Rini Kusumawati was born in Lumajang, East Java on June 12th 1977. She obtained her Bachelor degree in Education with a specialization in French in 2000. Upon graduation, she worked as a Bahasa Indonesia teacher for foreigners, and carried out some consultancy work with CIFOR, Bogor. In 2006 she obtained a Master degree from Gadjah Mada University in the field of Sociology, with a specialization in Development Studies. In March 2007, she became a member of the RESCOPAR program and started a sandwich-PhD program at the Rural Development Sociology Group of Wageningen University, the Netherlands.

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Networks and Knowledge at the Interface
Governing the Coast of East Kalimantan, Indonesia
Rini Kusumawati

Networks and Knowledge at the Interface

Governing the Coast of East Kalimantan, Indonesia

Rini Kusumawati

The RESCOPAR project

RESCOPAR is a co-operation between research groups at Wageningen University (the Netherlands), Can Tho University (Vietnam), Mulawarman University and WWF (both Indonesia) studying the resilience of coastal populations and aquatic resources, with an emphasis on mangrove ecosystems, shrimp culture and coastal fisheries. The final objective is to propose guidelines that optimise the sustainability of shrimp production, of fisheries, and of mangrove forest. To do so RESCOPAR also studied the way decision making processes at different socio-political and spatial scales affect the use, management and conservation of natural resources.

Eleven PhDs, 6 Vietnamese stationed in the Mekong Delta, 4 Indonesian in the Berau Delta of East Kalimantan, and one in the Philippines, have studied various aspects of the shrimp sector: the interaction between mangroves, aquaculture and fisheries; the changes in the genome of the WSSV virus causing disease; the epidemiology of this disease; the effects on the people's livelihood and the role of governance by state and markets in the changes. Aggregation and comparison of the results will allow RESCOPAR to provide policy advice.

Networks and Knowledge at the Interface

Governing the Coast of East Kalimantan, Indonesia

Rini Kusumawati

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This research was conducted under the auspices of the Wageningen School of Social Sciences (WASS)

Networks and Knowledge at the Interface

Governing the Coast of East Kalimantan, Indonesia

Rini Kusumawati

Thesis

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Rini Kusumawati

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Wageningen, June 2014
Rini Kusumawati

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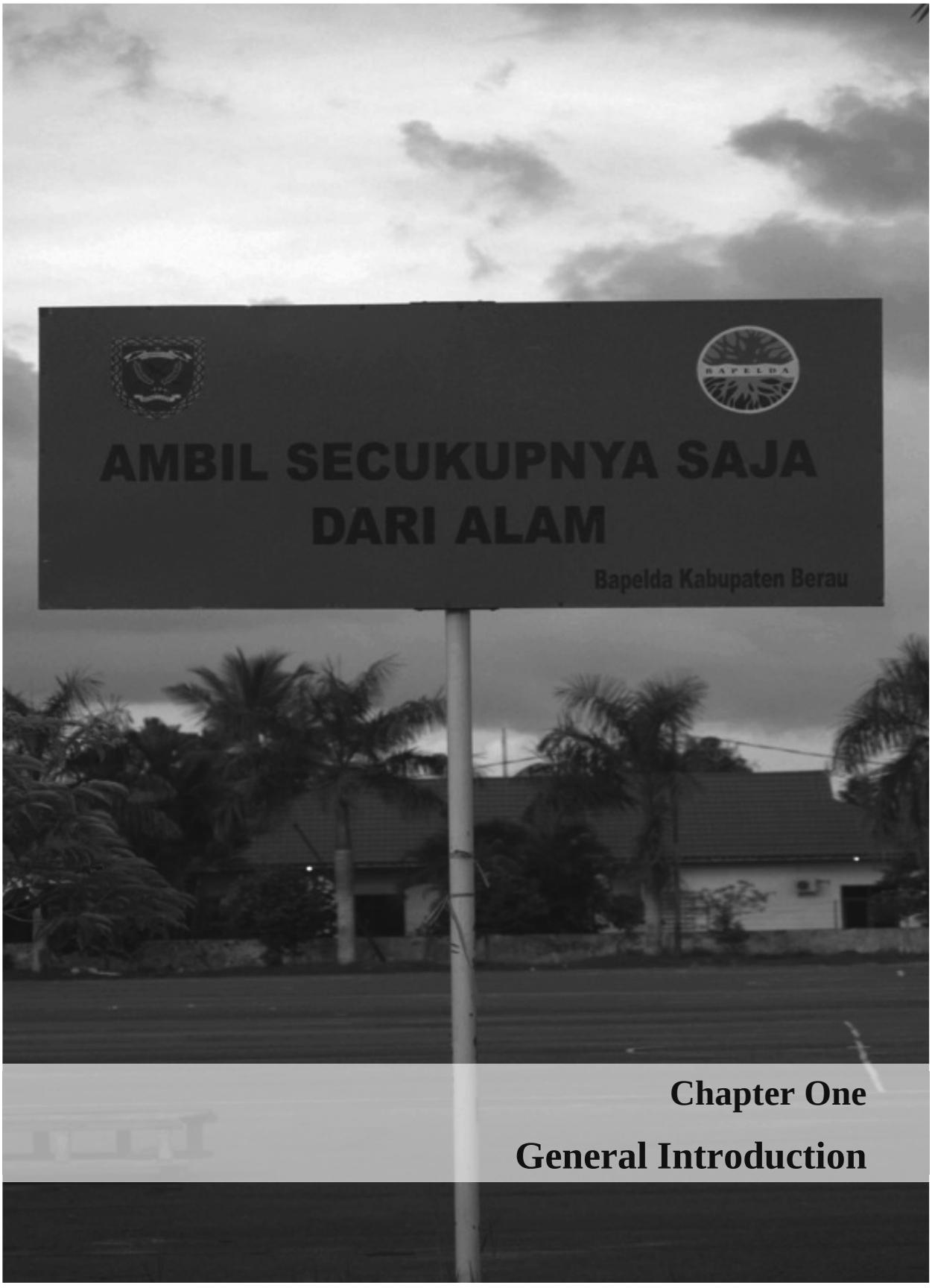


Chapter One

General Introduction

Note on the cover page picture:

A signboard issued by Natural Resource Management Agency (*Badan Pengelolaan Lingkungan Hidup* – Bapelda) of Berau located in the main square of Tanjung Redeb City, Berau. The sign is in Indonesian and in English it means ‘Take only what you need from nature’.

1.1 Global Intervention in Coastal Governance in Indonesia

Decentralization in Indonesia has provided new opportunities for provincial and regency government, as well as private sector actors to access and exploit marine and coastal natural resources (Patlis 2008; Patlis 2005; Satria and Matsuda 2004; Aspinal and Fealy 2003). The implementation of decentralization and subsequent emergence of regional autonomy has invited government to formulate locally oriented and relevant laws and regulations related to the management of natural resources (Resosudarmo 2005). However, despite the importance of coastal areas for national and local economies in Indonesia (Visser 2004; Laksono 2007) the social and regulatory consequences of marine resource exploitation remain poorly understood. Moreover, inconsistency and overlap of laws and regulations between sectors (Patlis 2005; Resosudarmo 2005) and the lack of coordination between multiple levels of government are aggravated by a general lack of clarity and insecurity for legislative enforcement (Patlis 2005). Despite the promise of decentralization, the framework for governing the coastal resources is full of legal disconnects in defining, regulating and enforcing the regulations (Patlis 2008). This legal disconnects lead to the ineffectiveness of state governance of coastal resources in Indonesia.

International environmental non-government organizations (NGOs) have taken the perceived failure of the Indonesian state as an opportunity to intervene in coastal resources and conservation governance. They have done so by bypassing the central government and building domestic networks with a broader range of public and private actors. NGOs like The Nature Conservancy (TNC) and the World Wide Fund for Nature (WWF) have been especially instrumental in introducing internationally developed marine governance tools and arrangements, based on global narratives of environmental crisis in fisheries and aquaculture (Fox et al. 2012; Padiyar et al. 2012; Mohan and De Silva 2010; Djohani 2009; Halim et al. 2008). These NGO inspired tools and

arrangements are diverse (Bush 2010; Parkes et al. 2010; Jacquet et al. 2009; Rohiem 2009). In the coastal areas of Southeast Asia, including Indonesia, two have become prominent: spatial planning for marine conservation areas and standards for better management practices in extensive shrimp aquaculture.

Conservation has been associated with the protection of habitats and species and is characterized by a territorial and centralized approach to management (Robbins 2004; Satria et al. 2006; Vaccaro et al. 2013). More recently, conservation has also been framed in productivity terms, and translated by NGOs, often through their partnerships with private sector actors as a strategy "aiming to make production, extraction or trade in resource commodities more environmentally sensitive and sustainable" (Peluso 2012: 86). This productive turn has led to new approaches in conservation that demand the participatory inclusion of local needs; considering local livelihoods, and acknowledges the role of power in creating undesirable conservation outcomes (Vaccaro et al. 2013; Goldman and Turner 2011; Peet et al. 2011). Consequently, this new approach reinforces demands for decentralized forms of natural resource governance (Vaccaro et al. 2013; Goldman and Turner 2011).

The productive turn in conservation in Indonesia, with its inclusion of a wider group of actors and knowledge claims, can also be understood in terms of a 'governance-turn'. In contemporary governance studies the act to govern is not merely in the hands of the government (Bulkeley 2005; Kooiman and Bavinck 2005; Cashore 2002). Instead, a wide range of public and private actors participates in varying forms of partnership to formulate societal problems and solutions, within which the government becomes one of the interest groups (Falkner 2003; Cashore 2002). The government continues to maintain considerable power by controlling legislation and procedures, as well as financial resources and human resources. However, it is through the interaction of actors from different positions and levels in society that prevailing social and political obstacles are removed and new institutions

emerge that structure and direct actors' behaviour (Kooiman and Bavinck 2005). In Southeast Asia, through the implementation of co-management, central governments have fostered the development of institutions and arrangements for devolving decision-making power to resource users (Carlsson and Berkes 2005; Persoon et al. 2003; Pomeroy and Berkes 1997; Sen and Nielsen 1996). In Indonesia, following the implementation of political-administrative decentralization in resource management, global environmental NGOs have taken the lead in introducing and organizing conservation activities; often, but not always in partnership with the decentralized government and private sector. Two strategies studied in this thesis include the attempts to coordinate and implement of marine conservation areas (MCAs) and better management standards for fisheries and aquaculture. In both approaches NGOs have built networks of decentralized government, international organizations, industries, consumers, and resource users. The actors in these networks have converging and/or conflicting motives and interests that underlie their strategies for engaging with or resisting the conservation activities.

The increasing number of actors involved in marine conservation activities has opened up a range of questions around who is included, how, and with what result. More fundamentally, a series of questions exists around how conservation is framed, including or excluding whose knowledge and by whom. This politics of knowledge (Goldman and Turner 2011; Jasanoff 2004) focuses attention on the dynamics of knowledge co-production and transfer; processes which stretch beyond the local and link to global places and historical events (Goldman 2010). Co-production implies a collaborative process to define and develop shared understanding of environmental problems (Armitage et al. 2011), implies the inclusion or exclusion of certain actors as well as different knowledges during the process (Konefal and Hatanaka 2011; Ponte and Cheyns 2011; Cooke and Kothari 2001).

The global-local networks built by NGOs become mechanisms or tools in the process of transferring global knowledge to local actors (Tsing 2004). These networks act as an interface through which knowledge must pass before being actively translated and negotiated into practice. The global environmental knowledge is a product of scientific knowledge that is produced by scientists who have access to selecting the relevant theory and interpreting the data (Kontinen 2004). The knowledge of the local actors is shaped by a different ontological basis originating from the historical practices and experiences of the local people. Often this local knowledge conflicts with, or is opposed to the global knowledge that was brought in by the NGOs networks.

In the process of knowledge transfer and co-production, knowledge is transformed and re-inscribed into other knowledge-power constellations (Escobar 1998). International environmental NGOs transfer global knowledge to local governmental actors, private sector, and resource users through tools and activities such as MCAs and production standards. However, the local actors are not merely the objects of the global conservation activities. Instead of employing absolute power and a blueprint transfer of conservation ideas, global actors are caught in what Tsing (2004) has described as friction, where global actors are entangled with local actors in awkward, unequal and unstable interconnections. Applying this concept of friction instead of focusing on the possible conflicts in the process of the global-local knowledge interface, allows me to look at its positive outcomes. Two case studies, on the development and implementation of the Berau marine conservation area (MCA) and on the emergence of standards for best management practices (BMPs) in Sesayap Delta were chosen to illustrate the dynamics of the global-local interface.

The Berau coastal waters, despite being known as rich in marine species, coral reefs, migration routes and nesting ground of sea turtles suffer from destructive and illegal fishing activities (Gunawan and Visser 2012). Recently, they have become a national, regional and international target area for inclusion in marine protected area networks (Kusumawati and Visser 2014).

Together, concerned international, national and local environmental NGOs proposed the district government to collaborate in developing the Berau MCA. It was established in 2005 and acknowledged by the central government.

North of Berau District, Tarakan District is known as the main regional processing and export area for farmed shrimp in East Kalimantan. Locally based processing companies are supplied with shrimp from traditional extensive aquaculture systems located on the small islands scattered throughout the estuary of the Sesayap River that extends beyond Tarakan to include Bulungan, Tana Tidung and Nunukan districts (Kusumawati et al. 2013). Invited by one of the processing companies to assist them in mangrove replantation programs, WWF-Indonesia introduced better management practices (BMPs) in shrimp farming and initiated a process of developing BMPs that would fit the region. However, in both cases these global attempts to introduce and implement coastal conservation and management practices were hampered by local political-economic and cultural-historical forces.

1.2 Research problem, objective and questions

In this thesis I analyse the motives and rationales based on the political-economic, social and historical contexts of the different actors and the ways in which they construct, interpret, claim and contest global environmental discourses around marine and coastal conservation in Indonesia. This thesis is not about local resistance to global influences. Instead, it explores the social dynamics that structure the global-local interface in which the global and local actors form networks, co-produce and contest environmental knowledge.

This thesis presents ethnographic case studies of the interface of global and local actors in governing the conservation of natural resources of the coastal waters of East Kalimantan. The research is based on two case studies of NGO-led implementation of an MCA-based habitat and species conservation in

the Berau Delta and of the promotion of sustainable shrimp aquaculture through better management practices (BMPs) standards in the Sesayap Delta. Both research sites were selected in the framework of the interdisciplinary RESCOPAR program of Wageningen University on human and natural resilience in the coastal zones of East Kalimantan, Indonesia and Ca Mau, Vietnam. Each case study describes the interaction between global and local actors in the process of co-production of knowledge. Combining the formation of the global-local networks with processes of translation and negotiation of knowledge will provide an improved understanding of the dynamics of their interactions in attempts to govern the coastal resources of East Kalimantan.

The first focus is on the encounters of global environmental actors in introducing and sharing global, scientific knowledge on conservation with local actors. In this process of intervention, the global NGOs create networks with the local actors to secure the process of knowledge transfer for the implementation of new governance arrangements such as marine conservation areas and better management standards for shrimp aquaculture. The implementation of these NGO-led governance arrangements that enrol local actors embedded in coastal environments are not only shaped by global processes and historically shaped experiences and values, but also by the local politicization of network formation and the co-production of knowledge.

Despite intentions of inclusion and participation, networks are uneven and contested. My understanding of the term network refers to the concept of environmental regulatory networks developed by Vandergeest (2007) that denotes a broad range of actors who are driven by different motives and goals in governing the coastal resources. The interactions in the conservation endeavour are not only shaped by history and place, but also by the process of generating social-economic and political networks that facilitate the co-production of knowledge. These networks thus stretch beyond the local and link to global places and historical moments (Goldman 2010). Whether they can serve as channels for knowledge transfer depends on the interests of the

actors involved. Those building the networks may wish to create a common awareness of those enrolled (Jentoft et al. 1999; Pomeroy and Berkes 1997). But the outcome is often more qualified. The outcome could be either conflict, resistance or a negotiated middle-ground where the different perceptions and practices can be merging. The outcome is also tempered by the political and legal context in which they operate. In the case of Indonesia the implementation of the decentralization of resource management since 1999 (Satria and Matsuda 2004) shapes legal disconnects (Patlis 2008) that lead to further institutional disconnects (Kusumawati and Visser 2014) and friction (Tsing 2005) between the actors involved around knowledge and power.

The ontological differences between the knowledge of global and local actors lead to the second focus of this thesis, namely the process of the transfer of the global environmental knowledge to local actors and how these actors co-produce environmental knowledge. My analysis focuses on how global knowledge is translated and conveyed to local actors by the networks of environmental NGOs, and how these local actors (district government, entrepreneurs, shrimp farmers) translate and negotiate the global environmental knowledge to fit their own interests and power positions. Both the global and the local actors construct their own discourses - whether around the importance of marine conservation areas or better management standards - on the basis of different bodies of knowledge.

The general objective of this thesis is to explore, describe and analyse the interface between global and local actors in governing the conservation and sustainable use of the coastal and marine environment in decentralized Indonesia. The research is organized around two main research questions. The first research question is: How do global actors form networks in order to secure the process of global environmental knowledge transfer? How do these networks of actors produce power and knowledge disconnects and friction? In answering this question the thesis contributes to an understanding of the role of global environmental NGOs in Southeast Asia in their endeavour to transfer

global environmental knowledge on conservation to the district government and the local political-economic leaders, and the outcome.

The question is addressed more specifically in two case studies. First, by investigating the process of the establishment of the Berau MCA, I explore how the environmental collaboration is constructed, and how collaboration produces knowledge and power disconnects. By addressing this question I demonstrate that it is important to understand how the collaboration and contention are not only constructed, but also themselves construct the actors' perceptions and perspectives on marine conservation and resource extraction in decentralized marine governance in Berau. Second, by investigating the emergence of the standardization of best management practices in shrimp farming in Tarakan, I explore three different environmental regulatory networks in shrimp aquaculture and trade to analyse how they interact in influencing the externally introduced forms of governance. In this case I intend to demonstrate how the government and the NGO regulatory networks systematically ignore the role of local patrons (*ponggawa*) who control the artisanal trade networks in the process of developing standards.

The second main research question focuses on the process of knowledge transfer and co-production: How do actors co-produce environmental knowledge in defining and practicing sustainable coastal resource governance given the different ontologies of knowledge and values owned by the global and local actors? This question aims to contribute to an understanding of the role of the global environmental NGOs, district government agencies and local political-economic leaders (*ponggawa*) in framing the knowledge they use for defining the use of coastal resources.

The second research question will be addressed in another two studies. First, I examine the interaction in terms of different types of knowledge and the role of the local political-economic networks by exploring the political battle of values, knowledge and discourses between the actors involved in the management of the Berau MCA. This case explores how the different

ontologies of knowledge on coastal resource management and marine conservation shape different discourses. Second, I examine the development of BMP standards for shrimp aquaculture in the Sesayap Delta, analysing the accommodation of the local technical and social conditions of shrimp aquaculture and the friction between the standards and the local aquaculture practices. By addressing these issues I explain how global standards are translated into local contexts through a series of meetings and pilot projects in shrimp ponds, and how local political-economic leaders and patrons (*ponggawa*) involved respond to the process of implementation of the standards.

1.3 Political ecology and environmental anthropology

There are various approaches to study the relation of humans with their environment, such as environmental sociology (Buttel 1987), environmental anthropology (Brosius 1999; Kalland and Persoon 1998; Milton 1997), and political ecology (Peet et al. 2011; Robbins 2004; Bryant and Bailey 1997) just to name a few. Even so, there seems to be a set of common elements of discussion: environmental movements, environmental problems, how human behaviour contributes to environmental changes and how environmental changes affect human behaviour. In order to position my thesis in these debates, in this section I will mainly review how political ecology as well as environmental anthropology approach human interaction with the environment.

Political ecology focuses broadly on the political dynamics surrounding material and discursive struggles over the environment (Blaikie and Brookfield 1987; Bryant 1998). In this approach, the environment serves as an arena where different social actors with different powers of control and exclusion are competing for access to the natural resources and ways of using or conserving those resources (Vaccaro et al. 2013; Robbins 2004). Building on the notion of

'second nature' which emphasizes the social and material (re)construction and co-option of environments as subjects of human control, political ecology is interested in how environments become socialized and politicized (Escobar 1999; Lefebvre 1991).

By putting politics first (Bryant 1991), political ecology highlights the specific dynamics and characteristics of how the environment is politicized; either by examining unequal power relations over the access to and the use of environmental resources (Robbins 2004) or by including knowledge and practice in the analysis of the environment as a biophysical phenomenon (Paulson et al. 2003). Combining both approaches returns the political to its integrative core focusing on both the material and discursive dimensions represented by the multiple ways in which power over the environment is contested and negotiated in diverse arenas at multiple scales, and infused with cultural knowledge and value.

Political ecology scholarship is divided into four general domains: degradation and marginalization; environmental conflict; conservation and control; and environmental identity and social movement (Robbins 2004). The political ecology of conservation and control over natural resources starts from the assumption that "control of resources and landscapes has been wrested from local producers or producer groups through the implementation of efforts to preserve 'sustainability', 'community', or 'nature' " (Robbins 2004: 14). Central to this control is the formulation and implementation of conservation policy by state and non-state actors, who may be more powerful. Also, external actors have often disabled local systems of livelihood, production and socio-political organization (Vaccaro et al. 2013; Robbins 2004; Peet et al. 2011). The 'productivity turn' in conservation scholarship means that scholars have started to analyse these wider processes of control in the context of governance arrangements that attempt to steer the production, extraction and trade of natural resources to more environmentally friendly and more sustainable practices (Peluso 2012). This shift in the scope of conservation leads to a

change in the approach of conservation toward being more sensitive to including local needs, local livelihood, and the role of local political economic forces.

Research on the politics of conservation has focused predominantly on the power of state governance and policies that contribute to environmental and social change (Peluso 2012; Robbins 2004). As Peet et al. (2011: 31-2) argue, the earlier focus of political ecology research has been on the "capacity of a polity or state to control the actions of people within its jurisdiction… to the promulgation of environmental problems as well as to the control of environmental degradation through regulation". However, as private forms of conservation have increased, the scope of political ecology research and its narrow focus on power has broadened away from the state. NGO involvement with environmental conservation is now seen as an equally valid form of control as the state (Peet et al. 2011: 28). In this sense, the discussion on the identification and prospective solutions to conservation problems directly implicates a wider conceptualization of governance and power. Conservation also allows the network of global environmental NGOs to take over the role of the state in the control over the actions of the people in using the natural resources. To reach the local people, this global environmental NGOs network creates collaboration or builds new networks with the district government and/or the private sector.

In this thesis, I will apply an anthropological perspective to political ecology to provide further insights into how the actors perceive coastal conservation, use discourses, and how they are involved in the implementation of conservation activities. Brosius (1999: 277) suggests that anthropology should engage with environmentalism to extend the critical role of anthropology in contributing to the understanding of the impact of the social actors on the physical and biotic environment and also in showing how "environment is constructed, represented, claimed, and contested". Environmental anthropology evolved from an ecological anthropology that

received contributions from post-structuralist social and cultural theory, political economy, and the exploration of transnationalism and globalization (idem). Environmental anthropology address issues of "power and inequality, the contingency of cultural and historical formations, to the significance of regimes of knowledge production, and to the importance of the acceleration of trans-local processes" (ibid: 278). One of the domains where Brosius sees that anthropologists could engage with environmentalism is through the study of the relationship between emerging forms of political agency and the process of environmental institutionalization. As global actors, the environmental NGOs build networks with powerful local actors, such as district governments, industries, and multilateral agencies to discursively and materially transform local environmentalism (ibid: 288).

However, the local actors who deal directly with resource management does not accept off-hand that all the global knowledge is introduced to and imposed on them (Tsing 2005). Instead, they interpret and negotiate the global knowledge in accordance with their local needs. By using the concept of 'friction' in the global-local interaction, Tsing challenges the notion that global ideas are passively accepted and adopted by actors at the local level. She argues that the friction that follows from the global-local knowledge interface creates "new arrangements of culture and power" (Tsing 2004: 5). Her position in the debate contrasts with many others. For example, Long states that the aspects of power, authority, and legitimization implied in the knowledge process will lead to "the establishment of common perceptions and interests" (Long 2001: 183). Both authors, however, underscore that the global-local knowledge interface becomes more important to study, particularly in the context of administrative decentralization, making the local or district-based actors the principal decision- makers rather than the central government.

Long defines knowledge as "something that everybody possesses, even though the grounds for belief and the procedures for validation of knowledge-claims will vary" (ibid: 189). Consequently, global environmental knowledge

is already a collection of different motives, power, goals, and objectives. At the local level it also encounters different knowledge depending on the local actor's motives, power, goals, and objectives. Knowledge, like power, should be looked at relationally, as "knowledge encounters involve the struggle between actors where certain of them attempt to enrol others in their 'projects', getting them to accept particular frames of meaning and winning them over to their point of view" (ibid: 184). Our study of how the worlds of these global and local actors are brought "into relation" (Olivier de Sardan 2005: 153) through the processes of knowledge transfer and co-production makes it possible to understand the social and environmental outcomes when different motives, power, goals and objectives meet or confront each other during the process of designing and implementing conservation activities in the coastal areas.

Knowledge production as well as socio-economic and political networks affects the relation between humans and their environment as well as their environmental knowledge. When it comes to how knowledge is produced or co-produced it appears to depend on how the social actors understand the value and the practice of ecological knowledge (Turner 2011). Essentially, the networks created by the global NGOs serve as a tool to secure the transfer of knowledge through the process of co-production. Dealing with knowledge production with a political ecological focus on power relations may shed light on the political-economic process of how actors impose or contest knowledge about access to and control over natural resources (Goldman and Turner 2011).

However, in this thesis the study of natural resources governance and the transfer and co-production of knowledge moves beyond the politics of access and control over natural resources. I want to show that co-production of environmental knowledge does not automatically bring the global and local actors together since the scientific environmental knowledge of the NGOs is confronted with local cultural-historical knowledge and political-economic values. I have chosen to combine political ecology and environmental

anthropology because it enables an improved understanding of how contemporary global governance arrangements over the coastal environment are dialectically embedded in a wider set of local political-economic, social, and cultural-historical relations.

An anthropological approach using extensive ethnographic data has helped to paying critical attention to the conditions under which local actors are enrolled in conservation activities through a form of collaboration that was initiated by the global environmentalist NGOs.

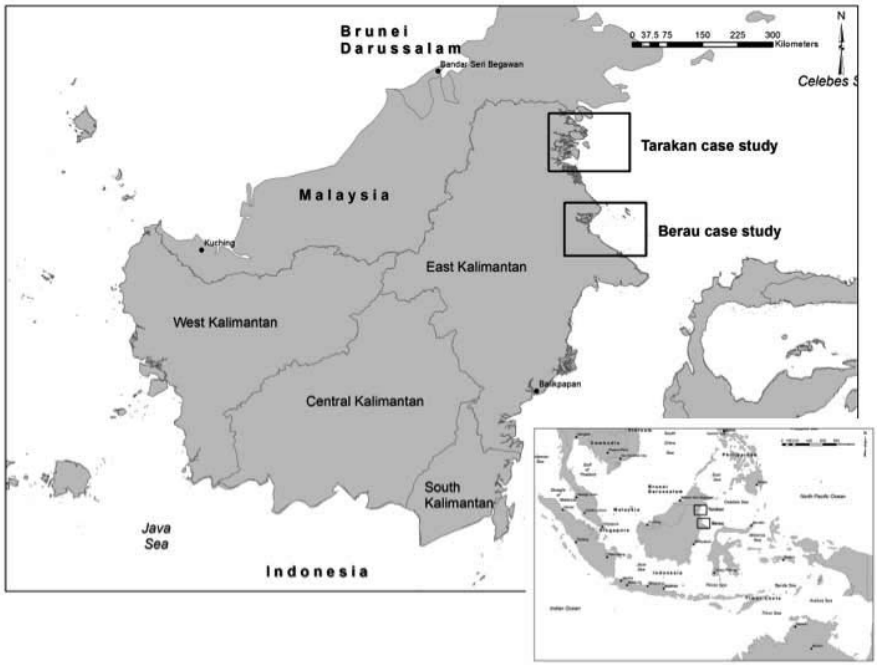
Applying an anthropological approach to the political ecology of coastal resources governance proves to be a fruitful approach. First, to explain the social dynamics of development in East Kalimantan, particularly in the case of the implementation of the Berau marine conservation area and the emergence and development of standards for best management practices in shrimp aquaculture in Tarakan. Second, by applying this approach in studying the knowledge transfer and co-production, I better understand how the different actors discursively transform the discourse on sustainable coastal resource governance and on how they co-produce and validate global knowledge (Jasanoff 2004). My methodology is further explained below.

1.4 Methodology

This thesis brings together two case studies. The first case study is about the development and implementation of a marine conservation area (MCA) in the Berau district. The second case study is about the emergence and the development of better management practices (BMPs) in shrimp farming in the Sesayap Delta. An ethnographic research method is applied. Importantly, this thesis is based on a modern application of the ethnographic method that involves a multi-locale and multi-level approach (Gupta and Ferguson 1997). Instead of staying in one particular place, I followed the networks of the global

actors and the flow of their knowledge on conservation and shrimp aquaculture in their encounters with local actors and their networks and knowledge.

Figure 1.1 Map showing study sites in East Kalimantan, Indonesia



I started my fieldwork in Indonesia (Figure 1.1), in the Berau district of East Kalimantan, the region selected in the framework of the RESCOPAR program in Indonesia. In Berau I encountered the global knowledge on habitat and species conservation and the struggle, particularly, of the two environmental agencies: The Nature Conservancy (TNC) and the World Wide Fund for Nature (WWF). There was also a struggle of the local political-economic leaders and entrepreneurs (*ponggawa*) in interpreting and claiming their ways of conserving and defending the economic interests of 'their' coastal resources. To study a different conservation model, I went north to the District of Tarakan where I encountered the emergence of better management practices

in shrimp aquaculture. From these two districts in East Kalimantan, I travelled to Samarinda, Bogor, Jakarta, the Netherlands and Germany to interview the global actors involved in order to trace back the process of how the global conservation knowledge arrived in these two places in East Kalimantan, Indonesia.

Field research was conducted from 2008 to 2011; with some additional interviews held in 2012 and 2013. Primary data were collected through qualitative methods. I conducted in-depth interviews with actors involved in the development process of the marine conservation area in Berau and actors involved in the development process of better management standards took place in Tarakan. They included national and regional government officials, regional entrepreneurs and international, national and local NGO staff. For the Berau case study my discussions and semi-structured interviews focused on the management of the coastal area of Berau, the development process of the Berau MCA and on the history of sea turtle management in Berau. In the Sesayap Delta case study the discussions and interviews served to gather information about the development of the standards in shrimp production. I also interviewed the directors of locally based processor companies, shrimp collectors, shrimp workers, shrimp pond owners and their families.

Additionally, I engaged in participant observation. This included attendance at meetings and workshops organized by the agencies at district, national and international levels, and visiting shrimp farms in Bulungan and Tarakan. In both cases I gathered secondary data by reviewing and examining scientific publications and other sources from libraries, websites, newsletters, newspaper articles and reports to complement my field data.

1.5 Organization of the thesis

The thesis consists of six chapters. There are four empirical chapters covering the two case studies. Chapters 2 and 3 are about the development and implementation of the marine conservation area in Berau. Chapters 4 and 5 are about the emergence and development of best management practices in the shrimp farming in Tarakan. Below is the outline of the thesis:

Chapter 2 presents a case study on the collaborative network of the Steering Committee (SC) between the international environmental NGOs (TNC-WWF) and the Berau district government in developing the Berau marine conservation area. Introduced by the collaborative effort of these global environmental NGOs, the collaboration in developing the MCA in this area was claimed by TNC-WWF as a new concept of partnership with the decentralized government. But their governance framework appeared to be full of disconnects (Patlis 2008) and friction (Tsing 2005), as the MCA implementation faced the real-life challenges of the political-economic conditions of decentralization. Following the historical process of the establishment of the Berau MCA in 2005, this chapter shows that it is necessary to understand how collaboration and contention are constructed and in turn construct actor's perceptions and perspectives of marine conservation and resource extraction.

Chapter 3 presents a case study on the knowledge interface between the global actors represented by TNC-WWF, and the local actors represented by the district head, the government agencies, and the sea turtle eggs concession holder who are the key actors in defining the cultural-historical, economic, and political values of the sea turtle and the marine conservation area of Berau. This chapter discusses the political battle of values, knowledge and discourses between TNC-WWF, the district government, and the concession holder of sea

turtle eggs. I argue that the different epistemologies and ontologies of knowledge on marine conservation and sea turtle management shape the knowledge that was mobilized by the actors to develop different discourses and power positions regarding sea turtle management and marine conservation.

Chapter 4 is a case study on the emergence of shrimp farming certification in Tarakan. This chapter describes the interaction of three regulatory networks and their influence on regulating sustainable shrimp aquaculture in East Kalimantan. The results show that while government and NGO regulatory networks have focused on standardization of best management practices, it is the artisanal trade network, controlled by the pond owner or middlemen-trader (*ponggawa*) that holds most influence over shrimp aquaculture. In demonstrating the influence of these *ponggawa*'s over production and trade I demonstrate how patronage is key to regulating the conduct of farmers and constitutes a vital, but poorly understood element in the shrimp value chain.

Chapter 5 is about the co-production of knowledge in the development of standards for better management practices in shrimp aquaculture in Tarakan. Better management practices (BMPs) have emerged as an increasingly dominant governance arrangement designed to standardize on-farm practices and in turn reduce risks associated with disease and environmental degradation. The BMPs developed by the World Wide Fund for Nature-Indonesia (WWF-Indonesia) intend to guide the farmers to apply more environmentally friendly farming techniques. The BMPs are advertised as having been developed through a multi-stakeholder dialogue. This chapter presents the analysis of co-production and negotiation of standardization in shrimp farming in East Kalimantan by focusing particularly on the role of WWF-Indonesia in creating alliances for designing, implementing and negotiating the BMPs.

Chapter 6 presents the general discussion and conclusion. I argue that the global-local interface in Indonesia is strongly conditioned by the recent political- administrative decentralization of resource management, and by patronage interdependencies. I conclude that by ignoring the political-economic power of local actors, particularly the pond owners and entrepreneurs (*ponggawa*) and their cultural historical values and perception of marine resources conservation hampers global-local collaboration in the governance of sustainable natural resource use. The second argument is developed around the process of knowledge transfer and co-production. The process of knowledge transfer should be seen as an interface that is affected by specific local historical-economic values and empirical environmental practices that remain highly influential in creating the necessary social conditions for successful environmental networks.

Chapter Two
Global-Local Collaboration in Decentralized Marine Governance in Berau

This chapter is based on the publication of: Kusumawati, R and L.E. Visser. 2014. Collaboration or Contention? Decentralised Marine Governance in Berau. *Anthropological Forum* 24 (1): 21-46

Note on the cover page picture:

This picture shows the coastal area activities in northern part of East Kalimantan. In the background there is a barge transporting coal from the mainland to ocean faring cargo ships. In the forefront there is a *ketinting*, a small motorboat that is the most common form of water transport by the locals in the area.

2.1 Introduction

The tendency in marine and coastal resources management in Indonesia has been to look at ‘marine fisheries as a new resource frontier’ (Laksono 2007, 39). This view is supported by the general opinion that the sea is an open access resource for exploration and exploitation for corporate or national purposes. Also, authority over marine resources serves to extend territorial claims by the state, particularly in the context of recent decentralization of natural resources management in Indonesia (Patlis 2005a; Visser and Adhuri 2010). Despite the trend towards greater commercialization, the international concern over coastal and marine resource degradation has led to the institutionalization of marine protected areas to conserve or restore species, habitats, coastal and marine ecosystems and ecological functions (Fox et al. 2012; Majors 2008; Satria et al. 2006; Visser 2004). In Indonesia, several marine conservation initiatives have been undertaken over the past few decades. However, resource conservation is usually initiated following technical designs based on ecological and biological data and motivations (Halim 2008; Patlis 2008; Darmawan and Suraji 2006; Van Helden 2004).

One of the effects of the implementation of decentralization in Indonesia is the multiplicity of laws and regulations that are issued by different national and sub-national governmental agencies (Barr et al. 2006; Satria and Matsuda 2004; Laksono 2007). Together with the international marine protected areas governance framework (FAO 2011) the overlapping and sometimes contradictory marine governance schemes create confusion and ambiguity for the actors involved in the establishment and implementation of a marine conservation area, as in the case of the Berau marine conservation area.

Originally, the Ministry of Forestry's Directorate General of Forest Protection and Nature Conservation (PHKA) was in charge of the establishment of marine park areas (Patlis 2008; Bennet 2005, 82;). In 2002, the newly instituted Ministry of Marine Affairs and Fisheries (MMAF) introduced the concept of district marine conservation area (Satria et al. 2006), allowing a district to propose a new marine conservation area to the central government. MMAF together with Coremap II[1] proposed a target of 10 million ha of marine conservation areas (MCAs)[2] in Indonesia by 2010 (Darmawan and Suraji 2006). This target was eventually approved as the national goal for marine conservation. With the establishment of the 3.9 million ha of the Sawu National Marine Park in 2009, the latest estimate of marine conservation is 13.4 million ha (*Republika*, 13 May 2009). It implies an impressive growth in geographical space, but the mere size of these conservation areas begs the question of districts' capacity to govern the coastal and marine environment under their responsibility.

The Berau Marine Conservation Area was developed under this regime. Known to be rich in marine species, coral reefs, migration routes and nesting grounds of sea turtles, the Berau waters also suffer from destructive and illegal fishing activities by local fishers as well as outsiders (Gunawan and Visser 2012). International, national and local non-governmental organizations

[1] The Coral Reef Rehabilitation and Management Program is a long-term program initiated by the Government of Indonesia. The program started in 1998 and was funded by the Government of Indonesia with support from such donors as the World Bank, Asian Development Bank and AusAid during the first phase. The objectives of this program are to protect, rehabilitate, and achieve sustainable use of Indonesian coral reefs and their associated ecosystem which, in turn, enhance the welfare of the coastal communities (http://www.coremap.or.id /tentang coremap)

[2] In Indonesia, NGOs and donors use different terms to address marine conservation activities. TNC uses the term Marine Protected Area (MPA), while the World Bank prefers the term Marine Management Area (MMA) (Satria 2009: 71). Nationally, the term Marine Conservation Area (MCA) is used by the central and regional governments to address conservation activities in marine areas. This term is used to avoid the conflict with the fishers since the word 'protected' implies a 'no take zone' (Satria et al. 2006; Bennett et al. 2005). In line with this choice we use the term conservation (*konservasi*) and marine conservation area (MCA).

(NGOs) established collaboration with the district government to promote a marine conservation area in Berau, established in 2005. Globally, the Berau waters would become part of several larger Marine Protected Area networks, particularly the nationally managed East Borneo Seascape (EBS) as well as the international Sulu Sulawesi Marine Ecoregion (SSME), and the Coral Triangle Initiative (Tim Pengarah 2008), thereby adopting the The Nature Conservancy approach to partnerships between actors across several organizational layers (Djohani 2009, 161; Acciaioli 2008)

Decentralization in Indonesia since 1999 (Laws 22/1999 and 25/1999) and especially since Law No. 32/2004 has been well addressed in the literature (Satria et al. 2006; Hidayat 2005; Hadiz 2004;) from historical, legal, and political-administrative perspectives. Ample empirical examples are provided from land-based projects, particularly on forestry (McCarthy 2006; Wadley 2005; Casson and Obidzinski 2002; Padoch and Peluso 1996). The laws mandated that up to 80% of natural resource revenues be re-directed to regional governments, rather than the 20% prior to 1999 (Patlis 2008, 2005a). The framework governing protected areas is mainly sectoral. This has led to a framework that is 'replete with gaps, inconsistencies, redundancies and, generally, what can be termed "disconnects"' in a number of basic components of law, such as definitions, administrative and institutional provisions, and enforcement, monitoring and sanctions (Simarmata 2012, Patlis 2008: 411). However, legal pluralism by itself does not provide us with insight into *how* such legal disconnects influence the very practice of resource governance and the construction of power and environmental knowledge of the actors involved in conservation in particular cases. Much less is known about the everyday practice of dealing with such overlapping, contradicting and contentious frames in the development and management of a marine conservation area.

In the case of the Berau marine conservation area establishment The Nature Concervancy marine program (TNC-Marine) and the World Wide Fund for Nature Indonesia (WWF-Indonesia) developed what they saw as a new management model of partnering directly with local, decentralized government and local NGOs, bypassing the central state and virtually excluding coastal communities (Halim et al. 2008). Institutional approaches to co-management often look for a technical solution demanding that stakeholders search for a middle ground, 'believe' in conservation, and have a common awareness of the subject (Acciaioli and Erb 2008; Majors 2008; Natcher et al. 2005; Jentoft et al. 1998; Pomeroy and Berkes 1997). Marine conservation management in Berau, in fact, addresses a variety of subjects at the same time, including turtle conservation at species level, coral reef conservation at habitat level, and action against illegal fisheries.

My empirical research carried out in Berau between 2008 and 2011, using an actor-oriented approach (Long 2001), supports the argument that the local management model applied by environmental NGOs does not provide the middle ground due to political-economic and cultural-historical differences in perceiving the value and meaning of marine conservation and shifting power positions among the actors as principal stakeholders[3] in MCA management. The scientific knowledge and power of the international NGOs conflicted with the historical and political-economic position and knowledge of local actors like the district head, the technical agencies, and the turtle concession holder. These ontological differences are causing disconnects in environmental knowledge and power of the principal actors in MCA management that need to be taken seriously to understand the dynamics of collaboration and contention in the governance of a marine conservation area.

[3] Halim et al. ((Halim et al. 2008: 129) describe TNC's 'conservation by design' approach to conservation, using a stakeholder hierarchy based on 3 criteria: legitimacy, power, and urgency. In the case of Berau (Derawan), the district government, Steering Committee, and the turtle concession holder are ranking 'high' on all 3 criteria, while the turtle concession holder is ranked 'medium' on urgency.

Recently, the need for ethnographic fieldwork was underscored to highlight the local processes that shape and influence the outcomes of coastal resource management (Fabinyi et al. 2010). This chapter presents an ethnographic case study of the implementation process of a marine conservation area by an empirical account of the interface between the main institutional actors. I draw upon Patlis' notion of disconnects (Patlis 2005a; 2008: 411) by expanding its legal qualification to include the institutional disconnects creating confusion and contention where collaboration and synergy were the objective. I aim to contribute to the debate on resource governance, particularly marine conservation management.

The chapter is organized in the following way. Section 2 describes the development phases of the Berau MCA and continues with the description of co-management in decentralized marine conservation in section 3. Sections 4 and 5 analyse the role and position of each institutional actor in the proposed co-management structure of the MCA, resulting in overlapping fields of power. Section 6 analyses how the collaboration model to govern the MCA is affected by decentralization. The implementation of decentralization assigns more power to the district government to manage its natural resources. Hence, conservation is translated by the district into the political-economic issue of boundaries and access to marine resources. In section 7 I discuss and conclude that power and knowledge disconnects as much as legal disconnects between individual and institutional actors create confusion and contention about definitions, institutional provisions and governing practices of the decentralized marine conservation area. The actor-oriented approach brings to light the confusion and contention between decentralized government and the other actors in terms of partnership (*kemitraan*) for the purpose of conservation and, particularly, the power game between the district government and those whom

they have come to regard, on the basis of a newly obtained subjectivity (Acciaioli 2008) as outsiders: international environmentalist NGOs.

2.2 The life history of Berau MCA development

> So, 1.2 million ha is the seaward administrative authority area [of Berau]. Berau declared all marine space under their administratrive authority as a marine conservation area, which makes Berau unique. No other district claimed all their [coastal and marine] space for marine conservation. In 2005 Berau dared to declare this 1.2 million ha as an MCA because of the marine biota living in the Berau marine area, such as crustaceas, sea turtle, corals, etc. [We] did not [propose] species conservation, [We proposed] habitat conservation instead. So, in this case, the whole Berau marine area should be conserved. [We] also need to secure the migration corridor [of those species]. That was our consideration [to persuade the Berau district government] to declare 1.2 million hectares as a marine conservation area. (Policy coordinator of Joint Program, Berau, October 2011)

The process of establishing the Berau MCA had already been initiated in 1979. At that time the man who later became the project leader of the Joint Program (2005-2007) was already involved through the Directorate of Forest Protection and Nature Conservation[4] in a survey on sea turtle nesting sites on the islands of Derawan, Sangalaki and Semama, and on the coast of Tanjung Batu on mainland Berau (Tim Pengarah 2006). Based on this survey, in 1982 two national parks Ire established in the district: the Sangalaki Marine Tourism Park to conserve the coral reefs and the sea turtle nesting area, and the Semama Wildlife Conservation Area which serves as a sea turtle and sea birds

[4] *Perlindungan Hutan Dan Konservasi Alam* (PHKA) which back then was under the Ministry of Agriculture.

habitat. These conservation areas are based on Ministry of Agriculture Decree No. 604/kpts/um/8/1982.

Only in 1998 did international and national NGOs become interested in Berau marine natural resources, as they tried to introduce the concept of sustainability to manage marine resources. In response to this increased attention the district government issued several important policies on the management of marine biodiversity, including sea turtles and sea turtle eggs, including District Head Decree No. 66/1998 on the formation of a preservation team of aquatic biological resources, District Head Decree No. 35/2001 on the formation of a monitoring and research team for sea turtles, and District Head Decree No. 44/2001 on sea turtle monitoring collaboration that gave a mandate to the national Natural Biodiversity Foundation or *Yayasan Keanekaragaman Hayati* (KEHATI Foundation), the World Wide Fund for Nature Wallacea bioregion program (WWF Wallacea), and The Turtle Foundation[5] (TF) as key actors in sea turtle conservation in the Derawan Islands, especially on Sangalaki Island. Following these decrees was the District Head Instruction No. 660/2001[6] that terminated the historical right of local families to tender for a sea turtle eggs concession. The 2001 decree that allowed the NGOs to monitor Derawan Islands in fact overlapped with the national decree by the Ministry of Agriculture that gave a mandate to the Natural Resources Conservation Agency or *Balai Konservasi Sumber Daya Alam* (BKSDA) over Sangalaki Island as a conservation area. Consequently, the national conservation area (Sangalaki) has geographically – though not politically – been made part

[5] The Turtle Foundation (TF) is a German NGO formed in 1999 by some filmmakers and divers (Bennet 2005). It is funded by donations from various international donors and sponsors (www.turtle-foundation.org).

[6] The difference between a decree and an instruction is temporal and hierarchical: a decree is a decision by the district head and it is one level higher than the instruction, while an instruction is the request to implement the decree.

of and included in the district decrees that have given the mandates to non-government agencies at multiple international, national, and local scales.

In 2002 the district government established the collaborative institution known as Team 16 (*Tim 16*, see next section). The team was legalized under the District Head Decree No. 179/2003 on the formation of a monitoring and surveillance team for sea turtle conservation. This institution acts as a forum to spread the concept of marine conservation. In 2004 the Joint Marine Program or *Sekretariat Bersama Kelautan* (Joint Program) was established. It consists of the national and international NGOs such as the Natural Environment and Cultural Conservation Foundation or *Yayasan Konservasi Alam Lingkungan dan Kebudayaan* (Kalbu Foundation), Sustainable Berau Foundation or *Yayasan Berau Lestari* (BESTARI), WWF-Indonesia, Yayasan KEHATI, Mitra Pesisir/Coastal Resource Management Program II (CRMP II), and the marine program of The Nature Conservancy (TNC-Marine). Their activities in Berau are acknowledged as based on the MoU signed between the NGOs and Berau district government. In 2004 decentralized district governments obtained the legal right to establish local marine conservation areas (Satria et al. 2006: 247). The Berau government thus acknowledged the JP initiative by declaring Kakaban Island as an MCA based on the District Head Regulation No. 70/2004.

Finally, in 2005 the Berau MCA of 1.27 million hectares was established, initiating what has been called the Berau MCA era. The District Head Regulation No. 31/2005 aimed to conserve Berau marine biodiversity and to guarantee the sustainable use of marine resources by the community (Tim Pengarah 2006). The establishment of this more inclusive MCA, known as the Berau MCA, now incorporates the previously decreed Kakaban MCA and the BKSDA-monitored Sangalaki and Semama Islands (Figure 2.1), materialising the multi-scalar disconnects (Patlis 2008) between sectors (forestry and fisheries) and governance scales (international, national and local NGOs, national and district government agencies).

Table 2.1 The historical process of Marine Conservation Areas in Berau

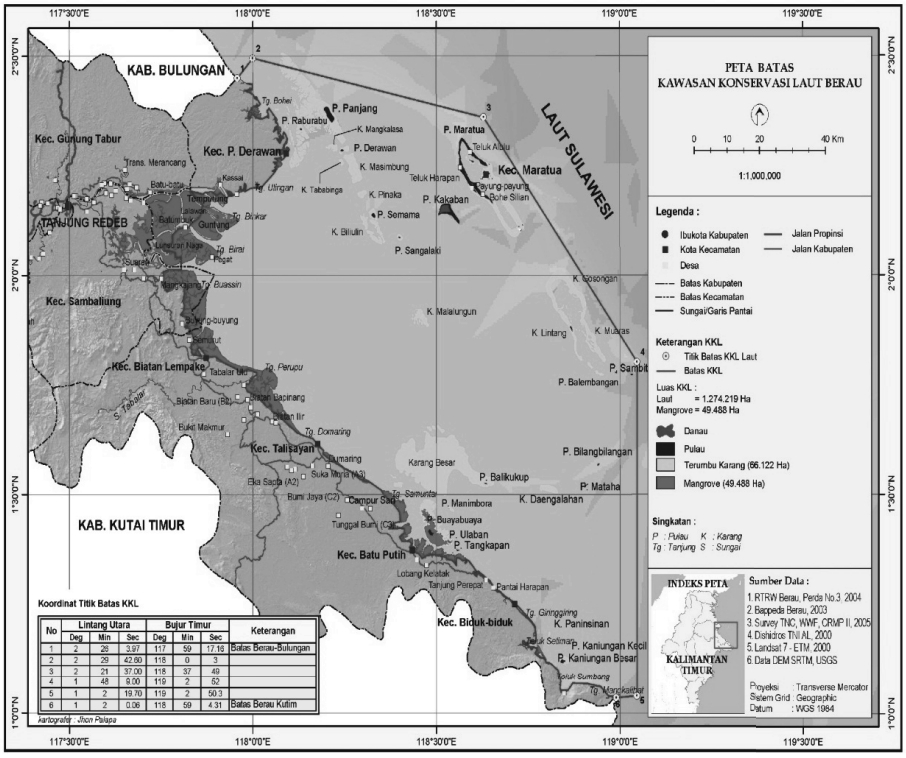
Year	Realizations	Administrative Level
1960	To regulate the trade of wild animals and plants crossing the borders between countries, CITES was drafted at the meeting of members of IUCN (http://www.cites.org/eng/disc/what.php; accessed on 7th August, 2013)	International
1979	Indonesia becomes one of the CITES parties (http://www.cites.org/eng/disc/parties/chronolo.php; accessed on 7th August, 2013)	International
1979	Survey on sea turtle nesting sites on the islands of Derawan, Sangalaki, Semama and the coast of Tanjung Batu of Berau by the Directorate of PHKA (Tim Pengarah, 2006)	National
1981	Formation of Directorate of Marine Conservation in PHKA (Alder, J. et al. 1994a)	National
1982	Issuance of Law No. 4/1982 on Basic Provisions for the Management of the Environment concerning the sustainable management of the environment for improved human welfare and the legal basis for environmental assessment (Alder, J. et al. 1994b)	National
1982	The establishment of Semama and Sangalaki MPAs in Berau (based on Ministry of Agriculture decree no. 604/1982)	National
1990	Issuance of Law No. 5/1990 on Conservation of Natural Resources and its Ecosystem that is used by the conservation institutions to authorise their ideas on conservation activities, particularly marine conservation.	National
1994	In the Fifth Five Years National Development Plan or *Rencana Pembangunan Lima Tahun* V (REPELITA V) the central government recognises the role of MPAs in the management of marine resources and sets a target of 10 million ha of MPAs (Alder, J. et al. 1994b)	National
1998	National government decree No 68/1998 gives a mandate to the Ministry of Forestry to take responsibility to manage natural conservation areas including upland and marine areas (Satria et al. 2006)	National
1998	Environmental NGOs start the process of establishing the Berau MCA (Halim et al. 2008)	National
1998	KEHATI Foundation starts a program on conservation and sustainable use of natural resources; BESTARI	District

	and KALBU start a program on conservation and community empowerment (Al Giffari and Harianto 2010)	
1999	Establishment of Ministry of Marine Affairs and Fisheries	National
2000	Sea turtle conservation becomes part of the Sulu Sulawesi Marine Ecoregion of WWF-Indonesia (Al Giffari and Harianto 2010)	District
2001	Formation of sea turtle research and monitoring team (District head decree No. 35/2001); District of Berau gives mandate to KEHATI Foundation, WWF-Wallacea and Turtle Foundation to act as key actors in sea turtle conservation in Derawan Islands, especially on Sangalaki Island (District Head Decree No. 44/2001; District head instruction to stop the sea turtle eggs extraction in Derawan and Sangalaki islands.	District
2002	Introduction of the Regional Marine Conservation Area (KKLD) by the MMAF (Satria 2006). MMAF together with COREMAP II set a target of 10 million ha of KKLD by 2010 (Darmawan and Suraji 2006)	National
2002	Establishment of Team 16	District
2004	Issuance of Law No. 31/2004 on Fisheries. This law gives a mandate to MMAF to manage the marine conservation area (Satria et al. 2006)	National
2004	TNC, WWF-Indonesia, KEHATI and Mitra Pesisir sign an MoU on the development of the Berau MCA. Establishment of the Joint Program of national and international NGOs, who also invited Bestari and Kalbu (the locally based NGOs) to join them	District
2004	MoU between Berau district government and Joint Program on the planning and collaboration of the development of the Berau MCA	District
2004	The declaration of Kakaban island as a district marine conservation area	District
2004	MMAF and WWF International award the district head of Berau for his dedication to marine conservation (Al Giffari and Harianto 2010)	International and National
2004	The formation of a Steering Committee	District
2005	The establishment of the 1.27 million ha Berau Marine Conservation Area.	District
2005	Election of the district head.	District
2006	The President of Indonesia gives a speech on the Convention on Biological Diversity Forum and give a commitment to develop 10 million ha of MCA by 2010 (Al Giffari and Harianto 2010)	National and International
2009	Award to District Head from MMAF for his dedication in managing the Berau MCA	National

Source: This research

However, the establishment of the Berau MCA was the last act of the District Head. He was succeeded by a district head who assumed some distance to the position of the MCA (Table 2.1). The change of the district head also affected district policy and the collaboration between district and NGOs in governing the Berau MCA.

Figure 2.1 The boundary of the Berau marine conservation area as proposed by the Joint Program



Source: Joint Program

2.3 Co-management in decentralized marine conservation

The concept of co-management was developed to be applied in mono-sector fields of forestry or fisheries management, including exploitation and conservation. It is usually understood as the sharing of responsibility, decision-making and power between the government and individual or collective resource users to manage certain natural resources or areas (Carlsson and Berkes 2005; Persoon et al. 2003; Pomeroy and Berkes 1997; Sen and Nielsen 1996). Even though that implicitly demands an equal partnership, co-management is characterized by vertical linkages between the government and user groups, and often involves a diversity of players, including public and private actors (Berkes 2009).

In the formation process of conservation areas the idea of co-management has mostly come from outsiders, particularly international environmental organizations such as TNC and WWF (Djohani 2009), while local NGOs that they support financially adopt their conceptual position. In this kind of arrangement, co-management is not merely a sharing of responsibility or of power between the state and resource users, but it often becomes a sharing of responsibility and decision-making power between international NGOs and resource appropriators mediated by local NGOs, as in community-based forest management (Wiersum 2009).

The Berau case does not differ from other conservation plans where environmental and biological experts design large conservation areas as a technical rather than a social matter (Van Helden 2004). The targeted conservation area in Berau was decided on in a workshop organized in 2003 that involved marine experts from WWF, TNC, MMAF, the Oceanographic Research Center of the Indonesian Institute of Sciences (LIPI) and Naturalis from Leiden, the Netherlands (Wiryawan et al. 2005). The first collaboration between the international NGOs, national and local NGOs, district government

and representatives of five villages on Derawan and Maratua Islands was established in 2002.

This collaborative body was known as Team-16 and was comprised of several district government services[7] and the BKSDA as the national government institution. Further, TNC-Marine as an international environmental NGO, WWF-Indonesia, KEHATI Foundation as national NGOs, and Bestari and Kalbu as local NGOs were involved together with the Navy, and the Sangalaki Dive Lodge as a representative of the private sector. In 2004 the Team-16 changed its name into the Steering Committee formalized by a decree of the district head. In 2008, the Steering Committee was again renamed as the Collaborative Board (CB).

These are interesting changes of name and corresponding image concerning collaboration. Even though in their reports, the collaborative body is presented as one single body, my observations and interviews make clear that in fact separate networks of collaboration were formed with the goal of developing and managing the Berau MCA. The first collaborative network consisted of the international, national and local NGOs that were already known as the Joint Program. This was a horizontal collaboration of departmental services focussing on nature conservation. The second network consisted of the collaboration between the Joint Program and the sectoral agencies in the district. The initiator, the Joint Program, expected the members of these two networks to work together as partners in the development and implementation of marine conservation in Berau. The first objective was achieved by the decree

[7] Such as the Fisheries and Marine Service (*Dinas Perikanan dan Kelautan* - DPK), the Cultural and Tourism Service (*Dinas Kebudayaan dan Pariwisata*, or just *Pariwisata*), the Regional Development Planning Office (*Badan Perencana Pembangunan Daerah* – BAPPEDA), the Regional Environmental Agency (*Badan Lingkungan Hidup* – BLH), the Forestry Service (*Dinas Kehutanan*).

of the district head on the establishment of the Berau Marine Conservation Area in 2005.

Included in the collaboration was the expectation of a sharing of knowledge, budget and responsibility in the management of the Berau MCA. Since the collaboration was constructed through an imposed partnership by the Joint Program, it did not develop into a robust collaboration. The following section will describe and analyse why the collaborative networks established to manage the Berau MCA did not work as expected.

2.4 The Joint Program as an NGO network

The Joint Program is a collaborative network of international and local Non-Government Organizations (NGOs). Starting from the conservation concept of TNC to develop 'ridge to reef' conservation in Berau, TNC came up with the idea to develop a joint program to share budget and management responsibilities for marine conservation with other international and local NGOs. In theory, the Joint Program wanted to convert the coastal and marine area of Berau into a Common Pool Resource (Ostrom 1990) by giving it the title of a marine conservation area. But in the implementation process, they merely paid lip service to including all appropriators (fishers and the sea turtle egg collectors) in the development process of this marine conservation area, by only inviting the fishers' networks organization (see next section). Based on personal networks, TNC invited representatives of WWF-Indonesia, Mitra Pesisir/ CRMP II and KEHATI foundation to join this initiative, as by 2002 these three NGOs all had projects running in East Kalimantan. WWF-Indonesia was already active in Berau with their WWF-Wallacea project to promote sea turtle conservation; Mitra Pesisir had a project to develop a conservation program for Teluk Balikpapan, and Jakarta-based KEHATI foundation was partnering with the Berau-based NGOs Kalbu and Bestari for the program of biodiversity

preservation and utilization. Except KEHATI, they agreed to share budgets in developing a marine conservation project in Berau.

The collaboration between these NGOs of different governance levels was formalized in May 2004 through a Memorandum of Understanding (MoU) with the District Head of Berau. Mitra Pesisir, Kehati and Kalbu became involved only during the first two years. Later, they were not involved anymore because their projects in Berau terminated. In 2008 the locally based Turtle Foundation became part of the Joint Program. Although officially the members of the Joint Program comprised local, national and international NGOs, my interviews with members of NGOs and technical agencies in Berau, as well as their own reports, identified the Joint Program primarily with international NGOs collaboration. The successive project leaders of the Joint Program came mostly from TNC based on their agreement about funding, that TNC would act as the 'partner' coordinating the expenses in relation to third parties, particularly the Berau district government, and WWF-Indonesia would 'internally' refund 50% of these expenses to TNC.

The aim of the Joint Program was to promote an institutional partnership between government agencies and NGOs that would share administrative responsibilities, develop a joint work plan, and coordinate conservation activities in Berau (Wiryawan et al. 2005). The Joint Program sponsored many activities, including workshops, research, seminars, meetings, as well as reciprocal visits to other marine parks and conservation areas throughout Indonesia. These kinds of activities were undertaken in the expectation of raising the understanding of government agencies, user groups and local conservation organizations of the concept of marine conservation. According to an interview with the ex-policy coordinator of the Joint Program during the period of 2003-2006 (Bogor, 18 November 2011) the Join Program claimed that the collaboration it tried to develop in initiating marine conservation in Berau was a new

concept of co-management. Through this approach the Joint Program wanted to ensure that the Berau MCA was different from the old paradigm of a centralized national park by firmly establishing the 'ownership' of the co-management in the collaboration between locally based NGOs and the district government (Wiryawan et al. 2005).

The Joint Program partnership presupposed equal positions of the district government and the Joint Program. Consequently, the Joint Program expected that the district government would be willing to share budget responsibility in funding the activities related to the management of the marine conservation area. The Joint Program also expected that through this partnership their – externally initiated - programs would have a greater impact in the district to the extent that the district government would acknowledge its existence, even if the international partners were formally 'guests' or 'outsiders'.

> As an international NGO, it [TNC] could not work alone; it needed to build a strong basis. That is why it needed support from the local government. (Policy coordinator Joint Program 2003-2006, Bogor, November 2011)

The policy coordinator invested most of his time to meet the heads of the sector agencies that were responsible for the working programs in the coastal and marine area of Berau. He also used these meetings to discuss and try to explain the idea of marine conservation to them, hoping that the district government agencies would become better aware of the need for environmentally sustainable development. He continued: 'Even though it is the NGOs who need the conservation area, there will be time [for us] to 'educate' the government about the concept of marine conservation' (Policy coordinator Joint Program 2003-2006, Bogor, November 2011). NGOs need the conservation area in terms of being acknowledged as responsible for the success of projects to their global donors. And also, for the sake of science and biodiversity,

NGOs need to conserve something. Since the idea to conserve the Berau waters was not high on the agenda of the district, the NGOs saw the need to create synergy by 'educating' the district government through their collaboration with Joint Program.

2.5 The Steering Committee and collaborative management board

> By involving the Regional Development Planning Agency (BAPPEDA) in this development process, we expected that it would help us in program development and deal with the district budget. The Marine Fisheries Agency (DPK), we expected that they would know marine problems better than the rest of us. Forestry was involved because of history. They always contested DPK's authority [over the mangrove area]. So, instead of having a dispute it is better that they collaborate. The Natural Resource Conservation Agency (BKSDA) certainly should be involved because its work covers conservation; they are knowledgeable about marine and land species. The NGOs, such as WWF, TNC Marine, and Bestari were involved because their domain covers coastal and marine issues. The district government was expected to work with us as partners to develop the MCA. Between 2004 and 2007, the district government indeed supported us. We, as Steering Committee, did the communication [*sosialisasi*] to the People's Representative Council (DPRD). They said that they supported our activities. (Ex-member of Steering Committee, Berau, October 2010)

To implement the collaboration concept based on the District Head's Decree No. 225/2004, a Steering Committee for Berau coastal and marine resources

management was established. This committee was a copy of the TNC co-management model and was expected to negotiate and merge the needs of the relevant institutional actors involved in the process of developing the Berau MCA. One of the first initiators of this marine conservation stated that during its first four to five years, the Steering Committee was robust, and it had regular meetings to discuss the concept of the MCA and how to improve the livelihood of the coastal communities (Ex-member of Steering Committee, Berau, October 2010). Besides having seminars and regular meetings, during the first five years after its initiation, the Steering Committee did a comparative study (funded by the Joint Program) of other marine conservation areas in Indonesia (in Bali, Bunaken and Nusa Tenggara Timur) that were already developed. These activities were seen as a way for the Joint Program to generate the district government's interest to join and support their marine conservation idea.

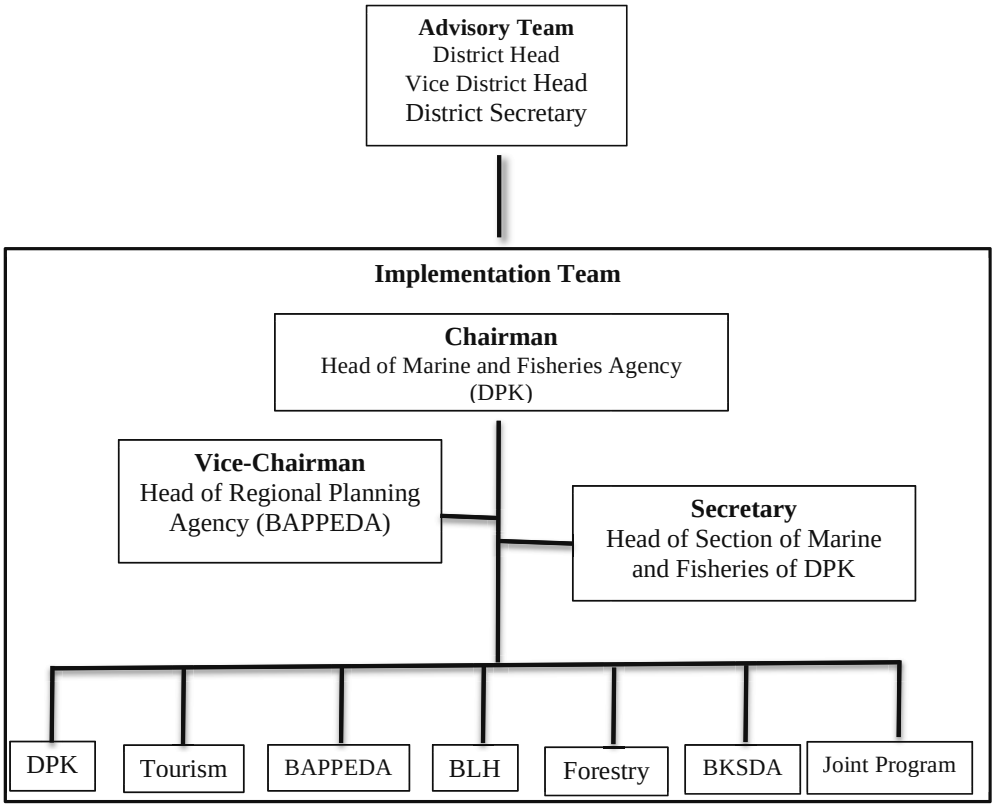
The Steering Committee is a multi-layered and multi-stakeholder organization, consisting of different district sector agencies, the national BKSDA, and the NGOs (Figure 2.2). In 2008 the Steering Committee was transformed into the Collaborative Management Board (CB) of Berau MCA, based on the District Head Decree No. 460/2008. The members of this board stayed the same as the Steering Committee, except that the Joint Program included more organizations: TNC, WWF-Indonesia, Bestari, the Turtle Foundation (*Yayasan Penyu Berau*), Fishers' Communities Network (*Jaringan Masyarakat Nelayan*)[8] and One Thought (*Dakkayu Akkal*))[9]. The main tasks of Steering Committee were to facilitate and socialise the draft of coastal and marine management, to facilitate the establishment of the joint committee on coastal and marine management and to facilitate communication, consultation and

[8] The Fishers Community Network (*Jaringan Masyarakat Nelayan* - JAMAN) is the district level form of the *Forum Masyarakat Nelayan* (Fishers Community Forum - *Formal*) initiated by TNC-WWF as an institution to coordinate and to transmit information among fishers and between fishers and government.

[9] The name *Dakkayu Akkal* - *Satu Pemikiran* (One Thought) originated from the language of the Bajau inhabitants of Maratua Island. It is a local institution initiated by Bestari with a concern to manage marine resources.

coordination in coastal and marine management. The main task of the CB was to produce a five-year management plan for the Berau MCA that included various activities of planning, implementation and surveillance of the Berau MCA.

Figure 2.2 Organizational Chart of the Steering Committee



Source: District Head Decree No. 224/2004

The agencies involved in the Steering Committee and the Collaborative Board were mostly the same, but *not* the persons who represented them, as a

consequence of the constant mutations within the district government. The former project manager of the Joint Program complained:

> We wanted to empower the district government. We invested in the persons representing the [district] government. We trusted them, but then they were transferred to another sector agency, so we had to start all over again. It was tiring. (Joint Program project manager period 2009, Bogor, August 2010)

Commenting on this problem in 2010, the policy coordinator mentioned that the Joint Program had a plan to review the regulation on the nomination of Steering Committee/Board membership. They planned to improve it by assigning a fixed person for each sector agency in the district who would be a member of the Collaborative Board. They proposed two options for improvement. Firstly, the nomination of the person in charge would mean appointing the person as a member of their institution (CB). Secondly, this appointment would give a structural position to the sector agency. The Joint Program expected that by changing the system there would be no more 'personnel' shifts in the Board so that knowledge transfer would be smooth and continuous, which would improve the commitment from each member of the Collaborative Management Board.

2.6 Decentralization as an arena of contention between district and outsiders

Unfortunately, decentralization is not a one-time definition of a legal shift of authority and responsibility to an autonomous region; it is an ongoing administrative and political-economic re-organization of resources, management and financial arrangements (Tacconi 2007; Hadiz 2004; Satria and Matsuda 2004). Consequently, the process of implementation often comes with unclear and

overlapping fields of power between central and decentral governments (Gunawan and Visser 2012; Patlis 2005b). Hence, decentralization materialized in overlapping and confusing regulations that were used to their benefit by the different actors involved in the co-management of the Berau MCA to authorise their claim on the development process, zoning, or the size of the Berau MCA. According to the first project leader of Joint Program (interview, Bogor, June 2012), the Berau MCA was established based on the Law No. 32/2004 on regional government, especially with regard to the management boundary of the district's coastal area.

Both the environmental NGOs of the Joint Program and the Berau district government apply Law 32/2004 on the nautical miles limits to set up the boundary of Berau MCA. But there is confusion and contention about their interpretation *from where* to start measuring. The Joint Program policy coordinator (2003-2006) who was involved in establishing the boundaries of the marine conservation area stated (interview, Bogor, November 2011) that the mangrove forest would be its landward boundary. The nautical-miles-seaward boundary of the Berau MCA, according to the Joint Program, should be started from the shore lines of Berau's outer islands[10]. Treating Berau as an archipelagic district, the Joint Program uses the Djuanda Declaration[11] to set up the 4 miles boundary as the outer boundary of the Berau marine administrative area. In this view the whole of the marine space including the sea around and

[10] A straight line drawn started from the 4 miles of the northest of Berau to the east toward the 4 nautical miles of Maratua islands. From this point, a straight line pulled to the south toward the 4 nautical miles of Sambit Island. From Sambit, a straight line pulled to the 4 miles of the most southern point of Berau. Those lines fenced in the Berau marine administrative area (see Figure 2.1).

[11] The Djuanda Declaration (1957) is the Indonesian government declaration that Indonesia is an archipelagic state and that the Indonesian marine area including the sea around and between the islands is under the Republic of Indonesia's authorithy. The outer boundaries of Indonesia are 12 nautical miles from Indonesia's most seaward islands according to this declaration.

between the islands is included in the Berau MCA. Based on this calculation, the MCA in Berau would extend over 1.27 million ha covering the whole of the district's maritime administrative area. This measurement was formally acknowledged through the District Head's Decree No. 31/2005 on the establishment of the Berau MCA.

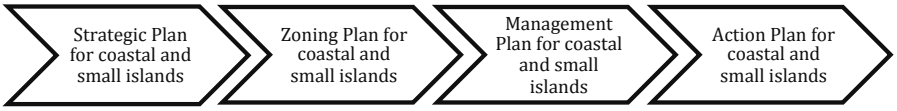
The district's marine and fishery agency (DPK) disagreed with the Joint Program using the administrative area as the criterion to declare the MCA boundary. DPK reasoned that the district authority to manage the coastal and marine natural resources only covers 4 miles seawards from the shore line. Based on this, the conservation area of the district would only cover 350,000 ha rather than the formally declared 1.27 million ha. DPK's interpretation of the law is legally correct, as Berau is not a so-called archipelagic district (*kabupaten kepulauan*) but a coastal district (*kabupaten pesisir*). Therefore, the starting point to measure their resource management authority of the 4 nautical miles should be at the shore line on the mainland *and* from the shore line of each of the small islands scattered through the Berau waters. The district head thus cannot claim authority over the marine space between 4 and 12 nautical miles because the remaining 8 nautical miles are under provincial authority (the *doughnut* model of Figure 2.5). This creates a considerable 'spatial gap' in the legal basis for governing the MCA by the district, which amounts to almost 1 million ha[12]. While these coastal waters are legally under provincial and national authority, the international NGO management model took the district government as its partner, not the provincial and national government.

In 2007 a coastal management law (Law No. 27/2007) was issued as a general guide to plan the use, monitoring and control of the coastal and small islands' natural resources. By the enactment of this law, the district government (DPK) was expecting that the state of the Berau MCA would be reviewed in order to conform to this new law. Based on this law, a conservation area is part of the coastal area zoning plan that needs to be designed by the

[12] 1,270,000 ha minus 350,000 ha is 920,00 ha.

district, and the law decrees certain steps that should be taken in the planning (Figure 2.3).

Figure 2.3 The sequence of planning steps



Source: Law No. 27/2007, Section 7

The implementation of the Berau MCA thus created considerable confusion for DPK Berau. According to the DPK officer, if an area was declared a marine conservation or protected area based on Law No. 27/2007, there should not be any extractive activities in that area. But the Berau MCA did not serve as a conservation area as implied in the law. In practice, marine resources were still extracted from within the declared marine conservation area, both by local and by outsider fishers (Gunawan and Visser 2012). In other words, if the district declared the 1.27 million ha as a marine conservation area, the whole of the Berau marine space would be restricted or closed to fisheries and other extractive activities. This officer argued that this would look like the government was ignoring the legal right of coastal communities to a marine-based livelihood (interview DPK officer, Tanjung Redeb, October, 2009).

Another problem is zoning. In composing the management plan for the Berau MCA, the JP in the name of the Steering Committee contracted Mulawarman University (UNMUL) in Samarinda to produce a series of publications on the Berau MCA. One of them was on the spatial zoning and coastal sites plan (Berau District Government 2008). The proposed zones divided the Berau MCA into core zones, a buffer zone, use zone and special zone. How-

ever, even though UNMUL staff members in their presentation stated that their zoning plan was based on Law No. 27/2007, I found that the terms they used in identifying the zones are based on the older Law No. 5/1990 on natural resources conservation (*Konservasi Sumberdaya Alam Hayati*). According to Law No. 27/2007 what is called a core zone (Table 2.2) should be called a 'conservation area'. Consequently, there would be specific no-go zones in the Berau Delta and around the islands, but the remaining waters would remain open access.

Table 2.2 Differences in naming and zoning of the conservation area.

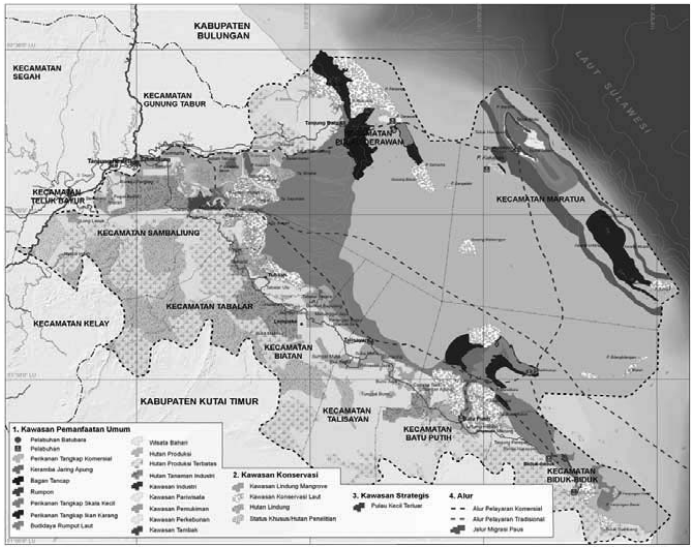
	UNMUL-Joint Program (Berau District Government 2008	**IPB-Joint Program (IPB et al. 2009)**
Principal Laws as points of reference	Law No. 27/2007; Law No. 31/2004; Law No. 5/1990	Law No. 27/2007; Law No. 31/2004; Law No. 32/2004
Name	Marine Conservation Area	Water Conservation Area
Zoning	Core Zone	Conservation zone (*Kawasan Konservasi*)
	Buffer Zone	
	Use Zone (*Zona Pemanfaatan*)	General Use zone (*Kawasan Pemanfaatan Umum*)
	Special Zone (Sea Lane and Research and Training Use Zone)	Sea Lane (*Alur Laut*)
		National Strategic Zone (*Kawasan Strategis National*)

Apart from the study by UNMUL, the Joint Program contracted the Bogor Agricultural Institute (IPB) to do a study on the Berau MCA zoning plan. The result of this study was presented in August 2009 in a workshop for district agencies' staff. The Joint Program and IPB proposed a new boundary and zoning plan for the Berau MCA. This time the boundary and zoning plan was adjusted to Law No. 27/2007 on the management of the coastal zone and small

islands, which divided the coastal and marine area of Berau into a public utilization area (*kawasan pemanfaatan umum*), conservation area, specific national strategic areas, and sea lanes. This means that not all the coastal and marine administrative authority of Berau would be designated as a conservation area.

The conservation area proposed by this study (Figure 2.4) includes the mangrove forests and reefs of Tanjung Batu, Panjang Island, Semama Island, Sangalaki Island, Guntung and Pagat Islands, Mangkajang Delta, the mangrove area of Tabalar, the Malalungun sandbar, Kakaban Island, the migration line of whales and other big cetaceans, Maratua Island, Sambit and Blambangan Islands, Bilang-Bilangan and Mataha Islands, the northern big reef, the mangrove area of Batu Putih and Buaya-Buaya Island, Teluk Sulaiman, Small Kaniungan Island and Teluk Sumbang (Berau District Government et al., 2009).

Figure 2.4 Zoning plan of coastal and marine area of Berau as proposed by Joint Program-IPB



Source: IPB et al. 2009

Moreover, in this zoning plan by IPB the coastal and maritime space of Berau became a collective concern of district, provincial and national governments, conforming to the search for collaboration between governmental levels, as expressed by the law (Law No. 27/2007). Because Maratua Island is one of the islands identifying the limit of Indonesia's national waters, the district needed to coordinate the management of this island with the central government. Since Maratua Island as part of the MCA is also a concern of the international NGOs, the island belongs to the domain of all the multiple-scale actors involved in the coastal resource governance of Berau, creating confusion and contention between MMAF, conservationists, and the district.

Interestingly, although the Joint Program-IPB study, which was the basis for the workshop, had received inputs from different agencies, including DPK Berau, DPK as the technical agency appeared to be reluctant to accept this zoning plan, as stated by the officer of DPK Berau:

> We told the director of the Coastal and Marine Department of MMAF that we would use their (Joint Program-IPB) proposed boundary and zoning plan as input to our plan on developing the district spatial planning on coastal areas and small islands. We appreciate their work, but when they insisted that we should recommend their boundary and zoning plan as a district regulation, we could not do that. (Officer of DPK, Tanjung Redeb, October 2009)

He objected to follow-up on the Joint Program's proposal and to submit it to the district government (DPRD) to become a formal district regulation, because he believed that this zoning was decided upon without any participation of coastal communities, and thus without the need for public consultation that was mentioned in the law. When JP-IPB presented the results of their study, they used the word 'to socialise' instead of 'public consultation'. Their terminology gave the impression that 'outsiders' (Joint Program/IPB, see next section) overruled and excluded local institutions. Consequently, DPK did not

feel like it 'owned' the process of the zoning. DPK, infact, had their version of boundary of Berau MCA that was based on Law No. 32/2004 on Regional Government (Figure 2.5). The contention between the international NGOs and the local government agency (DPK) over the boundaries of district authority to monitor the MCA has consequently been politicized in a power game against 'outsiders' - whether national government agencies, non-Kalimantan universities, or international NGOs in a newly emerging subjectivity of the Berau district government.

To respond to the confusion about the status of the zones, the Joint Program held a joint workshop in July 2010 to create synergy between the different definitions, interpretations of institutional provisions, and monitoring authority over the conservation of the Berau coastal waters. This time, its staff purposely did not use the term marine conservation area, but replaced it by water conservation area following Law No. 27/2007. In his opening speech, the head of DPK Berau tried to downplay the status of the MCA in the District Head Regulation No. 31/2005 by calling it merely an initiative, with the intention to reconsider the status of the marine conservation area as stated by the Joint Program (TNC/WWF). Interestingly, the district head in his opening speech now played the card of the local economic and cultural-historical value of sea turtle eggs, thus taking sides with DPK in distancing himself from the MCA model of the international NGOs. He stated that sea turtle eggs have always been and will remain important to Berau people[13] and that this should be one of the considerations for the provincial and central governments to col-

[13] The political-economy of turtle eggs is another highly contentious issue between the environmental NGOs and local government. The power positions of the district head and turtle eggs concession holder are both very important for the outcome of the implementation process of the Berau marine conservation area (in contrast to Halim et al. 2008). This issue is dicussed in chapter three of this thesis.

laborate with the district in their conservation attempts (Field notes, October 2010).

The Joint Program persisted in keeping the 1.27 million ha as a single Marine Conservation Area as declared internationally. But it now left its position of partnering only with the district by declaring that an MCA of this size would better become an MCA under national instead of district governmental authority, using the argument of habitat conservation. The Joint Program expected that the central government would intervene to solve the conflict so that district, provincial, and central governments would all contribute their share, both in terms of authority and budget responsibility, to the implementation of the Berau MCA[14].

Figure 2.5 Boundary of the Berau Water Conservation Area based on Law No. 32/2004 or "the *doughnut* model" as proposed by the DPK Berau

Source: Al Giffari and Harianto, 2010

[14] In fact, they returned to a position closer to Law No. 32/2004 that puts greater emphasis on the relationship between central and regional governments, rather than the authority (or autonomy) of regional governments (Patlis 2008, 420).

2.7 Collaboration and contention in decentralized MCA management: Discussion and conclusion

The Berau case not only serves as an example of legal disconnects, but also of power and knowledge disconnects between the principal actors in the implementation of the Berau MCA. These disconnects create confusion and contention on the ground about definitions, institutional provisions and monitoring practices in decentralized marine conservation area management in a search for synergy in the establishment of the Berau MCA.

In the era of decentralization, the district has the authority and responsibility to manage the coastal resources within 4 nautical miles. This management is not merely about the exploitation of the coastal and marine resources, but also includes the development and implementation of a conservation area. International environmental NGOs saw this as a chance to directly partner with the Berau district in the expectation of improving local environmental management. They thus proposed a different model from recent co-management approaches in Indonesia (Djohani 2009; Christie 2004; Erdmann et al. 2004) by focussing on collaborating with the district, deliberately bypassing the central and provincial government and marginalising coastal communities.

TNC-Marine, WWF-Indonesia, and local NGOs started collaboration in developing what they saw as a new marine conservation concept for Berau. After they received the district's acknowledgement, they initiated collaboration as a Joint Program with the different technical agencies in the district. Together they formed the Steering Committee for the Berau MCA. But, contrary to their structural position (Figure 2.3) the Joint Program took the coordination of these different governmental stakeholders into their own hands because the district government did not fulfil its management obligations. Through this governance construction the Joint Program as a foreign body

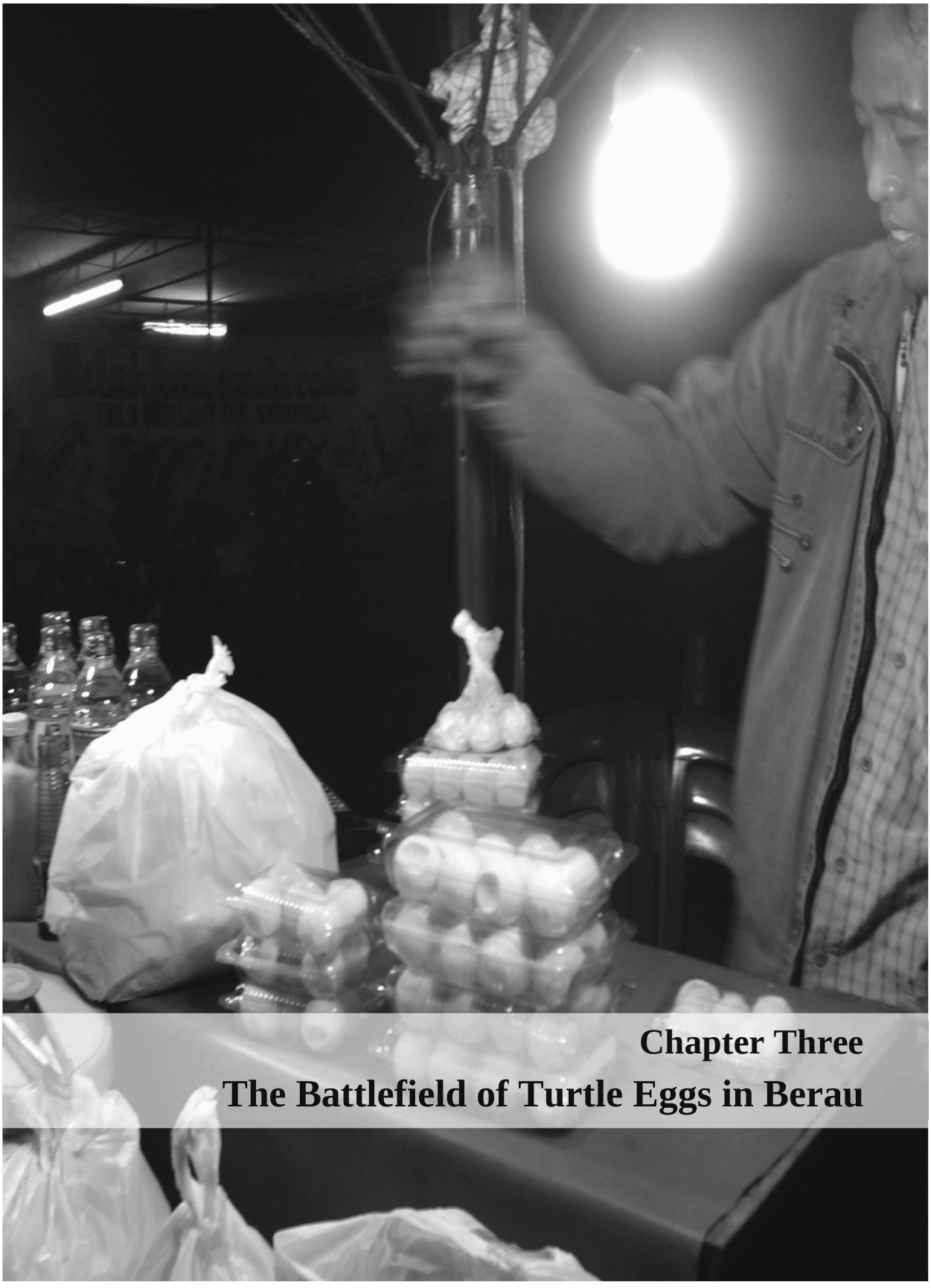
tried to monitor and control the sustainable use of the marine resources. Yet, as non-government institutions and outsiders to the district, TNC-Marine and WWF-Indonesia took away from the district government the authority and responsibility to make the MCA management model in Berau a success.

However, marine conservation was not a priority for the Berau government for several reasons. Fiscal decentralization (Aritenang 2009; Hira and Parfitt 2004) had forced district agencies to devise strategies to increase the regional income (PAD). An increase in coastal resources exploitation was seen as a more sustainable solution to regional economics than a decrease due to no-take zones and environmental regulations (Gunawan 2012), including rent-seeking practices (Gunawan and Visser 2012; Patlis 2008).

I have argued that the decentralized management model applied by the environmental NGOs in the Joint Program does not provide the often-sought middle ground (Acciaioli and Erb 2008; Majors 2008). Expanding Patlis' notion of legal disconnects (Patlis 2008, 411; 2005a) I also discussed disconnects in environmental knowledge and power between the principal individual and institutional actors in MCA management, based on two main areas of contention: 1) the issue of how to measure the coastal space of district authority over the 4 nautical miles (Law No. 32/2004) and, 2) the issue of zoning of the marine conservation area. In addition to these issues, the personnel changes in the different institutions further complicated collaboration. Particularly, the succession of district head in 2005 and the replacement of members of the Steering Committee and the staff of DPK created problems for the position of the Joint Program. The Joint Program came to be seen as an outsider that lacked authority and legitimation to govern the MCA in the eyes of the district. The personnel changes in the district fisheries agency (DPK) helped to strengthen the newly obtained identity of the district government as an autonomous government body. This new subjectivity contributed to the increase of discontent over the power of the Joint Program to define the boundaries of the MCA that

conflicted with its own interpretation of Law No. 32/2004 regarding district authority over 4 nautical miles.

By 2010 it was clear that the district did not live up to its commitment to govern the 1.27 million ha of the MCA declared in 2005. The district head decided not to extend the MoU on collaboration with TNC/WWF in the JP. The non-local NGOs departed from their partnership with the district by proposing that central and provincial level governments should share in the management through a multi-scalar governance structure for the Berau MCA. The district head, in a meeting about the new Law No. 27/2007, made a remarkable political move away from collaboration with the external partners, the international NGOs, the national research institute (IPB, Bogor), and the regional university (UNMUL, Samarinda), by making a political statement in support of the local belief in the cultural-historical and economic value of turtle eggs exploitation as a legitimate part of district marine conservation practice. These developments mark the demise of the collaboration between the international environmental NGOs and decentralized government in the life history of the Berau MCA.



Chapter Three

The Battlefield of Turtle Eggs in Berau

Note on the cover page picture:

One of the sea turtle eggs sellers in the province capital of Samarinda. The Joint Program and Natural Resource Conservation Agency (*Balai Konservasi Sumberdaya Alam* – BKSDA) believe that sea turtle eggs sold in Samarinda originate from Berau waters.

3.1 Introduction

The marketing of turtle eggs from Berau has a long history (see table 3.1), only recently it was declared illegal. In this sense, the histories of sea turtle egg exploitation and marine conservation in Berau were closely related. Before 1901, sea turtle eggs were used as an important resource in barter exchange, and they were extensively exploited. During the period of 1901-1941 the capture of sea turtles and the use of sea turtle eggs were limited by way of a system of a temporary harvesting of sea turtle eggs on Sangalaki island for conservation purposes (Al Giffari 2008) and by auctioning of the right to collect the eggs by the Dutch government.

After the colonial era, the eggs were again extensively exploited and used as a gift or exchanged with other regions. From 1950 to 2000, the Berau district government controlled the trade of sea turtle eggs through district regulations and by a decree of the district head (Table 3.1). The concept underlying the legal tools were based upon the same organizational principle as the one used by the Dutch colonial officers: auctioning to local political figures or elite families the right to collect turtle eggs (Yayasan Penyu Berau 2012; Krom 1940). The winner of the auction became the lease-holder for a period of a year. In Berau, the lease-holder is still called *pachter*[1]. From 1994 to 2005/2006 the *pachter* of the sea turtle concession was Haji Penyu[2].

The Joint Program sought to establish a marine conservation area in the Berau waters that was finally established in 2005 (Chapter 2). Even though the conservation implemented by the Joint Program was not based on the notion of

[1] *Pachter* is a Dutch word meaning a lease-holder or renter. In Indonesia, the land and its natural resources belong to the state. Following modern state administration, the district has the right to decree how land and natural resources are managed. In this case, the district has the right to control the islands and sea turtle eggs' exploitation and trade or lease that right to a private party through auction. The winner of the auction is thus called *pachter*. In Berau, *pachters* not only manage the islands where sea turtle eggs are found but they also manage birds' nests caves.

[2] Meaning "the turtle haji". Of course this is not his real name.

species but on ecosystem boundaries, sea turtle conservation[3] was indeed on their agenda. Although the district government had agreed through the establishment of the MCA with the objective of sea turtle conservation, at the same time it did not abolish the auction system allowing the lease-holder of the sea turtle islands to continue the collection of sea turtle eggs. Sea turtle conservation thus became a major source of contention between the interests of the Joint Program and the district government.

Especially since the decentralization of natural resources management in 2004, the district government demanded that it could still exploit sea turtle eggs for the purpose of increasing district revenues (Chapter 2). The district government teamed up with Haji Penyu to obstruct the implementation of the MCA in Berau. Following the life history of the establishment of the Berau MCA in Chapter 2, I here provide a case study about the political battle of values, knowledge and discourses between the Joint Program, district government, and Haji Penyu on seeing sea turtle conservation as the key to marine conservation in Berau. I will explain how the political network of Haji Penyu blocked the implementation of the Berau MCA. I further argue that the different ontologies of knowledge about sea turtle management and marine conservation shape the different discourses on sea turtle and marine conservation used by these actors.

Primary data were gathered during field research carried out in 2008-2011. I conducted in-depth interviews with multiple-scale actors involved in the development process of the marine conservation area including national and regional government officials, local entrepreneurs, and NGO staff. The interviews focused on the management of the coastal area of Berau, the development process of the Berau MCA and the history of sea turtle management in Berau. Additionally, I also engaged in participant observation. This included attendance at meetings and workshops held by the Joint Program

[3] Based on the appendix of the government regulation No. 7/1999 on plant and animal preservation, sea turtle (both green sea turtle and hawks bill sea turtle) are part of the protected animal.

to communicate (*sosialisasi*) the Berau MCA program with the district. Secondary data to complement my field data was gathered by reviewing and examining a variety of scientific literature and other sources on the Berau MCA and sea turtle eggs exploitation from websites, newsletters, newspaper articles and reports produced by Joint Program.

In the following section I will review the literature on the global-local interface and how the different values and knowledge shaped the discourses of the actors under conditions of political-administrative decentralization in Indonesia. The third section discusses the ecological value that became the basis for the knowledge of the Joint Program in framing marine conservation in Berau. The fourth section describes the historical and economic values shaping the district government's interest in sea turtle eggs. The fifth section elaborates on Haji Penyu's ideas of the management of sea turtle eggs, and continues with the discussion of the political network he uses to accommodate his interests. The final section discusses the battlefield of knowledge between the actors involved in sea turtle management and draws the conclusions.

3.2 Conceptual framework

Following the implementation of decentralization in Indonesia since 1998, the district government, particularly in a resource-rich district like Berau, demanded a greater role in managing their natural resources (Resosudarmo 2004). Supported by the issuing of regional government laws in 1998 and 2004, the district government gained more political power in governing their resources (Hidayat 2005). The district government now used its power in producing, implementing, and employing regulations to accommodate its own interest (idem). Its power becomes even greater when supported by the attitude of local political elites who have a tendency to exhibit 'mono-centric-loyalty' to their superior or boss (*ponggawa*) or to other local elites, rather than to the

community (Hidayat 2000). The sovereign positioning of the district's political elite implies that in every process of policy decision-making they tend to protect the interest of their economic bosses more than the interest of the coastal community depending on them.

Hence, the nationally accepted global trend in implementing marine conservation is not always automatically accepted or implemented by local government, as shown in Chapter 2 in the case of the establishment and implementation of the Berau Marine Conservation Area. Instead of passively receiving the global norm, knowledge and policy goals regarding the concepts of marine conservation are translated and transformed according to local actors' goals, interests and strategies. In the previous chapter I have argued that the idea of marine conservation was introduced by global environmental NGOs into Berau. As a global force, this idea involved a different body of knowledge, motives, power, goals, and objectives from those of the local actors. In this chapter I would like to deepen my analysis of the interface of global and local knowledge and explain how global environmental knowledge (in this case about sea turtle conservation) is reshaped and used in different ways by the local political-economic elite to reach their goals.

I define knowledge as "something that everybody possesses, even though the grounds for belief and the procedures for validation of knowledge-claims will vary" (Long 2001:189). Even though the global science-based environmental knowledge is produced to inform the public and the government about the changes and the role of humans in environmental change, this knowledge is produced in isolation from the everyday lives of the public and the government (Goldman and Turner 2011). When this global science-based environmental knowledge was brought into the district, it met and interacted with a different local knowledge. As a product of scientific knowledge, this global environmental knowledge is produced by scientists who usually "occupy a position of power and authority in selecting theoretical approaches, data and interpretations […]" (Kontinen 2004: 3). On the contrary, local knowledge is

shaped by a different ontological basis that originates from the historical practice and experiences of the local people. The local knowledge in this case finds is source in the historically based auction of the single right of access to harvest sea turtles eggs for economic purposes (Krom 1940) together with local pride and a sense of identity expressed by the sharing of the eggs with relatives and guests, and the cultural value of the eggs as an aphrodisiac.

The interface of global and local knowledge creates what Tsing (2005: 4) has labeled as friction, the "awkward, unequal, unstable, and creative qualities of interconnection across difference". She challenges the notion that global ideas are passively accepted and adopted at the local level. Instead, she argues: "global forces are themselves congeries of local/global interaction" (Tsing 2005: 3), as the interaction will "bring two worlds into relation" (Olivier de Sardan 2005: 153). This means that two different bodies of knowledge and interests will meet or confront each other during the process of the transfer of certain skills.

In the case of the Berau MCA, the implementation of political-administrative decentralization has given more weight to the district government's economic interests. Also, the local knowledge and valuation of sea turtle eggs are now being contested by the scientific knowledge introduced by the Joint Program, which contributes to turtle eggs representing highly contentious values. When these bodies of knowledge with different understandings, interests, and values meet and interact, a battlefield of knowledge is in the making (Long 2004). In this battlefield of knowledge, each of the actors involved is struggling to persuade others to accept "particular frames of meaning and winning them over to their point of view" (Long 2001: 184).

3.3 The scientific knowledge of the Joint Program

The Joint Program is a collaborative institution consisting of international, national and local NGOs that initiated the development and establishment of the marine conservation area of Berau (Chapter 2). The Joint Program's initiative to develop an MCA was mainly oriented to conserve the habitat of crustaceans, coral reefs and sea turtles, safeguard a migration corridor for whales, dolphins and sea turtles, and especially to conserve the mating, feeding, nesting and nursing ground for the sea turtles. Evidently, these aims are framed by scientific ecological and marine biological values based on the knowledge of Joint Program members, who are mostly marine biologists. The first thing they see is the biodiversity of a certain area, as mentioned by one of the ex-project leaders of Joint Program:

> "Why is Berau valuable from the point of conservation? Because of the high [biodiversity] conservation value of the waters in front of Berau River. We still could find the Irrawaddy that looks like a pink dolphin. And also, that the Berau waters have served as the migration route for marine mammals. [Moreover] if we talk about the sea turtle, according to the Turtle Foundation, the Berau waters are the place for sea turtles, [because] they serve also as mating, feeding, nesting and nursing ground for the sea turtles. So, because of that, we have to conserve the area. The conservation value is high." (Ex-project leader/policy coordinator of the Joint Program, Bogor, August 2010)

Another Joint Program member also supports the idea of habitat conservation:

> "[…] The Berau [district government] declared this 1.27 million ha as MCA because they see the marine species in the Berau waters. So the approach should be habitat conservation

> instead of species conservation […].” (Ex-policy coordinator of JP, Tanjung Redeb, October 2010).

When the Joint Program started the project in Berau, they already had held a discussion among their members (Chapter 2) before they started to contact several people from the district government. They tried to communicate (*sosialisasi*) their ideas about conservation to the district government using technical terms, like ‘target species’, ‘ecosystem’, and ‘habitat’. In this early approach, supported by the political situation favouring district authority and considerable international funds, the Joint Program could attract the district government’s interest to join the global attempt on marine conservation activities. Hence, in 2005, Berau district government, supported by the Joint Program declared a marine conservation area of 1.27 million ha that was thereupon formally recognized by the district head. This attempt aimed at securing the habitat of marine biota in the Berau coastal waters. Although they were not targeting sea turtle conservation in particular, most regulations issued by the environmentalists in relation to the MCA were on sea turtle protection to oppose sea turtle eggs exploitation by the district through their auctioning of the right to manage the sea turtle islands of Berau.

3.4 District historical values of turtle eggs

The history of turtle egg management in the past underlined the district legitimating the continuation of the auction system to manage turtle eggs until the present. This historical value also enriched the cultural value of the turtle eggs in the eyes of the Berau population. They are proud to present turtle eggs before guests or to be taken home as souvenirs from Berau. Table 3.1 shows the history of sea turtle eggs management in Berau.

Table 3.1 The history of sea turtle eggs management in Berau

Period	Activities	
Before 1901—1912 (Sultanates)	Open access	Managed by two local entrepreneurs or *ponggawa*
1912—1934 (Dutch colonial rule)	Restricted use	Forbidden to catch sea turtles; auctioned permit to harvest sea turtle eggs implemented on Sangalaki and Derawan islands.
1934—1945	Auctioned	Open-closed conservation scheme implemented by the Dutch colonial government on Sangalaki island.
1945—1950	Open access	Highly exploited. Sea turtle eggs served as a gift and object of barter.
1950—1997	Auctioned	Based on District Regulation No. 30/1930 and District Regulation No. 15/1983. The lease-holder had the responsibility to hatch 3,000 turtle eggs/year.
1998	Open access for 6 months and nomination based on district head's decree for the next 6 months	The issuing of the Law No. 18/1997 on tax and retribution overruled District Regulation No. 15/1983. Nests could be adopted by outsiders/tourists through the tourism entrepreneur of Derawan and Sangalaki islands.
1999—2000	Auctioned	Based on a decree of the district head 10% of the eggs were for conservation and nest adoption, and 25% for the Berau and regional markets.
2001	Limited bidding and the beginning of the protection of Derawan and Sangalaki islands	20% of the harvested eggs is for conservation
2002—2005	Direct nomination of sea turtle eggs management for the islands outside of Sangalaki, Semama and Derawan islands	Establishment of Berau MCA and the sea turtles becoming fully protected.
2006	District issues a ban on the harvesting of sea turtle eggs on Bilang-bilangan, Mataha, Sambit and Belambangan islands.	A letter of PHKA (2006) confirms that the harvesting ban on sea turtle eggs is extended to include Bilang-bilangan and Mataha island. This now means full protection of sea turtles in Berau.
2007		The Minister of Forestry formally acknowledges the full protection of sea turtles in Berau.

Source: Yayasan Penyu Berau 2012; Al Giffari 2008; Noor 1996, and interviews

Sea turtle egg collection and trade were commercialized under the reign of Sultan Hasanuddin of Berau (circa 1876 – 1882) who married a princess from Solok (Philippines). Many Bajau migrants from Solok then came to stay on the Derawan and other small islands in the Berau Delta. Their main livelihood was fishery. As fishers, they also held rights to collect sea turtle eggs. They held rights to exploit sea turtle eggs on the turtle islands (Sangalaki, Semama, Balambangan, Bilang-bilangan, Sambit, Balikukup, Mataha and Tatangga)[4].

> "Originally, collecting the eggs seems to have been privilege of the Bajau's, who therefore owed to their heads (poenggawa's) only a small compensation (tjoekei) […] ...To keep their rights, they had to pay tribute to their boss or patron (poenggawa). When Aji Kuning became regent in Gunung Tabur, he issued a regulation in 1880 to auction the right to manage what were locally called the "sea turtle islands" because sea turtles were nesting on their shores. Those turtle islands were divided into two areas and managed by two entrepreneurs: poenggawa Toke who held the apanage right for the islands of Bilang-bilangan and Mataha; and poenggawa Taba who held the apanage right for the islands of Sambit, Sangalaki and Balambangan. These poenggawa regulated the tribute of the sea turtle eggs exploitation on these islands. Poenggawa Toke received 600 florins/year and poenggawa Taba received 200 florins/year. Since 1912, a new regulation was issued, which mentioned that tax or tribute should be paid to the Sultan of Sambaliung and to the Sultan of Gunung Tabur, the two sultanates in Berau. The lease period runs from 1st May to 30st April." (Idem)[5]

[4] *"Van groote importantie voor de Landschapskas zijnde, is de exploitatie der "schildpadeilanden" ... Sangalaki, Semama, Balambangan, Bilang-Bilangan, Sambit, Balikoekoep, Mataha en Tatangga"* (Krom, 1940, p. 84 translated from Dutch by L. Visser, 2013)

[5] *"Oorspronkelijk schijnt het eierrapen privilege der Bajau's te zijn geweest, die daartoe slechts eenige vergoeding (tjoekei) aan hun hoofden (poenggawa's) verschuldigd waren. Controleur Westra maakt van e.e.a. althans melding in zijn memorie. [...] Eerst de rijksgroote Adji Koening, die tijdens de minderjarigheid van*

It is important to note that a conservation regulation was already included in the contract between the Dutch district government and the lease-holding entrepreneur who was obliged to forbid any eggs collection and trade during the months of November and December. Also, starting in 1936, it was included in the contract that the lease-holder should deliver to the local government a total of 200 young turtles at the end of his term to be released into the sea under supervision of the sub-district head at Derawan Island.[6]

Table 3.2 Revenues from turtle eggs exploitation in Berau in 1912-1940

Year	Tax revenues (florin)
1912 s/d 1914	15.052
1915 s/d 1917	18.250
1927 s/d 1929	62.510
1930 s/d 1934	70.510
1939	10.600
1940	11.600

Source: Krom 1940

There are no records on tax revenues gained from the sea turtle eggs trade after 1940. Up to the 1960s, the revenues from sea turtle eggs were the only district income. With the implementation of President Soekarno's *Politik Berdikari*

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den vorigen vorst van Goenoeg Taboer, Mohamad Siranoeddin, als waarnemend Sultan optrad, zou omstreeks 1880 het zamelrecht van de betaling van een soort pacht afhankelijk hebben gesteld. Controleur Spaan deelt in zijn memorie (1901) mede, dat "sinds eenigen tijd de oude toestand hersteld is en Poenggawa Toke zijn apanage, nl. de eilanden Bilang-Bilangan en Mataha, benevens het monopolie der op die eilanden gevonden schildpadeieren tegen betaling eener jaarlijksch accijns van f 600,-- heeft teruggekregen. Poeggawa Taba met hetzelfde monopolie de eilanden Sangalaki, Sambit en Balambangan tegen betaling van f 200,-- per jaar." (Krom, 1940, p. 84 translated from Dutch by L. Visser, 2013)

[6] "*Teneinde het bij ongebreideld zoeken der eieren niet denkbeeldig gevaar voor een strekte achteruitgang der schildpadstand te keeren, werd in de notarieele pachtovereenkomst de voorwaarde opgenomen, dat gedurende de maanden November en December geen eieren mogen worden ingezameld.[…] Voorts is, voor het eerst in 1936, in het contract opgenomen de verplichting voor den pachter, om aan het eind van het pachtjaar t.b.v. de Zelfbesturen 200 jonge schildpadden op te leveren, welke onder toezicht van het onderdistrictshoofd van Poelau Derawan in zee worden uitgezet."* (Krom, 1940, p. 85 translated from Dutch by L. Visser, 2013).

foreign investment did not reach Berau to be invested in the management of natural resources in Berau (Noor 1996: 99). During the New Order of President Soeharto (1965-1998) sea turtle eggs were the only natural resource in the district that was controlled by local people, since all other marine resources were controlled by the central government. The former head of DPK Berau confirmed this:

> "In those days, there was no other district income besides the income from taxation of turtle eggs. We could not manage the timber because its exploitation was controlled ('managed') by the central government, and so did birds' nests. Sea turtle eggs were the only natural resource that could be managed by local people and it became the only source of district revenue." (Former head of DPK 2000-2006/2007 , Tanjung Redeb, 2nd October 2010).

Using the argument that the people of Berau managed sea turtle eggs for a long time in history, the district government wanted to keep the control over sea turtle eggs exploitation and trade as an important source of district revenues (PAD) in the era of decentralization. Even though its contribution was not that high (Table 3.2) sea turtle eggs represent a marine resource that was in the hands of local people who paid their tribute directly to the district. In this sense, sea turtle eggs represent an essential element of the identity of the district, not only historically, but also economically.

Table 3.3 Contribution from the sea turtle eggs taxation to regional tax revenues

Year	Total Regional Revenue from the regional tax (IDR)	Contribution from the sea turtle egg tax (IDR)	Percentage
1995/1996	3,709,871,728.61	483,830,000.00	13.04%
1996/1997	3,762,530,604.34	677,830,000.00	18.02%
1997/1998	4,874,685,005.01	647,830,000.00	13.29%
1998/1999	3,355,636,158.20	400,000,000.00	11.92%

Source: District government data on regional revenues 1994/1995 – 1998/1999

The district government, also supported by Haji Penyu, argued that they were actually contributing to conservation by auctioning the sea turtle eggs concession. They called it management or *pengelolaan* of sea turtle eggs, meaning that they did not just exploit sea turtle[7] by harvesting the eggs, but also conserve the species at the same time by limiting and controlling public access to the eggs. The district government, through DPK, had a budget to hatch sea turtle eggs, and release the young animals at sea, just like the regulation set during the colonial time.

The district government released the last baby-turtle in 2004. Even though Berau DPK received a budget for sea turtle conservation for another year until 2007, it had lost its only source for the conservation of eggs after the full protection of sea turtles in 2006 (Chapter 2). Unfortunately, the termination of the sea turtle conservation by the district government was related to the declaration of the Berau MCA and the full protection of sea turtles in 2006. Before 2006, the agency would get the eggs to be hatched from the *pachter* and involve villagers in hatching the eggs and nursing the baby-turtles until they were ready to be released into the sea. Using the money derived from the retribution of the sea turtle eggs trade DPK paid the villagers who carried out the sea turtle hatchery an amount of IDR 10,000 (around US$ 1) per animal of 3 months old that would then be released into the sea. To the villagers on Derawan Island, this activity meant quite a good income (Kompas, 2004).

3.5 Haji Penyu's eggs management and political network

I had difficulty to collect data in Berau, especially on the production and tax revenues obtained by the district from the auctioning of sea turtle eggs management activities. I went to three government institutions to search for data, but they appeared to be reluctant to share their data. One female officer

[7] Primarily green turtle (*Chelonia mydas*).

from DPK told me that she did not want to share the data with me because it was not valid. One of her job descriptions was to collect data on fisheries production, and sea turtle eggs are regarded as one of the fisheries products of Berau. DPK had the responsibility to monitor the collection of eggs as part of fisheries. When she asked data on the turtle egg production from the *pachter*, he just asked her to fill in the data sheet by herself.

Finally, I collected data through my personal network, although I know it is incomplete. I was fortunate to be able to interview Haji Penyu, the last and most powerful *pachter* of Berau, in October 2009 in Tanjung Redeb,.

3.5.1 Haji Penyu's egg management: exploitation plus conservation

Haji Penyu is a complex person. His opinion on sea turtle management oscillated between pro and contra conservation. He has a vast knowledge on conservation issues and regulations, and the activities of the NGO's in Berau. He agreed to the idea of sea turtle conservation and took his responsibility regarding the district regulation to protect 10 percent of the eggs he received from being collected. On the other hand, he said he disagreed with the statement that sea turtle as a species was close to extinction and, consequently, the need for its full protection as heralded by the marine biological experts who worked with NGOs, but who did not seem to be bothered about local people's livelihoods and values. In his opinion, if sea turtles were fully protected without proper management, there would be too many animals. For him, the term sea turtle management meant not just the necessary conservation but also that the harvesting of the eggs should be allowed.

In his opinion, the district government should manage the turtles with local people as the implementers. If NGOs managed the conservation area, the local people should also be involved in it. Thus, the local people would directly benefit from the conservation activities, instead of just becoming and acting as spectators because the conservation activities are done by the NGOs, who are

outsiders. Once the government, whether district or national government, would have decided to conserve the sea turtles, it should have to seriously implement the conservation program. In short, lack of clarity and inconsistency of the implementation of conservation regulations triggered Haji Penyu's resistance to the very idea of marine conservation. He acknowledges that in Berau the sea turtle is fully protected, but he also acknowledges that in Samarinda people can still eat sea turtle eggs that he believes come from the Berau waters despite their protection (see Picture of the cover page of this chapter).

3.5.2 Haji Penyu's political network

Haji Penyu had an extensive local and regional network. His younger brother was one of the vice-chairs of Berau parliament. His uncle had served as the head of Berau DPK from 2009 to 2012. Before his uncle served as the head of Berau DPK, this institution had been actively involved in monitoring and surveillance activities of the Berau waters together with other Joint Program members. Commenting on this change of interest, one of its officers stated:

> "DPK was involved in monitoring and surveillance activities. But when the head of DPK was replaced, we were not permitted anymore to join the monitoring. Joint Program kept asking us to join their activities, but we were reluctant to joint them. We are under the authority of the district government, so we have to obey them. Many eyes are watching us. Whatever we do we are always wronged (*serba salah*)". (DPK officer, Tanjung Redeb, Berau, October 2009)

The familial relationship between the head of Berau DPK, Haji Penyu, and the vice-chairman of local parliament appeared to hamper the implementation of

marine conservation related activities in Berau. They saw the MCA as an obstacle to their family interest in keeping the concession. One of the Joint Program members stated:

> "[Haji Penyu's brother] has a position as a vice-chairman who is in charge of environmental affairs, including fisheries. As long as he is in that position, I do not expect that we would get any support [to implement] the MCA, especially for the budgeting. Because he is the one who has the power and authority to arrange the budget for these affairs. [Even though] in my opinion, Berau has the financial capacity to set apart a budget for the monitoring of the Berau waters." (Member of JP, Tanjung Redeb, Berau, October 2011)

In August 2005, when the green sea turtle became a fully protected species, Berau happened to organize its first direct election of the district head since the implementation of the decentralization laws. One of the candidates had a close relationship with the Haji Penyu family. They were in the same political party. Haji Penyu's family financially supported the political campaign of this candidate. He won the election and became the vice-district head of Berau for two periods of 5 years after he also won the second direct election in Berau in 2010. Some of my informants believed that the district government therefore 'owes' the political promise to Haji Penyu's family to defend the right to sea turtle eggs management for them.

Box 3.1 Haji Penyu's considerations regarding turtle egg management

Haji Penyu was head of Derawan village and he was a businessman. His main business was the sea turtle eggs trade. With the money he collected from this business, he spread his wings by investing in the construction sector. The establishment of the Berau MCA meant that he lost his money making machine.

He recalled that when he was small, in the 1960s, the district government already auctioned the right to harvest sea turtle eggs. His father was one of surveyors of the sea turtle islands (*penjaga pulau telur penyu*). In those days, the lease right (*pacht*) was held by a group of people, usually by the members of an extended family. They collectively paid the auctioned price of the lease. Each male head of a family would then take turns in collecting the eggs, rotating each 10 days.

In 1994 Haji Penyu obtained the right to harvest sea turtle eggs in the Berau area and he kept this right for 13 years through his family business. He was *pachter* for 10 years by repeatedly winning the auction. After those 10 years as auction winner, the district government appointed him for another 3 years to manage the sea turtle islands because of his good records in managing the *pachter* rights. He managed six 'turtle islands': Derawan, Balambangan, Sambit, Sangalaki, Bilang-bilangan and Mataha. He installed two to five persons to watch on each island, on salaries ranging between 700,000 and 1,500,000 IDR per month per person. He also provided a radio for communication to each island, and two operational boats for all the islands with five crew-members on each boat. The eggs were harvested each day the whole year through. His crew would leave a couple of nests to be conserved, depending on how many nests they found that day. His rule was to keep one nest out of 10 undisturbed. Usually he would select the nests for conservation that were located far from the waterfront, which would remain untouched by the high tide. Sometimes he asked his workers to move the nest to a more secure place to ease surveillance.

In 2001 he lost Derawan and Sangalaki Islands because of the district head decree on the full protection of the sea turtle on these two islands, which banned him from collecting the eggs in these places. In 2005 the *pachter* contract was terminated because the Berau district declared the full protection of the sea turtle. According to Haji Penyu this conservation activity would harm the sea turtle population in the sense that there would be no control on the sea turtle management from the district.

Source: interviews 2009

But, although Haji Penyu had strong political ties in the district, his political network did not stretch any further, and he had no voice in either the provincial or the national government. Finally, he more or less gave up by saying:

> "[Even though] my brother is at the local parliament, it's done. [Meaning: the sea turtle eggs concession]. It's been three years that I have not been actively involved in it anymore. I also feel bad toward the head of DPK. He is my uncle. If I say that I want to continue the concession, I will harm his program. I don't want to do that. My concern is: Why in Samarinda eggs from Berau are still on the market, also in Sukabumi, but why not in Berau? If the [national] government was successful in implementing the [law] to ban illegal logging for the whole of Indonesia, why can they not do so in implementing [the regulation] on banning sea turtle [commoditization]?" (Haji Penyu, Tanjung Redeb, 22 October 2009)

He further elaborated on his doubt about the origin of the eggs:

> "As the 'manager of the eggs' [lease holder] for many years, I could tell you that those sellers did not tell the truth. They could create any story to assure you that they get the eggs legally. Those officers (of BKSDA) did not check whether they were telling the truth or not. But, if they had really checked the origin of the eggs they would have learned that those eggs were from Berau. I know very well which island sells the eggs. There are no inhabitants on the island of Balambangan, but the military apparatus guards the island. Their men harvested the eggs and sold them." (Haji Penyu, Tanjung Redeb, 22 October 2009)

The head of the Tourism Agency of Berau echoed Haji Penyu's concern at that time. Her reluctance originated from banning the collection of the sea turtle eggs in the district, despite the fact that her agency was a member of the

network of sector agencies for conservation in the Steering Committee. Referring to the turtle eggs trade in Samarinda, she said: “If others can consume sea turtle eggs of Berau origin, why can we - inhabitants of Berau - not consume those eggs?” (Head of Tourism Agency, Tanjung Redeb, November 2008).

Even though the Joint Program was convinced that sea turtle eggs from Berau were hard to be found in Samarinda after the sea turtle’s full protection was implemented in Berau, they did not deny that there was some ‘leakage’ of eggs supply to Samarinda, as indeed one island in Berau was not under the supervision of the NGOs, but under the supervision of the military. The national navy and army, together with the district police force take turns in guarding the island. One of the project leaders of the Joint Program suspected that those who surveyed that island also harvested the sea turtle eggs and sold them. Apparently, this was more or less common knowledge, since Haji Penyu had also raised the issue. But what he had not said was what two Joint Program officers, as well as the former head of DPK told me, namely that the formal guards appointed by the national and district governments collaborated to sell sea turtle eggs outside Berau with someone they referred to as ‘Haji Penyu’[8].

3.6 Turtle eggs and the battlefield of knowledge

The eggs from Berau are famous for their quality that makes them expensive on the regional and national markets. When I was in Berau in 2010, one sea turtle egg was sold for about 10,000 IDR. According to a Joint Program member, ordinary and poorer people (*masyarakat menengah ke bawah*) could

[8] The Joint Program officers denied that this “Haji Penyu” was the same as the Haji Penyu I interviewed. Their “Haji Penyu” was involved in a different network from my interviewee. Moreover, when I interviewed him, he told me that sometimes, when he wanted and needed sea turtle eggs, he would contact someone he knew to get eggs from those military guards.

not afford to buy sea turtle eggs. Only the more affluent people could afford it: usually entrepreneurs or government officials. Moreover, government officials expected that they would get a share of the sea turtle eggs from the auction winner as a 'gift'. According to the Joint Program, however, based on Government Regulation No. 7/1999 on plant and animal preservation, it is forbidden to use any part of the body of the sea turtle, including the eggs.

The district government argued that, based on their statistics, there were still many sea turtles that were laying their eggs on the shores of the small islands in the Berau Delta. Looking at this fact, district government believed that they could very well manage, in the sense of control, the number of sea turtle eggs for the sake of district revenues. These Joint Program members evidently had a different interpretation of conservation in the sense of managing sea turtles for the sake of their future existence. The members in the Joint Program feared that, if the district continued to manage the sea turtles their way, there would be a downward trend in the number of sea turtles nesting in the Berau waters over the next ten to fifteen years. The environmental NGOs felt that the district government did not support the implementation of their conservation ideas, even though when they first introduced them, they received full support from the district officers in the Steering Committee.

The Joint Program was especially frustrated that the district government did not want to share the budget for the necessary monitoring activities. Before the district decree on full protection was issued in 2006 (Table 3.1) the district government did indeed reserve some budget for these activities. The JP officer who was in charge of sea turtle conservation management argued that this was because of the interest of local parliament (DPRD). He also suspected that the district government of Berau would not contradict the interest of Haji Penyu and his family.

One of the Joint Program project leaders also admitted that there was a conflict of interests caused by the different sources of livelihood between the

Joint Program officers (mainly from TNC and WWF-Indonesia) and the local people, arguing that as a conservation agent and outsider whose work was with the project, his/her livelihood would not be affected by the implementation of habitat conservation, meaning the establishment of no-go zones and prohibition of marine resources exploitation. Joint Program members' salaries do not depend on whether the conservation program is working or not. But for local people whose livelihood depends on extractive activities in the marine conservation area, it would be a different story. The Joint Program understands that when local people see that turtle eggs have a high economic value, they become a threat for the sustainability of the species.

When the egg trade was declared illegal in the district (Table 3.1) DPK lost control over the conservation of the sea turtles. The only way known by the Marine and Fisheries Agency in 'doing conservation' was by hatching the eggs that they received from the *pachter*. So, after 2006 because of the status of sea turtle egg trade, if they bought eggs, it meant that they would support illegality according to national and international laws and regulations. Their dilemma was also aggravated by the demise of the legal government-*pachter* contractual relationship. Hence, DPK was not inclined to continue doing anything to conserve the sea turtle. Similarly, the Regional Planning Board (BAPPEDA) and the Tourism Agency argued that before 2006 the district was actually more effective in turtle conservation.

Despite the full protection of the sea turtle, government officers of DPK, Regional Planning, Tourism, the *pachter*, and even BKSDA still believed that sea turtle eggs encountered at the market in Samarinda originated from Berau. They insisted that those eggs originated from Berau by looking at the physical appearance of the eggs. Because the eggs sold from the Berau coastal area were mainly the eggs of the green turtle. Their eggs are bigger than those of other species. Still, egg sellers in Samarinda insisted that those eggs came from Banjarmasin (South Kalimantan) or sometimes from a sea turtle hatchery in Pontianak (West Kalimatan).

3.7 Discussion and Conclusion

In the previous sections I have shown that each of the actors involved in marine conservation development defines the marine conservation area and activities related to it differently, based on different ontologies of knowledge, values, and discourses.

Related to the management of the coastal area, including the management of sea turtle eggs by Haji Penyu, DPK Berau is the agency assigned to carry out some of the regional authority in the field of marine and fisheries affairs. According to the government's strategic plan most of the tasks are based on the elaboration of the Midterm Development Plan for the Fisheries and Marine Sector (DPK Berau 2006). One of their duties is the conservation of sea turtles, primarily the green turtle (*Chelonia mydas*) and hawksbill sea turtle (*Eretmochelys imbricata*), and their habitats. To carry out this task, the agency received a budget from the district. But after the implementation in 2006 of the full protection decree in the district, DPK Berau did not receive any budget from the district any more to implement sea turtle conservation. Implicitly, the district government blamed the marine conservation initiated by the NGOs for the termination of sea turtle conservation by the district. Several people, both from JP and district government, were explicit about the fact that, despite the full protection decree of 2006, in reality sea turtle eggs were still being collected and sold at the regional market without proper control.

Table 3.4 The actors and their interests

Actor		Interests	Regulations
International environmental organizations (represented by JP)		Species and habitat Conservation following international concerns	International, regional and national agreements
Central Government	Ministry of Forestry	Conservation for tourism	Laws, ministerial decrees
	Ministry of Marine Affairs and Fisheries	Conservations for tourism and fisheries	Laws, ministerial decrees
District government		Coastal governance for district economic income (PAD)	District head decree and regulations
Steering Committee		Conservation following district authority	District head decree and regulations
Haji Penyu		Private economic benefit	District regulations

Source: This research

In 2001 decentralization was implemented throughout Indonesia (Laws No. 22/1999 and No. 25/1999). Based on Law No. 22/1999, the regional head was elected by the local parliament members[9]. But Law No. 32/2004 stipulates that from 2004 onward the district head is elected directly by the district's inhabitants (Disprose 2008). It has been amply shown that decentralization gives more power to the local elites (Patlis 2008; Hidayat 2005; Resosudarmo 2004; Aspinal and Fealy 2003; Hidayat 2000). The power of the district's political elite is strengthened by their position in the legislative and executive bodies and also in some of the sector agencies. In the case of the management of sea turtle eggs and the development of marine conservation in Berau, we have seen that members of the political elite, who gain considerable benefit from trading sea turtle eggs, used their power to indirectly put pressure on the members of the Steering Committee. This resulted in a difficult position for DPK Berau. On the one hand, DPK Berau acknowledged that the formation of the Berau MCA is part of the national marine conservation program. On the other hand, it was also caught in the web of local politics. As a result of this

[9] The local parliament members were appointed by their parties (Rasyid 2003).

ambiguity, the monitoring and surveillance program designed by the international environmental NGOs and the members of Steering Committee (Chapter 2) that should have been implemented by DPK, was not effective.

The attempt to change the policies related to the MCA and the conservation of sea turtles in favour of local political-economic and historical interests was triggered by the fact that the local political elite belonged to the network of Haji Penyu and his family, who had a clear interest in keeping the sea turtle management concession. This affected the development of the Berau MCA and other efforts regarding sea turtle conservation in the Berau area (Satria 2008). Because of this political barrier, the legal status of the MCA and the regulations on sea turtle conservation were approved only halfheartedly by the People's Representative Council (DPRD). This means that DPRD in principal approved on the MCA and turtle conservation politically, but they did not act upon it. Every time a public workshop or seminar about coastal issues was held in district, the management of sea turtle eggs created friction.

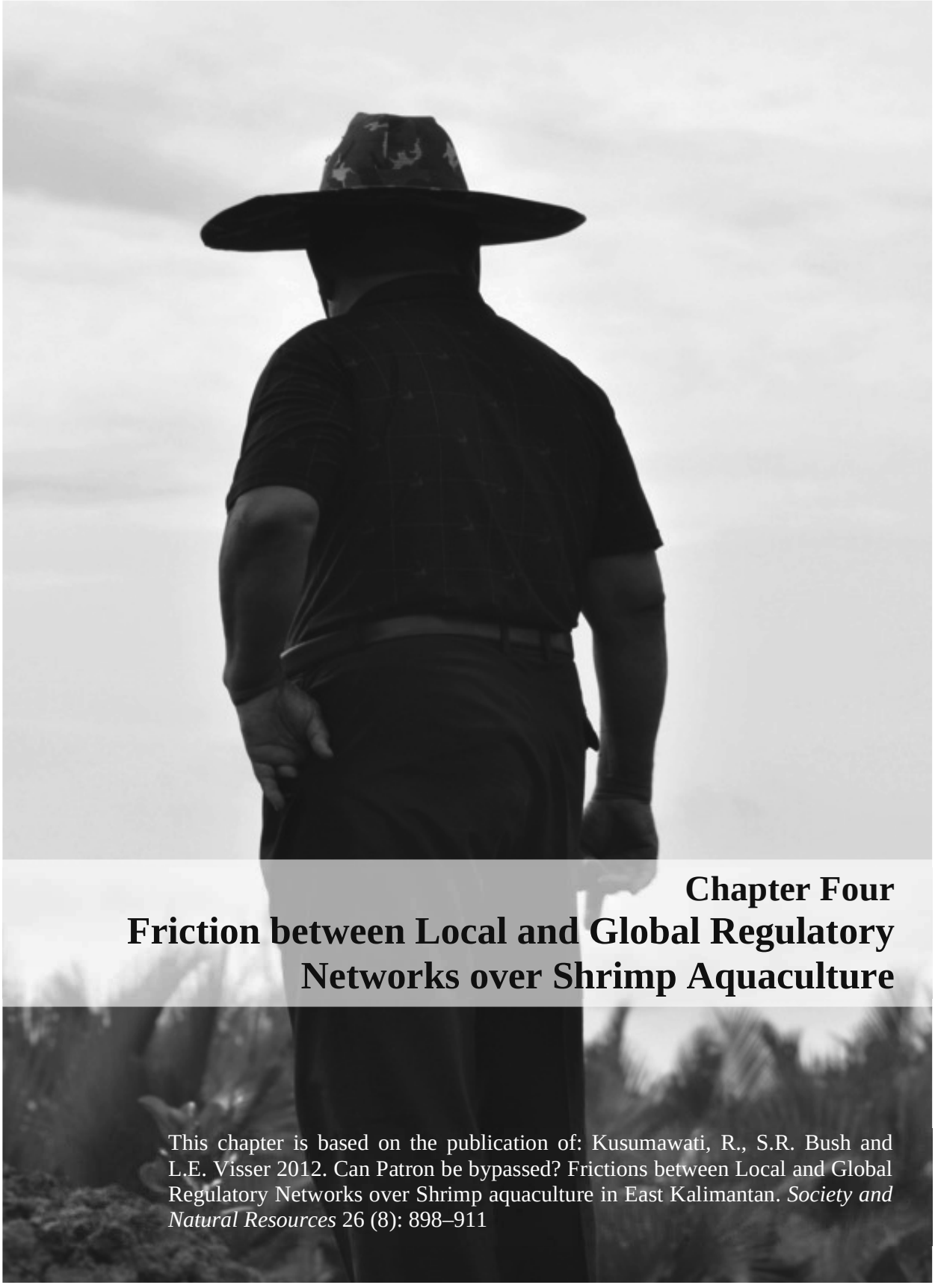
Haji Penyu's family network controlled the discourse on conservation in the district government to the effect that its participation in the Joint Program restricted the JP discourse on the MCA to a discourse only on sea turtle conservation. In the end, by 2008 the district government withdrew its support from the implementation of a marine conservation area in Berau.

Sea turtle eggs keep being encountered on the regional market. After the implementation of the conservation regulation on the green turtle in 2006, the eggs trade had gone underground beyond the control of both the global environmental NGOs and the district government. This is an unexpected outcome of the narrow, specialist application of the marine biological and ecological valuation of the sea turtle. The regulation that the international environmental NGOs co-produced with the district government to promote and to implement conservation has proven to be ineffective in banning the sea turtle eggs trade. Institutionally JP did not have the juridical tool, while the

government who did have the tool did not make use of it to take any action to enforce the banning of sea turtle eggs trade.

Haji Penyu used the knowledge on conservation he received from his interaction with outsiders, particularly JP to legitimize his historically and culturally embedded knowledge on sea turtle eggs management. He offered a solution how to control the flow of the sea turtle eggs because he knew how to prove whether the eggs were marketed from Berau or coming from elsewhere, but his idea was not acceptable to the district government.

It is in the nature of the knowledge encounter that each actor struggles in over-powering others to accept certain knowledge. In the Berau case neither the global environmental NGOs (JP) nor the district government, nor the most influential private entrepreneur appeared to be interested in coming to the other's side in the project of establishing and managing the MCA including sea turtles. The friction between global and local interests emerged from different ontologies of knowledge generating contested and conflicting values in interpreting and implementing marine conservation and sea turtle management. Bolstered by decentralization the political elite in the district used their newly obtained power to support local political-economic interests, exemplified by their attempt to retain the practice of auctioning the right to exploit sea turtles and market the eggs for the sake of the district revenues.



Chapter Four
Friction between Local and Global Regulatory Networks over Shrimp Aquaculture

This chapter is based on the publication of: Kusumawati, R., S.R. Bush and L.E. Visser 2012. Can Patron be bypassed? Frictions between Local and Global Regulatory Networks over Shrimp aquaculture in East Kalimantan. *Society and Natural Resources* 26 (8): 898–911

Note on the cover page picture:

This picture shows one of the big *ponggawa, or a shrimp businessman,* in Tarakan. I took this picture when accompanying him on a field trip to check on the condition and production of his shrimp ponds.

4.1 Introduction

International concern over the environmental impact of shrimp aquaculture in tropical countries has created a new 'battlefield of quality' (Marsden 2004) in which shrimp farmers are increasingly forced to demonstrate their capacity to sustainably manage their ponds (Vandergeest 2007). But as shown by Béné (2005) and Konefal and Hatanaka (2011) standards are not passively created, adopted or implemented. Instead, the global norms, knowledge and policy goals producing these standards are translated, and as such transformed, into local knowledge and practices according to local stakeholder goals and strategies. Such negotiated processes create what Tsing (2005) has labelled 'friction'; zones of awkward engagement in local-global interconnections that define agency, interaction and practice.

Faced with increasing pressure from international civil society, international consumers and retailers for quality assurance, the Indonesian government and industry have begun employing market-based standards as a means of demonstrating improved production safety and quality – including sustainable production (Hatanaka 2010). Understanding how state, civil society, and market actors engage through what Vandergeest (2007) labels environmental regulatory networks, helps to identify the kinds of frictions that emerge from the interaction between often contrasting global and local, as well as state, market and community norms, logics and practices. Instead of focusing on the direct responses of producers to these networks, as already covered in literature, I here focus on the composition and function of different regulatory networks over shrimp production and, more specifically, on the frictions that emerge from a lack of interaction between externally introduced regulatory networks and local patron or *ponggawa*-controlled artisanal trade networks.

The analysis centres on the interplay between three environmental regulatory networks in Tarakan, East Kalimantan that together influence the

extent to which external-led forms of governance influence producers. First, a regulatory network based on good aquaculture practice (GAP) standards led by the central government. Second, a WWF-private sector partnership linked to the WWF Shrimp Aquaculture Dialogues and Seafood Savers network in Indonesia. And third, the regulatory influence of social relations in artisanal shrimp trade networks. In this chapter, artisanal trade networks are made up of interactions based on patron-client relationships that regulate practices of actors involved in shrimp production and trade (Ruddle 2011). The term artisanal specifically defines social relations that are 'handcrafted' according to the local cultural and social dynamics in which these actors are located. In this culturally embedded network *ponggawa* exercise patronage as either pond owners or as middlemen-traders. Linking Tsing's notion of friction to a network analysis of value chains and commodity flows (Bolwig et al. 2010; Gibbon 2008), I examine how state and NGO-market led networks have systematically ignored *ponggawa* and the networks they control, as well as the implications this has for the implementation of state and market led production standards.

In the following sections I review the literature on friction, the role of production standards, and their impact on producers in regions such as Southeast Asia. The third section describes the shrimp trade networks in the northern part of East Kalimantan before analysing the frictions evident between the three different regulatory networks. Finally, I discuss the implications of the resulting frictions before drawing the main conclusions.

4.2 Understanding regulatory networks

Standards and certification are increasingly important tools for translating retail and consumer concerns over food quality, as well as mechanisms for quality assurance in global markets. Whereas quality was once limited to tangible characteristics of a product, it is now extended to include methods of production and their impact on environmental quality (Bingen and Busch

2007). Standards and their verification through certification have transformed the global agrifood system by defining a moral economy that regulates "people and things that do not conform to the accepted definitions of good and bad" (Busch 2000: 274). This moral dimension of standards and certification means that initiatives that were once seen as mechanisms to promote safe foods are now used to govern social and environmental food qualities (Oosterveer 2007; Raynolds et al. 2007). The concern is that in doing so they have also become mechanisms of marginalization for developing world producers. Hatanaka (2010) demonstrates multiple dimensions to this concern based on her work in Indonesia: knowledge and practices of farmers are often ignored; there is an unequal division of labour and responsibility leading to producer distrust of northern consumers; and third party relations that mediate consumers and producers often confound any mutual understanding or moral obligation.

How regulation through standards and certification is transferred into production practices therefore begs further consideration of the moral or ethical dimensions of environmental governance and, in particular, the link to development and equity (Bush et al. 2012; Bingen and Busch 2007). As Li (2007) points out, technocratic governance mechanisms like standards and certification often aspire to educate desires and configure habits, aspirations and beliefs, but in practice lead to a superficial regulation of the 'conduct of conduct'. Seen as such, standards force actors to change their behaviour without any understanding or agreement on why change might be necessary. The implementation of standards and the process of certification are therefore likely to continue to face the problems outlined by Hatanaka (2010) if there is not a more meaningful understanding of the conditions which determine how they are translated into local practice.

Tsing (2005) argues that instead of seeing local communities as powerless minorities who have simply accommodated themselves to global forces such as production standards, it is more productive to see these forces as dialectical local-global interactions. As these interactions proceed they produce

friction within global regulatory networks. Instead of global actors exerting absolute power, they engage in awkward, unequal, and unstable interconnections with local networks and their constituent actors. Using this lens enables me to move beyond seeing producers as subjects of regulation and instead examine how power is reframed by different regulatory networks which give new meaning to on-going interaction in, for example, global shrimp markets.

The interaction between state, NGO-market led and artisanal trade regulatory networks becomes an object of research that opens up the conditions through which standards are transferred to the local from 'above'. Key sites of regulation that shape the practice of production and flows of inputs and outputs in regulatory networks can be identified using a networked commodity chain approach (Leslie and Reimer 1999). The first two networks have received considerable academic attention. Research on decentralization of the Indonesian government over the last decade, instigated as part of a wider reform to public management (Turner 2006; Haris (ed.) 2005) has shown the challenges of incorporating multiple levels of government into a new framework for regulating environmental and food safety aspects of production and processing. Research on networks of public and private actors promoting standards and third party certification have explored one of the main frontiers of global environmental governance (Ponte 2008; Bingen and Busch 2007; Oosterveer 2007) of which the WWF-private sector partnership in East Kalimantan is an example. Together these bodies of work have elaborated on how state and market networks have facilitated the translation of production standards as well as the resistance of producers to change their practices (Anh et al. 2011; Belton et al. 2011; Hatanaka 2010; Konefal and Hatanaka 2011; Ponte 2008; Vandergeest 2007). However, less attention has been given to the interaction of state and NGO-led regulatory networks with what I identify as a third regulatory network: the artisanal trade network characterized by patron-client relationships.

By focusing on the role of pond owners-traders or *ponggawa* in this third network and their interaction with state and WWF-led networks, I open up what Bush and Oosterveer (2007) refer to as the 'black box' of value chain regulation. I expand on the cultural position of *ponggawa* in patron-client relationships (Levang 2002; Acciaioli 2000) as well as their role in facilitating regulation of shrimp production. Their central position in the shrimp value chain, controlling not only vertical flows of commodity and finances, but also many of the conditions under which production and trade practices are decided, places them as centrally important actors. Returning to Tsing's notion of friction, I focus on how *ponggawa* interact with actors in the other two regulatory networks to draw attention to how their interconnectivity influences implementation of production standards.

4.3 Site selection and methodological approach

Fieldwork was carried out from 2009 to 2011 in Tarakan, the main regional processing and export district for farmed shrimp in the northern part of East Kalimantan. Tarakan has developed as a major centre for processing companies thanks to its existing infrastructure for international trade (Ilman et al. 2009) and because of the value of the surrounding demersal fishery, which has attracted Japanese investors. Farmed shrimp are primarily produced in islets scattered along the estuary of Sesayap River that extends beyond Tarakan to include Bulungan, Tanah Tidung and Nunukan districts. It is precisely the location of shrimp ponds in these remote islets, where good quality of coastal waters invites entrepreneurs to open large ponds, which has given the shrimp from northern East Kalimantan a strong reputation for high quality among Japanese importers.

The emergence of production standards and third party certification greatly extends existing trans-boundary influences on Tarakan to include

national and international sites and actors (Visser and Adhuri 2010). To bridge this local-global divide a multi-sited ethnography (Marcus 1995) was adopted to compliment Tsing's (2005) ethnography of global connection. Primary data was collected through observation, semi-structured and unstructured interviews with actors working in production and trade, as well as in regulation, policy and training. This included eight pond owners, three middlemen, three government functionaries of the Marine Affairs and Fisheries (MAF) office in Tarakan, three of same department in East Kalimantan province and four at the national level. In addition, four employees of international NGOs were interviewed. Observations were made during several visits to shrimp ponds, hatcheries, nurseries, and processing companies. Also, meetings and seminars on sustainable shrimp production were attended in both Indonesia and Europe. This data was complemented with information from secondary sources including governmental documents, NGO reports and newspaper articles.

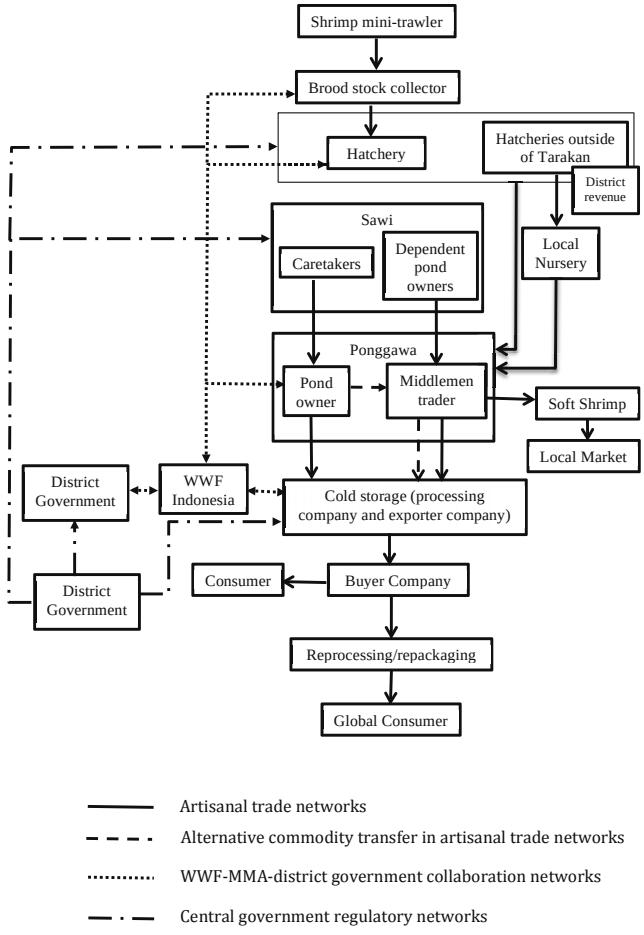
4.4 The shrimp chain in the northern part of East Kalimantan

The shrimp chain extending from the Sesayap estuary to international markets through Tarakan is comprised of a range of production and trade relations between producers, *ponggawa,* and other actors within governmental, WWF, and artisanal regulatory networks (Figure 4.1). The chain can be divided into pre-production, production and post-production; all of which are targets for regulation.

The main actors in the pre-production phase include brood stock collectors and hatcheries. Currently 70% of shrimp seed is imported from other areas in Indonesia such as Surabaya, Balikpapan, Ujung Pandang and Lampung (MAF 2009). The district government of Tarakan generates tax from this trade, which constitutes an important source of public revenue. The remaining 30% of shrimp seed is provided by 17 hatcheries in Tarakan (ibid.) who buy brood

stock directly from coastal mini-trawlers who catch them as by-catch in the waters around Tarakan.

Figure 4.1 Intersecting regulatory networks in Tarakan



Source: This research

The size of shrimp ponds (*tambak*) in the Sesayap estuary is 5 - 25 hectares/pond (Illman et al. 2009: 12). The inaccessibility and isolation of the ponds in surrounding districts means that pond owners live predominantly in Tarakan. Many of these absentee shrimp farmers hire a care-taker from their family or patronage network to whom they delegate the surveillance and day-to-day management of their ponds. Pond owners thus act as a patron[1] (*ponggawa*) to these clients[2] (*sawi*) through a patronage network of mutual dependencies that originated from Buginese and Makassarese practices in South Sulawesi (Acciaioli 2000; Pelras 2000). In Sulawesi the title of *ponggawa* was traditionally reserved for noblemen, but in East Kalimantan the title is now given to individuals who have acquired considerable economic power (and often also political power, like in Chapter 2) as owners of shrimp ponds or as middlemen-traders.

As described by Pelras (2000) clients in shrimp farming are regarded as partners more than wage labourers. There are three benefit sharing models practiced in Tarakan that reflect this partnership arrangement. The first is *bagi hasil* or sharecropping of between 10 to 50 per cent of net yield harvested. The share of the client-caretakers is calculated as net profit after harvest minus the cost of shrimp seed, pesticides and fertilizers, as well as accommodation. The percentage shared is based on an unwritten agreement between pond owners and their partners. The second model is based on a flat monthly salary, where the cost of accommodation is covered by the pond owners. This model is usually applied to clients-workers in less productive ponds. The third model combines the previous two, with the exception that caretakers receive a monthly salary in addition to their share. In all three cases clients are able to generate further income from harvesting other aquatic products from the ponds, including white shrimp and mud crabs – an income that often exceeds what they receive under their shrimp farming partnership arrangements.

[1] Local terms include: *bapak* – literally father; and *bos*.
[2] Local terms include: *anak-anak* – literally children; and *orang yang kerja* – workers.

The relationship between *ponggawa* and processing companies exhibits characteristics of clientelism. The value of the harvest is based on farm gate prices of shrimp offered by the companies that in turn is based on export prices, and there appears to be little variation between traders and processing companies. However, in order to attract and convince *ponggawa*, both as pond owners and middlemen-traders to sell their product to them, the companies have set up a commission system that provides a price incentive to *ponggawa* above local market prices. The commissions vary between companies and are not indicated on the receipt; characterizing what one pond owner called his 'secret with the company'. The profit of *ponggawa* is therefore increased through a prearranged margin that does not form a part of the share of small pond owners or dependents.

Despite the seemingly exploitative economic conduct of *ponggawa* as patrons, they also provide a source of risk mitigation for a wide group of actors involved in shrimp production. To fully understand the mutual dependencies of actors in this patronage network it is necessary to recognise that *ponggawa* have two distinct social-economic positions: as pond-owners and as middleman-traders. In both roles the *ponggawa* reduce the risk associated with shrimp production as well as providing capital to "… buy a boat, an engine, fishing gear, to develop a *tambak* or to advance the operating costs for a *tambak*" (Levang 2002: 21). The increased risk for dependent pond owners and caretakers then is minimised through their access to financial capital provided by their bosses or *ponggawa*.

In this way, the entire value chain in the region is determined by multiple interdependencies of *ponggawa*, making them a key actor of the artisanal regulatory network. They represent a vital, but underestimated and often poorly understood element in the shrimp value chain, which determines the conditions under which formal state and environmental NGO regulatory networks can influence production practices.

4.5 Environmental regulatory networks in northern East Kalimantan

I now turn to an analysis of practices of state and WWF-led environment regulatory networks and their relationship with artisanal trade practices within the value chain. In this section I also outline the interaction between these networks and analyse the multiple intersecting, converging and conflicting motives of their constituent actors.

4.5.1 Government regulation of fish chain

The Indonesian government has been active in regulating food safety and environmental quality through the development of voluntary standards and legislation (Figure 1) paying considerable attention to regulating the practices of processing companies. Only recently has the central government tried to regulate producers through the introduction of farm-level good aquaculture practice standards (GAP). But while the government has been effective as a producer of regulations, it has been less effective in their enforcement.

In an attempt to regulate producers, the Ministry of Marine Affairs and Fisheries (MMAF) developed GAP standards alongside a National Residue Control Plan (NRCP) based on European Union import requirements. Even though these two programs are already operational they have not yet been extended to eastern Indonesia, including Tarakan. MMAF officers from Jakarta stated that they lack qualified laboratory tools and operators, and that technical inputs required to run this system are very expensive. They added that regulation of processors had proven to be more effective than monitoring producers because of private sector support to a national HACCP (Hazard Analysis Critical Control Point) plan and the fact that a national health

certificate is a mandatory requirement for these companies to export to lucrative markets such as the USA and the EU[3].

In January 2010, the central government introduced the national GAP standards to Tarakan in an attempt to prevent the spread of white spot disease and the environmental impact of organic waste flows from ponds. The result of an initial audit was that, despite high hopes for more sustainable shrimp production in Tarakan, most of the farms earmarked for certification required considerable technical and managerial improvement. Three main issues for compliance were identified: the shape and size of ponds, the area of mangrove around the pond, and poor sanitation practices. The government subsequently requested farmers to reshape and resize their ponds or *tambak* to conform to the standards. However, most pond owners appear to be reluctant to accept these regulations because of the cost of transforming their large extensive ponds into semi-intensive smaller units of only 2 ha/pond. But perhaps more importantly, they do not accept the standards because they fundamentally disagree with the top-down intervention methods that prescribe a system which does not comply with production and trade practices in Tarakan[4].

Even though the central government recognizes the existence of the patron-client system, they have excluded *ponggawa* from attempts to set standards and regulate production and trade. Instead, the central government sees them as 'problematic' actors who confound their attempts to create transparent and traceable commodity flows. The strategy is therefore to bypass them. However, this ignores the central role of these powerful *ponggawa* in the process of commodity transfer between export companies and dependent pond owners and pond caretakers.

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[3] HACCP is a quality assurance system for fisheries products issued by the FAO Codex Alemanterius Commission. In Indonesia, this system has been adopted into the *Program Manajemen Mutu Terpadu* (Integrated Quality Management Program) (Santoso 2010).

[4] Interview with the leader of an informal *tambak* organisation in Tarakan, 2010. Translation of standards into local practices will be expanded upon in chapter five.

4.5.2 WWF regulatory network

In April 2008, WWF Indonesia, Mustika Minanusa Aurora (MMA, one of the biggest cold storages in Tarakan) and the Environment and Natural Resources Agency of Tarakan signed an MoU on mangrove rehabilitation. MMA, assisted by WWF, set a goal to plant 150 ha of mangrove over a period of five years. WWF in turn has used the arrangement to introduce their better management practices (BMPs) to farmers who sell to MMA. The BMPs are designed to reduce the environmental impacts of shrimp farming, including the use of chemicals and artificial feed, cutting mangroves, and the over-exploitation of brood stock. WWF advertises their BMPs as having been developed through a multi-stakeholder dialogue, involving shrimp farmers, government, cold storage, shrimp collectors, hatcheries, university, and subsequent farm trials.

WWF's BMPs model is based on international principles for sustainable shrimp farming published by NACA in 2006, which were in turn translated into a BMP manual for feed and non-aerated shrimp aquaculture in Aceh before being brought to Tarakan. The first related activity was the development of BMPs pilot sites in partnership with MMA and two pond owners. In August 2009, WWF organised a first round of public consultation to introduce the BMPs in five districts. In January 2010, a second round of public consultation with the Marine and Fisheries agencies of five districts, farmers, and a local shrimp farmer's organization were held to present the standards and gather feedback. Additional inputs were collected by WWF through subsequent interviews until December 2010. The result would be a draft set of non-fed and non-aerated BMPs for northern East Kalimantan.

The five MAF offices supported the WWF-led BMPs because the district governments did not have any regulations to regulate shrimp farming practices. Before the arrival of WWF, the only choice for district governments to improve the quality of shrimp farming practices in order to meet

international demands on food quality and safety was through the voluntary application of national standards. But as stated by the Head of MAF-Tarakan, the BMPs were regarded as a better offer because they directly addressed the "environmental problems that have been caused by the mismanagement of shrimp ponds" (observation during public consultation over draft BMPs Tarakan, Januari, 2010).

However, farmers held a different opinion. Most of those interviewed questioned the applicability of standards that they believed would become the basis for external regulation in Tarakan. As one farmer stated:

> "If you show these standards to farmers, they will laugh at them. We never do this kind of thing. If you want us to practice these standards, you have to show us how to do it, not just tell us what we should do and what we should not do. If you can show us that your way is better in increasing the production, or at least to make the production stable, I am sure that farmers here will follow you voluntarily" (Shrimp farmer, Tarakan, January 2010).

Farmers direct their attention primarily to increasing shrimp production. But, at the same time, they clearly acknowledge that environmental degradation is one of the causes of declining pond productivity. They are not aware of what leads to poor productivity, or how to solve the problem. Since the WWF BMPs are not (yet) subject to third party certification, and as a result not recognised in international markets, they do not provide any incentive for pond owners to comply. Therefore, the main incentive to participate in the BMP program is the hope of improving the environmental health of the shrimp pond and thuse resurrecting productivity.

Even though WWF acknowledges the importance of *ponggawa* as pond owners – by including them in the meetings, interviewing them and

collaborating with them in farm pilot project – they have not included them or the influence the hold over production practices in the development of the BMP standards. Instead these are based on international principles which emphasize reducing the negative impacts of shrimp farming on the environment through the improvement of technical farm level practices. Indeed, by stressing *on farm* practices they fail to see shrimp farming *and* trade as a one coherent production system.

4.5.3 Artisanal trade regulatory networks

Shrimp trade relations in East Kalimantan constitute a regulatory network because of the role of *ponggawa* in shaping the production choices that farmers make. Fig. 1 illustrates the central position of *ponggawa* in controlling production and trade, both as pond owners and as middlemen-traders.

As the owners of a large number of ponds *ponggawa* are able to control an extensive area of production through the daily supervision of their caretakers. This network is strategic for both *ponggawa* and their dependents. Most of their clients do not have adequate capital to autonomously produce shrimp and therefore rely on *ponggawa* to assist with financial and material capitals, which make *ponggawa* major decision makers related to where to buy shrimp seed, pond management, and where to sell the shrimp. Under a sharecropping or monthly salary arrangement, caretakers also make use of this patronage relationship when they are in need of any emergency funding, which in turn underlies the loyalty of the caretakers to *ponggawa*.

As middlemen-traders, *ponggawa* also play an important role in facilitating the flow of shrimp, setting price based on a mix of quasi-credit relations, or debt-tied pricing mechanisms, rather than market prices (Gunawan 2012; Ruddle 2011; Bush 2004; Platteau and Abraham 1987). In addition, they may control a number of smaller pond-owners from whom they purchase shrimp. As in the case of *ponggawa* as pond owners, their role as middlemen-

traders also means they have an obligation to provide shrimp seed and other inputs for aquaculture. In return the shrimp farmers are obliged to sell their shrimp to *ponggawa*. In some cases, *ponggawa*-pond owners have less shrimp production and may sell their shrimp to other *ponggawa* middlemen-traders, which becomes an alternative commodity transfer in artisanal trade networks (Gunawan 2012).

The relationships that *ponggawa* establish with their clients allow for efficient trade which is based not only on an economic logic, but also on strong cohesion and loyalty between different levels of their network (Levang 2002). To maintain this loyalty and at the same time also to secure their production and trade relations, *ponggawa* offer additional benefits such as buying a house for their most reliable and respected caretakers, sending their children to school, providing access to medical treatment, covering expenses for special occasions, and even providing a pension fund (Timmer 2011).

Given that *ponggawa* as pond owners and middleman-traders have enough capital to work independently of processing companies they are free to sell their shrimp to whom they wish. In order to ensure a reliable supply of shrimp, the processing companies create liaisons with selected *ponggawa* who become valuable associates who can take on a distributive role and absorb a large degree of the financial risk. This gives those *ponggawa* an especially important position given the large distances across which shrimp are traded in the Tarakan region. If processing companies were to deal directly with farmers they would have to provide credit for stocking. Based on experience, companies see this as too risky – often farmers do not pay the money back and there is little recourse to collect the debt owed. This also emphasizes the purely business interest of the companies, with no investment in social leverage as a guarantee to financial security. In comparison, *ponggawa* are embedded in the familial and social relationships of the clients who provide substantial security to their business activities. As companies cannot - and apparently do not - want

to fulfil this role, *ponggawa* play an extremely important enabling role in the shrimp value chain.

In addition to being a key player in financing shrimp farmers and acting as middlemen, *ponggawa* also play an important role in controlling and translating flows of knowledge in the industry. This was demonstrated during a public consultation over draft BMPs facilitated by WWF in January 2010. They recommended that farmers in Tarakan organize a farmer group to promote successful shrimp farming in response to the success of farmers 'clusters' in Aceh (FAO et al. 2006). In response to this suggestion, the head of the shrimp farmers organization in Tarakan argued that instead of forming externally constructed groups of farmers to promote compliance with standards, farmers groups should be based on what he referred to as 'natural networks' led by *ponggawa*. According to him, this would be the best way to organize farmers since *ponggawa* determine the logic, norms and organizational structure of shrimp aquaculture production and trade in Tarakan. By-passing this network and their translation of government and WWF-BMPs regulations would therefore undermine any attempt to promote more a coherent set of locally embedded best practices for sustainable shrimp aquaculture production and a more transparent traceability system in northeast Kalimantan.

Central government and WWF see actors of the artisanal network primarily as a target rather than as a partner in the development, monitoring and enforcement of their standards. Interestingly, processing companies already use *ponggawa* for informal quality control by translating standards of government and WWF into a simpler dual classification of 'export quality' and 'non-export quality' shrimp. To *ponggawa*, these terms and conditions are more effective to control shrimp production. Even if *ponggawa* may be considered as exploitative and rent seeking (Platteau and Abraham 1987) their central role in shrimp production and trade simply cannot be ignored. Instead, any attempt to regulate local production and trade practices should seek to engage these central actors.

4.6 Emergent frictions between regulatory networks

Despite recognizing their position in both production and trade in Tarakan, both the government and WWF have chosen not to engage with *ponggawa* for different reasons. The government's position is that they compromise traceability in the value chain and should be by-passed, while WWF's focus on farm level BMPs instead of the surrounding influences over production, has led to a form of 'technocratic blindness' that removes *ponggawa* from view. The overall result is that *ponggawa* have been excluded in discussions around production standards and, as such, from any forum in which their role might be better understood. By ignoring their important position, the external-led regulatory networks assume they are able to avoid any potential friction. Whereas this research clearly shows that frictions emerge precisely because of misrecognition of the role of *ponggawa* in the artisanal trade network, and therefore in the real-life encounters between three regulatory networks. Should they then not be recognised and become more closely involved in both state and NGO-market led regulatory networks? Given their role in controlling flows of information and setting incentives for change, their inclusion would appear to be an important step forward.

As reflected in the work of Li (2007), the exclusion of actors from external standard setting processes often means that 'target actors' remain unaware of why their conduct is being regulated. This condition is only compounded when wider political-economic relations are also excluded from diagnosis and prescription by external experts. Not only is this likely to produce ineffective interventions, but it also threatens to contribute to the marginalisation of local actors and environments. Ignoring the central role of *ponggawa* and excluding them from the formulation of standards demonstrates that a hard boundary still exists between global-national networks and local

networks. At first sight this boundary might imply non-engagement and therefore the absence of friction. However, given that both the government and WWF recognize their attitude to avoid *ponggawa* also constitutes a form of 'awkward engagement' and can by itself be considered a form of friction. Whereas those actors involved in artisanal trade networks recognize *ponggawa* as having a meaningful role in the transfer of commodity and knowledge, the central government and WWF see *ponggawa* as a hindrance to standard development, implementation, monitoring and enforcement. In this sense, we argue that in addition to Vandergeest's (2007) observation that certification and standards tend to exclude farmers' practices and knowledge, this form of regulation also excludes the practices and knowledge of a wider set of actors joined through interdependent relations of production.

Attempts to transfer external solutions to Tarakan illustrate the difficulties ignoring *ponggawa's* role can bring. For example, the introduction of an organisational model from Aceh based on geographical location and water source has proved problematic in Tarakan because shrimp ponds in same location and sharing the same water source are often owned by different *ponggawa.* By failing to recognise the social structure of ownership WWF has ignored the political-economic conditions of their target actors and created an imposed set of assumptions that has led to a direct friction with existing regulatory relations. In doing so WWF has fed into what Konefal and Hatanaka (2011) and Béne (2005) refer to as the depoliticization of standard development by focusing on the technical and scientific basis of production rather than the societal conditions that allow for production decisions to be made. WWF might then be well informed to take the recommendation of the shrimp farmer association more seriously to organize farmer groups based on *ponggawa* networks rather than on externally derived plans and assumptions. But as long as they remain focused on the technical upgrading at the farm level it is unlikely they will change their strategy.

The goal of global certification networks is to standardize differences in farmer practices (Busch 2000) and to improve (albeit externally defined) "deficiencies that need to be rectified" (Li 2007: 7). The government's issue with chemical use and WWF's focus on mangrove degradation are relevant because they respond to market concerns of food safety and (environmental) sustainability. While the need to rectify these issues have a demonstrated scientific basis they are perceived by local actors as being led by external values, norms and logics. This research has drawn attention to the disjuncture between external and local actors' knowledge, by showing that a focus on on-farm decision making (Hatanaka 2010) does not include the necessary attention to the role of *ponggawa* in controlling flows of knowledge between producers, international markets and the other regulatory networks. Failure to recognize this role means that attempts by government and WWF to introduce new knowledge through the development and implementation of standards will continue to face resistance. As long as the dependant farmers and caretakers, who make primary on-farm decisions about production, trust the *ponggawa*'s knowledge more than that from external networks, changes will be slow at best.

4.7 Conclusion

While *ponggawa* play a centrally important role in the process of commodity and information transfer, they are systematically ignored by national and global environmental regulatory networks. The exclusion of these actors holds implications for the development and implementation of production standards, and ultimately certification as a means of environmental governance. Instead of creating zones of awkward but creative engagement, the agency and practice inherent in artisanal trade networks has been excluded. The results of this study therefore support wider claims that the development of production standards through externally-led regulation in the absence of targeted group involvement

is unlikely to lead to meaningful and lasting change. This does not mean that any particular actor knows best, but rather questions whether and how processes of standardization should aspire to regulate diversity in production. Ultimately, engagement with local knowledge and practices of not only producers but also patrons-traders may create space for more realistic definitions of both problems and solutions.

Taking into consideration actors like *ponggawa* beyond the farm level appears to be highly relevant for an effective process of standardization and certification. If the threat of ineffectively implementing certification is the further marginalization of local actors and environments then improved processes of implementation need to be engendered including interactions between global, national and local regulatory networks. Shrimp farmers sit at the nexus of these networks, but they are primarily embedded in interdependent relations with powerful pond owners and/or middlemen-traders. The central position of the *ponggawa* in the multi-scalar transfer of knowledge to farmers, as well as in setting the conditions that allow for changing production practices makes them an essential node in what constitutes a poorly understood 'third' regulatory network. The on-going success of governments and NGO-led initiatives for sustainable shrimp production is therefore dependent on whether they continue to relegate this third network to a site of resistance, or alternatively include *ponggawa* to facilitate improved local engagement. But as long as the government and WWF are locked in this technocratic approach to improving the practices of shrimp farming, there is little prospect for change.

Chapter Five

Co-producing Better Management Standards For Shrimp Aquaculture

This chapter is the basis of a paper co-authored with Simon Bush. The paper is submitted to Food Policy on February 8th, 2014.

Note on the cover page picture:

The picture shows one of WWF-Indonesia pilot ponds in Tarakan. This pilot pond was developed in collaboration with one of the pond owners under the MMA's network.

5.1 Introduction

In the previous chapter, I have described how external networks do not comply with powerful local networks that govern the production and trade practice of Tarakan where I indicated that the success of the initiation of the Better Management Practices (BMPs) depends on how the government and WWF networks include the third network lead by the *ponggawa*. In this chapter I analyse the role of WWF in leading a multi-stakeholder process of BMPs design and implementation in the northern part of East Kalimantan.

Better management practices (BMPs) for shrimp farming are designed to standardize on-farm practices and reduce the economic risk associated with disease and environmental degradation. Similar to third party certification standards, BMPs set out a range of technical indicators that producers can use as targets for improvement in their production (Vandergeest, 2007; Padiyar 2012; Anh et al. 2011). However, unlike private certification standards, such as those of the Aquaculture Stewardship Council (ASC), Global Aquaculture Alliance (GAA) or Naturland organic, BMPs are in most cases not formally monitored by either governments or third party auditors. Instead, governments and NGOs alike use them to disseminate technical practices to producers in a more structured and formalized fashion in order to standardize production inputs and practices.

BMPs are based on the principles for sustainable shrimp farming developed by a consortium of international agencies (The Consortium 2006), and the FAO Code of Conduct for Responsible Fisheries (CCRF), which includes sections on aquaculture (FAO 1995). However, before being put into practice they are also adapted to suit the local contexts in which they are applied – for example, to match the specific demands of different extensive and semi-intensive production systems (Anh et al. 2012; Padiyar 2012). For example, in geographically diverse countries such as Indonesia, national level

BMPs are adapted to the diversity of production systems found in different regions or provinces. In doing so, national governments and NGOs alike aim to translate a generic set of global concerns into local contexts with the intention of increasing the likelihood of adoption and subsequent performance of shrimp aquaculture.

In practice, however, the process of translating BMPs into local shrimp farming contexts has proven problematic. Despite state and producer involvement in local translation, BMPs have been viewed with suspicion by governments and farmers as an attempt to supplant state regulation, and render social and political conflicts surrounding shrimp farming as technical problems with technical solutions (Vandergeest and Unno 2012; Ha and Bush 2010; Islam 2010; Li 2007). Béne (2005: 611) has argued that the perceived threat posed by BMPs is that advocates are able to "depoliticis[e] the problem of shrimp farming and refram[e] it into a neutral, bio-physical problem, where only technical - and not structural or political - solutions are required". BMPs are also seen as being part of a wider system of non-state regulation by setting producers on the path towards more stringent private standards that facilitate access to international markets, such as ASC or GAA (Ha et al. 2012). The role of BMPs in addressing technical problems of shrimp aquaculture therefore appears to be dependent on the capacity of those facilitating their translation into local settings to negotiate or co-produce locally specific standards that reflect the knowledge and interests of global and local actors (Konefal and Hatanaka 2010; Long 2001).

In this chapter I question to what extent are BMPs able to capture and mitigate both technical and social challenges of production, and the extent to which BMPs (de)politicize social and environmental issues around shrimp aquaculture by mitigating divisions and conflicts between local actors? This question is addressed by analysing the transfer of knowledge embodied in global principles to local actors and environments, the composition and content

of multi-stakeholder meetings, and the degree to which the final BMPs are incorporated the practices of local producers.

I examine the process of translation in three parts. First, the translation by WWF of the international principal of the consortium into BMPs in Aceh, in partnership with other NGOs operating there after the 2004 tsunami (ADB et al. 2007). Second, how WWF introduced the Aceh BMPs to two districts of East Kalimantan - Tarakan and Bulungan - by developing a series of multi-stakeholder meetings and subsequently a farm-level pilot programme with a group of pond owners supplying to Mustika Minanusa Aurora (MMA) which is one of the largest processing companies in the region. Finally, I analyse the negotiations that occurred over the BMP standards, and the socio-technical outcomes and wider consequences of WWF's engagement with shrimp aquaculture in northeast Kalimantan.

5.2 Co-producing standards

Like private standards, BMPs involve a variety of actors in the definition, implementation and regulation of primary production processes. BMPs draw together NGOs, industry and intergovernmental organizations in what Vandergeest (2007) refers to as environmental regulatory networks. The active formation of these networks has recently been taken up in studies of multi-stakeholder initiatives (MSIs) (Ponte *in press*; Cheyns 2011) that focus on questions of exclusion and the subjective nature of defining standards as consensus-based regulations.

Research on aquaculture standards have focused on a range of questions related to the extent of expert and industry capture during their definition, the poor representation of producers from developing countries (Belton et al. 2010; Anh et al. 2011), and the effects of transferring globally derived knowledge

into national and local settings (Béne 2005; Konefal and Hatanaka 2011). A common theme running through these studies is how NGO-state-industry networks translate global norms, knowledge and policy goals into local knowledge and practices, with questions focusing on the inclusion/exclusion of actors, consensus seeking in local settings, and the extent to which these networks lead to changes in production practices.

Translation can be understood as a process of knowledge co-production, emphasizing the creative friction that emerges between the interaction of different knowledge, each with their own grounds for belief, procedures for validation (Tsing 2005; Jasanoff 2004; Long 2001). In the process of defining standards and the environmental regulatory networks that implement and enforce them, co-production is not linked to any single event, but is instead seen as an outcome of networked places and processes stretching beyond the local and linking to global places and historical events (Goldman 2010). Set within formal processes of standard design through MSIs, co-production also draws attention to how content is decided upon, as well as who is able to contribute to that content.

Co-production is seen in two distinct ways. From a managerial perspective it implies a collaborative process of stakeholder engagement designed to "address a defined problem and build an integrated system-oriented understanding of [a] problem" (Armitage et al. 2011: 996). Based on the notions of resource co-management, this perspective opens up the possibility to actively steer a process of co-production which results in a shared understanding of environmental problems that in turn results in conformity and effective management.

However, from a critical perspective, and reminiscent of Cooke and Kothari's (2001) 'tyranny of participation', co-production can also reveal the difference between the quasi-inclusion of actors and their meaningful collaboration that leads to ownership and empowerment of regulatory processes. In this sense, the uniformed and formalized knowledge codified in

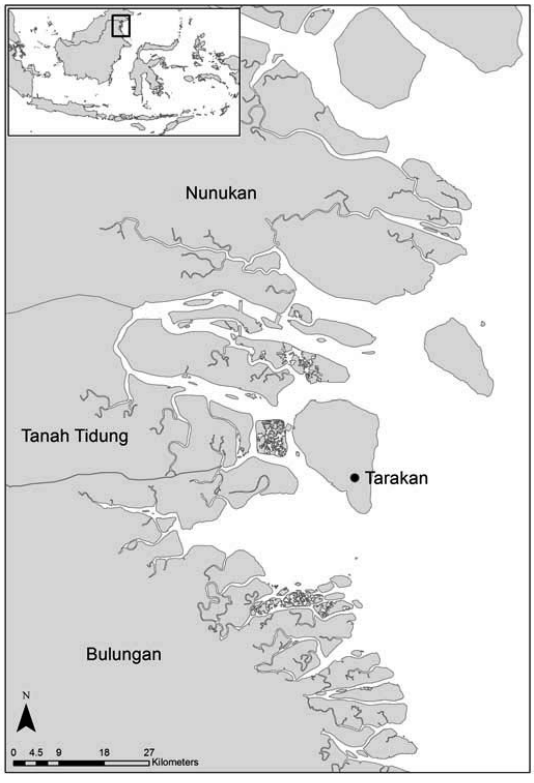
BMPs is representative of the relations of power that negotiate the inclusion of different knowledges (Ponte and Cheyns 2013; Konefal and Hatanaka 2011). The conditions of including the knowledge and interests of actors in the final standards are therefore as fundamentally political as the conditions of exclusion (Cheyns 2011). The final standards are then representative of the aims, perceptions, values, interests and relationships of actors with the technical and also political capacity to contribute.

Co-production can also be observed through producer practices, which represent the outcomes of the discursive practice inherent in standard definition and implementation. In the case of BMPs, exploring practices and their outcome helps to uncover how co-production continues beyond standard definition to standard implementation. We argue that by understanding these practices and their material outcomes, it is possible to understand how responsive standard setters are to producer innovation or localization. Following on from what Tsing (2005) labels friction, this analysis explores the difference between discursive and material practice by focusing on the "awkward, unequal, unstable, and creative qualities of interconnection across difference" (Tsing 2005: 4). In the case of BMPs, we focus on the creative qualities of friction expressed in producer practices, while also reflecting on the willingness of the standard setters to re-negotiate the content of standards and, therefore, the collective knowledge they embody. I thus move beyond studies on the formalized standard setting processes in networks and MSIs, to explore the possibility of incorporating alternative practices and knowledge in standard formation and revision.

5.3 Site selection and methodological approach

The methodology adopted for this study is a multi-sited ethnography (Marcus 1995) investigating the context within which decisions over standards for shrimp production in Tarakan were made, how different actors influenced these decisions, and how the different kinds of knowledge that constitute these standards have been communicated across space (Falzon 2009). This methodology is also complimentary to Tsing's (2005) claim that frictions become evident when studied through what she calls ethnography of global connections.

Figure 5.1 Map of districts involved in the WWF BMP programme in East Kalimantan



Field work was carried out from 2009 to 2011 in Tarakan, the main regional processing and export district for farmed shrimp in the north of East Kalimantan, supplemented with additional interviews in 2012 and 2013. Tarakan has developed as a major centre for shrimp processing companies thanks to its existing infrastructure and geographical position for international trade (Ilman et al. 2009), and because of the value of the surrounding demersal fishery, both of which has attracted investment from Malaysian, Taiwanese and Japanese investors. Farmed shrimp are primarily produced in the Sesayap Delta of Tarakan, Bulungan, Kabupaten Tanah Tidung and Nunukan districts (Figure 5.1). It is precisely the location of shrimp ponds in these remote islands that have given the shrimp from the north coast of East Kalimantan the reputation of the high quality desired by Japanese shrimp importers, and subsequently created the market for entrepreneurs to invest in extensive ponds of up to 100ha.

Primary data was collected through in-depth interviews with actors working in shrimp production and trade, as well as those working in regulation, policy and extension. In Tarakan this included eight pond owners, three middlemen, and three cold storage (processing factory) owners. Three government functionaries of the Marine Affairs and Fisheries (MAF) office in Tarakan were also interviewed, as well as three officials from the same department at the provincial level of East Kalimantan[1], and four at the national level. In addition, three Indonesia-based NGOs were interviewed both in Tarakan and Jakarta. Observations were also made during several visits to shrimp ponds, hatcheries, nurseries, and processing companies, as well as at

[1] When I started and during the data collection, Tarakan and Bulungan were part of East Kalimantan province. When I was in the middle of writing this thesis, Tarakan and Bulungan became part of newly established North Kalimantan province. Hence, in this thesis, I will still refer those districts as part of East Kalimantan.

meetings and seminars on sustainable shrimp production in both Indonesia and Europe – for example, when I was a participant at the WWF shrimp aquaculture dialogue meeting in Jakarta in March 2010. Secondary data was gathered by reviewing and examining data on both shrimp farming and better management practices from websites, newsletters, reports and newspaper articles.

5.4 Building the BMP network

5.4.1 From principles to standards

The first BMPs in Indonesia were developed through a collaboration of international and national NGOs, development institutions and national government for Aceh as part of the of a wider reconstruction program for shrimp aquaculture after the 2004 tsunami (ADB et al. 2007). Many international agencies offered assistance for the rehabilitation of coastal regions, including the aquaculture sector that was one of the sources of livelihood of the inhabitants. However, as Rimmer et al. (2012) argue, many of the agencies involved did not have adequate technical capacity to rehabilitate shrimp ponds and their supporting infrastructure. The development of BMPs was therefore seen as a means of providing guidelines based on the international principles for sustainable shrimp aquaculture, for these organisations to either reduce the risk of poor reconstruction or develop technically improved shrimp ponds.

Although made difficult by the disintegration of community and farming structures following the tsunami, the standards have been criticised for not taking into consideration the local perspectives on reconstruction, and for reproducing previous practices instead of new, potentially more sustainable

farming approaches; a pattern noted by McGregor (2007) in other initiatives for rebuilding the region.

The BMPs implemented in Aceh represent the first step of translating the international principles into the Indonesian context, and WWF-Indonesia saw them as an opportunity to create locally specific standards for other regions in country. As stated by a staff member of WWF-Indonesia, the international collaboration that went into the development of the BMPs in Aceh provided considerable credibility within Indonesia. WWF-Indonesia planned to invest further in the development of other locally specific BMPs through the "development of pilot projects enriched with literature studies" (Interview WWF staff, Jakarta, February 2013). WWF-Indonesia then entered a new phase of technical translation of the BMPs aimed at advocating environmental improvement by district governments. Part of their wider advocacy strategy – including BMPs for 11 other aquaculture species – the translation process intended to address a widely perceived lack of capacity for environmental policy and management at the district level (Smith et al. 2003; Satria and Matsuda 2004).

The process of translating BMPs into new local contexts in Indonesia is therefore not insulated from networks of global experts. It is instead part of WWFs wider strategy to facilitate different organizations to put their experience and expertise into the promotion of responsible aquaculture production. However, unlike the development of the BMPs in Aceh, WWF-Indonesia argued that the new round of BMP translation should focus directly on local government, industry and shrimp producers. Nonetheless, the association of WWF-Indonesia with the global WWF network meant that the BMPs they facilitated were also designed to assist shrimp producers in Indonesia to move towards international third-party certification, such as the ASC shrimp standards developed through the WWF-facilitated shrimp aquaculture dialogue (ShAD). Also in the case of Sesayap Delta, these localised BMPs remain closely linked to the wider ShAD process and,

according to WWF-Indonesia, play a strategic role in preparing producers to be ready for ASC certification. They can therefore be seen as a bridge between the knowledge of producers and that of the experts within the global environmental regulatory networks of which they are a part.

5.4.2 Building on business - WWF and MMA

The decision of WWF to start working in the Sesayap Delta, with vastly different production systems to Aceh (Table 1) was led by MMA; the largest processing and exporting company operating in that region. MMA was already actively developing their own environmental program, in part because of a newly found environmental concern of the company's owner, but also in response to a demand for 'green' shrimp from their main Japanese buyer. The general manager explained the incorporation of environmental issues in their business strategy by arguing: "If we want our product to hit the market, we need a story [that can promote the product]. If our customers believe that our products are environmental friendly, organic, and pose no harm to the environment, [I believe] there would be a price increase to our products" (Interview, Tarakan, February 2009).

Table 5.1 Main technical differences of production systems between Aceh and East Kalimantan

Pond characteristics	**Aceh** (Source: Zainun et al. 2007)	**East Kalimantan** (Source: Ilman et al. 2009)
Size	2 – 5 ha/pond	5 – 25 ha/pond
Type	Mainly traditional, but also semi-intensive and intensive ponds	Traditional, extensive ponds
Stocking of shrimp fry	1,000—20,000/ha (traditional) 20,000—60,000/ha (semi-intensive) 100,000—600,000/ha (intensive)	10,000—20,000/ha
Feed	Natural growth of algae for traditional ponds; algae, rice bran, pellets for semi-intensive; for intensive farming system, feed is given as recommended.	Natural growth of algae. No feed added.

The demand for green products at the Japanese market in order to support their 'green shrimp' label was originally focused on reforestation in Kalimantan. The first phase of collaboration focused on an 'environmental responsibility program' which contributed US$ 1 per box of shrimp sold to fund a reforestation programme in Kutai Kartanegara district of East Kalimantan. Recognising a mismatch between inland reforestation and their claim of 'green shrimp', MMA then proposed that the buyer shift its funding to mangrove rehabilitation in Tarakan and surrounding region. The resulting 'Forest of Life' project started in 2006 providing the Japanese buyer and MMA the chance to claim mangrove reforestation as a marketable quality of their shrimp. Using the claim of a 'green made farm' on their packaging with further explanation that the shrimp were sourced from extensive systems that are 'close to the natural environment', they established what they perceived as a Japanese consumer driven scheme for mangrove rehabilitation.

The 'green made farm' label was successful in establishing a flow of funding. However, after some poor technical results with their reforestation programme MMA requested the assistance of WWF to provide assistance on mangrove planting. In doing so WWF also became a key partner, providing legitimacy to the environmental claims of the company in return for establishing their own network in Tarakan. They were given office space at the MMA factory and access to the companies' suppliers, as well as a basis from which to develop relations with the district government. In April 2008, WWF Indonesia, MMA, and Tarakan Environmental agency (*Badan Lingkungan Hidup* - BLH) signed an MoU stating that MMA, with assistance from WWF, had a responsibility to plant 150 ha of mangrove in five years. For WWF the document represented a formalization of their collaboration with MMA, the enrolment of the government into their activities, and it provided a statement of political support for introducing their BMP program.

5.4.3 Translation into a local setting

The collaboration with MMA provided a platform for WWF to access and enrol local actors into the process of translating the Aceh BMPs to the local context of Tarakan. WWF supported at least three 'public' meetings to introduce the concept of BMP, their experience from Aceh, and ultimately to develop a new set of BMPs for East Kalimantan. At the first consultation, held in August 2009, WWF invited government agencies from different sectors: the Marine and Fisheries Agency (MFA), Forestry Agency, and Environmental Agency from five districts: Tarakan, Bulungan, Tanah Tidung, Nunukan and Berau. The aim of the meeting was to enrol the five district governments in the process of developing BMPs suitable for East Kalimantan by introducing the BMPs from Aceh.

In the second meeting held in January 2010, WWF reduced the number of government departments invited and brought in a selected group of local industry representatives. MFA was invited to chair the meeting and provide technical input into to the standards. The meeting was scheduled in Tarakan at the MFA office; other departments who attended the first meeting, such as the environmental and forestry agencies, were excluded. WWF also invited representatives from fishers and shrimp producers organizations who were selected on the basis of their perceived ability to 'speak' in public. They were also key suppliers to MMA, who was the only one of seven export processors in Tarakan to be invited. On justifying this exclusive selection policy, the WWF officer reflected on close personal ties with MMA: "[WWF] involves MMA in the BMP development because we have worked with them since the beginning. I would feel uncomfortable if we invited other cold storages to our project" (WWF field staff, Tarakan, January, 2010).

The exclusive and targeted selection of participants was reflected in the content and discussion of the meeting, as well as the subsequent strategy for

trialling the draft-BMPs. The head of MFA stated in her opening address that MFA gave full support to WWF-Indonesia in the development of BMPs for Tarakan. She also argued that the BMPs provided a clear solution to the decline of shrimp production caused by producer mismanagement. According to her, BMPs also provided a solution to the government in their support of shrimp producers to improve the quality of farming systems in the Tarakan area.

However, the praise given by the head of MFA also revealed a subtext against which the BMPs were being introduced. In follow-up interviews MFA stated that a 'third party' like WWF-Indonesia was needed to intervene in the management of shrimp farming across the northern part of East Kalimantan. While local government recognized key issues associated with producer practices, mangrove clearance and overfishing of broodstock from surrounding waters, it was unable to unilaterally control these activities. The exclusion of other government departments also avoided a potential institutional clash between the forestry agency and other technical agencies around the illegality of farming on forest land in some coastal areas. MFA attempts to draw in the provincial governor had failed because formally the head of a province has no jurisdiction in district affairs and the relative isolation of Tarakan – on the border of Kalimantan-Indonesia and Borneo-Malaysia (Visser and Adhuri 2007). For the government, the 'local adaptation' of BMPs by a select group of actors was an indication of the underlying friction over coastal resources.

The selection of pond owners by WWF also reflects the complexity of pond ownership and decision-making over shrimp farming in the region. In the previous Chapter 4 I have shown that there is a clear distinction between producers who are in practice caretakers, and (absentee) pond owners or *ponggawa* who attend meetings like the one organized by WWF. WWF expected pond owners to be resource persons, providing technical knowledge to the formation of the standards and so legitimizing BMPs in the wider shrimp farming community. But, in fact the 'participants' selected were more representative of the patronage networks of *ponggawa* that control ownership

of the shrimp industry, than they represented the technical knowledge on farming (which resides with their pond caretakers). The pond owners fulfilled their public 'speaking' role as hoped for by the WWF, but they were better at expressing their opinions (*bisa bicara*) than at sharing grounded technical knowledge of shrimp farming.

The political positioning of MFA and the selection of pond owners rather than pond caretakers to represent producer interests affected the outcome of the meeting. Instead of presenting the Aceh BMPs, receiving input, and translating them into best practices for shrimp farming in Tarakan, WWF was met with resistance. During the meeting the pond owners refuted the knowledge of WWF because they perceived proposed changes to the infrastructure of the their ponds as too capital intensive and fundamentally different from the techniques they used on their farms and, perhaps most importantly, unrelated to the immediate problems they were facing in terms of decreasing productivity. This was captured by one pond owner who stated during the meeting: "If you show these standards to producers, they will shake their heads." He went on to argue that producers and pond owners alike: " [N]ever think about what good [pond] construction is like. We only know how to stock, maintain shrimp, and harvest them. That's it. If shrimp disease spreads, we would like to know how to deal with it and the cure" (Pond owner, Tarakan, January, 2010). Although the advice from WWF to change the design of the ponds was grounded on expert knowledge, it immediately created friction because of its abrupt introduction and radical shift from current practices.

Recognizing the resistance from the pond owners in the formal meetings, WWF changed their strategy to enrol them into the BMP process through interviews and demonstrations. The interviews were designed to collect the experiences and opinions of pond owners and the actual producers, their caretakers, on issues related to production. The inclusion of workers was an important step given their absence at the formal meetings. However, the

selection of pond owners remained narrow, as again only those supplying to MMA were invited. It was only in 2012, after the BMPs for Tarakan were issued, that this strategy was revised and new pilot farms in Tarakan were built to demonstrate the new set of BMPs to non-MMA related pond owners (WWF 2012).

In the next section I turn to the experiences of pond owners prior to 2012 who were involved in the pilot project run by WWF and MMA to test the applicability of the Aceh BMPs in northern part of East Kalimantan, while at the same time they contributed to the design of the Tarakan BMPs.

5.5 Translating BMPs into practice

Field-testing by WWF in partnership with MMA offered an opportunity to test the Aceh BMPs, and translate them to the local conditions of Tarakan.WWF hoped to thus avoid the politicized debate of the meetings and overcome the pond owners' critique that the BMPs were of no relevance to the challenges they faced. The goal was to develop a shared or co-produced set of BMPs that balanced the expert knowledge embodied in the Aceh BMPs and the empirical knowledge of the producers. In this section, I present my observations of WWF's testing of three specific BMPs from Aceh, the feedback WWF received from the pond owners and the pond caretakers, and the reasoning behind their rejection, acceptance, and the ways in which the standards accommodated the wider interests of shrimp production in the coastal environment of Tarakan.

5.5.1 Pond location and mangrove rehabilitation

The location of ponds is a fundamental parameter in both the international principles for sustainable shrimp farming and in the Aceh BMP standards. The

standards require local government to establish rules for the construction of ponds in and adjacent to coastal mangrove forest. The original manual developed for the Aceh BMPs stipulated a minimum buffer zone of 150 meters along the seaward facing edges of ponds (ADB et al. 2007). In the Tarakan case this seaward buffer was maintained, but also reflected the location of ponds in the Sesayap Delta. This implied an additional requirement for ponds to maintain a 50-meter buffer along river facing edges of the ponds and the re-establishment of mangrove in and directly around the ponds in order to increase the environmental carrying capacity of the extensive shrimp aquaculture system (WWF-Indonesia 2011). To comply with this adjusted BMP standard, the pond owners involved in the pond trial were asked to plant mangrove trees along the dyke and the raised, shallow central areas inside the ponds.

The scientific justification for planting mangrove in and around the ponds is to increase the micronutrient load of the ponds, which in turn increases the production of bacteria and plankton upon which shrimp in extensive systems feed (Gatune et al. 2012; Alongi et al. 1999). Other benefits include the provision of cryptic habitat for shrimp, increased shade cover to prevent algal blooms and nutrient cycling (Paez-Osuna 2001; Primavera 1997; Robertson and Phillips 1995). These benefits are scientifically supported and listed on the MMA website developed in partnership with WWF (http://www.shrimp.co.id/eng/index.php, accessed on 15 November 2013). However, despite the scientific motivation for implementing these measures pond owners expressed technical concerns about increasing the mangrove cover of the ponds.

The pond owners did not accept the rehabilitation of the mangroves, arguing that the ecology of the ponds would be disturbed and the productivity of the ponds would decline. But instead of rejecting the proposal outright, they proposed an alternative approach for planting mangroves on the dykes and inside the ponds at a wider spacing. Instead of the one to two meters spacing

between trees they successfully negotiated a 10 meter gap between trees. Their rationale for doing so was to protect the production of plankton, the main source of food in extensive shrimp systems, which requires adequate sunlight to for photosynthesis. A secondary concern was that if mangroves become too dense dangerous wildlife would encroach on the 'forested' pond.

Although technically framed, the pond owners' concerns were underscored by the wider politics of access and ownership to coastal land in northeast Kalimantan. Under national law, coastal production forest (*Kawasan Budidaya Kehutanan*) is owned by the state through the Ministry of Forestry who issues user permits (Ilman et al. 2009). However, the administrative decentralization of the Indonesian state has reduced the enforcement of national forest regulation (Smith et al 2003). Once a forest is cleared, usufruct rights are granted by village leaders with customary rights over the forested land. Pond owners then need a letter from the sub-district head to acknowledge this permission before making a formal request (often in retrospect) to clear the forest and develop a pond. This formal permission from MFA is often not sought because it enables MFA to levy a tax over production (*Surat Ijin Usaha Perikanan* or SIUP). As a result access rights remain ambiguous; as long as the producers do not convert the land back to forest, they are able to maintain their customary access agreement and avoid any legal enforcement (and tax payment).

The case demonstrates that, although technically framed, resistance by producers to the BMP standard for pond location and mangrove rehabilitation is part of a wider conflict around access and use of coastal land. Planting trees in and around their ponds changes the status of that land and disqualifies them from continuing shrimp aquaculture. The final version of the BMPs for Tarakan and Bulungan (2011) maintained that mangrove needs to be planted around the dike, inside the ponds and around the water gate. But unlike the standards in Aceh they do not specify the exact distance between trees –

leaving this up to the farmers. The standards therefore provide room for interpretation by producers, feeding into a wider politics of the land.

5.5.2 Extensive aquaculture practices

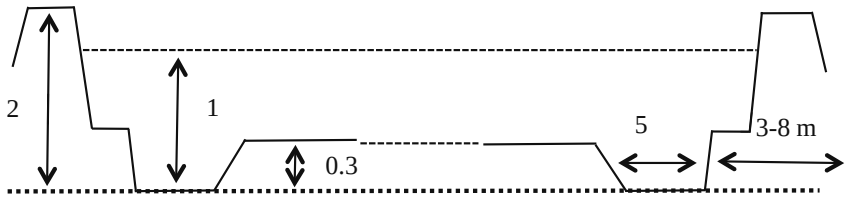
The BMP standards also set out guidelines on the design and construction of ponds to create a productive farming system that reduces the incidence of disease and promotes biodiversity. Both the meetings and the pilot program gave considerable attention to the characteristics of the extensive pond system found in the Tarakan region, namely open tidal water flows, variable pond sizes and shapes, and low density in seed stocking (WWF Indonesia, 2011: 1; Figure 5.2). However, despite the focus on these local conditions, nearly all changes to pond design (Figure 5.3) and management were met with resistance.

Figure 5.2 Different pond sizes and shapes in Sesayap Delta

The first concern of the pond owners focused on the economic rationality for large pond sizes. Capital costs for pond construction are based on distance from Tarakan and cost per square meter, making little difference for the size of pond being built. However, a different pond infrastructure is more costly. One of the

biggest capital costs is the construction of the gate through which water is exchanged and shrimp recruited into the pond. Each gate has one or two caretakers who live at the gate and manage the pond. Dividing larger ponds into smaller ponds requires further capital investment and operational cost. But perhaps more importantly, the smaller pond size allows for a higher intensity of production. The existing extensive system is based on limited stocking of shrimp supplemented with wild shrimp recruited through water exchange (Illam et al. 2009). Smaller ponds would mean that farmers move from a relatively less to a more intensive form of production, which increases capital outlay and operational costs, as well as production risk.

Figure 5.3 Pond design as recommended by BMP for Tarakan and Bulungan



Source: WWF 2011

The WWF proposal for pond management were based on smaller size of ponds; including drying and liming the soil to reduce soil acidity, fertilizing the pond and managing water input (WWF Indonesia 2011). These are well established measures for more intensive forms of production aimed at mitigating the incidence of disease by reducing the incidence of virus carrying organisms, reducing excessive nutrient loads and reducing the acidity of pond soil – all of which are major factors in reducing the overall productivity of ponds (Tho et al 2011; Walker and Mohan 2009). However, pond owners state that none of these measures are feasible in their extensive systems. Contrary to the BMPs they argue that drying their ponds will trigger a higher level of

acidity by drawing pyrite out of the soil. WWF countered that this can be overcome by washing, turning and liming the soil. However, this process becomes difficult because of the difficulty of ensuring that the whole pond is dry (Illman, et al. 2009). Other farmers do not empty their ponds at any point in the production cycle, instead keeping water in the canals in the pond during harvesting to maintain the stock of wild and juvenile shrimp. The extensive production systems are also low cost, requiring minimal maintenance and input. The wider experience of shrimp aquaculture indicates that implementing BMPs measures on pond design and management would lead to higher stocking densities, feed and ultimately labour. Although incurring greater costs in the short term, these measures are expected to improve the overall efficiency of production in the long term. However, the pond caretakers in Tarakan see a range of risks associated with implementing the BMPs and increasing the intensity of production. First, the measures trialled in the pilot ponds by WWF failed – survival rates and yield per hectare were significantly lower and the quality of shrimp poorer (Table 5.2).

Table 5.2. Targets and state of MMA-WWF trial ponds

	Observed average	**Targets**
Survival rate	< 20%	30%
Yield/ha	< 75 kg	100 kg
Average shrimp size	40 g	40 g
Quality of shrimp	Variable	Stable

Source: http://www.shrimp.co.id/eng/index.php accessed on March 2012

Second, increasing the intensity of production is recognised by producers as increasing the risk of disease. This is supported by literature that open extensive systems have a higher incidence of viruses such as White Spot Syndrome Virus (WSSV) but with a lower virulence than in intensive systems (Dieu 2010). The pond owners in Tarakan are therefore faced with the prospect of following the BMPs under conditions of uncertainty and with a potentially

higher degree of risk. They are invited to redesign their ponds and change pond management practices with little assurance that these practices would increase productivity. In this sense, the BMPs standards on pond management in Tarakan were not really co-produced, nor was there any movement towards a negotiated set of standards until the risk and uncertainty around the measures being proposed would be incorporated into the locally adapted BMPs.

5.6 Reflections on co-produced BMPs

BMPs are designed to combine global experiences on better management in shrimp farming, consultation with the local stakeholders, and field experience of those initiating the translation process (Padiyar et al. 2012). But like any globally derived standards they are not introduced and translated in a social vacuum. The translation of the standards is a function and outcome of social relations between global actors embedded in expert networks and local actors embedded in politicized places and environments. Reflecting on the findings in the literature (Foley and Hébert 2013; Roth and Dressler 2012) my study shows that the particularities of place demand a transformation and translation of the globally conceived standards. In the Tarakan case, adaptations were necessary on three levels: translation of the standards to fit the technical and social realities of the coastal lands in Tarakan, the design of multi-stakeholder meetings, and the BMPs pilot program at ponds with pond caretakers and the pond owners.

The International Principles were published with the expectation that public and/or the private sector actors would use them to develop a national policy for BMPs. The attempt to develop BMPs can therefore not be separated from the wider advocacy strategies of WWF as an international environmental NGO, especially given their role in the development of the BMPs for Aceh, the

International Principles for Sustainable Shrimp Farming and the Shrimp Aquaculture Dialogue. Even though the adoption of the global standards should be suitable to the social, economic, and environmental conditions of the targeted area, the translation from principles to standards has led to some diversification in the content of the BMPs. However, most BMPs are closely related in content (Mohan et al. 2010). In this sense, BMPs are co-produced in a network dominated by global expert actors with interests and agendas that transcend those of producers embedded in local places (Cheyns 2011; Anh et al. 2010; Belton et al. 2010; Fransen and Kolk 2007).

The multi-stakeholder meetings in Tarakan were designed to enrol local actors and manage a system-oriented collaborative process of defining and codifying problems associated with shrimp farming into local BMPs. However, these meetings were unable to create a shared understanding of how aquaculture practices in extensive systems lead to environmental problems that in turn lead decreases the productivity of ponds, because those invited were not the ones who were the actual pond caretakers who had the technical knowledge. Instead WWF selected a few pond owners to the meetings who were involved with the cold storage, thus politicizing the meetings in two different ways. First, the close relationship of WWF with MMA that was instrumental for WWF to gain access to Tarakan, also restricted the involvement of other processors and producers who were not included in that network. Although no stipulation was placed on WWF by MMA, the relationship imposed a perceived obligation set by a ‘pre-existing social arrangement’ (McCarthy 2002) to restrict the program to those involved in MMA’s supply chain. Second, the active exclusion of pond owners and government actors in the second meeting avoided debate on the legal ambiguity of land use. Instead of creating consensus, the composition and content of the meetings fed into a politics of regulation and control over the environment by reinforcing global expert knowledge (Cheyns 2011; Ponte and Cheyns 2013). The difficulties WWF faced in fostering consensus over the content of the

BMPs reflected the relations of power within Tarakan that determine who is heard and who is not in the governance of the shrimp industry.

The politicization of BMP during the meetings transferred over to the pond-level pilot programme. The counter arguments of producers to BMPs for pond design, location and management were largely technical, but underscored by the politics of access and control over land and the distribution of economic risk to pond caretakers and owners rather than regulators. However, the pilot program did offer to them an opportunity to enter into a technical dialogue with WWF over the design of the BMPs that was not possible during the meetings. The co-produced BMPs also represent the fine division between a technical outcome and the reification of contested political relations of aquaculture production. For example, WWF acknowledged that the aquaculture practices in the Tarakan region have emerged in response to the local challenges of production. However, with the goal of increasing the productivity of ponds, or at least mitigating current declines, they sought to adapt these practices to increase the relative intensity of production by proposing smaller pond sizes and mangrove plantation. But by not stipulating the distance on mangrove replantation around and inside the pond, WWF tried to minimize the issue of land ownership by rendering issues of the legal status of 'forested' land into technical terms.

Comparing the meetings and the pilot program questions the extent to which the co-production of knowledge is built on a collective dialogue, or simply remains a 'transactional' form of co-production: I'll trade you this for that (Needham 2008). It is not only the inclusion/exclusion from a process of co-production but also the quality of knowledge contributed. Who is included how and when, then become important questions to determine why and how those participating contribute to the BMP process at different moments and events. The pond owners at the meetings enabled WWF to develop a meaningful dialogue and buy-in to the BMP process because they are the primary decision-makers. However, the technical focus of the meetings forced

them to comment on production practices that are better captured by the experiential knowledge of pond caretakers. In contrast, the on-the-spot pilot program provided pond caretakers with the occasion to give technical input that reflects a transactional form of co-production, but they are not responsible for subsequent decisions over major changes in infrastructure or investment in the ponds.

The co-production of BMP standards has therefore placed WWF in a precarious position. Although their original intention of managing a process of consensus forming, co-production evolved into a process of political reification, WWF has been successful in accessing complex local social networks responsible for shrimp farming in Tarakan. However, BMPs appear to be not only a tool to negotiate the technical dimensions of shrimp aquaculture, but they also create an extended 'site' of advocacy (De Vos and Bush 2011). WWF is now involved in the on-going development of pilot shrimp farming that involves the district government of Tarakan. By expanding its network WWF can gradually extend its influence by acting as a conduit for international principles and debates around shrimp aquaculture to pond owners and agencies that have until now not been included in discussions around sustainability (Kusumawati et al. 2013). Despite the apparent failure of the multi-stakeholder process and farm trials in reaching a consensus-based set of BMPs, the embeddedness of WWF in these local networks will enable on-going engagement and advocacy for conservation and sustainable production. But their success will rely on their ability to balance the technical and political dimensions of the implementation of the BMPs.

5.7 Conclusion

This case study identifies a range of sites and events led by WWF-Indonesia, where the Tarakan BMPs were co-produced with processors, government and

shrimp producers. The goal of translating BMPs into the local context was to ensure both technical relevance and a higher rate of adoption and impact. The resistance WWF faced in both the meetings and the pilot program indicates that the formulation of BMPs is far from a linear process of translation. Instead the activities implemented by WWF represent a problematic process of co-production, through which attempts were made to incorporate and represent empirical technical knowledge in the adaptation of the standards to local conditions.

This chapter shows that through a process of co-production, BMP standards are not merely about how to negotiate and include the technical aspects of local production; they also represent and perpetuate existing social relations of production and politics of environmental control and degradation. BMPs thus contribute to the politicization rather than depoliticization (Béne 2005) of social and environmental issues around shrimp farming. Recognizing the political role of BMPs also reflects on the precarious role of global NGOs such as WWF in leading the process of co-production. They need to seriously engage with networks embedded in complex local political economies to co-produce locally relevant and effective standards. Close involvement in local networks may well lead to the formulation of relevant standards that will end up having a higher rate of adoption. However, the impacts of these co-produced standards may be compromised by how inclusive or exclusive the process of co-production is, and the degree to which they justify existing aquaculture practices and resource access.

Chapter Six

General Discussion and Conclusion

Note on the cover page picture:

A house for a shrimp pond caretakers in the field.

6.1 Introduction

This thesis explores the process and dynamics of the interface of global and local actors concerning coastal governance by way of network formation and the co-production, negotiation, and contestation of environmental knowledge. As part of the Wageningen funded RESCOPAR program on the resilience of coastal populations and aquatic resources in Indonesia and Vietnam, case studies were carried out in two different conservation settings in East Kalimantan, Indonesia. The first case study in Berau Delta addresses the design and implementation of a marine conservation area by global environmental non-governmental organizations, in collaboration with decentralized government agencies and local entrepreneurs. The second case study in Sesayap Delta concerns the development and implementation of better management standards for shrimp aquaculture.

The Berau Delta case study examines the formation of global-local environmental collaboration over a period of five years (2004-2010), focusing on the interactions of multi-scale actors and knowledge through the implementation of sea turtle management in the Berau MCA. The thesis explores and explains how collaboration shapes different actors' perceptions and perspectives on marine conservation and resources extraction in the context of decentralized marine governance. The results show that the political-economic and cultural-historical role of local entrepreneurs and political elites (*ponggawa*) are particularly important in shaping knowledge and power disconnects, apart from producing legal disconnects (Patlis 2008) between global and local actors (Chapter 2).

I further investigate how actors with different types of knowledge interact in sea turtle management in the Berau MCA. By focusing on the role of local political-economic forces that shape the discourse on marine conservation, the results provide a deeper understanding Tsing's (2005) concept of friction. Friction emerges when the values, knowledge and

discourses of global NGOs, local power brokers (patrons or *ponggawa*) and local government coalesce. By not adequately resolving the differences between the interests, values, and knowledge of these actors, the complex planning and implementation of MCAs is undermined and new uncertainties are created over the future governance of coastal resources (Chapter 3).

The Sesayap Delta case study illustrates the relative influence of private and public actors who contribute to different but related environmental regulatory networks around shrimp production. The results show how these different networks interact and influence the reach and impact of global environmental governance introduced through standards for better management practices (BMPs) by WWF. While it appears that local economic elites are again the determining factor in affecting the interactions of the environmental regulatory networks, Chapter 4 demonstrates that 'external' networks led by global NGOs and the central government largely ignore the local economic elites and the networks in which they are embedded.

The final case study, also on BMPs in the Sesayap Delta (Chapter 5), shows how actors with different types of knowledge interact in co-producing and negotiate best management practices (BMPs) in the extensive shrimp aquaculture practice of the Tarakan area in the northern part of East Kalimantan. Focusing on the process of co-production of knowledge in developing the BMPs, the results examine whether co-production is simply a matter of translation of international principles or an arena to negotiate the balance between the technical and the social conditions of production. The results indicate that, contrary to the findings of others (Béne 2005), BMPs contribute and even reinforce the politicization of social and environmental issues around shrimp aquaculture. The meetings organized by the World Wide Fund for Nature and the pilot project at pond level with producers following the development of the BMPs standards, further strengthen the patron-client dependencies of the shrimp aquaculture practices, as well as the politics of control over the natural resources.

In this final chapter, I bring together the main findings from the four empirical chapters and use them to illuminate and reflect upon the key research questions of this thesis. First, I examine how global actors form networks in order to secure the process of global environmental knowledge transfer. I follow this through by examining how these networks of actors produce disconnects and frictions around power and knowledge that lead to misconceptions of global actors in understanding the role of local economic elites in controlling the local networks. Second, I investigate how the actors co-produce environmental knowledge in defining and practicing sustainable coastal resource governance, given that the global and local actors own different ontologies of knowledge and values.

The following section summarizes the main findings of the chapters to answer the questions presented above. In section 6.3 I discuss the contribution of this research to the literature on coastal governance and, more specifically, on the key concepts used in the thesis, including global-local interaction, knowledge translation, negotiation and co-production in the context of conservation initiatives. I continue by indicating what actions and room for negotiation are needed from all actors involved for a more effective conservation of coastal resources. I end this last chapter by presenting the future research agenda.

6.2 Main findings of the thesis

The findings of this thesis highlight the unequal interplay of the different networks that has consequences for how the coastal resources are governed, and the dilemma of knowledge co-production in the global-local interface in improving the governance of natural resources and a sustainable coastal environment. By integrating the results from the Berau Delta and Sayasap

Delta cases we now turn to an integrated discussion of the two core themes of network formation and the knowledge interface.

6.2.1 Network formation as a tool to govern the coastal resources

The focus of Chapter 2 and Chapter 4 is the attempts of the global environmental NGOs, The Nature Conservancy (TNC) and the World Wide Fund for Nature (WWF) to govern the use of natural resources in collaboration with local actors. The development and implementation of these networks take place in the context of a decade of political-administrative decentralization in Indonesia. This setting provides the global actors with a better opportunity to collaborate directly, either with the district government or with the private sector, by bypassing the central and provincial governments. The global environmental NGOs are aware of the existence and actions of key local actors, particularly the economic elites or *ponggawa*, but they find their patron-client relationships often too complex and time consuming to understand. Out of need for simplicity they therefore tend to ignore or downplay the potential of these local actors to influence the implementation and outcomes of global conservation attempts.

The life history of the development and implementation of the Berau MCA clearly shows that the collaboration model applied by the environmental NGOs has failed to produce an all-inclusive governance approach to the conservation and sustainable use of coastal resources. At the outset, the Berau MCA was to be based on a decentralized co-management model featuring strong collaboration with the district government agencies, bypassing the central and provincial government. By forming a Steering Committee the global environmental NGOs tried to actively include the district government agencies (Chapter 2). However, this collaboration had certain limitations. Ideally, the Steering Committee should equally represent all the actors involved. Yet, in practice, these actors form two competing networks, namely

the global-local NGO network (the Joint Program) and the district sectoral network, which were frequently at odds with each other, resulting in poor performance of the Steering Committee. The Joint Program is often seen as an outsider by the actors involved in the district network and a potential threat to the local actors' authority and responsibility to monitor and control the use of natural resources of the coastal waters of Berau.

However, the legal framework in governing the marine conservation area is sector oriented and full of disconnects in definitions, administrative and institutional provisions, enforcement, monitoring and sanctions (Patlis 2008). Once I realized how legal disconnects were further compounded by institutional and value disconnects, I appreciated the scale of the problem and was able to explain the continuous confusion and contention of the actors in the Steering Committee in all governance aspects of marine conservation. Despite the NGO model for decentralized global-local collaboration, the actors involved struggled to find a middle ground in defining and implementing the decentralized MCA activities. Frictions appeared to be mainly caused by the fact that the approach of the global NGOs ignored two important local conditions. First, the differences in political-economic power between local actors, like the district government agencies and private entrepreneurs and the different cultural-historical values and meanings that strongly influenced their ways of perceiving marine conservation. The second problem was the constantly shifting authority that occurred both within the networks of the local and the global actors, as well as between them throughout the five-year process of development and implementation of the MCA.

The Sesayap Delta study on the shrimp value chain highlights the emergence of better management standards for shrimp aquaculture. This case study is not centred on the history of network formation; instead I underline the interplay of three different environmental regulatory networks in the development process of BMPs. In an attempt to introduce sustainable production, WWF collaborates with the network of the seafood processing

companies in the region, thereby initiating the formation of an environmental regulatory network (Chapter 4). This environmental regulatory network interacts with the State and the existing artisanal trade networks. By focusing on the role of the economic elites (*ponggawa*) in the artisanal trade networks and their interaction with state and NGOs networks, I bring to light the 'black box' of the value chain regulation (Bush and Oosterveer 2007). The value chain of shrimp aquaculture and trade in the region is determined by the multiple interdependencies of *ponggawa* as pond owners and/or traders. However, their key position as the actor who controls the flow of commodities and knowledge in the artisanal trade network is often underestimated and misunderstood by the state and NGOs networks.

Consequently, the failure to recognize the role of *ponggawa* has significant implication for the implementation of any conservation initiative. Given that all actors involved in environmental regulatory networks are connected via awkward, unequal and often unstable interactions, I underline the potential frictions and misunderstandings that emerge from this type of interaction. Like in the previous case, the lack of recognition and equal interaction between external regulatory networks and local economic elites lies at the root of the problem. Instead of seeing the *ponggawa* as a potential to strengthen the process of standards development, the state and NGO networks see them as an obstacle to not only the development of the standards, but also to their implementation, monitoring and enforcement. Extending Vandergeest's (2007) notion of the exclusion of farmers' practices and knowledge in standards development, I find that the exclusion of the practices and knowledge of actors such as local elites or *ponggawa* from the development of BMP standards is problematic in this form of governance introduced by the global environmental NGOs.

What lessons can we draw from this more inclusive approach to the empirical study of conservation initiatives? The global environmental NGOs embraced the new decentralized model in marine conservation. Together with

the local actors, especially government agencies and entrepreneurs, the global environmental NGOs set up a collaboration platform and formed environmental regulatory networks to govern the use of the coastal resources. The actors involved in these networks range from the global to the local and include district government institutions, the private sector, as well as aquaculture producers. However, despite the inclusive approach applied by the global environmental NGOs in setting the conservation agenda (Goldman and Turner 2011; Peet et al. 2011; Vaccaro et al. 2013), there seems to be a serious omission in their understanding and acknowledging the multiple patron-client relationships that characterize the networks of local elites in governing the coastal resources. These patron-client ties are crucial for our understanding of the local networks and are key to the regulation of the conduct of local actors. Therefore, in order to develop networks and forms of collaboration that are acceptable to local actors, they must take seriously into account, and be consistent with, local political-economic and cultural-historical conditions and perceptions.

6.2.2 The global-local knowledge interface

The second focus of the thesis highlights the internal dynamics of the process of global-local knowledge interface. In this process each actor translates and negotiates the different types of knowledge to meet his interests and goals. This process is thick with friction and the struggle of actors to overpower others to accept knowledge that is different from their own knowledge and experience. Moreover, global environmental knowledge does not come to an empty space when it is transferred to the local. Hence the translation and negotiation processes are entangled with the historical and empirical knowledge and the political-economic objectives of the local actors.

My study of the implementation of the Berau MCA highlights the battlefield of knowledge over turtle eggs management (Chapter 3). I apply the concept of friction (Tsing 2005) to explain how each global or local actor

involved in the Berau MCA governance contests the interpretation and implementation of the MCA and, particularly, sea turtle management. Friction is widespread and divergent, as the actors appear to be bent on prioritising their own values and interests, which leads to a stalemate rather than a collective move towards conservation. Their struggle to impose their views and knowledge on others leaves little room for compromise.

The fact that the Berau MCA is endorsed by both district government and central government authorities gives the Joint Program its legitimacy and authority to implement conservation activities. In response to global environmental concerns the global environmental NGOs (TNC and WWF) apply a conservation model to the Berau MCA that is predominantly based on scientific knowledge. When it comes to its implementation, this science based knowledge clashes with local realities and is contested by the local knowledge proponents. In contrast to global environmental knowledge, local knowledge is based on historical practices and social-cultural experiences and values held by the local elites.

Local knowledge on the exploitation and conservation of sea turtle eggs is a case in point. In Berau the management of sea turtle eggs is based on the rich history of sea turtle eggs harvesting and trade under an auctioned licencing (*pachter*) system. The auction holder, still locally called *pachter* (Dutch), buys a government licence to collect and trade the turtle eggs. As this is a source of a lucrative income for those who are able to secure such permits, since the pre-colonial times the auctioning of *pachter* licence has been thick with intrigue and back door manoeuvres. This continues to be the case in today's Indonesia. Because of its low volume - high value status, sea turtle eggs are a strategic asset for local elites, whether private (*ponggawa*) or governmental and military. As a result, there is constant friction between the environmental NGOs and the local economic elites who are interlinked with the political elites, who struggle to turn the battle of knowledge about the MCA into a debate about acceptable parameters for the continued collection and trade in turtle eggs.

My study of BMP standard development shows the process of knowledge co-production from a different angle (Chapter 5). BMPs were co-produced through three distinct processes: the translation of the global principal in shrimp farming to the local context, the transfer of knowledge through meetings and a pilot program, and the negotiation process that occurred in BMP development. In general, standards for best management practices are prepared to provide a guideline to reduce the negative impact of production activities on the environment. The standards in BMPs are developed through multi-stakeholder initiatives (MSI) that incorporate the different knowledge of the actors involved and are linked to global networks and production processes. BMPs are designed to allow the translation process to fit into specific locations. In this MSI process the co-production of knowledge is taking place. WWF-Indonesia as key global actor in the network provides the opportunity to design locally suitable standards together with the local actors, like the locally based shrimp processing company and the producers attached to it. Scientists and global NGOs expect that such global-local networking produce hybrid knowledge (Jasanoff 2004) shared by WWF-Indonesia and other actors. However, it is problematic if it is assumed that standards are produced under conditions of a local social vacuum. The social relationships and the political capacity to contribute to the development of standards influence the co-production of these standards.

The implementation and development of BMPs for shrimp aquaculture in the Tarakan and Bulungan region of Sesayap Delta are a case in point. They are the collective product of translation and adoption of global knowledge and experiences in interaction with the knowledge, experience, and social-economic conditions of the pond owners and local elites (*ponggawa*), and others in the shrimp production chain. However, the translation of BMPs into the local context is not separate from the networks of global experts whose interests and agendas are set well beyond those of the local producers. Through this process of co-production of knowledge, the formulation of the BMPs in

Sesayap is more than just about negotiation and inclusion of the technical aspects of the local production. As shown in this case study, the local actors seem to counteract the standards proposed by WWF. The translation process, indeed, is not a linear process when it faces the economic and political interests and goals of local elites. In this sense, the process of co-production also perpetuates the existing social relations of production and consequently the politics of environmental control and degradation.

What lesson can we draw from this global-local knowledge interface? Both cases illustrate that despite being initiated by global environmental NGOs the knowledge interface takes place in the local context. This local context comprises complex political-economic networks of elites who have their own knowledge and interests in governing their coastal natural resources. Those introducing global scientific knowledge to coastal resources governance in present-day Indonesia should be cognizant that decentralization grants more power to local networks of political-economic elites and their dependents to decide on an effective model for sustainable governance of the coastal resources. Consequently, in order to co-produce locally relevant and effective knowledge to govern the conservation and use of coastal resources, the global actors need to grant more space to the historical and empirical knowledge - and the values and perceptions of conservation it produces - in actively engaging with the complex networks of local actors.

6.3 Contribution of the research to science

This thesis combines anthropological and political ecological approaches (Brosius 1999; Robbins 2004; Peet et al. 2011) to obtain a better understanding of the global-local interface in the context of coastal governance and knowledge transfer and co-production in East Kalimantan. Integrating these approaches allows me to move beyond the debate on a mere politics of access

and control over natural resources. It gives us a better understanding of the dynamics of the global governance networks and their interactions when they are embedded into local political-economic contexts that are marked by specific social, cultural-historical, and political-economic relations.

I have shown throughout this thesis that the role of the local elite, whether as an individual or as a group, weighs heavily on the outcomes of global conservation attempts. In line with political ecology, as outlined in Chapter 1, I have demonstrated that global environmental NGOs collaborate and build networks with the local actors to discursively and materially transform the local knowledge and practices in governing their natural resources (Blaikie and Brookfield 1987). Although it is often stated that global environmental NGOs should become more responsive to local social, historical, and political conditions (Peet et al., 2011; Peluso 2012), there still are few empirical studies that provide the field-based qualitative data on new decentralized NGO approaches to conservation. This thesis does so in shedding light on two cases in Indonesia. This thesis also contributes new knowledge on the outcomes of the interaction between global and local networks. By examining the interface between global conservation initiatives and the political-economy of local actors, particularly the multiple patron-client networks of local elites, the thesis shows how such local networks challenge the scientific premises, prescriptions, and collaborative models introduced by global actors such as TNC and WWF.

Secondly, this study underlines the importance of a multi-sited empirical research to better understand the local political and economic contexts and conditions and to seriously study the historical and cultural views of local actors that inform their positions at the interface with the global environmentalists. Combining insights into the local actors' historical, political and economic motives with a multi-sited ethnographic approach also helps to escape the trap of essentializing the global and the local as if they were real places. Indeed, one of the major contributions of this thesis is the explanation

of the interplay between and within the networks and its relation to the more integrative processes of the global-local networks interface, without reifying or losing sight of the complexity that underpins this interface. Developing and retaining such a balanced perspective is a rare occurrence in the literature and therefore I see this as a valuable contribution.

Thirdly, while the literature on political ecology is predominantly about the dominance of powerful actors (e.g. the state, corporations) vis-à-vis comparatively weaker local actors (Peluso 2012; Peet el al. 2011; Robbins 2004), this thesis shows that "locals" are not always weak. In fact, they are often powerful as well. I have been able to show how powerful local entrepreneurs (*ponggawa*) have a crucial role and impact, and transform the discourse on sustainable environmental governance differently from global environmental NGOs, national government agencies, private industries, and even the district government. I illustrate this with real-life examples of what different perceptions of conservation entail, how actors construct different interpretations, launch counter-discourses, and steer the implementation of conservation so it is least disruptive to their interests and goals. This is a political-ecology in action, and an important contribution to science as most studies on this topic treat political ecology in an 'after-the-fact' fashion.

Finally, this thesis contributes to a growing literature about the impact of decentralization on conservation and resource management (Aspinal and Fealey 2003; Bene 2005; Wadley 2005; Barr et al 2006; Satria et al. 2006; Acciaioli 2008; Gunawan 2012) providing ethnographic data about actual processes of the development of marine conservation and better management standards. What is new is my focus on the global-local knowledge transfer and the actual co-production processes in this global-local interface. My research confirms earlier evidence of the process of the knowledge interface (Long 2001) that each actor brings different knowledge, interests, resources and networks to the table. But this thesis is the first to show empirical data of processes of environmental knowledge transfer regarding coastal conservation.

Global environmental knowledge transfer and co-production should not be seen as a one-way process. More specifically, the global NGOs, despite genuine efforts to design inclusive process of engagement with local actors, often end up reinforcing simplifications and shortcuts – as the reality they face is complex and the activities must be implemented within a specific timeline. This could potentially be understood as global NGOs gaining the upper hand by imposing such simplifications (Li 2007). However, this thesis shows such simplified conservation designs, which prioritize the global actors' science-based knowledge and tight schedules, do not prevail. Instead, I show that coastal resource conservation is an arena where science-based concepts are contested by social conditions generated by specific local economic interests and cultural-historical values. This contestation effectively puts a check on the agendas of global NGOs and the resultant friction becomes a venue for negotiation and co-production of knowledge. This is by no means a smooth process as local elites, while often collectively opposed to conservation prescriptions introduced by the global actors, frequently also battle among themselves as a result of their different power positions and patronage networks.

6.4 Contribution of the research to policy-making

This thesis also makes important contributions to policy making regarding coastal governance and the involvement of multi-level actors like global environmental NGOs, district government agencies, and local political-economic leaders (*ponggawa*). It shows the ineffectiveness of a top-down approach in governing marine conservation and implementing standards for best management practices in shrimp farming.

Although the global environmental NGOs claim they now apply a new conservation approach by directly linking up to decentralized governments and

local entrepreneurs in setting the marine conservation agenda and in implementing BMP standards, this thesis shows that in fact the implementation of this new approach is not significantly different from the past. The conservation activities introduced by NGO networks and described as being co-produced with local actors and their networks are actually developed well before the intervention even starts in the target area. In fact, the decentralized collaboration model for conservation disguises re-centralization of local coastal resources governance.

The global and national actors often ignore the local social, economic and political conditions, which results in indifference or outright resistance from the local actors who label them as 'foreigners'. In order to make their intervention more effective and sustainable, it is important that the environmental NGOs find ways to accommodate the diversity of social, political, and economic interests of the local elites. This entails a fundamental change in the way in which they approach and engage with local elites, collectively called *ponggawa*, like district government, local industry, entrepreneurs and pond owners. Rather than arriving with preconceived ideas and readymade concepts, the international actors need to focus on enabling an interactive process which includes the elites and envisages specific roles for all concerned with clear incentives and disincentives to move towards a commonly agreed upon goal. It also suggests that global actors acknowledge the value and meaning of local knowledge and provide the necessary space and time to debate and negotiate its relevance and utility. The negotiation of the values of local *and* of global knowledge is the basis for a form of locally sustainable governance that fits local conditions. Only then this can contribute to global environmental governance.

Finally, Indonesia's political-economy has significantly changed over the last decade. Much political and economic power has shifted away from central government and become rooted in the provinces and districts, enhancing the status of local political-economic elites. In order to be

successful, any conservation initiative needs to take serious note, engage in a debate, and incorporate the local political-economic interests into the conservation collaboration activities. At the same time, the local actors, e.g. district government and local political-economic leaders (*ponggawa*), need to move beyond the short-sighted material interests of local resource extraction and trade, to appreciate the efforts of environmental NGOs and value the potential benefits that may follow from a greater engagement with a more sustainable way of governing the coastal resources.

6.5 A future research agenda

This thesis analysed the global-local interface in the context of implementing marine conservation and better management standards for shrimp aquaculture in East Kalimantan, Indonesia. The thesis finds that these processes lead to friction and knowledge co-production that in effect mean negotiation and translation of the global agenda and its adjustment to the local context. This knowledge interaction has been shown to be exceedingly dynamic, variable, case specific, and critical for understanding conservation and development outcomes.

I have sought to examine this process in as much detail as I could. However, among the many questions that still require further analysis, I see two issues of particular importance and of personal interest to me. First, it is important to look more closely into the question of decentralization and its links with sustainable development and conservation. Decentralization has been high on the scientific agenda in the first half of the 2000s, but since then it has become of less interest because of the prevailing view that it has failed in environmental terms. Is this indeed the case, and if so why? How does the assumed failure link up with the theme of local political ecology networks? What is the role and space for NGOs to step into this political mix, and what

are the best ways to devise steps towards better natural resource governance? Finally, the understanding of local political ecology needs further refinement as well. So far, political ecology analyses have tended to be descriptive, limiting themselves to identifying the winners and losers and providing general explanations about the underlying causes. More research is needed to go beyond the descriptiveness and more into the specifics of what can be done to advance better natural resource governance.

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Summary

Coastal and marine resources that are the basis for local livelihoods and economies are increasingly becoming part of global networks accessing commodities available for exploration and exploitation, as well as global concerns for environmental degradation. The decentralization process in Indonesia is potentially an opportunity to improve the governance of the use of coastal natural resources as district government agencies have more flexibility to design policies that better respond to local needs. However, at the same time, it provides more space for the political-economic interests of local elites. The central state governance of coastal resources remains lacking and has not been effective in halting the environment degradation. Global environmental non-governmental organizations (NGOs) see this ineffectiveness as an opportunity to intervene directly at the district level, bypassing the central state, to improve the governance of coastal resources through collaborative conservation initiatives. NGOs such as The Nature Conservancy (TNC) and the World Wide Fund for nature (WWF) take the lead in introducing and organizing conservation activities in target areas. In doing so, they build networks of global and local actors as a means to anchor the global knowledge to local socio-economic and political settings.

Using ethnographic case studies of two of these target areas in East Kalimantan province, Indonesia, this thesis investigates how these relationships are constituted by examining the global-local interface associated with the attempts to influence the governance of coastal natural resources.

The general objective of this thesis is to explore, describe and analyse the social dynamics of the global-local interface in governing the conservation of coastal and marine resources in decentralized Indonesia. This thesis brings together two case studies about two different conservation attempts initiated by environmental NGO networks on collaboration with local actors and their networks. The first case study is about the development and implementation of Berau Marine Conservation Area

(MCA) that is based on scientific concepts of conservation. The second case study focuses on the emergence and the development of standards for better management practices (BMPs) in shrimp aquaculture in the Sesayap Delta (Tarakan and Bulungan region) in the northern part of East Kalimantan province. In both case studies, a multi-local and multi-level ethnography approach was used to organise primary data collection and field observations.

This thesis provides empirical data on the actual processes of interaction between global and local actors by showing an in-depth picture of the collaboration, friction and cultural-historical, social, and political-economic contestation of the value and meaning of conservation from the perspectives of the district governmental agencies, the district head, local entrepreneurs and industry, and the different ontologies of their knowledge and the knowledge of the global environmental actors. Concentrating on the dynamics of this global-local interface this thesis adds to existing literature because it helps us to understand *why* global environmental networks often face contention and even fail to be effective in their attempts to implement regulations or standards for a more sustainable use of coastal resources. These observations are possible by combining the political ecology approach for context analysis with environmental anthropology which provides ethnographic detail on global-local interaction (Tsing 2005).

Chapter two presents the life history of the Berau MCA establishment between 2005 and 2010. This chapter investigates the establishment of environmental collaboration between Berau district government agencies and TNC /WWF. The global environmental NGOs insist the current conservation efforts are a radical departure from top-down practices of the past. They explain that extensive efforts have been made to apply a new concept of partnership with decentralised district government that is inclusive and collaborative. However, despite good intensions and planning, this decentral type of collaboration has not resulted in a common understanding of marine conservation needs and appropriate governance. TNC and

WWF did develop a Joint Program as a district-based MCA collaboration body intended to facilitate discussion and compromise. However, faced with the complications resulting from different actor interests and motivations, they sought to simplify the issues taking over the authority and responsibility of the district government to monitor and control the use of coastal resources. Research findings show that as a result of this kind of re-centralisation not only a legal disconnect (Patlis 2008) followed, but also social, historical, and political-economic disconnects. This gradually translated into increased confusion and spurred contention between the actors involved in defining, regulating and monitoring the marine conservation area.

The study of Berau MCA implementation highlights the situation where what seems to be a well-intentioned collaboration between networks of global and local actors turns into a battlefield of perceptions and different environmental knowledge systems held by the different actors. This is further illustrated in Chapter three which shows how global knowledge on conservation implementation clashes with the local realities, and is contested by the local actors whose knowledge is grounded in local historical practices and social-cultural experience. The case in point is the fact that despite the implementation of Berau MCA, the district government continues to endorse the long-standing auction of the access rights (concessions) to harvest and trade the sea turtle eggs seen as an important source of district revenue. Because of their high economic value, sea turtle eggs are a strategic asset which local elites, both in the government and private sector (*ponggawa*), are not prepared to relinquish. In addition, they view the sea turtle eggs collection as their historically established right. These differences in economic interests and ontologies of knowledge result in contested interpretations of what marine conservation should be and what place within it, if any, the sea turtle protection should have.

Chapter four explores the interaction of three environment regulatory networks in the context of formation of the standards for better management practices (BMPs) for shrimp aquaculture in the Sesayap Delta. This chapter examines how in the

process of developing such standards, the state and NGOs networks have systematically ignored the local political-economic elites (*ponggawa*) who control the artisanal trade networks and their activities on the ground. Both the State and NGOs see *ponggawa* as a target rather than a partner to develop, monitor and implement the BMP standards. Local actors are evidently not merely subjects to or passive recipients of interventions by the global environmental and State-led regulatory networks. Instead, they are important actors by themselves who control not only the vertical flow of commodity and finance, but also influence the conditions of production and trade. In the process of standardization and certification of production, it is therefore critical to include these local actors in the networks for standardization. Shrimp farmers in East Kalimantan are part of the global trade system through their linkages to national and artisanal regulatory networks as they are embedded in interdependency relationships with powerful pond owners and/or middlemen-traders (*ponggawa*). Therefore, patron-client ties within the artisanal trade networks are key to understand how to better regulate the production and trade through the shrimp value chain.

Chapter five explores the interaction of different ontologies of knowledge in the development of BMPs for shrimp aquaculture initiated by WWF-Indonesia. In general these standards are intended to reduce the negative environmental impact of shrimp production activities in the coastal regions. These standards are developed trough multi-stakeholder process that brings together different actors involved in the global trade networks and their knowledge. BMP standards for shrimp aquaculture are rather loosely formulated to allow space for adjustment to specific local contexts. Through the process of co-production in seeking to develop these standards in East Kalimantan, WWF-Indonesia created the opportunity for local participation. The expected result was hybrid conservation knowledge co-produced by WWF-Indonesia and local stakeholders that would be acceptable to all. In practice, however, the standards developed for the Sesayap Delta in East Kalimantan were still dominated by

demands for environmental sustainability in shrimp farming practices based on the global scientific knowledge, and left little room for local perspectives. Interestingly, this case shows that formulation of BMP standards is more than just about negotiation and inclusion of the local technical aspects of shrimp production and trade. It also perpetuates the social-political relations of production and environmental control and degradation.

Chapter six synthesizes this thesis by bringing together the findings from the empirical chapters. A major finding here is that in the process of collaboration and network formation the global environmental NGOs tend to ignore the multiple patron-client relationships that characterize the networks of local elites in governing the coastal resources. Moreover, decentralization grants the local elites' networks more power to decide upon the management of their natural resources. This inevitably affects the process of translation and negotiation of the global environmental knowledge in the process of knowledge co-production with the local actors. This research contributes to existing literature on global-local interaction, particularly the translation, negotiation and co-production of knowledge in the context of conservation initiatives when they are embedded into decentralized local political-economic context.

This thesis offers policy recommendations to improve the coastal governance, paying particular attention to creating enabling conditions for effective involvement of multi-level actors such as global environmental NGOs, district government agencies, and local political-economic leaders (*ponggawa*). First, the global actors need to change the way they approach and engage the local elites to better understand their diversity and find appropriate ways to accommodate their social, political, and economic interest. Second, the global actors need to provide space and time for local and global knowledge to engage in debate and negotiation to find more effective ways towards sustainable resource governance. Finally, the local political-economic leaders need to be more open and receptive to the opportunities for interaction with the global

actors. This may not only result in better solutions for coastal resource governance, but may also be financially viable.

For the future research agenda, it is important in my view to look more closely into the question of decentralization. How does this link up with the theme of local political ecology networks? What is the role and space for NGOs to step into this political mix and what are the best ways to devise steps towards better natural resource governance? Further, more research is needed to go beyond the descriptiveness local political ecology and delve into the specifics of what pragmatic steps can be taken to advance better natural resource governance.

Ringkasan

Sumberdaya pesisir dan laut merupakan sumber mata pencaharian utama dan mewarnai kegiatan ekonomi masyarakat pesisir. Pengelolaan sumberdaya pesisir dan laut juga telah menjadi salah satu perhatian dunia baik oleh mereka yang ingin mengeksplorasi dan mengeksploitasi maupun oleh mereka yang mempermasalahkan peningkatan kerusakan lingkungan yang terjadi di wilayah pesisir.

Penerapan desentralisasi di Indonesia membuka kesempatan bagi perbaikan tata kelola sumberdaya pesisir oleh pemerintah daerah. Desentralisasi memberikan kesempatan pada pemerintah daerah untuk merencanakan kebijakan penglolaan kawasan pesisir yang lebih bisa menjawab kebutuhan masyarakat lokal. Namun, di saat yang sama, dengan dalih peningkatan pendapatan asli daerah (PAD), desentralisasi memberikan kesempatan bagi pemerintah daerah untuk mengadopsi kepentingan para elit ekonomi lokal daripada mengadopsi kepentingan masyarakat secara luas. Sedangkan bagi pemerintah pusat sendiri, perbaikan tata kelola sumber daya pesisir belum menjadi perhatian utama sehingga pemerintah pusat dianggap kurang tanggap dalam menanggulangi kerusakan lingkungan yang terjadi di wilayah pesisir.

Lembaga Swadaya Masyarakat tingkat international (LSM internasional) yang bergerak di bidang lingkungan melihat hal ini sebagai suatu kesempatan untuk melakukan intervensi terhadap kegiatan pengelolaan kawasan pesisir di tingkat daerah. LSM internasional menjalin kerja sama langsung dengan pemerintah daerah untuk meningkatkan pengelolaan kawasan pesisir. LSM internasional seperti The Nature Conservancy (TNC) dan World Wide Fund for nature (WWF) memelopori kegiatan konservasi dengan mengenalkan dan merencanakan berbagai kegiatan konservasi di berbagai wilayah di Indonesia. TNC dan WWF membangun jejaring dengan aktor lokal

sebagai salah satu cara untuk memasukkan konsep pengetahuan global tentang konservasi ke dalam konsep ekonomi-politik masyarakat dan pemerintah lokal.

Penelitian ini dilakukan untuk melihat hubungan antara aktor lokal dan aktor global dalam proses tata kelola pemanfaatan sumberdaya alam pesisir di wilayah Kalimantan Timur. Melalui deskripsi dan analisis dua studi kasus, tesis ini menjabarkan proses tatap muka antara aktor global dan pengetahuan global mereka dengan aktor lokal dan pengetahuan lokal ketika aktor global berusaha untuk mengintervensi proses tata kelola pemanfaatan sumber daya alam pesisir di tingkat lokal.

Secara umum, tesis ini bertujuan untuk mendeskripsikan dan menganalisa dinamika-dinamika sosial yang terjadi ketika aktor dan pengetahuan global bertatapmuka dengan aktor dan pengetahuan lokal dalam proses penatakelolaan sumberdaya pesisir lewat kegiatan konservasi di masa desentralisasi di Indonesia. Di dalam tesis ini saya akan memaparkan dua studi kasus tentang kegiatan konservasi yang dilakukan oleh jejaring LSM yang bergerak di bidang lingkungan. LSM tersebut berkolaborasi dengan aktor dan jejaring lokal. Studi kasus yang pertama menjelaskan tentang pengembangan dan penerapan Kawasan Konservasi Laut Daerah Berau (KKLD Berau) yang di kembangkan berdasarkan pada konsep ilmiah sebuah kawasan konservasi. Studi kasus kedua membahas tentang pengembangan konsep budidaya udang yang baik di Delta Sesayap (Tarakan dan Bulungan) di pesisir utara Kalimantan Timur. Di dalam kedua studi kasus ini pendekatan etnografi multi-lokal dan multi-level digunakan dalam proses pengumpulan data utama dan kegiatan observasi di lapangan.

Tesis ini mendeskripsikan tentang proses interaksi antara aktor global dan aktor lokal. Proses interaksi ini terjadi ketika setiap aktor yang terlibat di dalam proses pengembangan kegiatan konservasi tesebut menilai dan memaknai konservasi sesuai dengan pengetahuan yang mereka miliki. Interaksi ini tidak saja berakhir pada kegiatan kolaborasi antara aktor global dengan aktor lokal, namun juga melahirkan friksi dan pertentangan yang berakar pada

nilai sejarah budaya, sosial ekonomi dan politik antara aktor global dan aktor lokal. Di dalam tesis ini, saya juga mendeskripsikan perbedaan ontologi antara pengetahuan global dan pengetahuan lokal yang berkaitan dengan pengelolaan lingkungan yang dibawa oleh masing-masing aktor. Tesis ini memperkaya literatur yang mengulas tentang dinamika tatap muka antara global dan lokal karena di dalam tesis ini dipaparkan secara mendetil tentang proses tatap muka antara global dan lokal dan menjelaskan mengapa jejaring LSM lingkungan global seringkali dipahami secara salah dan bahkan gagal dalam usaha mereka untuk menerapkan aturan-aturan atau standard dalam pengelolaan sumberdaya pesisir yang berkelanjutan. Pengamatan yang dilakukan dalam penelitian ini menggabungkan pendekatan ekologi-politik untuk analisa konteks, dan antropologi lingkungan untuk detil entografis interaksi antara global dan lokal (Tsing 2005).

Dalam Bab Kedua, saya memaparkan sejarah perkembangan KKLD Berau antara tahun 2005 hingga tahun 2010. Bab ini menganalisa tentang proses kolaborasi antara Pemerintah Daerah Kabupaten Berau dengan TNC/WWF dalam mengembangkan dan menerapkan KKLD Berau. TNC/WWF sebagai LSM lingkungan internasional beranggapan bahwa pendekatan pengelolaan kawasan konservasi yang sedang dilakukan sekarang merupakan warisan lama yang bersifat *top-down*. TNC/WWF mengklaim bahwa mereka telah banyak mengembangkan kawasan konservasi dengan pendekatan baru melalui kolaborasi dengan pemerintah daerah. Namun, meskipun konsep baru ini telah direncanakan dengan baik, kolaborasi langsung dengan pemerintah daerah ini belum bisa menghasilkan satu pemahaman yang sama tentang kebutuhan akan pengelolaan kawasan konservasi di suatu kawasan pesisir. Dalam rangka pengembangan KKLD Berau, TNC dan WWF membetuk *Joint Program* sebagai sebuah institusi kolaboratif yang mewadahi berbagai kepentingan berbeda antara pemerintah daerah dan LSM. Namun, dalam usahanya tersebut, TNC dan WWF menghadapi berbagai kerumitan yang ditimbulkan oleh perbedaan kepentingan dan motivasi dari para aktor

yang terlibat dalam proses pengembangan dan pengelolaan KKLD Berau. Untuk menyederhanakan kerumitan tata kelola kawasan pesisir ini, TNC dan WWF mengambil alih kewenangan dan tanggung jawab pemerintah daerah untuk mengawasi dan mengontrol pemanfaatan sumber daya alam pesisir. Hasil temuan penelitian ini memperlihatkan bahwa bentuk tata kelola yang bersifat re-sentralisasi ini tidak saja mencerminkan sebuah *'legal disconnect'* (Patlis 2008), namun juga memperlihatkan bahwa konsep tata kelola kawasan pesisir yang ditawarkan oleh TNC dan WWF ini juga terputus dari kondisi sosial, sejarah dan politik ekonomi masyarakat lokal. Hal ini mengakibatkan meningkatkan kebingungan dan menimbulkan ketegangan diantara para aktor yang terlibat dalam mendfiniskan, mengatur dan mengawasai kawasan konservasi laut.

Penelitian tentang penerapan KKLD Berau menjelaskan tentang sebuah kondisi dimana kolaborasi yang direncanakan dengan baik di dalam jejaring aktor global dan lokal berubah menjadi sebuah medan pertempuran persepsi dan sistem pengetahuan tentang lingkungan diantara para aktor. Saya memaparkan hal ini dengan lebih mendalam di Bab Tiga. Bab ini juga akan menjelaskan bagaimana pengetahuan global tentang penerapan konservasi tidak sejalan dengan realitas yang ada di masyarakat lokal dan bahwa pengetahuan global tersebut berlawanan dengan pengetahuan yang dimiliki oleh aktor lokal yang berdasarkan pada praktek historis lokal dan pengalaman sosial budaya mereka. Yang menarik adalah bahwa, meskipun KKLD telah diterapkan di Berau, pemerintah daerah tetap mendukung sistem lelang hak pengelolaan pulau penghasil telur penyu (konsesi) yang memang telah dijalankan sejak jaman nenek moyang mereka. Lelang hak pengelolaan pulau penghasil telur penyu ini menjadi salah satu sumber pemasukan daerah yang cukup penting. Karena nilai ekonominya yang tinggi, telur penyu menjadi sebuah aset strategis bagi para elit lokal, baik mereka yang berada di pemerintahan maupun mereka yang di sektor swasta (ponggawa). Hal ini membuat mereka enggan melepaskan sistem pengelolaan pulau-pulau

penghasil telur penyu yang telah mereka kenal dan kerjakan sejak jaman nenek moyang mereka. Berbagai perbedaan yang berakar pada kepentingan ekonomi dan ontologi pengetahuan menyebabkan perbedaan interpretasi bagaimana pengelolaan sebuah kawasan konservasi laut dan bagaimana pengelolaan perlindungan penyu dilakukan.

Dalam Bab Empat, saya menjelaskan tentang interaksi tiga jejaring peraturan tentang lingkungan dalam konteks penyusunan cara bertambak udang yang baik – *Better Management Practices* (BMPs) untuk tambak udang di wilayah Delta Sesayap. Bab ini membahas tentang bagaimana jejaring yang diinisiasi oleh pemerintah pusat dan jejaring yang diinisiasi oleh LSM telah secara sistematis mengesampingkan peran ekonomi-politik ponggawa yang mengontrol jejaring perdagangan yang ada di dalam sistem sosial ekonomi masyarakat lokal. Baik pemerintah pusat dan LSM melihat ponggawa sebagai target dalam proses penyusunan, pengawasan dan implementasi standard BMPs daripada sebagai mitra dalam kegiatan-kegiatan tersebut. Bab ini memberikan gambaran bahwa aktor lokal bukan hanya merupakan subjek atau penerima pasif sebuah intervensi aturan lingkungan yang dilakukan oleh global maupun oleh pemerintah pusat. Aktor lokal memiliki peran penting, bukan saja dalam mengontrol aliran vertikal suatu komoditi dan keuangan, namun juga berperan penting dalam mempengaruhi kondisi kegiatan produksi dan perdagangan. Sehingga sangatlah penting untuk melibatkan aktor lokal sebagai salah satu aktor penting dalam jejaring aktor dalam proses penyusunan sebuah standard dan sertifikasi sebuah produk. Di Kalimantan Timur, keterikatan petambak udang secara ekonomi dan sosial dengan ponggawa tidak bisa dilepaskan dari sistem perdagangan global dalam rantai komoditi. Oleh karenanya, hubungan *patron-client* yang berada dalam jejaring perdagangan di tingkat lokal merupakan kunci untuk memahami bagaimana cara untuk mengatur kegiatan produksi dan perdagangan udang lewat rantai komoditi udang.

Di dalam Bab Lima, saya memaparkan tentang interaksi berbagai ontologi pengetahuan yang berbeda dalam proses penyusunan BMPs tambak

udang yang diinisiasi oleh WWF-Indonesia. Secara umum, standard ditujukan untuk mengurangi dampak negatif dari kegiatan bertambak udang di wilayah pesisir. Standard ini disusun lewat beberapa proses diskusi yang melibatkan berbagai pemangku kepentingan yang terlibat dalam jejaring perdagangan global dengan berbagai pengetahuan mereka yang berbeda. Melalui proses *co-production*, WWF-Indonesia memberikan kesempatan kepada para pemangku kepentingan lokal untuk terlibat langsung dalam proses penyusunan BMPs. Proses ini bertujuan untuk menghasilkan BMPs yang bisa mengakomodasi kepentingan dan kondisi lingkungan dan sosial lokal. diharapkan nantinya, BMPs yang tersusun akan sesuai untuk diterapkan di wilayah Delta Sesayap. WWF-Indonesia mengharapkan melalui proses ini akan dihasilkan suatu pengetahuan yang merupakan hasil gabungan antara pengetahuan yang dimiliki oleh WWF-Indonesia dan pengetahuan yang dimiliki oleh para pemangku kepentingan lokal sehingga bisa diterima dan diterapkan oleh semua aktor. Namun, pada kenyataannya, standard yang disusun untuk wilayah Delta Sesayap masih didominasi dengan tuntutan atas pengelolaan lingkungan yang berkelanjutan dalam proses produksi udang yang didasarkan pada pengetahuan ilmiah global. Yang menarik dari kasus ini adalah bahwa proses penyusunan standard BMPs bukan saja menggambarkan suatu proses negosiasi dan cara-cara untuk memasukkan aspek teknis lokal dari sebuah proses produksi dan perdagangan udang ke dalam sebuah standard yang bersifat global. Proses penyusunan standard ini juga mengungkapkan hubungan suatu kondisi sosial-politik masyarakat lokal dalam sebuah proses produksi dan kontrol terhadap lingkungan.

Bab keenam merangkum tesis ini dengan memaparkan temuan-temuan dari bab-bab sebelumnya. Temuan utama tesis ini adalah bahwa dalam sebuah proses kolaborasi dan pembentukan jejaring, LSM lingkungan internasional memiliki kecenderungan untuk mengesampingkan hubungan *patron-client* yang beragam yang dimiliki oleh jejaring elit lokal dalam kegiatan tata kelola wilayah pesisir. Terlebih lagi, penerapan desentralisasi memberikan

kewenangan lebih kepada jejaring elit lokal dalam memutuskan pengelolaan sumber daya alam di tingkat lokal. Tidak bisa dihindari bahwa hal ini mempengaruhi proses penerjemahan dan negosiasi pengetahuan lingkungan global dalam proses *co-production* pengetahuan antara aktor global dan aktor lokal. Penelitian ini memberikan kontribusi pada penelitian sejenis tentang interaksi antara global dan lokal, terutama dalam hal bagaimana para aktor menerjemahkan, bernegosiasi, dan terlibat dalam proses *co-production* pengetahuan dalam konteks pemrakarsaan kegiataan konservasi lingkungan di dalam era desentralisasi.

Beberapa rekomendasi dari tesis ini diharapkan bisa memberikan sumbangan bagi peningkatan tata kelola kawasan pesisir, terutama untuk lebih mengefektifkan keterlibatan aktor – baik itu LSM lingkungan internasional dan nasional, pemerintah daerah dan juga pemimpin elit lokal (ponggawa). Rekomendasi yang pertama adalah bahwa aktor global perlu mengubah pendekatan dan cara yang mereka gunakan dalam mengikutsertakan elit lokal dalam program-program kerja mereka sehingga diharapkan nantinya akan bisa ditemukan cara-cara yang tepat untuk mengakomodasi kepentingan-kepentingan sosial, politis dan ekonomi elit lokal. Rekomendasi yang kedua adalah bahwa aktor global perlu menyediakan ruang dan waktu yang lebih untuk memberi kesempatan bagi proses interaksi antara pengetahuan lokal dan global. Diharapkan nantinya akan bisa ditemukan cara-cara yang lebih efektif dalam pengelolaan sumberdaya alam yang berkelanjutan. Rekomendasi yang terakhir ditujukan bagi pemerintah daerah dan elit lokal supaya mereka bisa lebih terbuka terhadap kesempatan-kesempatan untuk berinteraksi dengan aktor global. Sehingga nantinya, akan bisa ditemukan solusi-solusi untuk peningkatan tata kelola kawasan pesisir yang lebih baik dan berkelanjutan.

Pelaksanaan desentralisasi di Indonesia perlu dikaji lebih lanjut, terutama yang berkaitan dengan jejaring ekologi politik masyarakat lokal. Apa saja peran dan kesempatan bagi LSM untuk masuk ke dalam kancah politik lokal? Bagaimana renca-rencana yang disusun oleh LSM untuk memperbaiki

tata kelola sumberdaya alam? Lebih jauh lagi, perlu penelitian lebih lanjut untuk membahas lebih lanjut ekologi politik lokal untuk menggali lebih dalam langkah-langkah pragmatis dalam meningkatkan tata kelola sumberdaya alam yang berkelanjutan.

About the author

Rini Kusumawati was born on June 12th, 1977 and grew up in Probolinggo, East Java, Indonesia. She completed her bachelor degree in Education with specialization in French from the State University of Yogyakarta in 2000. Between 2000 and 2005, she worked as a Bahasa Indonesia teacher for foreigners. In this period she also carried out her first consultancy assignment for the Center for International Forestry Research (CIFOR), Bogor. In 2006, she obtained a master degree from Gadjah Mada University in the field of Sociology, with a specialization in Development Studies.

In March 2007, she enrolled in the PhD program in Rural Development Sociology at Wageningen University as a member of INREF-RESCOPAR project entitled *Rebuilding resilience of coastal populations and aquatic resources: habitats, biodiversity and sustainable use options*. Her PhD thesis entitled *Networks and knowledge at the interface: governing the coast of East Kalimantan, Indonesia* belongs to the theme of *Governance arrangements facilitating change in aquatic natural resource use* under RESCOPAR programme supervised by Prof. Dr. Leontine E. Visser and Dr. Simon R. Bush.

Rini Kusumawati
Wageningen School of Social Sciences (WASS)
Completed Training and Supervision Plan

Wageningen School of Social Sciences

Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
RDS advanced research seminars	WUR	2007, 2010, 2011	2
RESCOPAR research seminars and workshops	RESCOPAR	2007, 2009, 2010, 2011	4
MARE Conference IV (participant)	WUR/UvA	2007	1
Competencies for integrated agricultural research	CERES	2007	1
Governance, Livelihood and Resourcess (RDS 30806)	WUR	2011	6
B) General research related competences			
Introduction course	WASS		
CERES Orientation program	CERES	2007	5
CERES Presentation Tutorials	CERES	2007	5.5
Technique for Writing and Presenting a Scientific Paper	WGS	2010	1.2
FNP Summer School 'Participatory forest management as practice and performance'	WASS	2011	3
C) Career related competences/personal development			
'The politics of marine conservation area in Berau'	International MARE Conference V	2009	2
'Shrimp farming and the conservation networks'	International Coastal Zone Aquaculture, RESCOPAR, Can Tho	2010	2
The governance of shrimp production and trade: case study on shrimp farming and trade in Tarakan, East Kalimantan, Indonesia'	IIFET 2010 Montpellier	2010	2
'Collaboration or contention: disentangling the dynamics of social actors in the Berau Marine Protected Area, Indonesia'	International Seminar on 3rd Southeast Asia Update, Leiden University	2011	1
'Shrimp farming and strandardization of production: the case of East Kalimantan'	International MARE Conference VI	2011	2
Total			37.7

*One credit according to ECTS is on average equivalent to 28 hours of study load