NATURAL RESOURCE GOVERNANCE AND THE POLITICS OF
KNOWLEDGE: A CASE STUDY OF THE KAMOETHWAY RIVER VALLEY IN
MYANMAR

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A Thesis Submitted in Partial Fulfillment of the Requirements

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มาร์

นางสาวลิซา ชิมทาต

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
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เนื่องด้วยความสนใจจากต่างประเทศในการลงทุนในประเทศเมียนมาร์เพิ่มขึ้น ทรัพยากรธรรมชาติจึงกลายเป็นประเด็นสำคัญในเรื่องระบบการจัดการมากขึ้น หมู่บ้านริมแม่น้ำขมอดเวย์ในมณฑลตะนาวศรีสะท้อนให้เห็นถึงข้อกังวลนี้ได้เป็นอย่างดี ทั้งนี้เพราะมีการขยายการพัฒนาและแผ้วถางพื้นที่สำหรับอุตสาหกรรมมากขึ้น สถานการณ์ดังกล่าวเหล่านี้เป็นผลจากข้อตกลงหยุดยิงระหว่างรัฐบาลเมียนมาร์และกลุ่มสหภาพกะเหรี่ยงแห่งชาติ อย่างไรก็ดีการริเริ่มพัฒนาพื้นที่ดังกล่าวส่งผลกระทบต่อทรัพยากรธรรมชาติซึ่งเคยอุดมสมบูรณ์และเป็นที่พึ่งพาของชุมชนในพื้นที่ กิจกรรมทั้งหลายซึ่งเกิดขึ้นแต่ถือว่าไม่ส่งเสริมให้เกิดการพัฒนาอย่างยั่งยืนเหล่านี้ ได้ทำให้องค์กรอนุรักษ์ระหว่างประเทศชั้นนำหลาย ๆ องค์กรต่างพากันจับตามอง กระทั่งพากันพยายามช่วยอนุรักษ์ปกป้องพื้นที่ดังกล่าว

จุดมุ่งหมายของวิทยานิพนธ์ฉบับนี้เพื่ออภิปรายเกี่ยวกับการเมืองเรื่ององค์ความรู้ที่อยู่รายล้อมประเด็นระบบการจัดการทรัพยากรธรรมชาติซึ่งเป็นผลเนื่องมาจากมีผู้มีส่วนได้ส่วนเสียเข้ามาเกี่ยวข้องในกระบวนการนี้จำนวนมาก วิทยานิพนธ์ฉบับนี้ใช้แนวทางการศึกษาระดับชุมชนและมุ่งเน้นที่จะเปิดเผยความซับซ้อนที่มีผลต่อการผลิตและการปรับใช้องค์ความรู้นี้ตลอดจนผลกระทบที่เกิดต่อระบบการจัดการ ผู้วิจัยใช้ระเบียบวิจัยเชิงคุณภาพ โดยใช้การสัมภาษณ์มากกว่า 40 ครั้ง และการจัดสนทนากลุ่มในหมู่ชาวบ้านชุมชนริมแม่น้ำขมอดเวย์ซึ่งนำโดยองค์กรภาคประชาสังคมและองค์กรเอกชนหลายองค์กรที่ทำงานในพื้นที่ ประเด็นหลักในการวิจัยนี้ก็เพื่อระบุผลกระทบซึ่งเกิดจากการโต้เถียงกันในเรื่ององค์ความรู้ต่อชุมชนท้องถิ่น อีกทั้งตอบคำถามว่าองค์ความรู้นั้นสามารถใช้เป็นเครื่องมือเพื่อให้ชุมชนเข้าร่วมระบบการจัดการทรัพยากรธรรมชาติได้อย่างไร

ผลการวิจัยระบุว่าถึงแม้จะมีการให้ความกระจ่างโดยรวมและทำความเข้าใจโดยตรงเกี่ยวกับระบบจัดการทรัพยากรธรรมชาติ แต่พลวัตเบื้องหลังการระบบการจัดการ เช่น การเมืองเรื่ององค์ความรู้ ก็ทำให้เกิดความซับซ้อนและส่งผลทางอ้อมต่อผู้ที่ต้องพึ่งพาทรัพยากรธรรมชาติ ผลการวิจัยยังแสดงให้เห็นอีกว่า เมื่อมีการร่วมลงทุนเชิงพัฒนาเพิ่มขึ้นในบริเวณขมอดเวย์นั้นเรื่อย ๆ สิ่งที่ตามมาคือการโต้เถียงในเรื่ององค์ความรู้ที่เพิ่มขึ้นตาม แต่กลับถูกมองว่าเป็นเพียงเสียงจากชุมชนท้องถิ่นเท่านั้น เหตุนี้มักนำไปสู่ข้อกล่าวหาว่าชุมชนท้องถิ่นมักมีทัศนคติติดต่อต้านการพัฒนา มิหนำซ้ำยิ่งเป็นการผลักดันชุมชนให้ออกห่างจากกระบวนตัดสินใจต่าง ๆ อีกด้วย ผลการวิจัยที่แท้พบว่าชุมชนท้องถิ่นนั้นมีศักยภาพ ความรู้ความเข้าใจ และความยินดีต่อการพัฒนา

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LISA SCHIMETAT: NATURAL RESOURCE GOVERNANCE AND THE POLITICS OF KNOWLEDGE: A CASE STUDY OF THE KAMOETHWAY RIVER VALLEY IN MYANMAR. ADVISOR: ASST. PROF. NARUEMON THABCHUMPON, Ph.D., pp.

With rising international investment interest in Myanmar, natural resources have become an increasingly important issue of governance. The Kamoethway River Valley in the Tanintharyi Region reflects this concern due to expanding extractive and development industries, opportunities borne as a result of an agreed ceasefire between the Myanmar Government and the Karen National Union (KNU). Such initiatives have placed strain on the natural resources in the area, once abundant and still depended on by local communities. This unsustainable activity has acquired the attention of leading international conservation organisations and as a result has lead to efforts in reserving protected areas.

The purpose of this Thesis is to discuss the politics of knowledge that surround the issues of natural resource governance arising as a result of the numerous stakeholders involved. This Thesis takes a community-level approach and aims to unearth the complexities surrounding knowledge production and use and the impact this has on governance. The research used a qualitative methodology, including over 40 interviews and a number of focus group discussions with members of the Kamoethway River Valley Community, leading CSOs and NGOs in the area. A key priority of this research is to identify the impact the contestation of knowledge has on local communities and how knowledge can be used as a tool with which to participate in natural resource governance.

Key findings as a result of the undertaken research indicate that despite the overall clarity and linear understanding of natural resource governance, underlying dynamics, such as the politics of knowledge, complicate and indirectly impact those most dependent on natural resources. Results have shown that with increasing development ventures in Kamoethway, comes an increase in knowledge contestation that often disregards the voice of local communities. This has often led to local communities being accused of anti-development sentiments further alienating them from decision-making processes. This Thesis concludes that local communities hold the capacity, knowledge and willingness for development.

Field of Study:	International Development	Student's Signature	....
	Studies	Advisor's Signature	....
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LIST OF ACRONYMS

AECEN	Asian Environmental Compliance and Enforcement Network
ASEAN	Association of Southeast Asian NAtions
BEWG	The Burma Environmental Working Group
CSLD	Community Sustainable Livelihood and Development Organisation
CSO	Civil Society Organisation
DDA	Dawei Development Association
DRA	Dawei Research Association
DSEZ	Dawei Special Economic Zone
EIA	Environmental Impact Assessment
FDI	Foreign Direct Investment
FFI	Fauna and Flora International
IDCM	Internal Displacement Monitoring System
INGO	International Non-Governmental Organisation
IO	International Organisation
ITD	Italian Thai Development Company
KBDDF	Karen Buddhist Dhamma Dhutta Foundation
KDN	Karen Development Network
KESAN	Karen Environmental and Social Action Network
KHRG	Karen Human Rights Group
KNLA	Karen National Liberation Army
KNU	Karen National Union
LK	Local Knowledge
MOECAF	Ministry of Environmental Conservation and Forestry
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PA	Protected Area
PRD	Thailand Government Public Relations Department
SEZ	Special Economic Zone

SIA	Social Impact Assessment
SLORC	State Law and Order Restoration Council
STEPS	Social, Technological and Environmental Pathways to Sustainability
TERRA	Towards Ecological Recovery and Regional Alliance/Foundation for Ecological Recovery
TOTA	Thai Organic Trade Association
TRIPNET	Tenasserim River and Indigenous People Network
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WBG	World Bank Group
WWF	World Wildlife Fund

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CHAPTER I
INTRODUCTION

1.1 Statement of Research Problem

The governance of natural resources is emerging as one of the biggest challenges of development policy and is becoming increasingly important for both the current and future sustainable, fair and just utilisation of resources. One major obstacle to this is the politics of knowledge, which is often a cause for contestation and power struggles, and therefore also ineffective governance. This is mostly seen in areas where diverse knowledge, interpretations and understandings of access, use and value of natural resources are undertaken creating complex dynamics that shape decision making, often resulting in conflict and disputes among involved stakeholders.

The purpose of this thesis aims to understand the complexity of the politics of knowledge, and the impacts this has on the governance of natural resources. It aims identify a community-level response to threats and development and the contestation of knowledge that occurs as a result of multiple stakeholders involved in natural resource use. In light of this, the intentions and purpose of this thesis hope to highlight the importance of local community participation in determining and deciding on the process of development within their own communities.

The research has taken place in Myanmar, with a principle focus on the local community of the Kamoethway River Valley as the unit of analysis, the challenges of development, the changes and implications this has, not only on the governance of the Kamothway River, but also on the security of the community itself.

Myanmar is among the most biologically diverse countries in mainland Southeast Asia and is home to a number of the most endangered and rare species in the world. Its wealth in natural resources stem from the large areas of forest-cover that

remain intact, due to its past closed economic borders and low development capabilities. The country is located in the Indo-Burma Biodiversity Hotspot identified by Conservation International as 'the richest and most threatened reservoirs of plant and animal life'("Biodiversity Hotspots," 2009). Between forests, coastal areas, watersheds and freshwater sources, Myanmar is host to an expansive array of wildlife and natural resources on which the indigenous and ethnic peoples and communities are dependent on for their livelihoods.

Myanmar is also well-known as a multi-ethnic country of over one hundred ethnic groups and indigenous peoples. This large percentage of the population has historically maintained the extensive natural resources using traditional management systems in order to ensure the sustainability of natural resources (BEWG, 2011). The Tanintharyi Region, formerly known as the Tenassarim Division and located in southern Myanmar, is home to an extensive mountain range and vast forestland, famous for harbouring and supporting countless populations of species and vegetation. This region borders both the Mon State to the north and includes 3 districts and 10 townships of which many communities' ancestors have farmed and protected the land over many generations.

Figure 1 Map of Myanmar States
(MyanmarsNET, 2012b)

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Despite this however, due to its historical background and largely Karen population, this region has seen much internal conflict. The Karen conflict in Myanmar is widely known as the longest running civil war (South, 2011a) and this region in particular has seen much Karen National Union (KNU) activity in the past. Despite a large decline of the KNU and an announced ceasefire in 2012, particular areas in this region remain under a duo-administration[1], which has severe implications to the decision-making processes in the area.

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[1] Administrative and Legislative Authorities operating in this area are both the KNU and the Myanmar Government. Terms decided at the time of ceasefire agreement

Since the announced ceasefire, economic and industrial development activity has been increasingly prominent, posing new pressures and threats to the already vulnerable communities. This has intensified since the joining of Myanmar to the ASEAN community (1997), as policies have encouraged a 'constructive engagement' with Myanmar, and as a result has accelerated natural resource extraction (South, 2011a). This has seen rapid infrastructural development, and in the case of the Tanintharyi Division has led to the beginning of the construction of the Dawei Deep Seaport and Special Economic Zone Project (DSEZ). Since its plans this project has been widely contested and remains a large threat to the local communities. This particular infrastructural development incurs much environmental disruption, and amongst many forms, damage to watersheds necessary for the security of local livelihoods and is therefore a particular cause for worry.

These new pressures and threats to the local communities and the surrounding environment consequently imposes pressures on the governance of natural resources and relies directly on the interpretation of the development that is taking place and use of natural resources in regards to the prioritisation of values. This comes as a result of large numbers of stakeholders with their own dynamics and intentions for the area. It is however not only the DSEZ project that threatens communities and natural resources in this area, but many other forms of increasing opportunist economic development such as extractive businesses, mainly seen in tin mining or logging, but also hydropower in regards to the rivers throughout Myanmar.

The diminishing dangers and vulnerabilities of conflict can be seen as one particular reason for the increasing economic and industrial development within the region. However as a result of this, with increasing global awareness of the scarcity of natural resources and natural habitats comes international interest in conservation and environmental security[2]. Large international organisations have expressed interest and are involved in projects concerning the conservation of the natural resources and

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[2] Environmental Security is defined by the United Nations as a category of Human Security, relative to the safety of the public from environmental dangers.

wildlife in the Tanintharyi Division, due to the increasing economic development interest and as a response to its damage.

This has also been under contestation in regards to the impact this has on local communities and access to their traditional livelihoods, and therefore also access to security. One element that is particularly prominent in obstructing and complicating the issue of natural resource governance the politics of knowledge that arise as a result of the number and differences in stakeholders and actors. One particular aspect of knowledge contestation can be seen as the difference in interpretation between the local communities and the international organisations' concept of conservation and the elements of power in terms of international recognition and legitimisation.

The politics of knowledge plays an extensive role in the governance of natural resources, most notably in areas such as the Tanintharyi Division, where many forms of power exist and much interest is devoted to the natural resources available. The communities living in this area have been exposed to many pressures and changes to their livelihoods over a long period of time, and continue to be exposed to new threats. Community led responses to these threats play an important role in the governance of natural resources in this region. Taking a micro-level approach to the research exposes elements of internal power structures, authorities and the politics of knowledge that are played out with-in and with-out of the local communities in order to acquire power in decision-making processes in regards to natural resource governance.

The availability of natural resources in the Kamothway area of the Tanintharyi Region is largely dependent on the watershed of the Kamothway River and has therefore remained the focus of the undertaken research. This not only means that the value of this resource is both inherent and intrinsic, but also that all stakeholders in the area have an interest in the use and governance of the river, as well as interpreting their own value of the river itself. It is for this reason that water governance will bear importance over other natural resource governance throughout this thesis and the politics of knowledge will remain a central theme to understanding how actors

approach this form of governance. The community itself will be used as a unit of analysis as it is infrequent for this form of research to be executed in Myanmar due to challenges, such as access and safety. Furthermore, taking a micro-level approach will aid in establishing the politics, dynamics and complexities that shape governance from a bottom-up approach and will shed light on the importance of micro-level research in regards to water governance.

1.2 Research Questions

The main question this Thesis aims to answer is:

To what extent do the politics of knowledge, played out by different stakeholders, limit community-level natural resource governance?

In order for this question to be answered, two prior questions must be resolved:

1. What are the current development trends, using natural resources, taking place in the Tanitharyi Region and how are they prioritised?
2. To what extent do these new trends and changes impact and shape resource governance in the Kamoethway River Valley?

1.3 Research Objectives

1. To understand and study the changes and new actors involved in using, accessing and impacting the natural resources in the area and why and how these are prioritised in regards to economic or environmental development.
2. To interpret how these changes and pressures affect the decision making processes in terms of how and by who the natural resources are used and managed, and to understand how this impacts the local communities
3. To identify the sphere of contestation regarding the interpretation, production and understanding of knowledge as a form of conflict in the governance of natural resources

1.4 Conceptual Framework

This research will be structured around three key concepts in order to approach and answer all questions and achieve the research objectives. These will also provide a solid framework for clarity purposes and will help identify the key dependent and independent variables. These three elements will focus on Governance, Knowledge and Community Security and will be clarified and interpreted for the purpose of this thesis in the following sections.

This section will provide an extensive literature review of all three conceptual framework components and will offer an insight into the theoretical complexities that are embedded in governance and knowledge politics. The complexities and dynamics introduced within this section will be further discussed in subsequent sections, with a closer look into the practical application of such complicated and 'messy' theories.

Additionally the concept of Community Security will be analysed and will be altered in regard to its use throughout the research. Using Human Security concepts as agreed by the UN it is possible to build a new theoretical understanding of Community Security and the significance of a Bottom-Up Approach that will aid in understanding the application of al three concepts at a micro-level, impacting the macro.

This will also attempt to highlight the gaps in current conceptualisations of natural resource governance and will allow for further discussion and analysis on the role of the politics of knowledge in shaping decision-making.

1.4.1 Complexity of Governance

Governance is understood and interpreted in many different ways, on many varying levels and has taken many contrasting forms (Jessop, 1995). Its complexity as a concept reflects the dynamics involved in decision-making processes in regards to policy creation and enforcement, as well as management processes for contemporary challenges in development. Governance is seen to respond to these challenges and changes and is therefore heavily relied upon. In regards to this, it is important to deconstruct governance and understand it as a dynamic and complex concept influenced by many aspects of power, knowledge and politics.

This section aims to address the many debates surrounding Governance and will draw on a number of theories and literatures in an attempt to understand the complexities of this concept. The STEPS Working Paper 2 will be used as a literary basis in this review. As a means of a brief theoretical account, it will be possible to understand the interpretations of governance and the vast theoretical background that surrounds it.

Despite its eclectic range of meanings and interpretations, Governance is predominantly understood as the process of decision-making by a number of different actors (Stoker, 1998). This initial simplification however, draws to attention the underlying dynamics of this concept, in particular with regards to actors and their power structures. One major argument surrounding the power debates within governance is the role of the state. State-centric theorists, such as those of International Relations, use the State as a main focus (POLITICSOFTHEFUTURE, 2012) and as a result debate the impact of governance on the power of the State. Over a number of recent years however, developments have been seen in a move beyond the state as a predominant power, resulting in a recognition of interactions between multiple actors (STEPS, 2007) and therefore also a realisation of the complexities and disorder of 'politics-in-practice' (STEPS, 2007). Further disputes arise when discussing State and Governance when Market is also considered. This stems from established political science theory in regards to a co-operative effort of both the State

and the Market in responding to social and economic issues. However contemporary analysis has promoted a suggestion regarding expanding governance activities outside of government hierarchies and institutions and beyond market incentives (Rhodes, 1997; STEPS, 2007).

As a result of these developments, a broader understanding of Governance is implied, with a focus on the 'multiple political processes and relationships through which state and non-state actors do, and might, engage' (STEPS, 2007). This 'multi-level' conceptualisation of Governance can therefore be understood, not as a 'demise' of institutions, but rather a 'blurring' of boundaries between actors involved in social and economic issues (Rhodes, 1997). This has a number of consequences on both governance itself, but also on how and why policies are designed and implemented. The complexities and dynamics that are introduced as a result of contemporary thinking has brought attention to over simplistic linear designs and their inadequacy for realistically depicting governance procedures.

The dynamics introduced, with regards to the relationships between actors need to be further broken down to fully appreciate the complexities of governance. As a result the embedded politics in play are identified, developing an in-depth understanding of governance. One such element is the importance of political history and context, both within and between the different actors. If governance entails the relationships between actors it is necessary to understand the reasons for specific interactions. The influence of history, culture, and knowledge amongst others, are key to shaping the interactions that emerge between actors in policy processes (Wright, 1987) and are necessary in understanding governance. This however has yet to be fully recognised in the analysis of governance as the dynamics involved complicate and confuse policy makers and remains a notable gap in theorising governance. This will be further discussed below in regards to the politics of knowledge and the role it plays in shaping governance.
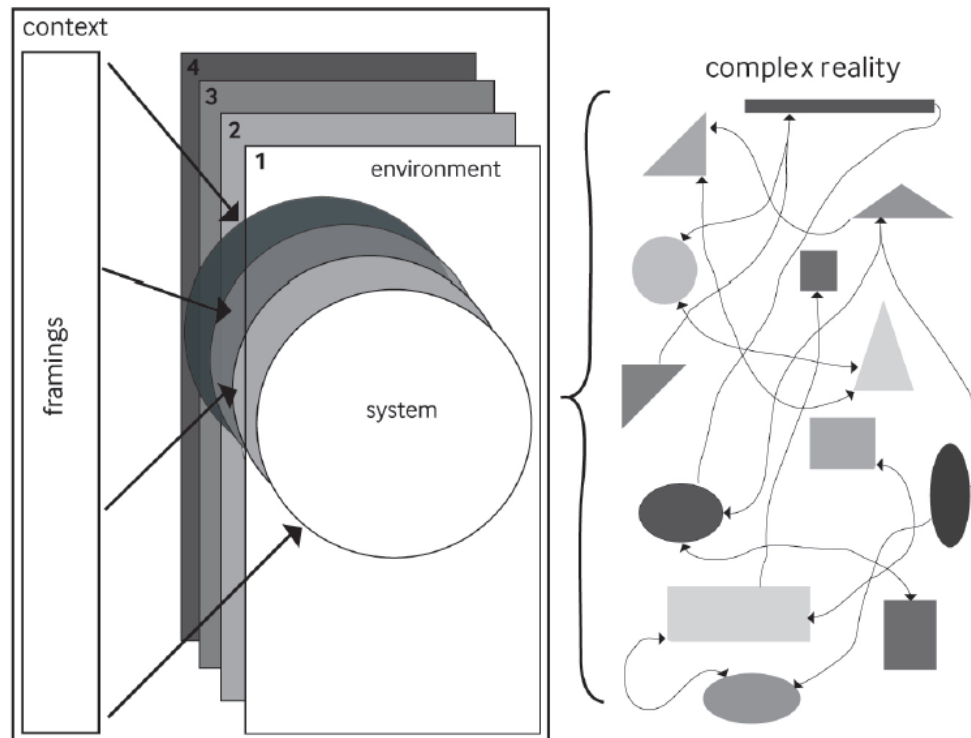
Figure 2 Example of How Knowledge is organized (STEPS, 2007)

The STEPS Centre defines governance, in a broad sense as: "political processes and institutions" (STEPS, 2007) explaining governance as directing scientific and technological processes, defining environmental and health issues and deciding how social consequences are distributed. The main dynamics, identified by STEPS, are interpreted as the 'interactions between people, technology and environment, and how these dynamics unfold over time', as well as the '…contestation over social, technological and environmental values and priorities and how they are resolved in whose favour' (STEPS, 2007). As discussed, this implies the complexity of the process of governance, suggesting it relies on a number of different dynamics, with complexities of their own.

One defining element to how governance is established and developed involves an understanding of politics as embedded within all interactions and procedures. However, in this context, as explained by the STEPS Working Paper, the

long standing and widely disputed theories and traditions of social and political sciences are varied and deeply-rooted and require precise and well defined clarification. For the benefit of this study, this thesis will assume the theories of Habermas and Foucault to better understand the 'roots' of politics as embedded in relationships, values, priorities and knowledge and will take on and analyse these particular theories as a foundation to understanding the meaning of governance.

1.4.2 Embedded Politics

It is important to acknowledge and conceptualise politics as deep-rooted and embedded when discussing governance. The break down and analysis of deep-rooted theories will also serve as a foundation for understanding the relationships between actors throughout governance procedures.

The concept of governance cannot be understood or indeed possible without a founding ideal of democracy. Taking a Liberal approach, democracy can be understood in terms of: 'the democratic process (that) takes place exclusively in the form of compromises between competing interests' (Habermas, 1995). The 'compromises' occur as a result of deliberation and whether or not participation to this deliberation occurs, and the 'competing interests' can be understood as socially constructed ideals of individuals. These however, combined with Foucault's understanding of power and knowledge, are further complicated as an element of politics is drawn into the deconstruction of what and who the interests are, and how, why and who is involved in the deliberating process. The complexity of this is well summarised in Foucault's description: 'the conduct of conduct" understood as "a form of activity aiming to shape, guide or affect the conduct of some person or persons (Gordon, 1991), this can also be understood as a definition of politics that is used throughout this chapter and sheds light onto the complex dynamics involved in governance and the ever-present dimension of politics.

1.4.3 The Politics of Knowledge

The influence of knowledge in shaping interactions, decision and understandings, and therefore governance, is undeniable. It is therefore important to acknowledge the embedded politics of knowledge production, interpretation and engagement to recognise the overarching dynamics. This section will outline three main challenges regarding the politics of knowledge and will conclude with an evaluation of its significance to natural resource management.

1.4.4 Knowledge Production

A number of theoretical and analytical approaches have identified knowledge as systems and in doing so have highlighted the vast complexities surrounding the concept of knowledge. A 'system' itself is a configuration of dynamic elements (Leach, 2010) and allows for an insight into the complexities in the production and categorisation of knowledge. In regards to a theoretical perspective, Constructivism conceptualises knowledge as a result of experiences (STEPS, 2007), which are respectively shaped by social, political and institutional commitments (Jasanoff, 2005). This implies that knowledge is based on personal experience, suggesting the amount of 'knowledges' are endless.

This has spurred an overall necessity to categorise knowledge, whereby differences in the vast number of knowledges can be identified and organised. These categorisations are made up of groups of individuals with the same experience and knowledge, however due to over simplification of categories, the overlapping and blurred lines are frequent and are likely to cause considerable confusion (Raymond, 2010). One example of this can be seen as a result of the categorisation of 'local' and 'scientific' knowledge, both involving expert, local, explicit and tacit knowledge, therefore emphasising the complexities involved merely in knowledge depiction.
 In recognising different categories of knowledge, such as Indigenous, Traditional, Scientific or Local Knowledge, it is possible to deduce that each has its own system, process and function with which to produce knowledge (STEPS, 2007). This

consequently leads to the identification of problems and their solutions, accordingly interpreted by individual knowledge systems. This aspect is extremely important for natural resource governance, as it is the identification of problems that allows for solutions. Despite this, the underlying factors to how knowledge is produced, interpreted and categorised are often disregarded (Raymond, 2010) and yet are able to explain the roles and powers of actors and their agency (Leach, 2010), an important aspect of governance.

1.4.5 Contestation of Knowledge

With the acknowledgement of various categories of knowledge comes engagement and integration, which gives light to the complexities of multi-layered governance. This is decipherable through acknowledging actors and their categorisation of knowledge as a basis for creating power structures. Pluralism recognises the competition between interest groups (Dahl, 1961) and occurs as a consequence of different knowledges engaging with one another.

In light of the above-mentioned concept of knowledge production, various power structures develop. Evidence is a foundation for knowledge validity and reliability and therefore an influence in decision-making processes. It has however also been discussed that the nature of governance implies the debate of multiple stakeholders and as a result refers to the necessity for the engagement of differing knowledges, held by spate stakeholders, throughout decision making processes. Challenges arise when several ways of knowing are considered valuable (Raymond, 2010) and as a result induces contestation.

Historically, evidence and scientific based knowledge have been most prominent throughout natural resource governance, with a strong focus on authoritative institutions. As a result, linear and simplistic approaches, such as the top-down approach, to policy have often been favoured. However, recent years have given rise to the acknowledgement of locally produced knowledges, which has influenced major theories in regard to natural resource governance. Power dynamics

have therefore begun to shift in regards to validity orientated knowledges and suggest for a better understanding of how the validity and reliability of the knowledge has been evaluated (Raymond, 2010).

1.4.6 Application of Knowledge

Recent years have seen a shift in the way knowledge is used and acknowledged in natural resource management and can be understood as an erosion of boundaries between different forms of knowledge (Raymond, 2010). This suggests a diversity of knowledges are to be used, shared and expanded on throughout the on-going processes of governance (STEPS, 2007).

This stems mostly from the intense debates of the 1960s about science and technology and its role in policy making. It brought knowledge to the forefront of discussions, with a necessity for a certain type of evidence-based expert scientific knowledge and therefore an un-necessity for politics (Innerarity, 2012). This strongly suggests knowledge plays a large role in fortifying decision-making processes and is therefore a clear shaper of governance. However with the previously discussed definition of governance, it is clear that the decision making body is made up of more than just authority bearing institutions, consisting of multiple diverse stakeholders with separate ideals and values as a foundation for different knowledges. It is therefore often the case that the diversification of knowledge complicates and often impedes the process of decision-making.

Participatory deliberation is therefore a fundamental process in natural resource governance, and requires the integration of diverse knowledges. Science is but one of a crowd of knowledges, suggesting that political, ethical and ideological considerations also call for a legitimate place throughout the decision making process (Innerarity, 2012). Furthermore, governance requires the understanding of participatory processes alongside how diverse knowledges have been integrated by stakeholders (Reed, 2010). However, as seen with previous sections, equitable discourse in power-laden settings proves highly challenging (Leach, 2010). Yet when

accomplished, can prove extremely beneficial to the outcomes of governance procedures, such as more robust policy recommendations, better-validated findings and a building of well-founded relationships between stakeholders (Leach, 2010).

1.4.7 Community Security

This section aims to identify the existing literature that conceptualises 'Community Security' in exploring the definitions by the UN. However, a gap will be identified in using this approach in light of the undertaken micro-level research and an alternative approach will be offered. This will take the form of a bottom-up micro-level approach to Human Security and will be defined as Community Security throughout.

1.4.8 Human Security as defined by the United Nations

In understanding the significance of Community Security an acknowledgement of the concept of Human Security must be given. This has been defined by the UN Commission on Human Security, established in 2001, as a response to the call for 'freedom from want' and 'freedom from fear' during the 2000 Millennium Summit (UN, 2009). It is defined as:

"…to protect the vital core of all human lives in ways that enhance human freedoms and human fulfilment. Human security means protecting fundamental freedoms – freedoms that are the essence of life. It means protecting people from critical (severe) and pervasive (widespread) threats and situations. It means using processes that build on people's strengths and aspirations. It means creating political, social, environmental, economic, military and cultural systems that together give people the building blocks of survival, livelihood and dignity." (UN, 2003)

This concept aims to reconceptualise security in moving away from a more traditional state-centric understanding to focus predominantly on individuals. This

takes a people-centric approach and also aims to distinguish it as an inter-disciplinary concept between security, development and human rights (UN, 2009).

This therefore suggests that Human Security is based on multi-sectoral insecurities and threats:

Table 1 Types of Security (UN, 2003)

Type of Security	Examples of Main Threats
Economic security	Persistent poverty, unemployment
Food security	Hunger, famine
Health security	Deadly infectious diseases, unsafe food, malnutrition, lack of access to basic health care
Environmental security	Environmental degradation, resource depletion, natural disasters, pollution
Personal security	Physical violence, crime, terrorism, domestic violence, child labor
Community security	Inter-ethnic, religious and other identity based tensions
Political security	Political repression, human rights abuses

Therefore when taking this approach Human Security is fragmented into sectors, also suggesting each 'threat' is to be tackled and responded to accordingly in regards to its 'type'.

Table 2 UN Definition of Human Security Components (UN, 2003)

Human security components	Strategies to enhance protection and empowerment	Capacities needed
Economic security	➤ Assured access to basic income ➤ Public and private sector employment, wage employment, self-employment ➤ When necessary, government financed social safety nets ➤ Diversify agriculture and economy	➤ Economic capital ➤ Human capital ➤ Public finance ➤ Financial reserves ➤ Diversified agriculture and economy
Food security	➤ Entitlement to food, by growing it themselves, having the ability to purchase it or through a public food distribution system	➤ Diversified agriculture and economy ➤ Local and national distribution systems
Health security	➤ Access to basic health care and health services ➤ Risk-sharing arrangements that pool membership funds and promote community-based insurance schemes ➤ Interconnected surveillance systems to identify disease outbreaks at all levels	➤ Universal basic education and knowledge on health related matters ➤ Indigenous/traditional health practices ➤ Access to information and community-based knowledge creation
Environmental security	➤ Sustainable practices that take into account natural resource and environmental degradation (deforestation, desertification) ➤ Early warning and response mechanisms for natural hazards and/or man-made disasters at all levels	➤ Natural resource capital ➤ Natural barriers to storm action (e.g. coral reefs) ➤ Natural environmental recovery processes (e.g. forests recovering from fires) ➤ Biodiversity ➤ Indigenous/traditional practices that respect the environment
Personal security	➤ Rule of law ➤ Explicit and enforced protection of human rights and civil liberties	➤ Coping mechanisms ➤ Adaptive strategies ➤ Memory of past disasters
Community security	➤ Explicit and enforced protection of ethnic groups and community identity ➤ Protection from oppressive traditional practices, harsh treatment towards women, or discrimination again ethnic/indigenous/refugee groups	➤ Social capital ➤ Coping mechanisms ➤ Adaptive strategies ➤ Memory of past disasters ➤ Local non-governmental organizations or traditional organisms
Political security	➤ Protection of human rights ➤ Protection from military dictatorships and abuse ➤ Protection from political or state repression, torture, ill treatment, unlawful detention and imprisonment	➤ Good governance ➤ Ethical standards ➤ Local leadership ➤ Accountability mechanisms

In addition to this multi-sectoral approach, Human Security places value on Protection and Empowerment as a means to achieving security, which can be interpreted as both Top-down and Bottom-up approaches[3].

1. Protection is to be understood as the 'norms, processes and institutions required to protect people from critical and pervasive threats' (UN, 2009). This recognises the

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[3] It is to be noted that these two elements are considered as 'mutually reinforcing' (UN, 2009) and are not to be considered or put in practice in isolation.

state as a leading actor in ensuring protection and therefore represents a top-down approach to Human security.

2. Empowerment is defined as 'strategies that enable people to develop their resilience to difficult situations' (UN, 2003) and therefore implies a bottom-up approach as it enables people to act on their own behalf (UN, 2009).

Despite its theoretical strength, in practice, as in most cases Human Security remains complex and context-specific. The top-down approach in Protection is often disputed, as strong institutional capacities are depended on, an element that is often lacking in an 'insecure' setting.

1.4.9 Bottom-Up and Micro-Level Community Security

In regards to the nature of research and the research site, the above-discussed UN defined concept of Human Security remains inadequate in determining the issues and responses to security threats within the Kamoethway River Valley. Due to its conflict ridden past and its current transition period to peace, many obstacles remain in responding to security threats and therefore require an alternative conceptualisation. In addition, due to the micro-level approach taken for the purpose of this research, the UN defined concept of both Human Security and Community Security fail to distinguish the importance of the community as leading the response to security threats.

For the purpose of this research the understanding of Community Security, unlike that of the UN[4] will encompass all sectors of Human Security, however is to be understood as being implemented solely at a local level. This includes Food Security, Health Security, Economic Security and Environmental Security, all types of security threats to the local communities and responded to by the community.

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[4] Identified as a threat to cultural and traditional identity

In accordance to Human Security as defined by the UN, an inter-disciplinary approach is to be taken, however also includes that of natural resource governance. It aims to provide an identification of how local actors engage and compete with other stakeholders, in which the dynamic processes of multi actor governance are highlighted (STEPS, 2007), in regard to the impact it has on local communities and how this has influenced a response, thereby impacting natural resource governance and policy implementation on a wider scale.

The integration of the concept of community security allows for a better understanding of micro-scale impact of natural resource management. This has often come under a post-structuralist perspective of political ecology and identifies a gap between local impacts and its wider scope impacts on international discourses, therefore taking a bottom-up approach.

1.4.10 Conclusion

As a result of the complexity of each concept and the extensive and diverse literature that surrounds them, it has been possible to draw on three main conceptual theories explored in the previous chapters. As a result it is possible to determine a number of gaps that appear in the existing literature, which this thesis aims to both identify and fill.

Firstly, in light of the literature and existing theoretical analyses it is possible to identify a clear lack in the combination of all three concepts, as inter and intra-linking holistic approach. This is an important development for natural resource governance, as not only will the linking of concepts allow for a deeper understanding of the underlying and significant developments of decision making, but also ensures the framework for designing policies and implementing governance are changed. Using this holistic approach ensures the participation of all stakeholders and the use of different knowledges, which is expected to bring greater attention to solving problems and responding to uncertainties and therefore also ensuring a sustainable outcome to the decisions made (Clark, 2008).

Secondly, in the reviewed literatures above it is clear that a bottom-up approach is necessary to allowing the inclusion of other[5] knowledges, a concept that does not readily or formally exist. The UN, as seen above is reluctant to acknowledge local community action as adequate response to security threats and as a result assumes the role of 'expert' and reliable knowledge system with which to ensure protection and empowerment. This limits the power of local communities and authorities on btoh a micro and macro scale, thereby hindering participation in decision making based on the concept of politics of knowledge.

It is for this reason hat this thesis aims to research on a micro-level scale in order to provide an insight into an alternative understanding of the concept of community security and the role of politics of knowledge.
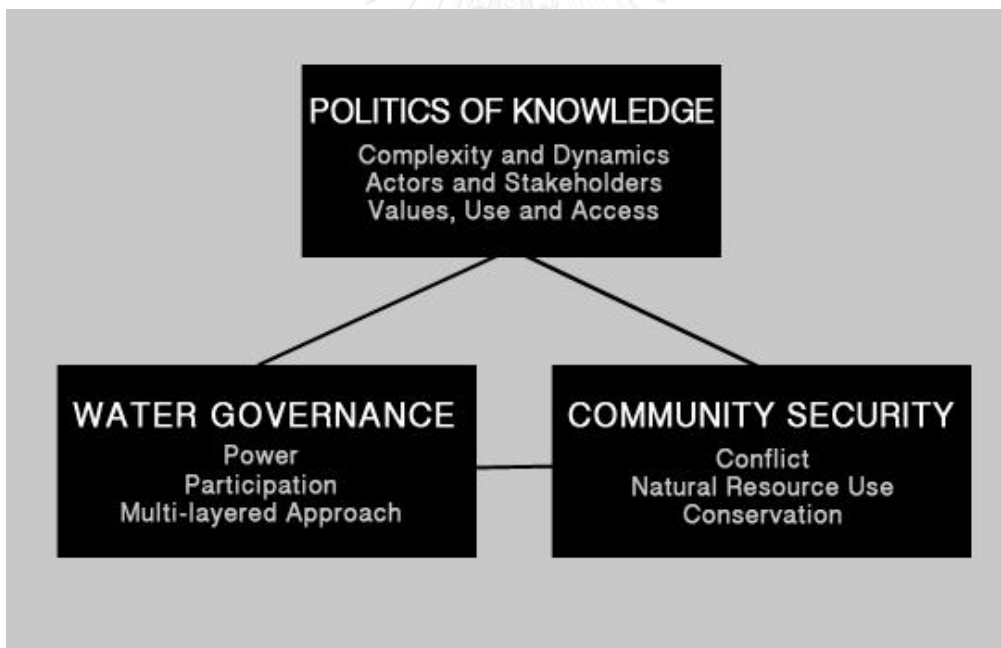
Figure 3 Conceptual Framework

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[5] as opposed to expert, scientific knowledge

1.4.11 Definitions:

A list of definitions is hereby given and necessary in regards to how these concepts are to be approached throughout the research analysis. The definitions listed here are to be understood as the definitions given by theoretical, already existent literatures. Further explanation is given in Chapter Two in regards to the main concepts used for the purpose of this analysis.

Governance: political and institutional relationships, including those of power and knowledge (Leach, 2010)

Sustainability: a normative explicit form of the general term, referring to the capability of maintaining over indefinite periods of time specified qualities of human well being, social equity and environmental integrity. (Leach, 2010)

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. ("Our Common Future: Towards Sustainability," 1987)

Conservation: To ensure Earth's capacity to sustain development and to support all life. Comprising the ecologically sound management· of productive systems and the maintenance of their viability and versatility.("Wold Conservation Strategy: Living Resource Conservation for Sustainable Development," 1980). Managing commons at multiple levels, with vertical and horizontal interplay among institutions (Berkes, 2007)

Indigenous Knowledge: Refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings ("Local and Indigenous Knowldge Systems," 2009)

Participatory Approach: That all people have a right to play an active and influential part in shaping decisions that affect them.

Community security: Addressing the protection against the breakdown of communities that provide members with a reassuring sense of identity and shared value system("Community Security and Social Cohesion: Towards a UNDP Approach," 2009). This definition is to be expanded and altered in subsequent chapters.

1.5 Research Site

The research to has taken place in the Southern part of Myanmar, known now as the Tanintharyi Region, previously Tenasserim District. As previously described, this region borders Thailand to the East, the Mon State of Myanmar to the North, and the Andaman Sea to the West, covering an area of 16,729 square miles (UNICEF, 2013), of which 9,653 square miles (2.5 million hectares) (FFI, 2014) is overspread by a largely intact tropical lowland forest.

Figure 4 Lowland Forest   Figure 5 The Dense Forest
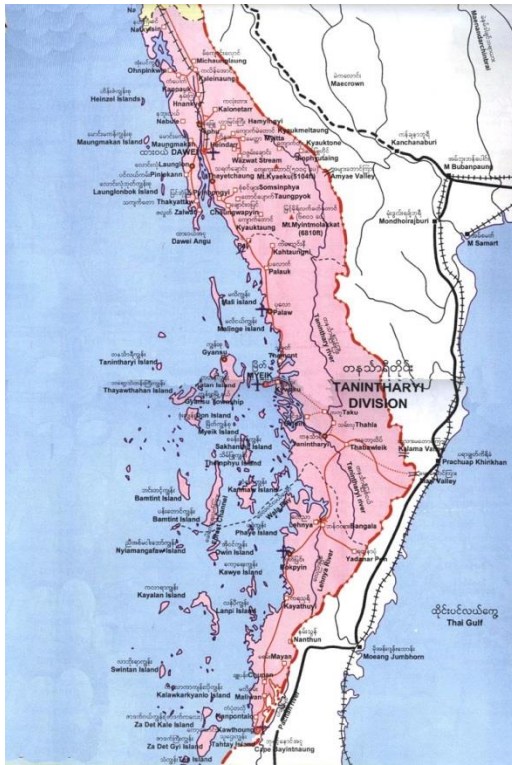
Figure 6 Map of Tanintharyi Region

Figure 7 Map of Tanintharyi Divided into Districts (MyanmarsNET, 2012a) (UNICEF, 2013)

With its capital as Dawei, 3 districts (Dawei, Myeik and Kawthuang), ten Townships and around 1,713,447 villages (UNHCR, 2014), the Tanintharyi Region is home to a sparse population of around 1,365,467 (UNICEF, 2013). This is made up of a number of ethnic groups within this area, such as Bamar, Rakhine, Mon, Shan, Karen, Salone and Malay (UNHCR, 2014).

Region	Tanintharyi
Flag	တနင်္သာရီတိုင်းဒေသကြီး
Previous Name	Tenasserim
State Capital	Dawei
Number of Districts	3
Number of Townships	10
Ward and Village Tracts	347
Total population (Est. 2012)	1,713,447
IDPs	71,650
Refugees	6,015
Area	16,729 sq. miles / 43,328 sq. kms
Borders	North: Mon State
	East: Thailand
	West: Andaman Sea
	South: Ranong province, Thailand
Latitude	14° 5' 2.98"N
Longitude	98° 12'E 5.67"E
Ethnicities	Bamar, Rakhine, Mon, Shan, Karen, Salone, Malay (Bashu)

Map: Myanmar Information Management Unit

Figure 8 Tanintharyi at a Glance (UNHCR, 2014)
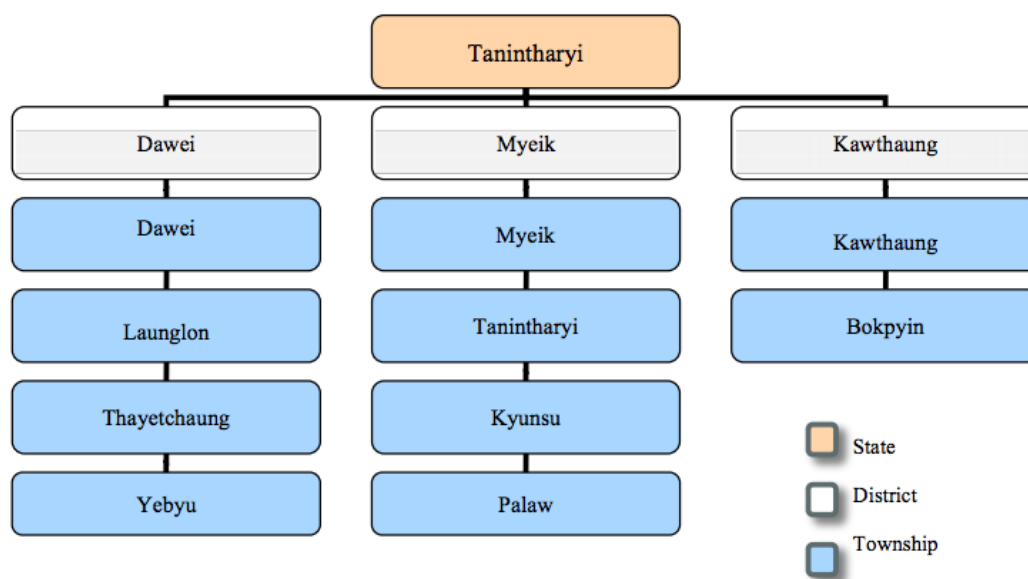
Figure 9 Tanintharyi Districts and Townships (UNHCR, 2014)

Table 3 Kamoethway Villages

Kamoethway River Valley Villages
1. Wah Hsa Ko
2. Kaw Pow
3. Kami
4. Kler Pu
5. Nau Tra Taw
6. Koe Hsay
7. Kaw Tee Law
8. Pwyay Poe Klar
9. Ka Let Ki
10. Ker Gaw
11. Mitta
12. Hto Ki Poe No

Due to its large surface area and multiple ethnic groups, this research has focused solely on the Karen communities in the Tanintharyi Region and has limited the research site to the Kamoethway River Valley, located within the District of Dawei and the Township of Dawei, as shown below in the Map. This distinct area, due to its geographic position, is home to twelve main villages: Wah Hsa Ko, Kaw Pow, Kami, Kler Pu, Nau Tra Taw, Koe Hsay, Kaw Tee Law, Pwyay Poe Klar, Ka Let Ki, Ker Gaw, Mitta and Hto Ki Poe Now. These are the given Karen names, however Myanmar names also exist for each individual village.

Each village consists of its own headman, pastor, elders and member of the CSLD[6] and includes approximately, between 200 and 300 households each.
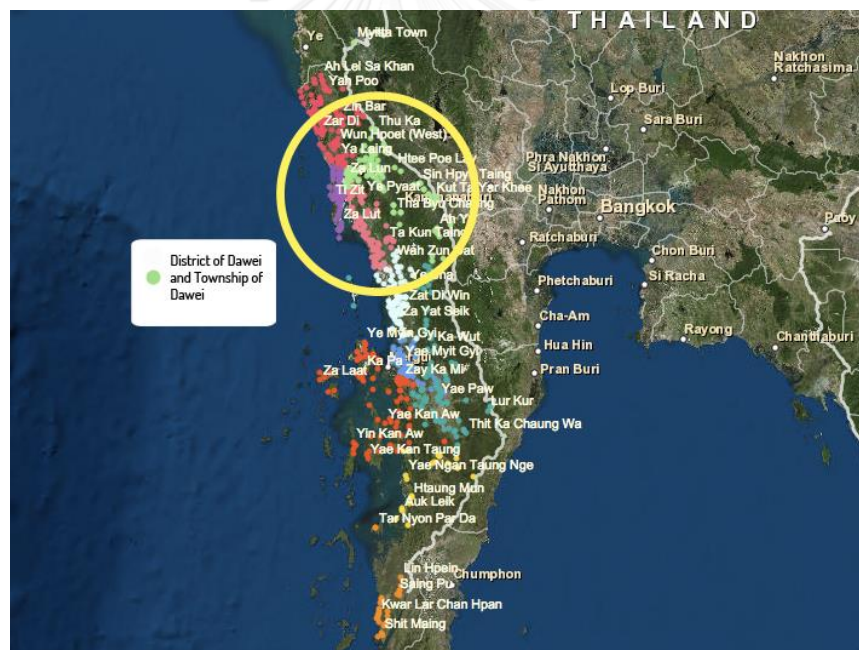
Figure 10 Kamoethway Location in Tanintharyi Region
(ArcGis, 2014)

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[6] CSO in the Kamoethway Area combining all 12 villages
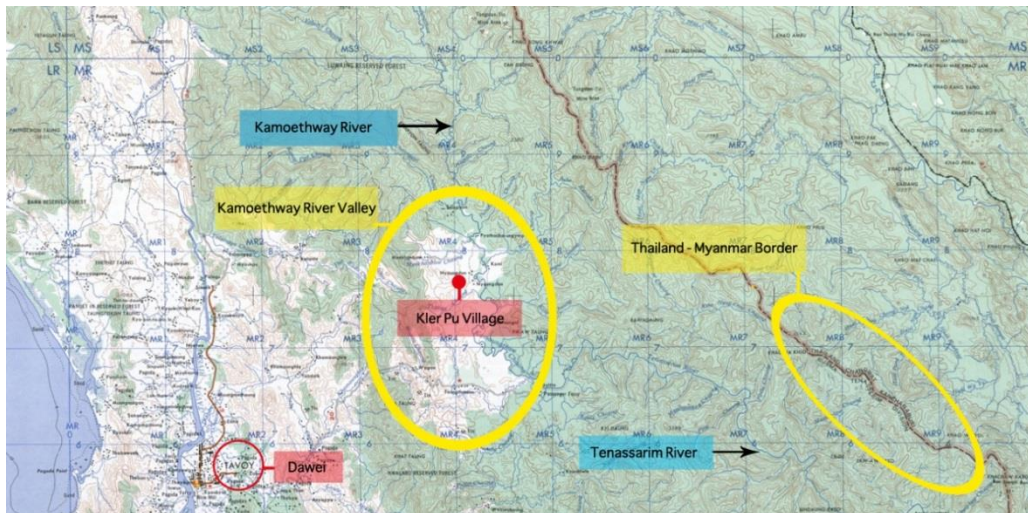
Figure 11 Research Site Map

The village of Kler Pu has been selected as the main research site due to the community's availability, accessibility and involvement in the organisation and use of the Kamothway River. This has been the hub for most meetings and interviews, whereby interviewees from Kamoethway's 12 villages have arranged to meet due to accessibility and time constraints. This will be further discussed in the subsequent 'Research Scope' section.

The reasons for having selected Kler Pu as headquarters for the research suggests the community has proposed and been involved in the production of knowledge and therefore display a cause for a contestation of knowledge between themselves and other stakeholders involved in the use and management of the river. This village in particular, as well as its surrounding villages has experienced influence and impact in regards to stakeholders involved in the governance of natural resources of the area and as a result has responded as a community. This has therefore been a significant research site as not only has this enabled an understanding of the impact of the politics of knowledge, but has also highlighted the role of community security.

Figure 12 The House Most Interviews Took Place At

Further sites include Dawei, the capital of this Region and home to organisations such as the Dawei Development Association (DDA) and Dawei Research Association (DRA). This has allowed for interviews with members both inside and outside of the community and CSOs involved in issues surrounding the Kamoethway River Valley and its 12 villages. Due to the travel to and from Dawei a number of other interviews were possible, amongst which a number of Youth Groups and Networks, such as the TAGOPAW and the KDN.

Figure 13 Map of Dawei (Chantawanit, 2014)

The community research will focus on understanding the politics of knowledge that take place in this region from the perspective of the community. It will provide and insight into the power structures both inside and outside of the community and will shed light onto the previous, current and future governance of natural resources. Additionally it will raise awareness of the trends and pressures the community faces in regards to how natural resources are managed.

For interview procedures and conduct a translator has been necessary. The translator's role has been both neutral and accurate and has also assisted in the facilitation of focus group discussions. All data gathered has been checked for quality and reliability to ensure there has been sufficient coverage.

1.6 Research Methodology

The research methodology is divided into a number of different techniques and approaches. Qualitative research methods have been used as well as database and literature reviews concerning existing legal and policy frameworks, conventions and institutions in place as well as the methods of knowledge production used by the different involved stakeholders and how these two interlace. In addition to these forms of research methods, a form of mapping has also taken place as a way to both collect and organise information. This aims to establish the contestation of knowledge and the impact this has on both the governance of natural resources and community security.

The field research that has taken place has been organised internally using the contacts and relationships built as a resource for widening research. In addition to this a number of online and offline documentary resources have been used in order to both justify and strengthen the field research results.

1.6.1 Documentary Research

Documentary research is necessary as a means to collect both historical and empirical data for the primary research procedures. This has been made possible by analysing data such as published and unpublished information, local and national newspaper and magazine articles, and online resources of both IOs and the Government. The use of relevant documentation aids in the identification of all stakeholders involved in the use of Kamothway River, including access, value and use of this resource. It ensures reliable data is collected in regards to stakeholders other than the local community and whether or not Kamoethway locals have been directly involved in macro-level decision making.

By analysing newspaper reports and locally led news reports it has been possible to collect data on the communities of Kamoethway. Due to the traditions and ethnicity of the Karen, it is common that only oral histories exist, therefore using

newspaper records aids in analysing the trends, changes and challenges the community has faced. In light of this the implementation of a number of different sources has been used in order to maintain reliability and proof of detail and therefore provide additional backing to the oral histories that exist within the community. In short, as a result of a lack in documented histories, further historical analysis has been undertaken, in order to understand the meaning of community and the pressures it has been subject to in the past. This has facilitated an analysis of the current trends and changes to the area and how this impacts the local communities' security.

Collectively these two elements have ensured a thorough insight into the community and other stakeholders involved in natural resource use of the area and in addition to a documentary analysis of existing governance and policy has been possible to determine the politics involved throughout decision-making. This involves analysing already in place policies and International Organisation projects and activities available mostly through online resources and hard copy documentation

1.6.2 Qualitative Research and Primary Research

In order to suitably answer the research question, on the ground fieldwork has been conducted using qualitative methods. These involve the use of semi-structured interviews, focus group discussions, informal interviews and participant observation.

Table 4 Outline of Interview Methodology

Semi Structured Interviews	Involved a number of questions asked to multiple interviewees, with room for discussion and interpretation. No concise framework or time constrictions are given so not to limit the interviewee to speak freely.
Focus Group Discussions	Involved a number of participants who discussed amongst one another in response to a number of questions. No concise framework or time constrictions are given so not to limit the interviewees to speak freely.
Informal Interviews	Unscheduled and unplanned conversations with a number of participants. No structured questions and no time constraints
Participant Observation	Involvement in everyday practices within the community. Involved also a number of semi-structured informal interviews throughout the procedures.

These methods have been selected as a result of the nature of the required research, in addition also to the lack in documented histories of the community and its experiences. The informal nature of the interviews comes as a result of a largely agrarian community and therefore required a more delicate approach to obtaining information and opinion. In addition to the benefits of this form of research methodology, contacts were easily made with a continuing broadening of interviewees and knowledge networks.

Most participants and interviewees, as mentioned previously remain community members and have provided empirical information regarding the trends and challenges the communities are faced with. A holistic approach has been taken in terms of interviewees meaning it has included males (55), females (40), youth and elders. This has included different livelihoods and different village members of the Kamoethway River Valley and has enabled an acquisition of information regarding the value and use of the Kamoethway River, which has proved important in understanding the underlying dynamics of knowledge and a reliable case study for the politics at play in natural resource governance. Furthermore it provides a foundation for an understanding of community led conservation as opposed to IO conservation in the area and will provide an important case study in Chapter Four.

The participants have been selected as a result of contact with the leading CSOs within the community, the CSLD and TRIPNET whose internal connections have allowed for the interviews to be both organised and arranged.

Table 5 Interview List and Referencing

n.	Date	Type of Interview	Info	Location	Role / Organisation[7]	Details (origin) (activity)
1	3-6/7/14	Focus Group	20-30 members		Farmers	
2	7/07/14	Individual	Male Elder	Kler Pu Village	Farmer	Kler Pu Village
3	7/07/14	Group	4 Individuals 3 Males (30-40) 1 Female (30-40)	Kler Pu Village	Farmer	Kler Pu Village
4	8/07/14	Participation	5 Males 3 Females	Kler Pu	Farming	Lowland Rice Farming
5	8/07/14	Individual	Male Elder (previous Armed Group member – Pyi Chit)	Wah Sah Ko	Farmer	Bago Region
6	8/07/14	Individual	Male Villager 43	Wah Sah Ko	Secretary to Headman	Wah Has Ko
7	8/07/14	Individual	Male 34	KNU Township Dep't	KNU	Undisclosed
8	9/07/14	Individual	Male - Elder	KNU Township Dep't	KNU	Undisclosed
9	9/07/14	Individual	Male - 21	Kler Pu	TRIPNET	Kler Pu
10	9/07/14	Individual	Female Elder	Kaw Paw	CSLD	Kler Pu
11	10/07/14	Group	2 Male Youths	Dawei	TAGOPAW	Kamoethway
12	11/07/14	Individual	Female Youth	Dawei	KDN	Kler Pu
13	12/07/14	Individual	Male	Dawei	DDA	Undisclosed
14	12/07/14	Individual	Male	Dawei	DRA	Undisclosed
15	14/07/14	Participation	2 Males 3 Females	Kler Pu	Farming	Lowland Rice Farming
16	14/07/14	Individual	Male Elder	Kler Pu	Pastor	Kler Pu
17	14/07/14	Individual	Male	Kler Pu	Day labourer	Outside of Kamoethway
18	15/07/14	Group	8 Females	Kler Pu	Homekeepers	Nau Tra Taw, Koe Hsay, Ker Gaw, Hto Ki Poe No, Pwyay Poe Klar
19	15/07/14	Individual	Female	Kler Pu	Shop owner	Kler Pu
20	15/07/14	Individual	Male	Kler Pu	CSLD	Kler Pu
21	15/07/14	Group	3 Males	Kler Pu	CSLD TRIPNET	
22	16/07/14	Group	4 Males 2 Females	Kler Pu	Villagers	Kami, Ker Gaw, Kah Let Ki, Kaw Pow, Kaw Tee Law, Wah Has Ko
23	17/07/14	Individual	Female	Kler Pu	Farmer	Ka Let Ki
24	17/07/14	Individual	Male	Kler Pu	Farmer	Kow Hsay
25	17/07/14	Individual	Male	Kler Pu	Day Labourer	Nao Tra Taw
26	18/07/14	Individual	Female	Kler Pu	Farmer	Ker Gaw
27	21/07/14	Individual	Male	Kler Pu	CLSD	Kaw Paw
28	21/07/14	Group	2 Males	Kami	Farmer	Kami
29	22/07/14	Individual	Female	Kler Pu	Farmer	Kaw Tee Law
30	22/07/14	Individual	Female	Kler Pu	Farmer	Kaw Tee Law
31	23/07/14	Individual	Male	Kler Pu	Farmer	Pwyay Poe Klar
32	24/07/14	Participation	2 Males 3 Females	Kler Pu	Farming	

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[7] Primary occupation

33	25/07/14	Participatio n	2 Males 2 Females	Nau Tra Taw	Farming	
34	26/07/14	Individual	Male	Dawei	DRA	Dawei
35	28/07/14	Individual	Female	Kler Pu	Farming	Kow Hsay
36	28/07/14	Individual	Female Elder	Kler Pu	Farming	Outside Kamoethway
37	29/07/14	Individual	Male Youth	Kler Pu	Farming	Kler Pu
38	29/07/14	Individual	Male	Kaw Tee Law	CSLD	Kaw Tee Law
39	29/07/14	Group	4 Male 1 Female Elder	Kaw Tee Law		Kaw Tee Law, Kami, Kler Pu
40	30/07/14	Group	7 Male 5 Female	Starmoo	ITD	Thailand
41	31/07/14	Group	Male 3 Female	Border Crossing	Border Patrol	Undisclosed

In addition to community members, interviewees such as community leaders, authorities in the area and those involved in larger projects have also participated in the research fieldwork. These have included the leading CSOs, the DDA, DRA, CSLD and TRIPNET; members of the KNU, one young male member from the Education Department, formally the Health Department and one elder as the deputy in charge of the Township Department located in Kamoethway; and private sector employees, ITD engineers and project officers located in Starmoo in the vicinity of the Kamoethway River Valley and involved in the development of the Kamoethway Area. This has allowed for a better understanding of the politics at play between the different stakeholders involved in using the Kameothway River and sheds light on the complexities of governance and the politics of knowledge.

Figure 14 Informal Interview

Figure 15 Focus Group Discussion

Table 6 Stakeholder Mapping

Stakeholder Mapping	
Local Community	
	CSO
	Headman
	Pastor
	Elders
	Youth
	Villagers
Authorities	
	KNU
	Myanmar Military
	KNLA
	Myanmar Government
Development	
	Logging Companies
	Plantation and Agriculture
	Mining Companies
	DSEZ Project
Conservation	
	CSOs
	Local NGOs
	INGOs
	Government

Other forms of research have been undertaken such as focus groups and participatory research. The focus groups have encouraged an holistic approach and have enabled for a group discussion on issues and challenges the local communities are faced with, as well as the types of response the community takes into consideration. This has also enabled community mapping of the natural resources and of stakeholders present in the area. This has been important also to establish the

members of authority within the community and therefore to determine the
establishment of a power hierarchy taking place at a micro-level. These groups were
organised by the CSOs within the Kamoethway area, mainly the CSLD and
TRIPNET. Collaborating with these two organisations allowed for better access to the
introduction of key players in the community and also access to organising larger
groups for discussion.

Figure 16 Natural Resource Mapping in Focus Group

The interviews and discussions were transcribed by hand during the process of
the interviews and were later uploaded into a number of different files and databases
in order to triangulate and analyse the data. This has included the use of programmes
such as Excel in order to document all elements and categories that were discussed in
light of the questions asked of interviewees (by topic, for example, river, forest or
land; and by time scale, past present or future), details, vocation, organisation, origin
etc.

The following snapshot represents an example of this tabulation:

Table 7 Example of Data Tabulation

Field Research Mapping						
Details		Personal History	Village	Forest	River	Livelihood	Religion / Traditional
Age 80+		Wife died last year	The war brought many difficulties for everyone in the village		Mining has been the biggest threat in the past	Betel Nut	
		Did not have to move away during conflict	Many people ran away from the village		Locals opposed mining operations		
		Used the river to play when he was a young boy	Mining interest near village - villagers opposed		Mining companies have come to the village to test		
Sex Male / Present		Opposes mining despite knowing that many people find it difficult to make an income	Dual government - MM and KNU		Main reasons to oppose mining is because of the threat to the river	People depend on their land	Threat to traditions (not religious sense) because young people pressured into easier ways
Position Elder			Can travel freely		Villagers living along the river- fully dependent on it for water - do not have a well	Betel Nut as main source of income, depending on year - price higher in the rainy season	
			Many risk are still there (see future)		Betel nut is dried on the river bank in dry season	Many people are moving to new lands and other villagers to have enough space to grow rice	
			Responsibility of the Headman to keep the rules intact - the headman are young		Rules to managing the river for the locals - not to cut trees	shifting cultivation: elders taught to wait every 7 years to re-use the land; people do not follow this anymore	
			Headman must learn from elders to sustain the village		Changes in the river: less fish, sand soils brought down so the river is shallower (due to mining 60 years)	will start with rice but then the land will be used for betel nut	
			The fact the headman is young means that young people are learning from elders			Many villagers leave to work; money for the family - to Thailand and send money back	
			(because of fish conservation centre) - community unite to protect natural resources			Some families cannot afford to go to Thailand to work - sad	
Village Kier Pu						Betel nut is dried on the river bank December - April	
Born in Village Yes / Future		Ceasefire may not last long - cannot say how long it will last	Importance of new generation to continue the Karen way learning from elders		If the river is destroyed so is their life - very dependent on the river	very rare that Karen work for mines	
			defend lands and territory				
			hopes people will not need to run away again due to war				
			biggest threat for the future is the risk of war again (ceasefire won't hold) will cause many difficulties for the young generation but also to the land				
2 Name Pa T Pah Lay / Past		Not from the village but married into it	During the war this village had it really bad	Many people use the forest for livelihoods	used it for hovel	The forest is of most importance in the past present and the future for livelihoods	
Age 78		Member of an armed group during the war (PHYI CHTE - KNU affiliation	Many people fled due to the situation		cross it to get to peoples land		
		He left the armed group and became a farmer	Not everyone has come back yet		catching fish		
		Son murdered by MM	The village has had much strife		some have used it for household water use		
Role Elder			Much MM presence and has killed many people due to their affiliation with the KNU				
			Villagers at the time had no power and suffered a lot				
			A past headman (SAW DAH BUH - lived in Kopaw Village and controlled the whole of Kamothway River Valley) partnered with the MM for personal gain and as a result threatened the villagers and the community				
			This headman cut down many trees to sell				
			Community fragmentation occurred through force				
			Many young people join the KNU after middle school (also now)				
Sex Male / Present			The situation now is much better, but is unsure of how long the ceasefire will last	Since ceasefire the threat of the creation of a forest reserve zone has assumed meaning people cannot own the land to suit it for their food and agriculture	Threats to the river are the mining companies coming into the area	The villagers rely on the land for their livelihood - threatened by economical development	
			New people can work freely	The land that is currently within the discussed areas of the forest reserve zone - it is unsure of what will happen to it	People still use the river as they did in the past (see above)	The logging is not doing anything for the villagers -they make no money from it intact toss out	
			The village has an ITD road that connects it to other villages	Decrease in trees causing the threats of landslides (similar to that of 2004)	River has changed a lot - gravel and rocks in the river		

A breakdown of the methodology can be seen as follows:

- Semi-structured interviews to community leaders involved in community led conservation projects. Includes the structure and timeline of the projects, stakeholder participation, and difficulties prior to, during and after the project.
- Semi-structured interviews with community project leaders concerning natural resource use, ways in which this has been established and why particular forms of research or usage have been chosen.
- Semi structured individual interviews with members of the community regarding points of view of the effectiveness and use of conservation projects. Includes a number of questions on the acknowledgement of other big players and identifies whether or not community-led projects are in fact supported by the larger community.
- Semi-structured In-depth interviews with established CSOs and specialists in the field, involving rights based insight. With particular focus on the pressures to local communities in regards to the governance of natural resources

- In-depth interviews with larger institutions, such as INGOs in light of their role in conservation of the area, again with particular insight into participatory willingness, awareness of community based research and conservation and possible established partnerships with other stakeholders

- Interviews will take place within the community to establish the value and use of the river and the methods used when managing this resource

- Focus group discussions with members of the community concerning participatory prospects with other stakeholders and terms and conditions that would ensue.

- Participant observation within the communities on the issue of data collection for resource use and management

- Participant observation at local community meetings, with or without other stakeholders

- Participant observation in regards to seed selecting, planting and constructing a lowland rice field near the Kler Pu village

1.7 Research Scope and Limitations

As mentioned in previous sections regarding the research sites, Kler Pu Village, of the 12 villages of Kamoethway River Valley, has represented a base for where most interviews and focus group discussions have taken place. This has aimed to cover all 12 Villages of Kamoethway and represents Kamoethway River Valley as the research site and scope. This includes interviews with members of the Kamoethway River Community and symbolises all 12 villages. Representatives from all 12 villages have been interviewed, despite having been held mostly in Kler Pu Village. A number of trips to other Kamoethway villages have been made, namely Kaw Tee Law, Kami, Kaw Paw, Wha Sa Ko and Nau Tra Taw. This has been mostly as a result of enabling meetings with those not able to commute to Kler Pu and as a means to understand the physical and geographic connections between the 12 Villages. In addition, a number of interviews and practical observations have been made outside of the Kamoethway Area, however still within the District and Township of Dawei. These consist of Dawei Town itself and Starmoo, where a

basecamp for the private sector development organisations ITD is established, offering interview possibilities with those involved in the private sector and development projects that have influenced Kamoethway River communities. This scope aims to establish an understanding for the production and use of knowledge by the local community, however also to establish how this contrasts with other stakeholders involved in using and decision-making of the Kamoethway River.

A number of limitations have arisen during the process of the research, though in most cases have been mitigated or diminished where possible. Due to the past armed conflict within this Region and Township, and the current transition period to peace within the Kamoethway Area, questions of security and safety have had an impact on the initial process of research methods and accessibility. However in light of the time given before the initial processes of research began, it was possible to ensure, and in some cases not, permissions to areas, villages and authorities. In addition to this, close collaboration with the leading CSO of the area, the CSLD, and the NGO TRIPNET allowed for secure and cooperative contacts for interview and access purposes. This has allowed for the reliability of data as a result of access to a number of sources that were not possible without this underlying cooperation. Furthermore it has allowed for the personal safety and security of the researcher undertaking interviews and the undertaken travel necessary to reach certain research sites.

Transportation involved a number of diverse conveyances, such as motorbike, car, truck and bus, all of which were taken with a companion and supervision for safety purposes. Other reasons for the necessity of an assistant, other than safety, were mainly language constraints and therefore requiring the assistance of a translator, and the approval of authorities to enter and leave the research site. The roads linking Kamoethway to Dawei have a number of checkpoints and security crossings and despite the now open borders and more liberal Myanmar, foreigners are an unlikely sight, causing suspicion and tensions with authorities. This was found, particularly at the overland border crossing between Thailand and Myanmar where a number of

questions for stating the purpose of visit were asked. Furthermore, road safety and design are perilous throughout this area and require constant attention.

In addition to safety precautions necessary for the time spent at the research site, water and foodborne illnesses are common and therefore required necessary preparation in the form of medication and water purifiers. The rivers and streams outside of the Kamoethway Area are on a scale of mild-to-largely polluted by metals and chemicals from surrounding industrial developments, such as mining and chemical agriculture, and therefore required particular precautions for both drinking and washing. Similarly precautions, in the form of mosquito nets and repellents, were taken in response to the risk of malaria within the forested area and wetlands, particularly due to the research taking place throughout the Wet Season, and therefore increasing the risk of both malaria and dengue.

Further limitations to the research have presented themselves as both language and culture barriers and differences. These have been met using a consistent translator, originating from the research site itself and fluent in Myanmar, Karen (as well as a variety of dialects) and English. This has entailed concise immediate translation throughout all interviews and focus group discussions and a clear insight into the cultural and traditional standards within the community.

In addition, important stakeholders, such as the IOs involved in conservation development in the area, such as the FFI, have not been interviewed; rather, relying on secondary data in this field has a potential for undermining the research results. However despite this, it is important to take into account the value of community-level research and a micro-level approach this research takes.

1.8 Significance of Research

Natural resource management is increasingly important and has come to the attention of all major players of development. In regards to the management and natural resource governance, the politics of knowledge plays a significant role in establishing who and how this is organised and understood amongst all stakeholders.

The significance of this research is to identify, from a micro level perspective, the challenges and pressures on the governance of natural resources, in particular that of the river being used by all stakeholders in the area. Much change is on going in this particular community, together with new pressures and challenges to the future of the management of natural resources. The most recent changes come as a result of development and conservation interest, both internal and international, and therefore require an understanding of the knowledges and comprehensions of contexts in order to understand the power changes in governance. It is only once these different forms of knowledge and the way they are used and played out, by the different stakeholders, that a politics is established. From this it is possible to understand where the local communities come in, in regards to managing and governing the natural resources, in specific the Kamoethway River.

It is therefore possible to take into account that the new trends and pressures shaping resource governance cause a contestation of knowledges, this in turn not only creates micro-macro conflict, but also initiates or deepens internal community fragmentation. It is for this reason that the community will remain the unit of measurement and analysis, for which there is a knowledge gap in previous research.

1.9 Structure

This research aims to answer questions concerning the complexity of governance and how the politics of knowledge shapes decision-making processes of natural resource management. With a brief background to the nature of the study, the methodology and a background on the research area it is possible to establish a theoretical background that will be explained more abundantly in later chapters. Chapter Two aims to uncover gaps in already existing academic and institutional literature. This will help in identifying the purpose of this Thesis and will cover the subject of politics, economy and environment in regards to Myanmar as a nation as well as delving further into the case specific research site analysed throughout the thesis.

Following a literature review and analysis in light of the designed conceptual framework Chapter Three will offer a deeper insight into the local community of the Kamoethway River Valley. It is here that a micro-level approach is taken and an analysis begins in an attempt to answer the first and second research questions. This community level research will give light to the existing conflicts, threats, challenges and stakeholders involved in natural resource use of the region and will provide a foundation upon which it is possible to understand the dynamics of governance and the significance of the politics of knowledge.

As a result of the identified security threats to the community in Chapter Three, it is possible for Chapter Four to identify community strength and power in responding to the identified threats. This brings to light the role of knowledge politics where it is possible to identify its importance, as well as its deep-rooted complexities, in shaping natural resource governance. One particular aspect that will be identified throughout Chapter Four is the significance of a bottom-up approach. The local community is used as the main source of research, however it will be possible to identify the impact this has on international authorities and concepts.

Further analysis on the significance of knowledge and the importance of a micro-level approach will be offered in Chapter Five, where a conclusion will also help determine how and to what extent the research questions have been answered.

CHAPTER II
LITERATURE REVIEW

2.1 Introduction

This chapter aims to identify gaps in knowledge in the existing literature in regards to the research site and discussed questions. It does so by identifying the main works and writings, both academic and institutional, and by focusing on the political, economic and social processes that have taken place in Myanmar, the effects this has on the Tanintharyi Region, and ultimately the impacts and repercussions these have on the communities of the Kamoethway River Valley. Due to a lack in literature concerning the Kamoethway River, the external impacts on the local communities within the targeted research site will be established in Chapter Three, as a key element to the findings of the research questions.

By taking an external-to-internal approach it is possible to understand the priorities that exist in both institutional and academic writings, with a clear focus on the economic development of the country on a large scale. Despite this however, recent works have identified an over-indulgent interest in economic growth and industrialisation of the country, and bring to light the socio-cultural impacts and developments taking place throughout Myanmar as a whole.

2.2 Myanmar

As a recently emerging country, Myanmar has undergone a series of significant changes since the end of colonialism. With its political, economic, environmental and cultural transitions, it remains a complex and dynamic system. Despite vast and varied discussions regarding the political and economic changes, much is left unspoken, or more than often too little proven, in regards to the social and cultural changes the country has undergone, and the impact these changes have had (or are having) on the environment and the numerous ethnic groups in Myanmar.

2.2.1 Politics

Historically, Myanmar is known to have excluded civil society on almost every occasion of change (South, 2004). Since the end of colonialism and British presence, a military junta established itself as ruling elite. This has been a major cause for the overarching armed ethnic minority insurgencies and conflicts scattered across Myanmar, as well as also economic instability of the country. Realisation of this decline and a thirst for economic development, as well as a part in global economic growth, Myanmar has since undergone a number of changes in order to allow for Foreign Direct Investment (FDI) and a part in the Regional changes and trade opportunities. This brought the end of a military rule in 2011 and in its place a number of new institutions and laws, alongside a new constitution, offering a move towards democratisation, and with it international interest.

These changes have involved a number of different processes and can be identified as steps taken in order to ensure the attention of foreign investors. A move away from centralisation can be seen with the establishment of seven states and seven regions and as one particular method whereby an attempt for democratisation is made in the hope of international favour (Aung, 2012). However, although seen as a structural development, centralisation remains at the core of all aspects of government (Aung, 2012) and seen by some as merely one of many fronts with which to attract FDI.

As a whole, the domestic reforms, efforts and changes made in the recent years in Myanmar are seen as remarkable, given the circumstances before 2011 (Chalk, 2013), however a number of significant challenges remain persistent as a result of the tenacious political infrastructure (Chalk, 2013) and the lack of social participation (South, 2004).

Given this however, due to the political developments and the necessity for international approval, social tensions have subsided with efforts to ensure ceasefires amongst ethnic groups and the Myanmar Government (South, 2004). This has had

momentous impacts on the ability for social development as well as a contribution to efforts in building local democracies, with the intention of 'development from below'(South, 2004). Nevertheless, this also still remains largely immature and relies on gradual processes to be seen in full, much alike the political development of Myanmar as a whole.

Table 8 Insurgent Organisations and Ceasefire Dates (Chalk, 2013)

Insurgent organisation	Year founded	Strength	Date initial agreement signed
United Wa State Army	1989	20,000–30,000	6 September 2011
National Democratic Alliance Army (or the 'Mongla Group')	1989	3,000	7 September 2011
Democratic Karen Benevolent Army—Kalo Htoo Baw ('Golden Drum' Group or ex-Democratic Kayin Buddhist Army Brigade 5)	2010	1,500	3 November 2011
Shan State Army—South	1996	5,000–6,000	2 December 2011
Chin National Front	1988	200	6 January 2012
Karen National Union	1947	4,000–5,000	12 January 2012
Shan State Army—North	1964	3,000–4,000	28 January 2012
New Mon State Party	1958	800+	1 February 2012
Karenni National Progressive Party	1957	600	7 March 2012
Arakan Liberation Party	1968	60–100	5 April 2012
National Socialist Council of Nagaland–Khapland	1980	4,000–5,000	9 April 2012
Pa-O National Liberation Organization	1949	200	25 August 2012

Source: *Deciphering Myanmar's peace process: a reference guide, 2013*, News International, Chiang Mai, January 2013.

2.2.2 Economy

As seen in the previous section, political reforms come hand in hand with economic prospects and developments. In the case of Myanmar, the most visible and understood reforms remain economic (Aung, 2012) with extensive background literature and debate. Efforts to re-immerse itself within the regional and global economy have proved the reason for many economic reforms with particular attention to FDI law, with amendments made to it in 2011, and thereby facilitating foreign investment.

Table 9 Foreign Direct Investment Amendments (KPMG, 2013)[1]

This has had an extensive impact on economic, political, social and environmental aspects in Myanmar and will be further discussed in subsequent sections regarding a closer look into the Tanintharyi Region and Kamoethway itself.

2.2.3 Environment

It is significant to consider the impacts these reforms and the changes to national policy in regards to the environment, as it will identify gaps and loopholes existent in the national structures of Myanmar.

A number of legislations exist concerning the environment in Myanmar including the Law on Forestry 1992, Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law 1994, Territorial Sea and Maritime Law 1977,

Marine Fisheries Law 1990 and the National Environmental Policy 1994 (Cho, 1997). This list has faced a number of problems in its time of existence, such as deforestation, resultant from a number of diverse reasons. Although Myanmar has not faced much environmental damage[8], compared to its surrounding neighbours, its lack of institutional capacity, poverty and general underdevelopment have lead to a number of difficulties in relation to upholding the environment legislation (Cho, 1997).

Table 10 FDI by Country

Table 1.1. **Approved foreign investment by country, as of 31 October 2013**
USD million, per cent

	Existing enterprises (realised)	(%)	Permitted enterprises (approved)	(%)
China	14 115	42	14 193	33
Hong Kong, China	6 366	19	6 459	15
Korea	2 973	9	3 045	7
Thailand	2 876	9	9 984	23
United Kingdom	2 503	7	3 056	7
Singapore	2 247	7	2 584	6
Malaysia	1 028	3	1 626	4
France	470	1	474	1
Viet Nam	511	2	511	1
India	279	1	283	1
Other	469	1	736	2
Total	**33 837**		**42 951**	

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[8] A large reason for why it is now so popular and in demand as it still holds a large number of now rare natural resources.

Table 11 FDI by Sector (OECD, 2014)

Table 1.2. **Approved foreign investment by sector, as of 31 October 2013**
USD million, per cent

	Existing enterprises (realised)	(%)	Permitted enterprises (approved)	(%)
Oil and gas	13 630	41	14 372	33
Power	13 254	39	19 284	44
Mining	2 309	7	2 838	6
Hotel and tourism	1 349	4	1 600	4
Manufacturing	2 254	7	3 456	8
Real estate	448	1	1 129	3
Industrial estate	179	1	193	0
Agriculture	163	0	192	0
Transport and communication	138	0	314	1
Livestock and fisheries	88	0	347	1
Construction			38	0
Other services	25	0	42	0
Total	**33 837**		**43 902**	

- The outlook is positive, with the economy projected to grow at 6.8 percent in 2013/14 and rising further to 6.9 percent in the medium-term. This will be on account of a continued increase in gas production, increased trade, and stronger performance in agriculture.

From this table and this exerp it is possible to identify the main sectors invested in by foreign developers. With the largest percentages lying in natural resources such as oil, gas and mining (OECD, 2014) and the positive outlook for an increase in agricultural performance (WBG, 2013) it is possible to identify the value of the environment and the natural resources to Myanmar in terms of economic return. A problem that has arisen from the use of the natural resources by FDIs is the end result of the investment, which is often criticised to benefit the investing countries rather than the people of Myanmar (Song, 2013). In addition, development and extractive industries have often caused irreparable damage to both the land and the local communities. It is for this reason that the environmental laws and policies must be identified in order to establish the extent to which the environment is protected, conserved or restored for the benefit, other than economic development, but of the local communities.

Since the change in government of 2011 a change in attitude toward the environment has been seen, if only superficially and if only in comparison to the previous military government. A number of development projects, such as the Myistone Dam and a coal-fired plant of the Dawei Special Economic Zone, have been altered in response to the social movement against their construction, due to the environmental and social toll these projects would have (Aung, 2012). In light of these occurrences an Environmental Conservation Law has been established in 2012, with continuous amendments and changes made to it up to March 2014 (Eleven, 2014). This has included comprehensive legal and regulatory frameworks whereby standards and guidelines are set and Environmental and Social Impact Assessments (EIA and SIA) are required by public and private initiatives for development in Myanmar (AECEN, 2012).

In addition to this change in policy and attention, the Government has initiated programmes in conjunction with International Organisations (IO) focused on conservation and wildlife protection. When looking at the involvement of IOs in Myanmar, cooperation and collaboration with the Government is key to the success and allowance of the project, and therefore must be inline with the national agenda. This however is in some cases considered a hindrance, most particularly because of the persistent tensions and difference in agenda between the Government and the individual ethnic groups, in regard to the use of the environment and the natural resources that make up Myanmar as a whole. It is for this reason that operations conducted by IOs are in some way criticised due to their overarching requirement to abide by Government standards, in which case often results in disregarding the requirements of local communities occupying the bio-diverse lands Conservation IOs are interested in. Despite this criticism, little literature is found concerning these issues, especially in the case of Myanmar.

2.3 Tanintharyi Region

The National transitions, changes and reforms have been seen to impact Myanmar as a whole, but also on a smaller scale, in terms of regional and community effects. Myanmar is multi-cultural and multi-ethno-religious country with history in fragmentation and tensions between groups. This has caused difficulties in undergoing change as a Nation, in regards to a lack in institutional capacity, political uncertainties and on-going tensions (Chalk, 2013). It is therefore important to observe the external, national changes in a community-based context to understand the impacts and capacities of institutions that play a role in natural resource governance of the research site analysed throughout this thesis.

2.3.1 Politics

As previously established, a number of ranging conflicts across Myanmar have been the result of ethno-religious tensions and have been met with recent attempts to establish ceasefires amongst ethnic groups and the Government. One such conflict, and consequentially, ceasefire has been that of the Karen ethnic groups, having undergone a sixty-year conflict between the Karen National Union (KNU) and the Myanmar Military and recognised as the longest standing conflict to take place in Myanmar (South, 2011a). Although not yet identifiable as 'peace', this region is currently in a transition period whereby a ceasefire has been established. This is understood as still potentially unstable due to the on-going tensions still present in this Region (Shaung, 2014).

Other than the clear instability within the Tanintharyi Region, a change to the institutional and administrative structure has been made as a result of the agreed ceasefire. This has left both the KNU and the Myanmar Government as formal institutions in ensuring the rule of law and the governance of natural resources within the area and is seen as a complication due to the, formally contrasting and now strained relationship of the two administrative stakeholders (Htwe, 2014). Despite the

significance of this agreement, little is seen on the impact this has on the communities under this form of duo-administration.

One obvious problem this agreed duo-administration presents is that of contrasting policies between the Central Myanmar Government and the KNU. Specifically in regards to Forest Policies, as Karen People regard the forest as the most important natural resource for maintaining livelihoods. This has lead to the establishment of a KNU Forest Policy, with a different agenda to that of the Myanmar Government, which, regarding both are in place throughout the Tanintharyi Region, creates obstacles and confusion for the fulfilment of each policy. It is also clear, from an analysis of the existing KNU Forest Policy, that a direct rivalry for the authority and control over the forests within KNU territories is underway:

"The SPDC Government is planning to exploit the Karen forest and its natural resources to the benefit of its leadership" (KNU, 2012)

This suggests tensions between the two administrations exist despite the acknowledged and agreed upon ceasefire. In addition, further complications arise due to the agreed upon duo-administration as contradictory power-infused policies cause huge complications for the governance of natural resources within the duo-administration areas, and suggest an already strong contestation between contrasting knowledge.

2.3.2. Economy

In light of the impacts of the economic reforms made to the Tanintharyi Region, one particular case is significant on both a national and internal-regional scale. With increasing foreign investment and a national agenda for economic growth a number of Special Economic Zones (SEZ) have been established in Myanmar. The Tanintharyi Region is home to the Dawei Special Economic Zone (DSEZ), a development project between Thailand and Myanmar signed in 2008 for the

construction of a deep-sea port and a road link connecting Bangkok to Dawei and its proposed industrial centre.

Figure 17 DSEZ Development and Road Link (Delamare, 2011)

This project has come under a number of problems and much contestation, in particular with local communities who have experienced an abundance of negative impacts that arise as a result of such extensive infrastructural developments. As well as forced land evictions, involuntary resettlement, lack of local participation and vast environmental impacts (Aung, 2012) for what has already been completed, it has come across a number of investment difficulties causing the current cease in operations and further development (Ferrie, 2013).

Media coverage on this project has been extensive and as a result has attracted the attention of both national, regional and international audiences, with a more positive recognition for the project, often referred to as "An Industrial project that could change Myanmar" (NYT, 2010). Despite this, the local communities and ethnic natives to the lands this project will impact, have been overlooked on a number of occasions, often also during the EIAs that have taken place in order to comply with the Environmental Conservation Laws in place since 2012.

Although mostly economic benefits and social, and environmental concerns have been introduced, literature regarding the potential benefits to the local

communities has also been produced, however most tending to come from sources such as investors[9] or those interested in backing the project for economic gain.

2.3.3 Environment

As mentioned in previous chapters, the Tanintharyi Region remains one of Myanmar's most important biodiversity areas. Its intact forests and abundance of endangered species places it as one of the most significant areas for environmental conservation efforts and as a result has drawn in much national and international attention. Together with a change in the National Agenda for the concern of the environment and the newly resolved ceasefire arrangements in this region, IOs have been able to commence projects and programmes concerning the conservation of the rare and unique biodiversity in this particular area of Myanmar.

Organisations such as Fauna and Flora International (FFI) have initiated programmes in 2014 involving the protection of "internationally important areas for biodiversity in the Sundaic Region[10] of Myanmar" (FFI, 2014) which also involves the management of agriculture. This comes as a response to the potential and seemingly increasing FDI into agriculture, particularly in areas such as rice, pulses, sugar, palm oil and natural rubber (FFI, 2014). As previously identified, this rapid change in use of land and the environment can potentially cause social and environmental problems in the area, and therefore outweigh the short-term national economic gain.

The projects concerning conservation and the involvement of IOs however, are extremely recent and therefore suggesting impacts of such involvement remain small and difficult to interpret at such early stages. The main projects involve the establishment of protected areas, community forestry, sustainable plantations and settlements (FFI, 2014) and consider the Government and industry as a main partners

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[9] Namely ITD – Italian Thai Development ltd.
[10] Identified as one of the hottest biodiversity hotspots on earth, identified as the Thai-Malay Peninsular (Myers, 2008)

with which to establish the outcomes to these projects, leading to suggest little is achieved in line with local community cooperation.

2.4 Conclusion and the Gaps

From this review of literature and existing data it is possible to interpret a number of gaps and clear issues that arise. It is only by identifying these gaps that it is possible to approach and attempt to fill them using the findings of this research. In addition, an acknowledgement for concerns and dilemmas should also be considered throughout the course of this Thesis.

One clear gap that can be interpreted in regards to both academic and institutional literature is the priority given to the economic and political reforms within Myanmar. The outcome of this prioritisation is an abundance of information regarding the impacts and results of economic growth and industrialisation with attention to FDI in Myanmar. This has obscured a more social insight into the transitions and changes this country has encountered, albeit because of the vast differences among the many ethno-religious groups. A deeper look into how local communities and social groups have adapted to, or have been included in the decisions made for the future aspirations of the country are difficult to come by, suggesting not only a gap but also a trend in how the decision-making processes are to continue, is identified.

In addition to this perception, the uncertainties that surround all elements to this research must be taken into account. Political, economic and social instability is identified, in particular due to the weak institutional capacities and the doubtful ceasefire arrangements. This translates directly to the community-level from which a large amount of uncertainties and unpredictability is determined.

However, it is not only the uncertainties that cause gaps in knowledge and concerns for the future developments, but it is the prospect of a transition period that adds to this dilemma. The changes that are occurring may or may not be short-lived

and the responses issued by the Government, the IOs or the local communities have had little impact so far.

It is therefore necessary to acknowledge the importance of a micro-level approach, taken throughout this research, as it allows for a closer and more profound look at how communities are responding to threats and uncertainties in a sustainable way. In addition, it aims to identify the decision making processes that occur within a community for appropriate development as established by the community. The gaps this research aims to fill are based on a community level approach, whereby the contestations between other stakeholders are interpreted as part of the risks and threats communities must prepare against, or work alongside in order to maintain a sense of community security and a possibility for sustainable development in accordance to the communities needs and traditions.
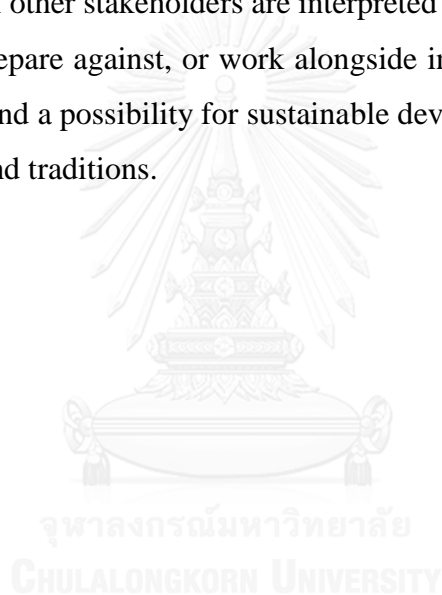
CHAPTER III
KAMOETHWAY RIVER VALLEY AND ITS COMMUNITIES

3.1 Introduction

An overview of this particular research site is a necessity in this case as there is no existing written documentation. This section will cover both a general background as well as an historical breakdown of the Kamoethway River Valley and will bring insight and a foundation to its current setting.

In addition, this Chapter will attempt to answer the two research questions with regard to establishing development trends in Tanintharyi and how they are prioritised. This will lay a foundation to understanding how this impacts natural resource governance in the area and will determine the role, strength and capacity for response of the local communities. This will provide an important insight into how micro-level approaches can impact macro-level activities and will aid in following the literature of external to internal impacts.

3.2 Background on the Kamoethway River Valley

In this section an introduction to the case study is offered in order to analyse and better understand the geographic, demographic, and historical foundation in terms of its natural resources and the current conditions of this area.

3.2.1 Kamoethway River Valley Geographic Location

The Kamoethway River Valley lies upstream of the main Tenasserim River in the locally known Megui-Tavoy Disrict, or Tanintharyi Region of Myanmar. This region borders the Mon State to the North, the Andaman Sea to the West and the shares a mountainous border with Thailand to the East (KHRG, 2012). The Region is

relatively narrow with a landmass of 644 kilometres long and 94 kilometres wide (KHRG, 2012).

Known in Burmese as Ka Muang Thwer, the Kamoethway River itself lies in the east of this District. Due to the extensive biodiversity and various ecosystems in this area, it is rich in both natural resources and wildlife, however remains largely underdeveloped with little transport availability to access the area.
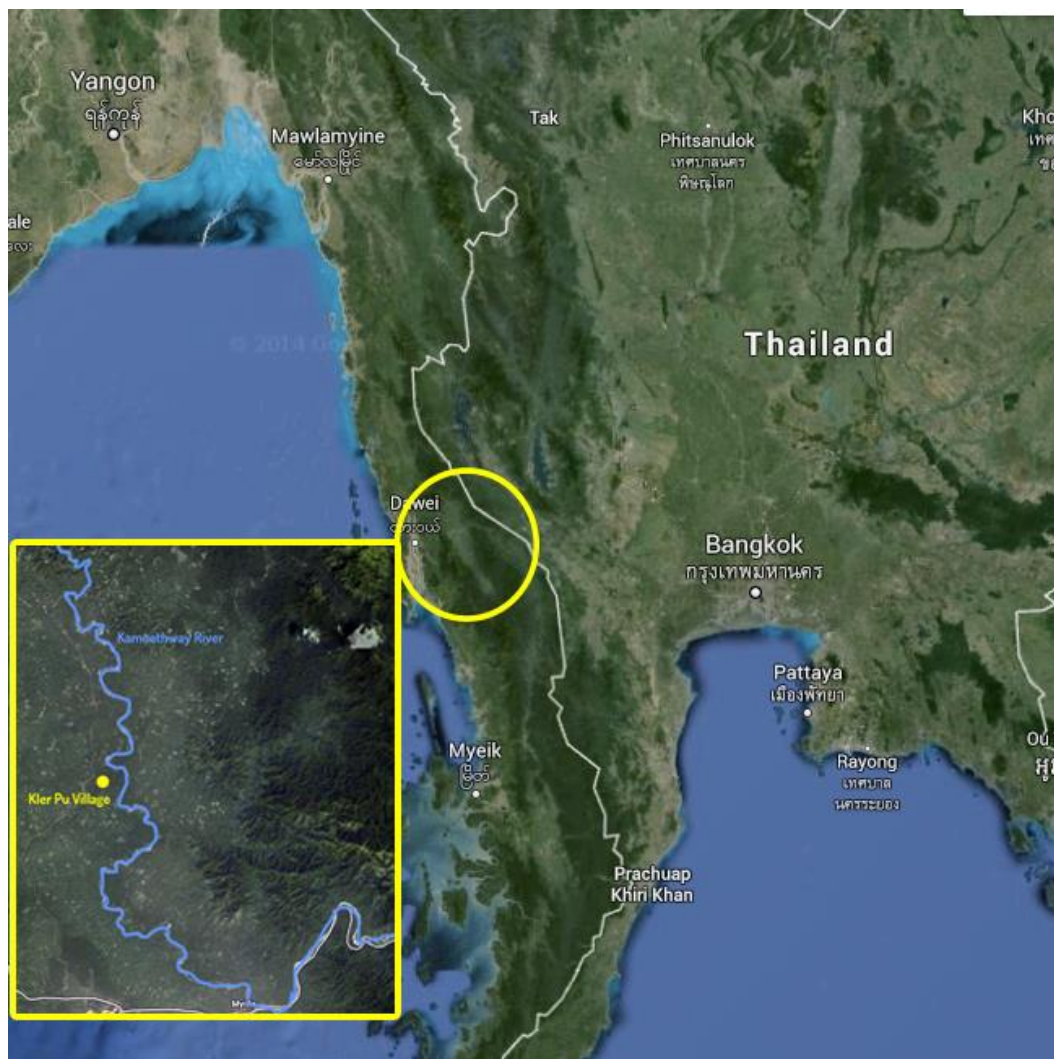
Figure 18 Research Site Location

Due to the impact of an expansion of Special Economic Zones (SEZ) in this region, it is important to understand how developments have changed the geographic form of the area. The introduction of this development project in 2012, concerning the construction of a deep-sea port off the coast of Dawei, the capital of this region, and an industrial complex, amongst other plans, has called for the creation of a road link, connecting Thailand and Myanmar. The road spans 132 kilometers from the Kanchanburi province in Thailand to Dawei, in Myanmar's Tanintharyi region (Weng, 2013). This, although having been suspended in 2013, has had both positive and negative effects on the Kamoethway area, with one particularly important aspect being easier access to the area, and therefore also better means for communication and knowledge sharing. It has facilitated trading routes, communication possibilities and access to various villages, the capital of the Region and Thailand. Prior to the construction of this road, transport from Kamoethway to its surrounding areas was limited and, especially during wet seasons, challenging. Despite this however, the road construction and plans for the Dawei Special Economic Zone (DSEZ) has had multiple impacts on the geographic form, environmental stability and social structure of the area and will be further discussed in following chapters.

3.2.2 Kamoethway Political and Historical Background

Kamoethway's historical background is much like many Karen histories. As with many ethnic minority groups, at the turn of independence the Karen populated parts of the country have been severely affected by armed conflict (South, 2011a). The mountainous area of Mergui-Tavoy, where Kamoethway is situated has borne the brunt of longstanding armed conflict with severe repercussions to the current situation in these areas. A short background of the history of this region is necessary for further analysis of the contemporary activities in this area.

3.2.2.1 Independence

The Karen National Union (KNU) was established one year prior to Independence, in 1947 as a result of a longstanding Karen Nationalist movement, dating back as far as 1881, with the formation of the Karen National Association (South, 2011a). Many separate armed groups and organisation were formed between 1881 and 1947, most of which have come under the umbrella of the KNU. Despite this, a number of rebel-armed groups continue to exist as independent organisations.

Tensions between Karen minorities and Myanmar officials have long existed due to the support to the Karen by the American Baptist Missionaries, seen in the provision of education, during the beginning of the 1900s (South, 2011a). This is seen to have put stress on the relationship between the two groups, most specifically during the period prior to, during and post the Second World War and Independence periods.

After the KNUs establishment attempts to achieve independence from the newly established Myanmar Government through political discussions were made, Despite this the KNU were rejected resulting in a revolution in 1949 (South, 2011a). This sent the KNU underground, determining both political and territorial claims over Karen areas, and therefore also resulting in the beginning of a 60-year conflict between the KNU and the Myanmar Military, also known as the Tatmadaw.

3.2.2.2 Conflict

This conflict is largely known as the longest standing civil war in Myanmar and has been the result of, and the cause of deep-rooted complications and difficulties in this area. The impact of this conflict is reflected in the contemporary issues now surrounding this region, also in terms of natural resource governance and will be further discussed in later chapters. This section aims to identify the reasons for contemporary tensions and barriers to fair and equitable governance of natural resources.

As a consequence of KNU established territories, many villages faced, what is still understood as a duo-administration. With the KNU acting as a de facto government (South, 2011a), the Tatmadaw became ever more present in this region to reclaim these territories and to counter the insurgencies led by the KNU, resulting in a violent war. A number of reports indicate the systematic and often brutal nature to these counter-insurgency operations, as well as the policies that were first introduced against insurgency groups, much like the KNU. One such policy is known as the 'Four Cuts Policy', involving cutting off communication, recruitment possibilities, logistics and information access for the insurgency groups. Many Karen believe there to be an undeclared fifth cut which is said to be decapitating insurgents. This 'Four Cuts' strategy aimed to transform rebel held land into firmly government controlled areas (South, 2011a). In addition to these methods and policies, the Tatmadaw are known to appropriate resources, as they are required to be self-sufficient in the field. This often means local villagers are relied upon to produce rice and other food sources, often by force in order to support the large Myanmar armies.

Military operations and conflict in locally inhabited areas result in the suffering of many local, innocent people. This region is no exception with many people remembering the turbulent times. Due to the 'self-sufficient' Tatmadaw, villagers were forced to relinquish all rice provisions, being allowed only a weekly allowance for their own consumption. In addition to this livestock was regularly slaughtered for consumption with little or no compensation to the families dependent

on this form of food security (Villager Interview). If villagers did not comply to these rules or regulations punishments were installed leaving most locals living in fear.

The local villagers of this Karen territory have lived under oppression of both sides, however due to ethnic ties and nationalistic roots, the KNU has been largely supported, with many young Karen being recruited at the time of conflict (Villager Interview). However, with the implementation of the Tatmadaw policies, support for the KNU was largely impossible due to the fear and suffering of local villagers leaving the KNU largely weakened.

With a change in government, from the Burma Socialist Programme Party (BSPP) to the State of Law and Order Restoration Council (SLORC), in 1987 came also a renewed and substantial military offensive against the KNU in the Tanintharyi Region. This included the forced recruitment of local villagers to carry military equipment and resources for the Myanmar Tatmadaw leading to many deaths and much destruction. In addition to this, villagers close to KNU areas were forced to relocate, leaving villages in devastation and forcing many Karen nationals into Thailand as refugees.

Table 12 Villages within Kamoethway Relocation During Conflict

Previous Villages		Relocation
Kami		Between Kaw Pawt and Dawei
Kose		Between Kaw Pawt and Dawei
To Ki Po Noh		Between Kaw Pawt and Dawei
Ka Taw Ni		In the vicinity of Tuang Thone Lone
Kaletki		In the vicinity of Tuang Thone Lone
27%	71 Villages	Abandoned
10%	25 Villages	Destroyed
32%	85 Villages	Forced Relocation
31%	83 Villages	Remained
15,443		Tham Hin and Ban Don Refugee Camps
3761		Hid in the Jungle as Internationally Displaced People

The use of land mines has been identified as a technique, used mostly by the KNU, throughout this conflict. However, due to the Tatmadaw's use of villagers as porters, it was often the case that local people were harmed as a result of land mines (Individual7, 2014). Splinter groups of the KNU were also appearing, with further problems for the villagers, due to increasing raids and intensified armed conflict, augmenting villager casualties and community splits and weaknesses.

3.2.2.3 Ceasefire

Due to a reformed government decision to reconstruct the Union of Myanmar and the ever-decreasing national economy, due to economic sanctions and the prospect of being excluded from the Asian economic cooperation, renewed efforts for ceasefire agreements between the Government and the armed groups are seen to take place throughout the 1990s.

A number of peace talks and discussions were held in negotiating a ceasefire between the KNU and the Tatmadaw from 1963, yet remained largely unsuccessful. It was only in 1995 that the Karen Peace Mediator Group was formed and facilitated 'confidence building' meetings between the KNU and SLORC (South, 2011a).

The long process of ceasefire cost the KNU severely during its early developments, with much criticism from supporters on sacrificing the interests of the Karen in exchange for political power. This lead to abandonment of the KNU in peace talks in 1994, inducing splits within and a further weakening of the insurgency group. With relentless SLORC offensives to the much weakened KNU territories it was only in 2012 that an official, agreed ceasefire was signed by the Myanmar Military and the KNU.

The ceasefire has only been possible after a number of negotiations, regarding the control of territories has been undertaken, resulting in the operation of the KNU as an official capacity and administration of the Tavoy area (Noreen, 2014). Both the

KNU and the National Government are seen as authority institutions in terms of policy making and enforcement. In most scenarios these dynamics include also a village leader who may be accountable to other armed factions(South, 2011b). This has severe consequences in terms of natural resource governance where conflicting political interests and tensions place the Tanintharyi Division and its population in a vulnerable setting. These pressures have seen previous internal displacement, however in recent years the cease-fire has allowed the return of several local communities to their previously owned lands. It is however worth noting that the ceasefire does not signify total peace, with still many reports of conflict and deaths within the District as a result of the previous conflict (Shaung, 2014) it is clear that Kamoethway remains in a transition period between conflict and peace, resulting in a number of severe vulnerabilities of the local communities.

One both positive and problematic outcome to the ceasefire in this area is the number of returnees. Due to conflict circumstances, as mentioned above, many villagers fled. The ceasefire has allowed for many to return, which although positive has also caused a number of problems concerning land availability within the community. In some cases unoccupied lands have been re-occupied by others for farming and households, causing land disputes with those returning. "We've experienced many problems with those returning. I myself am not from here, but have married here and have been farming here for many years. Now those coming back want their land back, but what do we do?" (Group, 2014).
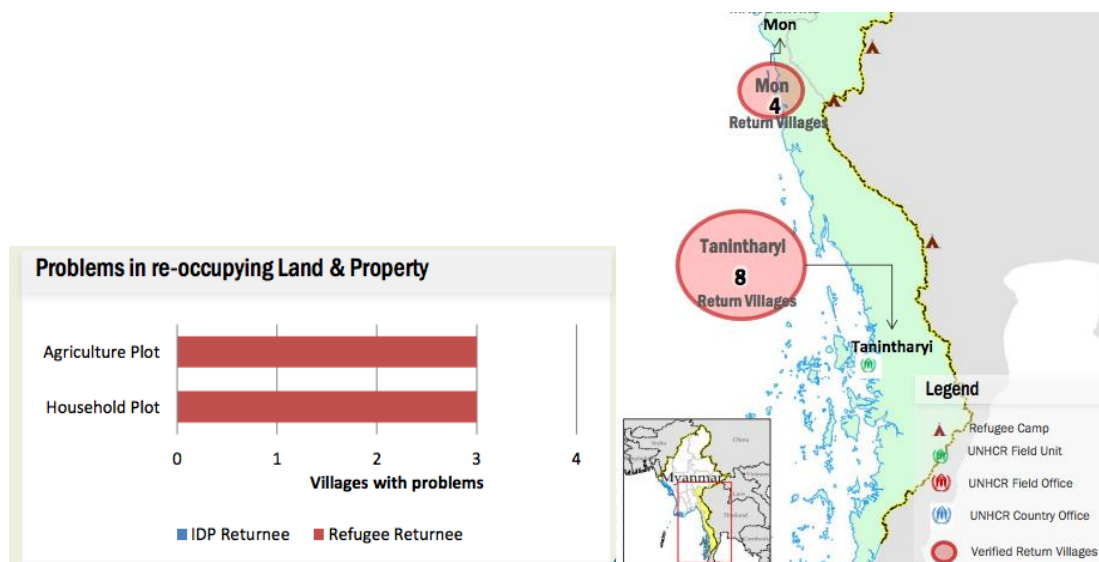
Figure 19 Returnees to Kamoethway Area (UNHCR, 2013)

3.2.2.4 Post Ceasefire

The ceasefire between the KNU and the Myanmar Government has had diverse effects over the different territories the KNU operates in, as well as criticism from a range of stakeholders and actors within particular regions. Within the Mergui-Tavoy Region, it has been argued that much has changed, with both negative and positive impact on the communities. Despite efforts to ensure a stable and peaceful setting however, it is still reported that conflict has not been entirely ceased, and that the stability of the ceasefire is delicate (Group4, 2014). In most recent events, shootings and death tolls still rise as a result of the KNU – Myanmar Government conflict[11] and are a key reason for many insecurities and doubts regarding the durability of the ceasefire agreement.

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[11] In June and July, during field research two KNU members were shot followed by eight Myanmar Government Soldiers

3.2.2.5 Transport

One notable positive outcome for the local communities in the Tanintharyi Region has been an improvement on freedom of movement. Transport facilities and access to difficult areas, as well as safety during transit have improved considerably (Individual3, 2014).This has increased greater access to communication within and with-out the communities, a greater variety of resources, better access to potential and existing farmlands and access to advanced education and health means. Villagers deem transport exceedingly important and regard it as a main area of development for the future.

Access to better transport has allowed villagers to come and go more regularly, as well as allowing new actors into the region. This has also brought many prospects for the twelve villages in the Kamoethway River Valley in terms of the introduction of new materials, technologies, farming techniques, resources and above all opportunities. It is these developments however that put pressure on the governance of natural resources. With more actors come more demands and with this comes a negotiation of value and use, often initiating negotiations that are possible to escalate into conflict.

3.2.2.6 Industry Development

As a result of easier access and more reliable transportation, the building of roads has taken precedence in forms of development in the area. This has allowed for extractive industries, such as mining and logging making use of the abundant resources in this region. This has had a number of negative impacts, both on the environment and on the local communities as this destructive industry has done little for sustaining the natural resources the local communities are dependent on.

3.2.2.7 Dawei Project

One major development project to have taken place in this region is the initiation of the Dawei Project, backed by foreign investors, led mainly by Thailand. This, as mentioned previously, is part of an expansion of a SEZ in Mayanmar, involving the construction of a road from Bangkok to Dawei and has been the consequence of much contestation.

The disputes regarding the Dawei Project concern both Myanmar and Thailand and despite the recent suspension of the project continue to take place as the consequences to the project continue to impact livelihoods. The Kamoethway River Valley is directly impacted as a result of these developments, consequently affecting both the environment and the local communities and their security.

Thailand's investment in this project stems mostly as a result of an expansion of its own industrial zone, known as Map Tha Put Industrial Estate in Rayong Province, east Thailand (TERRA, 2012). As a result of the extensive pollution, including air, water and hazardous waste pollution (TERRA, 2012), Thai local communities have opposed further expansion of the industrial estate in Thailand, resulting in an interest to shift its extended operations to Myanmar. Drawing form the Map Tha Phut experience it is clear that a number of problems arise with the implementation of such a large-scale projects. In addition to the pollution, large quantities of important water sources have depleted and or been polluted, livelihoods have been lost in regards to the ecological destruction due to a fall in tourism and local businesses, chemical explosions and various other accidents have also had wide scale impact, and large migration into the area, due to the sudden increase in job opportunities has led to much cultural destruction in the Rayong Region (TERRA, 2012). As a result of these consequences, Thai and Myanmar people are concerned about the overall impact of the Industrial Estate in Dawei.

A number of problems have already come to light, most considerably in regards to the construction of the Road link. The road, built in 2010, has drawn the attention of many local rights groups in regards to abused land rights and concessions (Weng, 2013), and respectively of convictions and relocation. The company in charge, the Italian-Thai Development Company (ITD), has initiated the relocation of an estimated 30,000 people from more than 16 villages as a result of the entire project (Na, 2012), with an increasing amount as a result of the road construction (TERRA, 2012). Although compensation has been offered to a number of those affected, it has been considered inadequate as the land space offered remains unsubstantial for the subsistence livelihood the local communities lead in this region.

One of the most prominent risks to the introduction of the industrial estate is the impact it has on water resources. The project aims to use 2,150 million cubic metres of water per year with severe consequences to the public water sources and the surrounding ecology (TERRA, 2012). As seen in the previous sections, the dry season in this region can critically limit water resources, an aspect that will be accentuated as a result of the project's commencement.

In regards to the Kamoethway River Valley, the DSEZ project has impacted a number of vital resources. The construction of the road link has had the most direct impact on the community, both in positive and negative aspects.

With the construction of a road come prospects of transport and communication, consequently also impacting trade and business between the villages and the larger city of Dawei. This has brought contemporary agricultural technology and techniques, impacted knowledge systems, facilitated communication and mobilisation of villagers and influenced the dynamics of the local community. With regards to mobilisation and the sharing of knowledge, the road and transport systems have allowed for leading local CSOs to share knowledge with other villages outside of the Kamoethway River Valley, with regards to response to development, awareness and capacity training in human rights and environmental issues, and the understanding of benefits as a result of locally led conservation areas.

In terms of environmentally damaging consequences as a result of the road construction, the Kamoethway River has seen a large influx of debris and sediment, which has negatively impacted its flows and fish habitats. In addition agricultural lands have been used and intersected without agreement of the villagers, which has led to a number of broadening issues within the region (Ehna, 2012b).

3.2.2.8 International Conservation Projects

As a result of increasing economic development and extractive business presence, conservationists have become progressively interested in the region, as it holds much environmental and biodiversity value. These include large internationally renowned conservation organisations such as WWF and FFI, who have been involved in a number of different projects in the area.

As with impacts of economic and agricultural development, conservation practice has also had both beneficial and negative impacts to the local communities of Kamoethway. International conservation interest has brought a wider understanding of the Region and has initiated considerations for the wildlife and ecosystems of Myanmar as well as its natural resource wealth in regards to economic gain.

However in some cases, projects initiated by Organisations have mitigated certain effects of development, and thereby have diminished chances of impeding impacts before they are taken into effect. One example of this is a project conducted by WWF in response to the road link built in connection with the DSEZ. The project involves building bridges and tunnels around the constructed roads to ensure wildlife is able to pass safely throughout its natural habitat (Roberts, 2012). This is seen as a mitigation of environmental impacts rather than an obstruction of the development project itself and can be understood as encouraging similar destructive development projects (Individual14, 2014; Individual22, 2014).

Other projects, conducted by the FFI, involve the establishment of Protected Areas (PA), which include government and institutional agreement, however lack contribution and participation of local communities and local CSOs. This will be discussed more thoroughly in further chapters, however remains to be understood as a limitation to community power and decision-making capacity.

3.2.3 Kamoethway Natural Resources

The Kamoethway and Tanintharyi areas are home to a large variety of natural resources, ranging from water resources, including fish, vegetation and the water itself; to forest resources, such as wood, plants, soils and land resources for activities such as agriculture. In addition to this, the extent of intact tropical ecosystems has left this area rich in minerals, including gemstones, gold, limestone and marble, as well as a large variety of endangered forest wildlife. This has attracted much attention of international businesses and investors since the opening of Myanmar, and has been the result of mining, logging and other extractive industries interested in the area. Despite the vast availability of these resources, the nature and ecosystems in this area are extremely vulnerable to changes and over use, consumption or destruction and for this reason are brought to the attention of numerous organisations, both local and international and community lead projects.

Incredible Wildlife

ASIAN ELEPHANT
Weighing around 11,000 pounds, this forest giant (*Elephas maximus indicus*) spends more than two thirds of its day grazing on available plants.

FEA'S MUNTJAC
Muntiacus feae inhabits the evergreen forests that hug the Thailand-Myanmar border. Extremely elusive, it rarely leaves the woods and its numbers are unknown.

MYANMAR SNUB-NOSED MONKEY
When it rains, *Rhinopithecus strykeri*—discovered only in 2010—tucks its head between its knees to keep water from entering its upturned nose.

INDOCHINESE TIGER
Panthera tigris corbetti can weigh up to 550 pounds. As of 2010, only 350 were estimated to be roaming the forests of the entire Greater Mekong region.

GURNEY'S PITTA
Pitta gurneyi is endemic to Myanmar and Thailand. Thought extinct after the 1950s, the vibrantly colored little bird was rediscovered in 1986, but remains endangered.

FOUR-TOED TERRAPIN
Over-collection of eggs has sped the decline in populations of the river dwelling *Batagur baska*, one of the world's most threatened turtles.

Figure 20 Endangered Wildlife of Tanintharyi (WWF, 2014)

3.2.3.1 Kamoethway River

The River itself stems from The Pawklo River, originating from the Kaserdoh Mountain, where it flows south to meet with the Tanintharyi River. It is surrounded by rich biodiversity, which in the past has been home to wildlife such as the Asian Elephant, Tiger, Guar, Gibbon, Great Hornbill, Asian Tapir, Wild Boar, Sambar Deer, Asiatic Bear and the Sun Bear, some of which still inhabit the area. Previous wildlife, that is now extinct, due to both environmental damage and excessive hunting, included the Asiatic Rhino. The indigenous traditions believe this animal to hold medicinal capacities (individual11, 2014) and as a result has been excessively hunted and illegally traded, leading ultimately to its extinction in this area.

Figure 21 Kamoethway River in Relation to Research Site

The name of the River holds an important value to the villagers who have settled in this area, "We cannot see how important water is to us, it is invisible like air. Nature gives us water for free so we must value it like we value our lives"(Individual3, 2014). The many streams stemming from the river are equally respected by the local community as they offer drinking water and fresh fish. In addition, due to the dependency of the smaller streams, the health of the larger Kamoethway River is vital.

Over 150 year ago, with the first Karen settlers, Kamoethway was so named after the Karen name of a large purple blossoming tree, known scientifically as Largerstoemia Tomentosa growing abundantly at that time around the river itself.

Figure 22 The Largerstoemia Tomentosa : Kamoethway (Plantsystematics, 2002)

The river has many functions in regards to its use and value to the community and wider stakeholders involved in the area. Community members, as previously mentioned, rely on clean water sources for drinking purposes, food resources and transport use. Many elders believe: "should the river ever be destroyed, then so too will our lives"(Individual2, 2014). The river provides the community with stable food security, as it is rich in fish, frogs, vegetation, shrimp and crab, all staples of the communities diet. In addition to the clear value and dependency the community gains from the river, it has also had important cultural and personal significance to the local communities. Many have known little other than the river and the resources it offers, having played in the river as young children and from an early age learnt of the weight of its importance.

However a change in current stakeholders to the area have increased a change in who and how the water resources are used and therefore also a threat to Food Security. "We've seen an increase in companies coming to our lands wanting to use the river" explained an Elder from the Wah Sah Ko Village, "and we've seen the river

change over the years" (Individual2, 2014). Mining companies for example, require huge amounts of water and operate largely during the rainy season, where water flows abundantly. This however has an increasing impact on the water quality and mass in later dryer seasons and can pose damaging threats to the dependent communities. As well as mining ventures, extractive industries such as logging are also having an impact on the river: "the banks of the river need the forest to hold it together, without it much will be lost" (Individual16, 2014)

The river's use therefore comes under a large number of increasing threats, including political instability, development, pollution and mismanagement

3.2.3.2 Forest

The Karen people are intrinsically linked to the forest, the importance of the Forest it similar to that of the river and holds an interdependent relationship with the Kamoethway River. The forest is therefore extremely important to the communities, however, similarly to above, is also under new threats of development, and as a consequence has unmistakable impacts on Community Security.

Figure 23 The Forest Resources are used for all Aspects of Life in Kamoethway

The resources made available to the community by the forest include building materials for buildings and other forms of shelter; food resources, such as protein and vegetables; and agricultural purposes, such as fruit trees and betel nut plantations that secure income to a number of community members in the area. "Our Karen traditions teach us to look after the forest, we see it as life and value it as we value our beliefs" (Individual18, 2014).

Figure 24 Farmer Makes a Fence out of Bamboo

Figure 25 Houses are surrounded by Orchards and Water Collecting Systems

Figure 26 The Construction of a Chicken Pen Using Forest Resources

Similarly the forest provides useful resources to a number of development industries involved in the area, such as logging and mining, however has also played a large role in providing revenue to the Tatmadaw, opposition groups and governmental members (see political background)

3.2.3.3 Land

As with many developing and developed countries land is a serious issue. Kamoethway and the Tanintharyi Region is no different with additional complications with regards to land ownership rights and the constant threat of land grabbing.

In regards to the land in the Tanintharyi Region, it is officially declared 'vacant'. This however has been interpreted in a number of different ways by a number of different stakeholders and remains a heavily contested issue within this Region, and many others in Myanmar.

Figure 27 The Tanintharyi River and Landscape

Local communities have occupied the land over generations and in regards to Karen culture, once having established ones-self on a section of land, one is able to declare it (within the community) as occupied(Group, 2014). This interpretation however is not shared by the Government who regard 'vacant' land as unoccupied. This has lead to a number of businesses being sold various sections of land that have encroached with villagers agricultural lands and has lead to much dispute in the Region (Individual9, 2014). The Government is entitled to contract certain areas of landmass for a period of thirty-years, which in light of the development within the area, such as logging or mono agriculture of rubber and palm oil, has had significant environmental impacts.

In regards to how the land is used by the local communities, it is mostly used for agricultural purposes. The subsistence livelihoods the forest people depend on require significant areas of land used for both lowland and highland rice farming, as well as orchard gardens[12] and betel nut plantations[13].

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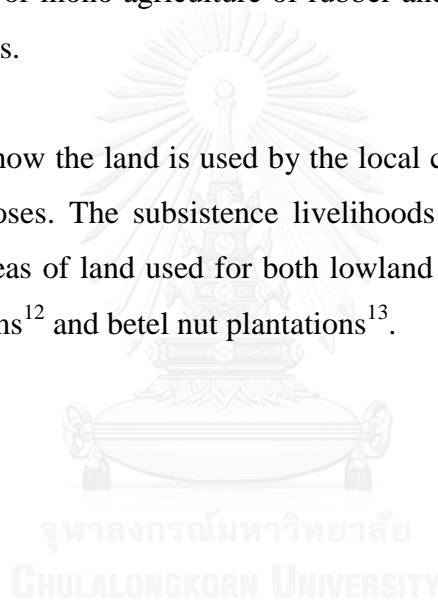
[12] unlike small gardens occupy a vast amount of land
[13] for both personal consumption and income

Figure 28 Lowland Rice Farming

Figure 29 Orchard Maintenance

3.2.4 Kamoethway Villages and Population

The Kamoethway River Valley is made up of twelve villages, each with its own geographic area, Headman, churches and schools, linked together by the Kamoethway River and a local CSO named the Community Sustainable Livelihood and Development Organisation (CSLD).

The importance of community is an important feature to Karen traditions: "being a community is the basis for the empowerment of the Karen ethnic group" (Individual4, 2014). It is for this reason that community and ethnicity come hand in hand and provide a foundation to the community solidarity that is part of the Kamoethway life. The population of all combined Villages increases slightly each year, due to an increasing population and outside villagers moving to the area. "We are close to our neighbouring villages (outside of the Kamoethway Area) and we have a close nit community that is attractive to other people" (Individual12, 2014)

3.2.5 Livelihoods and Occupation

The River Valley provides local people with the possibility of a subsistence lifestyle without a financial cost offering access to foods such as an abundant array of edible vegetables, fish and wild meat.

Figure 30 Fish Species in the Kamoethway River

In addition to this form of subsistence livelihood many villagers grow rice, mostly using sustainable and traditional methods such as rotational upland farming. Other vegetables can also be grown using this systematic approach and can meet the yearly requirements per family. Despite this, the amount of rice grown per family has decreased over the years, with previous amounts exceeding 100 baskets, to now only reaching around 30 to 60 baskets per family. This is due to a number of reasons, such as the decreasing rice yield, due to the use of chemicals during agriculture as well as diminishing the number of years necessary for rotational agriculture.

Figure 31 Preparation of Vegetables Grown in Orchards

Figure 32 Evening Meal

Figure 33 Chilli Plant and Coffee Tree

As well as upland rice and vegetable cultivation, villagers cultivate flatland areas to grow a larger variety of vegetables and fruits. Alongside this, coconut, banana, durian, mango, pomelo, lime and cashew nuts are also grown successfully and in come occasions sold to neighbouring villages and towns. Additionally, the Betel Nut tree has seen an increase in demand since 1995 and has become a popular income generator to the local villagers in this area. The River Valley is particularly renowned for its suitable soils and climate for this particular agriculture, however this has changed over the last sixty years, as a result in climate change and land use of the surrounding areas, causing soil erosion and limiting the suitability of soil, "Gradually over time, it is getting harder and harder to grow what we have always grown here, but we know our soils are the best for this type of agriculture, our ancestors were right about that" (Individual22, 2014). Despite this it continues to be the main income generator in the area, in some cases heavily relied upon by villagers. The growing process for Betel Nut requires only 3 months of hard labour during the dry season where the fruit is harvested and dried on the banks of the Kamoethway River.

With means of income derived from the trade in Betel Nut, villagers have begun to abandon traditional subsistence rice agriculture. Alternatively, rice is increasingly bought from larger surrounding towns, such as Dawei, due to decreasing rice yield and the pressures and difficulties of upland farming.

Figure 34 Village Shop

3.2.6 Kamoethway Seasons

Each season provides the local communities with diverse conditions with which an agricultural pattern is planned. The changes in temperature, precipitation, soil moisture and water mass in rivers and streams are important developments for the local communities.

Table 13 Seasons Mapping

SEASON	MONTHS	ACTIVITY
Dry Season	March – May	Harvest and Drying of Betel Nut
Wet Season	June – October	Growing of Rice and Betel Nut
	November - February	Harvest Rice

The dry season in particular is an important and sometimes challenging period, as water resources are low and therefore limited. Many smaller streams, tributaries to the Kamoethway River run dry which poses a threat to local communities that rely on drinking water from the streams, "we know to expect a drought in the smaller streams, but the Kamoethway River ensures the streams another life in the wet season, so we depend on it" (Individual18, 2014). This puts pressure on larger water sources, such as the Kamoethway River to provide both drinking water and natural habitats for food staples such as fish. Not only does this emphasise the importance of the Kamoethway River, but also sheds light on the importance of a commitment to protecting water health from pollution in the area.

3.2.7 Ethnicity

This particular Region in Myanmar is home to the Karen ethnic group. Ethnic and indigenous peoples are said to comprise of at least 40% of the population,with the Karen constituting of at least 10% (BEWG, 2011)[14] The numbers vary from three to seven million (South, 2011a).The Karen ethnic group is further divided into smaller groups, such as the Skaw Karen, Pwo Karen and Bwe Karen (KBDDF), with differences in languages and religions (Moonieinda, 2011). Most Karen people in

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[14] Despite these estimated percentages, an accurate census in Myanmar has not yet been established and therefore the size of the Karen communities in Myanmar remains distorted, inaccurate and largely unknown.

Myanmar are situated in the Murgui-Tavoy district, however other larger established communities are also situated in the Irrawaddy Delta and the Pegu Division in central Myanmar. Smaller groups are found in the Shan State and other areas in Myanmar. In addition to this, because of this particular regions' proximity to Thailand and the difficulties this ethnic group has endured, many Karen people have migrated and resettled, and as a result have established large Karen communities throughout Thailand, predominantly in the West. Some have acquired Thai nationality as their ancestors have originated in Thailand, however for the majority of Karens in Thailand, legal status is a far away concept, with a small percentage holding 'white-cards', allowing them to reside in Thailand as second class citizens. However for the majority, those migrating for employment are largely illegal immigrants. In addition to Thailand, other countries have become destinations for Karen refugees. Most particularly America, but also Australia, Canada, New Zealand and various European countries (Moonieinda, 2011)

One important reason for the movement and irregular placement of this ethnic group is the incessant and dangerous conflict between the KNU and the Tatmadaw, this has already been established in previous Chapters. In addition, the construction of gas pipelines in 1990 and increasing investment and economic development have also seen forced relocation for many local communities in the Tanintharyi Region ((IDCM, 2006)).

Ethnicity is a core foundation to the River Valley community, with a turbulent history and past it is a strong linkage of people and ensures combined efforts to upholding traditional capacities. This however also brings a severe mistrust and suspicion of other ethnicities and authorities, in particular the Myanmar Government officials, an aspect that may discourage future cooperation.

3.2.8 Religion

As previously mentioned, the Karen ethnic group consists of many ethnically and linguistically different groups. It is because of this that this extensive ethnic community practises a number of diverse religious beliefs and traditions, all of which are fully integrated into all aspects of villagers' lives.

Traditionally Karen people practiced Animism, a form of spirit worship also known as Nat worship, whereby ceremonies would take place as well as small animal sacrifices, mainly pigs, chickens and small fish, additionally trees and nature are highly valued in Animism where worship ceremonies take place every second week of December to ensure peace to the village; and Buddhism, involving merit-making practices.

In addition to these religions, the Karen people of Kamoethway have also been known to practice the "Spirit of Bed' traditions, involving rituals such as lighting candles at the head of the bed before sleeping and placing a handful of fresh rice on the top of ones roof every morning. One particular tradition takes place in August in an attempt to bring back souls. Elders and families gather in the evening and invite their souls to return to them through a number of readings and rituals. The following morning must involve bananas, rice, local wine, sugar cane, white thread that is later tied to the wrists of the family members, and a rice scoop, involving also calling out the names of the family members.

However, with the introduction of Christianity, many traditional beliefs have disappeared and are seldom practiced, mostly only in remote places, it is estimated that over 20% of Karens now practice Christianity with a majority of Karen people as Buddhists (South, 2011a). The Megui-Tavoy area is mostly Christian, however is known to also include Buddhism, Animism and Mulsim religions. Reasons for a change in religion are explained by the Pastor of the Kler Pu Village:

"The Karen have been discriminated against for such a long time, one way to be able to speak to others and for us to promote our community is through religion. Adopting Christianity has not only allowed for our own community to unite, but for us to unite with others." (individual11, 2014)

Christianity has been expanding throughout this region and many believe traditional religious practices are seldom exercised. The first Christian Missionary arrived in the Kamoethway area in the early 1900s, resulting in Myitta Village becoming the first Karen Christian Baptist base in the Tanintharyi Region. Most Karen Christians are Baptist, however Anglican, Catholic and Seventh Day Adventist are also practised Christian faiths.

The Bible plays a large role in Christianity and was translated into Karen by a missionary named Dr Mason in Myitta Village. This has lead to a large following of Christian believers in this particular region, with strong ties to the bible and its teachings[15].

The significance of religion in the Kamoethway River Valley is immeasurable as it provides the community with a foundation for unity and discussion. The church and religious activities are at the centre of all community ventures, "The Church and the Village work together"(individual11, 2014), which leads to discussion and sharing

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[15] A legend within the community exists to understand the full meaning and worth of the bible in which the Karen signifies an older brother and the British the younger. The elder is given a book in which all the important teachings of life are within. Despite this the older brother discards the book with little interest, only to be picked up by the younger. He, having read and learnt the lessons of the book leaves the older brother and becomes very successful and happy, whilst meanwhile the older brother is left miserable and desperate. It is said that one day the younger brother will return, and will teach his older brother the lessons of the book.

of information within and across the villages, "we see religion function in two parts, the first is to unite the community, and the second is to educate" (individual11, 2014)

3.3 Conclusion

This chapter aims to answer the first two research questions regarding the previous and current development trends taking place in the Tanintharyi Region and an initial understanding of how these may impact and shape the governance of natural resources.

With a historical insight into the Kamoethway River Valley it is possible to understand the changes in actors and therefore also a change in the prioritisation of trends in how natural resources and used and valued. This not only begins to identify the dynamics and complexities of natural resource governance, but also provides the reader with a foundation with which to understand how the contestation of knowledge impacts decision-making processes in regards to the importance of natural resources.

Additionally, through the acknowledgement of different stakeholders involved it is possible to begin to understand the complexities of natural resource governance from the perspective of the local community. With the presence of multiple stakeholders, and their multiple agendas it is possibly to interpret the increasing threats to the communities' security from a micro-level perspective. This also provides an understanding of how and to what extent the politics of knowledge plays a role in responding to the security threats and how this in turn impacts governance, explored in later chapters.

The prioritisation of development trends has also been recognisable throughout these findings, and is also identifiable through the presence and awareness of different stakeholders. This also enables an understanding of how the politics of knowledge plays a role in resource governance; this will be further explored in subsequent chapters.

CHAPTER IV
LOCAL KNOWLEDGE AND THE POLITICS OF KNOWLEDGE

4.1 Introduction

This chapter aims to answer the overarching question, having established already in previous Chapters the trends, challenges, and priorities, the politics at play between different stakeholders will be identified and analysed. It aims to bring to light the main findings of the research, with an objective of better understanding the role of knowledge in shaping water resource governance in Kamoethway. A micro-level analysis will take place in order to identify the local communities' role and how this impacts community security. In addition, this will help establish the bottom-up approach to natural resource governance.

The chapter will explore the different governance techniques and different knowledge structures of the involved stakeholders with a focus on the local community. This will reflect both the efforts of the community to produce and use knowledge in order to become part of the decision making process of the natural resources, in particular the river, but will also include the response of the community to other forms of knowledge as a threat to their own security. This Chapter will therefore incorporate the given concept of Community Security as seen in Chapter Two.

Two case studies will be used to identify how knowledge types play a role in shaping power structures and as a result impacting the direction of governance. The first will assess the community led establishment of a fish conservation centre in the Kamoethway River and will provide an analysis of the different stakeholders and the impacts it has on the power structures. The latter case study will interpret a response in knowledge of situations that have negatively impacted the community. This will be done by analysing the types of knowledge the local community use, from both inside

and outside of the community's traditional knowledge systems and the leverage and power this provides the local communities in natural resource governance.

4.2 Fish Conservation Zone

In light of the longstanding challenges the local communities of Kamoethway have faced, alongside recognition of the rivers value and increasing threats, the establishment of a fish conservation zone was initiated in February of 2014, "We need to protect and conserve what our lives depend on, not just for us but for the next generations"(Individual7, 2014). This community-led project has drawn in the attention of a number of stakeholders involved in using the Kamoethway River, as community standards have been implemented in order to protect the established area.

The fish centre, locally known as the Htan Ta Bin, has been initiated and further upheld by the local communities of the 12 villages of Kamoethway and is located in a particular section of the Kamoethway River. As a project formerly initiated by the CSLD in response to the increasing threats and changes that became more apparent with time. The Fish Conservation Centre comes under a bigger project of the CSLD to establish and enforce the social movement of villagers to become more involved and important in decision-making processes. This conservation centre comes as "one of several initiatives to start the social movement ball rolling" (Individual14, 2014), in the hope to allow for villagers to become more engaged and active in protecting their natural resources.

Figure 35 Fish Conservation Zone Signs

It is 1,550 metres long and 138 metres wide and holds a strategic position where water turbulence, as a result of two meeting water rapids, ensures a gentle whirlpool effect strong enough to deepen the chosen area over time and named Ta Ta Bet Lake. The fish sanctuary is currently 21 feet deep, however this depth will naturally increase as the riverbed is broken away. This location has been specifically chosen as it aims to gradually hold more fish species and therefore will require more space over a period of time.
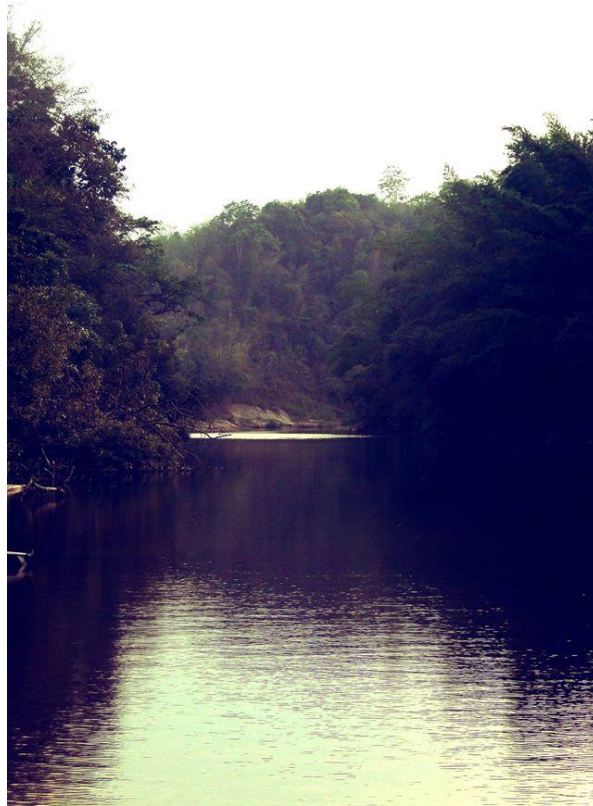
Figure 36 Fish Conservation Zone

Prior to the establishment of the Centre, a number of exercises were undertaken to document the natural resources present in the Kamoethway Area, this included an evidence based study and recording of fish species within the river and edible vegetation of the area. This process used local knowledge based research involving all members of the community from elders, fishermen and CSO members, to women, children and farmers. As acknowledged by a CSLD member "this takes a long time, but it also means we have accomplished something as a community, adhering to our own standards" (Individual14, 2014). The research and data collection period took little over two years to complete, however is seen as an essential process with which to establish the many challenges affecting and impacting the river. It is in response to and to mitigate these identified forms of destruction that the Fish Conservation Zone was established and enthusiastically enforced by the local communities of Kamoethway.

In addition to the community-led research activites taking place prior to the establishment of the Fish Centre, scientific water sample procedures have been undertaken on a monthly basis to both monitor and ensure the health of the river is not interfered with.
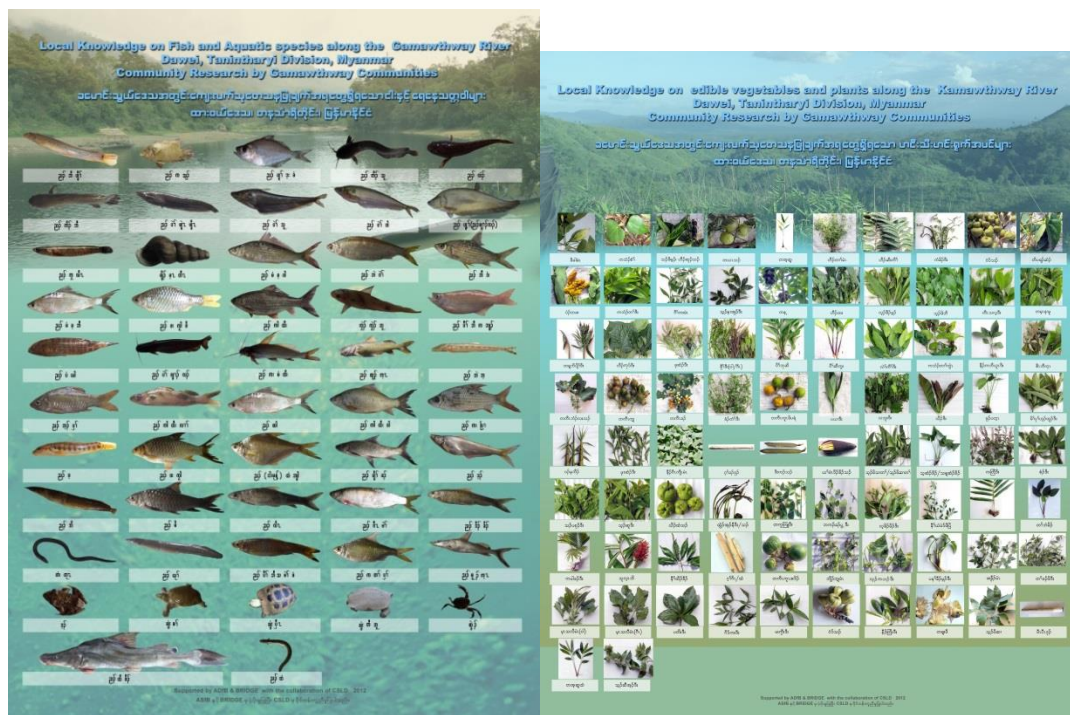
Figure 37 Community-Led Research Data on Fish and Vegetation Species of
        Kamoethway

The conservation centre comes as a result of numerous considerations and can be seen as a tool with which to impact governance of the river itself, as expressed by the Secrarary to the Headman of Wah Sah Ko Village "This fish sanctuary is a symbol, not just for us but for the whole of Myanmar" (Individual3, 2014). As seen in the historical background of the River Valley, the river is valued as an ecological lifeline for the surrounding biodiversity, wildlife and subsistence livelihoods. It is for this reason a key component to all stakeholders within this territorial area and under the pressure of the numerous stakeholders' requirements. Prolonged political instability, mining, logging, and additional forms of development in the area have impacted the river in a number of different ways, resulting in a change in how local

communities have been able to use it. Despite this however, in addition to the more obvious reasons for conserving the river and its fish species, it is to be noted that a number of underlying reasons for the establishment of this fish conservation centre are perceptible.

4.3 Community Security

To be understood using all concepts of security, ensured and implemented by the local community, as formerly established in Chapter Two.

4.3.1 Traditional and Cultural Security

Due to the rivers importance to the community, traditional and cultural belief has marked the rivers grounds. Elders and ancestors have traditionally protected the rivers grounds due to its longstanding significance to the local communities. This however has been threatened by the incessant political instability and insecurity, which has faltered community efforts and ability to protect this heritage.

With the ceasefire arrangement of 2012, it proved once again possible for the community to re-establish traditional routines and practices to ensure the health and safety of the river. In order to strengthen this procedure, community members agreed on the establishment of a conservation centre, which would allow for a more cooperative and substantial effort to protecting and conserving this vital resource.

In addition, with the inauguration of the conservation centre's founding came the ability to attract all acting members of the community to acknowledge the traditional and cultural significance of the river. This included religious leaders, local CSOs and NGOs, all surrounding villagers amounting to more than one thousand participants to the opening ceremony. The cooperation of different ethnicities and religious beliefs (KESAN, 2014) has been extremely significant to the communities, as it signifies a renewed ability to collaborate and participate in an activity that

remains significant for all members, as opposed to the previous conflict ingrained circumstances.

One additional feature that has been instilled with the establishment of the fish centre, and therefore embodies a significant reason for its establishment is the recognition of local rights. The CSO to have organised the event, the Community Sustainable Development Initiative (CSLD) believe the Fish Sanctuary to be a form of Social Movement, whereby people are able to participate and to learn about the elements that are most important to them (CSO, 2014). Most importantly the recognition of Human Rights, Indigenous Rights and Local Rights has allowed for more significant moves to protecting and managing ecologically symbolic areas.

4.3.2 Environmental Security

As previously established, the ceasefire has borne opportunities for both local and economic industry within the area and as a result has led to contemporary and alternative uses of the river. Extractive industries, such as mining and logging have had a number of destructive impacts on the Kamoethway River and its watershed, with both long-term and short-term impacts.

The region is home to a vast array of rivers and streams, with the majority being either polluted or over-used by such industries. The Kamoethway River remains the only outstanding tributary river to not have been impacted by severe water pollution (KESAN, 2014; Local, 2014), and therefore holds much significance to the local communities.

4.3.2.1 Landslide

Although the River remains largely unpolluted, it has borne the brunt of mining and logging destruction. 2004 brought a severe landslide, occurring as a result of longstanding logging in the area. Despite happening ten years ago, the repercussions and consequences to this landslide are still persistent and have had a long-lasting effect on the environment and the river.

It is well known the Myanmar Government has been accountable for selling land concessions to both Thai and Myanmar timber firms during the numerous counterinsurgency conflicts around the country (BEWG, 2011). 40 of these concessions were sold along the Thai-Myanmar border (CSO, 2014) with around 11 firms operating in the Tanintharyi Region (BEWG, 2011). As a result to the extensive logging in this area, the change in soils and the decrease in trees has impacted the stability of the land, leading to the destructive impacts of a landslide.

Extensive farmland has been impacted by the 2004 landslide, as well as deaths and future personal security issues for the local communities operating this land, "a change in the use of land around the river has caused much danger for both the river and the community" (Individual16, 2014). Further damage has been seen to the river as it has seen a drastic increase in soils and sediment, dangerously impacting the depth of the river, as mentioned by the leading CSO in the area, CSLD: "we've seen a dramatic shift in the rivers ecosystem, mostly a change from rocks to sand, mainly as a result of deforestation and the consequences of the 2004 landslide" (Individual14, 2014). This has also had an extensive impact on the fish species and habitats with consequences regarding food security for the local communities.

Therefore in response to future threats as these the Fish Sanctuary enables the communities to ensure safety and security to the surrounding environment. The regulations according to the established fish conservation zone limit the ability to remove forestry upstream and around the Kamoethway River(Individual6, 2014), including also upstream mining, which may pollute the rivers waters.

Community Rules and Regulations:

1. No-one can harm the Community recognised Fish Conservation Zone for any purpose
2. Harming and catching any aquatic species in the Fish Conservation Zone is prohibited
3. Any water flows into the Fish Conservation Zone by chemical farming is prohibited
4. Any inappropriate ways of fishing techniques, such as the use of poison, explosive devices, electric shock, diving and shooting with a spear at the adjacent rapids south and north of the Fish Conservation Zone is prohibited
5. Those who violate the rules and regulations agreed by communities will be educated by village elders of CSLD
6. The perpetrator who violates the rules and regulations agreed by the communities for a second time has to do community service
7. The perpetrator who violates the rules and regulations agreed by communities for a third time will be sent to the authorities (Myanmar/KNU) to take action according to the law

Figure 38 Community Rules and Regulations Regarding the Fish Conservation Zone

4.3.3. Food Security

As seen in previous sections, one of the most significant features of the River is its extensive food and water relevance to the local communities. It is abundant in food resources, such as fish, frogs, crab, shrimp and water-based vegetables, which have come under threat due to both the impeding industries in the area, including also the significant destruction caused by the 2004 landslide, but also due to a mismanagement of resources by the local communities over time.

A depletion of fish species has been acknowledged (Individual7, 2014) and resulted in an effort to record and document the existing variety. This is seen to have been the first stages to the establishment of the Fish Sanctuary and can be acknowledged as a form of combined local and scientific knowledge and to act as evidence based proof of the importance of the river to food security. The recognition of the importance of the river in terms of food security has been a major contribution

to the establishment of the Fish Centre. Local communities are keen to implement the current fish sanctuary, as well as extend the amount in Kamoethway, to ensure future generations are able to live off the vital food resources offered by the river (Individual3, 2014).

In addition to food, water is of great importance. Although many villagers own wells as a means of clean potable water, a number rely on the river and its tributary streams for drinking water. "Those who work and live close to the rivers and streams rely on the water they provide. We boil the water but we've noticed that doesn't get rid of the metals and many of the poisonous chemicals" (Group, 2014). It is therefore important that pollution is at a minimum as to not impact on villagers' health.

4.3.4. Economic Security

Although the local communities rely mostly on subsistence livelihoods, a percentage of villagers secure an income as a result of growing and selling betel nut and a number of other fruits. This requires the use of the river in both the wet and the dry seasons. During the wet season the river ensures the surrounding soils are adequate to growing betel nut trees effectively. This area has been acknowledged as bearing ideal circumstances for the growth of such trees and other fruits relying on rich and moist soils.

Figure 39 The Drying of Betel Nut in Dry Season (TransborderNews, 2014)

The dry season diminishes the river's water capacity, thereby revealing part of the riverbed. This is important for the drying of the betel nut, a process that is required in order to ensure betel nut quality. This is a process lasting three months, in which the revealed riverbed provides ideal circumstances for this process. The rivers flows and seasonal changes are at risk of being disrupted in response to new and destructive activities upstream, such as mining or logging.

4.4 Leverage and Power

It is clear that with the establishment of the fish conservation centre the local communities have been able to assert an amount of power in the management and protection of the river and its resources. A number of CSOs are to be acknowledged throughout this process, namely the CSLD and TRIPNET, as they have both represented the local community, yet have also been involved in shaping the intentions and results of the established fish sanctuary as a political and power leverage tool.

Through acknowledging the impacts of the fish centre with external stakeholders, it is possible to identify how power structures underlie the production and use of knowledge and how the Fish Sanctuary holds a number of underlying embedded politics.

4.4.1 The KNU

As seen in Chapter 2, the KNU are a significant authority in the region, both historically and culturally. Considered protectors of the Karen traditional and ethnic values(Individual4, 2014), the KNU are responsible for ensuring destruction and harm does not come to its people(Individual2, 2014).

The fish sanctuary therefore is expected to be supported by the KNU, "we are supportive of anything that ensures the unity of the community and the continuance of

our Karen traditions" (Individual4, 2014), as it ensures both cultural and traditional values are upheld by the community, provides future generations with secure food resources, and ensures the surrounding areas are protected under the Karen regulations. This ensures the support of an authority that may have the resources or the intention to support ventures, such as mining or logging, to ensure financial security in the Region.

This may not have been as willingly accepted by the KNU had the communities presented the fish centre as a means to diminish extractive industry ventures in the area, as such developments can offer large sums of income as well as future developmental progress. It is for this reason that leading organisations interested in the environmental conservation of the area and implementing the fish conservation zone, have pushed arguments in favour of traditions yet have not explained the underlying impacts this may have on the area to the local communities, at risk of the withdrawal of KNU support (Individual6, 2014).

4.4.2 Sharing Knowledge

Efforts to conserve the forest and the river of Kamoethway have seen efforts from local communities, local CSOs and local leaders with the establishment of the fish centre. However, the area has also come under scrutiny by large international conservationists, such as Fauna and Flora International (FFI) responding to the at risk and endangered forest and wildlife of the region. It is acknowledging similar yet external groups involved in conserving the environment in Kamoethway, as not only does it bring to light the dynamics and politics involved in knowledge, but also discloses the complexities of knowledge sharing amongst actors.

4.4.3 FFI

The FFI has been supporting conservation activities in the Tanintharyi Region since 2012 (Momberg, 2014) and has recently been involved, together with the Ministry of Environmental Conservation and Forestry (MOECAF) of Myanmar, in

expanding an already established Protected Area (PA) in the Region. The current PA System of Tanintharyi covers 209,256 ha with an intended expansion to at least 800,000 ha (Momberg, 2014).

This aims to achieve an improvement of the biodiversity and ecosystem services of the different landscapes present in the region (Momberg, 2014) and aims to reduce the changes in land use that are causing environmental risks and degradation, such as deforestation for mono-agriculture of palm oil and natural rubber, as well as extractive industries (Momberg, 2014). With this it is possible to assess a similarity in objectives with that of the local CSOs and local communities. Together with the similarity of objectives comes also the necessity for similar information. Therefore the documentation of wildlife, vegetation and surrounding resources is of great importance to the continuance of the conservation project. With specific evidence based knowledge it is possible to ascertain the importance and risk to ecosystems and therefore also their dependents, as a result the power of implementation, validity and legitimacy is strengthened

A number of elements arise as knowledge, as previously discussed, is produced and used in different ways using different techniques and is accredited by different systems. One particular example is that of differences in research technique by local communities and the FFI.

The FFI has been involved in researching and mapping the Tanintharyi Region, alongside other areas of Myanmar in regards to its forests and endangered wildlife. This has involved a systematic, integrated approach to land use as a means for identifying particular areas in need of conservation management (FFI, 2014). Two main approaches have been taken by FFI in regards to the Tanintharyi Region that impact also the Kamoethway River Valley[16]:

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[16] Specified in order to differentiate the scope in research. This Thesis remains focused solely on the 12 Villages found in the Kamoethway River Valley

1. Landscape-level land-use planning using a High Conservation Value approach

A High Conservation Value (HCV) is **a biological, ecological, social or cultural value of outstanding significance or critical importance.** The HCV approach has proven useful for identifying environmental and social values in production landscapes. It can be used for a specific management unit or a whole landscape to guide management.

HCV is widely used for conservation planning, resource use and also well used by commodity certification schemes (see below. Six HCVs include, for example, areas with internationally important threatened species, ecosystems or habitats, areas needed for protecting water catchments and controlling erosion, to sacred sites valued by a community.

In Tanintharyi Region, FFI is raising knowledge and capacity to use HCV for mapping and planning. Appropriate land management then includes a mosaic of protected areas, community forestry, sustainable plantations and settlements.

2. Commodity sustainability standards to inform policy and practice

There are efforts globally to make the production of major agricultural commodities sustainable, driven by industry and interested parties through various commodity initiatives. These include the Better **Sugar** Cane Initiative, **Forest** Stewardship Council, Round Table for Responsible **Soy** and the Roundtable on Sustainable **Palm Oil** (RSPO).

The commodity standards have broadly similar principles of sustainability, but differ in detail. These include economic, legal, environmental and social aspects and are relevant to both smallholder farmers and large plantation owners. The HCV approach is recognised by all of them, mainly to limit deforestation.

The standards provide guidance for on-farm management but they need to be applied in the context of a landscape-level planning process that has already defined the go and no-go areas for production. Governments can help enable sustainable development by setting policies and promoting approaches required by these standards. In the future, it may also help companies in Myanmar access new markets and finance if they decide to be certified sustainable.

In Tanintharyi Region, FFI is raising awareness of the RSPO among private sector and government actors to inform policy and practice and move towards establishing a sustainable plantations working group for Myanmar appropriate standards.

Figure 40 Two Apporaches Used By FFI (FFI, 2014)

These approaches vary significantly to the community-led research approach implemented by the local community and as a result cause a clear contestation of knowledge between two stakeholders on the same issue, conservation. It is also possible to gage that both stakeholders seem to aim for similar outcomes, however procedure and varying measurement and evaluation tools differ causing a contestation grave enough for disputes in decision-making processes. Furthermore, a difference in agenda is recognisable, as well as partners and motivation. All these elements point towards an emerging politics of knowledge that can be seen to influence the governance of the Kamoethway River.

In practice, this is notable in the forms of research undertaken of the Kamoethway River by the two stakeholders[17]. As previously established, the Fish Conservation Centre is protected under a number of community regulations. One such regulation bans the use of electro-fishing in the river (CSO, 2014) due to the mass

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[17] the local community and the FFI

impact it has on the dwindling, and recuperating fish species. Despite this, the local organisations involved in maintaining the Fish Centre were alerted to a breach of this regulation. Subsequent to this discovery, contact between the local CSOs and the FFI began to take place. As argued by the FFI, the particular research method had been approved by the Myanmar Government and therefore justifies its validity in being used for scientific research purposes. It was however inferred, by the correspondent local organisations, that prior to the intended research carried out by the external organisation, the FFI, it should have made efforts to both contact and acknowledge local communities and possible local conservation organisations involved in documenting and protecting the environment.

Table 14 Breakdown of the Contestation of Knowledge Between the Kamoethway
Community-Led Approach and The FFI Approach

	Community-Led Approach	FFI Approach
METHOD	• Community members • Documenting each single find • Establishing scientific description of aquatic and vegetation find • Design of a research booklet amongst community members • Meeting with experts on fish species • Initiation of community-led fish conservation zone • Invitation of all members of community, authorities, stakeholders to attend ceremony inaugurating the Fish Conservation Zone	• Socio economic surveys • 2 Rapid biodiversity surveys • Geographic data collection • Electro fishing (not stated but witnessed) • Camera trapping

AGENDA	• The recognition of Karen identity by maintaining Karen traditional practices on conservation • The practice of balancing between utilisation and conservation among communities • The recovery of the river ecosystem and forest ecosystem • The quality of life is improved by restoring resources and gooq quality water • Empower the community to enage and participate in decision making processes	• To conserve species and ecosystems • Sustainable solutions • Science based agenda • To be compatible with human needs • Implement a Ridge to Reef conservation programme • To provide technical support to the government • Expansion and integrated planning and management of Tanintharyi's PA • Reduce threats to PA • Improve maintenance and sustainable financing mechanisms • Propose National Park • Concept for integrated land management
PARTNER	• Living River Siam (NGO) • TRIPNET	• MOECAF • UNDP – GEF funding • GEGG • Smithsonian Institute

Not only has the limited discussion among stakeholders inhibited a sharing of knowledge and research, but it has also instigated a negative connotation to future relationships with external actors, as not only has a breach of local standards been seen, but also a disregard for local communities has been identified.

4.5 Local Knowledge as Power

Much change has been seen in recent years regarding the acceptance and use of Local Knowledge for natural resource management, both in academic fields and in policy making (Lynam, 2007; STEPS, 2007). This comes not only with the concept of Governance, as discussed above, as assuming a participatory approach, but also as a result of a better understanding of Human Rights and Community Security. As a result many IOs have adopted LK as an important strategy to accomplishing

development goals, in particular conservationist organisations have incorporated local participation as a main goal and tool for success (FFI, 2012; WWF, 2010).

As a consequence to the heightening importance of LK, the power it assumes, through legitimacy, validity, and acceptance by larger stakeholders, is undeniable and as a result becomes a tool local communities can apply in an attempt to gain more significance in decision-making processes for the use and management of natural resources. It can be seen that this approach has been taken in Kamoetheway, whereby the organisation and movement of people in establishing local CSOs, such as the CSLD and the presence of external CSOs such as TRIPNET, has brought to light the importance of LK to the communities and the documentation procedures for recording that knowledge. This has had an impact on how the community is valued as a worthy stakeholder in decision-making processes on the area.

4.5.1 Dawei Project and the EIA

In light of the Dawei Project and the aforementioned Road Link developments in the Tanintharyi Region, the growing strength of the community as a valid stakeholder can be seen. This can be understood as a change in knowledge of community rights, which has ultimately empowered the local communities in their participation with development projects and the way the land in this area is utilised.

The Kamoethway Area, along with many other villages, is seen to come under threat of the planned, and still on-going construction of a 4-lane highway[18] linking Dawei with Kanchanburi. This runs across the mountainous range between Myanmar and Thailand and requires significant territorial space, promising substantial environmental destruction. Since its proposal in 2011, Tanintharyi authorities, the KNU, have been seen to obstruct and hinder the continuance of the project in light of villagers concerns regarding the impact the construction will have on agricultural and home lands (Ehna, 2012a). Subsequent to discussions regarding the impact of the

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[18] To be an 8 lane highway by 2017

development project, Italian-Thai Development Company developers agreed to an Environmental Impact Assessment (EIA) leading in order to ensure agreement with the KNU.

The EIA was conducted by surveyors from the Environmental Research Institute of Chulalongkorn University (Ehna, 2013) over a year period, however has been met with much contestation, in particular by local villagers of the Kamoethway River Valley. "As communities of impacted villages we were not consulted, or even invited to the discussions conducted by the academics" (Group5, 2014; Individual14, 2014). One final stage to the completion of the Impact Assessment consisted of a consultation meeting between locals and EIA surveyors and can be seen to have been used by villagers as a means with which to bring to attention the multiple disagreements and concerns for the development of the project (Individual14, 2014).

One major concern to the villagers has been the developing company's dismissal and disregard of local communities and the impacts the project emanates on local agricultural lands. During the consultation meeting more that one hundred local villagers from all Kamoethway Villages attended despite only four villages[19] having been invited to attend the meeting by surveyors. This disregard for the broader affected communities of Kamoethway comes as a risk to Community Security. By dividing the unity of the community it has both damaged the relationship with the Kamoethway locals and distanced them from further cooperation in light of the project.

Alongside the risks to Community Security, the EIA procedures can be seen as a form of knowledge production, in light of the impacts the development project will have. With the disagreement of local communities it is possible to interpret the politics of knowledge production and validity and to ascertain the flourishing strength of the local communities in regard to knowledge of rights and entitlement.

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[19] Khor Htee Lor, Pway Po Klar, Ger Gaw and Ka Let Ki

4.5.2 Conservation, Land and (New) Local Knowledge

This case study, although not linking directly the previous one, does bring to light the complexities involved in how knowledge is produced and verified by the user. The local communities of Kamoethway, in this case study, are seen to adopt knowledge systems from outside sources and therefore obscuring one particular agenda set by the communities themselves in using knowledge as a bargaining tool: that of preserving Karen traditions. It is important to understand the process and construction of knowledge bases as it reflects the politics involved at the core of agenda setting, this case study reflects this in a number of ways.

One reason for the developments and use of LK by local communities is the leverage power it holds in natural resource governance. This has a particular impact on how the land in Kamoethway is used and remains one of the most important issues for local villagers (Individual15, 2014). As seen in previous sections, threats to security have been incessant and the struggle for ownership over land remains an overarching issue. Together with the above-mentioned threats of industrial developments[20] comes also a struggle for land access and use among conservationist groups. This has been highlighted by various CSOs and NGOs working with the Kamoethway community together with increasing conservation efforts to the area, in the form of PAs, which encroach on unsustainably developed land.

It is for this reason that a number of community-led developments are underway in adapting to international requirements in regards to sustainable use of land and acceptable and valid LK. In other words, due to growing interest in conservation and sustainable use of natural resources a number of 'best practice' methods for ensuring these standards are met have been set by leading IOs and Governments (Dixon, 2006). This has consequences on local communities fulfilling their own agendas and protocols in conserving the relied upon natural resources, in that they must adhere to the internationally, or nationally set standard in order not to

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[20] Including the Dawei Project, mining, logging, mono-agriculture

draw the attention of other stakeholders in implementing top-down approaches to how conservation is expected to unfold, or not meeting policies and agendas set my the national government and therefore seen as in need of capacity building. The prospect that communities have legitimate and reliable conservation techniques is in this case challenged and is portrayed as a contestation between knowledge.

The Kamoethway Area is inherently characterised by its own cultural and traditional beliefs and techniques to farming and protecting the environment. This involves ancestral techniques involving a 7-year rotation system in land use for the farming of rice to ensure the soils recuperate, the ecosystem is not damaged and the crop yield is high (Individual26, 2014). However this has come under threat of more than just the previously discussed external industrial developments to the area.

The community itself has been developing since the ceasefire agreement as it has gained better access to transportation, with the construction of roads, communication and therefore also development (Individual3, 2014). This has meant current farmers and land owners of Kamoethway have access to more developed and contemporary farming techniques that are seen to encompass a number of benefits, such as time and effort saving (Individual6, 2014), compared with more traditional farming techniques.

However, despite the numerous benefits to the modernisation of farming approaches, villagers and local CSOs have noted a severe depletion in rice yield, and therefore an increasing demand for agricultural land[21][22](Group5, 2014). The development in agricultural techniques has therefore surpassed the necessity for

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[21] This is to be understood as a result of soil mistreatment, lack of seed selection processes, use of chemicals and general abandonment of traditional techniques used to ensure rice yield is high and soils are not damaged

[22] It is to be noted that this is not the exclusive reason for increased land demand, but also comes as a result of increasing business interests in mono-agriculture for rubber and palm oil plantations together with the largely disputed problem of land grabbing in the area. However in terms of community-based efforts, only local farming techniques will be discussed in this chapter

traditional methods and has led to an increasing abandonment of the traditional farming practices.

4.5.2.1 Chemicals

One such contemporary farming method has been the introduction of chemicals as a form of clearing land from unwanted grasses (Group6, 2014). This has had a number of negative effects on both the community and the environment in a number of ways.

Firstly, land that has been chemically treated is seen to deteriorate in quality and malleability as the application is repeated over a period of time. This has a number of consequences in regard to a continuous dilapidation of rice seed quality, which in turn effects both yield and worth, as well as resulting in prolonged soil regeneration periods and therefore ineffective and worthless (Group5, 2014). This is largely categorised as an unsustainable farming approach (Cribb, 2010) and therefore gives opportunity for reprimanding local communities in its inability to protect its lands. This is a threat to community land ownership particularly with regards to the increasing IO conservation interest in the area.

Secondly, the damage to the environment unquestionably leads to contamination of water sources, including that of the Kamoethway River. The ecosystems are deeply rooted and connected to the small streams and the large rivers and soil contamination can be transported easily into the nearest water sources. In addition to this, when undertaking a Focus Group Study it was clear that procedures regarding the utilisation and sterilisation after use led to the pollution of the river, as it was used to both wash equipment and the worker (Group, 2014).

Thirdly, a shift in technique also suggests a shift in knowledge base and systems, as seen in this case as a disregard and discontinuance of local traditional methods and therefore also knowledge. Despite the numerous benefits to using

chemicals for agricultural purposes[23], the loss of traditional knowledge can cause a number of different problems for the local communities. One such problem is, once converted to mainstream and unsustainable methods, the community lacks validity in its LK procedures and therefore jeopardises its position as reliable stakeholder in decision-making.

The importance of LK has been acknowledged by the leading local CSOs and NGOs in the area and efforts are made in upholding and strengthening local based knowledge in responding to more contemporary requirements. This will be examined in the next subchapter.

4.5.2.2 'New' Local Knowledge

This 'new' knowledge is to be understood as local knowledge in term, however not local of the area. In other words it has been adopted by the Kamoethway communities and therefore, as previously explained, stands against the ideal with which to uphold Karen traditional knowledge. This can be seen in response to the depleting ancestral knowledge being passed down and used by new generations in terms of agricultural techniques, local CSOs have responded by introducing new knowledge systems used by similar traditional farming localities based in Thailand.

Tenasserim River and Indigenous People Networks (TRIPNET) works closely with the local communities of Kamoethway to strengthen their capacity to manage the surrounding natural resources (TRIPNET, 2012). One such method is to introduce local communities to alternative traditional methods, both national and international, in order to acquire a ranging skill set on agricultural techniques. This also ensures an expansion of local traditional forms of farming in the form of 'organic agriculture'.

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[23] Such as ensuring a predictive growth rate and quality of a plant

Figure 41 Seed Selecting and the Seed Selected Growing Rice

One particular country with a great deal of experience is Thailand, where local farmers have applied traditional farming techniques over centuries, which have developed over time with farmer expertise and experience (TOTA, 2011). These practises have become environmentally sustainable farming methods and are renowned amongst South East Asian agriculturally dependent countries. Thailand has implemented organic agriculture as part of its national policy since 2002 and has issued a new set of strategies to be implemented between 2014 and 2016 (PRD, 2014). This comes as a result excessive use of agro-chemicals and economic pressures to increase production, whereby a group of local farmers formed the Alternative Agricultural Network (AAN) in the 1980s to foster sustainable agriculture activism in Thailand (GN, 2012).

As an effort to introduce and restore environmentally sustainable farming methods to the surrounding villages in Kamoethway, TRIPNET has endorsed local community members to learn and experience these distinctive techniques (Individual6, 2014). Two methods in particular have been selected by the organisation's members and interested villagers, in a practical exercise to better understand the method and to prove effectiveness through results based evidence. These include a rice seed selection process, whereby only qualified seeds will be planted to increase the quality and gradually also the crop yield; and the introduction of an organic fertilizer to improve soil quality and over time also crop yield.

Although altogether meeting the requirements of farmer's needs to increase crop yield, it is important to note that both techniques do not replace the purpose of chemicals, used as a response to weed intrusion and land clearing. This, together with the time consuming efforts these alternative techniques require, may obstruct approval by other farming community members. Time and effort lie at the heart of reasons for having adopted agro-chemical methods (Individual2, 2014) and therefore, in regards to the proposed techniques, could prove inadequate in satisfying short-term results.

Long-term benefits are evident, as these techniques have proved successful in a vast number of cases. In addition to the benefits to the farming communities, these methods ensure environmental sustainability and no pollution. This, as inferred previously, has underlying political elements that ensure local communities are protected from land confiscation risks.

4.6 Conclusion

In using a number of case studies based on the undertaken fieldwork it is possible to establish how the politics of knowledge takes place both within and amongst different stakeholders. The significance of the politics and contestation of knowledge and how stakeholders have put it into play is understood having taken a micro-level approach, which brings to light the significance of a bottom-up concept.

However in regards to what has been found it is possible to see that even within the micro community level, politics of knowledge are at play. Information has been withheld from community members in order to ensure a power enhancing position in the decision-making process of how the Kamoethway River is to be used. This, although somewhat weakening the local community, in awareness and transparency, strengthens the bargaining power of community-led projects as a political tool with which to obtain legitimacy in decision-making.

This can be seen as bringing to light the true complexities and dynamics to knowledge politics and natural resource governance and deepening an understanding

of how, even at a micro-internal-level, politics are at play for power in decision making. In response to this significance in terms of the concept of community security, it is possible to determine how difficult a bottom-up approach can be. In such a politically unstable scenario, with the involvement of numerous stakeholders, the community has had to take measures to responding to these threats. It is clear that because of its disregarded position, the local community has had to take part in the only framework existing with which to obtain power in order to contribute to decision making on natural resources for the benefit of the community. With this an important aspect is notable, in that the existing framework discussed in Chapter One must be changed in order to achieve sustainable, fair and equitable governance.

CHAPTER V
FURTHER ANALYSIS & CONCLUSION

5.1 Introduction

This final chapter will offer further analysis of the undertaken research and will present an over all conclusion. As required by the research objectives this will cover a closer analysis of how actors and changes have impacted the natural resources and decision-making processes of the Kamoethway Area, with a focus on the underlying role of knowledge politics. Further research recommendations will be offered in light of the conclusive results of this research, as well as a recognition for the intra-connected nature of the conceptual framework and the embedded politics at play.

5.2 Knowledge

From the information in both Chapter 2 and 3 it is possible to deduce a number of characteristics that arise as a result of knowledge production and use, which influence and shape the governance of the Kamoethway River and its resources. Concluding from the Fish Conservation Centre case study it is clear that the production and use of LK by local communities and local CSOs has ensured a certain amount of leverage power to the community on how the river is to be used by themselves and other stakeholders. The significance of knowledge is recognised in this case as it is the documentation and evidence based proof that has allowed for a foundation of reliability and validity of the communities' role as an authority in governing the watershed. Prior to the scientifically based knowledge production of LK in Kamoethway, local communities and ancestors have relied upon oral histories to account for knowledge on resources and land. Met with an influx of threats to the ownership and entitlement to the land, and therefore also community security, the local communities and leading CSOs have implemented knowledge techniques as a

means to gain power and acknowledgement from local, national and international authorities.

In addition to the use and production of LK, it is important also to consider the underlying politics at play of when, how, why and who knowledge is produced by. The recognition of Rights plays a large role in this research, as it has been a key foundation for the local communities to establish power on their resources. This has come as a result of many threats to security, in the form of political and violent conflict, a competition of resources and an increasing international awareness for the importance of the protection and conservation of natural resources. It is therefore also important to acknowledge the CSOs and NGOs involved in ensuring sustainable development for the villages of Kamoethway, as their own agendas play a large role in shaping how the knowledge is used and dispersed, both among the local villagers and the wider community of stakeholders involved.

In addition, the role of stakeholders, other than the local community, has also shaped how and why knowledge has been produced and used by local communities. Knowledge that has adhered to a number of internationally renowned methods, such as the evidence-based research using techniques, such as local ecological methods can be used by a number of institutions and is therefore seen as reliable. It has been seen as 'politically appeasing' (Gilchrist, 2007), however has also gained increasing acceptance as a contribution to knowledge (Gilchrist, 2007), particularly in natural resource management. Both these elements give value and power to the local communities producing LK and therefore play a role in the shaping of knowledge. This therefore brings to light the complexity of knowledge politics, as not only is a top-down approach identified, but also a bottom-up approach.

5.3 Relationship between Knowledge and Governance (and Community Security)

Having established the dynamics of knowledge production from the aspect of local communities, it is possible to get a better picture of the complexities that lie

embedded in the relationship between the politics of knowledge and governance. Looking closely at the previously conferred conceptual framework, a clear link between knowledge and governance is perceived, however in regards to the undertaken research it is possible to infer much more complex dynamics in how decision making is eventually shaped.

The connection between knowledge and power, as identified by Foucault (Foucault, 1980) is clear when analysing governance. From this it is possible to understand that political processes are therefore to a greater extent more complex than what is often assumed. As previously deduced, multi-level governance includes and encourages the participation of actors, which in turn ensures interactions and relationships among stakeholders are built. The boundaries and status' of these actors however are often seen to be 'fuzzy' (STEPS, 2007) and as a result leads to an inadequacy of governance itself. However, importantly this also opens potential for an awareness of how power systems play out in order to constrain the more marginalised knowledge systems (STEPS, 2007) and it is here that the power of knowledge emulates as a tool used by those marginalised stakeholders in order to ensure influence throughout the decision-making processes.

The villagers of Kamoethway have therefore benefitted from both the recognition of the complexity of governance and through this the use of knowledge as a mechanism to gain power and presence in a wildly dynamic system. These dynamics of governance come as a result of the dynamic relationship between the dynamic social, ecological and knowledge systems, which therefore create an extremely complex system. An often-identified gap is the disengagement of all three elements, a gap that this research has attempted to fill.

Although a clear correlation between knowledge and governance can be seen, it is not without its limitations. The scale of which is highly disputed as bottom-up approaches rarely impact large-scale international agendas (STEPS, 2007). Despite this however, it is possible to deduce that although not directly impacting international policy, the politics of knowledge indirectly influences agendas, policies

and also approaches, as it is embedded and underlying in every element of these procedures. So much is proven in the research of Kamoethway as the use knowledge has enabled marginalised communities to participate, and in some cases lead the governance of natural resources, in regards to conservation. In this way it is possible to assess the impact of politics of knowledge on natural resource governance as an important feature that should be considered in overcoming the challenges of the complex dynamics of governance.

As seen in Kameothway, response to challenges, threats and a growing number of stakeholders with multiple agendas, has initiated a community-led effort to build capacity in maintaining a serious role in decision-making processes of the governance of natural resources. The methods with which the local community has established its power is through the use of knowledge both as a tool and a reason for effectively protecting resources and establishing itself as a legitimate participating stakeholder. This case can be used as an example of how influential the politics of knowledge can be to identifying and solving the complex challenges of governance.

In addition to the recognition of knowledge as shaping governance, it is important also to recognise the impact of knowledge sharing. It is clear from a number of findings throughout the research that this has had considerable consequences on the power of knowledge and therefore also the influential power a stakeholder has in decision-making processes.

5.4 Limitations

This research can be seen as merely the tip of an iceberg of a far more dynamic issue. As frequently and persistently mentioned throughout, governance and the politics of knowledge remain two extremely dynamic and complex concepts. It has been important to simplify and reduce the amount of information available in order to follow a concise argument, which unfortunately in many ways obscures the intentions and meaning of this research. It is for this reason that it is necessary to

mention an obligation for further prospective research on this vast and complicated matter.

Similarly, the case study of Kamoethway remains largely undiscovered. As having only recently been accessible to research, development and conservation attention it remains in very early stages of adaptation. Despite this it is possible to see how far this small community has come in responding to the persistent challenges to community security and deserves high estimations.

However, due to a number of varying factors uncertainties have come to light in regards to how LK of Kamoethway has shaped the governance of natural resources in the area.

- One extremely important limitation to the research has been the lack of prior academic studies to the area. This has to a certain extent limited the analysis, however contrarily, significantly contributes to the importance of the study, as it introduces the discussed concepts on a practical level and provides a micro-level analysis of wide ranging approaches.

- In addition to a lack in former research to the area, the case study remains premature in its developments. This suggests developments that jeopardise, or further justify the research results are yet be seen and would therefore require further analysis in the future

- Considering the production and use of LK in Kamoethway, one major conclusion revealed the incessant politics embedded within. The produced knowledge must be understood as being majorly shaped and controlled by the leading local CSOs. This uncovered the true power of knowledge, to an extent that many community members were not fully aware of. This was ensured intentionally as it allowed for strategic politically infused use of power and can be seen as once again marginalising groups and limiting access to participation on more than a level of necessity.

- One element that is necessary to take into account centres on the regulations and community standards that have been set up in terms of the Fish

Conservation Centre. Although convincing and, due to the robust evidence based LK that has grown in strength, valid, it is questionable as to what extent these regulations will be considered by other stakeholders. With political instability and illegal land grabs that pollute the ideal of governance as a start, it is necessary to once again take into account the infancy of social movements.

- The lack in stability in general has been a great limitation to the research as it has raised many uncertainties and tentative assumptions. This however, as seen above, can be used as evidence of complexity and intricacy of natural resource governance, most especially in areas where it is most needed.

- As seen previously, one important feature for the relationship between governance and knowledge is the interaction between stakeholders. This involves a sharing of individual knowledges in order to amount to a participatory and just decision for the use and management of natural resources. In finding that the knowledge produced by the local communities in regard to the Fish Centre has not yet been shared, or acknowledged by other stakeholders, such as IOs involved in Conservation efforts in the area and Government recognition of either local CSOs or local initiatives, it can be estimated that it has not yet gained or achieved the power necessary to become a key player in governance on a wider (national) aspect.

5.5 Recommendations

It is clear from the limitations that this study, as with many time restrictive research cases, is in need of further exploration. This involves a more lengthy data collection period and multiple years of investigation in regards to how the LK is used to further shape the governance of natural resources. In particular this will be an important requirement to help bridge the gap between local and international impacts and could present important developments of knowledge to governance relationships. Additional recommendations would be as suggested:

- A more in-depth analysis of the instable political situation of the area is necessary in order to gain better footing in understanding the underlying context that shapes knowledge through experience

- The importance of religion plays an extraordinarily large part in social movement in this area, as well as the ethnic roots and traditions. This is also extremely vital to the formation of knowledge and requires lengthy analysis in regards to its contributions to knowledge. This will also provide a better understanding of the political instability and long-lasting tensions between the Karen ethnic minorities and the Myanmar military.

- One important recommendation will be to analyse the impact a change in governance, as a result of knowledge, has on community security in order to establish the benefits and negatives of understanding governance as dynamic and knowledge use and production as political. This will thereby also produce an understanding of the wider, international impacts of governance as a dynamic and complex concept.

- Further research into the involvement of other stakeholders and their own perspectives will also contribute greatly to the intentions of this research. It will present the difference in knowledge production and use and the embedded politics within each actor thereby further portraying the differences in stakeholders and the politics at play within and without each individual institution

- Further theoretical reviews and more concrete amendments to ensure a holistic approach to governance is taken

5.6 Conclusion

While much is still left to unfold, in terms of the wider impacts of governance on community security in Kamoethway and anticipated results, regarding the politics of knowledge and its power to shape natural resource governance, have been largely validated through the considerable supportive collected data. As anticipated the role of knowledge politics has been a significant contributor to the shaping of governance and has largely manifested itself in the power structures and interactions between stakeholders interested in using the Kamoethway River and its resources. However, with regards to a second hypothesis presented in earlier chapters, the research has shown a significant contrast. The impact of change on the community was predicted to affect community security in a display of community disintegration; this however has been countered by the remarkably overwhelming information regarding community solidarity and the distinct joint effort of the community to respond to the contemporary issues of natural resource management and sustainable development capacity.

One distinctive feature of this research is the significance it has given to the underlying politics of knowledge in regards to natural resource governance. This sheds light on the complex relationships between stakeholders during decision-making and allows for a better understanding of governance. Additionally, with a better understanding of the dynamics and politics at play it is possible to target areas of governance that have come under scrutiny. This research therefore plays a considerable role in current discourses on natural resource governance and highlights the importance of knowledge politics.

Another significant conclusion to make from this research analysis is the overarching threats to community security natural resource use has. This includes the involvement of new stakeholders and changes to the research site. In this particular case it has seen the solidarity of a community and combined effort of all community members in realising a capacity to protect and conserve Rights and the use of surrounding natural resources. In the case of the Kamoethway River Valley it is clear

that community security has allowed for power dynamics to involve, including the production of knowledge. This knowledge has been seen to allow community members to play a largely contributory, and in some cases a leading role, in how the natural resources are controlled.

Additionally, a noted and significant threat to community security has been the political use of knowledge, and therefore bears weighty importance in the discussion of community involvement and response to both governance and security threats.

As once mentioned by a CSLD member of Kamoethway and a relevant statement to remember:

"We were born on earth, here in this place. We grew up and lived our lives here. This is the place that our grandparents left for us. Therefore, we can use, develop, govern and look after this place. We can also hand it to future generations for their wellbeing. These are our rights" (KESAN, 2014).

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VITA

Lisa Schimetat was born in the UK and raised in a number of different countries across the world. With international development experience during her early life, it has remained a passion and commitment throughout her academic and working career.

Lisa graduated in 2011 with a BA Hons in both International Relations and German from the University of Birmingham. It is here that her understanding and interest for development issues in Southeast Asia and the environment began to take shape. Throughout her degree she was involved in working on projects focusing on Water Health and Sanitation in Venice, Italy and a hands on Sustainable Farming Project in Bergerac, France. Her in-field research experience and community involvement exposed Lisa to ideas and optimism that encouraged her to continue pursuing a life long commitment to helping those most affected and forgotten by development.

Upon graduating, Lisa moved to Washington DC, where she worked for the MMMF at the World Bank Group. This allowed for a broadening in experience on development issues focusing on education opportunities for those most impoverished. This instigated an interest in the links and effects of education, migration and environment on those most vulnerable resulting in a move to Bangkok, Thailand in 2012 where Lisa began work for MTV EXIT as a lead Researcher. With a passion for knowledge, it is here that Lisa became interested in furthering her academic potential and enrolled for the Master of Arts in International Development Studies. Upon the completion of her degree, Lisa is hopeful to continue her career in international development work around the world and intends to focus on environmental issues, a subject that remains close to her heart.