

# A GLIMMER OF HOPE ?

An Assessment of Vulnerability and Empowerment  
in the Coastal Area of North Lebanon

Sahar Issa



Hope  
Armed Conflict  
Lebanon  
Coastal Area  
Environmental  
Degradation  
Direct Impacts  
Indirect Impacts  
Vulnerability  
Hazards of Place  
Empowerment  
Agency  
Opportunity  
Structure

UNIVERSITY OF TWENTE.

# **A GLIMMER OF HOPE?**

**AN ASSESSMENT OF VULNERABILITY AND EMPOWERMENT IN THE COASTAL  
AREA OF NORTH LEBANON**

**DISSERTATION**

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on the authority of the rector magnificus,  
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on account of the decision of the graduation committee,  
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by

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## **DEDICATION**

This work is dedicated to my family. To my wonderful father and mother, Tony and Amale, who sacrificed their lives to raise us and to give us the best education and opportunities in life. To my lovely siblings Vicky, Fahed, Micho, and Wally and my nieces Rita and Lara, for your unconditional love and for always being there for me. To my caring grandfathers, Abdel Nour and Fahed, for your great love and for teaching me how to be strong. You were always proud of me. I really wish you were still with us now. May your souls rest in peace. To my loving grandmothers, Najat and Nazek, strong and achiever women beyond all odds. You taught how to be patient and loving. To the rest of the family, thank you for being a great family and for being a source of love and happiness throughout the years.



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## Preface

This research is a part of a project titled 'Conflict and Environment in North-Lebanon: A longitudinal study of environmental and socio-economic mitigation processes in conflict-affected areas', funded by the Netherlands Organization for Scientific Research (NWO), WOTRO Science for Global Development (C&E North Lebanon, number :W.01.65.318.00). The project aims to provide a longitudinal analysis of the impact of recurring armed conflict on the human-environment system in the region of North Lebanon using an interdisciplinary and integrative approach through combining different disciplines including social geography, political economy, ethnography, environmental and life science, and economics. The objective of this project is to highlight the processes of vulnerability, environmental mitigation and reconstruction, and trust relationships in these processes in the area of North Lebanon during and after conflict.

The research was carried out at the Department of Governance and Technology for Sustainability (CSTM) at the University of Twente, the Netherlands and the Institute of the Environment (IOE) at the University of Balamand, Lebanon. Both institutions provided exceptional academic and technical support which allowed the successful completion of this study.

This thesis offers a multidimensional and interdisciplinary analysis of the effects on communities' vulnerabilities that follow from environmental degradation in the coastal area of north Lebanon within the context of armed conflict. The various outbreaks of armed conflict in the north Lebanon have had significant impacts at the economic, social, and political levels, as well as on the natural environment. This has negatively affected the communities living in north Lebanon, which are considered to be amongst the poorest and most deprived families in the country.

The research revealed the uncertainty and insecurity of these communities. The communities in the north Lebanon have been, and still are, exposed to various challenges, suffering, and threats. In some villages, some people do not have access to their basic rights or needs. In this thesis, I reveal the features and manifestations of vulnerability in the study area, but at the same time I place stress on the determinants of empowerment and on available opportunities. So, is there still a glimmer of hope for a better future? Despite the uncertainty, insecurity, challenges, and problems in this area, there are many opportunities and a high potential for development and prosperity. This can happen in the presence of good planning and management.

The field visits and the data collection process were an enriching experience. The interviews were more than just questionnaires; they were conversations giving me the opportunity to understand how these individuals deal with the unexpected, how grateful they are for what they have, and how much they value every small opportunity. I have also understood the choices these people make in their lives and their aspirations for a better future. What I have learnt from these people goes beyond theories and research. I have realized how

uncertainty and insecurity affect people's lives and decisions and what do they mean for their abilities to grab lives' opportunities.

As a Lebanese citizen, and more particularly as a northern coastline resident, I was perceived as an 'insider' who would understand the lifestyles, challenges, suffering, threats, and fears of the communities at the center of this study. I was astonished by the hospitality and generosity of the people who were keen to help and cooperate despite their deprivation, suffering, and the hard times their country was going through. Often they offered something to drink or eat, and tried to have pleasant conversations and make jokes. On many occasions, it was clearly painful for the respondents to recall the hard moments they had lived through, for example losing a dear friend during the conflicts, losing their property or livelihood, being displaced, having to leave their homes and loved ones, or simply the daily problems faced. Despite such memories, the participants tried to hide their tears with a smile and answer the questions and provide information to the best of their abilities.

The points discussed above created a feeling of admiration for, and appreciation of, these great people. However, at the same time, the feeling of self-involvement and guilt far outweighs that of admiration or even of achieving the research objectives. During the whole period of the study, I was always questioning myself: 'what right do I, even if I am a member of this community, have to enter any community and write about its people's experiences and lives? Are these people actually going to benefit from this research? How can this study help improve these people lives? And how can I return their favor?'

This dissertation is my opportunity to raise the unheard voices of the communities in north Lebanon and to contribute to an equal society which I aspire to be part of. I will always be sincerely grateful to each and every participant who generously shared with me their private experiences, knowledge, and opinions and took all the time to answer my questions and contribute to my aspirations. Thank you all!

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## Chapter One:

# Introduction

### 1.1. Introduction

Armed conflict and environmental degradation have a reciprocal relationship. While most armed conflicts result in some form of environmental degradation, pressure on the natural environment can also further exacerbate tensions and become a trigger for armed conflict. Environmental degradation coupled with other stress factors, such as unemployment, high levels of inequality, and weak governance, can aggravate poverty and social problems, thereby increasing individual and community vulnerabilities (Shambaugh et al., 2001; Khagram et al., 2003; Renner, 2006; Barnett, 2007; Huseynov, 2011). As such, the natural environment is directly associated with humans and their wellbeing, and particularly of the most impoverished, vulnerable, and least empowered (Khagram et al., 2003).

Most of the literature on environment and violent conflict focuses on the debate as to whether and why environmental degradation and scarcity, natural resource abundance, or a dependence on natural resources can induce violent conflict (Baechler, 1998; De Soysa, 2002; Bernauer et al., 2012). However, the environmental impacts of armed conflict and the effects of these environmental impacts on peoples' livelihoods are less researched in comparison to the other two themes (Khagram and Ali, 2006). The starting point for this thesis is the social impacts of environmental degradation which were caused by armed conflict in the coastal area of north Lebanon.

Taking this as a starting point, this thesis is based on two predominant and interlinking concepts that consider vulnerability and empowerment. Thus, this study aims to offer an in-depth and interdisciplinary analysis of the effects of armed conflict on the natural environment in north Lebanon and its consequent social impacts on the communities of the study area.

The next section provides the problem definition of the study. The research questions are then presented in Section 1.3 followed by a brief explanation of the study area and events selection (Section 1.4), and methodology (Section 1.5). Finally, an outline of the thesis is provided in Section 1.6.

### 1.2. Problem Definition

Lebanon's history is marked with much turbulence, political instability, and recurring episodes of armed conflict. The various outbreaks of armed conflict have had significant

impacts in terms of fatalities and injuries, population displacement, insecurity, economic disruption, as well as direct and indirect impacts on the natural environment.

In times of conflict, the environment falls at the bottom of the agenda and the focus is more on saving lives, reducing human sufferings, and covering of people needs (Shambaugh et al., 2001). However, the natural environment should be considered as a high priority due to the high dependence of many communities on natural resources (Shambaugh et al., 2001). One of the first conflicts in Lebanon, where the environmental impacts of the war received global attention, was the 2006 Israel-Lebanon War; in particular through the Jiyeh oil spill and the unexploded cluster bombs in South Lebanon. This war resulted in substantial environmental degradation, later estimated to a value of USD 729 million (Das and Davidson, 2011). However, for other episodes of armed conflict in Lebanon, the environmental impacts received less attention.

Recurring episodes of armed conflict in north Lebanon also increased people's negligent behavior towards their surrounding environment. This is strengthened by other developments such as urbanization, the lack of environmental management, uncontrolled activities in various sectors, including industry, tourism, agriculture, and transport. Such activities are exerting environmental pressure on Lebanon, particularly in its coastal areas (IMAC, 2009). These activities and their consequent environmental pressure have been well-covered and documented in a study done by the Integrated Management of East Mediterranean Coastlines (IMAC) Project on long-term mechanisms and management procedures for stimulating sustainable development in coastal zones (IMAC, 2007; IMAC, 2009). Even though this thesis acknowledges the significant impacts of daily human activities on the natural environment, it will only focus on the environmental degradation caused by armed conflict.

According to the literature, environmental degradation reduces economic potential and human wellbeing and changes people's living conditions by rendering them more vulnerable (Dabelko and Dabelko, 1995). In Lebanon, social divisions are reflected in spatial heterogeneous clusters characterized by diverse political, religious, and ethnic affiliations. There are 18 known religious communities and there are various foreign population and ethnic groups (Das and Davidson, 2011). Vulnerability research emphasizes the importance of profiling differential vulnerability because systems, or their elements, are seldom equally vulnerable (Turner et al., 2003). Spatial profiling of vulnerabilities will therefore be an important part of this research.

### **1.3. Research Questions**

This research aims to study the impacts of environmental degradation, as caused by recurring episodes of armed conflict, on communities' vulnerabilities in the coastal area of north Lebanon. Here, communities refer to a group of individuals who share a common

geographic region (city or village). To address this objective, the following research question was formulated:

*How does environmental degradation, caused by recurring episodes of armed conflict, affect the communities' vulnerabilities in the coastal area of north Lebanon? How can the findings be positioned in the academic literature on environmental security, vulnerability, and empowerment?*

In order to answer the central research question and provide an in-depth understanding of the subject being studied, the empirical part of this thesis is divided into three chapters each addressing a certain aspect. The first examines the environmental effects of recurring armed conflict in the study area. The second focuses on vulnerability resulting from environmental degradation in the context of armed conflict. The third focuses on measuring individual empowerment in the study area. The terms vulnerability and empowerment are closely related. Lack of empowerment can lead to higher levels of vulnerability and vice versa. On the other hand, empowering people is expected to lead to a decrease in vulnerability.

Three pairs of sub-questions were developed to reflect these goals:

1.1. What are the direct and indirect environmental impacts resulting from repeated episodes of armed conflict in the coastal area of north Lebanon?

1.2. How can the findings be positioned in the existing literature on environmental security?

2.1. What features and manifestations of vulnerability are particularly relevant in the coastal area of north Lebanon?

2.2. How does vulnerability vary across the different geographical areas within the study region?

3.1. What are the degrees of empowerment of individuals in the coastal area of north Lebanon?

3.2. How do the degrees of empowerment vary across the different geographical areas within the study region?

In order to answer these questions, a combination of steps was carried out in this research:

- A review and analysis of the environmental degradation caused by four episodes of armed conflict;
- An assessment of communities' vulnerability of place in the coastal area of north Lebanon using the 'hazards of place' model (Cutter, 1996); and
- An assessment of individuals' degrees of empowerment in the study area using Alsop et al. analytical framework (Alsop et al., 2006).

#### **1.4. Study Area and Events Selection**

The coastal area of north Lebanon was selected as the focus area for many reasons. North Lebanon receives relatively little attention from the government in terms of economic development compared to other areas of the country, and this makes it interesting to research. A further advantage of focusing on this area is that there is already valuable baseline information produced by the Integrated Management of East Mediterranean Coastlines (IMAC) project, mentioned earlier (IMAC, 2009).

The coastal area of north Lebanon has witnessed recurring episodes of armed conflict for more than thirty years. This ranges from civil conflicts to wars and continues to be the scene of periodic armed conflicts. The episodes of armed conflict in this area resulted in direct and indirect damage to the environment. This also affected the communities living in north Lebanon, which are considered to be amongst the poorest and most deprived families in Lebanon. As such, the environmental degradation has added to their existing vulnerabilities and aggravated their situation. The study area is described in detail in Chapter 3.

The research concentrates on four episodes of armed conflict. These significant events are the 1982 Israeli Invasion, the 2006 Israel-Lebanon War, the 2007 Nahr El Bared Clashes, and the Tripoli Clashes of 2008. These specific episodes of armed conflict were chosen due to their severe impacts on the study area, particularly on the natural environment and communities. The four events are described in detail in Chapter 4.

#### **1.5. Methodology**

The methodological framework of this research is briefly described here and is explained in detail in Chapter 3.

Both quantitative and qualitative methods are used, including:

- Structured interviews with the heads of the 24 cities and villages within the study area, or their representatives;
- 17 in-depth interviews with local stakeholders such as occupational groups, non-governmental organizations, and ministries;
- A survey among 500 individuals (a cross-section of the local population);
- Two focus groups with local authorities in the study area; and
- Document analysis.

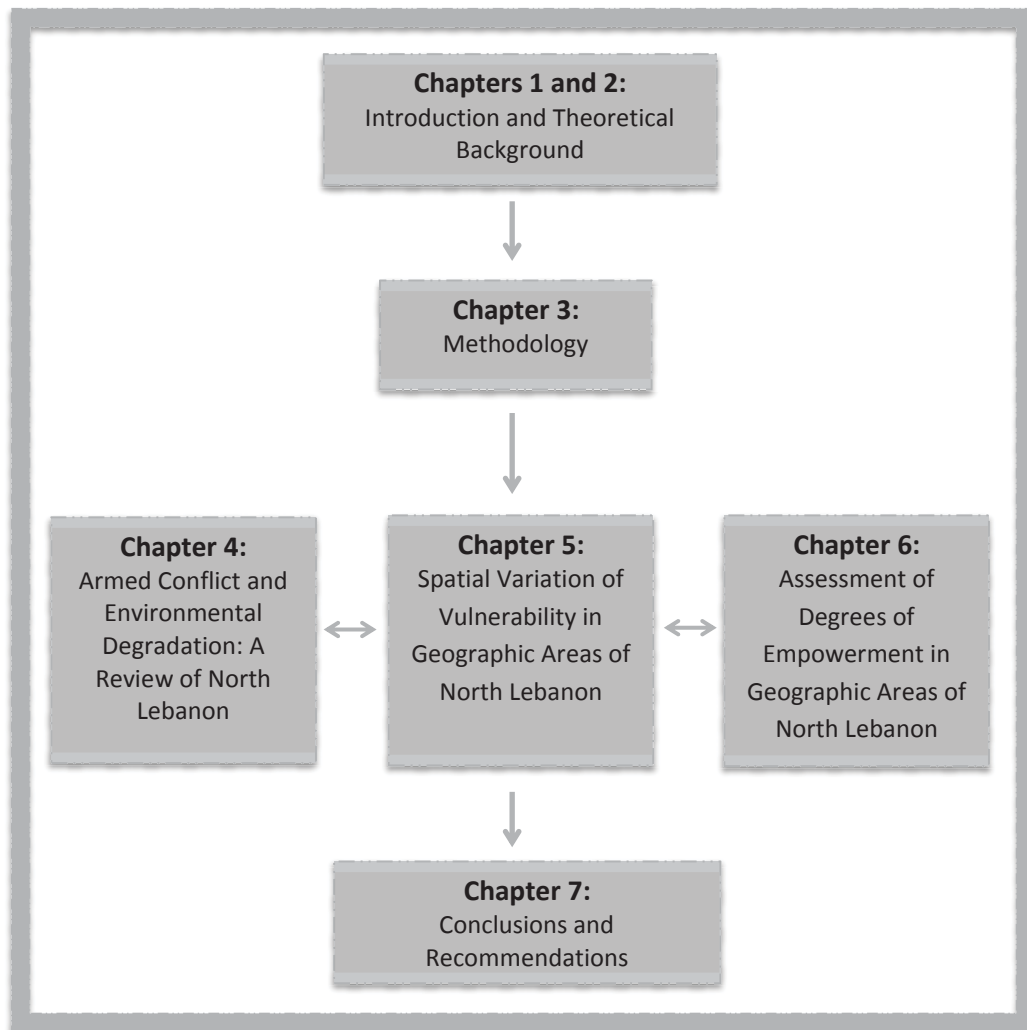
Triangulation is used to minimize bias and enhance the validity of the social research (Mathison, 1988; Thurmond, 2001; Guion et al., 2011).

## 1.6. Structure of the Thesis

This thesis offers a multidimensional and interdisciplinary analysis of the effects on communities' vulnerabilities that follow from environmental degradation in the coastal area of north Lebanon. This section describes the general outline of the thesis. It provides a summary of what each chapter includes and presents the logic followed in order to obtain the results. The thesis structure is illustrated in Figure 1.1.

In this thesis, the reader may find some overlaps and repetition between the research chapters (4 through 6) and the other chapters. This inevitable repetition is mainly due to the fact that the research chapters are based upon articles that are already published or under review in scientific journals.

**Figure 1.1:** *Structure of the thesis*



Chapter 1 introduces the problem definition, research questions, study area and events selection, methodology, and structure of the thesis.

Chapter 2 provides the theoretical framework for the thesis. The chapter starts by reviewing the literature on 'environmental security', particularly those themes that are related to the environmental consequences of armed conflict. The chapter relates 'environmental security' to the concepts of 'vulnerability' and 'empowerment'. The literature on 'vulnerability' and 'empowerment' is reviewed including the definitions, nature, and operationalization of the terms as well as the various analytical frameworks and approaches used for measuring 'vulnerability' and 'empowerment'. Chapter 2 concludes by outlining a general framework that combines the different concepts used in this research.

Chapter 3 provides the methodological basis of this research. The study area is first described. Next, the methodological approach used to answer each research question is illustrated. The data collection and analysis procedures are then described. Finally, the challenges faced during the four-year period of this study are acknowledged.

Chapter 4 starts with a description of the four episodes of armed conflict. This chapter reviews the direct and indirect environmental impacts that have resulted from the distinct episodes of armed conflict in Lebanon's northern coastal area and positions the findings in the academic debate on 'environmental security' and 'vulnerability of place'. The findings reveal a wide range of direct and indirect environmental impacts resulting from recurring episodes of armed conflict, including marine pollution from oil spills, land degradation, air and land pollution from infrastructure destruction, pressure on natural resources from population displacement and from the absence of environmental governance, and impacts on economic sectors that depend on natural resources. In addition, the findings show the ways in which armed conflict has resulted in environmental degradation and increased communities' vulnerability in the case of the coastal area of north Lebanon.

Chapter 5 examines the predominant features and manifestations of vulnerability in the coastal area of north Lebanon and studies the spatial variation of vulnerability in five geographical areas within this region within the context of armed conflict. To this end, the 'vulnerability of place' concept is adopted using the 'hazards of place' model (Cutter, 1996). The analysis shows that there is variation in community vulnerability among the five areas of Lebanon's northern coastal zone. It further reveals that this variation in vulnerability has not only been influenced by physical exposure to the environmental damage from armed conflict but also by the sensitivity and coping capacities of coastal communities that can be characterized in terms of their poor socioeconomic conditions, the political marginalization of the area, and weak institutional capacity and functioning.

Chapter 6 identifies different degrees of individual empowerment within the studied coastal area. Here, the analytical framework developed by Alsop et al. (2006) is used to measure the local-level degrees of empowerment within three sub-domains: the public services delivery sub-domain, the labor sub-domain, and the community sub-domain. The results show that degrees of empowerment in the coastal area of north Lebanon vary among the different

geographic areas and are to an extent determined by the combination of agency and opportunity structure. Education is also shown to be a crucial determinant of empowerment.

Chapter 7 concludes the thesis by highlighting the key findings of the research questions. This chapter also highlights the contribution of this thesis to the literature and provides recommendations and suggestions for further research.





Chapter Two:

## Theoretical Background

### 2.1. Introduction

This chapter provides the basic theoretical framework for this thesis. Taking environmental security as a starting point, Section 2.2 presents the literature on environmental degradation caused by armed conflict. Sections 2.3 and 2.4 then discuss the concepts of vulnerability and empowerment respectively. A general framework combining the concepts (Section 2.5) is then presented. Finally, Section 2.6 summarizes the key points discussed in this chapter.

### 2.2. Environmental Security

The concept of Environmental Security emerged in the early 1970s as part of the process of putting the environment on the international political agenda (Gleditsch, 1998). Since then, scholars have increasingly focused their efforts on examining the threats that can emerge from environmental disruption and their causal relationship with violent conflict (Graeger, 1996; Gleditsch, 1998; Stalley, 2003; Brauch, 2007). In the article *Environmental Security and Peace*, Jon Barnett (2007) defines environmental security as the “ability of individuals to avoid or adapt to environmental change so that things that are important to their well-being are not sustainably negatively affected” (Barnett, 2007, p. 5).

The literature on environmental security can be divided into four broad categories of research (Graeger, 1996; Rønnfeldt, 1997; Selim, 2004; Renner, 2006; Barnett, 2007; Buhaug and Theisen, 2012). The first category reveals how environmental degradation and scarcity can induce violent or non-violent conflict (Homer-Dixon, 1991; Elliott, 1996; Theisen, 2008). The second associates resource wealth to conflict (Collier and Hoeffler, 2001; Le Billon, 2001; Humphreys, 2005). The third category addresses the impacts of armed conflict on environmental degradation (Kanyamibwa, 1998; Westing et al., 2001; Khagram and Ali, 2006), while the fourth considers environmental peacemaking (Conca and Dabelko, 2002; Dabelko, 2006; Swatuk, 2004).

According to the literature, research on the environment as it relates to violent conflict largely focuses on the debate as to whether and why environmental degradation and scarcity, natural resource wealth, or dependence on natural resources can result in violent conflict (Baechler, 1998; De Soysa, 2002; Khagram and Ali, 2006; Bernauer et al., 2012). Less research has addressed the environmental impacts of armed conflict or the relationship between the environment and peace. This highlights the need for further systematic and focused research on this aspect of the environmental security debate (Khagram and Ali,

2006). Taking this point as a starting point, this thesis focuses on the environmental degradation that has resulted from different episodes of armed conflict in the coastal area of north Lebanon and, most importantly, examines its social consequences for the communities of this area.

Efforts to examine the environmental impacts of armed conflict date back to the 1970s with Arthur Westing, considered to be a pioneer in this field, exploring the negative environmental effects of the Vietnam War (Westing 1971; Westing, 1972; Westing 1975; Westing, 2013). Al-Lihaibi and Ghazi (1997), Husain (1998), and Price (1998) later studied the environmental effects of the 1991 Gulf war. Kanyamibwa (1998) examined the influence of the Rwandan war on biodiversity and conservation. Draulans and Van Krunkelsven (2002) and Nackoney et al. (2014) investigated the impact of armed conflict on forest areas in the Democratic Republic of Congo. Other scholars have also offered empirical evidence of environmental effects resulting from armed conflict (Rose, 1993; Dudley et al., 2002; Kengni, 2013).

Environmental destruction is unavoidable in times of armed conflict (Huseynov, 2011). The actual environmental impacts of an armed conflict depend on several factors such as the type of conflict, its magnitude and duration, types of weapons and chemicals used, and the ecosystems present in the specific geographic locations (Leaning, 2000). Identifying the nature of conflicts is crucial to determining their impacts on local communities and the environment that surrounds them. This is critical to understanding the political, social, economic, and environmental consequences, which is necessary when developing mitigation strategies and trying to reduce the negative impacts (Shambaugh et al., 2001).

Armed conflicts can have both direct and indirect environmental impacts (Partow, 2008). Direct impacts are those that result exclusively and directly from military activities, for instance, chemical spills, demolition waste from infrastructure destruction, pollution, land mines, natural resources destruction, as well as the destruction of habitats and loss of wildlife (Shambaugh et al., 2001; Al-Duaij, 2002; OECD, 2008; Partow, 2008). The environmental damage caused by such impacts is well documented (Price, 1998; Dicks, 1999; Ekanayake and Ofori, 2000; Leaning, 2000; Peterson et al., 2003; Gangoells et al., 2009; Corn and Copeland, 2010; Upton, 2011). Indirect impacts can be credited wholly or partly to the conflict and to the related war economy. Such impacts encompass population displacement, absence of environmental governance, and the halting of development and conservation programs (Shambaugh et al., 2001; OECD, 2008; Partow, 2008). Displaced people and refugees can have significant effects on the environment and these aspects have been well covered in the literature (Kibreab, 1997; Urdal, 2005; Gomez and Christensen, 2010). Further, conflicts tend to aggravate already prevailing environmental issues. For instance, they can exacerbate inadequate agricultural practices and deforestation, and may cause desertification, drought, erosion, soil contamination and loss of fertility, as well as the disappearance of some species. Armed conflicts may also lead to the over-exploitation of natural resources for both basic survival and for commercial purposes. The irrational removal of natural resources causes food shortages and deforestation that can, in the longer term, have negative effects on the means of survival for local residents (Huseynov, 2011).

Environmental impacts also occur before and after armed conflicts for various reasons, often with subsistence, strategic, or commercial causes, and often for political, social, and economic reasons (Barnett, 2007). The pre-conflict phase, including military preparation and training, poses several risks to the environment. Military activities also produce significant waste from the manufacture and storage of weapons, and from the usage of toxic substances (Al-Duaij, 2002). Post-conflict periods are often coupled with ongoing and sometimes even more serious environmental impacts in meeting the requirements of the country's reconstruction and population resettling programs. The return of refugees to their homes often results in natural resources being over-exploited. In addition, the breakdown of economic and environmental governance often disrupts waste collection arrangements, increasing pollution and the risk of infectious diseases (Huseynov, 2011). Moreover, military waste poses a significant environmental problem. Such waste may pollute countries or even larger regions for decades. Unexploded mines, for example, may result in soil and water pollution for years to come (Huseynov, 2011).

There is a close, direct, and complex linkage between the natural environment and human wellbeing. Environmental degradation weakens economic potential as well as human wellbeing and dramatically changes the living conditions of communities by rendering them more vulnerable (Dabelko and Dabelko, 1995). Environmental degradation can have numerous impacts such as health and economic problems as well as political instability. It can also lead to social issues that threaten individuals, families, communities, and social organizations (Khagram et al., 2003). As such, negative changes in environmental quality multiply the potential for impoverishment, deprivation, and lack of empowerment, and hence increase vulnerabilities. As a result, some individuals or groups become more sensitive and less prepared for dealing with unexpected or increasing environmental changes (Matthew et al., 2010). Individuals who depend mostly on natural resources as their main source of income are commonly the most susceptible to environmental change (Matthew et al., 2010). In particular, the poor and impoverished people are often the most affected by environmental degradation for they are often heavily dependent on natural resources for their livelihoods (Kumar and Yashiro, 2014). On the other hand, a better environment offers opportunities for human wellbeing by improving chances of survival, enhancing human capacities, and increasing the recognition of basic rights (Khagram et al., 2003).

### **2.3. Vulnerability**

Vulnerability is a highly debated concept but one that has been well covered in the literature (Timmerman, 1981, Cutter, 1996; Kelly and Adger, 2000; Bankoff et al., 2004; Wisner et al., 2004; Flint and Luloff, 2005; Schröter et al., 2005; Adger, 2006; Birkmann, 2006). The term vulnerability has proved difficult to define because it is a combination of several factors. Definitions of vulnerability vary between different disciplines and even within the same discipline depending on the various concepts and meanings that the researchers adopt as their starting point (Füssel, 2006).

In the early 1980s, Gabor and Griffith referred to vulnerability as the *“threat to which a community is exposed taking into account not only the properties of the chemical agents involved but also, the ecological situation of the community and the general state of emergency preparedness at any given point in time”* (Gabor and Griffith, 1980, p. 325). Timmerman defined vulnerability as the extent to which a system might adversely respond to the incidence of a certain threatening event. The extent and type of that adverse reaction are partially controlled by the system’s resilience defined as the system’s capability to absorb and recover from the incidence of a particular threatening event (Timmerman, 1981). According to Kates, vulnerability is the *“capacity to suffer harm or to react adversely”* (Kates, 1985, p. 17). Later, Liverman defined vulnerability as *“the characteristics of places or people that are likely to be harmed by meteorological and geophysical events”* (Liverman, 1990, p. 50). Kelly and Adger explained vulnerability as the capability or otherwise of individuals and groups to react, cope with, or adapt to an external pressure affecting their livelihoods and wellbeing (Kelly and Adger, 2000, p. 328). Turner et al. regarded vulnerability as the extent to which a system or part of a system is likely to suffer from threats caused by exposure to a certain perturbation or pressure (Turner et al., 2003), whereas Wisner et al. (2004) defined it as *“the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard”* (Wisner et al., 2004, p.11). Another definition of vulnerability is presented in *Mapping vulnerability: Disasters, Development, and People* where it is considered as *“an internal risk factor of the subject or system that is exposed to a hazard and corresponds to its intrinsic predisposition to be affected or to be susceptible to damage”* (Bankoff et al., 2004, p. 37).

As the various definitions suggest, vulnerability symbolizes physical, economic, political, and/or social susceptibility of a certain population to damage that is caused by a natural or man-made disaster. Since this study examines the environmental impacts caused by armed conflicts in the coastal area of north Lebanon and the consequent effects on the communities’ vulnerabilities in this area, vulnerability is defined here as the susceptibility of the communities of the coastal area of north Lebanon to environmental damage caused by episodes of armed conflict and their capacity to cope with threats or damage caused in that context. Vulnerability is multidimensional, differential, and scale-dependent and is usually associated with existing conditions that cause livelihood activities to be highly fragile for a certain population. It varies across time, geography, and among and within social groups. It is also dependent on the space and unit of analysis such as individual, household, region, and system. As such, the range of characteristics and driving forces of vulnerability are dynamic and continuously change over time (Birkmann, 2006).

Vulnerability is often associated with terms such as hazard, risk, coping capacity, and resilience. A hazard is generally defined as a hidden threat or an external risk that can affect an exposed system or subject (Bankoff et al., 2004). It is often regarded as the probability that a certain event with a precise intensity will occur in a certain area during a particular period of time. Combining vulnerability and hazard creates risk, which is the potential loss experienced by an exposed system. Vulnerability and hazard are in a mutual relationship and neither can exist without the other. A system cannot be threatened if it is not vulnerable and vice versa: a system cannot be exposed if it is not threatened. Thus, if the elements of risk

are affected, the risk itself is altered (Bankoff et al., 2004). Another two key terms associated with vulnerability are coping capacity and resilience. Coping capacity refers to the sum of the strengths and resources that are present within a community or institution that can minimize the level of threat or the impacts of the disaster (Birkmann, 2006). Vulnerability and coping capacity are manifested whenever vulnerable communities are exposed to a threatening experience. Resilience is related to the ability of a system to handle shocks and maintain its fundamental functions and structures. This implies that the system is capable of adapting and learning, and hence being sufficiently self-organized to sustain crucial structures and mechanisms within an adaptation or coping process (Birkmann 2006).

The literature on vulnerability can be divided into three distinct streams when it comes to its causal structure. One theme views vulnerability in terms of the potential exposure to occurring hazards. This approach is illustrated in several studies (Quarantelli, 1992; Alexander, 1993; Douglas, 2007; Uzielli et al., 2008; Bertrand et al., 2010). Physical vulnerability assessments often emphasize how hazardous conditions are distributed and the ways in which such circumstances can alter humans and structures. A second approach identifies social vulnerability as a function of the underlying social conditions which are often detached from the initial hazard occurrence. Social vulnerability researchers treat exposure as a given, and seek forms of differential losses among affected communities. Studies that assess social vulnerability focus on understanding the ways in which communities are exposed to threats, and particularly on their potential coping capacity to resist as well as their ability to recover from the damaging impact of an event (Bohle et al., 1994; Adger, 1999; Dunno, 2011; Tate, 2012; Yoon, 2012). The third perspective, vulnerability of place, combines both biophysical and social approaches. Vulnerability of place is considered in terms of biophysical and social vulnerability, but is centered on a specific geographic domain. Researchers that adopt this perspective, address vulnerability within a specific geographic area to determine the location of vulnerable people and places, or within a social place to identify which groups are most vulnerable in those places (Cutter, 1996; Boruff et al., 2005; Cutter et al., 2000; Cross, 2001; Cutter et al., 2008).

The various definitions of vulnerability are also accompanied by a similar diversity of assessment methodologies, such as participatory, indicator-based, and simulation-based approaches, which are applied to various systems and on diverse spatial and temporal scales (Birkmann, 2006; Hinkel, 2010). In reality, the scientific definitions offer little guidance on designing methodologies to assess vulnerability. In general, definitions are operationalized in ways that reflect the generalities of the terms used, and this results in methodologies that are loosely connected to the theoretical operationalized definitions (Hinkel, 2010). Therefore, in operationalizing definitions and designing methodologies for vulnerability assessment, normative choices have to be made. The key to assessing and understanding vulnerability is to determine who are the vulnerable individuals and/or groups, to what threats they are vulnerable and where, and how various factors interact leading to either attenuation or amplification of vulnerability. Thus, vulnerability can be studied to highlight the influence of numerous factors on the wellbeing and livelihoods of the entities of analysis. It is also important to examine the ways in which responses to one factor can increase or

decrease vulnerability to other factors and how interventions affect both present and future outcomes (Turner et al., 2003; O'Brien et al., 2009).

As observed earlier, there are diverse approaches and methods used to assess vulnerability. From a risk and hazard perspective, the risk-hazard model (RH) has been used to assess the risks to particular components that result from their exposure to hazards of a certain type and scale (Kates, 1985). This approach is descriptive rather than explanatory and is often used in the technical literature on disasters. The risk-hazard model is usually used to examine physical systems such as the built infrastructure and distinguishes between two features that determine the risk to a certain system: hazard and vulnerability. A hazard is seen as a potentially harmful physical event and is viewed in terms of intensity, frequency, location, and probability; vulnerability is seen as the association between the severity of the hazard and the extent of the damage resulting from such an event (Füssel, 2006). This approach is hard to apply to humans because their exposure to hazards is largely determined by their behavior which is influenced by various socioeconomic factors (Füssel, 2006). Another model that stems from the risk-hazard approach is the pressure-and-release model (PAR). This explanatory model encompasses the global root causes, regional stresses, and local susceptible conditions (Wisner et al., 2004, Füssel, 2006). According to Wisner et al. (2004), the root causes that contribute to vulnerability are primarily the economic, demographic, and political structures that often influence resource allocation and distribution among groups and individuals. Further, the root causes are linked with the functions of the government and military actions (Wisner et al., 2004). Despite this model exploring the processes that can influence vulnerability, it fails to explicitly consider the significance of place and geography and, as with other vulnerability approaches, only emphasizes the interconnections of negative processes during catastrophic events and disregards capacity building, which can be inherently disempowering (Joakim, 2008).

The political economy approach primarily assesses people's vulnerability by identifying the vulnerable individuals or groups and the factors that contribute to their vulnerability (Kelly and Adger, 2000). In this approach, vulnerability is conceived in terms of the coping capacity of individuals, groups, and communities and their adaptation to external pressures that affect their livelihoods and wellbeing. Here, the availability of and access to resources are considered the main determinants of vulnerability (Füssel, 2006). The political economy approach is dominant in the literature on poverty and development.

According to Bohle (2001), vulnerability can be regarded as a two-sided concept with both external and internal sides. The external side includes exposure to risks and threats while the internal side is associated with the capacity to anticipate, deal, resist, and recover from the impact of a certain disaster (Bohle, 2001). From the social geography perspective, the double structure of vulnerability depends on distinguishing between the exposure to external risks and the capability of the household, group, or society to deal with them. Bohle's conceptual framework emphasizes the physical aspect, characterized by the exposure to threats and perturbations as a key component of vulnerability, and the fact that vulnerability cannot efficiently be characterized without simultaneously considering coping and response capacity.



The 'sustainable livelihood framework' approach to vulnerability assessment relies on five key capitals: human, natural, financial, social, and physical. This approach was originally developed by Chambers and Conway (1991) who regarded livelihoods in terms of the capacities, assets, and actions that are necessary to secure a means of living (Chambers and Conway, 1991). Within the sustainable livelihood framework, the context of vulnerability is regarded in terms of shocks, trends, and seasonality, as well as the effect of changing structures on livelihood strategies and their outcomes. In this context, sustainability is explained in terms of the capacity to cope with and recover from perturbations while sustaining the natural resource base. The framework emphasizes that changing structures in the governmental system or in the private sector, and their processes, influence the vulnerability context by having major influences on and controlling access to the livelihood assets of people (Chambers and Conway, 1991; DFID, 1999). The sustainability approach highlights empowering local marginalized people as an effective means of reducing vulnerability. As such, it is crucial to consider the daily needs of people and communities, rather than simply applying general interventions without recognizing the different abilities offered by vulnerable people. Within the sustainable livelihood framework, access is a fundamental component, and this largely depends on the status of social relations. As such, a greater emphasis should be placed on the role of power relationships in sustainable livelihood research (Birkmann, 2006).

Turner et al. (2003) developed a conceptual framework to assess vulnerability. The framework regards vulnerability in terms of exposure, sensitivity, resilience, and coping capacity within the context of the human-environment system. In addition, this approach considers the various interrelating perturbations and stresses as well as adaptation, which is conceived as an important component that increases resilience.

The various approaches and frameworks developed to study vulnerability incorporate both social and physical characteristics, but these are generally presented as distinct and independent processes (Joakim, 2008). Further, there was a trend visible in the literature toward an increasingly detailed examination of the social aspect of vulnerability, with physical and environmental vulnerability consequently becoming somewhat neglected. In an attempt to incorporate both the physical and social dimensions of vulnerability, and to recognize the complex interactions between them, Cutter started to develop the 'hazards of place' model in the 1990s to give a comprehensive understanding of vulnerability by combining the social and physical aspects while emphasizing the importance of place (Cutter, 1996; Cutter et al., 2000; Cutter et al., 2003).

As discussed earlier, the complexity, dynamicity, and multidimensionality of the term 'vulnerability' pose serious methodological challenges when trying to measure it. Therefore, determining a specific framework for understanding the vulnerability of communities in the coastal area of north Lebanon, its manifestation, and its geographic variation within this particular area was not an easy decision. Given the aim of this study, the selected methodological approach was based on the theory of 'Hazards of Place' developed by Cutter (1996). The 'Hazards of Place' approach integrates the physical and social aspects of vulnerability and centers this within a specific geographic location. This approach has been



conceptualized in the 'hazards of place' model of vulnerability. It identifies the casual structure, the spatial variation, and means to reduce people's vulnerability. This model was chosen for several reasons. First, this model provides a more holistic understanding of vulnerability by combining the physical and social aspects of vulnerability and, as such, links various models and theories developed to study vulnerability. Second, this model focuses on a particular geographic area, an aspect that matches the purpose of this study that is focused on the coastal area of north Lebanon. This approach highlights the exceptionality of each area studied within the context of an overarching framework. Third, the model recognizes the dynamic nature of vulnerability and how small changes in components of the model can produce larger changes in 'vulnerability of place'. Further, the 'hazards of place' model with its emphasis on the importance of mitigation regards people as active participants within the vulnerability process. The final reason for choosing this model is that it encompasses a wide array of factors in providing a comprehensive overview of vulnerability. It involves quantitative variables such as age, education level, and gender but also focuses on factors that are hard to assess and analyze using quantitative approaches. This necessitates the use of both quantitative and qualitative methods and leads to a better understanding of vulnerability.

Studying vulnerability draws attention to the need to investigate the various concepts related to empowerment theory because empowering vulnerable individuals and communities is an effective way to reduce vulnerability (Birkmann, 2006).

#### **2.4. Empowerment**

Empowerment is broadly regarded as "*increasing poor people's freedom of choice and action to shape their own lives*" (Narayan, 2005, p.4). Research on empowerment connects human wellbeing to the larger social and political environment through highlighting people's capabilities, rather than focusing on risk factors, and by uncovering the influence of social issues, rather than blaming the victims (Perkins and Zimmerman, 1995). Empowerment has a multidimensional, complex, and dynamic nature (Samman and Santos, 2009). It refers both to a process and to an outcome. The idea is that the actions, activities, and structures surrounding people can be empowering and that the result of such processes is a certain degree of empowerment. Empowerment processes and outcomes differ in their apparent shape because there is no fixed standard that can fully determine the meanings in different contexts or populations (Perkins and Zimmerman, 1995). As such, definitions of empowerment vary depending on the discipline involved, the objectives of the research or intervention, and the approaches used to assess it. Nevertheless, they are generally associated with terms such as agency, autonomy, freedom, power, control, participation, integration, choice, and change (Fawcett et al., 1995; Goetz and Gupta, 1996; Foster-Fishman et al., 1998; Brown, 2005; Lokshin and Ravallion, 2005; Malena and Heinrich, 2005; Moser, 2005; Ibrahim and Alkire, 2007).

Rappaport was an early scholar in the field of empowerment and defined it as “*the process by which people, organizations and communities gain mastery over their lives*” (Rappaport, 1981; Rappaport, 1987, p.122). Empowering processes and outcomes could be on the individual, community, and organizational levels. Individual-level empowerment processes could involve participation and integration in organizations within the community, with the outcomes maybe seen in terms of perceived control over a certain condition and in an ability to mobilize resources. On the community level, empowerment processes could encompass collective action to gain access to government and various community resources, with outcomes maybe involving an indication of pluralism, the presence of organizational associations, and the availability of community capitals. Organizational-level empowerment processes might involve collective decision-making and leadership, with outcomes including expanded organizational networks and growth as well as policy influence (Perkins and Zimmerman, 1995). Various authors have focused on economic resources that enhance people’s opportunities to increase their income and hence improve their livelihoods. In line with this, several scholars have concentrated on the importance of microcredit in empowering certain marginalized social groups, particularly women (Goetz and Gupta, 1996; Mayoux, 2000a; Mayoux, 2000b; Mosedale, 2005; Jupp and Ibn Ali, 2010; Morsink, 2012). Others have put greater emphasis on the person-related aspects such as satisfaction, personal development, human rights, and justice (Charrad, 2010).

In her book *Measuring Empowerment: Cross-Disciplinary Perspectives*, Narayan defined empowerment as “*the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives*” (Narayan, 2005, p.5). Narayan regards empowerment as having an intrinsic and instrumental value and emphasizes four major components of empowerment: access to information, integration and participation of individuals and groups, social accountability, and local institutional capability. Khwaja (2005) discusses two major aspects of empowerment: information and influence. Providing and gaining information allow individuals and communities to express and value what they prefer which can, in turn, improve their ability to take optimized decisions. Influence is an important factor since it can affect the outcome of a particular decision (Khwaja, 2005).

In a World Bank publication, *Empowerment in Practice: From analysis to implementation*, Alsop et al. (2006, p.10) defined empowerment as “*a group’s or individual’s capacity to make effective choices, that is, to make choices and then to transform those choices into desired actions and outcomes*”. The authors, in an attempt to measure empowerment, also developed an analytical framework. The framework views empowerment in terms of two components – agency and opportunity structure – and distinguishes different degrees of empowerment. Agency refers to an actor’s capacity to visualize options, express preferences, and make purposeful choices; and opportunity structure refers to the institutional environment that is comprised of formal and informal contexts within which the actors function (Alsop and Heinsohn, 2005; Ibrahim and Alkire, 2007). Agency and opportunity structure share a relationship leading to different degrees of empowerment that can be measured in terms of the existence, usage, and actual accomplishment of choices (Alsop and Heinsohn, 2005; Alsop et al., 2006). There are a range of factors that can

influence the existence of choice, such as the socioeconomic and geographic status of a person or group. In some cases, a choice may not even exist. Using the ability to choose depends on their being an actual benefit to an individual or a group arising from an opportunity to choose. The achievement of a choice reflects the extent to which the desired result has been accomplished (Alsop and Heinsohn, 2005; Alsop et al., 2006).

In this thesis, the Alsop et al. definition and analytical framework form the basis of Chapter 6 that aims to measure empowerment in various geographic areas of the northern Lebanese coastline. A detailed description of the analytical framework is provided in Chapter 6. This analytical framework was chosen for several reasons including its focus on the duality of agency and structures, the different domains and levels in an individual's life, and individuals' capabilities of being effective actors within the processes and outcomes of empowerment. Another reason for choosing this framework is that it provides a set of universally applicable and comparable indicators to measure agency, opportunity structure, and degree of empowerment. As such, the results obtained could be compared with studies made in other countries.

As already mentioned, agency and structures are generally viewed as the main components of empowerment. According to Sen (1999), agency is what an individual is free to do and accomplish in the quest for purposes or values that this individual perceives as important. Hence, an agent is *"someone who acts and brings about change, and whose achievements can be judged in terms of her own values and objectives"* (Sen, 1999, p.19). This definition is particularly relevant when it comes to the role of a person as a member of the public and as a contributor in the social, economic, and political domains. Although agency is an important component of empowerment, it would be wrong to see agency as synonymous with empowerment (Drydyk, 2008). The ability to perform as an agent is not equivalent to the achievement of desired outcomes (Petesch et al., 2005). Even if individuals have the ability to visualize options and make choices, they may not be capable of using this agency efficiently and may be inhibited by the formal and informal institutional environments within which they function – the so-called opportunity structure (Alsop and Heinsohn, 2005; Ibrahim and Alkire, 2007).

The relationship between agency and opportunity structure is highlighted by social theorists such as Giddens (1984) who emphasize the importance of considering structures and agency as 'dual' – that they are both the medium and the results of actions, and form social systems (Giddens, 1984). Structures shape the performance of people but it is also people's agency that generates the structures (Giddens, 1984). Structures can have various forms including language, state, and power (Sewell, 1992). According to Giddens, structures are endorsed by 'knowledgeable' human agents, and these agents perform by practicing their basic structured knowledge. Consequently, structures should not only be seen as restricting human agency, but also as enabling. This notion emphasizes that these agents are able to put their structurally formed capabilities into action in creative and original ways (Giddens, 1984; Sewell, 1992). Agency represents the actions taken by individuals or communities in social contexts. It is revealed in the continuous flow of action, and includes the interference of actors in a flow of potentially flexible procedures.

In attempting to understand the role of human agency in the change and development of a society, the 'actor-oriented' approach developed by Long recognizes the vital importance of human agency, self-organizing mechanisms and the reciprocal identification of internal and external features and relationships (Long and Jinlong, 2009). This approach emphasizes the interrelating activities of actors and involves in-depth investigation of the social and cultural gaps and the uncertainties in what Long calls the '*battlefields of knowledge*' that characterize the relationships between local actors, development experts, and other involved parties. Such battlefields are found within and throughout numerous institutional domains and fields of social action, embracing a wide variety of social actors dedicated to various livelihood strategies, cultural benefits, and political trajectories (Long and Jinlong, 2009).

Thus, the actor-oriented approach highlights the relationships and networks that grow between individuals or groups rather than individual or group policies. Ongoing communication between individuals and groups expands the boundaries and common expectations that can shape the interactions between members and hence, with time, the interface becomes a structured entity characterized by its intertwining relationships (Long, 1999). Even though interface interactions assume a certain level of shared interest, they also tend to cause conflict due to opposing interests and purposes or to unequal power relationships. Sometimes, individuals such as a village leader or mayor, or anyone who occupies a position between various social domains representing certain communities or organizations, carry out negotiations at the interface. They need to respond to the demands of their own group as well as to the expectations of the peoples with whom they have to negotiate, and thus find themselves in an unavoidably ambivalent situation. Those who have the skills to manage such positions have the ability to use them to their personal or political advantage, and can sometimes act as mediators or brokers. When examining the causes and dynamics of uncertainty and inconsistency at interfaces, it should not be assumed that someone who represents a particular group or organization will necessarily act in the interests or on behalf of that group. Thus, it is crucial not to prejudge a situation by supposing that particular divisions or loyalties, including ones based on class, ethnicity, or gender, are more essential than others, and the actual situation should be determined empirically (Long, 1999). In understanding interface, one needs to recognize that the nature of challenges can take precedence over the dominance and legality of certain socio-cultural paradigms. Here, it is crucial to recognize that commitment to particular normative and ideological structures and to types of discourse is specific to each situation. This means that the actors involved in an interface are not constant across all the social contexts (Long, 1999).

Knowledge is another important element in the actor-oriented approach, and is closely linked to the last point. Knowledge is generally present in every social condition and is usually interlinked with the power relationships and the distribution of resources. It is an intellectual and social construction that results from experiences, challenges, and gaps that often arise when different actors interact. There are various kinds of knowledge, encompassing ideas about oneself, about others, as well as the context and social institutions (Long, 1999). Knowledge is multilayered and diffuse, rather than inherently

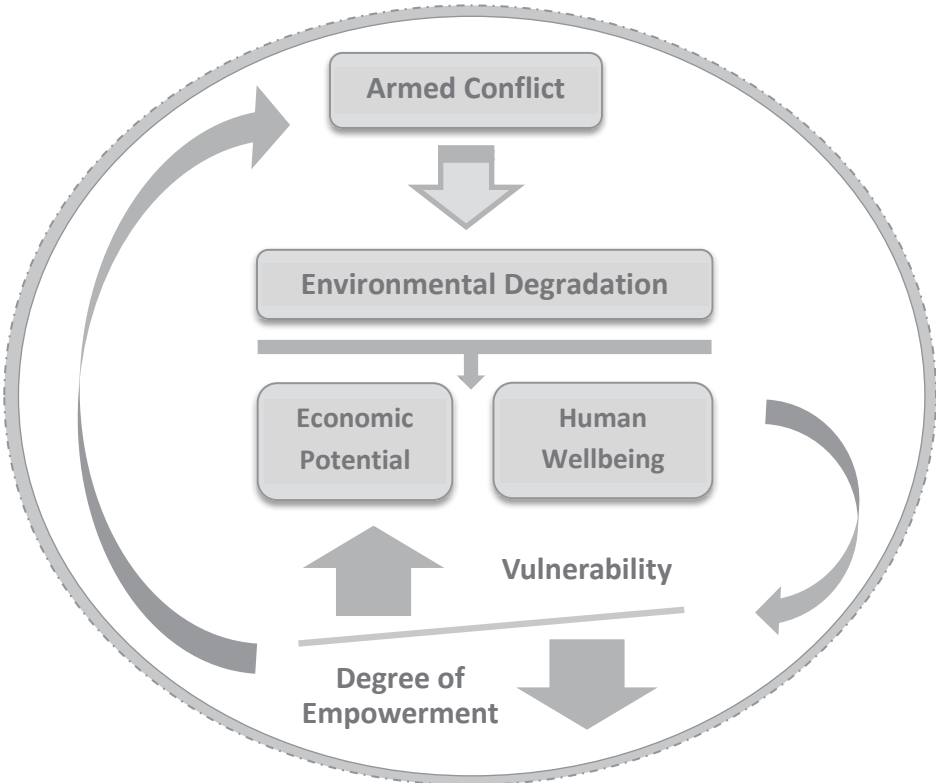
organized, emerging as a result of interaction, discourses, reflexivity, and challenges, and also involves aspects of control, authority, and power. Power, like knowledge, is the product of multiple and complex disputes and negotiations over authority, status, reputation, and resources. It requires membership of different networks of actors and groups (Long, 1999).

### 2.5. General Framework Combining Concepts

Based on the literature discussed above, this thesis is grounded on the following reasoning:

Armed conflict results in environmental damage or degradation. Environmental degradation affects the economic resources on which the people rely on and negatively affects human wellbeing and social response and hence increases people’s vulnerability to environmental change. Vulnerable people often have difficulties in accessing various assets such as information, human, financial, organizational, and material assets. This can negatively affect their agency and opportunity structure. Similarly, enhancements in agency and opportunity structure are expected to go together with a decrease in vulnerability. Figure 2.1 illustrates the relationship between the various concepts.

**Figure 2.1:** Framework illustrating the relationship between the different concepts



## **2.6. Summary**

This chapter has discussed the key theories and concepts that this thesis is based upon. Taking environmental security as a starting point, the chapter has discussed the literature on environmental degradation as a consequence of armed conflict. The concepts of vulnerability and empowerment have been addressed, encompassing definitions as well as theoretical and methodological approaches developed to assess these concepts. Finally, a general framework combining the different concepts was presented.



## Chapter Three:

# Methodology

### 3.1. Introduction

This chapter provides the analytical framework operationalization and methods used in this research. Methodology is a crucial component in any research study and underpins the successful fulfillment of the research objectives in answering the research questions (here presented in Chapter 1). It achieves this by providing a strategy to obtain the information needed and a clear approach to data gathering and analysis. In this study, the methods were carefully chosen and then combined in order to achieve an appropriate level of understanding and confidence in the results.

An overview of the study area is first presented in Section 3.2. The methodological approach (Section 3.3), data collection (Section 3.4), and data analysis procedures (Section 3.5) are then discussed. These are followed by Section 3.6 that explains the challenges encountered during the period of the study and reflects on the position of the researcher. Finally, Section 3.7 summarizes the key points addressed during this chapter.

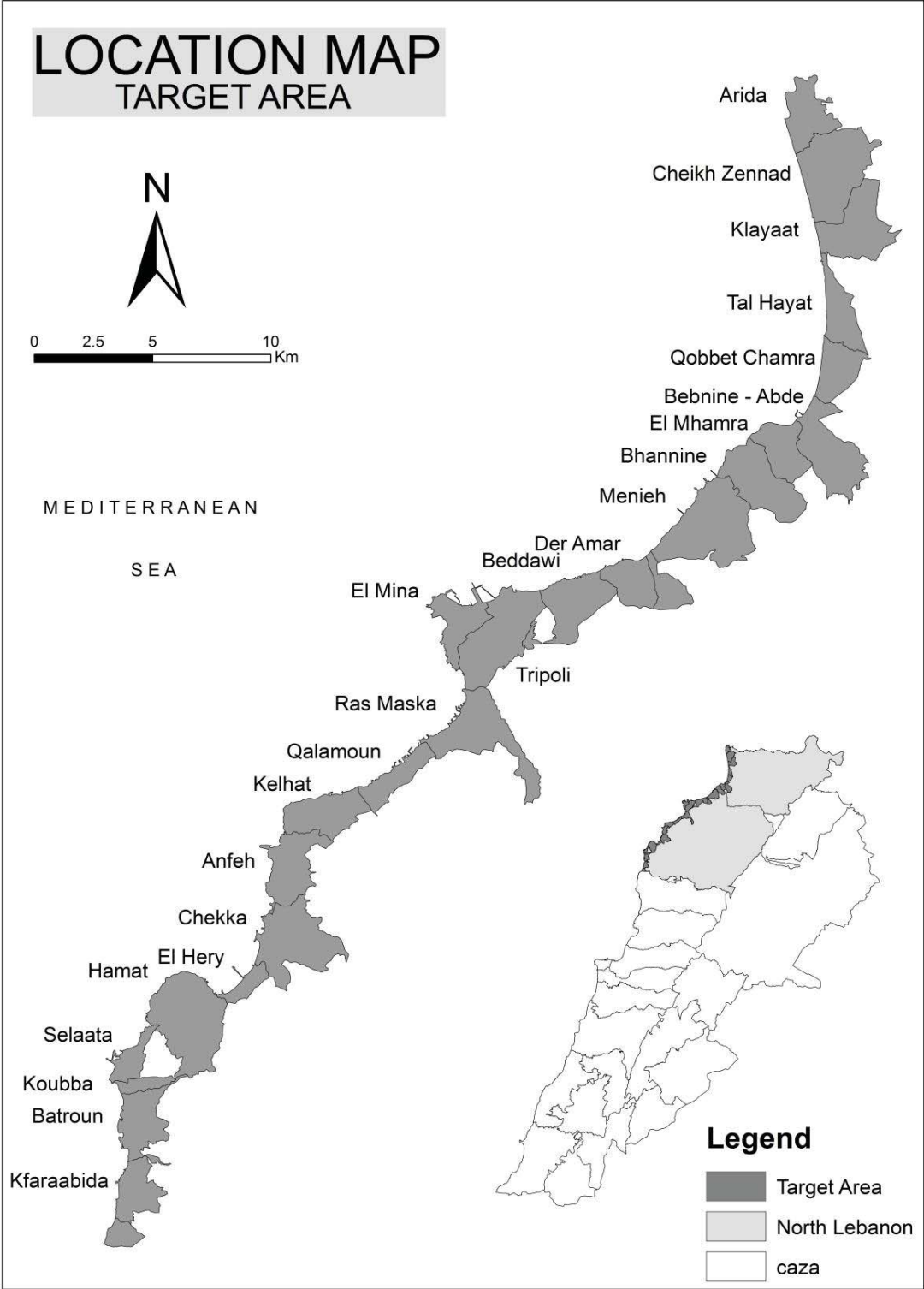
### 3.2. Study Area

As discussed in Chapter 1, the north of Lebanon and particularly the coastal region makes a good case study for a range of reasons encompassing the recurring episodes of armed conflict, the marginalization and deprivation of the area, as well as the political, religious, and ethnic complexity present. The area studied encompasses the northern coastal area of Lebanon. The northern coastline extends over some 100 km, roughly 40% of the entire Lebanese coast (Mitri et al., 2012). The overall region comprises five main areas (Akkar, Menieh, Tripoli, Koura, and Batroun) which are further divided into 24 cities and villages: Arida, Cheikh Zennad, Tal Hayat, Klayaat, Qobbet Chamra, Bebnine-Abde, El Mhamra, Bhannine, Menieh, Der Amar, Beddawi, Tripoli, El Mina, Qalamoun, Ras Maska, Kelhat, Anfeh, Chekka, El Hery, Hamat, Selaata, Koubba, Batroun, and Kfaraabida (Figure 3.1). The northern part of this coastal region is predominantly agricultural, whereas the southern part is characterized by urbanized areas including a number of major cities such as Tripoli and Batroun (IMAC, 2007). The whole region of north Lebanon is home to about 20% of the total population of Lebanon, and is estimated to have approximately 764,000 inhabitants (Central Administration of Statistics, 2007). The north of Lebanon is one of the poorest and most deprived area in the country, with 46% of the extremely poor population and 38% of the total poor population nationally (Das and Davidson, 2011). This region has historically been



neglected by the Lebanese government, which concentrates its efforts mainly in Beirut and its suburbs (Volk, 2009).

Figure 3.1: Map of the study area



### 3.3. Methodological Approach

As outlined in Chapter 1, each of the empirical chapters covers a specific area or concept addressed in the study relating to the interconnections between the different concepts. Various approaches and methods are employed to answer the research questions. Each of the empirical chapters (Chapters 4, 5, and 6) contains a detailed description of the particular methodological techniques applied. As noted earlier, the overlap and repetition that occur in some chapters are inherent to the way this dissertation is composed since it is based upon articles that are already published or under review in scientific journals. The empirical chapters are kept in this form so that they can be read independently.

Figure 3.2 presents a general scheme showing the different concepts used in the research and the related research questions.

**Figure 3.2:** *General scheme illustrating the various concepts used in the research and the related research questions*

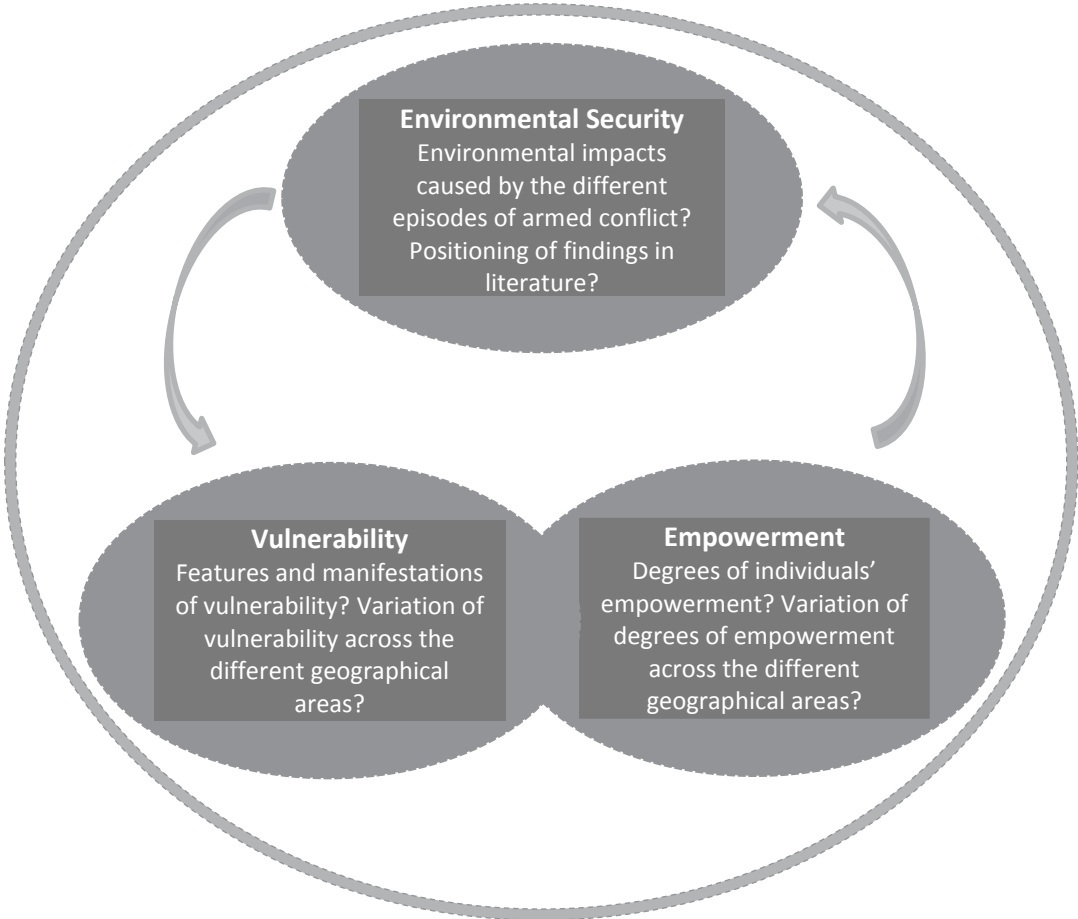


Table 3.1 summarizes the research questions, steps, and methods used in this study. The indicators used for each of the research questions can be found in Chapters 4, 5, 6.

**Table 3.1:** *Research questions, steps, and methods*

<b>Research Question</b>	<b>Steps</b>	<b>Methods used</b>
<p>1.1. What are the direct and indirect environmental impacts resulting from repeated episodes of armed conflict in the coastal area of north Lebanon?</p> <p>1.2. How can the findings be positioned in the existing literature on environmental security?</p>	<ul style="list-style-type: none"> <li>- Review of direct and indirect environmental impact caused by different episodes of armed conflict.</li> <li>- Position findings in the literature on 'Environmental Security'.</li> </ul>	<ul style="list-style-type: none"> <li>- Structured interviews</li> <li>- In-depth interviews</li> <li>- Document analysis</li> <li>- Literature review</li> </ul>
<p>2.1. What features and manifestations of vulnerability are particularly relevant to the coastal area of north Lebanon?</p> <p>2.2. How does vulnerability vary across the different geographical areas within the study region?</p>	<ul style="list-style-type: none"> <li>- Identify features and manifestations of vulnerability in the coastal area of north Lebanon.</li> <li>- Determine variation in vulnerability within the five main areas of the study region.</li> </ul>	<ul style="list-style-type: none"> <li>- Structured interviews</li> <li>- In-depth interviews</li> <li>- Questionnaire survey</li> <li>- Document analysis</li> </ul>
<p>3.1. What are the degrees of empowerment of individuals in the coastal area of north Lebanon?</p> <p>3.2. How do the degrees of empowerment vary across the different geographical areas within the study region?</p>	<ul style="list-style-type: none"> <li>- Identify different degrees of individual empowerment in the coastal area of north Lebanon.</li> <li>- Determine variation in empowerment within the five main areas of the study region.</li> </ul>	<ul style="list-style-type: none"> <li>- Questionnaire survey</li> <li>- Focus groups</li> </ul>

### 3.4. Data Collection

The main sources of information in this study involve documents, structured and in-depth interviews, a questionnaire survey, and focus groups (see Table 3.1). Below, the methods used in data collection are briefly described. A detailed description of the data collection process for answering each of the research questions is provided in the empirical chapters. The fact that there are no accurate or recent demographic statistics in Lebanon, as well as a lack of recent publishable data on the topic being studied, necessitated reliance on multiple and different sources of information. Triangulation was adopted in order to increase and strengthen the validity and reliability of data, to give a multidimensional perspective to the study, and to minimize potential bias within the study (Mathison, 1988; Blaikie, 1991; Yin, 2003; Guion et al., 2011).

The first round of information gathering included reviewing numerous documents. Official governmental documents were obtained from website searches and visits to several ministries and official institutions such as the Ministry of Environment, Ministry of Agriculture, Ministry of Social Affairs, Lebanon Higher Relief Committee, the Council for Development and Reconstruction in Lebanon, and the Al Fayhaa Union of municipalities. Reports from international organizations such as United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), and World Bank were also obtained either through visits to these organizations or from their websites. In addition, academic reports and articles, non-governmental organization (NGO) reports, and newspapers were also reviewed through libraries and internet searches as well as through contacts with various stakeholders. In the written material, we were seeking information regarding the damage, and particularly environmental damage, caused by the four episodes of armed conflict in the coastal area of north Lebanon. In addition, information on vulnerable and deprived communities as well as on the socioeconomic conditions found in the different cities and villages of the study area was also collected.

A total of 24 structured interviews were carried out between September 2011 and January 2012 with key informants who were mainly heads, or their representatives, of the cities and villages in the study area. The interviews were structured around open questions and aimed to collect data on the environmental damage caused by the various episodes of armed conflict. In addition, information regarding the constitution and characteristics of each city or village was collected in order to examine the social, economic, political, and environmental factors that could contribute to vulnerability in these areas. These key informants also provided a list of stakeholders involved in post-conflict interventions or in projects related to the study. In addition, several of the key informants provided documents containing general information about their cities and villages. The data collected from the structured interviews created a basis for the subsequent in-depth interviews with a range of stakeholders including staff from ministries and non-governmental organizations, farmers, and fishermen. A snowballing sampling method or chain referral sampling method was used and a total of 17 interviews were completed between September 2011 and April 2013. It is acknowledged in literature that this method can lead to biased samples. This is because data collection is highly dependent on social networks where the participants often provide the

researcher with a list of other participants who most likely share similar characteristics to the initial participant (Biernacki and Waldorf, 1981; Johnston and Sabin, 2010). Another drawback of this method is the generality of data (Biernacki and Waldorf, 1981; Johnston and Sabin, 2010). Being aware of these disadvantages, the researcher tried to collect data from various social networks such as governmental and non-governmental institutions, local residents, and other private institutions. The process of data collection was then ended as the information received was becoming repetitive and little new knowledge was being imparted. Further, the interviewees were no longer able to suggest additional new informants. The data gathered from the in-depth interviews concentrated on the issues that were highlighted during the structured interviews, including the types of damage and impacts on the surrounding communities, the vulnerable communities and groups within communities and their characteristics, the general socioeconomic conditions of the communities in the study area, and the interventions and initiatives that followed each episode of armed conflict. Some of the interviews were tape-recorded. The data collected were transcribed as soon as possible after the interviews and entered into QSR NVivo 10 Software for analysis.

A survey involving the distribution of 500 questionnaires among citizens in the study region was completed between June and October 2012. The survey was used to collect data on indirect indicators of agency and direct indicators of empowerment. In addition, the survey was used to collect data on vulnerability indicators that it had not been possible to obtain from documents and interviews. The choice of participants was based on simple random sampling for two main reasons: the lack of official statistical reports at the local level, and the complex nature of the populations in the coastal area of north Lebanon. In addition, it has been argued that a random sample is the most representative of the total population in a study area because, when participants are chosen randomly, everyone is equally likely to be included (Alreck and Settle, 2004). Before starting the survey, a pilot test involving 35 people completing questionnaires was completed in May 2012 to test for acceptability and accuracy, and the questionnaire was adjusted accordingly. After completing the main survey, the collected data were coded, entered into a Microsoft Excel Worksheet, and later transferred to the IBM SPSS Statistics 20 and Eviews 7 packages for analysis.

The final stage of data collection involved two focus groups that were held on 4 and 6 March 2013 at the University of Balamand in Lebanon. The use of focus groups presents several advantages. Firstly, focus groups allow in-depth discussion and examination of a topic of interest by emphasizing the interaction between the participants. This interaction may assist in exploring and clarifying participants' opinions in a way that is not available or manageable in a one-on-one interview and often leads to new and unexpected directions for the study (Sim, 1998). The group setting, that is the size, duration, composition, and geographic location of a focus group, is of crucial importance. Therefore, an extensive review of the relevant literature was carried out into the types, settings, and uses of focus groups in order to make the most of the focus groups and ensure high quality data (Calder, 1977; Hayes and Tatham, 1989; Morgan, 1996; Fern, 2001; Tong et al., 2007; Denzin and Lincoln 2008). A total of 18 participants, including heads and representatives of heads of cities and villages in the study area, were involved. The focus groups addressed open questions that aimed to assess

the formal and informal environment in terms of the performance and accountability of institutions as well as to gain an understanding of the relationship between agency and opportunity structure, and its influence on the degree of empowerment that individuals enjoyed in the coastal area of north Lebanon. Several suggestions were proposed during the focus groups to encourage further discussion; these are referred to as 'probe questions' (For further details see Appendix IV). The focus group sessions were tape-recorded and notes were also taken. Later, the data gathered from the focus groups were entered into QSR NVivo 10 software, transcribed, and coded for analysis.

Throughout the whole period of field visits and data collection, incidental observations were also recorded. The notes were as comprehensive and objective as practical to try to avoid judgmental evaluations. Recorded notes were revisited and reconsidered at different stages of the study. The field notes helped to understand and complement the formal findings of the study.

### **3.5. Data Analysis**

A range of analysis methods were used in each empirical chapter to reflect the nature of the research questions since each empirical chapter applies specific methodological techniques to the different types of data. The data analysis methods used for each research question are explained in detail in the relevant empirical chapters. In this section, just a brief explanation of the data analysis is presented.

Qualitative data collected from the interviews, focus groups, and observations, as well as from the documents, were transcribed and entered into QSR NVivo 10 for analysis. The data was sorted, coded, and classified into categories based on emerging themes. The information was later interpreted and analyzed in line with the objectives of each empirical chapter (Chapters 4, 5, and 6). The quantitative data, extracted from the questionnaire survey, were coded and entered into a Microsoft Excel Worksheet, and later transferred to the IBM SPSS Statistics 20 and Eviews 7 packages for analysis. A social vulnerability index (SVI) was developed and integrated into the results and discussion section of Chapter 5. Descriptive statistics including percentages, correlations, and logistic regressions were calculated to uncover the determinants of empowerment and were combined with the qualitative information in the results and discussion section of Chapter 6. This combination of qualitative and quantitative data helped deepen the understanding of the different aspects of the study.

### 3.6. Challenges

Several challenges were encountered during the four-year period of this study. Major challenges included the political instability in the country, lack of data, and the position of the researcher.

#### *Political instability*

The period of research coincided with major political events that caused significant turbulence in Lebanon and in the wider Middle East region. The process of data collection was interrupted several times due to the political instability in Lebanon at that time. The clashes in Tripoli and the civil war in Syria, which borders some villages in the study region, including Arida and Cheikh Zennad, were particularly disruptive. Therefore, critical decisions had to be made in terms of time management, field visits, and data collection procedures in order to maintain safety and so minimize field visits during times of conflict. At the same time, the researcher ensured that she was able to meet the people with data to provide, obtain the required information, and accomplish the planned activities in order to achieve the objectives of the study within the available time frame.

#### *Lack of data*

The lack of basic census data was another challenge. As discussed earlier in the current chapter, triangulation was used and several decisions were made regarding the methodological approaches used and the data collection and analysis procedures in order to increase and strengthen data reliability and validity, minimize potential bias within the study, and gain a deep understanding of the research topic. In addition, despite the fact that religion and political affiliations are important variables in Lebanon, they were not studied as socio-economic variables due to local sensitivities and to the lack of statistics on the number of people relating to each sect or religion and to each political party or movement.

#### *Reflections on the position of the researcher*

A major challenge in such research is the position of the researcher, which often becomes a source of struggle involving guilt and self-involvement; and consequently becomes a potential source of bias threatening the reliability of the study (Chenail, 2011). This challenge was particularly evident during the field visits as well as during the analysis and interpretation of the data. Even when writing these lines, the struggle and feelings of guilt are still prevalent.

The manner in which a researcher is perceived has an influence on the study as well as on the research experience (Matinga, 2010). Being an insider researcher has various advantages such as speaking the same language, understanding the local values and beliefs, and recognizing the formal and informal institutional environment. So, an insider researcher has



a great familiarity for the culture that is being studied and is able to interact easily and naturally with the respondents (Unluer, 2012). These advantages were of good use for the researcher during data collection. As a Lebanese citizen, and more particularly as a northern coastline resident, the researcher was perceived as an 'insider' who would understand the lifestyles, challenges, suffering, threats, and fears of the communities at the center of this study. However, there are also various disadvantages associated with being an insider researcher. Prior knowledge and familiarity with the culture can cause the researcher to lose objectivity and make unconscious and false assumptions about the research development, which can lead to bias (Unluer, 2012).

Therefore, the data analysis and interpretation stage of that followed data collection required an awareness of the researcher's own role in processing the information and the importance of being objective to minimize bias. The various perceptions and beliefs of researchers and participants interact in different and unpredictable manners and this has an effect on the research outcome (Kwaramba, 2012). Thus, the researcher needs to be aware of alternative possibilities and meanings that the findings might reveal and try to seek opposing or alternative justifications for the results. It is also recognized that the researcher's background knowledge, main assumptions, and research questions, all orient data interpretation and enable him/her to become attuned to certain features and patterns apparent in the data (Fink, 2000).

Therefore, dealing with the data, and especially the qualitative data acquired from the interviews and focus groups, as well as from the field notes, required careful attention in order to minimize bias. For instance, questions such as 'did I only transcribe what I wanted to hear rather than what they actually meant?' and 'do the findings really mean this, or is it just what I perceive it to mean?' were often asked. On many occasions, it was necessary to move away from the data and then try to return mentally to the setting of the interview or conversation in order to recall the emotions and attitudes of the participants. In addition, the researcher was continually engaging from various angles with the data, asking what was involved and the causes behind the findings. Further, as numerous themes were emerging from the data, one had to decide what to use in order to acquire a deep understanding and then how to best present the findings related to the topic being studied.

It is also important to mention that, at times, the role of researcher can create false expectations amid the participants who may think that, through the research, their own circumstances might improve (Kwaramba, 2012). Such expectations were most evident in the most deprived areas of the study region, and this is when the feelings of guilt and shame were most prevalent. In such circumstances, the researcher tried to stress that the research was purely academic but that the findings would become available for interested readers and authorities as a basis for future actions and decisions. The researcher also emphasized the importance of the participants' inputs for the study because they were the key basic elements of this research and the main reason for its development. However, these moments again brought feelings of guilt and shame because the reality would be that the researcher would be writing this thesis while the participants will still be living in the same conditions. Does this mean that the researcher has used peoples' suffering and challenges for her own self-development? Or, could this research really change these individuals' lives



in a significant and meaningful way? These people gave a lot, and exposed their problems and suffering, even when they had nothing.

### **3.7. Summary**

This chapter has presented a general overview of the methodological approaches as well as the data collection and analysis procedures. As such, this chapter links the previous theoretical component of this thesis with the empirical chapters that follow, and outlines the methods used in each empirical chapter in order to deepen understanding of the phenomenon under study and ensure high quality data. In addition, this chapter has highlighted the challenges faced during the research period and addressed how the position of the researcher impacts on the outcome of the research.

## Chapter Four:

# **Armed Conflict and Environmental Degradation: A Review of North Lebanon<sup>1</sup>**

## **4.1. Introduction**

This chapter aims to answer the following two questions: what are the direct and indirect environmental impacts resulting from the repeated armed conflicts in the coastal area of north Lebanon; and how can the findings be positioned in the existing literature on 'environmental security'? This chapter reviews the direct and indirect environmental impacts resulting from four episodes of armed conflict in the coastal area of north Lebanon and positions the findings in the academic debate on 'environmental security' and 'vulnerability of place'. The results are based on 24 interviews with heads, or their representatives, of the cities and villages within the study area in addition to drawing on secondary literature including previous studies, documents, and literature. Section 4.2 below presents a brief review of 'environmental security'. Following this, the methodology used is described in Section 4.3. The findings are then presented and discussed in Section 4.4 before being positioned in the academic literature in Section 4.5. Finally, in Section 4.6, conclusions are drawn highlighting the key points of the chapter.

## **4.2. Environmental Security**

Environmental degradation is inherent to armed conflict and can be a consequence of infrastructure destruction, displacement of people, release of toxic substances from weapons, production of waste, and the absence of environmental governance. The nature, scope, and extent of environmental degradation depend on the nature and scale of the conflict (Huseynov, 2011). Although most environmental destruction can be classified as collateral damage, in some instances the environment is used as a tool of warfare (Westing et al., 2001; Barnett, 2007; Takshe et al., 2009; Huseynov, 2011; Jensen, 2005). Environmental protection during wartime is covered both implicitly and explicitly in international agreements and conventions such as The Hague Regulations of 1907, the Fourth Geneva Convention of 1949, the Conventional Weapons Convention of 1980, and the 1977 Environmental Modification Convention, formally entitled the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (Gasser, 1995). However, nations involved in warfare tend to disregard environmental regulations (Takshe et al., 2009).

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<sup>1</sup> This chapter is based on a paper which has been submitted to be considered for publication.

Environmental degradation can result in increasing poverty and aggravating social problems, which in turn can lead to increased political instability, hence increasing the risk of renewed armed conflict (Shambaugh et al., 2001; Huseynov, 2011). In times of armed conflict, the environment tends to be low on the political agenda and the focus is more on saving lives, reducing human suffering, and providing basic human needs (Shambaugh et al., 2001).

There is a general agreement that environmental degradation can be both a result of armed conflict and also a trigger for armed conflict within and/or between states, although it is rarely the sole factor in these cases. Environmental degradation coupled with other stress factors commonly associated with violence, such as poverty, unemployment, high levels of inequality, and weak governance, can cause social and political instability, which increases the risk of armed conflict (Renner, 2006; Barnett, 2007). It is also acknowledged in the literature that armed conflict causes significant damage to the natural environment and that this may persist long after the conflict has ended (Gleditsch, 1998; Westing et al., 2001; Huseynov, 2011). This issue first received widespread public attention following the Vietnam War, even though earlier wars had resulted in vital infrastructure destruction and generated other environmental impacts (Gleditsch, 1998). The impact of the 1991 Gulf War on the coastal environment and ecosystems is another example of well-publicized significant damage to the natural environment caused by an armed conflict (Price, 1998).

Environmental assessments of impacts resulting from armed conflicts usually categorize impacts as either direct or indirect. Direct impacts involve physical damage associated with military activities and arise within the short-term, such as environmental contamination from bombed locations, intentional destruction of natural resources, and demolition waste and rubble from infrastructure damage. Indirect impacts are accredited to the conflict but usually result from interactions between various factors and only become fully evident in the medium to long-term, such as a breakdown in environmental governance or a population displacement increasing pressure on land and water resources (Partow, 2008).

In addition to direct and indirect environmental impacts, armed conflict increases the vulnerability of people to environmental degradation by disrupting local markets, depleting the labor force, damaging dynamic assets and infrastructure, increasing income and social inequalities, increasing foreign debt, as well as other impacts that create poverty - a crucial component of vulnerability to environment change (Barnett, 2007; Huseynov, 2011). Thus, where armed conflict leads to environmental damage, the risk of environmental insecurity increases, and this in turn increases the risk of further armed conflict, and hence further environmental damage, creating a vicious circle.

### **4.3. Methodology**

Data on direct and indirect environmental impacts resulting from different episodes of armed conflict were collected from primary and secondary sources and tabulated to enable

a direct comparison between the causes of events in order to identify similarities and discrepancies.

The primary data sources consisted of interviews with key informants including 24 heads, or their representatives, of the cities and villages within the study area. Questions were formulated to evaluate the environmental damage caused by the various episodes of armed conflict in the area. At the end of each interview, the key informants were asked if there were any studies or assessments made after the conflicts and if it was possible to have access to them.

Secondary sources consisted of various types of documents regarding post-conflict damage and environmental assessments for the conflict episodes, including UN, World Bank, and UNRWA reports, as well as NGO reports, published articles, newspapers, and websites. The search for documents involved visits to the Ministry of Environment, Ministry of Agriculture, and Lebanon Higher Relief Committee; and also various official institutions such as the Council for Development and Reconstruction in Lebanon and the United Nations Development Program were contacted. Our data covers primarily the 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes. No environmental assessments were found for the 1982 Israeli Invasion and the 2008 Tripoli Clashes, but limited data regarding human losses and political events were obtained. Another limitation was that the damage assessments conducted by the Lebanese army after the 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes could not be accessed due to their restricted nature.

The data collected were later sorted according to the episode of conflict involved, categorized as relating to a direct or an indirect environmental impact, and then placed in a table to enable a comparison between the primary and secondary sources. Data triangulation was used in documenting the direct and indirect environmental damage caused by armed conflict in the coastal area of north Lebanon. Triangulation of data sources involves comparing and double-checking the consistency of information from different sources in order to reach a single, totally consistent picture (Patton, 1999; Guion et al., 2011). Thus, triangulation between primary and secondary sources was used to increase and strengthen the validity and reliability of the data, to give a multidimensional perspective to this study, and to minimize potential bias (Thurmond, 2001; Mathison, 1988; Guion et al., 2011).

### *Episodes of armed conflict*

The definition of an Armed Conflict used here is adopted from the Uppsala Conflict Data Project (UCDP) as “a contested incompatibility that concerns government or territory or both where the use of armed conflict force between two parties results in at least 25 battle-related deaths. Of these two parties, at least one is the government of a state” (Gleditsch et al., 2002, p.619).

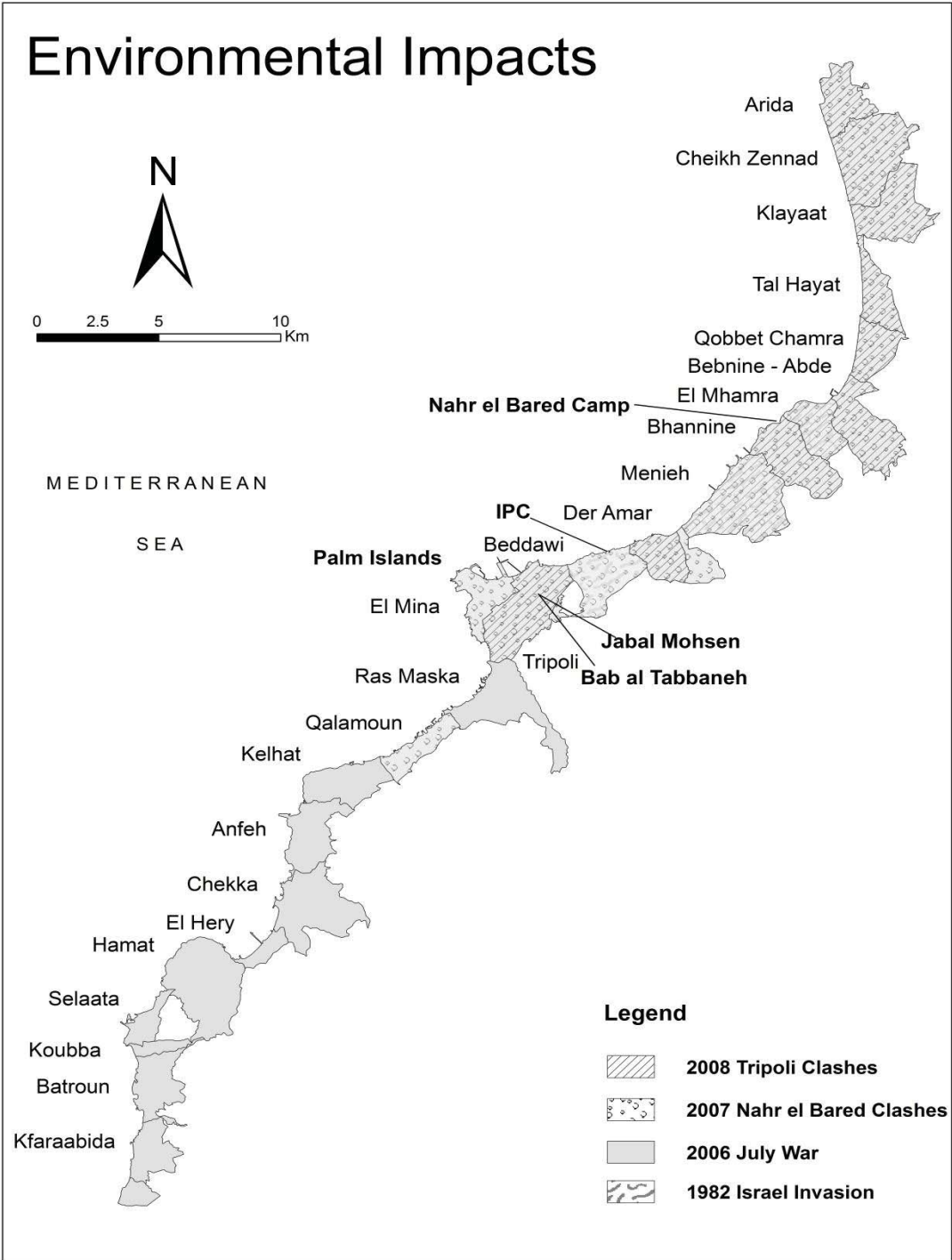
During the last 50 years, the coastal area of north Lebanon has been exposed to four major episodes of armed conflict that are considered to have resulted in severe impacts on the area: the 1982 Israeli Invasion (from 6 June, 1982 to 17 May, 1983), the 2006 Israel-Lebanon War (from 12 July, 2006 to 14 August, 2006), the 2007 Nahr el Bared Clashes (from 20 May, 2007 to 7 September, 2007), and the 2008 Tripoli Clashes. The clashes in Tripoli started on May 7, 2008, and have recently flared up again as a spillover from the war in Syria. However, the current situation is too recent to assess and therefore we limit ourselves to the clashes in 2008. The episodes of armed conflict varied in their nature, magnitude, and scale.

The 1982 Israeli Invasion was on a national scale. It started on June 6, 1982 and lasted 11 months and 11 days. This conflict is not viewed as an inter-state conflict (as defined by Gleditsch et al., 2002; UCDP, 2013a) by UCDP since the invasion targeted the Palestinian Liberation Organization and not the Lebanese government. This conflict resulted in large-scale destruction and population displacement. An estimated 170,000 people died, over 800,000 were displaced, and the material damage was put at US\$ 12 billion (El Masri et al., 2001). The 2006 Israel-Lebanon War is considered as an interstate conflict (as defined by Gleditsch et al., 2002) between the states of Israel and Lebanon. The war started on July 12, 2006 and lasted 31 days. On July 12, two Israeli soldiers were captured by Hezbollah, one of the major Lebanese political parties. The Israeli government condemned the act by Hezbollah and described it as an “act of war”. Their response resulted in a massive loss of life and livelihoods. Over a million people were displaced, 1,200 lost their lives, and 5,000 were injured. Several thousand lost their jobs or sources of livelihoods, and around 100,000, mostly young, people emigrated. The damage to civilian infrastructure was extensive and the economy was affected in all sectors (UNDP, 2006). In 2007, clashes erupted in the Nahr el Bared Camp, a Palestine refugee camp located in the coastal area of north Lebanon within the municipal boundaries of Bhannine and El Mhmara villages. The camp was established for Palestinians fleeing the 1948 Arab-Israeli War (UNRWA, 2008). The clashes started between the Lebanese army and an Islamist group called Fatah al-Islam on May 20, 2007 and lasted for 105 days. According to the Uppsala Conflict Data Project, the Nahr el Bared Clashes do not qualify as a state-based armed conflict since the conflict does not meet the required criteria (UCDP, 2013b). Rather, the clashes fall under the category of an insurgency. After the end of the conflict, the Nahr el Bared Camp was destroyed, forcing the majority of the 27,000 Palestinian refugees, as well as resident Lebanese citizens from neighboring areas, to move. It was reported that 169 Lebanese soldiers, 287 insurgents and 47 civilians died, and around 400 - 500 soldiers were injured (Chit, 2009). The 2008 Tripoli Clashes are classed as internal and involved two neighborhoods: the Alawites in Jabal Mohsen and the Sunni neighborhood in Bab Al Tebbaneh (Gleditsch et al., 2002). The clashes started on May 7, 2008 and lasted for five months, disrupting social and economic life in Tripoli (International Crisis Group, 2010). The clashes in Tripoli have recently increased again resulting in more than 190 reported deaths and 1,200 injuries since the start of the Syrian War in 2011 (Médecins Sans Frontières, 2013). More information on how this affected the vulnerability is discussed in the next section.

**4.4. Results and Discussion**

The primary and secondary sources revealed various direct and indirect environmental impacts resulting from the episodes of armed conflict in the coastal area of north Lebanon. Figure 4.1 shows the areas where impacts occurred for the four episodes of armed conflict.

**Figure 4.1:** The areas where impacts occurred for the four episodes of armed conflict



## Direct Impacts

As noted earlier, direct impacts on the natural environment often involve the physical damage associated with military activities (Partow, 2008). Direct environmental impacts resulting from the episodes of armed conflict included oil spills and land degradation, and one can also observe direct impacts on the built environment (infrastructure) (see Table 4.1). The data regarding direct environmental impacts collected from the interviews supported the data collected from secondary sources.

**Table 4.1:** *Direct impacts resulting from different episodes of armed conflict*

Direct Impacts			
Events	Type of Damage	Primary Sources (Interviews)	Secondary Sources (Documents)
1982 Israeli Invasion	Damage to the Iraqi Petroleum Company Refinery	Beddawi, Menieh, El Mhamra	The Levant (2012), Eur (2002)
2006 Israel-Lebanon War	Oil spill	Batroun, Koubba, Selaata, El Hery, Anfeh, Tripoli	Okrent (2006), Green Line Association (2007), UNDP (2007), UNEP (2007), World Bank (2007), Takshe (2009)
	Infrastructure and Building Damage	Kfaraabida, Menieh, El Mhamra, Qobbet Chamra, Klayaat	UNDP (2007), Nasr et al. (2009), Srour et al. (2010)
2007 Nahr el Bared Clashes	Infrastructure and Building Damage	Beddawi, Menieh, El Mhamra, Bebnine- Abde, Qobbet Chamra	UNDP (2008), UNDP & UNRWA (2008), UNRWA (2008), UNRWA (2010), Srour et al. (2010)
	Land Degradation	Menieh, Bhannine, El Mhamra, Bebine – Abde, Qobbet Chamra, Klayaat	Hanafi (2008), UNDP & UNRWA (2008)
2008 Tripoli Clashes	Infrastructure and Building Damage	Tripoli	No data found

### *2006 oil spill*

One of the severest environmental impacts in Lebanese history, and in the eastern Mediterranean Sea, was the oil spill resulting from the 2006 Israel-Lebanon War when Israeli



air forces demolished oil tanks at the Jiyeh power plant situated 30 km south of Beirut on 13-15<sup>th</sup> July. As a consequence, over 15,000 m<sup>3</sup> of heavy fuel oil were released into the sea while around 60,000 m<sup>3</sup> burned (Takshe et al., 2009; UNDP, 2007). During the period of the spill, wind and water currents were predominantly running from the southwest to the north and north east which caused the oil to drift north affecting the coastline for more than 150 km from the source, contaminating at least 22 areas of the Lebanese coast, some of the Syrian shoreline, and later Turkey and Cyprus (Takshe et al., 2009).

Data have been collected from secondary sources such as UN, World Bank, and NGO reports as well as published articles assessing the direct and indirect impacts of the oil spill (Okrent, 2006; Green Line Association, 2007; UNDP, 2007; UNEP, 2007; World Bank, 2007). The environmental impact of the oil spill was also reported by the heads and their representatives of the cities and villages in the study area. The environmental impact of oil spills in general has been extensively studied and documented (Price, 1998; Dicks, 1999; Peterson et al., 2003; Corn and Copeland, 2010; Upton, 2011).

According to the secondary sources, the oil that drifted onto the Lebanese coastline resulted in significant contamination and raised critical environmental concerns regarding marine ecosystems and biodiversity. The environmental contamination impacted shoreline biota, sub-tidal bottom communities, marine reptiles and mammals, fish, birds, and the Palm Islands Natural Reserve (UNDP, 2007; United Nations General Assembly, 2007; World Bank, 2007; Green Line Association, 2007). The impact of the oil spill on the Palm Islands Natural Reserve, located in the northern part of the Lebanese sea caused particular concern and was reported upon by UNDP (2007) and the World Bank (2007) as well as by the interviewed representative from the city of Tripoli. The Palm Islands Reserve is a *Ramsar* site and a Special Protected Area (UNDP, 2007; World Bank, 2007). The oil spill coincided with the hatching period of turtle eggs, with the eggs usually being laid from May to August and hatching one to two months later (UNDP, 2007; World Bank, 2007). There was a heavy impact on the island's plants leading to fears of erosion. There were also reports of crabs and birds being covered in oil (UNDP, 2007; World Bank, 2007). The impact on the Palm Islands Reserve was categorized as "severe significant" (UNDP, 2007). Given the national scale of the damage and the sensitive ecosystems that were affected by the oil spill, it was rated as a serious impact and was expected to have a long-term (10 to 50 years) effect (UNDP, 2007).

#### *1982 Damage to the Iraqi Petroleum Company Refinery*

Another similar event was the damage inflicted on the Iraqi Petroleum Company (IPC) refinery, located in Beddawi, as the result of the fighting between rival Palestinian groups in December 1982 (Eur, 2002; The Levant, 2012). Environmental impacts resulting from this event were reported by the heads of the municipalities of Beddawi, Menieh, and El Mhamra. According to the head of the Beddawi municipality, the bombardment of the IPC refinery had a severe impact on the environment. It resulted in atmospheric and groundwater pollution from the oil. In addition, the water ponds in the vicinity of the refinery, which used



to contain fresh and clean water, were highly polluted with oil and have subsequently been used for dumping rubbish. Similarly, the heads of Menieh and El Mhamra municipalities, which are close to the refinery, commented that their areas are still suffering from the adverse effects of the pollution resulting from the damage to the refinery. Secondary sources only identified damage to the refinery and did not document any subsequent environmental impacts.

### *Infrastructure Damage*

The impacts of episodes of armed conflict on the infrastructure in the studied areas of north Lebanon are noteworthy. Data from primary sources (Interviews) relating to the 2006 and 2007 episodes of armed conflict were confirmed by secondary sources (Documents).

As a result of the 2006 Israel-Lebanon War, several bridges and roads were destroyed in Akkar. This included damage to a bridge crossing the River Bared that links Akkar with the region of Dennieh and also to the Arqaa Bridge, as well as the destruction of the Madfoun Bridge in Kfaraabida (UNDP, 2007). It was estimated that 2.5 to 3 million cubic meters of demolition waste was generated by the 2006 Israel-Lebanon War (Nasr et al., 2009; Srour et al., 2010).

In 2007, the Nahr el Bared Camp was heavily damaged as a direct consequence of the clashes, including the destruction of houses, commercial units, and wastewater infrastructure. The surrounding area of Nahr el Bared also suffered from infrastructural damage, albeit at a lower level than inside the camp (UNDP, 2008; UNDP & UNRWA, 2008; UNRWA 2008). Assessments concluded that 348 units and 99 buildings were heavily damaged and 463 units were partially damaged (UNDP & UNRWA, 2008). These clashes were estimated to result in the production of more than 500,000 m<sup>3</sup> of rubble (UNDP, 2008; UNDP & UNRWA, 2008; UNRWA, 2008; UNRWA, 2010; Srour et al., 2010) and 12,506 items of unexploded ordnance (UNDP, 2008; UNRWA, 2008; UNRWA, 2010).

Damage to the built environment, including to electricity, water, and wastewater infrastructure, housing units, mosques, and other buildings as a result of the 2008 Tripoli Clashes was also reported during the interviews. However, no supporting information on the environmental impacts resulting from these clashes were found in secondary sources.

An indirect impact is associated with the post-war reconstruction phase since the construction industry consumes large quantities of potentially scarce natural resources including water, energy, stone, sand, and mineral products (Ekanayake and Ofori, 2000; Gangolells et al., 2009). The increasing demand for natural resources is of particular concern since an unrestricted increase in quarrying activities can result in an irreversible deterioration of Lebanon's environment through the destruction of vegetation and natural habitats, a loss of biodiversity, and deforestation (UNDP, 2007). Moreover, the construction industry itself usually causes surface, groundwater, soil, and noise pollution, emits dust and

particulates, destroys wildlife habitats and natural features, and generates demolition waste (Gangoellis et al., 2009).

### *Land degradation*

The different episodes of armed conflict in the coastal area of north Lebanon have caused significant impacts on land cover including land being reclaimed from the sea, unplanned construction, new road systems and quarrying (IMAC, 2007). Over the last four decades, around 1,020 ha of vegetation cover was lost, mainly in Tripoli and its surroundings and in the villages and cities north of Tripoli (Mitri et al., 2013). The highest rate of vegetation cover loss in the coastal area of north Lebanon was between 2006 and 2007. Data from both primary and secondary sources indicated that, during the 2007 Nahr el Bared Clashes, agricultural land and greenhouses in municipalities adjacent to the Nahr el Bared Camp were directly attacked during the bombardment resulting in land degradation (Hanafi, 2008; Mouchref, 2008; UNDP & UNRWA, 2008). Apart from soil contamination and its consequences, armed conflict puts pressures on farmers including the loss of harvesting seasons and restricted access to lands. Land was left uncultivated during periods of conflict and, as a result, farming activities changed with increases in certain agricultural activities and the adoption of practices such as excessive irrigation or the extensive use of pesticides in an attempt to recover losses, with an increased risk of land degradation (UNDP, 2007).

Illegal seafront dumping sites and landfill activities had sprung up along the coastal area of north Lebanon following the earlier 1975 Civil War (IMAC, 2007). Around 265 ha of sea in different locations in the coastal area of north Lebanon have been transformed into land, mainly in Chekka, Tripoli, Bannine, and El Mhamra. Most of these changes in the coastal area occurred between 1984 and 2006 (Mitri et al., 2013). Such activities impact on land cover and coastal and marine ecosystems through increased pollution, disturbances to the coastal current patterns, and destruction of marine habitats (IMAC, 2007). Illegal activities such as seafront dumping sites reflect the absence of environmental governance as an indirect impact of armed conflict, through the breakdown of law enforcement and order, and weaknesses in the state's ability to control or effectively manage resources during and after periods of armed conflict (Shambaugh et al., 2001; Huseynov, 2011).

Extensive quarrying activities along the coastal area of north Lebanon are another example that reflects lapses in environmental governance. These are mostly illegal and result from increased demands for construction materials due to an increasing population and post-conflict reconstruction (IMAC, 2007). Quarrying activities exert pressure on the environment through changing land cover as well as damaging and destroying natural habitats and vegetation (IMAC, 2007).

There appear to be no records on the direct impact of armed conflict on the occurrence of fires in the coastal area of north Lebanon (Mitri et al., 2013). A fire-risk map developed by these authors, using images from before and after the various episodes of armed conflict and associating them with changes in vegetation cover, indicated that 1,107 ha could be

classified as at high risk of land degradation, 968 ha as at moderate risk, and 344 ha as having a low risk. Most of the areas classified as at high risk of land degradation were in the villages and cities of Menieh, El Mhamra, and Bebnine-Abde, Tripoli, and Beddawi. The areas classified as at moderate risk included Arida, Cheikh Zennad, Klayaat, Tal Hayat, Qobbet Chamra, Bhannine, Der Amar, Ras Maska, Qalamoun, and Batroun. The fire-risk map illustrated various direct and indirect impacts of armed conflict on the vegetation cover. For example, agricultural areas were subjected to interrupted labor supply, and in some places restricted access, during the 2006 and 2007 episodes of armed conflict. As such, the risk of fire increased within these areas with the greatest changes in land cover and land use (Mitri et al., 2013).

### Indirect Impacts

As acknowledged in the literature, indirect impacts are accredited to the conflict but often result from interactions between various factors and only become entirely evident in the medium to long-term (Partow, 2008). Indirect impacts resulting from the environmental damage include displacement of people and effects on people's livelihoods that depend on natural resources such as the fishery, agriculture, and tourism sectors. Findings from the interviews regarding the indirect impacts of the 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes were consistent with the data gathered from secondary sources. However, for the 1982 Israeli Invasion and the 2008 Tripoli Clashes, most of the indirect impacts were only identified from the interviews. That is, supporting evidence was not found in secondary sources apart from some references to population displacement (Table 4.2).

**Table 4.2:** *Indirect impacts resulting from different episodes of armed conflict*

<b>Indirect Impacts</b>			
<b>Events</b>	<b>Type of Damage</b>	<b>Primary Sources (Interviews)</b>	<b>Secondary Sources (Documents)</b>
1982 Israeli Invasion	People Displacement	Bebnine – Abde	Global IDP Database (2004), iDMC (2006)
	Impact on Fishing	Beddawi	No data found
	Impact on Agriculture	kfaraabida, Koubba, Hamat, Chekka, Kelhat, Tripoli, Beddawi, Cheikh Zennad, Arida, agriculture, Klayaat	No data found
2006 Israel-Lebanon	People Displacement	Kfaraabida, Batroun, Selaata, El Hery, Chekka, Anfeh, Kelhat, Qalamoun,	FAO (2006), iDMC (2006)

War		Tripoli, El Mina, Beddawi, Der Amar, Menieh, Bhannine, El Mhamra, Bebnine – Abde, Qobbet Chamra, Tal Hayat, Cheikh Zennad, Arida	
	Impact on Fishing	Batroun, El Hery, Anfeh, Qalamoun, El Mina, El Mhamra, Bebnine - Abde, Tal Hayat, Cheikh Zennad, Arida	FAO (2006), UNDP (2007), World Bank (2007), Mouchref (2008)
	Impact on Agriculture	Der Amar, Menieh, Bhannine, El Mhamra, Bebnine - Abde, Qobbet Chamra, Klayaat, Tal Hayat, Cheikh Zennad, Arida	FAO (2006), Mouchref (2008)
	Impact on Tourism	Batroun, El Hery, Qalamoun, Tripoli	Green Line Association (2007), UNDP (2007), World Bank (2007), Mouchref (2008)
2007 Nahr el Bared Clashes	People Displacement	Tripoli, El Mina, Beddawi, Der Amar, Menieh, Bebnine – Abde, Tal Hayat, Cheikh Zennad, Arida, Bhannine, and El Mhamra	UNDP (2008), UNRWA (2008), UNRWA (2010), UNDP & UNRWA (2008)
	Impact on Fishing	Anfeh, El Mina, Bebnine - Abde, Tal Hayat, Cheikh Zennad, Arida	Hanafi (2008), Mouchref (2008), UNDP & UNRWA (2008)
	Impact on Agriculture	Der Amar, Menieh, Bhannine, El Mhamra, Bebnine – Abde, Qobbet Chamra, Klayaat, Tal Hayat, Cheikh Zennad, Arida	Hanafi (2008), Mouchref (2008), UNDP & UNRWA (2008)
2008 Tripoli Clashes	People Displacement	Tripoli, Bebnine – Abde	iDMC (2009), NowLebanon (2012)
	Impact on Agriculture	Der Amar, Menieh, Bhannine, El Mhamra, Bebnine – Abde, Qobbet Chamra, Klayaat, Tal Hayat	No data found

### *Population Displacement*

The impact of internally displaced people and refugees on the environment has been well documented (Kibreab, 1997; Draulans and Van Krunkelsven, 2002; Urdal, 2005; Gomez and Christensen, 2010). Large influxes of displaced people and refugees can result in significant impacts on the natural environment including land degradation, water pollution, pressure on natural resources, and uncontrolled slum growth (Gomez and Christensen, 2010).

The various episodes of armed conflict have displaced large numbers of people. According to primary and secondary sources, the Israeli Invasions in 1978 and 1982 resulted in the displacement of hundreds of thousands of people (Global IDP Database, 2004; Internal Displacement Monitoring Centre, 2006). In 2006, around one million people were displaced as a result of the hostilities (Internal Displacement Monitoring Centre, 2006; FAO, 2006). The clashes at Nahr el Bared in 2007 resulted in the displacement of almost all the Palestinian refugees in the camp, who fled mostly to the Beddawi Palestinian Refugee Camp and to other safer locations, as well as partial displacement of the residents of adjacent municipalities such as Bhannine, Bebnine - Abde, El Mhamra, Beddawi, Der Amar, and Menieh (UNDP, 2008; UNDP & UNRWA, 2008; UNRWA, 2008; UNRWA, 2010). The 2008 Tripoli Clashes between the two neighborhoods of Jabal Mohsen and Bab al Tabbaneh caused the displacement of around 6,000 families (Internal Displacement Monitoring Centre, 2009). The regular clashes in Tripoli have and still are causing people to move to safer areas while, at the same time, the city of Tripoli has received more than 43,400 of the total estimated 102,600 Syrian refugees in the coastal area of north Lebanon who have arrived since the start of the war in Syria (UNHCR, 2013a; UNHCR, 2013b).

### *Impact on Fishing*

Environmental change can lead to economic vulnerability in regions that rely heavily on a single economic sector for income production and on natural resources such as agriculture, fishing, and tourism (Cutter et al., 2003). Fishermen and farmers, who are among the most vulnerable and poorest families in the country, were the most heavily impacted as a result of the various episodes of armed conflict (FAO, 2006; Mouchref, 2008). Agriculture, fishing, and trade are the most important sectors in the district of Akkar (which includes the villages of Arida, Cheikh Zennad, Tal Hayat, Klayaat, Qobbet Chamra, Bebnine-Abde, and El Mhamra villages), one of the poorest and most deprived districts in Lebanon (Hanafi, 2008).

Indirect impacts on fishing and agriculture resulting from the 1982 Israeli Invasion could not be found in secondary sources. However, primary sources reported a decline in fishing and agriculture since the conflict. The head of the municipality of Beddawi noted that agriculture had declined and fishery activities stopped altogether after the bombing of the IPC power plant in 1982. Other cities and villages, including kfaraabida, Hamat, Chekka, Kelhat, and Tripoli, reported a decline in agriculture, which had been a major economic sector prior to 1982. It is of course possible that the decline in agriculture in these municipalities could be

also due to factors other than armed conflict, such as urban sprawl and increasing levels of education.

The 2006 Israel-Lebanon War had a severe impact on the activities and welfare of fishermen. Abde Harbor was damaged during an attack on a nearby army post. The fishing cooperative's facilities in Abde and some fishing boats in the harbor were damaged, and many fishermen lost fishing gear and nets (FAO, 2006; Mouchref, 2008). Fishermen along the coastal area of north Lebanon lost their only source of income as they were forbidden to go to sea during the period of conflict, in addition to the pollution resulting from the Jiyeh oil spill causing reductions in fish numbers and also in demand (FAO, 2006; UNDP, 2007; World Bank, 2007; Mouchref, 2008).

The clashes in Nahr el Bared in 2007 aggravated the situation. Fishermen from areas adjacent to the Nahr el Bared Camp were banned from going to sea, and experienced major losses in income that put them in a cycle of debt and poverty (Hanafi, 2008; Mouchref, 2008; UNDP & UNRWA, 2008).

#### *Impact on Agriculture*

Farmers in the coastal area of north Lebanon, particularly in Der Amar, Menieh, Bhannine, Bebnine-Abde, El Mhamra, Qobbet Chamra, Klayaat, Tal Hayat, Cheikh Zennad, and Arida, were negatively affected. Even though farmers did not suffer bombardment during the 2006 hostilities, the conflict and its aftermath caused large losses due to poor access to agricultural land, making harvesting impossible and degrading crops, to obstructions on transporting agricultural products, and to enforced control of prices (FAO, 2006; Mouchref, 2008).

The Nahr el Bared Clashes in 2007 had similar consequences but a more severe impact on local farmers as they were already struggling to recover from the hostilities outlined in the previous paragraph. Agricultural lands, greenhouses, and roads were damaged by the rockets fired by Fateh Al Islam militants. As a consequence, farmers were unable to reach their fields, and crops deteriorated. Transportation of products to the market was also hampered by the fighting. Thus, farmers lost their incomes from harvests for two successive years and found themselves in a downward spiral of debt and poverty (Hanafi, 2008; Mouchref, 2008; UNDP & UNRWA, 2008).

Since the start of the armed conflicts between Jabal Mohsen and Bab Al Tabbaneh in 2008, farmers in Menieh (Bhannine, Menieh, Der Amar, and Beddawi) and Akkar (Arida, Cheikh Zennad, Tal Hayat, Klayaat, Qobbet Chamra, Bebnine-Abde, and El Mhamra) have reported losses in income due to the problems of transporting their goods to the market located in the area of conflict in Tripoli. These indirect impacts were identified by the primary sources but we have found no collaborating secondary sources.

### *Impact on Tourism*

The 2006 hostilities had a negative impact on beach-based tourism, which is considered a major economic activity in Lebanon (Green Line Association, 2007; UNDP, 2007; World Bank, 2007). The marine pollution caused by the oil spill had a considerable effect on tourism and associated related activities in the Palm Islands Reserve. The tourist season lasts about 13 weeks from July to September and 22,500 tourists had been anticipated for 2006. However, the actual number was only about 1,700, representing a loss estimated at US\$ 15,400 - 27,600 (World Bank, 2007) due to the pollution caused by the oil spill. The city of Batroun relies heavily on tourism for its income through its beach resorts, restaurants and cafes, and festivals during the summer months, and was also significantly affected. All these activities were halted during the period of conflict. Similar reductions in tourist-related activities were reported in El Hery and Qalamoun beach resorts due to the marine pollution caused by the oil spill.

### *Other impacts*

In addition, due to the sea pollution resulting from the oil spill, fish consumption fell. This not only affected fishermen but also other social groups such as restaurant owners that rely on sea food and people working in related services such as retail, transportation, and boat maintenance who suffered from loss of livelihood leading to unemployment and poverty (Green Line Association, 2007; World Bank, 2007; Mouchref, 2008). It is also important to note that economic activity in general was interrupted during the 2006 and 2007 conflicts. In Akkar, a large number of people work in the informal sector and lost income during the conflicts, along with individuals involved in seasonal and temporary jobs (Mouchref, 2008).

## **4.5. Positioning the Findings in the Literature**

The findings give support to the literature related to 'environmental security' theory that addresses the impacts of armed conflict on the environment by illustrating various examples of direct and indirect environmental impacts resulting from episodes of armed conflict. It also shows how environmental degradation affects economic sectors on which people rely for their livelihoods.

The findings also show that the direct and indirect impacts vary among the different geographical areas studied. This was mainly due to the dependence of some areas' main economic sectors on natural resources for income production. Thus, the results are consistent with the literature stream addressed by Cutter et al. (2003) who argue that environmental change, resulting from armed conflict in our case, can create economic vulnerability for areas that rely on a single economic sector that depends on natural resources (such as agriculture, fishing, or tourism) for income production. This was particularly evident in the Akkar and Menieh areas (in the districts of Arida, Cheikh Zennad, Tal Hayat, Qobet Chamra, Bebnine, El Mhamra, Bhannine, Menieh, Der Amar, and Beddawi).



In comparison, areas that depend on other economic sectors for income production, such as Tripoli, Batroun, and Koura, were less impacted by the environmental damage resulting from the episodes of armed conflict and showed lower levels of vulnerability than Akkar and Menieh. The variation in vulnerability between the different parts of the coastal area of north Lebanon highlights the uniqueness of the study area and this aspect positions this research in the literature on 'vulnerability of place', which refers to people's vulnerability in a specific geographic location and combines both biophysical damage and social response (Cutter, 1996; Clark et al., 1998; Cutter et al., 2000; Cross, 2001, Turner et al., 2003). The differentiation in terms of 'vulnerability of place' is shaped by the long history of turbulence and violence in this area and the complex nature of the society in terms of political, religious, and ethnic diversification which creates social and political tensions between different groups in society (Das and Davidson, 2011). In addition, the north of Lebanon has the lowest per capita income and highest levels of inequality of all the areas of the country (Hanafi 2008; Das and Davidson, 2011). The combination of these factors in the coastal area of north Lebanon with environmental change increases the likelihood of human vulnerability and insecurity. Further research could usefully study how the combination of these various factors with environmental change impact on the communities of north Lebanon.

#### **4.6. Conclusions**

This chapter shows the ways in which the various episodes of armed conflict in the coastal area of north Lebanon have directly and indirectly affected its natural environment. Impacts included marine pollution from oil spills, land degradation, air and land pollution from infrastructure destruction, and pressure on natural resources from population displacement and from a lack of environmental governance. In addition, indirect environmental impacts had a significant influence on economic sectors that depend on natural resources, primarily agriculture, fishing, and tourism in the studied area. The findings of this chapter therefore validate the literature on 'environmental security' theory to the extent that it illustrates the environmental damage caused by armed conflict, and the consequent increased vulnerability of communities to environmental damage. More importantly, the findings confirm the literature on 'vulnerability of place' by highlighting factors that affect people's vulnerability as well as the variation in vulnerability within a certain place.





Chapter Five:

## **Spatial Variation of Vulnerability in Geographic Areas of North Lebanon<sup>2</sup>**

### **5.1. Introduction**

This chapter identifies features and manifestations of vulnerability that are particularly relevant to the coastal area of north Lebanon. It examines the spatial variation in vulnerability in different geographical areas of this region within the context of armed conflict to answer the following questions: 1. What features and manifestations of vulnerability are particularly relevant to the coastal area of north Lebanon? 2. How does vulnerability vary across the geographical areas within the study area? The analytical framework is based on the 'hazards of place' model. The findings will be positioned in the academic debate on vulnerability concepts. While 'vulnerability of place' is referred to in literature, it has not been systematically studied in the case of Lebanon. In the next section, a brief literature review on 'vulnerability of place' concept is presented. Then, the methodology used is explained and the findings are discussed. The final section highlights the main conclusions of this chapter.

### **5.2. Vulnerability of Place**

The inspiration for this study into understanding vulnerability, how it is manifested, and how it varies geographically within the study area stems from the 'Hazards of Place' theory as

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<sup>2</sup> An earlier version of this chapter is published as: Issa S.T., Molen I. van der, Nader M.R., and Lovett J.C. (2014). Spatial Variation of Vulnerability in Geographic Areas of North Lebanon. *European Scientific Journal*, 2, 276-288.

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CRESC 2013 Annual Conference: In/vulnerabilities and Social Change - Precarious Lives and Experimental Knowledge, 4-6 September 2013, School of Oriental and African Studies, United Kingdom. Paper title 'Spatial Variation of Vulnerability in Geographic Areas of North Lebanon'.

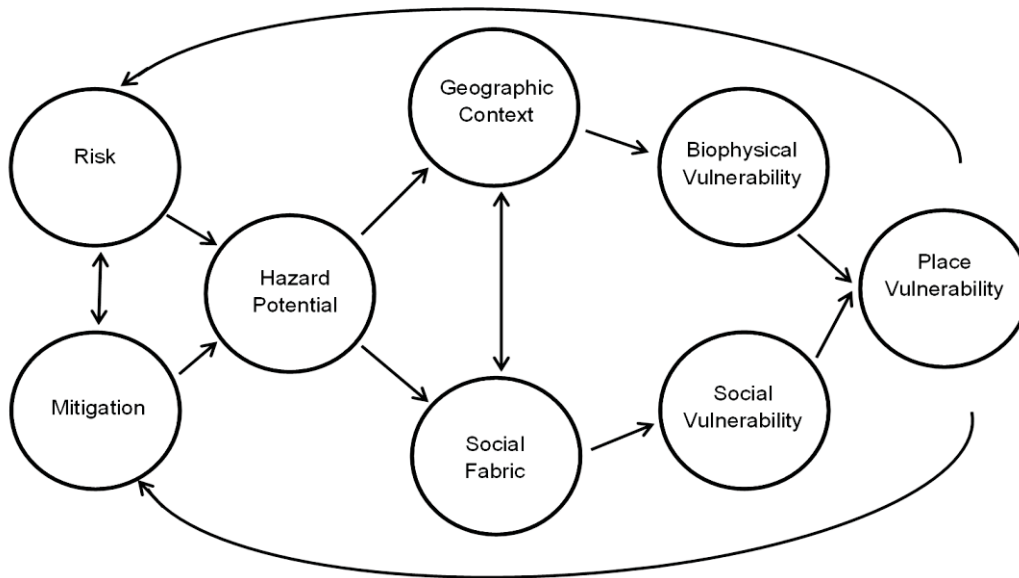
CERES Summer School Conference: Global Gloom or Development Boom? New Ways of Thinking about Development in a Changing World, 24-25 June 2013, University of Amsterdam, the Netherlands. Paper title 'Vulnerability in the Context of Repeated Armed Conflict: A case of North Lebanon'.

developed by Cutter (1996). When studying the 'vulnerability of place', 'place' is specifically highlighted in the context of "*people living in hazardous places or in places made to be hazardous, not through choice but through external social, political, and economic force*" (Lewis and Kelman, 2010, p.193). Thus, the inhabitants of a place often inherit and become subjected to the vulnerability of that place. According to Lewis and Kelman (2010), events that occurred in the recent or even the distant past of a certain place can affect not only the occupants of that place at the time they occurred, but also the inhabitants that follow: future generations for many years and maybe permanently. In addition, events that occur in a certain place may accumulate and through this become a manifestation of vulnerability of people, regardless of whether those people grew up there or moved in at a later stage. This is true not only for the inhabitants of a certain place, but also for people living in adjacent, proximate, and even distant areas. For example, displaced people and individuals who migrate as a result of vulnerability, or as a result of the manifestation of vulnerability in a disaster, can affect near or far communities through the 'vulnerability of place' from where they came (Lewis and Kelman, 2010).

As such, 'vulnerability of place' refers to people's vulnerability in a specific geographic location and identifies its casual structure, spatial variation, and possible means for its reduction (Cutter et al., 2000). It combines potential exposure and social response but within a specific area. This approach was first conceptualized by Cutter (1996) who developed the 'hazards of place' model of vulnerability. This model is exploratory in nature, and integrates both the physical and social aspects of vulnerability by tying them to specific places. Emphasizing the place offers the opportunity to study some of the fundamental social and physical characteristics that contribute to vulnerability, and also to evaluate their interaction and intersection (Cutter et al., 2000). 'Vulnerability of place' may change over time depending on variations in the risk, mitigation, and settings within which hazards take place.

Based on the 'hazards of place' model of vulnerability, the interaction between risk and mitigation produces an initial hazard potential, which is affected by the social fabric and the geographic context (Cutter, 1996). The social fabric covers various demographic and socioeconomic features of the population in the area, in addition to the perceptions and experiences of the community regarding risks and hazards. The geographic context encompasses the geographic characteristics of the area as well as the exposure and proximity to hazardous events (Cutter et al., 2000). The interaction between the social fabric and the hazard potential generates a social vulnerability, while the interaction between the geographic context and hazard potential leads to physical vulnerability. 'Vulnerability of place' results from the interaction between physical and social vulnerabilities (Cutter et al., 2000; Cutter et al., 2003). In this model, 'vulnerability of place' presents a feedback loop to the risk input and the mitigation of origin that allows an increase or decrease in both risk and mitigation, resulting in either increasing or decreasing vulnerability (See Figure 5.1 taken from Cutter, 1996, p.536). From this perspective, the model is fundamentally dynamic and identifies the complex and continuously varying nature of vulnerability (See Figure 5.1, taken from Cutter, 1996, p.536).

**Figure 5.1:** *The 'hazards of place' model (Source: Cutter, 1996, p.536)*



In measuring 'vulnerability of place', physical vulnerability is measured in terms of exposure. Indicators associated with exposure often involve proximity to the source of threat, the probability or frequency of an event, and its magnitude, duration, or spatial impact (Luers, 2005; Adger, 2006; Gallopín, 2006). Social vulnerability is often measured by the quality of settlements and infrastructure, special needs' population, socioeconomic status, gender, race, and similar facets (Cutter, 1996; Cutter et al., 2003, Bankoff et al., 2004).

### 5.3. Methodology

In this study, vulnerability is defined as the 'susceptibility of the communities of the coastal area of north Lebanon to environmental damage caused by episodes of armed conflict and their capacity to cope with threats or damage caused in that context'.

The 'hazards of place' model was chosen as an analytical framework for various reasons. First, since the model combines physical and social aspects of vulnerability, it sits at the intersection of the different models and theories used to study vulnerability. As such, it allows a more holistic understanding of vulnerability. Another reason for adopting this model is its focus on a specific geographic domain, which fits the purpose of this study that addresses a specific local area: the coastal area of north Lebanon. This approach will highlight the particular features of each area studied within the context of an overarching model. Third, the model recognizes the dynamic nature of vulnerability, and how small changes in its constituents can produce wider changes in 'vulnerability of place'. In addition, this model regards people as active participants within the vulnerability process with its

emphasis on the importance of mitigation. Finally, Cutter’s model encompasses a wide array of factors in providing an overview of vulnerability. It involves quantitative indicators such as age, education level, and gender, while also focusing on factors that are hard to assess and analyze using quantitative approaches. This necessitates the use of both quantitative and qualitative methods that lead to a better understanding of the topic being studied.

While both quantitative and qualitative methods were used in studying ‘vulnerability of place’, a greater focus was put on qualitative approaches due to several reasons such as time pressure, a lack of local-level quantitative data, and an inability to quantify some of the indicators. Indicators of physical and social vulnerability were selected that fitted the context of the study area as well as the context of armed conflict. In terms of physical vulnerability, the indicators used are location, duration, intensity, spatial impact, and frequency of armed conflict, as well as the proximity of the area to an armed conflict. For social vulnerability, the indicators used are age, number of household members, education level, occupation, income, access to public services (water, electricity, and health insurance), information assets (Internet subscription, mobile subscription, landline subscription, and television ownership), material assets (Home and land ownership), organization membership, level of preparedness for disasters, presence of emergency plans, and institutional capacity to deal with disasters (Table 5.1).

**Table 5.1:** *Indicators of physical and social vulnerability*

<b>Indicators</b>	
<b>Physical Vulnerability</b>	<b>Social Vulnerability</b>
<ul style="list-style-type: none"> <li>• <b>Location</b></li> <li>• <b>proximity to the source of threat</b></li> <li>• <b>Frequency</b></li> <li>• <b>Intensity</b></li> <li>• <b>Duration</b></li> <li>• <b>Spatial impact</b></li> </ul>	<ul style="list-style-type: none"> <li>• Age</li> <li>• Number of household members</li> <li>• Education level</li> <li>• Internet subscription</li> <li>• Mobile subscription</li> <li>• Landline subscription</li> <li>• Television ownership</li> <li>• Home ownership</li> <li>• Land ownership</li> <li>• access to public services (water, electricity, and health insurance)</li> <li>• Occupation</li> <li>• Income</li> <li>• Organization membership</li> <li>• Level of preparedness for disasters</li> <li>• Presence of emergency plans</li> <li>• Institutional capacity to deal with disasters</li> </ul>

In this study, risk and mitigation will not be addressed and will be excluded from the analysis because it is difficult to measure them in the context of Lebanon and particularly when it comes to the types of armed conflict in Lebanon. The hazard potential has been addressed in detail in Chapter 4. The geographic context was described in Chapter 3. The social fabric will be partly discussed in this chapter and in Chapter 6. This chapter will focus on the physical vulnerability, social vulnerability, and the resulting vulnerability of place.

### *Data Collection and Analysis*

Both qualitative and quantitative methods were used to fulfill the objective of the study through document analysis, semi-structured interviews with key informants from the 24 cities and villages in the study area, 17 in-depth interviews with various stakeholders, and the distribution of 500 questionnaires among citizens in the study area. In these various ways, 'vulnerability of place' in the coastal area of north Lebanon was assessed.

As a first step, documents analysis was carried out. Various kinds of documents such as accessible UN, World Bank, UNRWA reports, NGOs reports, and previous studies were identified through internet searches, visits and contacts with official institutions such as the Ministry of Environment, Ministry of Agriculture, High Relief Committee, Ministry of Social Affairs, Al Fayhaa Union, and the Council for Development and Reconstruction. This step aimed to collect information regarding the major impacts, particularly environmental ones, of the four recent episodes of armed conflict on the communities of the coastal area of north Lebanon, as well as the socioeconomic conditions present in the cities and villages of the study area.

In addition, semi-structured interviews were carried out with key informants, mainly with heads of the 24 cities and villages, or their representatives, within the study area. The aim here was to collect information about the constitution and characteristics of each city or village as well as environmental, social, economic, and political factors that can affect vulnerability in these areas. In addition, data regarding damage, and particularly damage to the natural environment, caused by the various episodes of armed conflict were collected. In addition, in-depth interviews were held with a range of stakeholders encompassing representatives of institutions that were involved in post-conflict interventions such as United Nations Development Programme, Ministry of Environment, Ministry of Social Affairs, and Ministry of Agriculture. Representatives from Non-Governmental Organizations present in the study area, such as the Safadi Foundation, René Moawad Foundation, and World Vision were also interviewed. Data gathered from these interviews concentrated on the type of damage, particularly damage to the natural environment in the area, the communities and groups within the communities who were particularly affected and their characteristics, the general socioeconomic conditions of the communities, and the interventions and initiatives carried out following each of the episodes of armed conflict, and especially the 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes, which had the most severe impacts on the area. According to the data collected, farmers and fishermen were among the groups most vulnerable to the deterioration of the natural environment in

the studied area. Following this, several interviews were held with farmers and fishermen in the study area to know more about the type of damage they suffered as a result of the conflicts, their general socioeconomic situation, the problems that they faced daily, and the way in which the different episodes of conflict affected their lives.

The final step in the data collection process involved a survey of citizens in the area. The aim of the survey was to measure indicators that were difficult to assess from secondary literature and interviews, such as age, family size, education level, occupation, income per capita, membership of any organization or group, entitlement to land or resources (such as land and home ownership), informational assets (such as number of people connected to the internet and landlines, and the number of people with a mobile number and television), and material assets (such as type of lighting, sources of water, and type of health services). A total of 500 questionnaires were distributed proportionally among the citizens in each of the five areas. The sample size was calculated using the formula  $n = \frac{N}{1+N(e)^2}$  (Israel, 1992, p.4); where n is equal to the sample size, N to the population size, and e to the level of precision which is equal to 10% for each region and 5% for the entire study area. The level of precision for the entire region was set as 5 per cent for more precision. After calculating the number of questionnaires to be completed in each area, the number of questionnaires to be returned in each village or city was determined based on the population of each village and city as a proportion to the total population of each area. The participants were chosen based on simple random sampling. This approach was chosen for two main reasons. The first being the lack of official statistical reports providing detailed information about age, gender, education level, and other socioeconomic features at the local level. The second was the heterogeneous composition of the population in Lebanon in general, and in the north in particular, which is characterized by diverse religious, political, and ideological affiliations. In addition, it is argued that when participants are randomly chosen, the probability of any one individual being involved is exactly equal to the probability of including any other individual and hence the random sample is most representative of the total population of the area under study (Alreck and Settle, 2004, p.71). Before distributing the survey, a pilot test was carried out for acceptability and accuracy, and the questionnaire was subsequently adjusted as required.

In the data analysis, quantitative data from the survey were used to develop a social vulnerability index using Microsoft Excel, and the qualitative data were analyzed using NVivo 10 software. The data analysis focused on uncovering manifestations and features of 'vulnerability of place' in the studied area.

#### **5.4. Results and Discussion**

The results showed variations in 'vulnerability of place' among the five geographic areas of the Lebanese northern coast. The results obtained for physical vulnerability will be first presented and discussed. Then, the results and discussion on social vulnerability will follow.

The results for physical and social vulnerability are then combined and integrated into the 'hazards of place' model to produce the 'vulnerability of place'.

### *Physical vulnerability*

In this study, physical vulnerability is assessed in terms of exposure to armed conflict. The indicators used are location, proximity to the source of threat, probability or frequency of the event, its intensity, duration, and spatial impact.

The coastal area of north Lebanon has been exposed to four major episodes of armed conflict that are considered to have had severe impact on the area. The various episodes of armed conflict differed in terms of nature, magnitude, and scale. The definition of armed conflict used here is adopted from the Uppsala Conflict Data Project (UCDP) as "*a contested incompatibility that concerns government or territory or both where the use of armed conflict force between two parties results in at least 25-battle-related deaths. Of these two parties, at least one is the government of a state*" (Gleditsch et al., 2002, p.619).

The 1982 Israeli Invasion was on a national scale. It started on June 6, 1982 and lasted 11 months and 11 days. This conflict is not viewed as a state-based conflict by UCDP since the invasion targeted the Palestinian Liberation Organization and not the Lebanese government (UCDP, 2013a). The 2006 Israel-Lebanon War is considered as an interstate conflict between the states of Israel and of Lebanon. The war started on July 12, 2006 and lasted 31 days. Most of the coastal area of north Lebanon was targeted in some way by this conflict (UCDP, 2013a). The Nahr el Bared Clashes in 2007 were located in Nahr el Bared Camp, a Palestine refugee camp located in the coastal area of north Lebanon within the municipal boundaries of Bhannine and El Mhmara in Akkar area. The camp was established for Palestinians fleeing the Arab-Israeli War in 1948 (UNRWA, 2008). The clashes started on May 20, 2007 and lasted for 105 days. According to the Uppsala Conflict Data Project (UCDP), the Nahr el Bared Clashes are not recorded as a state-based armed conflict since the conflict does not fulfil the criteria for such type of conflict (UCDP, 2013b). The clashes are categorized as an insurgency. The 2008 Tripoli Clashes are considered as internal since they concerned two neighborhoods located in Tripoli. The clashes started on May 7, 2008 and lasted for five months. The clashes in Tripoli have increased recently as a spillover from the war in Syria but these events are too recent to be included in this research.

Proximity to armed conflict is seen as an important variable of physical vulnerability. Even though the 2007 Nahr el Bared Clashes were focused on the Nahr el Bared Camp, adjacent municipalities were severely affected, in particular the six municipalities surrounding the camp: Bhannine, El Mhamra, Bebnine – Abde, Der Amar, Menieh, and Beddawi. It was also reported that other nearby municipalities, such as Qobbet Chamra and Klayaat, were also targeted during the clashes. Similarly, the 2008 Tripoli Clashes located between two neighborhoods in Tripoli had direct impacts not only on Tripoli but also on surrounding municipalities such as Beddawi. Thus, areas in proximity to armed conflicts incur increased



physical vulnerability to the deterioration of the natural environment caused by the armed conflict.

The frequency and Intensity of armed conflict may also have an influence on physical vulnerability. In this study, frequency refers to the number of armed conflict events in an affected area and intensity refers to the nature of the damage to the natural environment in the affected areas.

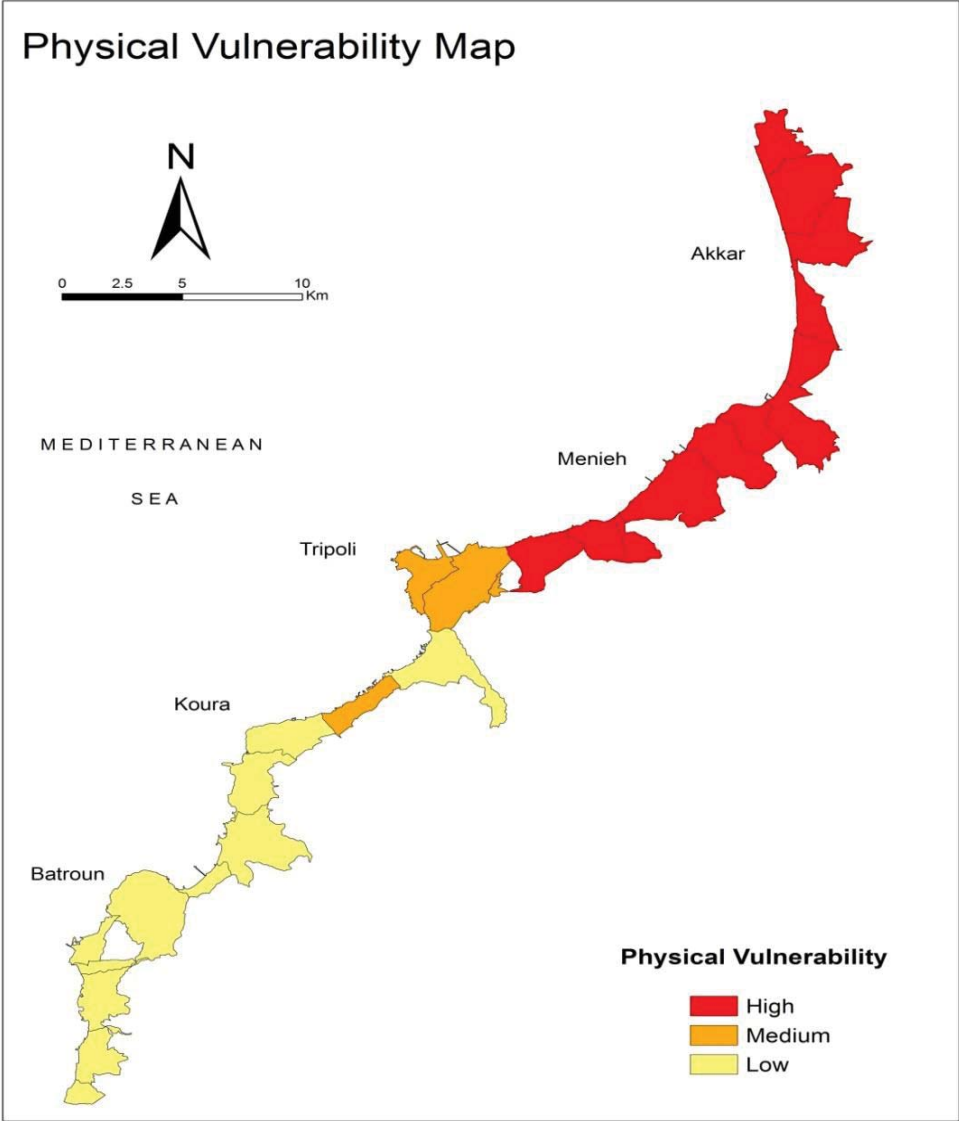
The coastal municipalities of Akkar and Menieh were the most affected in terms of frequency and intensity. The seven coastal municipalities of Akkar (Arida, Cheikh Zennad, Tal Hayat, Klayaat, Qobbet Chamra, Bebnine-Abde, and El Mhamra) and the four municipalities of Menieh (Bhannine, Menieh, Der Amar, and Beddawi) were exposed to all four episodes of armed conflict. In addition, these areas were severely impacted upon by the various events, particularly the 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes. The coastal municipalities of Akkar and Menieh areas suffered both direct and indirect environmental impacts. Direct impacts included an oil spill resulting from the 2006 Israel-Lebanon War, infrastructure and building damage resulting from both the 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes, and land degradation resulting from the 2007 Nahr el Bared Clashes. The Iraqi Petroleum Company located in Beddawi municipality in Menieh area was damaged during the 1982 Israeli Invasion causing severe environmental impacts. The various indirect impacts included population displacement and severe impacts on agriculture and fisheries as result of the 1982 Israeli Invasion, the 2006 Israel-Lebanon War, the 2007 Nahr el Bared Clashes, and the 2008 Tripoli Clashes. Indirect impacts were greater than the direct impacts on Akkar and Menieh since agriculture and fisheries are the most important sectors in these areas alongside trade. Fishermen and farmers are among the most vulnerable and poorest families, particularly in Akkar and Menieh areas which themselves are considered as the poorest and most deprived areas in Lebanon (Hanafi, 2008; Mouchref, 2008).

Municipalities in the Batroun and Koura areas have been the least affected in terms of frequency and intensity. Batroun area includes seven coastal municipalities (Chekka, El Hery, Hamat, Selaata, Koubba, Batroun, and Kfaraabida) and Koura area three municipalities that have a coastline (Ras Maska, Kelhat, and Anfeh). In terms of frequency, Batroun and Koura areas were exposed to two of the four armed conflicts: the 1982 Israeli Invasion and the 2006 Israel-Lebanon War. In terms of intensity, the damage to the natural environment was minor and not all municipalities were subjected to damage. For instance, a displacement of population as a result of the 1982 Israeli Invasion was only recorded in the city of Batroun. The oil during spill during the 2006 Israel-Lebanon War affected most of the municipalities, and a bridge was damaged in Kfaraabida. In addition, the tourism sector was impacted upon in Batroun and El Hery although the impacts were short term.

Tripoli area is made up of the municipalities of Tripoli, El Mina, and Qalamoun. The frequency and intensity of armed conflict differed among the municipalities of this area. The Tripoli municipality was exposed to four episodes of armed conflict whereas El Mina and Qalamoun municipalities were subjected to two episodes of armed conflict, the 1982 Israeli Invasion and the 2006 Israel-Lebanon War. The intensity is considered to be medium. For the

Tripoli municipality, the impacts include the oil spill during the 2006 Israel-Lebanon War and population displacements during the 2006 Israel-Lebanon War, during the 2007 Nahr el Bared Clashes, and during the 2008 Tripoli Clashes. The latter caused infrastructural damage in the neighborhoods where the clashes occurred. In El Mina and Qalamoun, the impacts included harm to the fishery and tourism sectors and population displacement as a result of the 2006 Israel-Lebanon War. However, the fishery and tourism sectors are not the most important sectors in these areas. Thus, the combination of the different indicators, encompassing location, nature, onset, frequency, intensity, and proximity to armed conflict, reveals variation in physical vulnerability along the coastal area of north Lebanon. The results indicate that Akkar and Menieh areas have the highest level of physical vulnerability, Tripoli area has a medium level of vulnerability, and Koura and Batroun areas have low levels of physical vulnerability.

**Figure 5.2:** *Physical vulnerability in the coastal area of north Lebanon*



### *Social Vulnerability*

In order to assess social vulnerability, a social vulnerability index was calculated for each of the five areas using the standardization technique (Briguglio, 1995; Kaly et al., 1999; St. Bernard, 2007) also known as Min Max rescaling (Yoon, 2012). The indicators included in the index were age, number of household members, education level, access to information (Internet subscription, mobile subscription, landline subscription, and television ownership), material assets (home and land ownership), access to public services (access to water, electricity, and health insurance), occupation, income, and organization membership (For further details see Appendix V). The vulnerability for each indicator in the dataset was calculated using the formula  $V = (X - X_{min}) / (X_{max} - X_{min})$ , where V is the degree of vulnerability arising from the indicator for each area, X is the value of the indicator included in the vulnerability index for each area, and Xmax and Xmin are the maximum and minimum values of the indicator across all five areas. This calculation results in a score between 0 and 1. This calculation was performed for each indicator to be included in the index, and then an average of all V's was calculated to give 'an index' (again between 0 and 1). The index was calculated for each of the five areas (Akkar, Menieh, Tripoli, Koura, and Batroun). They could then be ranked, with a higher score indicating a lower vulnerability.

The results (Table 5.2) showed that the coastal communities in Akkar area were the most vulnerable of those within the study area followed by those in Tripoli area. The coastal communities in Batroun area showed the lowest levels of social vulnerability, with Menieh and Koura areas showing medium levels of social vulnerability.

**Table 5.2:** *Social vulnerability Index for each of the five areas of the Lebanese northern coast*

Area	Batroun	Koura	Tripoli	Menieh	Akkar
Social Vulnerability Index	0.61	0.54	0.43	0.52	0.38

The fact that the coastal communities in Akkar area show the highest level of vulnerability was also supported by findings from the semi-structured and in-depth interviews as well as in the secondary literature. Akkar area has been classified as one of the most deprived areas in Lebanon (Hanafi, 2008; Mouchref, 2008; Das and Davidson, 2011). The existing situation of deprivation in Akkar area results from a combination of various reasons. A full examination of these reasons is beyond the scope of this study although the most important reasons are discussed here. The foremost characteristic of this area was the persistence of feudal system until the early 1970s and this had a major influence on the socioeconomic situation in the area. A ruling elite of large estate landowners used to control powerless laborers and residents who used to work as sharecroppers on the feudal lands. The feudal nature of the society has now been replaced by wealthy and powerful families. In addition, Akkar area reveals all the typical characteristics of poor and marginalized rural communities,

with poor infrastructure and low quality services in addition to other features such as limited sources of income and inadequate support from government and civil society (Mouchref, 2008). This situation is due to the centralized system operating in the country where most of the economic and development projects have historically been focused on Beirut, with the peripheral areas being marginalized leading to unequal growth between the different areas of the country. This fact was emphasized during the interviews and survey, with most participants reporting that they felt neglected by the Lebanese government and marginalized from the rest of the country.

Another major reason for this finding is the dependence of communities in the Akkar and Menieh areas on natural resources, with agriculture and fisheries being major economic sectors for income generation. The findings are in line with the literature on 'vulnerability of place' covered by Cutter et al. (2003) who explain that environmental change – resulting from various episodes of armed conflict in this case - can result in a form of economic vulnerability for areas that rely on one economic sector for income generation, especially when that involves natural resources. This is particularly evident in the areas of Akkar and Menieh that heavily depend on agriculture, fishing, and trade. Fishermen and farmers are among the most vulnerable and poorest families in these areas and felt the largest impacts that resulted from the episodes of armed conflicts (FAO, 2006; Mouchref, 2008). For example, as a result of the 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes, fishermen along the northern coast, and in particular in these two areas, lost their only source of income as they were unable to go to the sea during the periods of conflict (FAO, 2006; UNDP, 2007; World Bank, 2007; Hanafi, 2008; Mouchref, 2008).

Farmers in these areas experienced similar impacts. The 2006 Israel-Lebanon War and its aftermath caused large losses due to difficult access to agricultural lands, which made harvesting impossible and led to the degradation of crops, obstructions to the transportation of agricultural products and monopoly control of prices (FAO, 2006; Mouchref, 2008). The Nahr el Bared Clashes in 2007 had a more direct and severe impact on the farmers in this area. Agricultural lands, greenhouses, and roads were severely damaged, and farmers were unable to reach the fields resulting in crop deterioration. Transportation of products to market was also hampered by the fighting. As a consequence, farmers lost their income from harvests for two successive years and found themselves in a downward spiral of debt (Mouchref, 2008). It is important to also mention that fishermen and farmers in these areas suffer from socioeconomic problems that frequently place them in a cycle of poverty and debt. For example, they often suffer from extreme weather conditions during winter, which can result in losses in their only source of livelihood, leading to other problems such as difficulties in accessing medical care, low income, poverty, and lack of access to any training opportunities that might exist.

Further, the findings from the interviews also show that the areas with the highest levels of social vulnerability (Akkar, Menieh, and Tripoli) are showing increasing levels of social and economic problems such as violence, drugs, unemployment, robberies, children labor, schools drop-outs, poverty, and gender inequality. These problems in turn can increase a community's vulnerability and threaten human security.

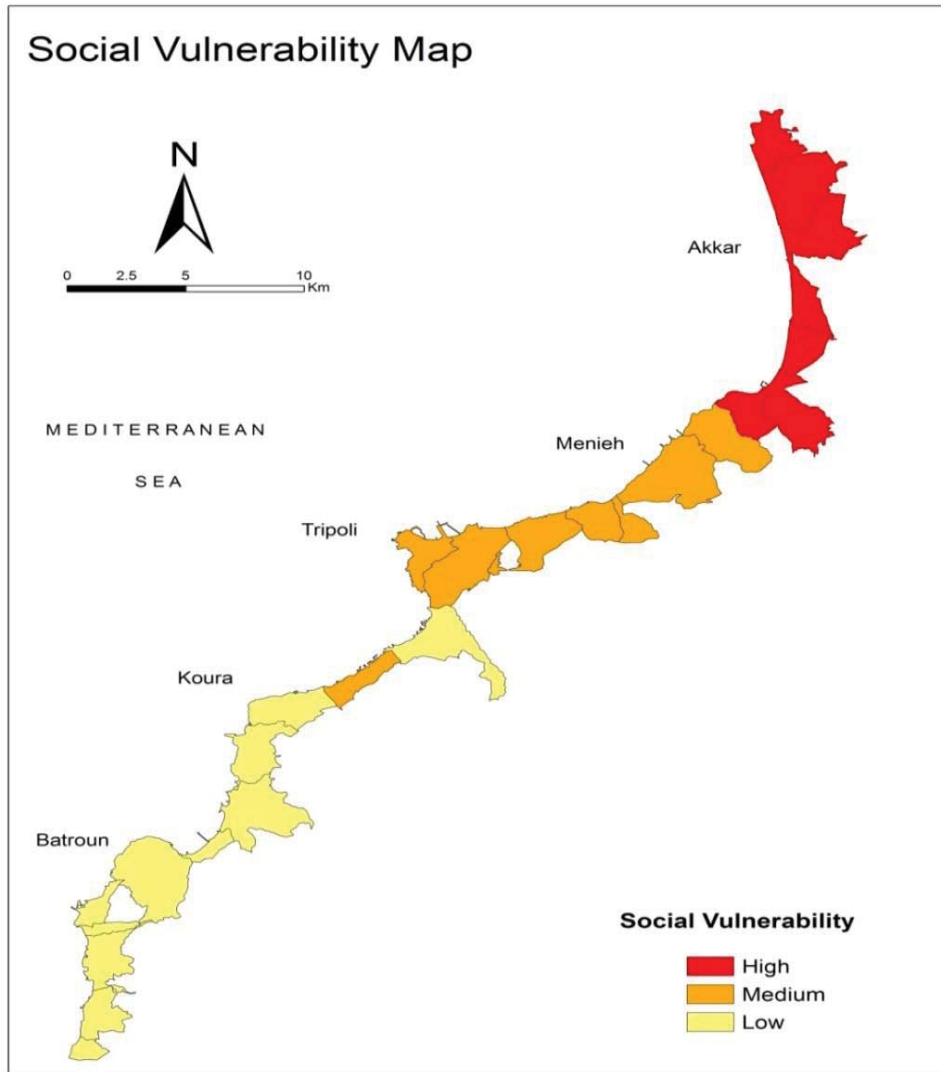
In addition to the social vulnerability of these areas, the results showed a low level of coping capacity in all the five areas studied. To assess the coping capacity, the following indicators were used: perceptions regarding the level of preparedness to disasters, the presence of emergency plans, and the institutional capacity to deal with disasters. During the interviews, the heads or their representatives of the municipalities were asked about their perceptions of their institutional capacity to deal rapidly with the impact of a disaster, a violent conflict in this case, on affected environmental resources. They generally reported a very limited or weak institutional capacity in all the five areas. According to local leaders and survey participants, the municipalities of Menieh and Batroun require expertise, personnel, and equipment. Most of the heads and their representatives noted that they suffer from low financial budget and from government negligence. Particularly in Akkar and Menieh, especially they are exposed to and affected by extreme weather conditions and armed conflict. When asked about their level of preparedness for disasters in general, and for conflicts in particular, all areas' leaders mentioned that there were no emergency plans to cope with armed conflict. However, the heads or their representatives of several municipalities, mainly those where agriculture was a major economic sector, recorded a higher level of preparedness to extreme weather conditions, especially in winter. In terms of the existence of any emergency plans, the interviews revealed that there were no emergency plans in Akkar, Menieh, Koura, and Batroun. According to the leaders of the municipalities in Batroun area, it is the government's responsibility to provide emergency plans and not the municipalities. The leaders of the municipalities in Menieh area noted that the lack of a financial budget and assistance were important reasons for not being prepared for disasters and for not having any plans. The findings show a low level of coping capacity, mainly due to the negligence and marginalization of these areas by the government, which, in turn, can increase people vulnerability.

#### *From Risk to Vulnerability of Place*

Based on the 'hazards of place' model, combining the results for physical and social vulnerabilities resulted in differences in 'vulnerability of place' among the five areas of the Lebanese northern coast as follows: Akkar and Menieh show the highest levels of vulnerability followed by Tripoli, with Koura and Batroun showing lower levels of vulnerability (Figure 5.4).

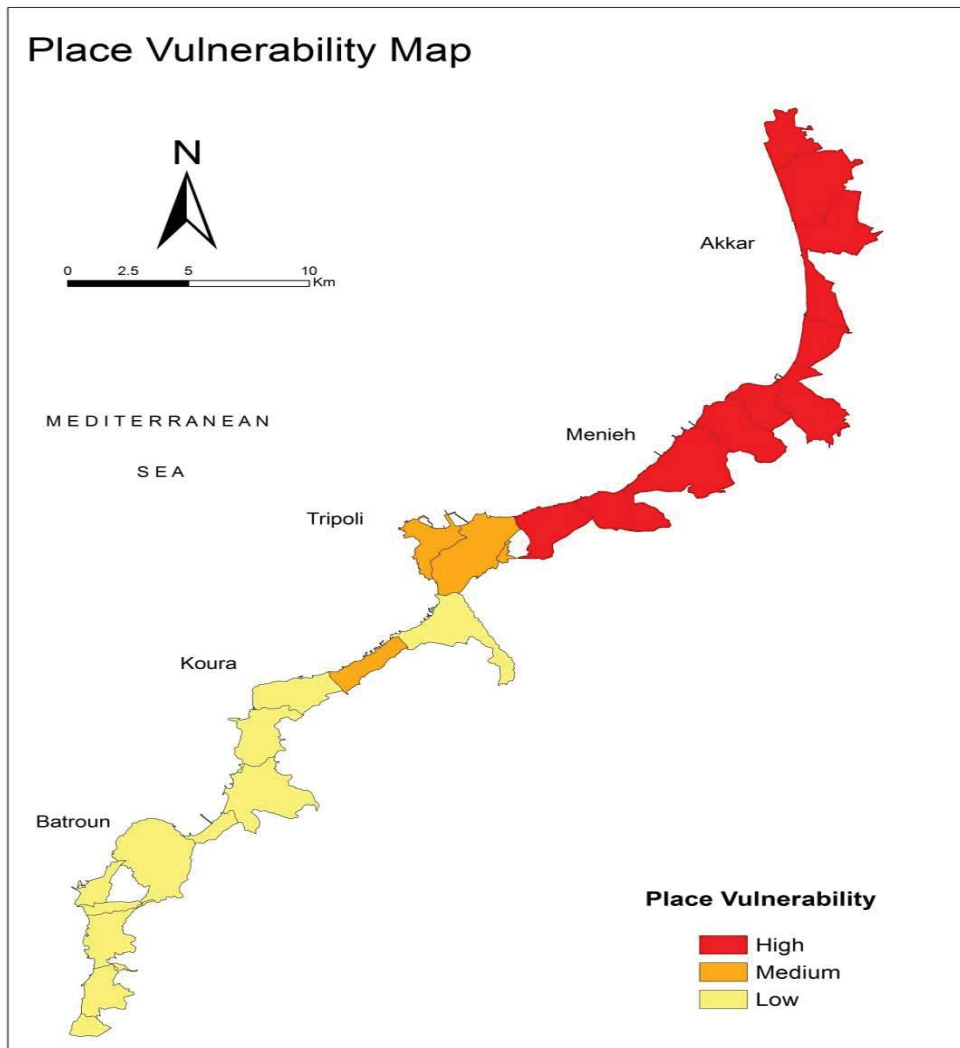
According to the model, 'vulnerability of place' provides a feedback loop to the inputs of risk and mitigation, enabling an increase or decrease in both risk and mitigation, resulting in either increasing or decreasing vulnerability (Cutter, 1996). This argument is supported by the results, where areas such as Akkar, Menieh, and Tripoli that experienced an increase in, or several episodes of, armed conflict showed an increase in vulnerability. In addition, in these areas there is a lower level of mitigation and preparedness for risks than the other areas. As such, these areas need to increase their mitigation processes in order to decrease their vulnerability. However, other areas such as Koura and Batroun who have experienced fewer episodes of armed conflict showed a lower level of vulnerability than other areas but also low levels of mitigation.

**Figure 5.3:** Social vulnerability in the coastal area of north Lebanon



It is also important to observe that the model suggests that a higher level of ‘vulnerability of place’ can increase the risk of armed conflict. This means that areas such as Akkar, Menieh, and Tripoli have a greater risk of armed conflict than other areas. An examination of recent political events in these areas, which show higher levels of violence due to armed conflict, supports this with the recent clashes in Tripoli being a good example. However, vulnerability is not the only trigger for armed conflict. While a high level of vulnerability can create a situation that increases the risk of armed conflict, other reasons can also cause conflicts or potential conflicts such as the political situation in the country or spillovers from the war in Syria. However, this study does not address the reasons and factors that can trigger armed conflict.

**Figure 5.4:** *Vulnerability of place in the coastal area of north Lebanon*



## 5.5. Conclusions

This chapter has assessed and identified the spatial variation in communities' vulnerabilities to the deterioration of the natural environment caused by various episodes of armed conflict within five coastal areas of north Lebanon. Results showed that the variation of vulnerability does not only result from exposure to armed conflict but also from existing conditions including the sensitivity and coping capacity of the communities. The areas of Akkar and Menieh showed the highest levels of vulnerability followed by Tripoli. In comparison, Koura and Batroun areas showed lower levels of vulnerability. The model used was able to show the dynamic and complex nature of 'vulnerability of place' and the ways in which it can vary within a certain geographic area. The coastal area of north Lebanon is a good illustration of how vulnerability can vary within a relatively small area, hence highlighting the uniqueness and exceptional features of the areas under study. The findings validate the literature on

'vulnerability of place' that addresses human vulnerability in a specific geographic area through combining the physical and social aspects of vulnerability, and hence emphasizes the factors and aspects that can influence vulnerability and which are unique to each area.





## Assessment of Degrees of Empowerment in Geographic Areas of North Lebanon<sup>3</sup>

### 6.1. Introduction

This chapter identifies different degrees of individual empowerment in the coastal area of north Lebanon within the context of armed conflict by answering two questions: 1. What degrees of empowerment do individuals in the coastal area of north Lebanon have? 2. How does the degree of empowerment vary across the different geographical areas within the study area? The study is based on the analytical framework developed by Alsop et al. (2006) who define empowerment as *“a group’s or individual’s capacity to make effective choices, that is, to make choices and then to transform those choices into desired actions and outcomes”* (Alsop et al., 2006, p.10). The findings are based on 500 questionnaire surveys of citizens in the study area, focusing on indirect indicators of agency and direct indicators of empowerment, as well as two stakeholder focus groups, to discuss opportunity structure. The chapter structure is as follows: a brief literature review on empowerment, agency, and opportunity structure is first presented. The methodology used is then described. Thereafter, the findings are presented and discussed. The final section concludes with the main points discussed in this chapter.

### 6.2. Empowerment, Agency, and Opportunity Structure

Empowerment is usually conceived in terms of two components: agency and opportunity structure. Agency refers to an actor’s capacity to visualize options, express preferences, and make purposeful choices (Alsop and Heinsohn, 2005; Ibrahim and Alkire, 2007). According to Sen (1999), agency is what an individual is free to do and accomplish in the quest for purposes or values that this individual perceives as important. Consequently, *“having greater freedom to do the things one has reason to value is (1) significant in itself for the person’s overall freedom, and (2) important in fostering the person’s opportunity to have valuable outcomes”* (Sen, 1999, p.18). However, it is problematic to consider agency as synonymous with empowerment (Drydyk, 2008). It is important to understand that the ability to perform as an agent is not equivalent to the achievement of desired outcomes (Petesch et al., 2005). Even when people have the ability to visualize options and make

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<sup>3</sup> An earlier version of this chapter is published as: Issa S.T., Molen I. van der, Nader M.R., and Lovett J.C. (2014). Empowerment, Agency, and Opportunity Structure: a Case of Lebanon. In E. Zeynep Güler (ed.), *Theorizing and Experiencing Politics: Political Science in the 21st Century - New Opportunities and Impasses*. Paper presented at the POLITSCI’13 Political Science Conference, Istanbul, Turkey 31 October - 2 November 2013 (pp.68-82). Turkey: DAKAM Publishing (Conference Proceedings). ISBN: 978-605-5120-74-0.

choices, they may not be capable of using their agency effectively and may be inhibited by their opportunity structure. Here, the opportunity structure refers to the institutional environment that comprises the formal and informal contexts within which the actors function (Alsop and Heinsohn, 2005; Ibrahim and Alkire, 2007). Petesch et al. (2005) argue that one's opportunity structure is influenced by three major factors: the accountability of institutions, the performance of groups in power, and the implementation capacity of the state. These three factors combined represent the contexts and opportunities that shape individuals' and groups' capacities to participate, influence, and hold institutions liable (Petesch et al., 2005). As such, agency and opportunity structure have a mutual relationship that leads to different degrees of empowerment. The relationship between agency and opportunity structure is highlighted by social theorists such as Giddens (1984) who emphasize the importance of considering structures and agency as 'dual', in that they are both the medium and the results of actions that form social systems (Giddens, 1984).

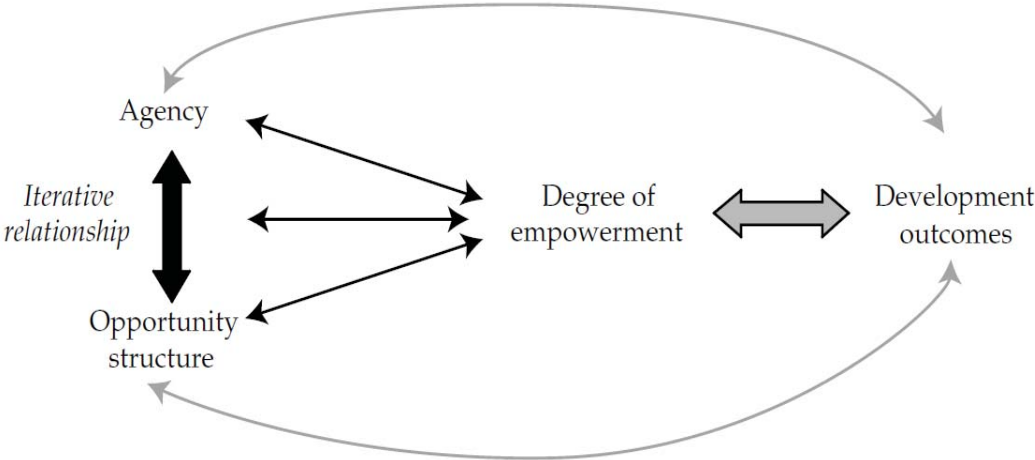
The degree of empowerment can be measured in terms of existence, usage, and actual accomplishment of choices by determining whether an individual has an opportunity to make a choice, whether he can truly take advantage of the opportunity to choose, and whether the decision leads to a preferred outcome once the choice is made (Alsop and Heinsohn, 2005; Alsop et al., 2006). Various factors including the socioeconomic and geographic status of a person or group can influence the existence of choice, which may not always exist. The use of choice relies on the actual benefit accruing to an individual or a group arising from an opportunity to choose. The achievement of a choice depends on the extent to which the desired result has been accomplished.

An individual's empowerment can be studied in different domains. Generally, three main domains are perceived, each divided into further sub-domains, which indicate in what areas and parts of his/her life an individual is empowered. The 'State' domain, in which an individual is considered as a civic actor, is divided into three sub-domains: politics, justice, and public service delivery. The 'Market' domain, in which an individual is considered as an economic actor, is divided into labor, goods, and private services sub-domains. The 'Society' domain, in which an individual is considered as a social actor, is divided into two sub-domains including family and community. Even though prior assumptions should not be made about empowerment relationships between different domains or subdomains, the degree of empowerment in one domain can be associated with similar degrees of empowerment in a different domain or sub-domain (Alsop and Heinsohn, 2005; Alsop et al., 2006).

According to Alsop et al. (2006), empowerment within domains and sub-domains can be experienced at various levels (or administrative boundaries): macro-, intermediary, and local. The macro-level may be the national level or that of the state. The intermediary level may correspond to the district, and the local level to the village or city. It is important to note that the degree of empowerment at one level is not necessarily the same as that on another level.

When measuring empowerment, the data collected do not necessarily have to cover all the domains and levels of the analytical framework. The number of domains, sub-domains, and levels considered mainly depends on the nature and purpose of the research. Usually, two to six domains and one to three levels are included in a study (Alsop and Heinsohn, 2005). In this research, the degrees of empowerment in the public services delivery sub-domain within the state domain, the labor sub-domain within the market domain, and the community sub-domain within the society domain are all addressed at the local level.

**Figure 6.1:** *The Relationship between Outcomes and Correlates of Empowerment (Source: Alsop et al., 2006, p.10)*



**6.3. Methodology**

The complex, dynamic, and multidimensional nature of the empowerment concept poses serious methodological challenges when trying to measure it, particularly when trying to identify indicators that satisfy standards of meaning, causality, and comparability (Alsop et al., 2006). According to Narayan (2005), the meaning, context, unit of analysis, levels of application, and dimensions of empowerment are essential criteria in determining what, who, and how to measure empowerment.

Given the analytical framework, both quantitative and qualitative techniques were used to answer the research questions. 500 questionnaire surveys were distributed among citizens in the study area, and two focus groups were held with local stakeholders in the area, mainly involving heads, or their representatives, of the 24 cities and villages. In the survey, data on indirect indicators of agency and direct indicators of empowerment were collected from citizens. Indicators were selected from Alsop et al. 2006 book: *Empowerment in Practice: From analysis to implementation*. Some of the indicators were adjusted to fit the context of the study site. To assess agency, asset endowments covering information, material, financial,

organizational, psychological, and human assets were used as indicators (Table 6.1). Information assets indicators were access to various sources of information such as television, internet, telephone, and mobile subscription. Materials assets indicators were home and land ownership. Financial assets indicators were occupation, income, and employment history. Organizational asset indicators were membership of organizations, effectiveness of organization, and benefits from organization membership. Psychological assets indicators were self-perceived exclusion from community activities and capacity to envisage change. Human assets indicators were education level, age, gender, marital status, and family size (For further details see Appendix III).

**Table 6.1: Indicators of Agency**

<b>Agency</b>	
<b>Asset</b>	<b>Indicators</b>
<b>Information assets</b>	<ul style="list-style-type: none"> <li>• Television ownership</li> <li>• Internet subscription</li> <li>• Telephone subscription</li> <li>• Mobile subscription</li> </ul>
<b>Material assets</b>	<ul style="list-style-type: none"> <li>• Home ownership</li> <li>• Land ownership</li> </ul>
<b>Financial assets</b>	<ul style="list-style-type: none"> <li>• Occupation</li> <li>• Income</li> <li>• Employment history</li> </ul>
<b>Organizational assets</b>	<ul style="list-style-type: none"> <li>• Membership of organizations</li> <li>• Effectiveness of organization</li> <li>• Benefits from organization membership</li> </ul>
<b>Psychological assets</b>	<ul style="list-style-type: none"> <li>• Self-perceived exclusion from community activities</li> <li>• Capacity to envisage change</li> </ul>
<b>Human assets</b>	<ul style="list-style-type: none"> <li>• Education level</li> <li>• Age</li> <li>• Gender</li> <li>• Marital status</li> <li>• Family size</li> </ul>

In addition, direct indicators of empowerment were measured. In particular, the focus was on the public services delivery sub-domain in the state domain, the labor sub-domain in the market domain, and community sub-domain in the society domain (Table 6.2). For the public services delivery subdomain, indicators were a score for the quality of public services used, percentage of individuals that have complained about public services delivery, a score for satisfaction with the outcome of a complaint, a score for the equitability in addressing needs and concerns, and a score for the influence of political and religious characteristics on the authorities’ treatment of people. In the labor domain, a score for control over employment or occupation choices was used as indicator. For the community subdomain, indicators were a score for awareness of the main local public service decision-makers, a score for involvement in community decision-making processes, a score for aspiration to be more involved in community decision-making processes, and a score for influence in community decision-making processes (For further details see Appendix III).

**Table 6.2: Indicators of Empowerment**

<b>Degree of Empowerment</b>	
<b>Subdomain</b>	<b>Indicators</b>
<b>Public services delivery subdomain</b>	<ul style="list-style-type: none"> <li>• Score for the quality of public services used</li> <li>• Percentage of individuals that have complained about public services delivery</li> <li>• Score for satisfaction with the outcome of a complaint</li> <li>• Score for the equitability in addressing needs and concerns</li> <li>• Score for the influence of political and religious characteristics on the authorities’ treatment of people</li> </ul>
<b>Labor subdomain</b>	<ul style="list-style-type: none"> <li>• Score for control over employment or occupation choices</li> </ul>
<b>Community subdomain</b>	<ul style="list-style-type: none"> <li>• Score for awareness of the main local public service decision-makers</li> <li>• Score for involvement in community decision-making processes</li> <li>• Score for aspiration to be more involved in community decision-making processes</li> <li>• Score for influence in community decision-making processes</li> </ul>

The 500 questionnaires were distributed proportionally to the citizens in each of the five areas. Some of the survey questions had multiple choice answers and others were rating-scales questions (Likert-type scales). A few were open-questions. Sometimes, in the analysis stage, the Likert-scale answers were converted to a binary form (0 and 1), particularly when performing binary logistic regressions. The sample size was calculated using the formula

$n = \frac{N}{1+N(e)^2}$  (Israel, 1992, p.4); where n is equal to the sample size, N to the population size, and e to the level of precision, which was set to 10% for each area. After calculating the number of questionnaires to be completed in each area, the number of questionnaires required from each village or city was calculated based on the population of each village and city compared to the total population of each area. The participants were chosen using simple random sampling for two main reasons. The first being the lack of official statistics providing detailed local-level information about age, gender, education level, employment, and other socioeconomic features in north Lebanon. The second reason being the heterogeneous composition of the population in Lebanon in general, and the in north in particular, which is characterized by diverse religious and political affiliations. Before starting the survey, a pilot test was carried out to evaluate the acceptability and clarity of the questionnaire and then adjusted the questions accordingly. After the questionnaires were returned, the data were entered into a Microsoft Excel Worksheet, later transferred to the Eview and IBM SPSS Statistics 20 software for analysis (For further details see Appendix III).

The function of the focus groups was to gather data on indirect indicators of the opportunity structure and understand the relationship between citizens' agency and the opportunity structure, and its influence on the degree of empowerment. During the focus groups discussions, open questions were asked in order to assess the formal and informal environment surrounding individuals within the coastal area of north Lebanon in terms of performance and accountability of institutions. In addition, the focus groups aimed to understand the perceptions of local authorities regarding the preliminary results on agency and degree of empowerment. Therefore, some of the findings from the questionnaire surveys were presented to the participants in order to understand their perceptions regarding the findings in terms of opportunity structure. The participants of the focus groups were heads, or their representatives, of the cities and villages within the study area who were divided into two focus groups for two main reasons: homogeneity and to have a sensible number of participants in each focus group. Group composition is important in gathering data and should reflect the research problem. According to the literature, a fairly homogenous group, sharing common interests, with a little variety is usually preferable to stimulate discussion and illustrate different points of view (Hayes and Tatham, 1989). This homogeneity allows the participants to feel more comfortable and this minimizes any cultural or status issues that could act as obstacles to free and open discussion. Accordingly, the focus groups were divided by geographical areas. The first focus group included the heads and representatives of the villages and cities in the Koura and Batroun areas, and the second focus group those of the villages and cities of the Akkar, Menieh, and Tripoli areas. These two "sub-areas" have different social and economic features and characteristics. Further, the number of participants in a focus group is an important factor in the quality of data and interactions among participants. According to the literature, the number of participants is usually between four and twelve (Tong et al., 2007). The 24 heads of the villages and cities of the study area were invited; however, not all invitees were able to attend or send representatives instead. The total number of participants was eighteen. The first focus group, involving the Koura and Batroun areas, had six participants. The second group involving Akkar, Menieh, and Tripoli had twelve participants. Data gathered from the

focus groups were later entered into NVivo software for analysis (For further details see Appendix IV).

#### **6.4. Results and Discussion**

Descriptive statistics derived from the survey revealed variations between areas in terms of agency. The Koura and Batroun areas are classified as having the highest level of agency, followed by Menieh and Tripoli, with Akkar showing the lowest level of agency (For further details see Appendix V). In terms of opportunity structure, the results from the focus groups revealed that the five areas lack adequate political representation and suffer from a lack of transparency in institutional activities (For further details see Appendix V). The combination of agency and opportunity structure results in different degrees of empowerment in the various areas. The results are discussed below in more detail and address the public services delivery, labor, and community subdomains.

##### **State Domain: Public Services Delivery**

In terms of the public services delivery subdomain of the state domain, the results showed a poor quality of public services. Citizens from the coastal area of north Lebanon complained about the poor quality of public services. Although the survey shows that houses in the coastal area of north Lebanon are connected to the electricity grid, major instabilities and power supply disruptions are common. The number of hours per day when electricity is available differs from one city or village to another. In several villages of Akkar, it was reported that electricity is only available for two to three hours a day. The significant failures in the electricity supply put an extra burden on the population by forcing them to search for alternatives such as subscribing for electricity from private providers or buying private batteries or generators, with the associated additional costs of fuel. Further, and particularly in Akkar, not everyone can afford private generators or to subscribe for electricity. The results indicate that large percentages of the populations in Menieh, Tripoli, Koura, and Batroun are able to afford the extra costs of private sources of electricity: 76% of the coastal population in Menieh, 82% in Tripoli, 91% in Koura, and 95% of the coastal population in Batroun. In comparison, only 51% of the coastal population in Akkar are able to afford public and private sources of electricity, with the other 49% relying on public sources. It is notable however, that residents in several villages in Akkar reported that they had recently been connected to the electricity grid.

Results also showed that many citizens in the coastal area of north Lebanon do not use the public water system. Batroun area had the highest percentage of people using the public piped water system at 52%, whereas only 17% of the citizens in Akkar use the public system. This is due to various reasons such as the quality of water and access to public water sources. For example, 37% of citizens in Akkar, 17% in Menieh, 49% in Tripoli, 41% in Koura, 35% of citizens in Batroun reported that they buy bottled water from private companies



because they do not trust the quality of water provided by the public system. In Akkar and Menieh, around 45% of the population rely on either private or public wells for their water because they cannot afford other alternatives; whereas in Koura, citizens reported that the water was polluted and they preferred other alternatives such as bottled water. People living in the El Mhamra village in Akkar reported that they had only recently been able to access public water. However, during field visits, they reported receiving warnings from the municipality council six months later that the water was polluted and it was better not to use it. Several villages, notably Arida and Cheikh Zennad in Akkar, still do not have access to the public water system. In addition to issues with the services mentioned above, citizens and local authorities complained about other public services such as public schools, hospitals, and wastewater and solid waste management. This was particularly the case in areas of Akkar where there are no local hospitals, wastewater networks are mixed with irrigation canals, and public schools are not available for all educational levels.

70% of the coastal population in Akkar lack any kind of health insurance compared with 42% in Menieh and Batroun, 39% in Tripoli, and 31% in Koura. Only 20% of citizens in Akkar benefit from the National Social Security Fund, whereas 1% benefit from private insurance, and 9% from other type of health insurance. For Menieh, 49% of citizens benefit from the National Social Security Fund, 4% from private insurance, and 5% from other type of health insurance. In Tripoli, 52% of citizens benefit from the National Social Security Fund and 9% from private insurance. Koura has the highest percentage of people who are able to afford private insurances, with 46% of citizens benefiting from the National Social Security Fund, 19% from private insurance, and 4% from other type of health insurance. For Batroun, 47% of residents are able to benefit from the National Social Security Fund, 9% from private insurance, and 2% from other type of health insurance.

Despite the perceived low quality of public services delivery, around 90% of citizens in the five coastal areas have never complained to the authorities regarding the delivery of public services, even though they do have this option. In Akkar, 89% of the people had not complained to the authorities regarding public services delivery, Menieh 91%, Tripoli 84%, Koura 92%, and Batroun 98%. According to the citizens, they chose not to complain because even if they did they expected to be neglected and their voices to go unheard. This is confirmed in the survey, where the majority of citizens in the five areas who had complained about public services delivery revealed that their complaint had not been resolved.

The results show that individuals do have the opportunity to complain but the majority do not take advantage of this opportunity. For the minority who do use this opportunity to complain about public services delivery, the preferred outcomes are not achieved. To better understand the results, we sought out the reasons and perceptions behind individuals' choices. Citizens were asked their perceptions regarding authorities' equitability in addressing needs and concerns and about the influence of political and religious characteristics on the authorities' treatment of people. Around 60% of respondents in the five areas believed that the authorities were neither more nor less effective when addressing other's people needs or concerns than their own, whereas 35% of citizens in Akkar, 20% in Menieh, 19% in Tripoli, 28% in Koura, and 24% in Batroun and thought that

the authorities were much more effective when addressing other people’s needs or concerns. These people believed that it all depended on power or personal connections, particularly with local authorities and politicians. Similarly, when it came to the influence of political and religious characteristics on the authorities’ treatment of people, 69% of citizens in Akkar, 57% in Menieh, 69% in Tripoli, 75% in Koura, and 79% of citizens in Batroun perceived that the way in which authorities treat people was very much affected by political affiliation and religion (Table 6.3).

**Table 6.3:** Authorities’ equitability in addressing needs and concerns, and the influence of political and religious characteristics on the authorities’ treatment of people

Perception	Area					Total
	Akkar	Batroun	Koura	Menieh	Tripoli	
<b>Do you think that the authorities are more or less effective when addressing other people’s needs/ concerns compared to yours?</b>						
Much more effective	35%	24%	28%	20%	19%	25.2%
Slightly more effective	5%	13%	2%	14%	8%	8.4%
Neither more nor less effective	59%	56%	61%	56%	67%	59.8%
Slightly less effective	1%	3%	4%	4%	3%	3.0%
Much less effective	0%	4%	5%	6%	3%	3.6%
<b>Do you feel the way in which the authorities treat people is affected by people’s religion or political affiliation?</b>						
Yes, very much	69%	79%	75%	57%	69%	69.8%
Yes, slightly	5%	5%	6%	10%	15%	8.2%
No, not at all	25%	13%	13%	14%	12%	15.4%
Would rather not say	1%	3%	6%	19%	4%	6.6%

*Correlation analysis and Logistic regression analysis*

To further understand these results, the relationships between the various indicators were sought (using Spearman's rho correlations) for each of the five areas. The indicators included in the analysis were education level, complaining about public services delivery, equitability in addressing needs and concerns, and influence of religious and political affiliations on the authorities’ treatment of people (Table 6.4). The following significant relationships were found:

1. A weak positive correlation between the perception of equitability in addressing needs and concerns, and the perception of the influence of social characteristics on the authorities’ treatment of people in Akkar (Sig. = **.327\*\***) and in Menieh (Sig. = **.258\*\***). That is, those who

think that authorities are more effective when addressing other’s people needs or concerns than their own are more likely to also perceive the way that authorities treat people to be affected by political affiliation and religion.

2. A weak positive correlation between complaining about public services delivery and a perception that political and religious characteristics influence authorities’ treatment of people in Tripoli (Sig = **.223\***). In other words, people who complain about public services delivery are more likely to also think that the way in which authorities treat people is affected by political affiliation and religion. One possible explanation is that Tripoli is a large city - the largest outside the capital Beirut - and the complex reality of Lebanon’s society in terms of diverse religious and political affiliations is therefore more apparent to its residents.

**Table 6.4:** Spearman's rho correlations between various indicators within the public services delivery domain

Area	Spearman's rho Correlations		Education	Complaint	Effectiveness	Treatment
Akkar	Education	Correlation Coefficient	1.000	.002	.046	.013
		Sig. (2-tailed)	.	.982	.650	.899
		N	100	100	100	100
	Complaint	Correlation Coefficient	.002	1.000	-.108	-.111
		Sig. (2-tailed)	.982	.	.283	.270
		N	100	100	100	100
	Effectiveness	Correlation Coefficient	.046	-.108	1.000	<b>.327**</b>
		Sig. (2-tailed)	.650	.283	.	.001
		N	100	100	100	100
	Treatment	Correlation Coefficient	.013	-.111	<b>.327**</b>	1.000
		Sig. (2-tailed)	.899	.270	.001	.
		N	100	100	100	100
Batroun	Education	Correlation Coefficient	1.000	-.093	.008	-.082
		Sig. (2-tailed)	.	.355	.934	.420
		N	100	100	100	100
	Complaint	Correlation Coefficient	-.093	1.000	-.108	-.073
		Sig. (2-tailed)	.355	.	.287	.470
		N	100	100	100	100
	Effectiveness	Correlation Coefficient	.008	-.108	1.000	.048
		Sig. (2-tailed)	.934	.287	.	.633
		N	100	100	100	100
	Treatment	Correlation Coefficient	-.082	-.073	.048	1.000
		Sig. (2-tailed)	.420	.470	.633	.
		N	100	100	100	100
Koura	Education	Correlation Coefficient	1.000	.065	.082	<b>-.203*</b>
		Sig. (2-tailed)	.	.519	.419	.043
		N	100	100	100	100
	Complaint	Correlation Coefficient	.065	1.000	-.062	-.016
		Sig. (2-tailed)	.519	.	.540	.875
		N	100	100	100	100
	Effectiveness	Correlation Coefficient	.082	-.062	1.000	.135

		Sig. (2-tailed)	.419	.540	.	.180
		N	100	100	100	100
	Treatment	Correlation Coefficient	<b>-.203*</b>	-.016	.135	1.000
		Sig. (2-tailed)	.043	.875	.180	.
		N	100	100	100	100
Menieh	Education	Correlation Coefficient	1.000	-.059	.176	.102
		Sig. (2-tailed)	.	.562	.081	.315
		N	100	100	100	100
	Complaint	Correlation Coefficient	-.059	1.000	.097	-.155
		Sig. (2-tailed)	.562	.	.336	.125
		N	100	100	100	100
	Effectiveness	Correlation Coefficient	.176	.097	1.000	<b>.258**</b>
		Sig. (2-tailed)	.081	.336	.	.010
		N	100	100	100	100
	Treatment	Correlation Coefficient	.102	-.155	<b>.258**</b>	1.000
		Sig. (2-tailed)	.315	.125	.010	.
		N	100	100	100	100
Tripoli	Education	Correlation Coefficient	1.000	.022	.000	-.105
		Sig. (2-tailed)	.	.828	.999	.299
		N	100	100	100	100
	Complaint	Correlation Coefficient	.022	1.000	-.061	<b>.223*</b>
		Sig. (2-tailed)	.828	.	.550	.026
		N	100	100	100	100
	Effectiveness	Correlation Coefficient	.000	-.061	1.000	.145
		Sig. (2-tailed)	.999	.550	.	.151
		N	100	100	100	100
	Treatment	Correlation Coefficient	-.105	<b>.223*</b>	.145	1.000
		Sig. (2-tailed)	.299	.026	.151	.
		N	100	100	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

In addition, logistic regressions were performed on data for each of the five areas to try to explain individual perceptions regarding the influence of religious and political affiliations on the authorities' treatment of people. The perceptions of authorities' effectiveness when addressing people's needs is an important factor and was therefore taken as the dependent variable (Table 6.5). The independent variables were age, gender, education level, income, organization membership, perception of involvement in community decision-making processes, and perception of authorities' equitability in addressing needs and concerns.

In terms of significant determinants, the following results are worth noting:

People in Akkar, Menieh, and Koura, who think that authorities are more effective in addressing other people's needs/concerns than their own are more likely to feel that the way in which authorities treat people is affected by people's religion or political affiliation. This might be due to the deprivation and poverty witnessed in these areas and the authorities neglect of people's conditions and their failure to cover basic needs in many

cases. In addition, people in Akkar who are more involved in their community are more likely to feel that the way in which authorities treat people is affected by people’s religion or political affiliation. One possible explanation might be that, with the deprivation and lack of opportunities in this area, being involved in the community is an opportunity to enlarge one’s social network and seek development opportunities.

**Table 6.5:** *Logistic regression to evaluate determinants of individual perceptions as to whether the way in which authorities treat people is affected by people’s religion or political affiliation*

Independent Variable	Batroun	Koura	Tripoli	Menieh	Akkar
Age	0.001765	-0.036604	0.012491	-0.075569*	0.041824
Gender	-1.807316*	-0.714654	0.300579	0.658762	0.395893
Education	0.183793	-0.229410	0.204958	0.042293	-0.080191
Income	-0.026309	0.447103*	0.016032	0.001264	-0.103495
Organization membership	0.744262	-2.598135**	0.600897	1.530159	0.554039
Involvement	-0.104652	-0.435822	0.696319	-0.239450	<b>1.350588**</b>
Effectiveness	0.063095	<b>1.695380*</b>	0.135259	<b>0.665038*</b>	<b>1.402461*</b>
C (Constant given by the software)	1.714031	-2.213624	-1.514911	0.984452	-6.037262
McFadden R-squared	0.127122	0.260365	0.052472	0.169340	0.239485

Probability: \* <0.05, \*\* < 0.1

Overall, the goodness of fit of the models, as represented by Mc Fadden's R<sup>2</sup>, is adequate. The variations in the dependent variable explained by the selected independent variables are as follows: 23% in Akkar, 16% in Menieh, 5% in Tripoli, 26% in Koura, and 12% in Batroun. The findings highlight the variations among the studied areas in terms of the influence of the various independent variables in explaining perceptions of the authorities’ treatment of their citizens. This reflects the uniqueness and different constitutions of the areas included in the study.

During the focus group sessions, the participants were also asked about the poor public services delivery that had been seen in the survey findings, and people’s perceptions regarding authorities’ effectiveness and treatment. According to the participating local authorities, the monthly budgets assigned to each municipality are very limited and do not cover municipal needs. It was also reported that, in many cases, delays in providing the money are commonplace. The limited financial potential hinders progress and development by the municipal council, which is unable to cover many of its citizens’ needs in general and public service delivery in particular. It was also mentioned that the municipalities are sometimes restricted by conditions laid down by the state, given the centralized system, which limit their performance. Another important aspect is power, which was referred by the participants during the focus groups. The effect of power and personal relationship or

social network is evident in the way authorities address needs and concerns, which is mainly based on political and religion characteristics, at the local and national level.

### **Market Domain: Labor**

In terms of financial assets, Akkar is the least endowed area in terms of income followed by Menieh. Respondents in Koura and Batroun report the highest incomes, followed by Tripoli. The low incomes in Akkar and Menieh could be related to characteristics linked to education level, type of occupation, and family size. The Akkar area shows the lowest level of education and the largest family sizes of the areas studied. In addition, incomes in Akkar mainly rely on natural resources in farming, fishing, and small enterprises, reflecting the rural nature of the area. The Akkar sample also had the highest percentage of unemployed: 32% of those interviewed in Akkar area were unemployed, compared with 15% in Menieh, 12% in Tripoli, 25% in Koura, and 10% in Batroun. It was reported during the focus group discussions that the high levels of unemployment, particularly in Akkar and Menieh, were leading to an increase in social problems such as drugs, violence, robberies, and other crimes. It is important to note that the impact of the Syrian war on the labor domain was emphasized during the focus group discussions, including by representatives from the Akkar and Menieh areas. They commented that Lebanese citizens were suffering from a lack of job opportunities and that many employers were replacing Lebanese workers with Syrian refugees because they could pay them less.

#### *Correlation analysis and Logistic regression analysis*

To study the degree of empowerment in the labor domain, indicators reflecting control over employment or occupation choices were used. Spearman's rho correlations were calculated to study the relationships between a range of indicators: education level, feeling of security in current occupation, choice in deciding occupation, and ease of changing occupation (Table 6.6).

The following significant relationships were found:

1. Weak positive relationships in Akkar between education level and feeling of job security (Sig = **.333\*\***) as well as between education level and the existence of choice in occupation (Sig = **.307\***). This reflects that individuals who have completed higher levels of education in Akkar have greater choices in deciding their occupation, and feel more secure in their current occupation, than individuals who are less well educated. This is understandable since the Akkar area, as discussed earlier, has the lowest level of education of the areas studied with less than 20% having completed higher education.
2. Weak to moderate relationships between there being a choice of occupation and a feeling of job security were found in Akkar (Sig = **.251\***), Menieh (Sig = **.259\***), and Tripoli (Sig = **.253\***). That is, individuals in these areas who have a choice in deciding their occupation feel

more secure in their occupation than individuals who do not have a choice in deciding their occupation.

**Table 6.6:** Spearman's rho correlations between various indicators within the labor domain

Area	Spearman's rho Correlations	Education	Security	Decision	Change	
Akkar	Education	Correlation Coefficient	1.000	<b>.333**</b>	<b>.307*</b>	-.049
		Sig. (2-tailed)	.	.007	.013	.695
		N	100	65	65	65
	Security	Correlation Coefficient	<b>.333**</b>	1.000	<b>.251*</b>	-.128
		Sig. (2-tailed)	.007	.	.044	.309
		N	65	65	65	65
	Decision	Correlation Coefficient	<b>.307*</b>	<b>.251*</b>	1.000	-.151
		Sig. (2-tailed)	.013	.044	.	.229
		N	65	65	65	65
	Change	Correlation Coefficient	-.049	-.128	-.151	1.000
		Sig. (2-tailed)	.695	.309	.229	.
		N	65	65	65	65
Batroun	Education	Correlation Coefficient	1.000	-.066	-.095	-.154
		Sig. (2-tailed)	.	.551	.385	.160
		N	100	85	85	85
	Security	Correlation Coefficient	-.066	1.000	.213	-.089
		Sig. (2-tailed)	.551	.	.050	.416
		N	85	85	85	85
	Decision	Correlation Coefficient	-.095	.213	1.000	<b>.221*</b>
		Sig. (2-tailed)	.385	.050	.	.042
		N	85	85	85	85
	Change	Correlation Coefficient	-.154	-.089	<b>.221*</b>	1.000
		Sig. (2-tailed)	.160	.416	.042	.
		N	85	85	85	85
Koura	Education	Correlation Coefficient	1.000	.006	.036	-.241
		Sig. (2-tailed)	.	.964	.784	.060
		N	100	62	62	62
	Security	Correlation Coefficient	.006	1.000	.070	.012
		Sig. (2-tailed)	.964	.	.590	.929
		N	62	62	62	62
	Decision	Correlation Coefficient	.036	.070	1.000	.177
		Sig. (2-tailed)	.784	.590	.	.169
		N	62	62	62	62
	Change	Correlation Coefficient	-.241	.012	.177	1.000
		Sig. (2-tailed)	.060	.929	.169	.
		N	62	62	62	62
Menieh	Education	Correlation Coefficient	1.000	.008	-.072	.139
		Sig. (2-tailed)	.	.946	.549	.248
		N	100	71	71	71
	Security	Correlation Coefficient	.008	1.000	<b>.259*</b>	-.079
		Sig. (2-tailed)	.946	.	.029	.511
		N	71	71	71	71
Decision	Correlation Coefficient	-.072	<b>.259*</b>	1.000	.091	
	Sig. (2-tailed)					

		Sig. (2-tailed)	.549	.029	.	.453
		N	71	71	71	71
	Change	Correlation Coefficient	.139	-.079	.091	1.000
		Sig. (2-tailed)	.248	.511	.453	.
		N	71	71	71	71
Tripoli	Education	Correlation Coefficient	1.000	.134	.014	-.111
		Sig. (2-tailed)	.	.271	.907	.363
		N	100	69	69	69
	Security	Correlation Coefficient	.134	1.000	<b>.253*</b>	.048
		Sig. (2-tailed)	.271	.	.036	.695
		N	69	69	69	69
	Decision	Correlation Coefficient	.014	<b>.253*</b>	1.000	<b>.408**</b>
		Sig. (2-tailed)	.907	.036	.	.001
		N	69	69	69	69
	Change	Correlation Coefficient	-.111	.048	<b>.408**</b>	1.000
		Sig. (2-tailed)	.363	.695	.001	.
		N	69	69	69	69

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

To further understand the findings, logistic regressions were performed to study factors that might influence the feeling of job security in each of the five areas. An individual's perception of security in their present occupation is a significant factor and was therefore taken as the dependent variable (Table 6.7). The independent variables considered were age, gender, education level, income, aspiration for life change, organization membership, and existence of choice in deciding occupation.

**Table 6.7:** Logistic regression to investigate determinants of individual perceptions of job security

Independent Variable	Batroun	Koura	Tripoli	Menieh	Akkar
Age	0.004004	0.002526	-0.043089*	0.005261	-0.067168*
Gender	<b>-2.000537*</b>	0.029716	0.563470	<b>-1.947866*</b>	<b>-1.530899*</b>
Education	0.164578	0.667514**	-0.196285	0.073982	0.261146
Income	0.058272	0.044134	-0.063654	0.052995	0.162755
Life change	-1.330468*	<b>-2.276586*</b>	-0.520127	0.924351	-0.057612
Organization membership	0.197509	-0.660740		-1.324511	0.079696
Decision	0.353620	-0.090203	<b>0.707917*</b>	<b>1.286794*</b>	0.009502
C (Constant given by the software)	0.478392	-0.895859	2.082592	-1.518048	1.553353
<b>McFadden R-squared</b>	0.187077	0.201547	0.116611	0.209616	0.177877

Probability: \* <0.05, \*\* < 0.1



Of the significant findings, the following results are the most noteworthy:

The probability of individuals feeling secure in their job is higher in Menieh and Tripoli when they have a choice in determining their occupation. Results also show that gender is an important factor in Akkar, Menieh, and Batroun, with men feeling less secure than women in their jobs. In Akkar and Menieh, this might be because these two areas can be characterized as masculine societies where women are less involved within their society. As a consequence, men are usually the main sources of income and decisions in the family and this may put a burden on the male head of household, particularly given the large families, relatively poor education, and lack of job opportunities. However, the finding also applied to Batroun, where women are more involved in the labor and social domains. Here, the reasons might be related to individual lifestyles in this area.

The goodness of fit of the models, as represented by Mc Fadden's  $R^2$ , is adequate. Overall, 17% of the variation in the dependent variable is explained by the selected independent variables in Akkar, 20% in Menieh, 11% in Tripoli, 20% in Koura, and 18% in Batroun. The variation in the independent variables found to partly explain the feeling of job security again reflects the uniqueness of each area and the different factors that influence empowerment in each area.

### **Society Domain: Community**

In addressing the community subdomain, the survey showed that more than 95% of citizens in Akkar, Menieh, Koura, and Batroun were aware of the main decision-makers regarding local public services. Here, Tripoli stood out: 17% of those surveyed did not know and 6% thought that nobody took decisions. However, everywhere, a large percentage of the citizens did not consider themselves involved in community decision-making processes. Tripoli, Koura, and Batroun led the way with 87%, 85%, and 80% respectively claiming non-involvement, followed by Menieh with 78% and Akkar with 65% making similar claims (Table 6.8).

**Table 6.8:** *Perception of involvement in Community decision-making processes*

<b>Perception of involvement in Community decision making processes</b>	<b>Akkar</b>	<b>Batroun</b>	<b>Koura</b>	<b>Menieh</b>	<b>Tripoli</b>	<b>Total</b>
<b>Very involved</b>	1%	1%	2%	3%	1%	1.6%
<b>Fairly involved</b>	6%	8%	5%	12%	5%	7.2%
<b>Slightly involved</b>	28%	11%	8%	7%	7%	12.2%
<b>Not involved at all</b>	65%	80%	85%	78%	87%	79.0%

*Correlation analysis and Logistic regression analysis*

To further understand the reasons behind the high level of non-involvement in decision-making processes, the relationships between various indicators combinations were studied (using Spearman's rho correlations). The indicators were education level, involvement in community decision-making processes, aspiration to be involved in community decision-making processes, and influence in community decision-making processes (Table 6.9).

Notable results are as follows:

1. Weak to moderate positive correlations between involvement in community decision-making processes and influence in community decision-making processes in Akkar (Sig = **.366\*\***), Menieh (Sig = **.538\*\***), Tripoli (Sig = **.329\*\***), and Batroun (Sig = **.247\***). That is, individuals who are involved in community decision-making processes believe they have an influence on the community decision-making processes, and those uninvolved believe they have less influence.
2. Weak positive correlations between aspiration to become more involved in community decision-making processes and influence in community decision-making processes in Akkar (Sig = **.329\*\***), Menieh (Sig = **.337\*\***), Koura (Sig = **.314\*\***), and Batroun (Sig = **.239\***). In other words, individuals who think that they can influence community decision-making processes aspire to be more involved in their community whereas those who do not think they can have an influence are not inclined to get involved.
3. A weak positive correlation between education level and influence in community decision-making processes in Akkar (Sig = **.210\***) suggesting that individuals with a high level of education perceive that they have a greater influence on decision-making processes. This might be due to the generally low level of education in the Akkar area. This is due to the relatively late arrival of schools in Akkar, the continuing lack of access to schools, and poverty that forces many students to leave school to help their family livelihoods. Therefore, for those living in the Akkar area, having completed a high level of education presents an opportunity and an advantage, not open to the less well educated majority, to see options and make purposeful choices that enhance their abilities to influence decision-making processes.

**Table 6.9:** *Spearman's rho correlations between various indicators within the community domain*

Area	Spearman's rho Correlations		Education	Involvement	Like to be involved	Influence
Akkar	Education	Correlation Coefficient	1.000	-.037	-.070	<b>.210*</b>
		Sig. (2-tailed)	.	.717	.487	.036
	N		100	100	100	100
	Involvement	Correlation Coefficient	-.037	1.000	.050	<b>.366**</b>

		Sig. (2-tailed)	.717	.	.619	.000
		N	100	100	100	100
	Like to be involved	Correlation Coefficient	-.070	.050	1.000	<b>.329**</b>
		Sig. (2-tailed)	.487	.619	.	.001
		N	100	100	100	100
	Influence	Correlation Coefficient	<b>.210*</b>	<b>.366**</b>	<b>.329**</b>	1.000
		Sig. (2-tailed)	.036	.000	.001	.
		N	100	100	100	100
Batroun	Education	Correlation Coefficient	1.000	-.106	.091	-.032
		Sig. (2-tailed)	.	.294	.366	.753
		N	100	100	100	100
	Involvement	Correlation Coefficient	-.106	1.000	.061	<b>.247*</b>
		Sig. (2-tailed)	.294	.	.543	.013
		N	100	100	100	100
	Like to be involved	Correlation Coefficient	.091	.061	1.000	<b>.239*</b>
		Sig. (2-tailed)	.366	.543	.	.016
		N	100	100	100	100
	Influence	Correlation Coefficient	-.032	<b>.247*</b>	<b>.239*</b>	1.000
		Sig. (2-tailed)	.753	.013	.016	.
		N	100	100	100	100
Koura	Education	Correlation Coefficient	1.000	-.141	-.122	-.017
		Sig. (2-tailed)	.	.161	.227	.864
		N	100	100	100	100
	Involvement	Correlation Coefficient	-.141	1.000	.058	.187
		Sig. (2-tailed)	.161	.	.569	.062
		N	100	100	100	100
	Like to be involved	Correlation Coefficient	-.122	.058	1.000	<b>.314**</b>
		Sig. (2-tailed)	.227	.569	.	.001
		N	100	100	100	100
	Influence	Correlation Coefficient	-.017	.187	<b>.314**</b>	1.000
		Sig. (2-tailed)	.864	.062	.001	.
		N	100	100	100	100
Menieh	Education	Correlation Coefficient	1.000	-.085	-.140	-.152
		Sig. (2-tailed)	.	.401	.164	.132
		N	100	100	100	100
	Involvement	Correlation Coefficient	-.085	1.000	<b>.392**</b>	<b>.538**</b>
		Sig. (2-tailed)	.401	.	.000	.000
		N	100	100	100	100
	Like to be involved	Correlation Coefficient	-.140	<b>.392**</b>	1.000	<b>.337**</b>
		Sig. (2-tailed)	.164	.000	.	.001
		N	100	100	100	100
	Influence	Correlation Coefficient	-.152	<b>.538**</b>	<b>.337**</b>	1.000
		Sig. (2-tailed)	.132	.000	.001	.
		N	100	100	100	100
Tripoli	Education	Correlation Coefficient	1.000	.115	.127	-.023
		Sig. (2-tailed)	.	.255	.207	.817
		N	100	100	100	100
	Involvement	Correlation Coefficient	.115	1.000	.165	<b>.329**</b>
		Sig. (2-tailed)	.255	.	.100	.001
		N	100	100	100	100
Like to be involved	Correlation Coefficient	.127	.165	1.000	.165	
	Sig. (2-tailed)	.207	.100	.	.100	

	N	100	100	100	100
Influence	Correlation Coefficient	-.023	<b>.329**</b>	.165	1.000
	Sig. (2-tailed)	.817	.001	.100	.
	N	100	100	100	100

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

To further understand the relationships, logistic regressions were performed to study the influence of various factors on an individual's involvement in community decision-making processes in each of the five areas. Individual involvement in community decision-making processes is seen as an important factor and was therefore taken as the dependent variable (Table 6.10). The independent variables considered were age, gender, education level, income, aspiration for life change, organization membership, aspiration to be involved in community decision-making processes, and perception of influence in community decision-making processes.

The following significant relationships are particularly interesting:

The probability of individuals in Menieh, Tripoli, Koura, and Batroun being involved in community decision-making processes is higher when the individuals perceive they have a greater influence on decision-making processes. Further, the probability of individuals being involved in community decision-making processes in Menieh is higher if the individual belongs to an organization or aspires to become more involved in decision-making community processes.

**Table 6.10:** Logistic regression to uncover determinants of an individual's involvement in community decision-making processes

Independent Variable	Batroun	Koura	Tripoli	Menieh	Akkar
Age	-0.088534*	0.012315	-0.013233	0.002253	0.036672
Gender	2.283146*	1.326512	-0.465089	-0.907656	0.762311
Education	-0.356629	0.704542**	-0.606467	-0.432047	0.162105
Income	0.038748	-0.041889	0.080175	0.031544	-0.117735
Life change	-2.210232*	-0.816062	0.425527	0.199654	-0.103994
Organization membership	1.123032	-0.562743	1.269680	<b>2.307381*</b>	
Like Involvement	-0.212059	0.456245	0.584451	<b>0.781516*</b>	-0.233986
Influence	<b>0.894163*</b>	<b>0.646492**</b>	<b>1.027577*</b>	<b>1.347295*</b>	0.505173
C (Constant given by the software)	2.344762	-8.994422	-2.964509	-4.574730	-2.783656
McFadden R-squared	0.266223	0.159095	0.203103	0.382225	0.061482

Probability: \* <0.05, \*\* < 0.1

The goodness of fit of the models represented by Mc Fadden's  $R^2$  is adequate. Overall, 6% of the variation in the dependent variable is explained by the selected independent variables in Akkar, 38% in Menieh, 20% in Tripoli, 15% in Koura, and 26% Batroun.

The question of citizens' involvement in the community was also raised during the focus group sessions with the local authorities of the different coastal cities and villages. They claimed that citizens do not want to participate because they feel deceived and are dissatisfied with the outcomes. In addition, the participants perceived that individuals' participation in the community was influenced by the overall political ambiance and that citizens simply did not trust public institutions. This finding is also confirmed in a study done by Abbas et al. (2013) on trust and cooperation in the field of environmental management in Lebanon.

## 6.5. Conclusions

The findings are in line with the statement that the degree of empowerment in one domain can be associated with another, similar, degree of empowerment in a different domain or sub-domain (Alsop et al., 2006). Even though agency differs between different areas, the combination of agency and opportunity structure result in similar degrees of empowerment for the three subdomains in each area. Thus, although the determinants of empowerment differ between one area and another, depending on the geographical location, socioeconomic situation, and marginalization of the area, the opportunity structures in these areas, characterized by a lack of adequate political representation, lack of transparency in institutional activities, and political influence on various activities, have a significant and similar influence on individuals' degrees of empowerment and limit their decisions and expectations for a better outcome. Individuals in Menieh, Tripoli, Koura, and Batroun do have the capabilities and opportunities to make choices, but they do not really take advantage of the opportunities to choose and improve their livelihoods. However, in the Akkar area, many citizens have few such opportunities and are also limited by the formal and informal institutional contexts.

Elsewhere, education has been seen as "*the most frequently recurring determinant of empowerment*" (Samman and Santos, 2009, p.20) and, based on our results, education would also seem to be a crucial factor in the Akkar area. This is classified as one of the most deprived areas in Lebanon (Das and Davidson, 2011) and has all the typical characteristics of poor and marginalized rural communities, with bad infrastructure and poor quality services, including in education, in addition to other features, such as limited income sources and inadequate support from government and civil society, that have produced a cycle of poverty and increasing deprivation. In such a situation, a higher level of education offers better opportunities and increases people's capacity to visualize options, express preferences, and make purposeful choices.

The coastal area of north Lebanon provides a good illustration of the way that degrees of empowerment can vary within communities within a relatively small geographical area. The study also shows that empowerment should not only be considered as an 'extension of agency'. In many cases, despite the presence of capacities and opportunities, the desired outcomes are not achieved due to structures that can inhibit available choices.



Chapter Seven:

## Conclusions and Recommendations

### 7.1. Introduction

This final chapter brings the thesis to a close by drawing conclusions and offering recommendations. The main research question of the thesis is:

*'How does environmental degradation, caused by recurring episodes of armed conflict, affect the communities' vulnerabilities in the coastal area of north Lebanon? How can the findings be positioned in the academic literature on environmental security, vulnerability, and empowerment?'*

To answer this question, three research sub-questions were developed. Each of the three research chapters (4 to 6) answered one of the research sub-questions presented in Chapter 1. We now highlight the key findings from the research chapters (Section 7.2) and the contribution of this thesis to existing literature (Section 7.3). Building on the key findings and the contributions to literature, suggestions for further research (Section 7.4) are then proposed.

### 7.2. Key Findings

Chapter 4 reviewed the direct and indirect environmental impacts resulting from recurring episodes of armed conflict in the coastal area of north Lebanon and positioned the findings in the relevant literature in attempting to answer two research sub-questions:

*1.1. What are the direct and indirect environmental impacts resulting from repeated armed conflicts in the coastal area of north Lebanon?*

*1.2. How can the findings be positioned in the existing literature on environmental security?*

This chapter focused on four main episodes of armed conflict, of different scales and magnitudes, in the coastal area of north Lebanon, namely the 1982 Israeli Invasion, the 2006 Israel-Lebanon War, the 2007 Nahr el Bared Clashes, and the 2008 Tripoli Clashes. The findings revealed a range of direct and indirect environmental consequences of armed conflict. The environmental impacts involved marine pollution from oil spills, land degradation, air and land pollution from infrastructure destruction, pressure on natural resources from population displacement and from the absence of environmental governance, as well as impacts on economic sectors that depend on natural resources such as agriculture, fisheries, and tourism. The results also showed that the impacts varied among



the episodes of armed conflict. The 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes had the most severe impacts of the four episodes considered, in terms of damage to the natural environment and negative effects on people's livelihoods. Further, the indirect environmental impacts varied between the different geographic areas studied: not all areas were affected equally. The areas of Akkar and Menieh were most heavily impacted, with lesser impacts in the other three areas (Tripoli, Koura, and Batroun). This is mainly attributed to Akkar and Menieh depending on natural resources, primarily agriculture and fishing, for income generation. In comparison, the areas of Tripoli, Koura, and Batroun that depend on other economic sectors for income production, such as trade and services, were less impacted by environmental damage resulting from armed conflict.

The findings to an extent validate the 'environmental security' literature that tackles the impacts of armed conflict on the environment by illustrating various examples of direct and indirect environmental impacts resulting from episodes of armed conflict, and the ways in which such environmental degradation can threaten human wellbeing and economic potential by increasing a community's vulnerability to environmental change. In addition, the variation in the indirect environmental impacts on the communities along the coastal area of north Lebanon support the views of Cutter et al. (2003) who argue that environmental change, resulting from armed conflict in this case, can create a form of economic vulnerability for regions that depend on a single economic sector for income production when this depends on natural resources. Thus, the findings can also be positioned in the literature on 'vulnerability of place' which tackles the vulnerability of people in a particular geographic location by combining biophysical risk and social response (Cutter 1996; Clark et al. 1998; Cutter et al. 2000; Cross 2001).

The results obtained in Chapter 4 highlighted the importance of studying the vulnerability of a community to environmental change more deeply. In response, Chapter 5 sought to examine the spatial variation in vulnerability across the different geographical areas of the coastal area of north Lebanon within the context of armed conflict. It set out to identify the features and manifestations of vulnerability that are particularly relevant to the coastal area of north Lebanon by answering the following two research sub-questions:

*2.1. What features and manifestations of vulnerability are particularly relevant to the coastal area of north Lebanon?*

*2.2. How does vulnerability vary across the different geographical areas within the study region?*

The findings revealed that the variation in community vulnerability in the coastal area of north Lebanon has been affected not only by exposure to the environmental damage caused by episodes of armed conflict but also by the sensitivities and coping capacities of the various communities. In terms of physical vulnerability, the combination of the indicators used, including location, duration, frequency, intensity, spatial impact, and proximity to armed conflict, showed that the areas of Akkar and Menieh have the highest level of vulnerability followed by Tripoli, with Koura and Batroun having low levels of vulnerability.

Addressing social vulnerability, indicators including age, number of household members, education level, access to information (Internet subscription, mobile subscription, landline subscription, and television ownership), material assets (home and land ownership), access to public services (access to water, electricity, and health insurance), occupation, income, and organization membership were used to develop a social vulnerability index (SVI) to measure vulnerability in each of the five areas. The analysis revealed that the communities in the Akkar area (SVI = 0.38) were the most vulnerable, followed by Tripoli (SVI = 0.43), Menieh (SVI = 0.52), Koura (SVI = 0.54), and finally Batroun (SVI= 0.61) as the least vulnerable.

The variation in social vulnerability is due to three main reasons that encompass marginalization and deprivation, dependence on natural resources in the primary economic sectors, and low capacity to cope with disasters. The area of Akkar, where we saw the greatest vulnerability, is classified as one of the most deprived areas in Lebanon and characterized by poverty, poor infrastructure, low quality services, limited income sources, and political marginalization and neglect by the government. A key reason for the high level of social vulnerability in the areas of Akkar and Menieh is their dependence on natural resources, such as agriculture and fishing, in their main economic sectors. Farmers and fishermen, who are among the most vulnerable families in Lebanon, were the most impacted by the recurring episodes of armed conflict.

The findings showed low levels of coping capacity to deal with disasters, and particularly with armed conflicts, in terms of preparedness, presence of emergency plans, and institutional capacity to deal with disasters in all five areas. We also saw that the areas with high levels of social vulnerability, notably Akkar, Menieh, and Tripoli, have seen an increase in social and economic problems such as violence, drugs, unemployment, robberies, and poverty. Combining the results for the physical and social aspects of vulnerability, it was possible to identify variations in 'vulnerability of place' among the five areas along the coastal area of north Lebanon. Akkar and Menieh were found to have the highest levels of 'vulnerability of place' followed by Tripoli, with Koura and Batroun showing lower levels of vulnerability.

Thus, the findings show that the areas that were most exposed to the episodes of armed conflict and were most impacted by the consequent environmental damage (Akkar, Menieh, and Tripoli) have higher levels of vulnerability than the areas of Koura and Batroun which experienced fewer episodes of armed conflict. However, exposure and magnitude are not the only factors that affected 'vulnerability of place' in these areas and caused spatial variation. Other factors such as existing socioeconomic and political conditions as well as coping capacity affect vulnerability. The three areas with high levels of place vulnerability had a low coping capacity to deal with disasters, increasing social and economic problems, and were suffering from marginalization compared with the other areas.

As just outlined, Chapter 5 focused on identifying the factors that threaten the communities in the coastal area of north Lebanon and increase their vulnerability to environmental damage caused by recurring armed conflict. However, the aim of this thesis is not to only

focus on the negative factors and consequences of armed conflict but also to discover the influences of such factors and emphasize individuals' and communities' abilities and potentials to reduce vulnerability and highlight the hidden opportunities to overcome the negative consequences of disastrous events in general but here particularly of armed conflict.

Consequently, the research reported in Chapter 6 set out to identify the differing degrees of individual empowerment and how it varied among the areas of the coastal area of north Lebanon by addressing two research sub-questions:

*3.1. What degrees of empowerment are seen in the individuals in the coastal area of north Lebanon?*

*3.2. How do the degrees of empowerment vary across the different geographic areas within the study area?*

Individuals' degrees of empowerment in the five main areas along the coastal area of north Lebanon were measured at the local level. The focus was on three domains of an individual's life: public services delivery in the state domain, labor in the market domain, and community in the society domain.

The results indicated a poor quality of public services in the public services delivery subdomain in terms of electricity and water delivery, health insurance, etc. The poor quality of public service delivery was explained during the focus group sessions as due to the very limited financial budgets of the municipalities. These limited budgets do not cover municipal needs, hindering the progress and development of the municipal councils' activities. Other reasons encompass power and personal connections, restrictive conditions and regulations, as well as the centralizing tendencies of the state. Perhaps surprisingly, given the perceived low quality of public services delivery, around 90% of the citizens in the five areas of the coastal area of north Lebanon had not complained to the authorities regarding the (non-) delivery of public services, even though they do have this option. Individuals choose not to complain because, even if they do, they still expect to feel neglected and feel that their complaint will not be resolved, and hence that the desired outcome will not be achieved. Further, around 60% of the individuals in the five areas perceive that the authorities are neither more nor less effective when addressing other's people needs or concerns than their own. However, 35% of the individuals in the Akkar area do think that the authorities are much more effective when addressing other people's needs or concerns than their own. The research revealed that it all depends on power or personal connections, particularly with local authorities and politicians (For further details see Table 6.3). In terms of the influence of political and religious characteristics on the authorities' treatment of people, 69% of citizens in Akkar, 57% in Menieh, 69% in Tripoli, 75% in Koura, and 79% in Batroun, perceive that the way in which authorities treat people to be very much affected by political affiliation and religion (For further details see Table 6.3). A deeper analysis showed that the probability of individuals perceiving the way in which authorities treat people to be affected by people's religion or political affiliation is higher in Akkar, Menieh, and Koura when the people think that authorities are more effective in addressing other people's

needs/concerns than their own. In addition, in Akkar, individuals are more likely to feel that the way in which authorities treat people is affected by their religion or political affiliation when they are more involved in their community. These findings could be explained by the deprivation, poverty, and lack of opportunities in these areas.

Turning to the labor subdomain, the areas of Koura and Batroun showed the highest incomes, followed by Tripoli, then Menieh, and finally Akkar as the least endowed in terms of income. The area of Akkar also showed the highest unemployment rate of the five areas, with 32% of the interviewed individuals being unemployed. These findings might be related to three characteristics of this area: the low level of education, the types of occupation, and the large family sizes. A further analysis showed that individuals who have completed higher levels of education in Akkar have greater occupational choices and feel more secure in their current occupation than individuals who are less well educated. In addition, individuals in the Akkar, Menieh, and Tripoli areas who feel they have occupational choices feel more secure in their occupation than those who feel they lack choices. The findings also showed that gender plays an important role in determining the sense of job security in the areas of Akkar, Menieh, and Batroun, with women in general feeling more secure. This finding is attributed to the masculine nature of the society and women's lack of integration into the social and economic processes in the areas of Akkar and Menieh and to individual lifestyles in the Batroun area.

For the community subdomain, the results showed that a large majority of citizens are not involved in the decision-making processes in their communities. The Tripoli, Koura, and Batroun areas show the least involvement, with 87%, 85%, and 80% respectively not being involved, followed by Menieh and Akkar with non-involvement rates of 78% and 65% respectively. This finding is explained by an individual's participation in their community being influenced by the overall political ambiance and general lack of trust in public institutions, and the deception and dissatisfaction individuals feel with the outcomes. A further analysis showed that individuals in the Akkar, Menieh, Tripoli, and Batroun areas are often not involved in community decision-making processes because they think that they cannot have an influence on them. In the Akkar area, we found a positive relationship between an individual's education level and perception of influence on community decision-making processes. This suggests that individuals with a higher level of education at least perceive that they can have a greater influence on decision-making processes.

Overall, the findings offer support for the statement that the degree of empowerment in one domain can be related to a similar degree of empowerment in a different domain (Alsop et al., 2006). Although individual agency varies among the five major areas along the coastal area of north Lebanon, the combination of agency and opportunity structure reflects the degree of empowerment in the three subdomains studied. In other words, although the determinants of empowerment are different in the areas studied - and based on the geographic location, socioeconomic situation, and political marginalization of the area - the opportunity structures in all these areas reflect a lack of adequate political representation, a lack of transparency in institutional activities, and political influence on different activities. This has major effects on an individual's degree of empowerment by limiting their choices,

decisions, and desires for better outcomes. Individuals in the areas of Menieh, Tripoli, Koura, and Batroun do have the abilities and opportunities to make effective choices, but they often decide not to use these opportunities. Comparatively, in many cases, individuals in Akkar do not have the capabilities and opportunities, and are also restricted by the surrounding opportunity structure. Another key finding is that education is a crucial determinant of empowerment in the Akkar area. Given its marginalized and deprived nature, a higher level of education provides better opportunities and enhances an individual's capacity to visualize options, express preferences, and make purposeful choices. As such, the findings reported in Chapter 6 demonstrate the ways in which degrees of empowerment can vary within communities in a small geographic area and emphasizes the duality of agency and structures. Empowerment cannot be considered as an extension of agency because, as seen in many cases in this study, even when the capacities and abilities exist, the desired outcomes are not achieved because of inhibiting opportunity structures.

### **7.3. Contribution to Literature**

The main objective of the research leading up to this thesis was to study and understand the influence of environmental degradation, caused by repeated episodes of armed conflict, on communities' vulnerabilities in the coastal area of north Lebanon. The coastal area of north Lebanon made an appropriate case study because it has been subjected to recurring episodes of armed conflict for more than thirty years, which have caused significant damage on the social, economic, and political levels as well as to the natural environment. This area is considered to be one of the most deprived areas in Lebanon and is also somewhat marginalized from the rest of the country due to the government's centralizing approach and subsequent neglect.

This study has contributed to knowledge in four distinct ways: by putting the problem definition in context, by emphasizing the importance of the environment, by positioning the findings in the academic debate on vulnerability and empowerment and thus enriching the literature in these two fields, and by highlighting the uniqueness of the area under study. This study can also be considered as a wakeup call for social change in the area under study.

Putting the problem definition into perspective, the research provides empirical evidence of the impacts of deterioration of the natural environment on communities' vulnerabilities in the coastal area of north Lebanon. In addition, the outcomes of this study highlight the importance of the natural environment for humans, emphasizing the need to protect the natural environment and promote sustainable development. In general, in times of violent conflict, priority is given to saving lives and minimizing human suffering. As such, the emphasis tends to be on immediate, direct, and short-term needs; while environmental concerns and indirect impacts are often neglected and viewed as of secondary importance (Shambaugh et al., 2001). However, even if it appears not unreasonable that environmental concerns are regarded as low priority in times of armed conflict and human emergencies, the heavy dependence of several communities in various parts of the developing world on

natural resources highlights the importance of giving the natural environment a high priority (Shambaugh et al., 2001). Here, it is important to stress that the relationship between the environment and violent conflict is indirect and is often mediated by other social, economic, and political pressures (Partow, 2008). Overall, we saw that a degraded environment threatens future livelihood security and prepares the ground for further social, economic, and political instability, and increases the risk of further armed conflict (Shambaugh et al., 2001).

The findings can also be positioned in the academic debate on vulnerability and empowerment. The results add support to the theory of 'vulnerability of place' as operationalized by the 'hazards of place' model developed by Cutter (1996). The findings revealed the varying and multidimensional nature of vulnerability by illustrating that not all communities within the same area are equally vulnerable. The focus of this model on a specific place highlighted the unique features of the area under study. As discussed earlier in Chapter 2, the various approaches and frameworks developed to study vulnerability often look at the physical and social dimensions of vulnerability as distinct and independent processes. In addition, there was a trend visible in the literature toward an increasingly detailed examination of the social aspect of vulnerability, with physical and environmental vulnerability consequently becoming somewhat neglected. For instance, the risk-hazard model (RH), the pressure-and-release model (PAR), and Bohle conceptual framework focus mainly on the physical dimension of vulnerability and disregard the coping capacity, which is an important component of vulnerability. On the other hand, the political economy and 'sustainable livelihood framework' approaches focus on the social dimension and disregard exposure to a certain event. Further, even though the framework developed by Turner et al. (2003) considers the various interrelating perturbations and stresses as well as adaptation, it fails to explicitly consider the significance of place and geography. The approach used in this thesis provides a holistic understanding of vulnerability by combining both the physical and social dimensions of vulnerability and recognizing the complex interactions between them. In addition, the focus on place is quite an innovative approach because it emphasizes the exceptional features that are unique to every area, as shown by the results of this research.

Similarly, the results add support to the analytical framework developed by Alsop et al. (2006) for measuring empowerment. This analytical framework combines all the components of empowerment that have been discussed by various scholars (Long, 1999; Khwaja, 2005; Narayan, 2005; Petesch et al., 2005; Long and Jinlong, 2009). The use of this framework offers innovative insights to the literature on empowerment because it distinguishes between various degrees of empowerment at various domains and emphasizes on the importance of the dual relationship between agency and opportunity structure.

Thus, by linking 'empowerment' to 'vulnerability', the findings of this thesis can be used to explore which factors, and in which domains, need to be improved in order to reduce vulnerability in the study area. This research emphasized on the reciprocal relationship between 'vulnerability' and 'empowerment'. As such, this thesis provides innovative insights in the academic debate on environmental security, vulnerability, and empowerment and offers an in-depth and interdisciplinary analysis of the complex relationship between the



conflict, the natural environment, and vulnerability. In addition, while the concepts discussed above have to an extent been addressed in the literature, they have not been systematically studied in the Lebanese situation, particularly not from the approach and context used in this thesis. The approach used and the obtained results can hence be based upon in further research to understand the relationship between the environment and vulnerability in other areas in Lebanon but also in other conflict-affected countries.

#### **7.4. Further Research**

Further research within the particular context of this study could address some of the limitations of this thesis linked to geographic scale and the time dimension, particularly when studying vulnerability and empowerment. According to Cutter (1996), geographic scale and timing are problematic issues when measuring vulnerability. In terms of geographic scale, detailed vulnerability measurements are often carried out on the local level but are then reduced and subsumed within larger designs and distributions to suit methodological applications. This research emphasizes the importance of detailed local vulnerability studies because, as the findings of this thesis show, vulnerability can vary greatly within communities, even in small areas such as the coastal area of north Lebanon. In addition, detailed studies have the potential to highlight the unique and special features of communities and areas, which can be very different to even their immediate neighbors. This is a critical aspect when considering interventions or development projects in a certain country or area. In addition, in terms of Lebanon, future research could address vulnerability and empowerment in other districts and areas to extend the study to variations in vulnerability and empowerment across the country. The findings could then be used by policy and decision makers to improve decisions on which areas are in greatest need of interventions and development projects, and what kinds of interventions and projects are needed.

Even though the time dimension is critical when considering vulnerability due to the varying nature of the term; However, unfortunately as discussed in Chapter 3, our study could not address the time dimension due to the lack of earlier data and statistics for the coastal area of north Lebanon, particularly in terms of the indicators used in compiling the social vulnerability index. Although we carried out a survey to collect data and compile social vulnerability indices for the five sub-areas in our study, time limitations made it impossible to complete another later survey and compare the results to see the effect of time. Thus, in order to better understand how vulnerability changes over time, it would be valuable to carry out a similar survey within the same geographic area. Similarly with empowerment, its dynamic and multidimensional nature, as well as its connotations in terms of process and outcome, would make it valuable to study the variation in degrees of empowerment in the same area over time. Thus, future research could also address the influence of the temporal context on empowerment in the coastal area of north Lebanon. The findings of this thesis could thus be considered as a baseline on which future studies of vulnerability and empowerment in the coastal area of north Lebanon could build to investigate changes in

vulnerability and empowerment over time. In addition, this thesis can be used as a model to apply in other areas of the country and study spatial variation in vulnerability and empowerment across Lebanon.

This thesis focused on three major subdomains of empowerment (public services delivery in the state domain, labor in the market domain, and community in the society domain) and studied them at the local level. Further lines of research could address other subdomains such as justice and politics in the state domain, goods and private services in the market domain, and family in the society domain. Furthermore, future research could also focus on other levels such as the intermediary and national levels. This thesis also focused on the influence of environmental degradation on communities' vulnerability in the coastal area of Lebanon within the context of armed conflict. Further research could broaden this out to address the influence on human wellbeing and economic potential of environmental degradation caused by daily anthropogenic activities. We also saw that natural disasters were a threat to communities in the coastal region studied, and especially in the areas of Akkar and Menieh. This would be another aspect that future research could usefully address.

Future studies could also investigate the influence of vulnerability and empowerment on environmental degradation. This thesis very much focused on the consequences for empowerment and vulnerability of environmental degradation and it would be of value to see if there is a two-way relationship between these concepts. A final potential idea for further studies would be to study how social, political, and economic stress factors combine with environmental change in the communities in Lebanon, and particularly in north Lebanon, and whether such combinations could trigger further armed conflicts. This seems particularly relevant given the recent and ongoing political events in the country and in the wider Arab world.





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# Appendix I

## Structured Interviews:

The structured interviews involved heads, or their representatives, of the cities and villages of the study area. Data collected included information on the environmental damage caused by the different episodes of armed conflict, as well as information regarding the constitution and characteristics of each city or village.

### 1. List of interviewees (Total: 24 interviews)

- September 12, 2011: Interview with the president of Bebnine - Abde municipality.
- September 12, 2011: Interview with an employee assigned by the President of Bhannine municipality.
- September 15, 2011: Interview with the president of Ras Maska municipality.
- September 20, 2011: Interview with the president of El Mina municipality.
- September 22, 2011: Interview with the president of Selaata municipality.
- September 22, 2011: Interview with the president and vice president of Hamat municipality.
  
- October 4, 2011: Interview with the president of El Hery municipality.
- October 4, 2011: Interview with the president of Batroun municipality.
- October 8, 2011: Interview with the president of Anfeh municipality.
- October 13, 2011: Interview with the president of El Mhamra municipality.
- October 13, 2011: Interview with the president of Menieh municipality.
- October 14, 2011: Interview with the president of Der Amar municipality.
- October 17, 2011: Interview with the president of Beddawi municipality.
- October 17, 2011: Interview with the president of Qobbet Chamra municipality.
- October 17, 2011: Interview with the president of Klayaat municipality.
- October 20, 2011: Interview with an employee assigned by the President of Chekka municipality.
  
- November 17, 2011: Interview with the mayors of Arida and Cheikh Zennad villages.
- November 17, 2011: Interview with the vice president of Tal Hayat municipality.
- November 28, 2011: Interview with a former employee at Tripoli municipality and current employee at UNDP.
  
- December 9, 2011: Interview with the vice president of Tripoli municipality.
- December 29, 2011: Interview with the vice president and a member of Koubba municipality.
- January 13, 2012: Interview with an employee assigned by the President of Kfaraabida municipality.



- January 17, 2012: Interview with an employee assigned by the President of Qalamoun municipality.
- January 28, 2012: Interview with the vice president and a member of Kelhat municipality.

## 2. Questions

This study is part of a project (WOTRO project) that aims to analyze the impact of repeated armed conflict on the human-environment system in the region of North Lebanon from an economic, social, geographic and political perspective. The main objective of this research is to study the influence of environmental degradation caused by recurring armed conflict on communities of the coastal area of Lebanon. This study focuses on four episodes of armed conflicts: the 1982 Israeli Invasion, the 2006 Israel-Lebanon War, the 2007 Nahr el Bared Clashes, and the 2008 Tripoli Clashes.

The questions of the interview will be asked to get general information about the city/village, vulnerable communities, and collect data on the environmental damage caused by the different episodes of armed conflict. It would be highly appreciated if you could answer the following questions objectively and accurately. The information provided by the project will be solely used for scientific purposes.

- 1.1 - What are the main environmental resources of this municipality?
  - 1.2 - What are the major services provided by different environmental resources?
  - 1.3 - To what extent those services were altered by repeated violent conflict?
  - 1.4 - Are there other alternatives that can provide similar services?
  - 1.5 - What is the current pressure exerted on these resources (quality, quantity, and access)?
  - 1.6 - To what extent these resources are vulnerable?
  - 1.7 - Are there any measures to protect these resources or improve their ability to recover to a satisfactory state more rapidly?
- 
- 2.1 - What kind of environmental damage did you experience as a result of violent conflict? (Direct and indirect)
  - 2.2 - In your opinion, who are the vulnerable communities to environmental threats or damage caused in the context of repeated armed conflict?
  - 2.3 - Why do you think these communities are vulnerable?
- 
- 3.1 - Did the environmental degradation lead to the migration of residents? Please, could you please give some examples?
  - 3.2 - Did you receive any displaced people during the periods of violent conflicts?
  - 3.3 - For how long did they stay in the municipality?
  - 3.5 - Were there any noticeable social and environmental consequences?

4 - What kind of social problems do you experience? To what extent did the repeated armed conflict affect the society?

5 - In your opinion, how do you evaluate the institutional capacity that is needed to deal rapidly with the impact of a disaster (violent conflict in this case) on affected environmental resources?

6 - What is the level of preparedness to disasters in general and to conflicts in particular? Is there any emergency plans? (Presence and quality of civil protection)

7 - What is the degree of autonomy or participation of residents in decision-making procedures and access to resources?

8 - Is this municipality homogenous? (Religious characteristics, socio-economic status, political affiliation)

## Appendix II

### In-depth Interviews:

The in-depth interviews involved various local stakeholders encompassing Non-Governmental Organizations, civil groups, occupational groups, and ministries. Data collected from the interviews focused on the key points that were highlighted during the structured interviews including the type of damages and their impacts on the surrounding communities, the vulnerable communities and groups within communities and their characteristics, the general socio-economic conditions of the communities in the study area, and the interventions and initiatives done post to each of the different armed conflicts.

#### 1. List of Interviewees (Total: 17 interviews)

- September 13, 2011: Interview with an Environmental Expert working in the United Nations Development Program at the Ministry of Environment (MoE).
- September 13, 2011: Interview with the IT and Logistics department Manager at the High Relief Commission (HRC).
- September 29, 2011: Interview with the President and former president of Fishermen Association in Batroun.
  
- November 16, 2011: Interview with Representatives from the Ministry of Agriculture (Tripoli Office).
- November 16, 2011: Interview with the President of Fishermen Association in Tripoli.
- November 29, 2011: Interview with the Coordinator at Social Development Centre of the Ministry of Social Affairs in Akkar (Halba Office).
- November 29, 2011: Interview with an Agricultural Engineer, Rural and Agricultural Development Sector at René Moawad Foundation.
- November 30, 2011: Interview with the Project Manager of UNDP-ART GOLD in North Lebanon (UNDP).
  
- December 9, 2011: Interview with the President of Fishermen Association of Al Abde and President of Association of Fishermen Syndicates.
- December 12, 2011: Interview with the Project Manager MDG-F Joint Program (UNDP).
- December 12, 2011: Interview with the Development Facilitator at World Vision in Akkar (Halba Office).
  
- January 18, 2012: Interview with the Coordinator of the Social Development Sector at Safadi Foundation.
- January 18, 2012: Interview with the President of Agriculture Cooperative Development of Bebnine - Abde and Mayor of Bebnine - Abde.

- January 25, 2012: Meeting with the Economist specialist at Al Fayhaa Union, Tripoli
- June 13, 2012: Interview with the Head of Fishing Department at Ministry of Agriculture (MoA).
- June 13, 2012: Interview with the Head of Department of Ecosystems at Ministry of Environment (MoE).
- April 16, 2013: Interview with Representatives from the Ministry of Social affairs (Tripoli Office).

## **2. Questions**

The questions of the interviews differed between interviewees according to their position, type of involvement in the topic, type of data needed for the research, and any interesting risen point during the interviews. However, the questions mainly concentrated on the kind of damages and their subsequent impacts on the surrounding communities, the vulnerable communities and groups within communities and their features, the general socio-economic conditions of the communities in the study area, and the post-conflict interventions and initiatives for each event.

## Appendix III

### Questionnaire Survey:

The survey involved citizens of the study area and aimed to collect data on indirect indicators of agency and direct indicators of empowerment.

#### 1. Participants

500 individuals were randomly chosen to participate in the survey based on the sample sized needed for the study, which was calculated according to population of each village and city as compared to the total population of each area. The participants were kept anonymous in order to respect individuals' privacy by keeping all the information provided as confidential and only use it for scientific purposes.

#### 2. Sample Size

The 500 questionnaires were distributed proportionally to the citizens in each of the five areas based on the following formula (Israel, 1992, p.4):

$$\frac{N}{1+N(e)^2}$$

Where:

n = sample size,

N = population size,

e = level of precision (10 % for each region, and 5 % for the entire study area)

**Table 1: Sample size for the survey**

Area	Total Population	Total Number of surveys needed for each area	City / Village	Population	Number of surveys needed for each City/Village
Akkar	45,221	100	Arida	877	2
			Cheikh Zennad	961	2
			Tal Hayat	942	2
			Kalyaat	1,730	4
			Qobbet Chamra	1,174	3
			Bebnine - Abde	12,787	28
			El Mhamra	26,750	59
Menieh	57,969	100	Bhannine	4,389	8
			Menieh	21,230	37
			Der Amar	4,890	8
			Beddawi	27,460	47
Tripoli	264,894	100	Tripoli	211,134	80
			El Mina	48,937	18
			Qalamoun	4,823	2
Koura	9,595	100	Ras Maska	4,082	42
			Kelhat	739	8
			Anfeh	4,774	49
Batroun	35,468	100	Chekka	8,346	24
			El Hery	909	3
			Hamat	1,853	5
			Selaata	389	1
			Koubba	853	2
			Batroun	21,393	60
			Kfaraabida	1,725	5

\* The number of areas and number of population are cited from IMAC, 2007, p.34.

### 3. Questionnaire

The main objective of this study is to study the influence of environmental degradation caused by recurring armed conflict on communities of the coastal area of Lebanon. This survey aims to collect data on agency and degrees of empowerment. All information you provide will be kept confidential and will be only used for scientific purposes.

Number of Questionnaire: ----- Municipality: ----- Date: -----

#### I. General Information:

Gender: Male / Female Age: -----

What is your marital status? a. Single b. Married c. Separated d. Widowed  
e. Divorced

How many people do you share your house with? -----

What is your level of education?

- a. Illiterate
- b. Knows how to read and write
- c. Primary education (certificate)
- d. Complementary education (brevet)
- e. Secondary education (Baccalaureate)
- f. University education
- g. Technical education

#### II. Vulnerability and Empowerment:

Questions that are marked with \* are adapted from the sources: Alsop et al., 2006, p.283-340 and Ibrahim S. and Alkire S., 2007, p.48.

##### ***Section 1: Informational assets***

- |  |     |    |
|--|-----|----|
| 1. Do you have an internet subscription? | Yes | No |
| 2. Do you have a fixed telephone line?   | Yes | No |
| 3. Do you have a cell phone line?        | Yes | No |
| 4. Do you have a television?             | Yes | No |

**Section 2: Material assets**

5. Is your home?\*
- a. Owned and completely paid for
  - b. Owned with a mortgage
  - c. Rented
  - d. Other, please specify:

6. Does your household use any land or property (farming/livestock/renting out etc.)?\*
- Yes      No

7. If yes, what is the “ownership status” of this land?\*
- a. Owned
  - b. Rented
  - c. Sharecropped
  - d. Used with no formal agreement
  - e. Other, please specify:

8. In your work or livelihood, do you need to use any particular tools or equipment?\*
- Yes      No

If yes, please answer questions 9 and 10. If no, go the question 11.

9. What tools or equipment do you need?\* -----

10. Which of these tools or equipment do you own (either individually or collectively), rent, borrow, or not have any access to?\*
- a. Own individually
  - b. Own collectively
  - c. Rent individually
  - d. Rent collectively
  - e. Borrow
  - f. Do not have any access to

11. What type of sanitary services does this household use?\*
- a. Connected to sewage system
  - b. Connected to septic tank
  - c. None
  - d. Other, please specify:

12. What is the primary source of water for this household?\*
- a. Public piped water system to individual house
  - b. Private well
  - c. Public well
  - d. River or stream



e. Other, please specify:

13. What type of lighting does this household use?\*

- a. Electricity (public source)
- b. Electricity (private source)
- c. Electricity (combination of public and private)
- d. Other, please specify:

14. What type of health services do you use?

- a. Social security
- b. Private insurance
- c. Services provided by NGOs and dispensaries
- d. Ministry of Health
- e. Cooperative of Government Employees
- f. None
- g. Other, please specify

15. Have you (individually or any members of your household) ever made a complaint to the authorities regarding the delivery of public services?\* Yes No

16. If yes, how successfully do you feel your complaint was resolved?\*

- a. Completely successfully
- b. Fairly successfully
- c. Slightly successfully
- d. Not at all successfully

17. Do you think that the authorities are more or less effective when addressing other people's needs/concerns compared to yours?\*

- a. Much more effective
- b. Slightly more effective
- c. Neither more nor less effective
- d. Slightly less effective
- e. Much less effective

18. Do you feel the way in which the authorities treat people is affected by people's religion or political affiliation (or other social characteristic)?\*

- a. Yes, very much
- b. Yes, slightly
- c. No, not at all
- d. Would rather not say

### ***Section 3: Financial assets***

Occupation: -----

19. Do you have a secondary occupation? Yes No

If yes, please specify:

20. Approximately how much is your monthly income (ICM)? (Thousands Lebanese Lira)

No income	600 < ICM < 699	1500 < ICM < 1999
ICM < 299	700 < ICM < 799	ICM > 2000
399 < ICM <	800 < ICM < 899	No answer
400 < ICM < 499	900 < ICM < 999	
500 < ICM < 599	1000 < ICM < 1499	

21. Have you voluntarily changed your employment/occupation in the past?\*

Yes No

22. Have you involuntarily changed your employment/occupation in the past?\*

Yes No

23. How secure do you feel in your present employment/occupation?\*

a. Very secure b. Fairly secure c. Neither secure nor insecure  
d. Fairly insecure e. Very insecure

24. How much choice do you feel you have in deciding your occupation?\*

a. Complete choice b. Some choice c. No choice

25. How easy would it be to change your occupation if you wanted to?\*

a. Very easy b. Fairly easy c. Not very easy d. Impossible to change

26. Which sources of credit do you most usually borrow from if you need to?\*

a. Bank b. Shopkeeper c. Family d. Other, please specify:

27. Why do you choose to borrow from this/these source(s)?\*

a. Close location  
b. Interest rates  
c. Easy requirements and procedures  
d. No formal requirements or procedures  
e. Other, please specify:

#### **Section 4: Organizational assets**

28. Are you a member of any organization or group?\* Yes No

29. Which of the following groups are you a member of?\*

a. Farmer/fisher group or cooperative





- d. No control at all

43. Who makes the main decisions about public services in your community?\*

-----  
-----

44. How involved do you feel in these decision-making processes within your community?\*

- a. Very involved
- b. Fairly involved
- c. Slightly involved
- d. Not involved at all

45. If you feel you are involved, in what way? -----  
-----

46. How much would you like to be involved in these decision-making processes within your community?\*

- a. Much more involved
- b. Slightly more involved
- c. Neither more nor less involved
- d. Slightly less involved
- e. Much less involved

47. How much influence do you feel you have in community level decision-making processes?\*

- a. A great deal of influence
- b. A reasonable level of influence
- c. A low level of influence
- d. No influence at all

**Comments:**

Thank you very much for taking part in this survey. Do you have any other comments or suggestions you would like to add about the survey and our research? Once again, thank you for your time and effort.

## Questionnaire (in Arabic)

رقم الإستمارة : ----- البلدية: ----- التاريخ : -----

### إستطلاع للمجتمع المحلي

الهدف الرئيسي من هذه الدراسة هو توضيح العلاقة بين مستويات تمكين المجتمعات الساحلية في شمال لبنان والتدهور البيئي في سياق النزاعات المسلحة المتكررة. الرجاء الإجابة عن الاسئلة بموضوعية. كل المعلومات ستبقى سرية وستستعمل لهدف علمي فقط .

#### معلومات عامة:

العمر: ----- الجنس: ذكر / انثى  
الوضع الإجتماعي: أ. أعزب ب. متزوج ج. منفصل د. أرمل ه. مطلق  
مع كم شخص تتشارك المنزل؟ -----  
المستوى التعليمي: أ. أمي ب. ملم بالكتابة والقراءة ج. ابتدائي د. تكميلي ه. ثانوي و. جامعي ز. مهني

#### مستويات الهشاشة و التمكين:

١. هل انت مشترك بخدمة الانترنت؟ نعم لا
٢. هل لديك خط هاتف ارضي؟ نعم لا
٣. هل لديك خلوي؟ نعم لا
٤. هل لديك تلفاز؟ نعم لا
٥. هل منزلك؟ أ. ملك ب. ملك وما زلت ادفع المستحقات ج. ايجار د. آخر، الرجاء التحديد:
٦. هل تستخدم أسرتك أي أرض أو ممتلكات (زراعة، تربية الحيوانات، تأجير، أو غيرها)؟ نعم لا
٧. إذا كانت الإجابة نعم، ما هو وضع ملكية هذه الأرض؟ أ. ملك ب. ايجار ج. ملك أشخاص د. تستعمل من دون إتفاق رسمي ه. آخر، الرجاء التحديد: -----
٨. ما نوع خدمات الصرف الصحي التي تحصل عليها؟ أ. شبكة المجاريير ب. جورة صحية ج. لا يوجد د. آخر، الرجاء التحديد: -----

٩. ما هو المصدر الرئيسي للمياه لأسرتك؟ أ. شبكة عامة لنقل المياه موصولة إلى كل بيت ب. بئر خاص ج. بئر عام د. نهر أو مجرى ه. آخر، الرجاء التحديد:-----

١٠. ما نوع الكهرباء التي تستخدمها أسرتك؟ أ. مصدر عام ب. مصدر خاص ج. مصدر عام وخاص د. آخر، الرجاء التحديد:-----

١١. ما نوع الخدمات الصحية التي تحصل عليها؟ أ. الضمان الاجتماعي ب. تأمين خاص ج. الخدمات المتوفرة من الجمعيات د. وزارة الصحة ه. لا تأمين و. تعاونية موظفي الدولة ز. آخر، الرجاء التحديد:-----

١٢. هل سبق وقمت (بشكل فردي أو أي من أفراد أسرتك) بتقديم شكوى إلى السلطات بشأن تأمين الخدمات العامة؟  
نعم لا

١٣. إذا كان الجواب نعم، هل تعتقد أن شكاوك كانت ناجحة من حيث معالجة المشكلة؟ أ. ناجحة تماما ب. ناجحة إلى حد ما ج. ناجحة قليلاً د. غير ناجحة

١٤. بشكل عام، هل تعتقد أن السلطات هي أكثر أو أقل فعالية عند معالجة احتياجات أو إهتمامات الناس الآخرين مقارنةً بك؟  
أ. أكثر بكثير ب. أكثر بقليل ج. لا أكثر ولا أقل د. أقل بقليل ه. أقل بكثير

١٥. هل تشعر أن الطريقة التي تتعامل بها السلطات مع الناس تتأثر بالدين أو الانتماء السياسي أو أي خصائص إجتماعية؟  
أ. نعم، كثيرا ب. نعم، قليلاً ج. لا، ليس على الإطلاق د. أفضل عدم الإجابة

المهنة:-----

١٦. هل لديك مهنة ثانية؟ نعم لا

إذا كانت الإجابة نعم، الرجاء التحديد:-----

١٧. الدخل الفردي (ألف ليرة لبنانية)

أ. لا دخل	ب. أقل من ٢٩٩	ج. بين ٣٠٠ و ٣٩٩	د. بين ٤٠٠ و ٤٩٩	ه. بين ٥٠٠ و ٥٩٩
٥٩٩ و ٦٠٠	٦٩٩ و ٧٠٠	٧٩٩ و ٨٠٠	٨٩٩ و ٩٠٠	٩٩٩ و ١٠٠٠
١٠٠٠ و ١٠٩٩	١١٠٠ و ١١٩٩	١٢٠٠ و ١٢٩٩	١٣٠٠ و ١٣٩٩	١٤٠٠ و ١٤٩٩

عدم الإجابة

١٨. هل تحتاج إلى إستخدام أي أدوات أو معدات خاصة في عملك أو مورد رزقك؟ نعم لا

إذا كان الجواب نعم، الرجاء الإجابة على الأسئلة ١٩ و ٢٠. إذا كان الجواب لا، الرجاء التوجه إلى السؤال ٢١.

١٩. ما هي الأدوات أو المعدات التي تستخدمها؟-----

٢٠. ما هو وضع ملكية هذه الأدوات أو المعدات؟ أ. ملك فردي ب. ملك جماعي ج. إيجار فردي د. إيجار جماعي ه. اقتراض و. لا استطيع الوصول إليها

٢١. هل سبق وقمت بتغيير عملك/مهنتك طوعاً في الماضي؟ نعم لا

٢٢. هل سبق وقمت بتغيير عملك/مهنتك لا إرادياً في الماضي؟ نعم لا

٢٣. إلى أي مدى تشعر بالأمان في عملك الحالي؟ أ. أمن جداً ب. أمن إلى حد ما ج. لا أمن ولا غير أمن د. غير أمن ه. غير أمن أبداً

٢٤. هل تشعر أن لديك الخيار في تقرير مهنتك؟ أ. كامل الخيار ب. بعض الخيار ج. لا خيار  
٢٥. هل من السهل عليك تغيير عملك إذا أردت ذلك؟ أ. سهل جداً ب. سهل إلى حد ما ج. ليس سهلاً د. مستحيل  
تغيره

٢٦. ما هو المصدر الذي تعتمد عليه في حال احتجت إلى اقتراض المال؟ أ. مصرف ب. صاحب متجر ج. العائلة د.  
آخر، الرجاء التحديد: -----

٢٧. لماذا تختار الإقتراض من هذا المصدر؟ أ. قرب الموقع ب. معدل الفائدة ج. سهولة المتطلبات والإجراءات د.  
عدم رسمية المتطلبات والإجراءات ه. آخر، الرجاء التحديد: -----

٢٨. هل أنت عضو في أي هيئة أو جمعية؟ نعم لا

إذا كان الجواب نعم، الرجاء الإجابة على الأسئلة ٢٩ إلى ٣٢. إذا كان الجواب لا، الرجاء التوجه إلى السؤال ٣٣.

٢٩. إذا كان الجواب نعم، أي من الهيئات أو الجمعيات التالية أنت عضو فيها؟

أ. تعاونية المزارعين/ الصيادين ب. جمعية التجار ج. نقابات د. إتحاد  
العمال ه. جمعية أهلية/مدنية و. جمعيات دينية ز. تيارات أو احزاب  
سياسية ح. جمعيات ثقافية وفنية ط. جمعيات تربية ي. جمعيات صحية ك.  
جمعيات بيئية ل. اندية رياضية م. اندية شبابية ن. آخر، الرجاء  
التحديد: -----

٣٠. أي من هذه الهيئات أو الجمعيات هي الأهم بالنسبة إليك؟ (الرجاء ذكر ثلاثة من الأهم إلى الأكثر أهمية)

١. ٢. ٣.

٣١. ما مدى فعالية قيادة كل من هذه الهيئات أو الجمعيات الثلاث الهامة؟ أ. فعالة جداً ب. فعالة إلى حد ما ج. غير  
فعالة

مجموعة ١: مجموعة ٢: مجموعة ٣:

٣٢. إلى أي مدى تستفيد من كونك عضو في هذه الهيئات أو الجمعيات على الصعيد الشخصي؟ أ. جداً ب. إلى حد ما  
ج. قليلاً د. أبداً

مجموعة ١: مجموعة ٢: مجموعة ٣:

٣٣. هل هناك أي أنشطة في المجتمع المحلي (مثلاً الأنشطة التي تنظم من قبل البلدية، المنظمات الدينية، المدارس، أو  
جمعيات تنمية)، تعتقد بأنه لا يسمح لك بالمشاركة فيها؟ نعم لا

٣٤. إذا كان الجواب نعم، لماذا تظن أنه لا يسمح لك بالمشاركة؟ أ. الفقر ب. العمل ج. المستوى العلمي د. الجنس  
ه. العمر و. الدين ز. الإنتماء السياسي ح. آخر، الرجاء التحديد: -----

٣٥. هل هناك أي شيء في حياتك ترغب في تغييره؟ نعم لا



إذا كان الجواب نعم، الرجاء الإجابة على الأسئلة ٣٦ إلى ٤٠. إذا كان الجواب لا، الرجاء التوجه إلى السؤال ٤١.

٣٦. ما هو الشيء الذي ترغب في تغييره؟ أ. على الصعيد الشخصي ب. على الصعيد الاجتماعي ج. على الصعيد المهني د. آخر، الرجاء التحديد: -----

٣٧. هل تعتقد أن هذه الأشياء سوف تتغير؟ نعم لا

٣٨. إذا كان الجواب نعم على السؤال ٣٧، متى تعتقد أنها سوف تتغير؟ أ. قريباً جداً ب. قريباً ج. في المستقبل البعيد

٣٩. إذا كان الجواب نعم على السؤال ٣٧، من بنظرك سيسهم أكثر في هذا التغيير؟ أ. أنا ب. عائلتي ج. مجموعتنا، الرجاء التحديد: ----- د. أبناء البلدة ه. البلدية و. الحكومة ز. آخر، الرجاء التحديد: -----

٤٠. برأيك، ما هي الصعوبات التي قد تمنع هذه التغييرات من الحدوث؟

١. ٢. ٣.

٤١. من عادةً يأخذ القرارات المتعلقة بالمسائل المنزلية؟ أ. رب الأسرة ب. الذكور الراشدين في الأسرة ج. ربة الأسرة د. الإناث الراشدين في الأسرة ه. رب ورية الأسرة و. كل الراشدين في الأسرة ز. كل أفراد الأسرة (مع الأولاد) ح. آخر، الرجاء التحديد: -----

٤٢. إلى أي مدى تشعر بأن لديك سيطرة في إتخاذ القرارات الشخصية التي تؤثر على نشاطاتك اليومية؟ أ. سيطرة على جميع القرارات ب. سيطرة على معظم القرارات ج. سيطرة على بعض القرارات د. لا سيطرة على الإطلاق

٤٣. من يأخذ القرارات حول الخدمات العامة في بلدتك؟ -----

٤٤. إلى أي مدى تشعر بأنك منخرط في عمليات صنع القرارات داخل بلدتك؟ أ. جداً ب. إلى حد ما ج. قليلاً د. غير منخرط

٤٥. بأي طريقة أنت منخرط؟ -----

٤٦. إلى أي مدى ترغب في أن تكون منخرط في عمليات صنع القرار في بلدتك؟ أ. أكثر بكثير ب. أكثر ج. لا أكثر و لا أقل د. أقل ه. أقل بكثير

٤٧. إلى أي مدى تشعر بأن لديك تأثير على عمليات صنع القرار في بلدتك؟ أ. كثيراً ب. إلى حد ما ج. قليلاً د. أبداً

## تعليقات

شكراً جزيلاً لمشاركاتكم في هذا الإستطلاع. هل لديك أي تعليقات أو إقتراحات ترغب في إضافتها إلى الإستمارة أو البحث. مرة أخرى شكراً لك على وقتك وجهدك.

## Appendix IV

### Focus Groups:

The focus groups involved heads or representatives of heads of the cities and villages of the study area and aimed to collect data on indirect indicators of opportunity structure as well as to understand the relationship between citizens' agency and opportunity structure, and its influence on the degree of empowerment. The focus groups consisted of open questions which aimed to assess the formal and informal environment surrounding individuals of the coastal area of north Lebanon in terms of accountability, performance, and accountability of institutions and also to understand the perception of local authorities regarding the preliminary results of agency and degrees of empowerment.

#### 1. Focus groups setting

In order to make the most of the focus group and ensure high quality of data, the group settings encompassing the number, duration, composition, and geographic location of group as well as the role of the moderator, are of crucial importance.

In general, the number of focus group sessions is determined by the type and complexity of the research topic as well as the usage for which the data produced is to be employed. For most studies, one to 10 sessions ranging from 90 to 120 minutes each, are usually enough for collecting data. At some stage further group discussions will lead to repetition of existing data, and hence it will unnecessary to hold further sessions (Powell and Single, 1996, p.501). As for the location, it is preferable for the focus group to be held in a considerably neutral place that does not have any exceptional significance to the participants and where they can feel comfortable (Powell and Single, 1996, p.501). Focus groups are usually small so that participants have sufficient time to discuss and deal with subjects in a more in-depth way. The number of participants is usually between 4 and 12 (Tong et al., 2007, p.351). The composition of the group is of high importance and depends on the research problem. The ability to gain valuable information will be greater in a safe environment in which participants feel comfortable and free to voice their ideas and views. Accordingly, a fairly homogenous group, sharing common interest, is usually preferable with a little variety to stimulate more discussion and illustrate different points of view (Hayes and Tatham, 1989, p.31). The homogeneity of the group allows the participants to feel more comfortable and thus, minimizes any cultural or status issues that can act as obstacles to free and open discussion. The role of the moderator is crucial in the evolution and direction of the discussion and in creating a comfortable environment for the participants. The moderator should be relaxed, friendly, a good listener, and his/her involvement should be minimal in order to prevent bias or discussion inhibition (Sim, 1998, p.347; Tong et al., 2007, p.351).

Based on extensive review of focus group literature and preparation, two focus groups were held on 4 and 6 March 2013 at University of Balamand.

In this study, the stakeholders consist of 24 heads of municipalities of the target area who were divided into two focus groups sessions for two main reasons:

1. Level of Empowerment: According to preliminary analysis of the data collected results show that some municipalities are more empowered than others. Therefore, it is more suitable to divide stakeholders according to their levels of empowerment (empowered and disempowered) in order to allow a more homogenous group and comfortable environment, allow comparison between different levels of empowerment, and get optimal data from the stakeholders.
2. The number of participants in a focus group is very important in order to get good quality of data and the interaction between different stakeholders is crucial to study.

## **2. Focus group agenda**

09:00 - 09:30	Reception and Registration (Coffee Break)
09:30 - 09:45	Opening
09:45 - 11:15	Session 1: Empowerment (Opportunity Structure)
11:15 - 11:30	Coffee Break
11:30 - 12:45	Session 2: Empowerment and environment
12:45 - 14:00	Session 3: Mitigation of the impacts of armed conflict on the environment
14:00	Lunch

## جامعة البلمند

مشروع "آثار النزاعات المسلحة على البيئة الساحلية"  
مناقشات حول طاولة مستديرة لبلديات ساحل محافظة لبنان الشمالي

### البرنامج

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### 3. Invitation Letter (in Arabic)

٥ شباط ٢٠١٣

**جانب : حضرة السيد ..... المحترم، رئيس بلدية .....**  
**الموضوع : مشروع "آثار النزاعات المسلحة على البيئة الساحلية WOTRO"**

تحية طيبة وبعد،

ان معهد الدراسات البيئية في جامعة البلمند يقوم بتنفيذ مشروع "آثار النزاعات المسلحة على البيئة الساحلية (WOTRO)" الممول من قبل الحكومة الهولندية بالتعاون مع جامعة "تونتي" في هولندا ويهدف هذا المشروع إلى دراسة آثار النزاعات المسلحة على البيئة في منطقة لبنان الشمالي من النواحي الاقتصادية والاجتماعية والجغرافية والسياسية (مرفقا نبذة عن المشروع).

لتحقيق هذا الهدف، نتشرف بدعوتكم للمشاركة في طاولة مستديرة بعنوان "الساحل اللبناني اليوم والغد: نزاعات، تمكين وتمويل" التي ستقام خصيصاً لقطاع البلديات لما له من دور اساسي وحيوي على ساحل محافظة لبنان الشمالي ، وذلك في تاريخ ٤ آذار ٢٠١٣ (مرفقا برنامج الورشة)، قاعة المحاضرات، الزاخم ١٠٩ جامعة البلمند - الكورة.

تتكون هذه الجلسة من شقين. في الشق الأول، سيتم مناقشة تأثير النزاعات المسلحة المتتالية على مستويات التمكين. والتمكين هو تعزيز قدرات الأفراد و المجتمعات ليتمكنوا من تحديد الإختيارات الأفضل واتخاذ القرارات بأنفسهم بالإضافة إلى المشاركة والتأثير على المؤسسات الرسمية من أجل تحقيق النتائج المرجوة وتحسين سبل العيش. أما في الشق الثاني من الجلسة، ستتم مناقشة سريعة لمصادر التمويل التي حصلت عليها البلديات للتخفيف من الأثر البيئي جراء النزاعات المسلحة.

نتمنى عليكم المشاركة شخصياً أو تسمية ممثلاً عن حضرتكم للمشاركة في هذه الجلسة. كما نأمل ملء الاستمارة المرفقة واحضارها الى الطاولة المستديرة (مرفقا: الاستمارة).

شاكرين لكم دعمكم، وتفضلوا بقبول الإحترام والتقدير

د. منال نادر  
مدير المعهد

لتأكيد الحضور يرجى الاتصال على الرقم: 06-930257 او عبر البريد الالكتروني على:

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المرفقات: نبذة عن المشروع، برنامج الورشة، الاستمارة  
نسخة : د. ميشال نجار؛ نائب رئيس جامعة البلمند

#### 4. Project Summary (in Arabic)

### نبذة عن المشروع

إن معهد الدراسات البيئية في جامعة البلمند يقوم بتنفيذ مشروع "آثار النزاعات المسلحة على البيئة الساحلية WOTRO" الممول من قبل الحكومة الهولندية بالتعاون مع جامعة "تونتي" في هولندا (<http://www.utwente.nl>). ويهدف هذا المشروع إلى دراسة آثار النزاعات المسلحة على البيئة في منطقة ساحل لبنان الشمالي من النواحي الإقتصادية والإجتماعية والجغرافية والسياسية. ويتفرع من المشروع الأساسي خمسة مشاريع بحثية مترابطة، يدرس كل منها ناحية خاصة من المسألة المطروحة، وهي كالتالي:

- تاريخ وجغرافيا إجتماعية للهشاشة البيئية، الإجتماعية، والإقتصادية
- تاريخ وإقتصاد سياسي لعمليات المعالجة وإعادة الإعمار
- تاريخ واثنوغرافيا للتفكك الإجتماعي وعلاقات الثقة في شمال لبنان
- الهشاشة المادية ومؤشرات للتكامل
- الموارد البشرية والمالية

ويتميز هذا المشروع بطرح مواضيع جديدة ورائدة من وجهة نظر الإدارة البيئية والتنمية المستدامة، إلا أنه يحتاج لجمع كم هائل من المعلومات. ومن أجل تحقيق تلك الغاية، سيتوجه هذا المشروع إلى عدد من المعنيين في القطاعين العام والخاص وذلك بهدف فهم تأثير النزاعات المسلحة على البيئة الطبيعية بشكل خاص وعلى المجتمعات بشكل عام آخذين بعين الإعتبار خصوصيات المجتمعات المحلية وعوامل أخرى كدور الدولة المركزية والجهات المانحة وسائر المعنيين من مكونات المجتمع المدني.

## 5. List of participants

4 March 2013 (Batroun and Koura areas)

- Representative of the municipality of Batroun
- Representative of the municipality of Chekka
- Representative of the municipality of Chekka
- President of the municipality of Hamat
- Representative of the municipality of Koubba
- President of the municipality of Kelhat

6 March 2013 (Tripoli, Menieh, and Akkar areas)

- Representative of the municipality of Bhannine
- Representative of the municipality of Bhannine
- Representative of the municipality of Bebnine - Abde
- Representative of the municipality of Beddawi
- Mayor of the village of Cheikh Zennad
- Representative of the village of Cheikh Zennad
- Mayor of the village of Arida
- Representative of the municipality of Der Amar
- Representative of the municipality of El Mina
- Representative of the municipality of Qobbet Chamra
- President of the municipality of El Mhamra
- Representative of the municipality of El Mhamra

## 6. Questions

### Focus Group Session 1 - Empowerment

The main objective of this session is to deepen the understanding of empowerment process, particularly regarding opportunity structure.

#### Questions:

1. In your opinion, how can people (citizens) that do not have many opportunities to develop be empowered? [20 minutes]
2. In your opinion, as presidents of municipalities, what capacities and choices do you have and what obstacles do you face, that can affect your community empowerment? [20 minutes]

### 3. Focus Group - Research Findings: [50 minutes]

The following exercise will help to explain agency findings in terms of opportunity structure. 'This is what we found, can you help us to explain why this is the case'. Several suggestions were proposed during the focus groups to encourage further discussion; these are referred to as 'probe questions'.

#### ***Community Involvement:***

We found out that citizens involvement and participation in community activities is low, we would like to explain why this is the case.

Probe questions:

- Are some people or groups left out of society or excluded from community life or decision-making (social exclusion)?
- Are different groups of people (differentiated by social differences) not able to participate in social, political, and economic processes equally?
- Is community association membership restricted based on gender/social/ethnic/religious/political identity?
- Are community associations and organizations not effective? Or are there other reasons?

We found that citizens involvement and participation in decision-making processes within their municipality is low, we would like to explain why this is the case

Probe questions:

- Are citizens restricted from entering certain public areas, such as village district office?
- Do citizens attend and participate in identification and planning meetings of the municipal council?
- Is attendance of citizens at identification and planning meetings is based on sex, socio-economic grouping, age and ethnicity?
- Is there any set of rules that were developed in a participatory fashion, and in which all members of the community were partly/fully involved?

#### ***Informational Assets:***

We found out that citizens have access to information, we would like to explain why this is the case.



Probe questions:

- What are the factors or existing opportunities that enhance the access to informational assets?
- What is the role of the municipality in providing or enhancing the access to informational assets for the citizens? Are there any restrictions that you face when you are trying to provide or enhance the access to informational assets?

***Material assets:***

We found out that a large portion of citizens have access to general services, we would like to explain why this is the case.

- What are the factors or existing opportunities that enhance the access to material assets?
- What is the role of the municipality in providing or enhancing the access to material assets for the citizens? Are there any restrictions that you face when you are trying to provide or enhance the access to material assets?

**Focus Group Session 2 - Empowerment and Environment**

The objective of this session is to elucidate the relationship between empowerment and environment.

**Questions**

5. In your opinion, as heads of municipalities, what are the priorities that should be provided in your society (e.g. health, education, etc.)? Please grade each listed priority according to its importance [40 minutes]

6. In your opinion, how important is the environment? Don't you think the environment is one of the priorities? In your opinion, how does the environment influence different domains and sectors? (Relationship between empowerment and environment) [Conclusion Question: 50 minutes]

## Questions (in Arabic)

### جلسات الحوار

#### الجلسة الأولى: تمكين الأفراد والمجتمعات

الهدف الرئيسي من هذه الجلسة هو التعمق في فهم عملية تمكين الأفراد والمجتمعات.

#### الأنشطة

١. برأيكم، كيف يمكن للمواطنين الذين لا يملكون الفرص والقدرات الكافية للتطور أن يتمكنوا؟ [٢٠ دقيقة]

٢. برأيكم، كرؤساء وأعضاء بلديات، ما هي الخيارات والقدرات التي تملكونها وما هي العوائق التي تواجهونها والتي يمكن أن تؤثر على تمكين الأفراد والجماعات في بلدياتكم؟ [٢٠ دقيقة]

٣. نتائج البحث: [٥٠ دقيقة]

وجدنا أن نسبة انخراط المواطنين ومشاركتهم في النشاطات الاجتماعية منخفضة. نود أن نعرف لماذا هذا هو الحال.

- هل هناك استبعاد اجتماعي لبعض الأفراد أو الجماعات في بلدتكم؟ هل هناك بعض الأشخاص المهمشين أو المستبعدين في مجتمعتكم؟
- هل هناك مجموعات مختلفة من الناس (بحسب إختلاف اوضاعها الاجتماعية) غير قادرة على المشاركة في الحياة الاجتماعية والاقتصادية والسياسية والاقتصادية بطريقة متساوية؟
- هل يقتصر الإنتساب إلى الجمعيات على الجنس / الدين / السياسة / الوضع الاجتماعي؟
- هل الجمعيات الأهلية أو المنظمات غير فعالة؟ أم هل هناك أسباب أخرى؟

وجدنا أن نسبة انخراط ومشاركة المواطنين في عمليات صنع القرارات في البلديات التي ينتمون إليها هي نسبة منخفضة. نود أن نعرف لماذا هذا هو الحال.

- هل يمنع دخول المواطنين إلى بعض الأماكن العامة في البلدة، مثلاً مبنى البلدية؟
- هل يحضر المواطنون اجتماعات المجلس البلدي ويشاركون فيها؟
- هل يقتصر حضور ومشاركة المواطنين في اجتماعات المجلس البلدي على أساس الجنس / الدين / السياسة / العمر / الوضع الاجتماعي والاقتصادي؟
- هل يوجد مجموعة من القوانين التي تم وضعها بمشاركة جميع أبناء البلدة بشكل جزئي أو كامل؟

وجدنا أن نسبة كبيرة من المواطنين قادرة على الحصول على المعلومات. نود أن نعرف لماذا هذا هو الحال.

- ما هي العوامل أو الفرص المتاحة التي تسمح للمواطنين بالحصول على المعلومات؟
- ما هو دور البلدية في تقديم أو تعزيز القدرة على حصول المواطنين على المعلومات للمواطنين؟ هل تواجهون أي عوائق أو مشاكل عند محاولتكم في تأمين الخدمات للمواطنين؟

وجدنا أن نسبة كبيرة من المواطنين هي قادرة على الحصول على الخدمات العامة. نود أن نعرف لماذا هذا هو الحال.

- ما هي العوامل أو الفرص المتاحة التي تسمح للمواطنين بالحصول على الخدمات؟
- ما هو دور البلدية في تقديم أو تعزيز القدرة على حصول على الخدمات للمواطنين؟ هل تواجهون أي عوائق أو مشاكل عند محاولتكم في تأمين الخدمات للمواطنين؟

## الجلسة الثانية: التمكين والبيئة

الهدف من هذه الجلسة هو توضيح العلاقة بين التمكين والبيئة.

### الأنشطة

٥. برأيكم، كرؤساء بلديات وكمواطنين، ما هي الأولويات التي تعتبرون أنه يجب أن تكون مؤمنة في مجتمعكم (مثلاً، الصحة، التعليم، ..)؟ الرجاء ترتيب الأولويات بحسب أهميتها (١: أكثر أهمية إلى ٥: أقل أهمية) [ ٤٠ دقيقة ]

٦. برأيكم، ما مدى أهمية البيئة؟ ألا تعتقدون أن البيئة يجب أن تكون واحدة من الأولويات؟ برأيكم كيف يمكن أن تؤثر البيئة على مختلف القطاعات والمجالات؟ [ ٥٠ دقيقة ]

## 7. References:

Hayes, T. J., and Tatham, C. B. (1989). *Focus Group Interviews: A Reader*. 2<sup>nd</sup> Edition. United States of America: American Marketing Association.

Powell, R. A., and Single, H. M. (1996). Methodology Matters – V: Focus Groups. *International Journal for Quality in Health Care*, 8(5), 499-504.

Sim, J. (1998). Collecting and analyzing qualitative data: issues raised by the focus group. *Journal of Advanced Nursing*, 28(2), 345-352.

Tong, A., Sainsbury, P., and Graig, J. (2007). Consolidated Criteria for Reporting Qualitative Research (COREQ): a 32-Item checklist for Interviews and Focus Groups. *International Journal for Quality in Health Care*, 19(6), 349-357.

## Appendix V

### Supplemental Material:

This Appendix provides supplemental information related to Chapters 5 and 6. Below, some of the main results of agency and opportunity structures obtained from the survey and focus groups.

#### 1. Agency (Results obtained from the survey)

**Table 1: Information Assets**

Information Assets	Batroun	Koura	Tripoli	Menieh	Akkar
Internet Subscription	75%	76%	73%	59%	36%
Mobile Subscription	92%	99%	98%	94%	95%
Television Ownership	100%	100%	99%	100%	97%
Landline Connection	82%	79%	65%	74%	34%

**Table 2: Material Assets**

Material Assets	Batroun	Koura	Tripoli	Menieh	Akkar
<b>Home Ownership</b>					
Owned and completely paid for	69%	84%	71%	89%	91%
Owned with mortgage	5%	4%	5%	2%	0%
Rented	26%	12%	24%	6%	6%
Other	0%	0%	0%	3%	3%
<b>Land Ownership</b>					
Yes	39%	32%	28%	36%	38%
No	61%	38%	72%	64%	62%

**Table 3.1: Financial Assets**

Income (thousand Lebanese Pound)	No inc.	< 299	300 << 399	400 << 499	500 << 599	600 << 699	700 << 799	800 << 899	900 << 999	1000 << 1499	1500 << 1999	> 2000	Total
Akkar Count	5	7	10	10	4	6	3	3	13	1	3	0	65
Batroun Count	2	6	11	7	7	5	4	3	13	4	18	5	85
Koura Count	1	6	2	7	3	1	3	7	15	9	7	1	62
Menieh Count	6	7	3	9	3	7	2	2	10	7	7	8	71
Tripoli Count	4	6	5	4	2	5	4	9	12	5	10	3	69
Total Count	18	32	31	37	19	24	16	24	63	26	45	17	352

**Table 3.2: Financial Assets**

Occupation (Sector)	Akkar	Batroun	Koura	Menieh	Tripoli
Agriculture, forestry, and fishing	5%	4%	0%	1%	0%
Mining and quarrying	0%	0%	1%	0%	0%
Manufacturing	12%	6%	2%	4%	3%
wholesale and retail trade; repair of motor vehicles and motorcycles	26%	45%	21%	20%	29%
Transportation and storage	5%	1%	0%	0%	1%
Accommodation and food service activities	3%	2%	2%	1%	1%
Financial and insurance activities	0%	1%	0%	0%	0%
Professional, scientific, and technical activities	2%	5%	5%	2%	5%
Administrative and support service activities	4%	9%	19%	12%	17%
Public administration and defense; compulsory social security	1%	0%	0%	1%	0%
Education	2%	3%	7%	15%	4%
Human health and social work activities	2%	2%	2%	6%	3%
Arts, entertainment, and recreation	1%	0%	0%	0%	0%
Other service activities	1%	7%	3%	6%	6%
Activities of extraterritorial organizations and bodies	0%	0%	0%	1%	0%
Student	4%	5%	13%	16%	19%
Unemployed	32%	10%	25%	15%	12%

**Table 3.3: Employment History**

Voluntarily employment/occupation change in the past		No	Yes	Total
Akkar	Count	48	17	65
	% of Total	13.6%	4.8%	18.5 %
Batroun	Count	41	44	85
	% of Total	11.6%	12.5%	24.1%
Koura	Count	41	21	62
	% of Total	11.6%	6.0%	17.6%
Menieh	Count	51	20	71
	% of Total	14.5%	5.7%	20.2%
Tripoli	Count	37	32	69
	% of Total	10.5%	9.1%	19.6%
Total	Count	218	134	352
	% of Total	61.9%	38.1%	100%

<b>Involuntarily employment/occupation change in the past</b>		<b>No</b>	<b>Yes</b>	<b>Total</b>
Akkar	Count	58	7	65
	% of Total	16.5%	2.0%	18.5%
Batroun	Count	66	19	85
	% of Total	18.8%	5.4%	24.1%
Koura	Count	49	13	62
	% of Total	13.9%	3.7%	17.6%
Menieh	Count	64	7	71
	% of Total	18.2%	2.0%	20.2%
Tripoli	Count	54	15	69
	% of Total	15.3%	4.3%	19.6%
Total	Count	291	61	352
	% of Total	82.7%	17.3%	100%

**Table 4: Organizational Assets**

<b>Organizational Assets</b>		<b>Batroun</b>	<b>Koura</b>	<b>Tripoli</b>	<b>Menieh</b>	<b>Akkar</b>
<b>Organization membership</b>						
<b>No</b>		72%	87%	81%	88%	95%
<b>Yes</b>		28%	13%	19%	12%	5%
<b>Type of organization</b>						
Farmer/ fisher group or cooperative	Count	3	0	0	0	2
Traders or business association	Count	1	0	2	0	1
Professional association	Count	1	0	4	4	0
Trade union or labor union	Count	0	1	0	0	0
Religious or spiritual group	Count	11	1	4	0	0
Political group or movement	Count	9	2	4	2	0
Cultural group or association	Count	2	2	4	0	0
Education group	Count	1	0	2	2	0
Sports group	Count	1	2	1	1	0
Youth group	Count	4	2	2	0	0
NGO or civic group	Count	6	3	10	6	2
Other groups	Count	0	2	0	2	0
Health group	Count	0	0	2	1	0
Environmental group	Count	0	0	2	0	0
Familial association	Count	0	0	0	1	0
Industries association	Count	0	0	0	1	0
Municipal and village council	Count	0	1	0	1	0

**Table 5: Human Assets**

<b>Human Assets</b>	<b>Batroun</b>	<b>Koura</b>	<b>Tripoli</b>	<b>Menieh</b>	<b>Akkar</b>
<b>Education</b>					
Illiterate	0%	0%	0%	0%	7%
Knows how to read and write	0%	1%	0%	2%	2%
Primary education	5%	6%	9%	14%	38%
Complementary education	13%	11%	12%	18%	27%
Secondary education	28%	26%	19%	24%	12%
University education	40%	43%	51%	34%	8%
Technical education	14%	13%	9%	8%	6%
<b>Gender</b>					
Female	49%	57%	45%	53%	46%
Male	51%	43%	55%	47%	54%
<b>Marital Status</b>					
Single	36%	38%	56%	50%	35%
Married	62%	55%	37%	48%	64%
Separated	0%	2%	0%	0%	0%
Widowed	2%	5%	4%	1%	0%
Divorced	0%	0%	3%	1%	1%
<b>Average</b>					
<b>Age</b>	43.03	38.59	35.68	34.87	32.56
<b>Family size</b>	3.37	3.44	3.8	4.81	6.99

**Table 6.1: Psychological Assets**

<b>Psychological Assets</b>	<b>Batroun</b>	<b>Koura</b>	<b>Tripoli</b>	<b>Menieh</b>	<b>Akkar</b>
<b>Self-perceived exclusion from communities' activities</b>					
<b>No</b>	95%	91%	84%	90%	91%
<b>Yes</b>	5%	9%	16%	10%	9%
<b>Capacity to envisage change</b>					
<b>No</b>	53%	65%	42%	52%	60%
<b>Yes</b>	47%	35%	58%	48%	40%

**Table 6.2: Difficulties Preventing Change**

<b>What are the main difficulties that you feel might prevent these changes from occurring?</b>		<b>Akkar</b>	<b>Batroun</b>	<b>Koura</b>	<b>Menieh</b>	<b>Tripoli</b>	<b>Total</b>
	Count	64	57	67	62	49	299
Authorities negligence	Count	1	1	1	1	0	4
Corruption	Count	1	0	0	2	1	4
Economic conditions	Count	7	11	8	9	12	47
Family	Count	2	1	2	3	1	9
General situation of the country	Count	8	7	8	7	7	37
Health conditions	Count	0	0	1	0	0	1
Lack of orientation	Count	0	0	0	0	1	1
Living conditions	Count	1	0	0	0	0	1
No answer	Count	0	0	1	0	1	2
No job opportunities	Count	0	2	0	2	2	6
Personal benefits	Count	0	1	0	0	4	5
Personal conditions	Count	2	1	2	1	3	9
Political diversity	Count	0	0	0	3	1	4
Political situation	Count	2	3	4	3	3	15
Politicians	Count	3	3	4	3	7	20
Politics	Count	0	0	0	1	0	1
Power (Inequality)	Count	1	1	0	0	0	2
Regional situation	Count	0	2	0	0	0	2
Religion	Count	0	2	0	0	0	2
Society	Count	7	5	1	2	6	21
Time	Count	0	1	1	1	0	3
Wars	Count	1	2	0	0	0	3
Work conditions	Count	0	0	0	0	2	2



## 2. Degrees of Empowerment (Results obtained from the survey)

### *State Domain – Public Services Delivery*

**Table 6.1:** *Complaints to the authorities regarding public services delivery*

<b>Have you ever made a complaint to the authorities regarding the delivery of public services?</b>	<b>No</b>	<b>Yes</b>
Akkar	89%	11%
Batroun	98%	2%
Koura	92%	8%
Menieh	91%	9%
Tripoli	84%	16%
<b>Total</b>	<b>90.8%</b>	<b>9.2%</b>

**Table 6.2:** *Perception of complaint resolution*

<b>If yes, how successfully do you feel your complaint was resolved?</b>		<b>Completely successful</b>	<b>Fairly successful</b>	<b>Slightly successful</b>	<b>Not at all</b>	<b>Total</b>
Akkar	Count	1	1	0	9	11
	% of Total	2.2%	2.2%	0.0%	19.6%	23.9%
Batroun	Count	0	0	0	2	2
	% of Total	0.0%	0.0%	0.0%	4.3%	4.3%
Koura	Count	2	2	0	4	8
	% of Total	4.3%	4.3%	0.0%	8.7%	17.4%
Menieh	Count	4	2	0	3	9
	% of Total	8.7%	4.3%	0.0%	6.5%	19.6%
Tripoli	Count	1	4	1	10	16
	% of Total	2.2%	8.7%	2.2%	21.7%	34.8%
Total	Count	8	9	1	28	46
	% of Total	17.4%	19.6%	2.2%	60.9%	100.0%

## Market Domain - Labor

**Table 7.1: Perception of security in present employment/occupation**

How secure do you feel in your present employment/occupation?		Very secure	Fairly secure	Neither secure nor insecure	Fairly insecure	Very insecure	Total
Akkar	Count	20	10	6	23	6	65
	% of Total	5.7%	2.8%	1.7%	6.5%	1.7%	18.5%
Batroun	Count	22	32	7	14	10	85
	% of Total	6.2%	9.1%	2.0%	4.0%	2.8%	24.1%
Koura	Count	22	21	9	9	1	62
	% of Total	6.2%	6.0%	2.6%	2.6%	0.3%	17.6%
Menieh	Count	33	17	8	11	2	71
	% of Total	9.4%	4.8%	2.3%	3.1%	0.6%	20.2%
Tripoli	Count	21	18	4	18	8	69
	% of Total	6.0%	5.1%	1.1%	5.1%	2.3%	19.6%
Total	Count	118	98	34	75	27	352
	% of Total	33.5%	27.8%	9.7%	21.3%	7.7%	100%

**Table 7.2: Perception of capacity to change occupation**

How easy would it be to change your occupation if you wanted to?		Very easy	Fairly easy	Not very easy	Impossible to change	Total
Akkar	Count	9	2	41	13	65
	% of Total	2.6%	0.6%	11.6%	3.7%	18.5%
Batroun	Count	15	19	36	15	85
	% of Total	4.3%	5.4%	10.2%	4.3%	24.1%
Koura	Count	10	16	27	9	62
	% of Total	2.8%	4.5%	7.7%	2.6%	17.6%
Menieh	Count	10	4	41	16	71
	% of Total	2.8%	1.1%	11.6%	4.5%	20.2%
Tripoli	Count	11	17	31	10	69
	% of Total	3.1%	4.8%	8.8%	2.8%	19.6%
Total	Count	55	58	176	63	352
	% of Total	15.6%	16.5%	50.0%	17.9%	100.0%

**Table 7.3: Perception of choice in deciding occupation**

Choice in deciding occupation		Complete choice	Some choice	No choice	Total
Akkar	Count	49	4	12	65
	% of Total	13.9%	1.1%	3.4%	18.5%
Batroun	Count	55	11	19	85
	% of Total	15.6%	3.1%	5.4%	24.1%
Koura	Count	44	14	4	62
	% of Total	12.5%	4.0%	1.1%	17.6%
Menieh	Count	48	13	10	71
	% of Total	13.6%	3.7%	2.8%	20.2%
Tripoli	Count	38	17	14	69
	% of Total	10.8%	4.8%	4.0%	19.6%
Total	Count	234	59	59	352
	% of Total	66.5%	16.8%	16.8%	100%

**Society Domain – Community****Table 8.1: Perception of influence on community level decision-making processes**

How much influence do you feel you have in community level decision-making processes?	Great deal of influence	Reasonable level of influence	Low level of influence	No influence at all
Akkar	3%	10%	16%	71%
Batroun	5%	29%	12%	54%
Koura	8%	16%	18%	58%
Menieh	3%	25%	16%	56%
Tripoli	5%	16%	14%	65%
Total	4.8%	19.2%	15.2%	60.8%

**Table 8.2:** Perception of aspiration to be involved in decision-making processes within community

How much would you like to be involved in these decision-making processes within your community?	Much more involved	Slightly more involved	Neither more nor less involved	Slightly less involved	Much less involved
Akkar	5%	26%	68%	0%	1%
Batroun	14%	25%	53%	3%	5%
Koura	18%	19%	51%	6%	6%
Menieh	11%	20%	50%	4%	15%
Tripoli	19%	32%	41%	3%	5%
Total	13.4%	24.4%	52.6%	3.2%	6.4%

### Society Domain – Family

**Table 9.1:** Decisions takers regarding household life

When decisions are made regarding the following aspects of household life, who is it that normally takes the decision?	Male head	Adult male members	Female head	Adult female members	Male and female heads	All adults members	All members
Akkar	44%	6%	14%	0%	20%	1%	15%
Batroun	25%	0%	12%	0%	39%	6%	18%
Koura	17%	2%	25%	0%	37%	5%	14%
Menieh	36%	3%	11%	4%	24%	8%	14%
Tripoli	30%	2%	23%	0%	16%	7%	22%
Total	30.4%	2.6%	17.0%	0.8%	27.2%	5.4%	16.6%

**Table 9.2:** Perception of control over personal decisions

How much control do you feel you have in making personal decisions that affect your everyday activities?	Control over all decisions	Control over most decisions	Control over some decisions	No control at all
Akkar	48%	39%	7%	6%
Batroun	43%	35%	19%	3%
Koura	31%	50%	16%	3%
Menieh	20%	51%	25%	4%
Tripoli	39%	46%	13%	2%
Total	36.2%	44.2%	16.0%	3.6%

### 3. Opportunity Structures (Results obtained from the focus groups)

**Table 10:** *Some statements from focus groups*

Domain	Statements
State Domain - Public Services Delivery Subdomain	<ul style="list-style-type: none"> <li>• The financial budget of the municipality is very low and is not enough to provide basics needs for the people living in these municipalities.</li> <li>• Financial potential is the biggest obstacle to proceed with development projects.</li> <li>• Expenses of the municipality are very costly and are beyond the financial potential of the municipalities.</li> <li>• The municipality of Chekka, for example, helps in public services delivery by providing alternative lighting with half the price.</li> <li>• The administrative process is hard and complicated (government regulations). Laws are sometimes inhibiting our progress. The laws are old and need to be improved.</li> <li>• No support from the government and no enough authorities or power in the hands of municipalities.</li> <li>• We need more support from the state. There is neglect from the state and lack of monitoring and we also cannot have an influence on the government.</li> <li>• We lack infrastructure in our area. Many of the basic needs are not met but we do not have the financial potential (Mainly in Akkar area).</li> <li>• Education is the most important. Education is the responsibility of the government. Now there is waste in education. The state should make public education much better than private and provide education to everyone.</li> </ul>
Market Domain - Labor Subdomain	<ul style="list-style-type: none"> <li>• Unemployment is a major issue and it's leading to an increase in social problems such as drugs, robberies, etc. (Mainly in Akkar, Menieh, and Tripoli).</li> <li>• In Akkar and Menieh, the Syrian war is having significant negative impacts on the labor domain. The flux of refugees is huge and we are not able to afford such amount causing social, economic, and environmental issues.</li> <li>• We do not have enough job opportunities already, and now the Syrian refugees are working or bringing their occupation into our country and taking our places, since they are paid less.</li> <li>• In Akkar, Qlayaat Airport is a great job opportunity</li> </ul>

	<p>for the citizens of this area. However, this airport is not functional. We tried to raise this issue to the government but we are neglected.</p>
<p>Society Domain – Community</p>	<ul style="list-style-type: none"> <li>• People are not satisfied with what the municipality provide, so they do not want to participate. But they do not know that the municipality does not have enough budget to cover all their needs.</li> <li>• Some people do not really care. Maybe they just like to criticize. However, we do like to listen if they have anything to say .</li> <li>• Individuals’ participation in community is influenced by the overall political ambiance.</li> <li>• Citizens do not trust public institutions.</li> <li>• People are not convinced about the municipalities’ financial resources.</li> <li>• People are deceived from the outcomes provided by the municipalities and state, but there are a lot of needs that are lacking and we need more time to provide them with the current financial potential and political situation.</li> <li>• Political situation is reflected even on the local level.</li> <li>• People do not have any influence on public decisions in general.</li> <li>• In Batroun area, anyone is welcome to participate and ask about anything regarding the municipality. However people do like to criticize.</li> <li>• For Kelhat (village in Koura), we think that it is not necessary for citizens to participate. They elected us and we work. But we do consult people based on their expertise for assistance in development projects different domains.</li> <li>• In Akkar, there is indirect participation. We do ask people about their needs and we try to make decisions based on the citizens’ needs. We also consult people based on their expertise for assistance in development projects different domains.</li> <li>• Personal benefits are predominant in public institutions.</li> </ul>



## Summary

This study offers an in-depth and interdisciplinary analysis of the effects of environmental degradation, as caused by recurring episodes of armed conflict, on communities' vulnerabilities in the coastal area of north Lebanon. The coastal area of north Lebanon is chosen as the focus area because it has been subjected to recurring episodes of armed conflict for many years. In particular, this research focuses on four episodes of armed conflict: the 1982 Israeli Invasion, the 2006 Israel-Lebanon War, the 2007 Nahr El Bared Clashes, and the Tripoli Clashes of 2008. These specific episodes of armed conflict have caused significant damage to the natural environment and negatively affected the communities living in north Lebanon, which are considered to be amongst the poorest and most deprived families in Lebanon. As such, the environmental degradation has added to their existing vulnerabilities and aggravated their situation.

This dissertation is divided into three interlinking parts that aim to answer the research questions developed to fulfill the objective of this research. The first part provides a review and analysis of the environmental degradation caused by four episodes of armed conflict. The second part consists of an assessment of communities' vulnerability of place in the coastal area of north Lebanon. The third and final part includes an assessment of individuals' degrees of empowerment in the study area. The findings are based on a combination of both qualitative and quantitative methods, including 24 structured interviews with the heads of the cities and villages within the study area, or their representatives, 17 in-depth interviews with local stakeholders such as occupational groups, non-governmental organizations, and ministries, a survey among 500 individuals (a cross-section of the local population), two focus groups with local authorities in the study area; and document analysis. Triangulation is used to minimize bias and enhance the validity of the social research.

In Chapter 1, the problem definition and research questions are introduced. The study area and events selection, methodology, and structure of the thesis are then described.

In Chapter 2, the theoretical framework for the thesis is presented. The literature on environmental security is first reviewed, particularly the theme that is related to the environmental effects of armed conflict. Taking environmental security as a starting point, the literature review is based on two predominant concepts that consider vulnerability and empowerment. The literature on vulnerability and empowerment is then reviewed including the various definitions as well as the different analytical frameworks and approaches used for assessing these concepts. This chapter concludes by illustrating a general framework that combines the concepts used in this research and positions the findings in the relevant literature.

Chapter 3 provides the methodological basis of this research. The study area is first described. Next, the particular methodological approaches used to answer the research questions are then presented. The data collection and analysis procedures are then described in details and the challenges faced during the period of the research are acknowledged.



Chapter 4 reviews the direct and indirect environmental effects of the four episodes of armed conflict in the coastal area of north Lebanon and positions the findings in the relevant literature. The environmental impacts involve marine pollution from oil spills, land degradation, air and land pollution from infrastructure destruction, pressure on natural resources from population displacement and from the absence of environmental governance, as well as impacts on economic sectors that depend on natural resources such as agriculture, fisheries, and tourism. However, the impacts vary among the episodes of armed conflict and between the various geographic areas studied. The 2006 Israel-Lebanon War and the 2007 Nahr el Bared Clashes were shown to have the most severe impacts on the natural environment as well as on people's livelihoods. Further, not all areas were equally affected. The areas of Akkar and Menieh were most heavily impacted compared with the other areas. This fact was mostly attributed to the dependence of the communities in Akkar and Menieh areas on natural resources for income generation. The findings validate, to an extent, the literature on 'environmental security' that tackles the effects of armed conflict on the environment and show how such environmental degradation can threaten human wellbeing and economic potential by increasing communities' vulnerability to environmental change. In addition, the findings support the argument that environmental change, resulting from armed conflict in this case, can lead to a form of economic vulnerability for areas that rely on natural resources as a primary economic sector for income production. The findings are then positioned in the literature on 'vulnerability of place' which explores people's vulnerability in a specific geographic area.

In Chapter 5, the predominant features and manifestations of vulnerability in the coastal area of north Lebanon are identified and the spatial variation of vulnerability is also studied in five geographical areas of this region. The findings show that there is variation in community vulnerability in the coastal area of north Lebanon and that this variation in vulnerability has not only been affected by the physical exposure to the environmental damage from armed conflict but also by the sensitivity and coping capacities of the various coastal communities. When assessing physical vulnerability, the areas of Akkar and Menieh show the highest levels of vulnerability followed by Tripoli. Koura and Batroun areas are shown to have low levels of vulnerability. To assess social vulnerability, a social vulnerability index is developed to measure vulnerability in each of the five areas. The communities in the area of Akkar are revealed to be the most vulnerable, followed by Tripoli, Menieh, Koura, and finally Batroun as the least vulnerable. When combining the results of the physical and social vulnerabilities, it is possible to identify variations in 'vulnerability of place' among the five areas of the Lebanese northern coastline. Akkar and Menieh are shown to have the highest levels of 'vulnerability of place' followed by Tripoli, with Koura and Batroun having lower levels of vulnerability.

In Chapter 6, different degrees of individual empowerment were assessed within the coastal area. The degrees of empowerment were measured at the local level and focused on three domains: public services delivery in the state domain, labor in the market domain, and community in the society domain. The findings showed variation in degrees of empowerment among the five areas of the northern Lebanese coast and that this variation is

to an extent determined by the combination of agency and opportunity structure. In addition, the degree of empowerment in one domain can be related to a similar degree of empowerment in a different domain for each area. Citizens in Menieh, Tripoli, Koura, and Batroun areas do have the abilities and opportunities to make purposeful choices, but they often decide not to use these opportunities. In comparison, the citizens in Akkar area Akkar do not have the abilities and opportunities, in many cases, and are often restricted by the surrounding opportunity structure. In addition, education was shown to be a fundamental determinant of empowerment in the area of Akkar. As such, the findings of this chapter indicated the ways in which degrees of empowerment can vary within communities in a small geographic area and emphasized the duality of agency and structures.

Chapter 7 concludes the thesis by highlighting the key findings of the research questions and the contribution of this thesis to the relevant literature. Building on the key findings and the contribution to Literature, recommendations and suggestions for further research were then proposed.

Finally, the chapters of this thesis explore the effects of environmental degradation on communities' vulnerabilities within the context of armed conflict by integrating various disciplines, concepts, and methodologies. The outcomes of this thesis provide new and innovative insights to the academic debate on environmental security, vulnerability, and empowerment. As such, this thesis offers an in-depth and interdisciplinary analysis of the complex relationship between the conflict, the natural environment, and vulnerability. In addition, the in-depth exploration of this relationship offers new perceptions for vulnerability reduction in conflict-affected areas.

## Samenvatting

Dit onderzoek is een grondige, interdisciplinaire analyse van de gevolgen die aantasting van het milieu heeft voor de kwetsbaarheid van gemeenschappen in de kuststreek van Noord-Libanon. Met 'aantasting' wordt hier specifiek de schade bedoeld die is veroorzaakt gedurende de verschillende gewapende conflicten. De kuststreek van Noord-Libanon is gekozen als voornaamste onderzoeksgebied omdat het namelijk jarenlang geteisterd werd (en nog steeds wordt) door meerdere van deze conflicten. In dit onderzoek wordt met name ingegaan op vier gewapende conflicten: de Israëlische invasie van 1982, de Israëlisch-Libanese oorlog van 2006, de gevechten in Nahr El Bared van 2007 en de gevechten in Tripoli in 2008. Door deze gewapende conflicten heeft de omgeving aanzienlijke schade opgelopen. Tevens hebben ze de gemeenschappen in Noord-Libanon – die tot de armste en meest misdeelde families van Libanon behoren - negatief beïnvloed. De aantasting van het milieu heeft hun kwetsbaarheid dus nog verder vergroot en hun situatie verergerd.

Dit proefschrift bestaat uit drie aan elkaar gerelateerde onderdelen. Aan de hand van deze onderdelen wordt getracht een antwoord te vinden op de onderzoeksvragen die zijn opgesteld voor dit onderzoek. Het eerste gedeelte betreft een bespreking en analyse van de aantasting van het milieu door vier gewapende conflicten. Het tweede deel bestaat uit een beoordeling van de kwetsbaarheid van gemeenschappen in de kuststreek van Noord-Libanon. In het derde en laatste deel worden de verschillende maten waarin individuen in het onderzoeksgebied (in staat zijn om) hun eigen besluiten nemen (de *empowerment*) beoordeeld. De bevindingen komen voort uit een combinatie van kwalitatieve en kwantitatieve onderzoeksmethoden, waaronder 24 gestructureerde interviews met de hoofden van de dorpen en steden in het onderzoeksgebied (soms werd in plaats van met de hoofden met hun vertegenwoordigers gepraat), 17 diepte-interviews met lokale stakeholders zoals beroepsgroepen, ngo's en ministeries, een enquête onder 500 personen (een representatieve afspiegeling van de lokale bevolking), twee focusgroepen bestaande uit lokale overheden uit het onderzoeksgebied, en een documentanalyse. Er is gebruikgemaakt van triangulatie om vertekening van de onderzoeksresultaten tegen te gaan en de geldigheid van het sociale onderzoek te verhogen.

In hoofdstuk 1 worden allereerst het probleem en de onderzoeksvragen ingeleid. Daarna volgt er een beschrijving van het onderzoeksgebied, de selectie van te onderzoeken gebeurtenissen, de gekozen onderzoeksmethode en de structuur van de thesis.

In hoofdstuk 2 wordt het theoretische kader voor deze thesis geschetst. Eerst wordt de literatuur over *environmental security* onderzocht, met name die over het onderwerp dat gaat over de gevolgen die gewapende conflicten voor het milieu hebben. Het literatuuronderzoek, waarvoor *environmental security* het uitgangspunt vormt, is gebaseerd op twee belangrijke concepten over kwetsbaarheid en *empowerment*. Vervolgens wordt de literatuur over kwetsbaarheid en *empowerment* geanalyseerd, waarbij ook de verschillende definities, analytische kaders en benaderingen die gebruikt worden om deze concepten te beoordelen, aan bod komen. Het hoofdstuk wordt afgesloten met een algeheel kader waarin

de concepten die voor deze thesis gebruikt worden zijn samengevoegd en waarin de bevindingen van deze thesis in de context van de eerdere literatuur worden geplaatst.

Hoofdstuk 3 vormt de methodische basis van dit onderzoek. Allereerst wordt het onderzoeksgebied omschreven. Vervolgens worden de specifieke methoden genoemd die zijn toegepast om de onderzoeksvragen te beantwoorden. Daarna komen de gegevensverzameling en analysemethoden uitgebreid aan bod en worden de uitdagingen die tijdens de onderzoeksperiode de kop opstaken besproken.

In hoofdstuk 4 wordt er gekeken naar de directe en indirecte gevolgen die de vier gewapende conflicten in de Noord-Libanese kuststreek op het milieu hadden. Ook worden de bevindingen uit dit onderzoek in de context van eerdere relevante literatuur geplaatst. De gevolgen voor het milieu reikten van watervervuiling door olievlekken, aantasting van het land en lucht- en landvervuiling door de vernieling van infrastructuur, tot potentiële verloedering of juist overmatig gebruik van natuurlijke hulpbronnen door migratie en een gebrek aan goed milieubeheer, maar de conflicten hadden ook negatieve gevolgen voor de economische sectoren die afhankelijk zijn van natuurlijke hulpbronnen, zoals de landbouw, de visserij en het toerisme. De impact was echter per gewapend conflict en per onderzocht gebied anders. Het is aangetoond dat de Israëlisch-Libanese oorlog van 2006 en de gevechten in Nahr El Bared van 2007 de grootste negatieve invloed hebben gehad op de omgeving en de manier waarop de plaatselijke bevolking in haar levensonderhoud kon voorzien. Bovendien werden niet alle gebieden in gelijke mate beschadigd. In vergelijking met de andere gebieden werden de districten Akkar en Menieh het zwaarst getroffen. Dit had er voornamelijk mee te maken dat de gemeenschappen in Akkar en Menieh voor hun inkomen afhankelijk waren van natuurlijke hulpbronnen. De bevindingen bevestigen tot op zekere hoogte de literatuur over de gevolgen van gewapende conflicten voor het milieu en laten zien hoe zulke aantasting een bedreiging kan vormen voor het menselijk welzijn en economisch potentieel doordat deze beschadiging de kwetsbaarheid van gemeenschappen voor veranderingen in het milieu vergroot. Daarnaast ondersteunen de bevindingen het argument dat milieuveranderingen – in dit geval als gevolg van een gewapend conflict – kunnen leiden tot een vorm van economische kwetsbaarheid in gebieden die afhankelijk zijn van natuurlijke hulpbronnen als primaire bron van inkomsten. Daarna worden de bevindingen in de context van de eerdere literatuur over *vulnerability of place* geplaatst. Met dit begrip wordt de kwetsbaarheid van mensen in een specifiek geografisch gebied aangeduid.

In hoofdstuk 5 worden de belangrijkste kenmerken en tekens van kwetsbaarheid in de Noord-Libanese kuststreek opgesomd. Ook wordt de geografische variatie in kwetsbaarheid onderzocht voor vijf gebieden in deze regio. Uit de bevindingen kan worden opgemaakt dat er in de kuststreek van Noord-Libanon verschillen zijn in de kwetsbaarheid van gemeenschappen en dat deze variatie niet alleen is en wordt beïnvloed door de fysieke blootstelling aan milieuschade veroorzaakt door gewapende conflicten, maar ook door de mate waarin de verschillende kustgemeenschappen gevoelig zijn voor deze schade en om weten te gaan met de veranderingen. Wat betreft de fysieke gevoeligheid scoren de districten Akkar en Menieh het hoogst, gevolgd door Tripoli. De districten Koura en Batroun

scoren laag. Om de sociale kwetsbaarheid te meten, is er een sociale-kwetsbaarheidindex ontwikkeld. Hiermee wordt voor elk van de vijf gebieden de kwetsbaarheid bepaald. De gemeenschappen in Akkar blijken het meest kwetsbaar te zijn, gevolgd door Tripoli, Menieh, Koura en als laatste Batroun. Als men de resultaten van de fysieke en sociale kwetsbaarheidsmetingen combineert, is het mogelijk om variaties in de *vulnerability of place* te ontdekken in de vijf gebieden aan de Noord-Libanese kustlijn. Akkar en Menieh vertonen de hoogste mate aan *vulnerability of place*, gevolgd door Tripoli. De districten Koura en Batroun blijken over een lager niveau aan kwetsbaarheid te bezitten.

In hoofdstuk 6 worden verschillende maten aan individuele *empowerment* in het kustgebied beoordeeld. Deze verschillende gradaties in *empowerment* worden op lokaal niveau en op drie vlakken gemeten: het overheidsvlak (de kwaliteit van overheidsdiensten), het marktvlak (werk in de marktsector), en het maatschappelijk vlak (gemeenschap). Uit de bevindingen blijkt een verschil in de mate aan *empowerment* in de vijf Noord-Libanese kustgebieden. Deze variatie wordt tot op zekere hoogte bepaald door de combinatie van *agency* (in staat zijn als mens onafhankelijk te handelen en eigen keuzes te maken) en kansenstructuur. Daarbij moet gezegd worden dat in één gebied de mate van *empowerment* op verschillende vlakken (overheidsvlak, marktvlak en/of maatschappelijk vlak) aan elkaar gerelateerd en vergelijkbaar kan zijn. Burgers in de districten Menieh, Tripoli, Koura en Batroun zijn in staat om bewuste eigen keuzes te maken en hebben ook de kans deze te maken, maar ze kiezen er vaak voor deze kansen niet te benutten. Burgers in het district Akkar zijn in tegenstelling tot de hiervoor genoemde burgers in veel gevallen niet in staat deze keuzes te maken en krijgen er vaak ook geen kans toe. Veelal wordt deze keuzevrijheid beperkt door de kansenstructuur waarin ze zich bevinden. Verder is gebleken dat in Akkar onderwijs van fundamenteel belang is voor het ontwikkelen van *empowerment*. De bevindingen uit dit hoofdstuk geven dus de manieren aan waarop binnen gemeenschappen in kleine geografische gebieden de mate aan *empowerment* kan variëren. Hiermee benadrukken ze het dualisme in *agency* en structuur.

Hoofdstuk 7 vormt de conclusie van de thesis. Hierin worden de belangrijkste bevindingen naar aanleiding van de onderzoeksvragen naar voren gehaald en wordt de bijdrage genoemd die deze thesis aan de literatuur heeft geleverd. Uitgaand van de hoofdbevindingen en de geleverde bijdrage worden tot slot aanbevelingen en suggesties voor vervolgonderzoek gedaan.

In deze thesis zijn de gevolgen van milieuaantasting – als gevolg van een gewapend conflict - voor de kwetsbaarheid van gemeenschappen onderzocht. Voor dit onderzoek is gebruikgemaakt van verschillende disciplines, concepten en methodes. De resultaten van dit onderzoek geven nieuwe en innovatieve inzichten in het academisch debat over *environmental security*, kwetsbaarheid en *empowerment*. De thesis levert een grondige, interdisciplinaire analyse van de complexe relatie tussen conflict, (natuurlijke) omgeving en kwetsbaarheid. De analyse biedt bovendien nieuwe inzichten in hoe de kwetsbaarheid van gemeenschappen in door conflicten geteisterde gebieden verminderd kan worden.

## ملخص

تقدّم هذه الدراسة تحليلاً مفصلاً ومتعدّد التخصصات لتأثيرات التدهور البيئي، التي سببها حوادث متكرّرة للنزاع المسلّح على نقاط ضعف المجتمعات في المنطقة الساحلية في شمال لبنان. وقد تمّ اختيار المنطقة الساحلية في شمال لبنان والتركيز عليها لأنها كانت الأكثر عرضة للحوادث المتكرّرة للنزاع المسلّح لسنوات عدة. ويتمّ التركيز في هذا البحث على أربع مراحل للنزاع المسلّح: الاجتياح الاسرائيلي عام ١٩٨٢، والحرب الإسرائيلية - اللبنانية عام ٢٠٠٦، واشتباكات نهر البارد عام ٢٠٠٧، واشتباكات طرابلس عام ٢٠٠٨. وقد سببت حوادث النزاع المسلّح هذه ضرراً كبيراً على البيئة الطبيعية وأثّرت سلباً على المجتمعات التي تعيش في شمال لبنان، والتي تُعتبر من أفقر العائلات والأكثر حرماناً في لبنان. وقد أدى التدهور البيئي إلى زيادة نقاط ضعفهم وتفاقم أوضاعهم.

تنقسم الأطروحة إلى ثلاثة أجزاء مترابطة تهدف إلى الإجابة على الأسئلة الموضوعية خصيصاً لتحقيق هدف هذا البحث. يقدم الجزء الأول عرضاً وتحليلاً للتدهور البيئي الناجم عن المراحل الأربع للنزاع المسلّح. ويقدم الجزء الثاني تقييماً لنقاط ضعف المجتمعات في المنطقة الساحلية في شمال لبنان. أما الجزء الثالث والأخير فيعرض تقييماً لدرجات تمكين الأفراد في منطقة الدراسة. وتستند النتائج على كلّ من البحث الكمي والنوعي، بما في ذلك ٢٤ مقابلة مع فعّاليات المدن والقرى داخل منطقة الدراسة أو ممثليهم، و١٧ مقابلة مفصّلة مع أصحاب المصلحة المحليين، مثل الفئات المهنية، والمنظمات غير الحكومية، والوزارات، بالإضافة إلى دراسة إستقصائية لـ ٥٠٠ شخص (شريحة من السكان المحليين)، ومجموعتين مركّبتين مع السلطات المحلية في منطقة الدراسة، وتحليل لوثائق. يُستخدَم التثليث لتقليل الانحياز وتعزيز صلاحية البحوث الإجتماعية.

في الفصل الأول، يتمّ عرض المشكلة وأسئلة البحث. ثمّ يتمّ وصف منطقة الدراسة واختيار الأحداث، والمنهجية، وهيكّل الأطروحة.

في الفصل الثاني، يتمّ عرض الجانب النظري من الأطروحة. أولاً، تتمّ مراجعة الدراسات السابقة في الأمن البيئي، خاصة الموضوع المتعلّق بالتأثيرات البيئية للنزاع المسلّح. وبما أن موضوع الأمن البيئي هو نقطة الإنطلاق، فإنّ مراجعة ما نُشر يقوم على مفهومين سائدين هما نقاط الضعف والتمكين. ثمّ تتمّ دراسة ما نُشر عن نقاط الضعف والتمكين بما في ذلك التعاريف المختلفة بالإضافة إلى الأطر والأساليب التحليلية المختلفة المستخدمة لتقييم هذه المفاهيم. ويختتم هذا الفصل برسم إطار عام يضمّ المفاهيم المستخدمة في هذا البحث، ويضع النتائج في محل الدراسة الصحيح.

في الفصل الثالث، يتمّ عرض الأساس المنهجي لهذا البحث. أولاً، يتمّ وصف منطقة الدراسة. ثانياً، يتمّ عرض المقاربات المنهجية المحدّدة المستخدمة من أجل الإجابة عن أسئلة البحث. ثمّ يتمّ وصف كل من عملية جمع البيانات وطرق التحليل وصفاً تفصيلياً، بالإضافة إلى التحدّيات التي واجهت الطالب خلال فترة البحث.

في الفصل الرابع، يتمّ عرض التأثيرات البيئية المباشرة وغير المباشرة لكل من المراحل الأربع للنزاع المسلّح في المنطقة الساحلية في شمال لبنان، ويتمّ وضع النتائج في محل الدراسة الصحيح. تشمل التأثيرات البيئية كل من: التلوّث البحري الناتج عن التسرّبات النفطية، وانحلال التربة، وتلوّث الهواء والأرض بسبب تدمير البنية التحتية، والضغط على الموارد الطبيعية بسبب نزوح السكان وغياب الإدارة البيئية، بالإضافة إلى تأثيرات على القطاعات الإقتصادية التي تعتمد على

الموارد الطبيعية، كالزراعة ومصايد الأسماك والسياحة. ولكن التأثيرات تختلف فيما بين مراحل النزاع المسلح وبين المناطق الجغرافية التي تمت دراستها. فقد أثرت كل من الحرب الإسرائيلية - اللبنانية عام ٢٠٠٦ واشتباكات نهر البارد عام ٢٠٠٧ تأثيراً كبيراً على البيئة الطبيعية كما على معيشة الناس. كذلك، لم تتأثر كل المناطق بالقدر ذاته. فقد تأثرت مناطق عكار والمنية تأثيراً بالغاً مقارنة مع المناطق الأخرى. وتُعزى هذه الحقيقة في معظمها إلى اعتماد المجتمعات في منطقتي عكار والمنية على الموارد الطبيعية من أجل تأمين الدخل. وثُبتت النتائج، إلى حد ما، ما نُشر حول "الأمن البيئي" والذي يتناول تأثيرات النزاع المسلح على البيئة، ويُظهر كيف أن تدهوراً بيئياً كهذا يمكن أن يهدد جودة حياة الإنسان والإمكانات الاقتصادية من خلال زيادة ضعف المجتمعات المحلية نحو التغيير البيئي. بالإضافة إلى ذلك، فإن النتائج تدعم الحجّة القائلة بأن التغيير البيئي، الناتج عن النزاع المسلح في هذه الحالة، يمكن أن يؤدي إلى نوع من الضعف الاقتصادي في المناطق التي تعتمد على الموارد الطبيعية باعتبارها القطاع الاقتصادي الرئيسي لإنتاج الدخل. ثمّ يتم وضع النتائج ضمن ما نُشر عن "ضعف المكان" الذي يكشف ضعف الناس في منطقة جغرافية محدّدة.

في الفصل الخامس، يتمّ تحديد الميزات السائدة ومظاهر الضعف في المنطقة الساحلية في شمال لبنان، كما تتمّ دراسة التباين المكاني للضعف في خمس مناطق جغرافية تابعة لهذه المنطقة. وتُظهر النتائج أن هناك تفاوتاً في ضعف المجتمع في منطقة الساحلية في شمال لبنان، وبأن هذا الاختلاف في الضعف لم يتأثر فقط بالتعرض الفعلي للضرر البيئي الناتج عن النزاع المسلح، إنما أيضاً بحساسية وقدرات التكيف لمختلف المجتمعات الساحلية. ولدى تقييم الضعف المادي، تُظهر مناطق عكار والمنية أعلى مستويات الضعف تليها طرابلس. بينما تُظهر مناطق الكورة والبترون مستويات منخفضة من الضعف. من أجل تقييم الضعف الاجتماعي، تمّ تطوير مؤشر ضعف اجتماعي لقياس الضعف في كل من المناطق الخمس. وقد تبين أن المجتمعات في عكار هي الأكثر الأضعف، تليها طرابلس، والمنية، والكورة، وأخيراً البترون الأقل ضعفاً. ولدى دمج نتائج الضعف المادي والاجتماعي، يمكن تحديد الاختلافات في "ضعف المكان" وسط المناطق الخمس من الساحل الشمالي اللبناني. ويتبين لدى عكار والمنية أعلى مستويات "ضعف المكان" تليها طرابلس، بينما تظهر مناطق الكورة والبترون مستويات ضعف أقل.

في الفصل السادس، يتمّ تقييم درجات مختلفة من التمكين الفردي في المنطقة الساحلية. تُقاس درجات التمكين على المستوى المحلي وتركز على ثلاثة مجالات: تقديم الخدمات العمومية في مجال الدولة، والعمل في مجال السوق، والجماعة في نطاق المجتمع. وتُظهر النتائج تبايناً في درجات التمكين ضمن المناطق الخمس للساحل الشمالي اللبناني، وأن هذا التباين، إلى حد ما، تُحدده عملية الدمج بين قدرة الأفراد والبناء الاجتماعي. بالإضافة إلى ذلك، يمكن أن تعود درجة التمكين في المجال الواحد إلى درجة تمكين مماثلة في مجال مختلف لكل منطقة. ويمتلك سكان مناطق المنية وطرابلس والكورة والبترون القدرات والفرص لاتخاذ خيارات هادفة، ولكنهم غالباً ما يقررون عدم استخدام هذه الفرص. بينما لا يملك سكان منطقة عكار لا القدرات ولا الفرص، في العديد من الحالات، وهم غالباً مقيدون بالبناء الاجتماعي المحيط بهم. بالإضافة إلى ذلك، يشكّل التعليم عاملاً أساسياً للتمكين في منطقة عكار. على هذا النحو، تشير نتائج هذا الفصل إلى الطرق التي يمكن أن تتغير فيها درجات التمكين داخل مجتمعات منطقة جغرافية صغيرة، وتشدّد على إزدواجية قدرة الأفراد والبناء الاجتماعي.



ويختتم الفصل السابع الأطروحة من خلال تسليط الضوء على النتائج الرئيسية لأسئلة البحث، ومساهمة هذه الأطروحة إلى ما نُشر في الدراسات السابقة. بناءً على النتائج الرئيسية والمساهمة إلى ما نُشر سابقاً، تمّ بعد ذلك تقديم توصيات واقتراحات لمزيد من البحث.

أخيراً، تكشف فصول هذه الأطروحة تأثيرات التدهور البيئي على نقاط ضعف المجتمعات في سياق النزاع المسلح من خلال دمج مختلف الأنظمة والمفاهيم والمنهجيات. وتقدّم نتائج هذه الأطروحة أفكاراً جديدة ومبتكرة للنقاش الأكاديمي حول الأمن البيئي والضعف والتمكين. بالتالي، تقدّم هذه الأطروحة تحليلاً مفصلاً ومتعدد التخصصات للعلاقة المعقدة بين الصراع المسلح والبيئة الطبيعية والضعف. بالإضافة إلى ذلك، تقدّم عملية الكشف العميق لهذه العلاقة تصورات جديدة للحدّ من الضعف في المناطق المتضررة من النزاع.



## **About the author**

Sahar T. Issa was born in 1987 in Hamat, Lebanon. She holds a Bachelor of Sciences degree in Biology from University of Balamand in Lebanon. She subsequently completed a Master of Sciences degree in Environmental Sciences from University of Balamand and a Master of Sciences degree in Expertise and Treatment in Environment from Université du Littoral Côte d'Opale in France. Between 2009 and 2010, she worked as an instructor at University of Balamand. In June 2010, Sahar started her PhD research at the Twente Centre for Studies in Technology and Sustainable Development (CSTM) at University of Twente, the Netherlands in collaboration with the Institute of the Environment at University of Balamand. Her research was funded by the Netherlands Organization for Scientific Research (NWO), WOTRO Science for Global Development. This research focused on the impacts of environmental degradation, as caused by recurring episodes of armed conflict, on communities' vulnerabilities in the coastal area of north Lebanon. The research findings have been presented and published in journals, seminars, and conferences targeting different audiences.