In hoofdstuk 2 wordt klassieke en hedendaagse literatuur over de analyse van implementatieprocessen behandeld. Het conceptuele model van de Contextuele Interactie Theorie wordt beschreven en toegepast op het terrein van de implementatie. Dit hoofdstuk wordt afgesloten door de kernvariabelen samen te vatten die het gebruik van CIT te bieden heeft bij het doen van implementatieonderzoek. Ook wordt ingegaan op enkele belangrijke beperkingen in relatie tot het gebruik van het model in deze studie. Hoofdstuk 3 gaat in op de speciale mechanismen die in complexe en dynamische implementatieprocessen spelen en toont hoe deze passen in het model dat in het voorgaande hoofdstuk werd beschreven. Vervolgens voegt het een aantal uitbreidingen aan CIT toe, die het geschikter maken om de factoren te onderzoeken die van invloed zijn op de relevante interactieprocessen en hun uitkomsten. Daarna worden de mogelijkheden op een rij gezet om het aangepaste CIT model te gebruiken om de inter-regime (een inter-regime is later gedefinieerd als gebaseerd op een samengestelde set van invloedrijke elementen uit meerdere sectoren) effecten op rivierherstel projecten in te schatten. Dit leidt tot de introductie van de methodologische aanpak die de onderbouwing en keuzen beschrijft die gebruikt zijn om het model op empirische cases toe te passen.

Hoofdstuk 4 is het begin van het empirische deel van het proefschrift. De grote casestudie die in dit hoofdstuk is opgenomen is het Reggeherstel proces. Dit hoofdstuk biedt een beschrijving van de governance context die rond dit project aanwezig is, vanuit een multi-level perspectief. Het belangrijkste internationale, nationale, provinciale, gemeentelijke en waterschapsbeleid en de betrokken actoren worden beschreven om de verschillende context gerelateerde invloeden eerst vanuit een traditioneel hiërarchisch perspectief te begrijpen. Daarop volgend wordt in hoofdstuk 5 de hele serie van onderling verbonden deelcases van het Reggeherstel proces bestudeerd vanuit een actor perspectief om de onderliggende factoren op het spoor te komen die een rol hebben gespeeld in het implementatieproces, alsook de factoren vanuit de externe context die een belangrijke en invloedrijke rol speelden. Elke beschrijving van een deelcase wordt gevolgd door een eerste analyse van de actorkenmerken en de governance context. Hoofdstuk 6 besteedt meer aandacht aan de aanvullingen op het theoretische model uit hoofdstukken 2 en 3. Deze grondiger analyse van het Reggeherstel proces is gefocust op de waargenomen interactieprocessen en de inter-regime invloeden hierop. Het governance inter-regime wordt beschouwd door te kijken naar zijn belangrijkste kwaliteiten compleetheid, coherentie, flexibiliteit en intensiteit en de interactieprocessen worden onderzocht door te kijken naar de kwaliteiten van de betrokken actoren in termen van receptiviteit en de ten toon gespreide strategieën om “bruggen te slaan”.

De Spencer Creek Stewardship Actieplannen worden beschreven en geanalyseerd in hoofdstuk 7. Dit hoofdstuk biedt een voorbeeldcase om de lessen die afgeleid werden uit het onderzoek en analyse van de Reggeherstel case mee te vergelijken. Een verhoudingsgewijs korte beschrijving wordt gegeven van de Rentmeester Actieplannen en de context waaronder zij plaats vinden. Eén deelcase is meer uitvoerig beschreven om in het volgende hoofdstuk met de Reggeherstel cases te kunnen worden vergeleken. Ook wordt een keuze van kleinere projecten die onder deze paraplu plaatsvinden beschreven om op het spoor te komen van algemene factoren en generalisaties met betrekking tot de aard van de interactieprocessen die plaatsvinden alsmede van voorbeelden van hoe kernmerken van het governance inter-regime deze beïnvloeden.

Hoofdstuk 8 reflecteert op het theoretische model zoals het is ontwikkeld en toegepast in dit proefschrift. Heeft de aanvulling op CIT met nieuwe elementen de ontdekking mogelijk gemaakt van extra invloeden op, of een beter begrip van de interactieprocessen? Ook bevat het hoofdstuk enkele pragmatische suggesties en een kijk op de generaliseerbaarheid van de resultaten die kan leiden tot de ontwikkeling van verder onderzoek of die de praktische toepassing van de geleerde lessen uit deze studie kan ondersteunen. De vier onderzoeksvragen die in dit proefschrift werden gesteld worden gebruikt als structuur voor de conclusies van dit laatste hoofdstuk.

AUTHOR BIOGRAPHY

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Born in Chatham, Canada the author began her life in the flat countryside of rural Ontario. Growing up in a farming community and family, she developed a respect for the importance of wisely using natural resources. Following her time at McMaster University studying Engineering and Management, she began her career working at Siemens in the Combustion Turbine Engineering Department. Desiring a career with more direct impact on the management of natural resources, she took up studies again at McMaster and completed a Masters degree in Engineering and Public Policy. This began her interest in water policy and governance that took her to CSTM at the University of Twente, the Netherlands where she would begin her PhD on the topic of Water Governance and Sustainability. During this time she has had the opportunity to contribute to a number of international projects related to rural resource use and multifunctional land management as well as help coordinate the Twente Water Centre. Based on her interdisciplinary background, Cheryl is interested in pursuing research that combines science and policy and that can be directly used to improve the sustainability and liveability of urban and rural spaces. She has been involved in various groups that try to increase people's awareness of environmental concerns and also enjoys spending time gardening, playing Ultimate Frisbee and learning about more sustainable ways of healthy eating and living.