Blast from the past

A case study of how UXO affects Human Security in Lao PDR.

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Abstract

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Unexploded Ordnance (UXO) contamination presents a considerable level of danger in almost all post-conflict environments. Globally there are a vast amount of casualties every year. However, accurate numbers of casualties is hard to obtain both globally and locally. The purpose of this thesis is to examine how UXO affects Human Security in Lao PDR. The methodology used is a theory consuming empirical and heuristic method. The thesis is a case study that does not attempt to generalize but to understand and analyze the relation between UXO and Human Security in the context of Lao PDR. The theory used in the thesis is Human Security based on the concept of the 1994 UNDP Human Development Report. The findings of the thesis make clear the connection between UXO contamination and lack of Human Security in Lao PDR. The direct and indirect consequences of UXO contamination are explored. Finally, the thesis works at a broader societal level where the links to poverty and development are illustrated.
Table of Content

Abstract .................................................................................................................................................. 2

Illustrations ........................................................................................................................................... 5
Tables .................................................................................................................................................... 5
Figures ................................................................................................................................................... 5
Abbreviations ....................................................................................................................................... 6

1. Introduction ....................................................................................................................................... 8
   1.1 Purpose of Study ......................................................................................................................... 9
   1.2 Research Questions .................................................................................................................... 10
   1.3 Thesis Outline ............................................................................................................................ 11

2. Methodologies and Material ............................................................................................................. 12
   2.1 Method ......................................................................................................................................... 12
   2.2 The Case Study Approach ......................................................................................................... 13
   2.3 Material and Source Criticism .................................................................................................... 14
   2.4 Critical Reflection of Method and Material .................................................................................. 15
   2.5 Delimitations ............................................................................................................................... 16
   2.6 Clarifications of Concepts .......................................................................................................... 16

3. Theoretical Framework ..................................................................................................................... 17
   3.1 Human Security ......................................................................................................................... 17

4. Background ....................................................................................................................................... 21
   4.1 ERW, MOTAPM and UXO ........................................................................................................... 21
   4.2 Lao PDR – Country, People and Society .................................................................................... 22
   4.3 UXO in Lao PDR .......................................................................................................................... 25

5. Analysis ............................................................................................................................................. 29
   5.1 Direct effects on the Human Security of people in Lao PDR ....................................................... 29
      5.1.1 Effects on Human Security caused by UXO accidents with deadly outcome .................. 30
      5.1.2 Effects on Human Security caused by UXO accidents with injury as outcome .............. 31
   5.2 Indirect effects on Human Security caused by UXO ............................................................... 35
   5.3 Does UXO work as a poverty multiplier? ................................................................................... 41

6. Conclusion ........................................................................................................................................ 43
7. Recommendations for further research ................................................................. 46

References ............................................................................................................................ 47
  Literature ........................................................................................................................... 47
  Publications ....................................................................................................................... 48
  Electronic Sources .......................................................................................................... 49
Annex 1: Map of Lao PDR including provinces and districts ................................................. 50
Annex 2: Poverty map of Lao PDR ..................................................................................... 51
Annex 3: UXO Contamination Map .................................................................................... 52
Illustrations

Tables

Table 1: Groups in the economic field ................................................................. 23

Figures

Figure 1: Victim’s Activity When the Accident Happened ................................ 27
Figure 2: Location of UXO Accidents ................................................................. 27
Figure 3: Type of UXO Causing Accidents ......................................................... 28
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>AP</td>
<td>Anti-Personnel (Mines)</td>
</tr>
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<td>AVM</td>
<td>Anti Vehicle Mines</td>
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<td>CBU</td>
<td>Cluster Bomb Unit</td>
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<td>CCW</td>
<td>Convention on Certain Conventional Weapons</td>
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<td>CIA</td>
<td>Central Intelligence Agency of the United States of America</td>
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<td>ERW</td>
<td>Explosive Remnants of War</td>
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<td>FAO</td>
<td>United Nations Food and Agricultural Organization</td>
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<td>HI</td>
<td>Handicap International</td>
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<td>ICRC</td>
<td>International Committee of the Red Cross</td>
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<tr>
<td>LAO PDR</td>
<td>Lao Peoples Democratic Republic</td>
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<tr>
<td>LDC</td>
<td>Least Developed Country</td>
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<tr>
<td>MOTAPM</td>
<td>Mines Other Than Anti-Personnel Mines</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>PAVN</td>
<td>People’s Army of Vie Nam</td>
</tr>
<tr>
<td>PL</td>
<td>Pathet Lao</td>
</tr>
<tr>
<td>RLAF</td>
<td>Royal Lao Air Force</td>
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<tr>
<td>RTAF</td>
<td>Royal Thai Air Force</td>
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<tr>
<td>RLG</td>
<td>Royal Lao Government</td>
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<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
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<tr>
<td>UNIDIR</td>
<td>United Nations Institute for Disarmament Research</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>---------</td>
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<tr>
<td>US</td>
<td>United States of America</td>
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<tr>
<td>USAF</td>
<td>United States Air Force</td>
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<tr>
<td>UXO</td>
<td>Unexploded Ordnance</td>
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<td>WFP</td>
<td>United Nations World Food Programme</td>
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1. Introduction

Unexploded Ordnance (UXO) contamination presents a considerable level of danger in almost all post-conflict environments. Globally there are a vast amount of casualties every year. However, accurate numbers of casualties is hard to obtain both globally and locally. More than 90 countries or disputed territories contain some level of Explosive Remnants of War (ERW) contamination. While Anti-personnel (AP) mines, often called landmines, may only have been used in specific roles or in certain areas of the conflict, explosive ordnance will almost certainly have been used wherever the fighting took place. Hence, contamination of ERW will most likely cover the whole area of the conflict. It is usually complicated for the local population to coexist with such contamination without either accidental exposure to risks or some form of deliberate tampering with UXO in an effort to deal with the risks they are facing (Landmine Action 2005).

In this thesis I will focus on UXO, or more specifically ERW and Mines Other Than Anti-Personnel Mines (MOTAPM), hence not AP mines/landmines. I make this limitation primarily due to the fact that landmines are covered under the Ottawa Anti-Personnel Mine Ban Treaty that a large number of countries has ratified and therefore outlawed the use of.\(^1\) The only thing remotely similar to the Ottawa Mine Ban Treaty as legal framework regarding UXO and ERW/MOTAPM is the Protocol V on Explosive Remnants of War of the Convention on Certain Conventional Weapons (CCW) that do not prohibit any use, but only make state parties responsible of clearing UXO after a conflict. Since only 26 state parties have ratified the CCW Protocol V,\(^2\) I find it more interesting and important to focus on this, and hence support discussions regarding the severe impact these weapons have on people living in post-conflict settings and how this affects the Human Security of these people and work as a poverty multiplier.

During the Second Indo-China War and the Secret War in Laos 1964-73, the United States Air Force (USAF) and the Central Intelligence Agency of the United States of America (CIA)

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\(^1\) As of 15 August 2007, 155 State Parties had ratified the 1997 Convention of Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (http://www.icbl.org/treaty/members).

\(^2\) The CCW Protocol V entered into force on 12 November 2006. The protocol is not retroactive so there is no obligation to clean up previously left-behind UXO/ERW, and there is no deadline for cleaning up after future conflicts (http://www.icbl.org/news/ccw_protocl_v).
dropped more than two million tons of ordnance over Lao PDR. This intense and one-sided bombing resulted in 660 kg of ordnance being dropped for each of the country’s three million citizens at the time (Landmine Action 2005). This makes Lao PDR the most heavily bombed nation in the world per capita. Furthermore, it is estimated that up to 30 per cent of this ordnance did not detonate on impact (NRA 2006) and therefore remain as potentially dangerous UXO. This legacy still causes death and injury more than 35 years later, as well as affecting the population in many other ways. In addition, the UXO contamination also works as a poverty multiplier and holds back the development of Lao PDR as well as affects the Human Security of the people.

Since Lao PDR is the most heavily UXO affected country in the world I believe that this presents an excellent opportunity for a case study, especially since the influence and problems caused by the UXO for a 35 year period will be interesting to explore. In order to understand the full extent of the problem in Lao PDR, I believe it is important to analyze all the affects UXO has on Human Security, both direct consequences that cause casualties and indirect consequences that affect and obstruct the lives of a big part of the Lao people. The definition of Human Security used in this thesis is the UNDP definition from the 1994 Human Development Report (UNDP 1994: 22). In addition, I will also explore the consequences UXO has had on development in Lao PDR since it can be seen as a poverty multiplier. With this in mind, the intention of this thesis is to provide an inclusive picture of the problem of UXO and the implications it has on Human Security in Lao PDR.

1.1 Purpose of Study

This thesis sets out to track and trace the problems occurring from the threat or perceived threat by UXO in a Lao context and the implications this causes on Human Security. Furthermore, I will also present and analyze if UXO works as a poverty multiplier. In addition, I will relate this problem to development since there are evident links to Human Security and it is further a crucial factor for Lao PDR, being one of the poorest countries in the world. The limited opportunities in Lao PDR are affecting the development of the country and the UXO contamination is most likely a partially responsible for the lack of development. Since the UXO contamination basically is
spread over the whole country I will generalize my findings to the entire country and not just the most affected areas.

There are many reasons to why the focus of this thesis is on UXO. One of the most important ones is that UXO contamination is a global problem with approximately 90 countries and disputed territories affected. Also the fact that there is no trustworthy convention that controls these ERW and UXO makes this study more interesting. Further, what makes Lao PDR an interesting case in regards to UXO contamination is that this is the most heavily bombed country per capita. This makes Lao PDR a special although not unique case. Hence, since it is the most extreme case it is interesting to examine this in depth. Furthermore, since I already have some knowledge regarding Lao PDR and its special context, this further put emphasis on why I analyze this country in depth. Therefore, I will within the Lao context analyze how UXO contamination affects Human Security and briefly discuss how and if UXO works as a poverty multiplier in Lao PDR.

This thesis will contain a broad overview of the links between UXO contamination and different Human Security issues in Lao PDR. The purpose with this is to provide a context and foundation for an analysis of UXO and Human Security in Lao PDR. This will deepen the understanding of the complex situation in Lao PDR. Furthermore, within this framework there are factors which can truly show that certain social constraints within Lao PDR are caused by UXO. Finally, on the basis of the findings of this thesis there will be recommendations for further research within the subject.

1.2 Research Questions

With the purposes stated above in mind, the research questions are thus;

- How does UXO affect Human Security in Lao PDR?
- Does UXO work as a poverty multiplier?
- What happens to societies, their structures and people, under the influence of UXO and how can Human Security explain this?
1.3 Thesis Outline

Following the introductory chapter, the thesis will present a chapter on methodologies and material with the intended aim to clarify how and in what way the thesis will be presented. Included in this chapter will be the delimitations of the thesis and a clarification of the critical view of the author in relation to the methodology and material used. Following this is a theory chapter that will be used as a framework for the essay. After the theory chapter there will be a chapter containing the background that will explain what UXO is and give some essential information about the country Lao PDR to brief the reader about the local context. The background chapter will also provide an explanation on the subject of UXO in the specific context, namely Lao PDR. Following the background chapter is the analysis chapter which consists of two parts; one about the direct effects that UXO have on Human Security; and one about the indirect effects. After analyzing these subjects thoroughly there will be a chapter with a conclusion of the thesis that will be followed by a final chapter called recommendations for further research.
2. Methodologies and Material

This chapter will illustrate the methodological framework that I will use in this thesis. There will be a discussion of the methodology in order to give a clear image of the structure and background of the thesis as well as the topic of research. Further, an explanation to why this particular methodological framework is used will be provided. I will also discuss the advantages and disadvantages of these specific methods and in addition, a review of the material used will also be provided. This thesis is based on information collected with the intention to present a straightforward and fair picture of the reality in regards to the UXO and Human Security situation in Lao PDR. The empirical material collected is used to relate to the theory chosen to describe and understand the reality of the problem.

2.1 Method

Identical for all research is to gain new knowledge within a specific field. Due to my familiarity of the field of study, different approaches of method are applicable. For this thesis I will use an empirical and theory consuming research platform since some information about this field of research already exists, and that I aim to analyze this case through existing theories. Therefore I will put my case in center of attention and in relation to that explain my findings (Esaiasson 2007: 42 f). By using an empirical and theory consuming research method I will limit myself to thoroughly research one aspect of the phenomenon, in this case how UXO affects Human Security. The theory has an essential role in this thesis since it is both the research tool as well as being a major part of the subject of study. I will use the theory as a lens through which I will analyze the material and draw conclusions.
2.2 The Case Study Approach

This thesis is a case study which uses a combination of qualitative and quantitative methods. Much research has increasingly been using a combination of the two since both these methods play a considerable part in social science and there can be advantages by using a combination of the two (March & Stoker 2002: 231). Since I set out to examine a specific phenomena and not just describing a situation, a case study is a preferred method (Yin 1993: 31). Furthermore, given that I base my thesis on theoretical assumptions that reflect the research questions, material and result, a case study is ideal (Yin 1994: 103). In order to strengthen the results and the analysis I have used Human Security in its broadest term as the theoretical framework through which I will base my analyzing. As a case study this thesis examines and analyzes a significant and specific problem of the country of my choice; Lao PDR. Affects on Human Security by UXO is a substantial problem in Lao PDR, primary to the people of the country. I find it crucial to better understand the full width of the problem in order to enhance awareness about the vast problems that UXO contamination cause in many post-conflict societies. The case study approach is an appropriate method in this thesis since I do not aim to draw any generalizing conclusions based on comparisons with the situation in other countries; instead I will focus on the situation in Lao PDR and aim to discuss my findings of this specific country. However, I will, in a very broad way, try to compare my case briefly with other countries in the concluding remarks at the end of the thesis in order to present some suggestions for further research.

The purpose of a case study is to recreate a focused and analytical picture of a phenomenon or a social entity through a profound study of a specific case (Bryman 2001: 66). The effects of how UXO impact a civil society and Human Security of a UXO contaminated country may have many causes and is very complex and hard to describe, and that is why I will solely focus on one country; Lao PDR. The thesis will be based on different sources from various fields of study, as well as different surveys and publications when possible. The origin of the thesis is a genuine and complex problem that will focus on a possible connection between UXO and a lack of Human Security.
My choice of case study has fallen to the heuristic\(^3\) case study. The heuristic case study is appropriate due to the fact that the researcher should explore, analyze, summarize and draw conclusions from a case of which there is a lack of previous research or where the problem has been neglected. Furthermore, the case study should enlighten the reader and strengthen the knowledge of the phenomenon of research (Eckstein 1992: 143).

The main weakness with the case study approach is its inability to draw any general conclusions on the situation elsewhere (Gustavsson 2004: 132). But since this is out of the scope of the research I still consider this method valid for my research. Furthermore, I find this method to be deep enough to produce the knowledge I need to fully understand and analyze the UXO and Human Security problem in Lao PDR. Using this methodology and with appropriate theories I believe that the research questions will be answered in a thorough and truthful way. The generalizing conclusions that however will be drawn in the final part of my thesis will be based on my case study and, as previously mentioned, only function as a means to provide suggestions for further research.

2.3 Material and Source Criticism

The material and sources I have used in this thesis are mainly primary. These consist primarily of documents from different UN agencies, such as United Nations Development Programme (UNDP), the United Nations Food and Agricultural Organization (FAO), and the United Nations Institute for Disarmament Research (UNIDIR), as well as documents from Lao Governmental agencies. I have used this material with great caution and always tried to find information from more than one source when possible. Secondary material and sources used include documents and reports from different and highly respected Non-Governmental Organizations (NGOs) within this field of research, such as Handicap International (HI), Landmine Action, or the Geneva International Centre for Humanitarian Deming. For the background part of the Second Indo-China War (or the American War as it is called locally) and the Lao society, I have used literature by anthropologists and academics with special knowledge of Lao history, society and politics. I

\(^3\) Heuristic means ‘serving to find out’.
have chosen material that is as unbiased as possible, even though completely unbiased material hardly exists.

The difficulty with this subject is how to apply the problems with UXO contamination in Lao PDR to Human Security. The material on the subject does not typically show a direct link between what causes a lack of Human Security in Lao PDR and the relation to UXO. This means that it has been a greater challenge for me as a researcher and I welcome this challenge and intend to show the truth/s in as accurate manner as possible.

2.4 Critical Reflection of Method and Material

It is my opinion that a critical reflection of the material used in this thesis is essential. My intention in this thesis is to be as objective and neutral towards the material, subject and the information retrieved as possible. The concern regarding this lies in the fact that the material I have used is perceived as valuable and important for my thesis. However, since I as a researcher am a cultural object situated in a specific environment, it is impossible to be completely objective and neutral within the selective procedure of the material and the analysis (Russell 2000: 206 f). Additionally, there is never just one version of the truth and the outcomes that I present in this thesis are my perceived version of the truth and are obviously based on my background and knowledge. It is also based on the information that I have gathered and analyzed, and on the methods used. Evidently, all information and material collected are interpreted and viewed according to my background and my Western male perspective. This interpretive framework cannot be excluded and forgotten and the selective procedure where information was gathered and reviewed was made with a critical awareness, knowledge and understanding of the problem that is being analyzed, and the sources used. My understanding of the problem is also reflected by my work in Lao PDR with the United Nations World Food Programme (WFP) where I have been enlightened about the vast problem with UXO, Human Security and poverty in the country, and I have as a result gotten closer to the problem and created an understanding in the local Lao context as well. This has affected me in the sense that I have a greater awareness of the huge problem regarding UXO contamination and the resulting sufferance among people affected.
Despite all these issues with objectivity at stake, I believe that my analysis can generate interesting points and contribute to the area of study. Furthermore, the material and sources used in this thesis are selected since they are believed to be as reliable and unbiased as possible. Material that has not lived up to these criteria’s has been rejected.

2.5 Delimitations

Due to time and space limitations for this thesis I have limited my study to just one UXO contaminated country, namely Lao PDR. Additionally, I have also chosen to exclude AP mines/landmines in my research, primarily due to the fact that they are covered on the Ottawa Anti-Personnel Mine Ban Treaty and that AP mines/landmines is relatively unusual in Laos compared to regular ERW/UXO.

2.6 Clarifications of Concepts

In this thesis and in the context of UXO accidents, I have chosen to not use the term ‘victim’ when describing individuals who have been injured in an accident. I choose to do this since the term ‘victim’ has certain negative undertones (submissive, passive, deserving of pity, etc.) that contradict the fact that the majority of individuals injured in a UXO accident try to rebuild their lives. This can also lead to a form of stigmatization of the survivors. Due to this and the fact that many people working in the field of UXO assistance prefer to use the term ‘survivor’ when describing people injured in UXO accidents, I have also chosen to do so. The term ‘survivor’ has a more positive meaning and emphasizes that life goes on even after an accident. Furthermore, even if the accident is an inescapable part of their life, this does not define who they are (HI & Lao Youth Union 2004: 4).
3. Theoretical Framework

In this chapter I will discuss the theoretical framework used in this thesis. During my search for theories suitable for this thesis I found that one theory was especially linked to the affects of UXO contamination, namely Human Security. Therefore, this thesis applies Human Security as a part of the extended security concept as a theoretical framework in order to fully understand, explain and analyze the affects of UXO. The thesis deals with the questions: What happens to societies, their structures and people, under the influence of UXO? How can the framework of Human Security explain this? It does not answer the question on an abstract level but in relation to a case study based on the contemporary Lao society. Human Security is used due to the fact that within the International Relations field of study this theory can best describe how the security of individuals is affected by UXO contamination. Furthermore, since Human Security is so closely linked with development it can also clarify if UXO can be considered to be a poverty multiplier.

3.1 Human Security

UXO threatens the security and development of people, in Lao PDR and elsewhere. In this thesis I will relate the impacts of lowered security and development of individuals to the issues that can be argued to be a consequence of the UXO contamination. In order to fully understand and discuss the issue of Human Security and Human Insecurity caused by UXO in particular, it is essential to make a distinction between traditional and non-traditional security issues. The United Nations Development Programme (UNDP) stated in their 1994 Human Development Report that “[t]he concept of security has for too long been interpreted narrowly: as security of territory from external aggression, or as protection of national interests in foreign policy or as a global security from the threat of nuclear holocaust. It has been related more to nation-states than to people.” (UNDP 1994: 22). Furthermore, they continued to declare that…

[f]orgotten were the legitimate concerns of ordinary people who sought security in their daily lives. For many of them, security symbolized protection from the threat of
disease, hunger, unemployment, crime, social conflict, political repression and environmental hazards….For most people, a feeling of insecurity arises more from worries about daily life than from the dread of a cataclysmic world event (UNDP 1994: 22).

I believe that most people will agree with these statements even though this is contradictory to the traditional security concept.

In our globalized world, new forms of nationalism, ethnic conflict and civil war, information technology, resource conflicts, genocides, pandemics, mass migrations, transnational terrorism, and environmental problems challenge the conventional means of understanding threats and of assuring the security of all regions of the world (Dodds and Pippard 2005: 27 f). Due to the transnationality of these threats, it is no longer possible to evaluate threats solely based on the nation-state as the unit of analysis, other issues and players have entered the arena of security and as these threats became more evident in the post Cold War era, and a new tool for analysis was created; Human Security. The concept of Human Security emerged in a moment of history between what can be described as two significant eras, between the Cold War geopolitics and the geopolitics of trans-national terrorism (Dodds and Pippard 2005: 28 ff). The world had left the uncertainties in the Cold War for another era of uncertainties. During the Cold War, the bipolar system created a state of power competition, which focused on military and political security. After the Cold War the states were no longer as preoccupied with military and political might, but other problems and threats appeared, such as terrorism, environmental degradation and pandemics. In order to deal with these issues another pallet of concepts and perceptions were needed and that laid the ground for the concept of Human Security (Dodds and Pippard 2005: 34 f).

When UNDP coined the concept of Human Security in their 1994 Human Development Report, they made an important broadening of the term ‘Security’. The term Security, which previously generally included traditional security of states and first and foremost military security (Paris in Brown 2004: 251), was now changed to put stronger emphasis on how states and international organizations view security issues and the new security agenda after the Cold War. The scholars and academics behind the concept Human Security describes it as one entity with seven
important parts that together describes different aspects of security that is of significant value for people to feel secure. These seven parts are; economic security; food security; health security; environmental security; personal security; political security; and societal security. Evidently this definition is very broad and incorporates very different, although relevant, security threats where the focus is in the individual human being, instead of the state. In order to be considered a security threat it also has to be a threat to somebody or something’s existence, and the result of human activity (Brown 2004: 251 f). Furthermore, UNDP put emphasis on four essential characteristics of the basic concept of Human Security. These are that Human Security is of universal concern; that the components of Human Security are interdependent; that Human Security is easier and less costly to ensure through early prevention; and finally that Human Security is people-centered (UNDP 1994: 22). Even so, there are two main aspects of these components that are important to recognize in order to get a more explicit definition. Firstly it means ‘safety from such chronic threats as hunger, disease and repression’. Secondly, it means ‘protection from sudden and hurtful disruptions in the patterns of daily life’ (UNDP 1994: 22 f).

In this thesis I aim to analyze the links between this and the UXO contamination in Lao PDR by using Human Security as a research tool.

Besides the UNDP definition of Human Security, other actors like states and NGOs has created their ‘own’ definition of the concept, even though the original UNDP definition is the most common and accepted (Brown 2004: 252 f). Furthermore, Human Security can be described as a concept that attempt to present an analytical picture over a complex world in need of responsibility and actions (Dodds and Pippard 2005: 34). A problem appearing when using Human Security as a theory for research is that the concept is so wide and that there are uncertainties regarding how the different sectors should be systematically arranged, or if some sectors are more important than others. Consequently, this creates confusion and uncertainty which makes the concept harder to apply. Another problem is that different actors interpret and arrange the term Human Security and its different sectors according to their own agenda and policies. The fact that the concept can mean and be interpreted in almost any way is jeopardizing its existence and threatening it to be watered down and hollow. Since security relates to everything, it loses clarity and means nothing (Brown 2004: 254 f). This makes it harder for ‘policymakers’ as well as scientists to use the concept, since the different sectors within the
concept is very interdependent and essential to each other as a holistic unit. The fact that the concept is so broad, elastic and at the same time vague is a big problem since it is hard to know in what way it is possible to use the concept to find solutions on problems or as topic in research (Brown 2004: 252 ff). Since I am aware of this problem it is my intention to avoid the traps and be thorough and clear with the intentions of the research and the relation between UXO and Human Security. Furthermore, since the different parts of Human Security are so closely linked together I aim to examine if the effects caused by UXO can result in ‘spill over’ effects of other parts of the theory. Hence, the Human Security theory will work as a foundation for the framework of my study in order to lead me through my research.
4. Background

In this chapter I will present a relevant background to the problem and I will cover issues important for the reader to be able to fully understand the technical aspects of UXO as well as the difficulty with UXO, ERW and MOTAPM. Furthermore, I will describe the most basic and essential information about Lao PDR and the specific UXO problem in the country in order to give the reader essential knowledge to be able to fully understand the analysis and the thesis as a whole.

4.1 ERW, MOTAPM and UXO

Explosive Remnants of War (ERW) is a broad term for explosive ordnance; for example mortar bombs, rockets, grenades, artillery shells, cluster submunitions and air-dropped bombs that have not exploded and are left as a hazard in a post-conflict environment. This excludes AP mines/landmines. ERW results from ordnance being fired but failing to explode and hence becoming UXO, or from ordnance stores being abandoned during fighting and this is called Abandoned Explosive Ordnance, the latter of which I will not cover in this thesis. Mines Other Than Anti-Personnel Mines is an informal term that generally describes Anti-Vehicle Mines (AVMs) (Landmine Action 2005: 2 ff).

Unexploded Ordnance (UXO) is described and formalized by the UN Convention on Certain Conventional Weapons (CCW) Protocol V (adopted November 2003 and entered into force in November 2006) as “…explosive ordnance that has been primed, fused, armed, or otherwise prepared for use and used in an armed conflict and that may have been fired, dropped, launched or projected and should have exploded but failed to do so.” (Moyes 2004: 3). All types of ordnance can fail to work as intended and the possible reasons for this are many. Reasons for failure can for example be improper use by soldiers⁴ or manufacturing defects. The difference

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⁴ For example, fear, confusing, fatigue or other factors can cause soldiers to forget proper handling techniques, and improper training of the soldier can also lead to mistakes since different type of ordnance have different types of arming mechanisms. Since some ordnance will not detonate unless fired or dropped under the right conditions there are several factors that can lead to improper handling and hence the ordnance will become UXO (HI 1997: 17).
between UXO and mines is that mines are specifically designed to be placed by hand or by other means (e.g. from air planes) and lie and wait for a specific action to trigger the firing mechanism. In contrast to this, UXO has failed to function according to its intended purpose and may or may not explode when moved, tampered with, or through other actions (Handicap International 1997: 18). Ordnance is typically described as two different types; air delivered ordnance and ground delivered ordnance. UXO that has been air delivered is very widespread in Lao PDR and includes small anti-personnel and anti-materiel submunitions (often called bombies) that are cluster type bomblets dispersed from dispensers. It also includes large general purpose bombs that vary in size between 100-1000 kg. Ground delivered ordnance was used in ground battles and the munitions used involved hand grenades, rifle grenades, etc.\(^5\) (Handicap International 1997: 18).

4.2 Lao PDR – Country, People and Society

Lao People’s Democratic Republic (PDR) is a mountainous and landlocked country in Southeast Asia that share borders with Thailand, Cambodia, Viet Nam, China and Burma. The greater part of the population lives in the Mekong valley where the majority of infrastructure and agriculture is located. The country has a tropical monsoon climate with strong rainfall from May to September/October which is followed by a dry period from November to April/May culminating in an extremely hot period (FAO 2003: 6). The monsoon plays an important role in the complexity of UXO clearance. Since the heavy rains flood many rivers and areas it becomes impossible to reach many remotely located villages during several months per year. Furthermore, it is also difficult to carry out UXO clearance during the monsoon. The heavy rainfalls have also the effects of moving UXO to other locations as well as hiding UXO sub-surface or revealing old UXO. In agricultural terms the monsoon climate results in one harvest per annum (FAO 2003: 6). This especially makes poor farmers very vulnerable since they need to have a good enough harvest to last for at least one year in order to survive and in addition they are vulnerable to the constant threat of UXO.

\(^5\) Designed to be anti-tank, anti-personnel, anti-materiel, smoke producing, etc.
The population of Lao PDR is about 5.6 million (2005) and the area of the country is about the same as the United Kingdom. The overall population density is solely 24 people per square kilometer, the lowest number in East Asia apart from Mongolia. With this in mind, the accident rate should be viewed as even higher. Lao PDR is classified by the United Nations as a ‘Least Developed Country’ (LDC) (UNDP2006: 2) and ranks 131 of 162 countries globally (UNDP 2001: 12). An LDC is defined by low levels of per capita income, low levels of human resource development and lack of economic diversification. The population is ethnically very diverse with approximately 49 different ethnic groups (Pholsena 2006: 161) and only 23% of the population lives in urban areas while 77% lives in rural areas (UNDP 2006: 2).

Table 1: Groups in the economic field (percentages refer to 2002)

<table>
<thead>
<tr>
<th></th>
<th>Core</th>
<th>Semi-periphery</th>
<th>Periphery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market culture</strong></td>
<td>Successful entrepreneurs, old elite (returnees) 0.5% of active population</td>
<td>Employees with a business or vocational education under 30 years 3%</td>
<td>Labourers in big companies under 30 years 2%</td>
</tr>
<tr>
<td><strong>Taking culture</strong></td>
<td>Elites 0.5%</td>
<td>Employees of foreign organizations; people with access to foreign money 3%</td>
<td>Beggars, labourers in tourism 3%</td>
</tr>
<tr>
<td><strong>Patrimonialism</strong></td>
<td>Leading administrators, entrepreneurs 3%</td>
<td>Small entrepreneurs 3%</td>
<td>Informal employees 6%</td>
</tr>
<tr>
<td><strong>Occasionalism</strong></td>
<td></td>
<td>Petty traders 4%</td>
<td></td>
</tr>
<tr>
<td><strong>Subsistence ethics</strong></td>
<td></td>
<td></td>
<td>Subsistence farmers 66%</td>
</tr>
</tbody>
</table>

(Rehbein 2007: 61)

The Gross National Product (GNP) per capita (US$ 491 in 2005) is very low and as much as 77 per cent of the population is working in the agricultural sector and 60% of farms still produce mainly for subsistence, not for market (UNDP 2006: 2), which make them vulnerable to shocks and the consequences caused by UXO. Approximately 38 per cent (World Bank 2006: 5) of these rural dwellers live below the national poverty line and 22 per cent fell below the food poverty

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6 These figures differ between 47 to 850 different ethnic groups according to different official documents.
Causes of malnutrition have many reasons but are predominantly a result of extreme and chronic poverty. The coverage of medical facilities and health personnel is very limited and the service is of very poor quality. Of the 117 district hospitals, only 20 were fully operational in 1994 (FAO 2003: 7). This is obviously a great problem after UXO accidents when transportation from rural villages can be very long and hazardous. Lao PDR is the most forested country in Southeast Asia and is covered with as much as 41.5 per cent forest. Further, 70 per cent of the country is mountainous and have peaks reaching an altitude up to 3000 meters. This further complicates transportation of casualties after UXO accidents, especially since the road system is very inadequate. Not more than 6 per cent of the country is permanently used for agricultural purposes (UNDP 2006: 3), making the UXO contamination even more serious.

Lao PDR was previously a French colony governed by the colonial power and a royal government and a war of independence started during the colonial era. When Japan invaded Lao PDR during World War II (WWII) this war continued. After WWII the French colonial power returned and was later replaced by the US who continued to support the Royalist government. The central point of local resistance was the Pathet Lao (PL). The PL received support and supplies for military campaigns against the US intervention and Royal government from the Vietnamese liberation forces and the People’s Army of Vietnam (PAVN). The Royal Lao Government (RLG), supported by the US and the Royal Thai Government was opposing the PL and PAVN campaigns. Furthermore, as a response to these campaigns the US launched a secret military campaign which supported the RLG forces in the north and operations throughout the territory used by the Ho Chi Minh Trail. The PL was approved the Houaphan and Phongsaly provinces by the Geneva Accords in 1954 and these provinces became their political, administrative and military headquarters until the liberation and creation of Lao PDR in December 1975 (HI 1997: 14).

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7 This is defined as the level of income sufficient to buy 2100 calories per person per day.
4.3 UXO in Lao PDR

The characteristic of the US campaign in Lao PDR during the Second Indo-China War 1964-73 was the intensity and one-sided character, and in total the USAF and CIA dropped more than two million tons of ordnance on the small and sparsely populated country. Since there accordingly were few military targets to strike at, “…bombing was carried out for purposes of “interdicting” territory from enemy use, cutting supply lines and targeting food supplies.” (Landmine Action 2005: 104). The war and the bombing was kept secret from the US public and the rest of the world for five years and the true scale of damage caused to the country was not exposed to the world until the early 1970s. As noted, “[b]y 1973, not one structure was reported to be still standing in the entire province of Xieng Khouang.” (Landmine Action 2005:104). Apart from regular bombs and munitions, cluster munitions were extensively used and it is estimated that the US dropped more than 80 million submunitions (bombs) over Lao PDR. Every Cluster Bomb Unit (CBU) could scatter submunitions over an area of 300 by 1000 meters and a single F-4 Phantom aircraft could hold 8-20 CBUs\(^8\) (Landmine Action 2005: 104).

During the war Lao PDR was divided into two different war-zones. Each zone reflected a specific strategic significance during the campaigns based on the certain setting of the area and geography. Military activity in the north was concentrated around the Phongsaly and Luang Prabang provinces in the north-west and around the Xieng Khouang and Houaphan provinces in the north-east as can be seen in the map of Lao PDR in Annex 1. In the southern parts of Lao PDR, campaigns started at the Bolikhamxay province and covered all provinces crisscrossed by the Ho Chi Minh Trail. As if the regular military activities were not enough, Lao PDR was also used as a ‘free drop zone’. Airplanes from USAF, Royal Lao Air Force (RLAF) and Royal Thai Air Force (RTAF) were free to unload ordnance that remained from airstrikes over Vietnam over Lao territory (HI 1997: 14).

After the end of the war, UXO clearance teams has found over 186 different types of ordnance, included 19 types of cluster bombs, spread across Lao PDR. Of the two million tons of ordnance dropped, it is estimated that up to 30 per cent did not work as intended and thus became UXO. The failure rate among these weapons was hence very high and this implies that up to 600,000

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\(^8\) An F-4 Phantom could normally hold 8 CBUs and up to 20 when fitted with special racks.
tons of UXO and 8-25 million cluster bombs can be scattered over Lao PDR (Landmine Action 2005: 107). Obviously, some of the ERW and UXO found in Lao PDR originate from other parts of the conflict than the US, RLAF and RTAF bombings. Substantial ground fighting took place between PL revolutionaries and North Vietnamese regulars against the Royal Lao Army and CIA-sponsored irregulars from the Hmong ethnic minority. These battles left behind UXO in the form of artillery shells, mortars, rockets and grenades, as well as heavy bombs. Thus, UXO in Lao PDR comes from both sides of the war, even though the US-backed forces had far more firepower at their disposal and hence left behind a vast quantity of UXO (Landmine Action 2005: 104 ff).

The 1997 *Living with UXO: Final Report, National Survey on the Socio-Economic Impact of UXO in Lao PDR* survey identified that at least 11.928 UXO-related accidents had occurred between 1973 and 1997. About one third of these accidents occurred during the first four years after the war (1973-1976) and throughout these years there were approximately 1100 UXO related accidents per year. During the period of 1977-1986 this accident rate declined to an average accident rate of about 360 per year. In the following period of 1987-1996 the rate has declined even further to around 240 accidents per year (HI 1997: 24 f). After this, there has been further decrease of incidents until around 2003-04 when an increase of accidents occurred, most likely and partially due to higher scraps metal prices (GICHD 2005: 26). About half of the accidents in the 1997 survey had resulted in deaths, although these decreased since the 1970s when around 55 per cent of the casualties died to after 1993 when less than 40 per cent died. When comparing the recorded accidents to the population, the people of Lao PDR suffer one UXO casualty per 250 males and one per 1500 females. This means that the effects on the Lao people are proportionally very severe due to the low population density of the country (HI 1997: 25 f). However, there are reasons to be cautious with these figures since they might significantly underestimate the casualties by up to 50 per cent (UNIDIR 2006: 28).

The most common activity leading to UXO-related accidents are deliberate handling or opening of UXO (24 per cent of the activities when the accident happened). This kind of activity had a decline during the 1990s due to low scrap metal prices but has had a big increase since 2004 caused by higher scrap metal prices. Furthermore, accidents caused while a person was playing

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9 The report only surveyed the 15 provinces out of 18 that reported significant problems with UXO.
with UXO have also increased in recent years and was (11 per cent) (HI 1997: 26). Additionally, but perhaps not surprisingly, 22 per cent of the accident occurs during agriculture.

Figure 1

**Victim's activity when the accident happened**

- Handling UXO 24%
- Playing with UXO 11%
- Other 12%
- Agriculture 22%
- Infrastructure 5%
- Domestic 12%
- Collecting forest products 14%

(HI 1997: 26)

The location of the UXO accidents is mainly in developed areas where a single accident is more likely to result in several injuries or fatalities. There has also been an increase of accidents occurring in the centre of villages (HI 1997: 27 f), which perhaps can be associated with playing or deliberate handling of UXO.

Figure 2

**Location of UXO accidents**

- Centre of village 32%
- Path / Road 7%
- Low-land rice field 13%
- Upland rice field 18%
- Grazing land 5%
- Near forest 12%
- Far forest 7%
- River bank 3%
- Other 3%
The types of UXO that is responsible for the accidents are mostly small bomblets (CBUs) with a whopping number of 44 per cent of the accidents. A reason for this is that they are anti-personnel weapons that are designed to kill or injure with high-velocity metal fragments. This can be an explanation to why the death rates by UXO are so high in Lao PDR. Furthermore, in 12 per cent of the accidents the type of UXO is unknown for the reason that the person either died instantly, or did not see what kind of UXO that detonated (HI 1997: 28).

Figure 3
5. Analysis

In the following analysis I will examine how UXO affects Human Security in Lao PDR. In order to do this I have divided the chapter into two main parts. In the first part I will analyze the direct effects on Human Security that can be assumed to be caused by UXO exploding and as a direct cause killing, wounding or otherwise causing damage on the human body. In the second part I will analyze the indirect effects that can be assumed to be caused by the UXO contamination in Lao PDR. This can be impact on infrastructure, fear of using and cultivating contaminated land, or UXO ‘harvesting’ to earn a income, or stigmatizing of the survivors. The first part covers the most obvious effects on Human Security since the people wounded or deceased by UXO naturally gets affected. The second part covers issues that may not be as clearly linked with Human Security as the direct effects examined in the first part, but that nevertheless affects significantly more people and may cause much damage on the Lao society. Furthermore, given that the indirect effects influence more people, they possibly create more suffering and perhaps even more casualties even though there is no clear evidence that confirm this.

5.1 Direct effects on the Human Security of people in Lao PDR

In this part of the analysis I will examine the direct effects that UXO have on people and Human Security in Laos, or to specify it even more, the direct casualties caused by UXO. Since Human Security represents a kind of security that is of significant value for people to feel secure that covers security threats of the individual human beings (Brown 2004:251 f), the threat and affects caused by UXO fits into this expression perfectly. Furthermore, Human security is also characterized by safety from such chronic threats as hunger, disease, and repression, as well as protection from sudden and hurtful disruptions in the patterns of daily life (UNDP 1994: 22 f). UXO accidents with direct casualties or other hurtful outcomes represent several of these aspects of Human Security and in this part of the analysis I will examine some of the common cases that are frequent in the Lao society. To do this in a clear manner, I have divided this part of the
analysis into two different parts. The first part covers effects on Human Security caused by UXO accidents with a deadly outcome and the second part covers accidents with injuries as outcome.

5.1.1 Effects on Human Security caused by UXO accidents with deadly outcome

As mentioned in the background, in recent years there have been around 240 accidents per year with a death rate between slightly less than 40 to 55 per cent (HI 1997: 24 ff) among these accidents. Accidents leading to deaths is naturally very dreadful and lead to a whole set of consequences to the relatives of the deceased besides the obviously emotional loss. The death of the individuals themselves is of course linked directly to a failure of Human Security for the people affected and is unquestionably a sudden and hurtful disruption in the daily life. Additionally, it will most likely lead to limited Human Security for the relatives of the deceased in form of hunger, insecurity and lack of societal security. If the death occurs to one or more of the family’s more productive members it will be particularly hard for the family of the deceased. According to the HI Living with UXO Report there were reports “… that families suffer a decrease in their ability to produce food and generate essential income” (HI 1997: 38) in affected families. After deaths in the family, the other family members and in particular children, have to help with the family’s work even more and may have to reduce their time in school or even give up school altogether. This will limit the opportunities for the children both directly and in the future and it renders them more vulnerable. Furthermore, they often have to do the work that their deceased family member was doing before the accident. What places the children even more at risk is that this work often is in the fields where the accident that killed their family member happened (if the accident happened in a field). In addition, the family will most likely have to reduce their cultivated land to reduce workload and hence also reduce income, and many times even sell off some of their land. This truly affects the Human Security of these individuals and the problems they are facing can be very hard or even impossible to tackle and creates a spiral of impoverishment since the younger family members will be less educated and the family’s economic and societal status will be reduced. Even if other families or community members give assistance to the affected family with labor and help them in other ways that is possible for them, these efforts can be extremely limited in a subsistence based economy. Hence, the shock on the
affected family can still be very harsh. Another major impact on affected families is the financial cost for the funeral ceremony. An average Lao funeral ceremony costs considerably more than the average early income in Lao PDR. An average income in 1995 was about 280 US$, and the average cost of a funeral ceremony was around 467 US$. This often results in families being forced to sell their assets or borrow money to be able to pay for the ceremony (HI 1997: 38 f). This can further the vulnerability and financial difficulty of the families affected.

In some accidents, the death of the victim is not instant and hence there might also be an associated cost of transport to one of the few hospitals in Lao PDR and/or the following treatment to be aware of. This will further impact the affected families financially and can even impoverish a well-off family (HI 1997: 38). It is very clear that the relatives of the deceased that live on is highly affected and experience a serious loss of Human Security both directly after the accident and in the future.

5.1.2 Effects on Human Security caused by UXO accidents with injury as outcome

UXO explosions generally cause severe injuries that are caused both from the blast of the ordnance combined with impact of metal fragments striking and piercing the body. This results in a high level of trauma to either the upper limbs, or a significant trauma to the lower limbs. The difference between the injuries is caused by the position of the body at the time of the accident. As described in the background of UXO in Lao PDR, the major activities leading to accidents are working with agricultural in the fields, deliberate handling and opening of UXO, or playing with UXO. While doing these activities the body of the survivor is often in such position that their hands and arms are in line with the force of the explosion. Furthermore, the tools that might be used by the survivor during the accident often shatter and can cause further injuries to the body (HI 1997: 30).

According to the 1997 Living with UXO HI report, the majority of survivors from a UXO accident have had amputations. The majority of these amputations are of the upper limbs. There are generally several implications for the survivor losing an upper limb and one of these are that there is currently no production of upper limb prosthesis in Lao PDR. Even if they were
available, most upper limb prosthesis is usually of cosmetic value and would therefore be of very limited use in agricultural work. To increase the Human Security of these survivors it would be fairly easy to construct a simple upper limb device that could allow the user to swing a hoe or use other agricultural tools (HI 1997: 31). Besides injuries that cause amputations, UXO accidents also cause and lead to other serious injuries that result in long, complicated and painful recovery.

Fragments from UXO cause penetrating injuries to the chest and severe abdominal trauma, resulting in damage to vital organs and possible haemorrhaging. There is damage to the vascular and neurological structures, open fractures and open head injuries. The accident victim often has serious blood loss and severe infections from foreign matter in their wounds. Eye injuries are caused by the penetration of foreign bodies into the eye globe, either metal fragments or pieces of dirt, rock or similar matter. Blast injuries cause damage especially to the ears, resulting in some degree of deafness, and damage to other organs such as the lungs and intestines. (HI 1997: 31)

Furthermore, fractures together with soft tissues damage and nerve damage are a common result of cluster bomb accidents, often with the body pierced with numerous shrapnel that also shatter bone fragments causing even more damage (Mitcovic 2000: 88). Shrapnel can also cause severe external wounds and traumatic amputations, and often penetrates the body causing damage to internal organs and lead to internal bleeding (HI & Lao Youth Union 2004: 8). Half of all child survivors in the HI & Lao Youth Union Life after the bomb study reported that they still had pieces of shrapnel lodged in their body. This was identified as a source of persisted or intermittent pain and discomfort. Almost all interviewed and UXO injured children wanted to have the shrapnel removed from their body in order to regain full physical health. However, the hospitals in most Lao provinces are not willing to perform this operation since they have very limited resources, inadequate surgery experience, lack of equipment and are generally concerned of the risks involved in such operation (HI & Lao Youth Union 2004: 8 f). This puts the Human Security of these survivors even further at risk, causing them a chronic threat regarding their health and wellbeing. Furthermore, it might also limit their ability to work to their full limit because of pain from the shrapnel.

Among the persons surviving the accidents and the resulting trauma, almost 50 per cent made it to hospitals for treatment (HI 1997: 32). This is very high numbers compared to the hospital
coverage statistics regarding the public health system in Lao PDR. A report by the World Bank illustrates that an average of just 12 per cent of adults and children in Lao PDR visited modern facilities such as hospitals and clinics. Another 60 per cent used pharmacies and 13 per cent did not receive any form of care at all (World Bank 1995: 33 f). This might indicate that villagers consider an UXO accident as very serious and that casualties need specialized care. According to reports, villagers always try to take the UXO injured person to the nearest hospital if it is possible. They do this despite the bad reputation of the Lao hospital system’s medical treatments, the fact that many parts of Lao PDR have poor accessibility, that there are relatively few hospitals, and the high cost of transportation and medical treatment (HI 1997: 32). The other nearly 50 per cent of the UXO injured persons did not choose to go to any hospital but instead attempted to be treated in their community by fellow villagers and without medical intervention. An effect of this has been that the local communities have developed special knowledge of coping with injuries themselves instead of using expensive and inaccessible hospitals (HI 1997: 32). The risks or benefits of this phenomenon might be hard to evaluate, but it might at least save the affected families from expensive hospital bills. It can be argued that this practice will make the recovery harder, longer, and more painful, and that eventual impairment might be more severe, but without further studies this might be hard to confirm. Furthermore, if this leads to higher death rates are similarly hard to prove. The injured person might benefit from local treatment since he or she can get treatment faster and hence might lose less blood. But on the other hand, if it is more complicated wounds, the risks involved would most definitely be higher. An example of the crude cauterizing technique during amputation by villagers “… involves the heating of a piece of metal over a fire and then placing the hot metal over the wound, thereby stopping the flow of blood and sterilising the wound.” (HI 1997: 32). This extremely rudimentary treatment is what wounded villagers that do not visit hospitals have to face.

Even though the accidents do not lead to a noticeable disability, there can still be some levels of impairment in the use of the survivor’s body and/or body functions. If this is for example a partially paralyzed arm, the accident will limit the amount of heavy labor an agricultural worker can do. It is also very common with multiple injuries or disabilities after an accident. For instance, double amputations or amputations plus paralysis, blindness or deafness gives an indication of the severity of an UXO accident and the effects it may have on the survivor (HI 1997: 31). Furthermore, the psychological impact of an UXO accident should not be
underestimated. Besides injuries, an UXO accident is an emotionally painful, distressing and shocking experience. The consequences of this can be long lasting and both psychological and physical. Trauma and stress is a normal response to a serious event like a UXO accident, and symptoms like nightmares, insomnia, emotional detachment, anxiety, depression, headaches, stomach aches and other pain that is not directly related to the physical injury is common. Furthermore, it is also common that survivors of UXO accidents who have experienced traumatic events will avoid places, persons, and activities that remind them of the painful memories (HI & Lao Youth Union 2004: 12). This also causes threats to the Human Security of the survivors and especially to health security.

Like accidents with deadly outcome, accidents with survivors also have devastating financial consequences for the injured and family involved. Poverty is very widespread in Lao PDR and families of survivors will generally be even worse off after an UXO accident. It is “… reported that they are poorer as a result of the accident in terms of food security, lower earning ability and fewer possessions including cattle and land.” (HI & Lao Youth Union 2004: 25). The cost of medical care for the survivor, together with loss of income if the survivor is an adult, is the greatest cause affecting families of survivors. The cost of health care is many times more than these families can afford. Therefore, they often have to sell their assets and or borrow money to be able to cope with the immediate expenses. In the long term, these measures to cope with the acute problem have major repercussions for the productivity of the family affected. The long term consequences after an injury can sometimes be even more damaging to a family than a death of the victim in an economic and Human Security perspective (Landmine Action 2005: 106). This can lead to increased vulnerability to shocks and threaten Human Security through the whole spectra of the many different components of Human Security. Additionally, children of families with a surviving parent will many times face the same consequences as in the case with a dead UXO victim. If children survive a UXO accident, they face significant challenges in school due to disability, poor health, and/or learning difficulties. Even accessing school at all can be a problem if the injury caused such physical disability that the survivor has reduced bodily functions and the school is too far away to reach with this injury. Also, psychological trauma can cause children difficulties in school and lead to limited opportunities in the future (HI & Lao Youth Union 2004: 26 f). Furthermore, according to the HI & Lao Youth Union survey none of the child survivor’s interviewed had ever received any psychological help. Additionally, the only
small Mental Health care available in Lao PDR is located in the capital Vientiane (HI & Lao Youth Union 2004: 16) which might explain a part of this.

Apart from the most obvious connection to Human Security, health security, most parts of the Human Security concept is covered regarding the problems that UXO survivors experience and the difficulties that they and their families are facing. Since many of the survivors face some form of psychological consequence, this affects their safety, which is one of the main parts of Human Security. Furthermore, the outcome following an accident often leads to chronic threats of hunger and disease. Hence, an UXO accident with injuries can jeopardize the economic security, food security, personal security and societal security of the survivor and to some extent even to the survivor’s family, and this is just on top of the fact that the accident has caused a sudden and hurtful disruption in the daily life. Additionally, surveys show that most UXO casualties are in their most productive years when they are killed or injured. This affects not only their families, but also the development of Lao PDR as a whole (Landmine Action 2005: 105).

5.2 Indirect effects on Human Security caused by UXO

There are quite a few connections between UXO contamination and the lack of Human Security in Lao PDR. These connections and the impact they have on Human Security can be hard to quantify, but I will describe and analyze some of them in this part of the thesis. Due to the limited space available for this thesis I will limit myself to cover what I believe to be some of the most important indirect effects on Human Security in Lao PDR. These cause great effects on the Human Security of people all over the country even though people living in rural areas and extremely contaminated areas are more severely affected.

According to the 1997 HI survey, there are reports that people with disabilities are denied access to certain professions or callings that normally have high status in the Lao society, such as school teachers and monks (HI 1997: 39).

One example of discrimination against a survivor of a UXO accident observed during the survey was a village school teacher in Phaxay district in Xieng Khouang province. This teacher was not allowed to teach by local authorities because he had lost one eye.
and had the lower half of his arm amputated. The man and his family now suffer the consequences, becoming increasingly impoverished and having lost significant status in the community. (HI 1997: 39)

This is a very clear example of an indirect effect on Human Security after a UXO accident. That UXO survivors with certain occupation can be so stigmatized in the Lao society and by local authorities that it leads to further loss of Human Security is an alarming fact. This will surely affect their heritage in form of for example enhanced risk of poverty. That the authorities endorse this stigmatization are a kind of repression from the state and it is limiting the Human Security of the people affected. It also affects the political security, economic security, personal security and societal security of the individual affected.

Even though disabilities caused by UXO accidents to a great extent can limit survivors’ ability to work and participate in the daily life, both from the disability and stigmatization, most survivors are to a certain extent accepted in the Lao society and still able to work (HI 1997: 39). The same kind of stigmatization that adults have to endure appears against child survivors as well. In the 2004 HI & Lao Youth Union survey, child survivors were asked how they were treated in their community and the most common answer was that they were treated with pity. Furthermore, some answered that some people wanted to help them and that some community members were scared and rejected them. Not many child survivors were treated normally by their fellow community members (HI & Lao Youth Union 2004: 23). Not only must these survivors live with injuries and disabilities, as well as increased poverty after a UXO accident, they also risk being stigmatized and treated in a submissive way. This further affect their Human Security and in particular their societal security.

Restrictions of land use caused by UXO contamination is another huge problem affecting the Human Security of people in Lao PDR, especially rural dwellers. Obviously, it is hard to measure how immense this problem is, and how much it affects Human Security. However, I find this to be an important link to both Human Security and development. There are reports that have shown that much agricultural land is contaminated to such a degree that it is under-utilized or not cultivated in the way that farmers would prefer (HI 1997: 40). Often farmers cannot use the land in the most productive way, which may cause economic implications since the agricultural output will be lower than it otherwise had to be. This is a major problem since the population of Lao
PDR is growing rapidly and higher agricultural production is much needed. It mainly causes less personal security for the farmer, but it also affects the food security both in short and longer terms for a great amount of people which in addition can result in lowered health security. Even though people know that it is dangerous to use UXO contaminated land, they have no choice but to continue to use it in order to survive. Paradoxically, in order to survive from day to day, the people must risk their lives by using their agricultural land. Furthermore, all other land in many places of Lao PDR is equally contaminated by UXO so there is really no other alternative for impoverished villagers. If they were to break new land it would doubtlessly be as contaminated as the land they currently use, and there is always an uncertainty that new unknown land might be even more contaminated. Many times the farmers try to move the UXO that they find in order to make their land a bit more secure (UNIDIR 2006: 36). Moving UXO is a very dangerous task, and by doing so they do not only risk their own lives or health, but also the Human Security of their families. Despite this danger, farmers have been forced to do so for many years in order to feel a bit safer when grazing their land and so that children will not find this particular UXO. Often farmers move the UXO very cautiously and move it to what they believe to be a safer place. A problem is, besides that moving UXO is extremely hazardous since it is impossible to know when or if it will detonate, that the monsoon climate in Lao PDR tend to move around UXO during the monsoon season. UXO that have been buried below the surface might resurface while other disappears. This further adds risks and uncertainties for the Lao people, lower the personal security and cause insecurity. Even after UXO clearance teams have cleared a village, new UXO might emerge. From my own experience of visiting rural villages in Lao PDR, I once visited a small rural village where UXO clearance teams had cleared all UXO from the village more than seventy times. New UXO resurfaced over and over again as a result of the monsoon, through agricultural practice, or rivers carried UXO with currents. I cannot think of many things that would cause more insecurity in such serious ways and that will not disappear. This happens over big parts of Lao PDR, and creates an uncertainty in the daily life of the people. It also creates a kind of hopelessness that the UXO problem will never go away instead it will affect the Human Security of people in Lao PDR for a very long time. With such severe threats in people’s daily life it is very clear that these people are not protected from sudden and hurtful disruptions in the patterns of everyday life, the foundation of Human Security. It is rather quite the opposite, and since this severely affects the agricultural output, it deteriorates protection against hunger and
diseases since there are no possibilities to build physical or human assets or build up any resilience against shocks.

After the war most villages, communities, and even provinces in Lao PDR was completely destroyed, especially in the provinces criss-crossed by the Ho Chi Minh-trail. In order to try to solve the situation, local people started to manufacture and rebuild things with scrap metal from detonated ordnance and other remnants from the war. For example, they made tools from shattered metal or bomb casings, used cluster bomb casings as stilts for houses, or cluster bomb shells as lamp shades. However, after a while some people saw an opportunity to increase their income by opening and selling the components from the ordnance that had failed to explode, the UXO. By doing so they could sell the metal as scrap metal and use the explosives for fishing or removing stumps when clearing new land, or sell it to a scrap dealer. This risky business was and still is encouraged by metal traders from both Lao PDR and neighboring countries, mainly Viet Nam (HI 1997: 36). As a result of this, scrap metal trade with components from UXO has become an industry in Lao PDR. This practice has been steadily declining since the war until around 2003-04 when it started to bloom, most likely due to higher metal prices. The scale of this ‘UXO harvesting’ is not fully known, but for the people working with this it, it is a considerable and deadly threat that they expose themselves to (GICHD 2005: 7). People know that it is dangerous to deliberately move or open UXO, but they need money so badly that many do not see any other options. Moreover, since Lao PDR have been contaminated for so many years, people are very familiar with having UXO in their presence and many farmers have found it necessary to move UXO from their fields for many years, even if they are afraid and know the risks (UNIDIR 2006: 31). However, this is not always the case for children. Children are often unaware of the danger of UXO or do not fully understand the consequences if it will explode. Therefore they are especially threatened as they for example might think that a CBU is a toy or something else, in particular since they are used to see these objects in their homes as for example lamp shades, or adults handling them in the field or when ‘harvesting’ UXO. Furthermore, when children see the adults ‘harvesting UXO’ and earning money from this them might be encouraged to try make some money themselves, most often unaware of the risks they are facing. This results in a significant threat to the Human Security of these children and their families.
Poverty struck farmers also faces the problems of UXO contamination when trying to make irrigation schemes in lowland rice fields. When practicing low-land rice paddy agriculture, constructing irrigation canals is a necessity. When constructing irrigation canals they have to do deep and tough digging at the suitable site. This is potentially very dangerous in UXO affected land and may cause death or injuries. Striking UXO by accident or moving it deliberately might cause it to detonate. This is one reason that land is not always used to its full potential. In high-risk areas it is too dangerous to employ certain agricultural practices. The same applies for other farming schemes such as digging a fish pond or planting trees. Even larger more infrastructure based irrigation projects suffer from these problems since this will require extensive ground as well as deep sub-surface UXO clearance (HI 1997: 44). This will delay such projects as well as make them more expensive and complicated. In a LDC like Lao PDR this is a further burden that only exaggerates poverty and delay much needed development. Other infrastructure schemes are obviously affected similarly with the same lowered Human Security outcome.

Constructing smaller access roads and bridges in order to get poor villages and communities the opportunity to reach the market to be able to buy and sell their products is also very difficult. The same difficulty affects the construction of a national road system. Since the national road system was a major target during the war, consequently there is massive UXO contamination that causes great problems for construction companies or organizations set out to build this road system. After the war, UXO was removed from road surfaces before reconstruction of roads. Unfortunately, some UXO was accidentally incorporated into or under the road surface. This poses a great problem for several reasons. For instance, it is extremely difficult to find, as well as clear, UXO built into the road. The UXO is a hazard for construction companies both reconstructing roads now and in the future. In order to go through with these projects, very expensive and time consuming UXO reconnaissance and clearance will have to be done (HI 1997: 44 f). This causes problems for the development of Lao PDR and is at the same time a security threat to the people working with the reconstruction and building of a national road system. For smaller access road or bridge projects the situation is similar, but while the constructors of these small projects most often is local villagers and communities they lack resources to deal with the problem in a controlled manner like a big construction company might be able to do. Usually villagers work in groups with just shovels and picks and carrying dirt and rubble by hand. When an accident occur it often injure and kill many people at the same time.
since they are working together so closely. As mentioned above, commercial companies have greater possibilities to deal with the presence and danger of UXO and hence, the main impact of UXO falls on village communities as usually is the case. These people are the ones who are least able to afford clearance, but in most need of it (HI 1997:45). When or if an accident occurs during this kind of construction the work often comes to a halt since the people involved generally do not want to continue with the scheme. This further affect the Human Security of these people that not only get directly affected by the accident but also suffer the consequences of not getting the benefits that a access road to bring. Furthermore, they have wasted a lot of time and effort on a project that was not finished when they surely could have done something else more productive instead.

Presence of UXO does not only affect people and the state, but can also affect humanitarian organizations in different ways. Humanitarian organizations such as different UN agencies or NGOs most often get affected when conducting transport of relief supplies and in their different projects. The biggest threat regarding the transport of relief supplies are Anti-vehicle Mines (AV). These are not very common on regular roads in Lao PDR, but a single AV mine or the fear of such mines can close a road for a very long time. This can affect many people and obstruct transport of important relief and supplies. This will most likely lead to further suffering, starvation and death among people in desperate need of help after for example draughts, floods or other shocks (ICRC 2002: 2 f). Many times, humanitarian agencies also have to delay or abandon aid to certain communities due to UXO contamination in or around the villages. For example, WFP never carry out Food for Work projects or and many times limit relief aid until the area have been cleared from UXO (WFP 2007: 13). This is due to several reasons. One reason regarding Food for Work projects is that it is too dangerous to carry out the different schemes for the beneficiaries involved. Another reason is that it is almost useless to help a village or community without clearing the UXO first and giving them a fair chance to a better future. With a village still contaminated with UXO, development will still be in jeopardy and one or few accidents might diminish the efforts made. Furthermore, another reason is of course to not risk the life and health of their personnel. Also, since there are limited UXO clearance resources in Lao PDR in relation to the extent of the problem and the fact that clearance is very expensive and time consuming this is a major obstacle. The result of this is as always that the people get further
loss of Human Security and keep living their life with the almost chronic threat of UXO and the insecurity of having their lives disrupted in a sudden and hurtful manner.

5.3 Does UXO work as a poverty multiplier?

Development and poverty goes hand in hand with Human Security. It is difficult to have Human Security without development and vice-versa. The war and its effects have had a severe impact on the development in Lao PDR. The infrastructure in Lao PDR was completely torn apart after the Second Indo-China War, and as a consequence the government’s capacity to rebuild the infrastructure and a healthy society was severely reduced. Still, the worst legacy after the war is the UXO contamination that continues to affect Human Security as well as obstructing and delaying construction of buildings, roads, bridges, school construction, irrigation schemes and other plans as for instance tourism (HI 1997: 9, Landmine Action 2005: 105). Naturally, UXO contamination has effects on development of both individuals and the state as a form of poverty multiplier. The question is how much the people and the state are affected and in what ways. The impact of UXO and poverty are hence bound together as can be seen in Annex 2 and 3 that shows the poorest provinces and the most heavily UXO affected provinces in Lao PDR. Moreover, the fact that UXO are still in the ground, hindering development and restricting land use, causes delays of development projects and much higher costs of various infrastructure projects, which in turn lead to increased poverty and reduced Human Security for the people of Lao PDR. Since a large part of the population in Lao PDR are poor, people do not have any other choice than to keep using their land, deliberately move UXO when required, and living their lives on UXO contaminated land, and hence jeopardize their health and safety. Sometimes people even have to collect or ‘harvest’ UXO for the scrap metal in order to earn an income, despite the high risks involved. When these activities in turn cause accidents, this often leads to even deeper poverty (UNIDIR 2006: 35). These examples make it reasonably obvious that UXO also have the effect of being a poverty multiplier.

There are reports that points out that in an agricultural economy based on subsistence farming, a widespread UXO contamination is a crippling handicap on development.
Literature produced by UXO Lao and UNDP points out that UXO contamination;
- Prevents farmers from using arable land;
- Prevents expansion into new land;
- Makes basic farming activities such as digging or clearing undergrowth potentially lethal, and;
- Delays or increases the costs of infrastructure and development projects.

(UNIDIR 2006: 35 f).

Even though there naturally are many other factors in Lao PDR that contribute to poverty, it is realistic to assume that the effects of UXO have a great impact on poverty, under-development and reduced Human Security. (UNIDIR 2006: 35 f). In Cambodia, a country that is also severely contaminated by UXO, there is evidence that show that a drop of casualties is very strongly linked to better agricultural output and economic gains (CMAA 2006: 7 f). This lead to the conclusion that UXO might be one of the greatest factors that have stalled development in Lao PDR for more than 30 years and will continue to do so for many years to come. The UXO contamination has also resulted in vastly reduced Human Security for a vast majority of the Lao population and an improvement of this will be slow and costly.
6. Conclusion

In this thesis I have examined how and in what ways UXO affects Human Security in Lao PDR. I have also examined if UXO works as a poverty multiplier and how this affects the development of the country. In this chapter I aim to answer the research questions formulated in the beginning of this thesis. Further, I will also wrap up the findings from the analysis and demonstrate the most important points.

- The first research question was; How does UXO affect Human Security in Lao PDR?

I have throughout the thesis proven that UXO affect human security in many different ways. UXO can be considered to affect Human Security through all of the different parts of the 1994 UNDP definition of Human Security. The people of Lao PDR are not protected from sudden and hurtful disruptions in the patterns of daily life since the country is so vastly contaminated by UXO. Since this security threat is jeopardizing the individual human beings and significantly limits their feeling of being secure, it is without doubt a significant security problem. The chronic threat of living in UXO contaminated areas creates new problems for the people that in turn create even lower Human Security.

Regarding the direct affects on Human Security the first part getting affected is naturally health security in most cases. On a longer-term and for the family of the survivor or deceased the economic security also gets heavily affected, followed by food security and personal security. If the effects are really severe, social, political and environmental security might also be affected, then the full spectrum of lowered or lost Human Security is evident in Lao PDR. When it comes to the indirect effects on Human Security it is more difficult to point out exactly what parts of Human Security that gets most affected since it differs from case to case. But it is clear that all parts of Human Security get severely affected, with an emphasis on the long-term societal affects. To conclude, UXO is affecting the lives of the population in Lao PDR, even though it might be hard to point at the exact causes and consequences of the insecure population, we know for a fact that Lao PDR could be a better country for the people if the UXO were cleared. The affects on Human Security would in that case be more limited.
- Does UXO work as a poverty multiplier?

The findings in this thesis confirm that UXO can be considered as a poverty multiplier. Especially since the accidents in many times affect the people that are already poor and hence exhaust the limited resources that they have. The UXO contamination has limited the development of Lao PDR in several ways. UXO directly impacts the daily life of many people in Lao PDR and adds an unknown factor into the future plans of individuals, communities as well as the government. Furthermore, it limits individuals and villages in affected areas to only the most essential and important activities. People continue on with their lives in an attempt to adapt to a situation that is less than ideal but that they cannot change in any considerable way. So, as the people have fewer opportunities to develop, it is less likely that the country will develop and come out of the poverty and Human insecurity that it is trapped in. In addition, UXO also directly affects the survivors of accidents and their families, and increases the poverty and insecurity through their injuries or death. It is difficult to identify how much loss of Human Security that the UXO contamination is responsible for, but it is clear that it have had great impact in form of personal suffering, loss of productive labor force, and adding a burden to the limited health care system. UXO contamination also limits different agricultural and forest-based activities and makes rural infrastructure projects much more expensive and uncertain. Furthermore, most UXO casualties are in their most productive years when they are killed or injured. This affects both their families Human Security and indirectly it affects the economy and development of the whole country. With this in mind, UXO can definitely be considered to be a poverty multiplier.

- What happens to societies, their structures and people, under the influence of UXO and how can Human Security explain this?

During this thesis it have been very clear that immense UXO contamination can affect a society in enormous ways, just like its structures and people. Societies based on agriculture (which is the most common household type in Lao PDR) have limited opportunities to develop and cultivate their land as a result of UXO contamination; this leaves the country with fewer resources and less opportunities to escape the LDC status in the near future. In regards to the structures of the country and how they are affected by UXO, it is safe to say that the lack of Human Security are emancipating from, e.g. UXO. There are other underlying reasons to why there is lack of Human Security in Lao PDR, such as environmental impacts, human trafficking, poverty etc. However,
these are rather well researched and the affects of UXO is not, but what can be said for sure is that there are evident links between UXO and the development of the Lao PDR, the population and the societal structures. Finally, until the legacy from the war in form of UXO is cleared, it will be difficult for Lao PDR in general, and the most affected areas in particular, to achieve development and Human Security for the people.
7. Recommendations for further research

During my research and process of finalizing this thesis, new questions have emerged that could be of interest for future research. Since this is a rather unexplored field there are a great number of research projects that could be conducted, in this chapter I have chosen the most interesting points of departure from my perspective and with my own thesis and findings in mind.

One interesting aspect to examine closer would be the gender perspective regarding UXO accidents. The fact that 1 of 250 UXO casualties in Lao PDR is male and 1 of 1500 female is very intriguing since the discrepancy is so great. What can the causes to this be? To further understand and analyze these facts it would be essential to apply a gender perspective to the research on UXO in Lao PDR and in other countries. It would be interesting to compare these figures with Cambodia, being in a quite similar situation as Lao PDR, not only geographically but also historically.

It would also be interesting to compare my findings of how UXO affects Human Security in Lao PDR to other countries. Cambodia or Viet Nam would be interesting examples since there are some similarities between these countries and their UXO contamination. This could not only shed light on the similarities and differences between the countries in regards to UXO, but it could also give an insight into how the problem should be tackled, there might be good practices that can benefit all the countries in the region. To explore the similarities and differences would be an immense task and would probably require a fair amount of field studies in order to see the problem at first hand and compare the countries to come to conclusions and generalizations about these UXO contaminated countries in Southeast Asia.

Furthermore, it would be fascinating to study what could be done to speed up the process of UXO clearing process in Lao PDR. This would preferably be done in cooperation with one of the major actors in the field of UXO clearance in Lao PDR. If there are any ways of speeding up the process, this method can be used in other countries where UXO is limiting the Human Security of the people.
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Annex 1: Map of Lao PDR including provinces and districts.
Annex 2: Poverty map of Lao PDR.

Dark red: 47 very poor districts with 46 highly affected by UXO.
Lighter red: 25 poor districts.
Annex 3: UXO Contamination Map

Green: Herbicide Mission
Yellow: B52 Bombing
Red: Bombing