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**Environmental governance and
resource tenure in times of change:
Experience from Indonesia**

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Summary

For much of the 20th century the dominant approach globally towards protecting natural spaces and ecosystems was heavily state centred and based on exclusion through, for example, the establishment of protected areas. This tended to be coupled with approaches to natural resource management more generally which were top-down and based on centralized control. In the 1980s, criticism of such exclusionary and state-centric approaches started to gain momentum, especially in relation to multi-use landscapes in developing countries. In response, alternative concepts of environmental governance emerged, which paid more attention to not only conservation aims, but also the concerns of rural development. Such approaches included integrated conservation and development projects and community-based natural resource management initiatives.

Over time the track record of these types of initiatives proved to be mixed, with results not always meeting expectations. By the early 2000s, in an environment increasingly open to market-like approaches towards natural resource management, payments for environmental services (PES) mechanisms emerged as a new addition to the portfolio of conservation- and development-related governance mechanisms. PES was hailed as a way of generating new funding sources for conservation and improving implementation efficiency.

This dissertation examines change and complexity in evolving systems of environmental governance in Indonesia, and explores interactions with resource tenure. The aim is to better understand how and why different actors have negotiated and contested resource tenure under conditions of changing environmental governance. In doing this, the dissertation elaborates a notion of dynamic hybridity in environmental governance and resource tenure systems.

The dissertation draws on three empirical case studies and focuses mainly on the transitional period from the end of the New Order regime (late 1990s) through to 2015. Analytically the cases rested at the meso-level intersection of interactions between local resource users, the state and other external actors. The cases were geographically dispersed and loosely categorized as falling into the ideal states of a state-led management, community-based management, and PES. They explored both unplanned shifts in environmental governance and land tenure and those that were deliberately planned and implemented through targeted programs.

The findings show how different analytical and theoretical perspectives – for example, a more nuanced focus on trust between actors, considering ideational changes and representations as captured in the changing values of resources, and the “bundle of rights” approach to understanding property rights – can explicitly encourage a temporal (dynamic) perspective in analysing changes to resource tenure specifically, and environmental governance more generally. This is then overlaid on the concept of hybrid governance

regimes which are those comprised of different and changing constellations of community, state and market social mechanisms.

The dynamic hybridity of each of the three cases is highlighted – systems change over time and move along continuums between the different social mechanisms of community, state and market. While the ideal type labels are widely used and have some utility, there is nevertheless the risk that they can mask more complex realities. For this reason it seems prudent to exercise caution when drawing firm lines between them.

Ringkasan

Hampir sepanjang kurun waktu abad ke-20, pendekatan global untuk melindungi kawasan alami dan ekosistem secara dominan terfokus pada pendekatan negara yang didasarkan pada “exclusion” (pengeluaran), misalnya melalui pembentukan kawasan lindung. Pendekatan ini biasanya berkaitan erat dengan pola manajemen sumber daya alam yang secara umum bersifat top-down dan sentralistik. Pada tahun 1980an, kritik terhadap pendekatan “exclusion” yang terpusat pada negara mulai memperoleh momentum, khususnya dikaitkan dengan penggunaan lanskap multi-guna di negara-negara berkembang. Sebagai respon kemudian muncul berbagai konsep alternatif tata kelola lingkungan, yang tidak hanya memerhatikan tujuan konservasi, tetapi juga masalah pembangunan pedesaan. Termasuk dalam pendekatan ini antara lain proyek-proyek pembangunan dan konservasi terpadu serta inisiatif pengelolaan sumber daya alam berbasis masyarakat.

Seiring dengan berjalannya waktu, tingkat keberhasilan inisiatif-inisiatif seperti ini terbukti beragam, dengan hasil yang tidak selalu memenuhi harapan. Pada awal tahun 2000an, sejalan dengan semakin diterimanya pendekatan pasar untuk manajemen sumber daya alam, mekanisme pembayaran jasa lingkungan (*payments for environmental services/PES*) muncul sebagai tambahan baru dalam portofolio mekanisme tata kelola konservasi dan pembangunan. PES disambut sebagai cara untuk menghasilkan sumber pendanaan baru bagi konservasi dan peningkatan efisiensi pelaksanaan.

Disertasi ini meneliti perubahan dan kompleksitas sistem-sistem tata kelola lingkungan yang sedang berkembang di Indonesia, serta menggali interaksinya dengan pola penguasaan sumber daya (*tenure*). Tujuan disertasi ini antara lain untuk lebih memahami mengapa dan bagaimana berbagai aktor menegosiasikan dan memperjuangkan penguasaan sumber daya dalam kondisi tata kelola lingkungan yang berubah. Dalam pelaksanaannya, disertasi ini mengembangkan konsep hibriditas dinamis (*dynamic hybridity*) dalam sistem tata kelola lingkungan dan penguasaan sumber daya.

Disertasi ini menggunakan tiga studi kasus empiris dengan fokus utama pada periode transisi sejak akhir rezim Orde Baru (akhir 1990an) hingga 2015. Secara analitis, ketiga kasus ini berada di titik temu tingkat menengah (*meso level*) berbagai interaksi antara pengguna sumberdaya lokal, negara dan aktor eksternal lainnya. Ketiga kasus ini tersebar secara geografis dan secara longgar dikategorikan dalam tiga kondisi ideal tata kelola, antara lain yang dipimpin negara, yang berbasis komunitas, dan PES. Studi kasus ini menggali perubahan-perubahan tata kelola lingkungan dan kepemilikan lahan, baik yang tidak direncanakan maupun yang direncanakan dan dilaksanakan melalui sejumlah program bertarget.

Hasil temuan menunjukkan bagaimana berbagai perspektif analitis dan teoretis – misalnya, fokus yang lebih bernuansa pada tingkat saling percaya antara para aktor, dengan mempertimbangkan perubahan ide dan representasi sebagaimana terekam dalam

perubahan nilai sumber daya, dan pendekatan “sekumpulan hak (*bundle of rights*)” untuk memahami hak kepemilikan – secara eksplisit dapat mendorong perspektif temporal (dinamis), khususnya dalam menganalisa perubahan penguasaan sumber daya, dan secara umum pada tata kelola lingkungan. Hal ini selanjutnya melengkapi konsep rezim tata kelola hibrida yang terdiri dari konstelasi yang berbeda-beda dan berubah antara mekanisme sosial masyarakat, negara, dan pasar.

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Acronyms and abbreviations

ADB:	Asian Development Bank
ASEAN:	Association of Southeast Asian Nations
BAPEDALDA:	Environmental Impact Management Board (<i>Pengendalian Dampak Lingkungan Hidup</i>)
BAPPEDA:	District Planning Board (<i>Badan Perencanaan Pembangunan Daerah</i>)
BAPPENAS:	National Development Planning Board (<i>Badan Perencanaan Pembangunan Nasional</i>)
BPKSA:	Segara Anakan Planning and Management Agency (<i>Badan Pengelola Kawasan Segara Anakan</i>)
BRN:	National Reconstruction Bureau (<i>Biro Rekonstruksi Nasional</i>)
CBNRM:	Community-based natural resource management
COMMITTEES:	Community of Interest to Empower Environmental Services for Sustainable Development and Better Quality of Life
CSR:	Corporate Social Responsibility
DANIDA:	Danish Development Cooperation
DFID:	Department for International Development (United Kingdom)
EPWS:	Equitable Payments for Watershed Services
FKKM:	Communication Forum on People's Forestry (<i>Forum Komunikasi Kehutanan Masyarakat</i>)
GNHRL:	National Movement for Forest and Land Rehabilitation (<i>Gerakan Nasional Rehabilitasi Hutan dan Lahan</i>)
HKm:	Community Forestry (<i>Hutan Kemasyarakatan</i>)
ICLARM:	International Center for Living Aquatic Resources Management
ICRAF:	World Agroforestry Centre
IFAD:	International Fund for Agricultural Development
IHSA:	Natural Resources Law Institute (<i>Institut Hukum Sumberdaya Alam</i>)
IIED:	International Institute for Environment and Development
LMDH:	Forest Village Community Organization (<i>Lembaga Masyarakat Desa Hutan</i>)
LP3ES:	Institute for Social and Economic Research, Education and Information (<i>Lembaga Penelitian Pendidikan Penerapan Ekonomi dan Sosial</i>)
MoF:	Ministry of Forestry
NGO:	Non-governmental organization
PDAM:	District water company (<i>Perusahaan Daerah Air Minum</i>)
PES:	Payments for Environmental Services
PHBM:	Joint Community Forest Management System (<i>Pengelolaan Hutan Bersama Masyarakat</i>)
PJT1:	Brantas River Basin Operator (<i>Perusahaan Umum Jasa Tirta 1</i>)
PLN:	State electricity company (<i>Perusahaan Listrik Negara</i>)
PWS:	Payments for Watershed Services

REDD+:	Reducing Emissions from Deforestation and Forest Degradation including the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
RUPES:	Rewards for, use of, and shared investment in pro-poor environmental services
SACDP:	Segara Anakan Conservation and Development Project
SAEMOP:	Segara Anakan Environmental Monitoring and Optimal Use Planning
SAL:	Segara Anakan Lagoon
SeTAM:	<i>Serikat Tani Merdeka</i>
SPPT:	Letter showing proof of payment of land tax (<i>Surat Pemberitahuan Pajak Terhutang</i>)
TGHK:	Consensus-Based Forest Use Planning (<i>Tata Guna Hutan Kesepakatan</i>)
USAID:	United States Agency for International Development
Waremtahu:	Forum of forest farmers in West Lampung (<i>Wadah Rembuk Petani Hutan</i>)
WWF:	World Wide Fund for Nature
YaCili	<i>Yayasan Cinta Lingkungan</i>
YPP:	Rural Development Foundation (<i>Yayasan Pengembangan Pedesaan</i>)
YSBS:	<i>Yayasan Sosial Bina Sejahtera Cilacap</i>

1. Introduction

For much of the 20th century the dominant approach globally towards protecting natural spaces and ecosystems was heavily state centred and based on exclusion through, for example, the establishment of protected areas. This tended to be coupled with approaches to natural resource management more generally which were also top-down, based on calls for “more elaborate and thoroughgoing centralized control” (Lemos & Agrawal, 2006, p. 302). In the 1980s, criticism of such exclusionary and state-centric approaches started to gain momentum, especially in relation to multi-use landscapes in developing countries. In response, alternative concepts of environmental governance emerged, which paid more attention to not only conservation aims, but also the concerns of rural development. Such approaches included integrated conservation and development projects and community-based natural resource management initiatives (Berkes, 2004; Blaikie, 2006; Swallow et al., 2009).

Over time the track record of these types of initiatives proved to be mixed (Berkes, 2004; Wells & Brandon, 1992), although the main principles embedded in them continue to shape conservation and development discourse and action. By the early 2000s, in an environment increasingly open to market-like approaches towards natural resource management (McAfee, 1999), payments for environmental services (PES) mechanisms emerged as a new addition to the portfolio of conservation- and development-related governance mechanisms. PES was hailed as a way of generating new funding sources for conservation (Ferraro, 2001; Ferraro & Kiss, 2002) and improving implementation efficiency (Engel et al., 2008; Van Hecken & Bastiaensen, 2010). However, as PES theory met reality on the ground, these claims too have been challenged (Muradian et al., 2013) and alternate conceptualizations of PES proposed (Muradian & Rival, 2012; van Noordwijk & Leimona, 2010).

These developments in environmental governance have not been linear, and rarely has implementation unfolded as the idealized types referred to above might indicate. Rather,

the situation on the ground is complicated, and conceptual lines are blurred. Nevertheless, these changes do represent attempts to realign the relationship between the state and its citizens, with associated implications for resource tenure and forms of actor engagement.

Indonesia has been no stranger to these trends in environmental governance. However, it was only after the fall of the Soeharto-led New Order regime in 1998 that space opened for major transformations in state-society relationships with respect to natural resources, allowing for a move away from a system based on pervasive and oppressive central control. The post-Soeharto reform era was marked by a rapid and messy process of decentralization and subsequent partial recentralization, with profound implication for the management of natural resources, and in particular for Indonesia's official forest estate, which covers the bulk of the country's land mass (Barr et al., 2006).

During the early days of the reform period, the Ministry of Forestry "adjusted (at least on paper) its new development vision in favour of people-oriented forestry, democratic forest access, and more just distribution of forest generated benefits" (Lindayati, 2003b, p. 246). In 1999 a new forestry law was issued which aimed at responding to high levels of frustration across different levels of society at inequities in forest resource access. As part of this, the state's approach to community-based forestry was overhauled. This then opened the possibility for new forms of interactions between local forest users and forest officials, coupled with shifts in property rights, an opportunity that was seized upon in some areas of the country.

In the mid-2000s, at the same time as new coalitions and networks were being formed in relation to local-level forest management, other attempts at reconfiguring approaches to environmental governance started to emerge in Indonesia. Paralleling developments globally, pilot PES initiatives were established focusing both on watershed services and

REDD+.¹ These projects differed in a number of ways, but at a basic rhetorical level they shared the characteristic of positioning environmental services front and centre as an item of exchange. This then became another way of configuring property rights, whether the final environmental service was reducing sediment input to a hydroelectric plant, or focused on protecting carbon stores and increasing sequestration capacity in a peatland forest.

This chapter continues by first introducing the overall objectives of the research before discussing some of the key conceptual perspectives that are used in the dissertation and contextual factors which shape the research, particularly in relation to environmental governance and property rights and resource tenure. This is followed by an outline of the structure of the dissertation.

1.1 Research objectives

The current research explores themes of change and complexity related to the management of natural resources. Environmental governance systems are dynamic, changing over time in response to a myriad of political, socio-economic, environmental, and technological drivers. Sometimes change is dramatic, sometimes it is gradual; sometimes it is based on contestation, sometimes on negotiation. With respect to natural resources, changes in governance can lead to changes in the way that property rights are represented and asserted by different actors through different resource tenure systems. In an inverse relationship, demands for rights or incremental changes in local de facto access over time can also serve to precipitate changes to overall governance systems.

It is this relationship between environmental governance and resource tenure that is the focus of the current research. The central research question is: How and why have different actors negotiated and contested resource tenure and access and how has this impacted on or been impacted by changes in environmental governance? With this question the research

¹ Reducing Emissions from Deforestation and Forest Degradation including the roles of conservation, sustainable management of forests and enhancement of forest carbon stocks.

explores how social relations, as embodied in property rights, are co-constituted with changes in environmental governance. In line with this, the dissertation will explore the changing constellation of actors and power relations involved in shaping three different resource management systems in Indonesia in a period of transition. It will also look at the different discourses employed by actors and how they defined problems and proposed solutions.

The research largely focuses on the period from the latter part of the New Order regime (1990s) through to the time of field research (2012-2015). The systems explored are rather geographically dispersed (on the islands of Indonesian Borneo, Sumatra and Java). While they can be loosely labelled using the ideal analytical types of state-led management, community-based management and market-based, these categorizations soon start to blur under closer scrutiny and the picture that emerges at the other end is one of dynamic hybridity.

1.2 Conceptual perspectives

This section introduces the general conceptual perspectives that will flow through the chapters which follow. It aims to shed light on some of the challenges and tensions inherent in trying to understand systems of environmental governance and resource tenure and looking at how they transform over time. These concepts will be revisited, expanded and discussed further within the context of the empirical findings. The aim here is not to present details of all the concepts that are of relevance to this dissertation. Theoretical discussions of specific relevance to the individual cases, for example community-based natural resource management and PES, will be elaborated upon in the relevant empirical chapters.

The section begins with a consideration of general concepts of environmental governance and a discussion of the decentralization process in Indonesia. It then considers how different threads of academic work and development discourse have approached issues of natural resource management regimes and property rights and resource access. This is intended to

help position the research theoretically. It considers the risks of using simplified categorizations as a basis for analysis and policy development and sets the stage for the broader and more nuanced analytical perspective that is used in this dissertation. Woven into these discussions are preliminary comments on the environmental governance and resource tenure context in Indonesia. Again, the intention here is not to provide comprehensive information, but rather, to set a common base which can be used as a foundation for more specific elaboration in later chapters.

1.2.1 Environmental governance within a decentralized context

This section begins by examining different perspectives on environmental governance, and why the concept has gained such traction in recent decades. This is followed by a concrete example of changing environmental governance, that of decentralization in Indonesia. This is a theme which permeates any discussion of natural resource management in the country and is therefore of relevance to each of the three cases which are the focus of this dissertation.

New approaches and hybridity

In recent decades the term “governance” has increasingly been used to capture a broadened understanding of how social systems are steered, with a move away from solely government actors to a system including a broader range of actors (Arts & Leroy, 2006; Høgl et al., 2012; Kooiman, 2003; Torfing et al., 2012). A key point here is that of change. Arts and Leroy (2006) note that according to the governance literature, “to put it bluntly, the old paradigm of top-down, state-led, command and control ways of steering” is no longer sufficient (p. 33).

This “command and control” paradigm is evocatively captured in Scott’s (1998) wide ranging exploration of the perverse impacts of large scale government modernization projects based on a, “hegemonic planning mentality that excludes the necessary role of local knowledge and know-how” (p. 6). Indonesia in the New Order period from the mid-1960s through to

the late 1990s fit squarely into this paradigm, especially when it came to the management of natural resources. For example, in the early 1980s a forest zonation system was put in place that classified 78 percent of Indonesia's land area as forests, under the responsibility of the Department of Forestry and Estate Crops (Fay and Sirait, 1999, p.2). As Fay and Sirait (1999) observe, this could be one of the largest land grabs in history. It reflects what Lindayati (2003b) describes as the, "complete belief in the state as the superior forest manager and guardian, with large-scale scientific mechanization the most rational forest exploitation method" (p. 238). This aligns with Holling and Meffe's (1996) description of command and control efforts to, "turn an unpredictable and 'inefficient' natural system into one that produces products in a predictable and economically efficient way" (p. 330).

The sub-set of governance literature focusing specifically on environmental governance has seen significant growth in the last decade and a half. The concept has also gained mainstream attention in the narratives of bilateral and multi-lateral donor agencies and international environmental and development organizations (see, for example, DFATD, n.d.; GEF, n.d.; IUCN, 2012; The Asia Foundation, 2012). This in turn has translated into an increase in development programming and projects focusing on this sector.

When thinking about institutions of environmental governance as some kind of "new paradigm," as a starting point it is useful to reflect on the broad definition proposed by Paavola (2007), which suggests viewing "environmental governance as the establishment, reaffirmation or change of institutions to resolve conflicts over environmental resources" where "conflict refers to a conflict of interest, not necessarily to an open conflict, between involved parties" (p. 94). Paavola (2007) argues that conceptualizing environmental problems as conflicts sharpens the focus on issues of social justice rather than efficiency (p. 96). He speaks of both distributive and procedural justice, where the core concerns of the latter include: 1) Which parties and whose interests are recognized, and how? 2) Which parties can participate, and how? 3) What is the effective distribution of power? (Paavola, 2007, p. 96). These are themes that recur throughout this dissertation.

Unpacking the concept of “institutions” further, one can consider the definition of environmental governance used by Lemos and Agrawal (2006), which refers “to the set of regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes” (p. 298). In line with this, while Hogl et al. (2012) do not narrowly define governance, authors in their edited volume, “regard structures and processes in which public and private actions and resources are coordinated for solving collective problems as standing central to their governance conceptions” (p. 8).

What these definitions have in common is recognition of the importance of institutions and the concepts of “process” linked with these. Each also recognizes multiple actors, although they tend to articulate the nature of actor engagement slightly different. Paavola (2007) explicitly talks about *resolving conflicts*, and argues for a focus on social justice rather than efficiency. Lemos and Agrawal (2006) refer to *influencing* actions and outcomes, while Hogl et al. (2012) focus on the idea of *coordination*. Also inherent in these definitions is the notion of legitimacy, where different actors acknowledge and accept the roles of the other actors in the system.

Different authors identify somewhat different modes of environmental governance revolving around ideas of markets, hierarchies, networks, and solidarity (Bäckstrand et al., 2010; Bulkeley, 2005; Lemos & Agrawal, 2006). Lemos and Agrawal (2006) explain how in early debates related to addressing issues of environmental externalities, the mechanisms of state, market and community were identified as alternate loci of environmental governance. This leads then to the ideal types of environmental governance which are used as a jumping off point in this dissertation: state-led, community-based and market-based.

Reality, however, does not always follow these ideal types, which is why the notion of hybrid arrangements becomes important. These arrangements are those where two or more of the main mechanisms interact with involvement of both state and non-state actors. Agrawal and

Lemos (2007) identify four types of hybrid environmental governance, and also highlight the role of non-governmental organizations,

“co-governance (between state agencies and communities), public-private partnerships (between state agencies and businesses), social-private partnerships (between businesses and non-governmental organizations (NGOs) and/or communities), and multipartner governance (incorporating actors from all three arenas). Each incorporates the joint action of at least two of the actors in the core triangle [state, community, market]...”(pp. 38-39).

The hybrid analysis is useful in helping to conceptualize the different roles that actors play in the system and as Agrawal and Lemos (2007) note, there are hundreds of different examples. The notion of hybridity also provides the space to think about how the roles and relationships between actors can change over time. The locus of control in any one system can then be conceptualized as having the potential to run along a continuum over time between the different mechanisms in a process of dynamic hybridism.

Decentralization in Indonesia

Having touched on some issues related to environmental governance more broadly, we now turn our attention back to Indonesia. Among the themes of particular interest with respect to environmental governance – globalization, decentralized environmental governance, market and individual-focused instruments, and governance across scales (Lemos & Agrawal, 2006) – none has been more significant in the context of natural resource management in Indonesia over the past decade and a half than that of decentralization. Additionally, in recent years the potential of market-based instruments has started to gain prominence with policy makers and practitioners, particularly as a potential implementing mechanism for REDD+ programs. These mechanisms will be discussed in more detail in Chapter 5, which focuses on watershed PES.

The general dynamics of the recent decentralization process in Indonesia are outlined below. This is a topic which has profoundly shaped the natural resource governance context in the

country, and cuts across each of the chapters in the dissertation. While the current section has a rather strong focus on government structures and processes of decentralization, this is intended to act as a starting point for the discussion. As McCarthy (2011) notes, “the processes that actually shape resource outcomes can often be complex and fluid. They diverge substantially from more public forms of decision-making and negotiation as set out by state laws” (p. 11). Later chapters will depart from this starting point to explore “rules in use,” which illustrate, “the range of capabilities that local people have, and the ways in which they use them to subvert or ignore formal institutions, and how they manage to perpetuate the balancing act that is central to all rural and urban livelihoods” (Batterbury & Fernando, 2006, p. 1859).

Reflecting on the decentralization process in Indonesia quickly brings us to a key point raised by Larson and Soto (2008), namely, who at the local level should receive powers. This is a complicated question, with long term implications for representation and democratic processes (Ribot, 2006). On the one hand it addresses explicit allocation of power. On the other, this cannot be accepted at face value and needs to be unpacked to understand what it means in terms of accountability. Accountability should be examined closely to understand the relations embedded in it. As Agrawal and Ribot (1999) stress, participation is broadened by downward accountability, which can be expressed through a range of mechanisms. This then links to the important question of what constitutes participation (Cooke & Kothari, 2001; Reed, 2008), which is of particular concern when customary organizations or newly established user groups enter the picture (Manor, 2004; Ribot, 2004) or when there is an uncritical reliance on the concept of “community” (Berkes, 2004; Li, 2002; Saunders, 2014).

These issues take on added salience when we are looking at decentralization programs with highly ambitious targets, as is the case with the community forestry program in Indonesia (see Chapter 4). These types of situations lend themselves to blueprint approaches in attempts to increase implementation speed and efficiency. External organizations such as donors and NGOs can also play a defining role, which again necessitates critical questioning

of the representativeness of the institutions which are supported (Fritzen, 2007; Larson & Ribot, 2004; Ribot, 2006). These are all issues that will be picked up and explored in more details in the chapters that follow. In particular, they are central to the discussion of community-based forest management (Chapter 4) and important with respect to emerging approaches to PES (Chapter 5).

The most recent and dramatic process of decentralization in Indonesia began with the end of the Soeharto-dominated New Order regime in mid-1998. However, this was not the first move towards decentralization in the country. Matsui (2003) provides an overview of historic attempts at decentralization in Indonesia, which started under the Dutch colonial government in 1903 and continued in various iterations through to 1959.

In 1959, in part in response to regional rebellions, decentralization was effectively abolished by then President Soekarno. Following this there were again attempts to re-balance the relationship between the different levels of government, which culminated in the issuance of Law 5, 1974, on regional administration. This remained the basic regulation overseeing relations between central and regional authorities until the end of the New Order regime. As Wollenberg et al. (2009) describe it, “this law was the epitome of the centralistic government of Soeharto. Its main intention was to promote national stability, and, in essence, it reined in local autonomy by emphasizing obligations to the central government” (p. 11).

When Soeharto resigned as president in May 1998, calls for change were nowhere more strident than in relation to the allocation of powers between the centre and periphery. Demands for increased autonomy were especially strong from resource-rich regions outside Java. For the three decades of New Order rule, forest exploitation in particular had been highly lucrative for the centre and those close to power, with few benefits flowing to the regions from which the wealth was generated. In the immediate aftermath of Soeharto’s resignation and the weakened central control that this signalled, reports abounded of

districts and other actors moving quickly in anticipation of decentralization legislation to establish new sources of income or strengthen resource claims (Barr et al., 2006; Fox et al., 2005; McCarthy & Warren, 2009; Patlis, 2005; Resosudarmo, 2004; Wollenberg et al., 2009).

In 1999 two laws were passed regulating decentralization, Law 22/1999 on Local Government and Law 25/1999 on Fiscal Balancing between the Central and Regional Governments. The laws came into effect at the beginning of 2001. As Resosudarmo (2004) comments, these laws “marked the beginning of a fundamental political and administrative transformation of Indonesia” (p. 105). The laws were the cornerstones of the early reform period, and as Hofman and Kai (2002) note, “increasingly, regional autonomy was considered to be, and presented as the natural complement to the emerging democracy at the central level” (p. 4).

This starts to capture some of the justifications for decentralization more generally, which Larson and Ribot (2004) summarize as including: increased efficiency, equity and inclusion; democratization and people’s participation; rural development; public service performance; poverty alleviation; relief of fiscal crisis; political and macroeconomic stability; national unity and state building; helping to increase the legitimacy of government (p. 2). Most of these have been mentioned in analysis of the period directly following the demise of the New Order regime and early days of the reform period (Barr et al., 2006; Contreras-Hermosilla & Fay, 2005; Fox et al., 2005; Hofman & Kai, 2002; McCarthy & Warren, 2009; Resosudarmo, 2004; Wollenberg et al., 2009).

The sweeping ambition of the early decentralization effort is captured in the opening considerations of the two 1999 decentralization laws, which:

- *“underscore the principles of democracy, social participation, equity and justice[...]*
- *give emphasis to local potentialities and diversity[...]*
- *provide the opportunity to increase democracy and local capacities[...]*

- *enhance social prosperity and create a civil society free of corruption, collusion and nepotism[...]*
- *increase social participation, openness and responsibility” (Fox et al., 2005, p. 92).*

Despite these goals, the laws did not generally lead to more effective management of natural resources. As Fox et al. (2005) observe, “in giving the widest possible authority to hundreds of regional governments, they have created a diversity of systems of management and mismanagement with no mechanisms for supporting one or discouraging the other” (p. 92). In addition to this, the situation was complicated by “ambiguities and contradictions” in the transfer of natural resource management authority (Resosudarmo, 2004, p. 105).

The sectoral elements of decentralization were not detailed in the decentralization laws. Rather, Law 22/1999 on Regional Governance included a requirement that sectoral regulations be modified in line with the law (McCarthy et al., 2006, p. 43). This was then left to the different agencies, which for a number of historical reasons responded to the situation quite differently.

For example, in 1999 a new Forestry Law was issued which included a number of innovations, although according to Wollenberg et al. (2009), these were “couched within the old paradigm of absolute control of the state and a centralistic system of management, rather than the new decentralization laws” (p. 16). The strength of the Ministry of Forestry can be traced back to the early days of the New Order regime when exploitation of forestry resources was prioritized, as encapsulated in the 1967 Forestry Law. Over the following three decades the Ministry of Forestry grew into an extremely powerful entity and by the time of reform had a great deal to lose from decentralization. In relation to this, Hofman and Kai (2002) observe that during the process of developing the decentralization laws, “the key line ministries were outright obstructionists. They felt they had everything to lose from decentralization, as the laws would abolish their deconcentrated apparatus, and with it their control over projects, resources, and perks” (p. 5).

In the period leading up to and following implementation of decentralization in 2001, there were numerous concerns raised about how the process was unfolding (McCarthy et al., 2006, p. 51). Patlis (2005) describes a sense of “regional euphoria” in which, “districts exhibited ingenuity, guile and speed in enacting new regional laws, many taking advantage of rent-seeking (or rent-harvesting) opportunities in management of natural resources, ignoring the ‘fine-print’ of the laws that restricted this authority” (pp. 453-454). And it was not just through the government apparatus that people were taking advantage of the new space that had opened up. Local groups, disillusioned with how the state had represented their interests, also took matters into their own hands, leading to a situation in which, “land occupations, ‘wild’ logging and mining, people’s ‘justice’, largely outside formal legal frameworks, became the primary avenue of public ‘participation’ in many parts of post-New Order Indonesia” (McCarthy & Warren, 2009, p. 7).

To correct what were seen as failings and ambiguities in the 1999 decentralization laws, in 2004 new laws were introduced, superseding the 1999 statutes. Law 32/2004 on Regional Government sought to clarify the roles, authorities, rights and obligations of regional governments (McCarthy et al., 2006; Patlis, 2005). Whereas the 1999 law focused on delegation of authority to districts and municipal governments, the new law emphasized promoting cooperation among regional government and on ensuring effective coordination between regional governments and the centre (McCarthy et al., 2006, p. 52). Ultimately, as McCarthy et al. (2006) observe, “Law 32/2004 gives the central government far-reaching authority to influence and control the activities of regional governments at each level – and, in doing so, effectively advances a process of recentralization” (p. 53).

1.2.2 Property rights and natural resource management regimes

Much of the literature on natural resource management refers to concepts of private, public or common pool resources. These, in turn, are typically related to specific property rights and resource management regimes (Vatn, 2005), which then guide policy and on-the-ground

interventions. However, when trying to answer the seemingly straightforward question, “what are property rights and how are they constituted?”, it soon becomes clear that this requires navigating a rather complicated field of scholarship, with a myriad of definitions, theoretical perspectives and research approaches (von Benda-Beckmann et al., 2006). Within this context, this section looks at notions of state property and common property, which play a prominent role in the Chapters 3 and 4.

State property rights are highly relevant when talking about resource access in Indonesia. This is in line with von Benda-Beckmann’s (2001) observation about the importance of such rights in developing countries where “most contemporary states control and claim to own huge resource areas” (p. 300). The understanding and legal basis of these rights in Indonesia is, however, not static. Flowing from key articles of the constitution, during the New Order period meanings tended to be interpreted and translated into laws in ways that enforced the entrenched and dominant interests of the state. However, particularly since the start of the reform period, state jurisdiction over land and other resources has been subject to challenges which have resulted in significant and on-going change.

According to Article 33(3) of the Indonesian Constitution, “the land, the waters and the natural richness contained therein shall be controlled by the state and exploited to the greatest benefit of the people.”² Article 33 was used by the New Order regime as justification for its natural resource management practices, which were based on an interpretation of the state having absolute rights to such resources (Lindayati, 2002, p. 41). This is particularly evident in the forestry sector, both in the pre- and post-reform period, as explained by Lynch and Harwell (2002):

“Article 33 is reiterated in the language of the Basic Forestry Laws of 1967 and 1999. The 1967 law stated that ‘all forests within the territory of the Republic of Indonesia, and all the resources they contain, are under the authority of the state’ (Article 5, Basic Forestry Law No 5/1967). The 1999

² Original Indonesian, Article 33 (3): *Bumi dan air dan kekayaan alam yang terkandung di dalamnya dikuasai oleh negara dan dipergunakan untuk sebesar-besar kemakmuran rakyat.*

reiteration provides that 'all forests within the territory of the Republic of Indonesia including all the richness contained therein are under the state's control for people's maximum welfare,' (Article 4 (1))" (Lynch & Harwell, 2002, p. 36).

According to Lynch and Harwell (2002), these laws served to, “bolster an unconstitutional expansion of state power and the erosion of local rights and welfare, as well as the welfare of forests – all of which are explicitly protected under the Constitution” (p. 36).

There are two main arguments put forward to counter the New Order interpretation of rights to manage natural resources. The first is based on the intention of the drafters of Article 33 and the second refers to Article 18 of the constitution, with a focus on legal pluralism and traditional (*adat*) rights. According to Safitri (2010), Mohammad Hatta, who became Indonesia's first Vice President and was deeply involved in drafting Article 33, believed that “the national economic system should be based on the idea of mutual help [...] and collective actions [...]” (p. 78). Following from this, land, as a key production factor, should be regulated in a way that ensured it was a source of prosperity for the people (Safitri, 2010, p. 78). In line with this, Lynch and Harwell (2002, p. 143) observe that Article 33 was originally intended to provide for the well-being of the nation by prohibiting foreign control of natural resources. Ultimately, however, it was interpreted quite differently under New Order natural resource legislation, with the result that according to Lynch and Harwell (2002), the common good was systematically overlooked (p. 143).

The concept of legal pluralism was implicit in the original article of the 1945 Indonesia Constitution focusing on regional government (Article 18), and explicit in the amendments of 2000. The elucidation of the original article highlighted the number of self-governing villages and native communities in Indonesia and the fact that these have their own traditional organizations and structures, which can be considered as special attributes. All state regulations concerning these special areas should then take into consideration the original hereditary rights (Indonesian Constitution of 1945, Official Explanation, Chapter IV, Article

18, Section II). In 2000 the article was revised and expanded, explicitly acknowledging legal pluralism in Indonesia: “The state recognizes and respects customary law communities and their traditional rights provided they still exist and are in accordance with community developments and the principle of the unitary Republic of Indonesia, as regulated by laws”³ (Indonesian Constitution of 1945, Amended 2000, Chapter IV, Article 18B (2)).

Butt (2014) notes that despite the fact that the explicit constitutional recognition of traditional rights provided by article 18B(2) was translated into various post-New Order statutes, “these laws did not provide sanctions for non-compliance and it appears that they were inadequately enforced, if at all. Despite strong ‘on-paper’ protection, then, traditional rights remained vulnerable to expropriation with inadequate or no compensation” (p. 66). In recent years, however, cracks have started to appear in the status quo of legally-based state dominance over natural resources.

In the forestry sector, for example, a Constitutional Court ruling in 2013 against articles in the 1999 Forestry Law opened significant space for the assertion of traditional rights.⁴ This has the potential to transform the system of pervasive state control of Indonesia’s forestry resources into a patchwork of state coverage interspersed with traditional forests that are outside the remit of the state. This reversal of state hegemony in the sector also directly calls into question narratives of “illegality” that have been so pervasive in resource management discourses in Indonesia over time (McCarthy, 2011). Local community activities in the (previous) forestry estate can no longer be simplistically labelled “illegal,” and in fact it is now the state’s own concession granting processes that may come under increasing scrutiny.

While this ruling is highly significant in that it effectively overturns decades of systematic marginalization of traditional rights, the challenges to implementation should not be

³ Original Indonesian, Article 18B (2): *Negara mengakui dan menghormati kesatuan-kesatuan masyarakat hukum adat beserta hak-hak tradisionalnya sepanjang masih hidup dan sesuai dengan perkembangan masyarakat dan prinsip negara Kesatuan Republik Indonesia, yang diatur dalam undang-undang.*

⁴ Constitutional Court Decision 35/PUU-X/2012, reviewing Law 41 of 1999 on Forestry, issued 20 March 2013.

underestimated. Analysts and practitioners have highlighted the difficulties ahead in securing recognition of traditional rights to forest areas. These range from the reality that decisions of the Constitution Court are not legally binding, the fact that decisions are not retroactive (for example, do not invalidate concessions that were granted before the ruling, even if they were on traditional land), to the complex situation on the ground where millions of hectares of traditional land need to be mapped, institutions recognized, and local government endorsement sought (Butt, 2014; Safitri, 2014; Siscawati, 2014).

The above captures the on-going dynamism and contestation of state property rights in the formal legal realm. In the chapters which follow, and especially Chapter 3 focusing on the Segara Anakan lagoon, this discussion will be deepened with an analysis of the de facto realities unfolding on the ground. These changes highlight the dynamic nature of property rights in contemporary Indonesia.

Many aspects of forests are often conceptualized as common pool resources (Ostrom, 1999, p. 1). These are characterized by “rivalry in consumption and costly exclusion” (Vatn, 2005, p. 272). As Klooster (2007, p. 318) summarizes,

“There are four basic property regimes for such resources. Under open access, there is no exclusion and no rules governing individual use. Under private property, the resource is parcelled out to individuals. Under state property, the state retains ownership and regulates the resources. Under communal property, which is often referred to as “common property,” an identifiable community of resource users is able to exclude other users and subject the resource to customs and rules.”

Over the past three decades, property scholars have responded to the challenge of the “tragedy of the commons” conceptualization of exploitation of common pool resources (Hardin, 1968) by building up an increasingly detailed and robust body of empirical and theoretical work on how communities cooperate to manage certain resources (early influential book-length examples include, Berkes, 1989; McCay & Acheson, 1990; Ostrom, 1990). Within the body of common property scholarship, Johnson (2004) argues that there

are two schools evident. The first, which Johnson (2004) sees as populated by “mainstream common property theorists” (p. 410), focuses on “the problem of achieving collective action to conserve natural resources which are both depletable and unregulated” (p. 408).

These “collective action” scholars are contrasted with “entitlement” scholars who are preoccupied with the “problem of creating and sustaining resource access for poor and vulnerable groups in society” (Johnson, 2004, p. 408). Whereas the lines between these two schools are not strictly drawn, Johnson (2004) argues persuasively that there are fundamental normative differences between the two:

“Whereas ‘collective action scholars’ analyse the rules and sanctions that encourage individuals to conserve the commons, ‘entitlement scholars’ emphasize the historical struggles that determine resource access and entitlement, and the ways in which formal and informal rules create and reinforce unequal access to the commons” (Johnson, 2004, pp. 408-409).

In this way the entitlement approach is well aligned with concepts of political ecology, which seek “to unravel the political forces at work in environmental access, management, and transformation” (Robbins, 2012, p. 3).

Over time the mainstream body of common property theory has become increasingly influential on policy formation and project design (Robson et al., 2014; Saunders, 2014). In parallel to this, criticisms of its appropriateness and efficacy have grown. Saunders (2014) analyses the way mainstream common pool theory has contributed to the development of commons projects, exploring some of the assumptions that underlie these approaches.⁵ He highlights a number of concerns with the way this theory is translated into practice, including questioning the capacity to accommodate local norms, values and interests. Saunders (2014), summarizes by saying that, “when analysing the functionality and efficiency

⁵ It is worth noting that Ostrom (1990), who pioneered the work of common property design principles, likely did not intend for these principles to be used as a blueprint for project design (Agrawal, 2003; Agrawal & Ribot, 2014). As Ostrom (2010) wrote, “the term ‘design principle’ has confused many readers. Perhaps I should have used the term ‘best practices’ to describe the rules and structure of robust institutions” (p. 653).

of commons projects greater attention should be paid to understanding the operation of power and conflict in particular resource use situations” (p. 649).

1.2.3 Resource tenure and access: Avoiding simplifications

While the categorizations private, common and state property have generated a robust academic literature, a number of authors have highlighted the tendency to simplify analysis of property rights and regimes (see, for example, Ribot & Peluso, 2003; Saunders, 2014; Schlager & Ostrom, 1992; von Benda-Beckmann, 2001). Peters (1997) highlights the risk that “more serious historical, cultural, and analytical” understanding will be compromised by “placing all forms of resource uses and all the myriad practices and ideas associated with them under ‘property’ (the holy trinity of public, private, and commons)” (p. 11). Schlager and Ostrom (1992) also caution against “blind faith” in any of the three property institutions and call on scholars to seek deeper understanding (p. 260). As von Benda-Beckmann (2001) says, these (including open access), “only give us an indication of the legal-institutional structure of property categories, but by themselves tell us nothing about the ways in which such categorical rights are actually embedded and distributed in the economic and political organisation of societies” (p. 301).

Vandergeest (1997) reflects these concerns with a view that property is, “a set of everyday practices as well as social relationships and rules” (p. 4), with all the complexities this implies. Property relationships seen from this perspective are “ambiguous and constantly renegotiated” and we can “never fully know a given set of property relations (Vandergeest, 1997, pp. 5-6). Against this backdrop, Vandergeest (1997) suggests that studying rules is, “a very limiting approach to understanding property. One can learn more about property by following people to see what they are doing, and asking them about it, than by asking them about rules” (p. 6).

What the above serves to highlight is von Benda-Beckmann et al.’s (2006) assertion that “property regimes, in short, cannot easily be captured in one-dimensional political,

economic or legal models” (p. 2). In responding to these concerns, it is useful to consider Ribot and Peluso’s (2003) concept of access, defined “as the ability to benefit from things” (p. 153). It incorporates Macpherson’s (1978) notion of property as an enforceable claim, the “bundle of rights” conceptual schema elaborated by Schlager and Ostrom (1992) (see Chapter 4) and builds on the social nature of property (Macpherson, 1978; Rose, 1994). However, Ribot and Peluso (2003) broaden the scope of analysis by positioning property as “one set of factors (nuanced in many ways) in a larger array of institutions, social and political-economic relations, and discursive strategies that shape benefit flows” (p. 157).

Ribot and Peluso (2003) propose a focus on how access is gained, maintained and controlled, looking at two broad categories of access mechanisms: i) rights-based access, and ii) structural and relational mechanisms of access. Rights-based access is defined as “that which is sanctioned by law, custom or convention” (p. 161). Vandergeest and Rogge (1999) use the term “resource tenure” to cover a similar meaning, which includes the notions of both de facto and de jure rights. This dissertation will use the term “resource tenure” to capture the rights-based mechanism discussed above. The structural and relational mechanisms of access encompass the fact that “the ability to benefit from resources is mediated by constraints established by the specific political-economic and cultural frames within which access to resources is sought” (Ribot & Peluso, 2003, p. 164).

What these scholars who plea for a more nuanced approach to property have in common is an insistence that we move beyond generally accepted broad categories and unpack what these concepts mean in messy real-world situations. When considering natural resource management systems, this requires both a strategy of looking into the system to try and understand how actors themselves actually understand and assert their resource tenure, and the power relations implicit in this, while at the same time analysing broader political, cultural, economic, environmental and technological factors that constantly mediate the ability of actors to actually derive benefit.

1.3 Dissertation structure

The dissertation is comprised of six chapters. This introductory chapter sets the stage by introducing the key conceptual perspectives upon which the analysis in subsequent chapters is founded. The next chapter outlines the analytical framework used in the dissertation and explains the methods. The three empirically-based chapters that follow build on this, weaving together empirical findings with a deeper exploration of conceptual and other literature relevant to the topic covered in each chapter.

Chapter 3 takes us to the south coast of Java where we focus on a case of environmental change within the context of broader state-led watershed development. Since the 1960s the Citanduy watershed and Segara Anakan Lagoon have been the target of several large state-led, loan-financed projects aimed at water resource development and lagoon conservation. Over time, articulation of the values of the lagoon has changed, in concert with rather rapid infilling of the area due to sedimentation. In a complex tapestry of ideas, the lagoon has been viewed at different and often overlapping times as little more than a wasteland, as having economic value for its contribution to local and offshore fisheries, as being useful as a “natural lab” for research, as holding significance for biodiversity conservation, as providing new land and opportunities for agriculture and aquaculture, and more recently, as having increasing importance because of its carbon stocks and sequestration potential. The chapter examines how perceptions of the value of the Segara Anakan lagoon have changed over time. It considers how different actors have or have not been driven by these ideas, whether institutional changes have resulted, and how power relations have shifted.

In Chapter 4 we move to Sumatra and a focus on community-based forest management. From the late 1990s into the early 2000s the protection forest of the Way Besai watershed in West Lampung transitioned from a period of violent state-led exclusion to the contemporary situation of state-sanctioned access through the government’s country-wide community forestry program (HKm, *Hutan Masyarakat*). The situation in Way Besai cannot be viewed as simply a case of transition from state-led to community-based natural resource

governance approaches. Rather, the reality is a dynamic hybrid that maintains strong elements of a top-down system while providing some space for local agency – both officially recognized and unofficially sanctioned – within well-defined limits. The chapter explores how and why resource tenure in the area changed over time. It looks at how changes at the national level provided the space for new actor coalitions to emerge which then made strategic use of knowledge and ideas to radically transform power relations in the area and allow for the forging of new rules for natural resource management. The chapter also reflects on the period following these dramatic changes, asking how these early experiences have translated into a broader push for the expansion of HKm in the area, and what the implications might be for HKm more broadly.

Chapter 5 explores the introduction of market-based watershed governance mechanisms in Indonesia. Starting in the early- to mid-2000s, pilot watershed PES schemes started to emerge in the country. This paralleled a global trend in development of such schemes that started to gain momentum in the late 1990s. In contrast to Chapters 2 and 3, this chapter does not focus on a single location. Using empirical data from three pilot watershed PES schemes in Indonesia (East Java, West Kalimantan and Lampung), the chapter explores the different actors involved in the development of the schemes and how they influenced emergent institutional structures.

Chapter 6, the final chapter, compares and contrasts the case studies. It explores a notion of dynamic hybridity in environmental governance and resource tenure systems. In doing so it elaborates on different analytical and theoretical perspectives – for example, a more nuanced focus on trust between actors, considering ideational changes and representations as captured in the changing values of resources, and the “bundle of rights” approach to understanding property rights – and looks at how these can encourage a temporal perspective in analysing changes to resource tenure specifically, and environmental governance more generally. This is then overlaid on the concept of hybrid governance

regimes to round out the notion of dynamic hybridity. The chapter concludes by reflecting on the research approach and future research needs.

2. Analytical framework and methods

The chapter outlines the analytical framework that is used in the dissertation. This is followed by a description of the methods that were used for field work and analysis.

2.1 Analytical framework for capturing change

Analysing the nexus of environmental governance and resource tenure across different ideal type governance systems over a period of radical political and administrative change and subsequent consolidation poses specific methodological challenges to a researcher. Understanding these dynamics requires trying to maintain a systems perspective while drawing on different disciplinary traditions. The question then becomes, how to do justice to the richness and dynamism of these systems, while maintaining some analytical coherence?

The research is concerned with questions of institutional change – both tenure institutions and approaches to environmental governance – and linkages. To explore these issues, the research positions itself at a meso level, resting between a micro-level focus on the interests, decisions and operations within a social system, and broader considerations of power in society (Evans & Davies, 1999, p. 363). At this intersection it is interested in how the interests of different actors, power asymmetries between actors, historical trajectories, and new ideas play a role in shaping emergent institutions.

The research is inspired by the focus of political ecology on, “the condition and change of social/environmental systems, with explicit consideration of relations of power” (Robbins, 2012, p. 21). Political ecology has been described as a “loosely organized approach with broadly similar perspectives and concerns, rather than as a single body of theory” (Andersson et al., 2011, p. 297). The interdisciplinary perspective of political ecology encourages the researcher to unpack different strands of influence – both ecological and social – and how ideas influence the approaches of different actors at different scales over time (see, for example, Batterbury & Fernando, 2006; Bryant & Bailey, 1997; Forsyth, 2003).

As noted by various authors, political ecology has been influential in contributing to understanding of common property and property rights (see, for example, Berkes, 2004; Lemos & Agrawal, 2006; Ribot & Peluso, 2003). In an edited volume exploring the political ecology of forest reform in South Asia as it moved towards more participatory practices, Springate-Baginski and Blaikie (2007) identified four main strands in political ecology that were particularly relevant for their work. These also resonate with the current research:

1. *Concerns with the “contested ways in which biophysical ecology is interpreted and negotiated” (p. 9);*
2. *Providing “more structural explanations of the ways in which different groups gain access to the ‘forest’: who becomes marginalized; who gains and who loses; how (that is, strategies of interested parties, and who succeeds in carrying them out); and why (e.g. the exercise of differential economic power, coercion and violence)” (p. 10);*
3. *Addressing the “dialectic relationship between ecology and society. A constantly evolving dynamic is at work. Forests shape people (their habitat and material practices, technology, identity and culture), and, at the same time, people shape forests” (p. 10);*
4. *Providing a “critical understanding of how environmental policy is made, the exercise of power, practices on the ground and the discourses that shape them at different levels” (p. 11).*

At the same time as political ecology was emerging in the 1970s and expanding through the 1980s and 1990s (Bryant & Bailey, 1997, p. viii), the analysis of institutions was also evolving. According to P. A. Hall and Taylor (1996), this occurred under the general and sometimes confusing label of “new institutionalism,” which emerged “in reaction to the behavioural perspectives that were influential during the 1960s and 1970s” (P. A. Hall & Taylor, 1996, p. 936). P. A. Hall and Taylor (1996) explain that within the discipline of political science for example, over time new institutionalism developed not as a coherent approach, but rather as, “at least three different analytical approaches” (P. A. Hall & Taylor, 1996, p. 936), historical, rational choice and sociological institutionalism. Each of these sought, “to elucidate the role that institutions play in the determination of social and political

outcomes” (P. A. Hall & Taylor, 1996, p. 936) and there was little cross-over between the approaches.

Schmidt (2010) argues that each of these “traditionally recognized ‘new institutionalisms’” (p. 1) have “mainly explained change as coming from the outside, as a result of exogenous shocks” (p. 2). Within these traditions, however, scholars have also over time started to use “ideas and discourse to explain political change (and continuity) in institutional context” (p. 2) in an approach that Schmidt (2010) sees as being a fourth analytical framework, discursive institutionalism.

What starts to emerge is a myriad of shifting analytical approaches. In their edited volume focusing on institutional dynamics in environmental governance in a mainly European context, Arts and Leroy (2006) also grapple with the different analytical possibilities for understanding institutional continuity and change. In a related work they talk of being “inspired by the desire to do justice to the duality of actor and structure on the one hand, and the desire to do justice to the balance between content and organisation of social, political and policy processes on the other hand” (Arts et al., 2006, pp. 98-99).

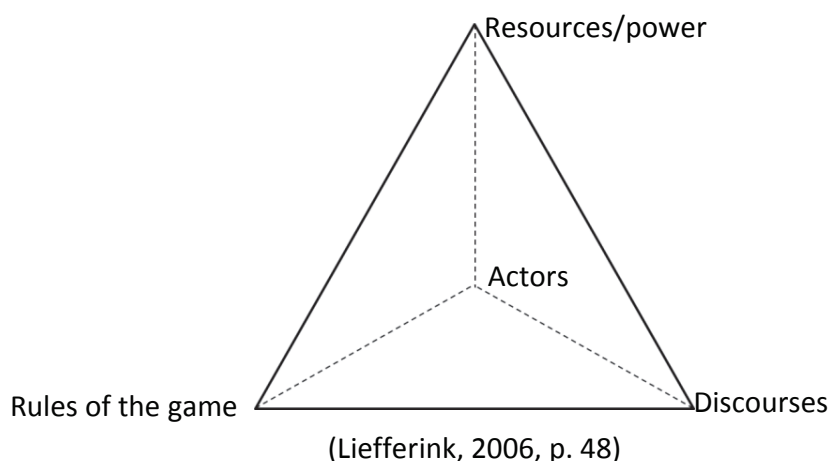
Returning to the definitions of environmental governance and the complexities of resource tenure in the Indonesian context discussed in the previous chapter, the challenge then becomes how to explore change in such systems without being too restrictive. Whereas the current research does not focus specifically on policy processes but rather, broader processes of change, the work of Arts et al. (2006) on policy arrangements within the context of environmental governance systems is useful in addressing these challenges. It captures the multi-dimensionality of the issues, and allows space to incorporate the key conceptual considerations related to participation, accountability, and access highlighted in the previous chapter.

Arts et al. (2006) elaborate four interrelated dimensions which are the “basis for an *encompassing* and *dynamic* analysis of policy processes” (Liefferink, 2006, p. 45, emphasis in original):

- *“the actors involved in the policy domain, and their coalitions (including their oppositions);*
- *the division of resources between these actors, leading to differences in power and influence;*
- *the rules of the game within the arrangement, either in terms of formal procedures or as informal rules and ‘routines’ of interaction; and*
- *the policy discourses, entailing the norms and values, the definitions of problems and approaches to solutions of the actors involved” (Arts & Leroy, 2006, p. 13).*

These four dimensions are interlinked and can be visualized as a tetrahedron (see Figure 1). Change in one dimension will almost inevitably lead to changes in the others, which is what the approach tries to capture. The appeal of the approach in broad terms for the current research lies in its interrelatedness. It is also flexible enough to capture the rich contextual factors (for example, history, political, socio-economic) embedded in the different dimensions of the Indonesian situation.

Figure 1: The tetrahedron, symbolizing the interconnectedness of the four dimensions of a policy arrangement



The approach is an interesting starting point for considering the elements of change and providing guidance in analysing empirical findings. From an analytical point of view it is possible to use any one of the dimensions as an entry point, which then serves to, “highlight different aspects of the arrangement” (Liefferink, 2006, p. 46). For example, if one is interested in analysing new coalitions that emerged at the beginning of the reform period in Indonesia and how they influenced the practical development of a community forestry programme and what the impact of that was on resource tenure, one would use actors and coalitions as an entry point. From there the analysis would explore what changes to actors and coalitions meant for the other dimensions.

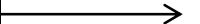




As another example, one might be interested in understanding how changing ideas of how resources are valued in a specific area over time have impacted on management of the area and resource tenure. Entering the analysis from the perspective of discourses would then require analysing changes to actor coalitions, rules of the game, and power relations flowing out of these changing ideas. What could be interesting here is to try and explore the link between the changing ideas and actual changes on the ground. As Arts and Buizer (2009, p. 342) point out, a change in the terminology used in a certain situation does not necessarily mean that the associated rules of the game were also altered.

In the analytical framework used in this dissertation, the dimensions introduced above are overlaid on ideal-type governance systems. It is therefore worth saying a few words about the decision to use the ideal types of state-led, community-based and market-based (payments for environmental services, PES) as a starting point. It was recognized that in the field the case studies would not fully confirm to any ideal type. However, using an ideal-type categorization provided a useful way to both engage with the environmental governance and resource tenure literature, and also a reference against which to analyse and compare empirical findings. This is relevant both to compare changes in a single system over time, and between systems. The decision to use the ideal types of “community-based” and “PES”

was made easy by the fact that these systems were already labelled as such by the initiators, and referred to accordingly in existing literature about the case studies.

Table 1 shows the dimensions that served as entry points for the empirical cases presented in Chapters 3, 4 and 5. The arrows in each row are intended to capture the fact that while the chapters started at the intersections shown in the table, each chapter explicitly addressed the other dimensions and interactions between dimensions as well. In this way, the work is not confined to any one cell in the table, but rather, explicitly attempts to explore the implications of the questions framing the entry point on other dimensions in the related row.

Table 1: Chapter entry points

Dimension Ideal type	Discourses	Rules of the game	Actors	Resources, power, influence
State-led	<p>Chapter 3. <i>Segara Anakan Lagoon, Central Java.</i> How have ideas and perceptions of the values of the lagoon and its resources changed over time and between actors? How have these shaped the strategies used by different actors in the lagoon? How may different understandings of values have influenced emergent land tenure arrangements and environmental governance?</p>			
Community-based natural resource management		<p>Chapter 4. <i>Community-based forestry, West Lampung.</i> How were the rules of the game for the new community forestry system established? How did these change over time and what does this mean for environmental governance?</p>		
Payments for environmental services			<p>Chapter 5. <i>PES pilot projects, East Java, West Kalimantan, West Lampung.</i> What were the roles of different actors in introducing emergent ideas of PES at the international level to the local context in Indonesia? What challenges were faced, and what are the implications?</p>	

2.2 Methods

This research was conducted under the auspices of a project which aimed at examining upstream-downstream linkages and new instruments in coastal and watershed governance.⁶ The project focused on understanding how watershed PES schemes have been conceptualized, established and implemented in Indonesia and what this has meant for land rights and resource access. Given that the research stemmed from previous work in the Segara Anakan Lagoon and its watershed in Southern Java, and was ultimately intended to contribute to thinking about management alternatives impacting on the lagoon, there was also a component of the research focusing on property rights and resource access in the lagoon itself.

The broad remit of the research, which in the early stages called for a scan of watershed PES schemes across Indonesia, soon opened up new avenues of inquiry. It rather quickly became evident that watershed PES schemes that had been piloted in Indonesia by the time the research was undertaken in 2013 had been rather small scale, and hybrid in nature. Additionally, the discursive overlap between PES and community forestry in Lampung province, where the community forestry programme had been labelled as a PES scheme, proved interesting. As a result, the research was ultimately separated into three cases looking at different approaches to natural resource governance. The first focused on the Segara Anakan Lagoon (state-led), the second looked at the community forestry programme in West Lampung district, and the third examined three watershed PES schemes in different locations.

⁶ Research programme SPICE III (Science for the Protection of Indonesian Coastal Marine Ecosystems), Topic 4: TIMES (Terrestrial influences on mangrove ecology and sustainability of their resources), Sub-project 8 (Upstream-downstream linkages and new instruments in coastal and watershed governance) funded by the German Federal Ministry of Education and Research (BMBF).

The research was exploratory in nature. Stebbins (2001) describes exploration in the social sciences as a, “broad-ranging, purposive, systematic, prearranged undertaking designed to maximize the discovery of generalizations leading to description and understanding of an area of social or psychological life” (p. 3). Exploratory research lends itself to qualitative research approaches (Schutt, 2012), although not exclusively so (Stebbins, 2001). As Mills et al. (2009) explain, these methods “are particularly well suited to the exploration of patterns in data that are not guided by a priori expectations or constrained by the operationalization of complex phenomena” (p. 153).

Data were collected from both primary and secondary sources. Field research was conducted between 2013 and 2015 with approximately five months spent in the field during three main stays as described in the case-specific descriptions of methods below. Primary data was collected through qualitative techniques including semi-structured interviews, open-ended individual and group discussions, and field observations. Interviews were conducted with a wide range of actors, including different members of local communities, local and national governments, non-governmental organizations (NGOs), parastatal companies and research institutions.

Interview guidelines were prepared which provided the framework for interviews, while allowing the flexibility to adapt depending on emerging information. For locations where there were multiple field visits (the Segara Anakan Lagoon and West Lampung) the guidelines were updated for subsequent field visits based on empirical findings from the preceding visit. This reflected the iterative process of the research (Yin, 2009).

Secondary data was collected through a review of documents, including project studies and reports, contracts, and community forestry user group workplans, among others. Relevant policy documents and legislation were also analysed. Satellite images, aerial photographs and maps were also reviewed to inform the field work. Bowen (2009) highlights five specific ways in which document analysis can contribute to a research initiative, each of which

proved relevant for the current research. According to Bowen (2009), document analysis can,

“provide background and context, additional questions to be asked, supplementary data, a means of tracking change and development, and verification of findings from other data sources. Moreover, documents may be the most effective means of gathering data when events can no longer be observed or when informants have forgotten the details (pp. 30-31).

Following field work, in each of the cases notes and recordings from interviews and discussions were typed up, resulting in a total of 206 items. To help analyse the information, these notes were then coded in MaxQDA. Relevant secondary information was also entered into MaxQDA and coded. In each case an initial coding framework was based on the interview guidelines and the review of project documents that had been conducted earlier. This was then modified based on material coming out of the interviews and discussions.

Themes revealed by the data were then identified and analysed. In analysing both the primary and secondary data entered into MaxQDA, attempts were made to identify the main actors and their interests and arguments, the discourses that were employed, how actors interacted with each other and what kind of power relationships could be interpreted from these interactions.

The sections below provide more details of the research processes for each of the individual cases.

2.2.1 Emergent land and contested claims

The implementation of a number of large development projects in the Segara Anakan Lagoon on the south coast of Java and its watershed since the 1970s provided something of a historical record that allowed for the exploration of changes in the discourses, policy environment and actors involved. This material was examined and coupled with empirical

findings aimed at understanding current dynamics of how land is contested. Supporting this was the lagoon's position as a "natural laboratory" for academic work.⁷

As mentioned, the research was a continuation of an earlier project focused on both the lagoon and its watershed. In the earlier stage of the project, reports and other documents were collected which covered the period 1975 to 2006. These dealt with the main loan-funded projects in the lagoon and its catchment area. During the previous and current stage documents were collected from government offices in Central and West Java, non-state actors and internet sources.

Using MaxQDA to organize information and help in identifying links and patterns, documents were then reviewed to: i) identify the main actors involved in planning and implementation; ii) establish the justifications for the interventions; iii) determine how the projects may have impacted or been impacted by the Segara Anakan Lagoon; iv) explore how resource tenure issues were discussed and addressed in these projects.

A preliminary visit was made to the district capital, Cilacap, in September 2013. Subsequent field work was conducted in the lagoon in two main phases, in November 2013, and in December 2014 - January 2015, with an additional short visit in May 2014. Primary data was collected through a combination of semi-structured interviews, open ended discussions and observation. Interviews were conducted with lagoon-dependent people from the four villages in the area of interest, government representatives at the district, sub-district and village levels, the state forest corporation (Perhutani), the state oil company (Pertamina), non-governmental organizations, and academics.

⁷ In 1985 Turner, describing the process which reversed the planned reclamation of the lagoon, mentions the lagoon's appropriateness as a natural laboratory as one of the reasons that it should not be reclaimed. He notes the lagoon's proximity to major education centers. Whether by design or not, this vision of the lagoon seems to have played out in practice. The list of bachelor, master and doctoral theses and dissertations focusing on the lagoon from institutions such as Universitas Gadjah Mada, Universitas Jenderal Soedirman, and Universitas Diponegoro, among others, is long.

In some cases respondents were visited several times in order to request additional clarification on issues that arose following the initial interview. This was particularly the case with district level agencies – the Cilacap office of the National Land Agency, the Department of Marine Affairs and Fisheries and Segara Anakan Management, the Planning Board (BAPPEDA, *Badan Perencanaan Pembangunan Daerah*), the land office of the local government – who were visited during both field research phases, and some individuals in the village of Ujung Alang (the village that was the focus of the first field phase) who had in-depth knowledge of the historical development of land usage on the north shore of Nusa Kambangan island.

Prior to each field phase interview guidelines were prepared. In the first phase field work was conducted in the village of Ujung Alang, and the guidelines focused on questions such as: change in land use and land cover, approaches to land and mangrove management, and sedimentation (see interview guidelines, Annex 1). In the second phase, after the first phase information had been analysed and outstanding issues identified, the interview guidelines were revised (see Annex 2). In the second phase the geographic coverage was broadened to include other villages that comprised emergent land, and the interview guidelines did not focus as much on sedimentation, but integrated questions about relationships with state agencies.

Questions were designed to start off as open ended as possible before focusing down on more detail. A laminated copy of a 2012 satellite image of the lagoon was used in some interviews to facilitate discussion of spatial issues. Respondents were able to draw on the map to clarify their points. For the most part interviews were not recorded – at the early stages of the process several respondents expressed discomfort with the idea of recording. Given this experience and the fact that the interviews touched on sensitive issues of land rights, in only a few subsequent cases were respondents asked whether they agreed to being recorded.

I typically conducted interviews at the village level together with an Indonesian student. This was in part to put the respondents at ease, but was also helpful in situations where people used a combination of Javanese and Indonesian to answer questions, as was occasionally the case in the Segara Anakan Lagoon. I speak Indonesian, but not Javanese. At the district level I mainly conducted the interviews alone.

Following interviews, notes from the discussion were reviewed and discussed (when an assistant was involved) to make sure they were complete. This also provided the opportunity to identify new ideas or information that had emerged, items that needed to be followed-up, and additional people to meet. From here a strategy for the next interviews was developed. As such, the iterative nature of the research was fostered. Reviewing and discussing following the meetings also allowed for an-going process of trying to understand the key arguments of different actors.

2.2.2 State-led community-based forestry

Field research on community-based forestry (HKm, *Hutan Masyarakat*) was conducted in two phases in the Way Besai watershed of West Lampung. During both phases Martin C. Lukas, a colleague from the Centre for Sustainability Studies (artec) at the University of Bremen, joined part of the research. This provided valuable opportunities for direct exchange and discussion as the field work was unfolding.

During the first phase of research in January and February 2013 the aim was primarily to understand the evolution of the program within the context of watershed governance in the Way Besai area. The focus was on: obtaining an understanding of the motivations and processes that led to the design and implementation of HKm; exploring how HKm complimented or replaced other approaches towards natural resource management; deepening understanding of the institutional arrangements; finding out how the interests of different actors are reflected in HKm; obtaining views about the direct and indirect effects, achievements, problems and future relevance of HKm.

During the second phase in December 2013, the research aimed at trying to better understand issues such as: farmers' experiences with HKm, how cultivation rights are granted, mechanisms for transferring cultivation rights, whether there was any HKm-induced out-migration, whether there was HKm-induced in-migration and land cover change, how HKm groups function (see interview guidelines, Annex 3).

Research involved semi-structured interviews, field observations and collection of secondary information. Interviews were conducted with farmers who were part of HKm groups and leaders of groups. Groups were purposefully selected to obtain a good understanding of the experience of the first HKm groups, and also information on the challenges and opportunities facing newer groups. Interviews were conducted with members of each of the first five groups that were formed under the HKm program in Way Besai, and three of the newer groups.

Interviews were also conducted with district forestry extension officers, the current and former head of the district forestry service, NGOs which were involved in facilitating HKm in the area (Watala and Yayasan Cinta Lingkungan), representatives from the World Agroforestry Centre (ICRAF), extension workers from the provincial forestry department, a representative from the Strengthening Community-Based Forest and Watershed Management project,⁸ the manager of the Besai hydropower plant, and representatives from the Ministry of Forestry. Most interviews were recorded with the permission of respondents. Following the interviews, interviewers discussed the information obtained in order to ensure they had the same understanding of the main points, and to identify new ideas or information and suggestions for additional people to meet.

⁸ The implementing agency for the project was the Ministry of Forestry. Financing was mainly from the Government of Indonesia and the Global Environment Facility with implementation led by the United Nations Development Programme. One of the project's field locations was in the Way Besai watershed.

Interviews in the Way Besai area that form the basis of the empirical analysis in this dissertation were mainly conducted by me together with an Indonesian student. Interviews at the district, provincial and national levels were typically conducted by me alone.

Information was also obtained from observations during: a cross visit of farmers from Jambi province who came to the Way Besai area to learn about experience with establishing HKm, a preparatory meeting for a monitoring and evaluation process of all groups with long-term HKm licences (the meeting included representatives from 22 farmers' groups and the district government), a digital mapping training for HKm groups, visits to the coffee plots of HKm groups.

Where possible, documentation was collected from each of the farmers' groups. The type of information gathered included copies of: applications for HKm licences, temporary licences, long-term licences, general and operational plans, internal rules of HKm groups, results of 2007 monitoring and evaluation. Information was collected related to eight groups. Not all information was available from all groups.

2.2.3 Introduction of payment for watershed services approaches

The first stage of the research for the PES case involved a literature review in 2012 to identify watershed PES schemes in Indonesia (Heyde et al., 2012). An Internet search was conducted to identify academic and grey literature sources examining existing or developing watershed PES schemes in Indonesia.⁹ The search revealed the following schemes in Indonesia that seemed to be either in operation, proposed, or had been operational: (1) Greater Aceh district and Peusangan watershed, Aceh; (2) Lake Toba, North Sumatra; (3) West Lampung, Lampung (RiverCare and community forestry); (4) Singkarak, West Sumatra; (5) Bungo, Jambi; (6) Cidanau, Bantam; (7) Citarum, West Java; (8) Kuningan, West Java; (9)

⁹ Searches of Web of Knowledge, Google Scholar, and google.com were conducted using key words, "payments for environmental services," "PES," "payments for watershed services," and "payments for ecosystem services," plus the word "Indonesia." Searches of google.co.id were made using key words, "pembayaran untuk jasa lingkungan" and "imbal jasa lingkungan."

Brantas, East Java; (10) Kapuas Hulu, West Kalimantan; (11) Wain River, East Kalimantan; (12) Malinau and Paser, East Kalimantan; (13) West Lombok, West Nusa Tenggara.

It was recognized that the search approach was rather coarse as it only identified schemes for which information had been posted on the Internet and for which the English and Indonesian key words used in the search had been applied. The literature review was therefore followed-up by a preliminary visit to Indonesia in September and October 2012 to meet with organizations which had facilitated the establishment of PES schemes, various government departments involved in natural resource management, and academics working on the subject. Interviews were conducted with key individuals who had been involved in PES in order to confirm and update the accuracy of information and identify any new developments related to PES in Indonesia.

Following this, three schemes were selected for the more detailed study.¹⁰ The cases selected were intentionally diverse, a strategy chosen to broaden the potential learning from the empirical work. The following considerations were used in selecting the case studies: types of beneficiaries, types of intermediaries, incentive type, scale, status at the time, performance- vs. activity-based payments, main external facilitators, land tenure.

It should be noted that there was no selection consideration referring to the success of the scheme, where success refers at minimum to a sustained reduction in sedimentation over time.¹¹ Two of the schemes reviewed did attempt to directly measure sedimentation reduction, and there were indications of positive results. However, it is the opinion of the

¹⁰ The community forestry initiative in West Lampung (discussed in detail in Chapter 4) has also been presented as a PES scheme (see, for example, IIED, 2012; Kerr et al., 2005; Suyanto et al., 2007; Wertz-Kanounnikoff & Kongphan-Apirak, 2008). Under this framing, “payments” are in the form of secure tenure in return for implementation of activities agreed through long and short term workplans. This scheme was not included in the PES schemes considered here as the focus was on initiatives that were purposefully designed as PES, drawing on a modality of natural resource management that was emerging at the time. The community forestry program on the other hand, was based on a different historical trajectory and conceptual underpinnings, as discussed in Chapter 4.

¹¹ It is recognized that there could be a range of criteria for success. However, given the types of schemes being considered, it seems reasonable that at minimum sedimentation reduction would be one such criterion.

author that the temporal and geographic scale of both schemes meant that it was difficult to attribute “success” or “failure” to the schemes in a meaningful way related to the criterion of sedimentation reduction. It is interesting to note that Indonesia is not an outlier in this case, and in fact there is growing recognition globally that for many types of PES schemes in developing countries, with perhaps the exception of those focusing on carbon, there is a general lack of quantifiable data to measure environmental impacts (Brouwer et al., 2011; Ferraro, 2011; Kroeger, 2013; Pattanayak et al., 2010; Porras et al., 2013).

The following schemes focusing on sedimentation reduction were chosen for follow-up empirical work: (1) a small-scale pilot initiative in the upper reaches of the Brantas River in East Java, (2) the RiverCare scheme in the district of West Lampung in Lampung province, and (3) a pilot scheme in the Mendalam River in Kapuas Hulu district of West Kalimantan.

Empirical data was collected over a two month period from January to March 2013 through a series of semi-structured interviews and group discussions with a variety of actors, and field observations. Interviews were typically conducted by me together with an Indonesian student. Interview guidelines were developed which focused on obtaining an understanding of: the motivations and processes that led to the establishment of the PES scheme; how the interests of different actors were reflected in the schemes; how PES complemented or replaced other approaches towards natural resource management; views about the direct and indirect effects, achievements, problems, and future relevance of PES (for interview guidelines, see Annex 4). Most interviews were recorded, with the permission of respondents.

Interviews were supported by a review of documentation related to the schemes. The availability of information varied between schemes. For example, one of the schemes (Brantas) had been inactive for over five years at the time of field research, and data could not be found and memories had faded.

2.3 A note about the researcher

At this stage it seems appropriate to provide some background about my experience working on natural resource management issues in Indonesia as this has no doubt significantly shaped the way I approached the current research project.

I first went to Indonesia in 1991 as a CUSO cooperant, where I lived in Manokwari, Papua for two years, teaching English to lecturers aiming to continue their studies in Canada. Following this, my volunteer, academic and professional experience has revolved around natural resource management and development issues in Indonesia. This included a year spent volunteering with Indonesian environmental NGOs in Papua and Maluku, a master's degree in Environment Studies focusing on community-based coastal resource management in Maluku province, employment with the Canadian International Development Agency as an Indonesia program officer, and various positions with Canadian and international human rights and environmental NGOs working on projects focused on Indonesia. In total I lived in Indonesia for three and half years (1991-1994 and 1996), mainly in Papua and Maluku. Outside of these periods I have travelled to Indonesia regularly for work.

For the decade leading up to commencement of the current research, the focus of my work was on peatlands management, with a geographic focus on Central Kalimantan, South Sumatra and Jambi. This involved working with Wetlands International at both the international level and with the Indonesia office on practical efforts to utilize emerging financing mechanisms to leverage long-term funding with the aim of strengthening community livelihood options, and generating climate and conservation benefits.

In terms of the current research project, I had not previously worked in the geographic areas where I did field research, nor had I had contact with most of the organizations or individuals I interviewed. The main exception is the fact that I sought information from my former employer, Wetlands International, about the status of mangrove management. At the time

the research was being conducted the Wetlands International Indonesia office was the secretariat of the National Mangrove Working Group.

3. Emergent land, emergent claims: Contested land in the Segara Anakan Lagoon

This chapter focuses on the Segara Anakan Lagoon on the south coast of Java as an example of a primarily state-led approach to natural resource management. Sedimentation in the lagoon has resulted in new, emergent land which has dramatically changed the physical environment and perceived values of the area. Despite decades of top down state-led initiatives, local residents have incrementally shaped the sea and landscape of the lagoon and its surroundings, persistently claiming newly emergent land despite state efforts to the contrary. Whereas these efforts were evident as far back as the 1970s, they faced strong state resistance in pre-reform Indonesia, including attempts to remove people from the land. In the post-1998 period, de facto rights have been increasingly recognized, in a process that is transforming the tenure landscape of the lagoon from the bottom up, despite the persistence of pre-reform structures and chronic distrust between actors.

Since at least the 1970s the lagoon has been the focus of state-led planning and management initiatives. As early as the 1980s it was recognized that problems of multiple agency responsibility and lack of coordination posed challenges to agreeing upon and implementing management interventions in the lagoon and its surroundings (PRC Engineering Consultants Inc., 1987). With the fall of the New Order regime in the late 1990s, and subsequent decentralization of natural resource management responsibilities, the situation has only grown more complicated.

After decades of studies and planning, in 1997 a major conservation and development project focusing specifically on the lagoon was initiated, with implementation continuing until 2005. Under the project an agency tasked with managing the lagoon was established. The mandate of the agency maintained strong elements of a command and control system, and provided little space for the types of multi-stakeholder processes that would be characteristic of a shift in governance regime. Although the management agency was established, it was soon disbanded, with its functions absorbed back into the existing district

structures. At the time of field work in 2015 the state-dominated system remained nominally in place, although there was no evidence of meaningful coordination and leadership or activity implementation with respect to lagoon management.

As shown in Chapter 2 (Table 1), this chapter explores how different discourses of lagoon management and usage at both the national and local levels have developed and changed over time within the existing policy and legal context. It looks at how these framings have been deployed by a variety of actors in order to address different issues, and what this has meant for land tenure in the area. The chapter suggests the importance of unpacking tenure issues, spatially, temporally, and with respect to different actors and their interactions with each other. In doing this it draws a picture of complex interactions, with changes in land tenure in the lagoon driven not so much by state action as by local actors incrementally and persistently making their claims through physical transformation of the emergent landscape. This in turn leads to a situation in line with Scott's (1985) observation that ultimately, "everyday forms of resistance" can lead to "changed or narrowed [...] policy options available to the state" (p. 36).

Discourses shaping management and usage of the lagoon have tended to be framed around four main concerns, reflecting different perceived values of the lagoon over time: food and income security, protection of the in- and off-shore fishing industry, flood protection in the areas up-stream of the lagoon, and expanding/maintaining state forest area. State interventions in the lagoon and its watershed since the 1970s have been supported by several large loan financed projects, with the justification for different interventions in the lagoon having shifted over time.

In the earlier period the focus was on increasing the area and productivity of farm land, and in particular rice paddy fields, as part of a push for food security. At that time the lagoon was regarded as something of a wasteland, with full reclamation of the area for a mixture of farming and fishing being seriously considered. Later, with increasing recognition of the

economic importance of the lagoon for in- and off-shore fisheries, priorities shifted towards conservation of the lagoon, both in terms of water area and depth and the surrounding mangrove forests. The focus on water area and depth dovetailed with a concern about reducing flood risk in agricultural areas adjacent to the lagoon which drained out through the lagoon. An emerging issue is the protection of carbon stores and enhancing sequestration potential in the interest of climate change mitigation.¹²

Management of the area has been complicated by the fact that the state forestry corporation (Perhutani) and the Ministry of Law and Human Rights (*Kementerian Hukum dan Hak Asasi Manusia*) hold jurisdiction over parts of the lagoon and adjacent areas. Lack of clarity as to the status of emergent land has led to legal ambiguity in terms of new land, particularly that which is adjacent to Perhutani areas.

There is a line of reasoning that new land should be under the jurisdiction of the entity beside which the land emerges. Perhutani's interest in these areas seems to be in securing a state claim and label of "state forest" to the largest area possible in order to contribute to meeting a legal requirement for percentage coverage of forest land. The scope and status of Perhutani's claims remains unclear, fuelling simmering land tenure contestation in the lagoon. It is evident, however, that Perhutani has attempted to assert institutional control of areas of the lagoon by trying to establish Forest Village Community Organizations (LMDH, *Lembaga Masyarakat Desa Hutan*).

Even as state management initiatives were being planned, postponed and implemented, people living in the Segara Anakan Lagoon, and others who saw opportunities in the area, were proceeding to use and claim the newly emergent land. Over the four decades since the 1970s the land has been the focus of on-going modifications, with micro reclamation

¹² The Segara Anakan Lagoon has been suggested as a potential REDD+ site (see, for example, Koran Tempo, 2012; merdeka.com, 2014) although at the time of field research there seemed to have been no concrete action taken in that direction.

through the movement of sediment and building of dykes. This has led to an increase in land suitable for building homes, village infrastructure and conducting farming activities.

Expansion of farm land is in part a response to loss of fishing areas due to infilling of the lagoon and a food security and income generation strategy to mitigate what Feldman and Giesler (2012) describe as “*in situ* displacement,” a situation where people remain in place but, “with diminished and highly uncertain forms of livelihood” (p.975). For long-term local residents of the lagoon, their claims are firmly grounded in the understanding that they had traditional rights (*hak ulayat*) to the sea before it became land, and therefore they continue to have these rights on the emergent land.

The different perceived values of the lagoon noted above, and the discourses associated with them, have shaped the strategies of actors in the lagoon. Three broad strategies are evident: reclamation of all or parts of the lagoon, conservation of mangrove forests and water area and depth, claiming emergent land. This chapter will use these strategies as a starting point for exploring changes in land tenure over time against the backdrop of a top-down, state-led mode of steering. It will consider the role of the major actors involved in shaping and addressing the issues, their relationships with each other, and how these have been represented in approaches to lagoon management.

To help situate the Segara Anakan Lagoon in a broader context, section 3.1 of this chapter first provides shape to the concept of “emergent” land, and then discusses some of the resource tenure complexities that flow out of this and how they have been considered both globally and in other areas of Indonesia. In section 3.2 the focus turns to the lagoon, and includes a brief description of shoreline changes over time and causes of sedimentation. In section 3.3 attention turns to how state approaches to the lagoon have shifted over time in response to changing priorities and how land tenure has been reflected in these. It considers the challenges of coordination, and the lack of involvement of non-state actors in lagoon management structures, in so far as they have existed. The three sections which follow then

turn to an examination of the different strategies that have been deployed in support of different discourses related to the lagoon.

Section 3.4 examines different types of conservation initiatives that have been conducted in the lagoon. These include both those related to mangrove protection and rehabilitation and maintenance of water areas. Such activities have mainly been justified in terms of protecting both the off- and on-shore fishing industries and also, particularly in the case of water area and depth conservation, in terms of reducing flooding risk in areas adjacent to the lagoon. More recently, mangrove conservation has also received increasing attention due to climate change mitigation concerns. With respect to mangrove conservation, on the one hand there seems to be a general understanding of the importance of mangroves for coastal and marine biota. On the other hand, there has been something of a backlash against mangrove planting due to the fact that mangroves are seen as exacerbating the spread of emergent land and strengthening the claims of Perhutani.

Section 3.5 turns to the different types of reclamation activities that have been undertaken in the lagoon. It focuses on on-going processes of micro reclamation which aim to enhance livelihood options and strengthen food security through expansion of farm land, and in the past also secured land for homes and community infrastructure. Reclamation shapes land tenure by both changing the value of land, and also by bringing new land under cultivation and therefore strengthening claims to land based on usage.

Section 3.6 focuses on the different ways in which key actors have tried to assert their claims to emergent land. It does this by considering the positions of both local residents and Perhutani, and also the role of the local government over time. Claims have been based on legal and spatial justifications, attempts by Perhutani to assert institutional control over the area, and incremental processes of claiming land on the ground by local residents and recognition by village institutions. Some strategies are overt and confrontational while others are more indirect.

Finally, section 3.7 summarizes how local residents have incrementally and persistently transformed the emergent landscape and claimed the land. It looks at how over time the position of local actors has strengthened with respect to Perhutani and more generally, considers the disconnect between formal structures for lagoon management and transformations in land tenure.

3.1 Emergent land and resource tenure

The term “emergent land” captures the notion of new land developing where there was previously none. Such processes of shoreline aggregation and associated erosion are intrinsic to dynamic coastal and riverine environments. It is where these processes intersect with multiple actors and interests that land tenure issues gain particular salience. If and how conflicts emerge in these changing environments hinges on a multitude of bio-physical, socio-economic and institutional factors.

Tenure issues related to emergent land are not unique to Indonesia. For example, in the lower Amazonian floodplain the term “grown land” is used to refer to areas created by, “the amount of sediment annually deposited at the bottom [of channels] during the flood seasons giv[ing] rise to new portions of land” (de Castro, 1998, p. 4). De Castro describes a situation where such land is a frequent source of conflict as, “the ‘grown land’ has potential economic value, due to the highly fertilized soil. For ranchers, it represents potential grass to feed cattle; for villagers, who have been experiencing land scarcity, it represents good soil to cultivate fast growing crops, such as beans, and watermelon” (p. 11).

In Bangladesh new land areas, known as “chars,” occasionally appear “from river beds in the midst of the river channels where they did not exist before” (Hutton & Haque, 2003, p. 418). Land tenure in these *chars* has been described as “radically unstable” (Feldman & Geisler, 2012, p. 978) and such areas “remain sources of perennial dispute among conflicting

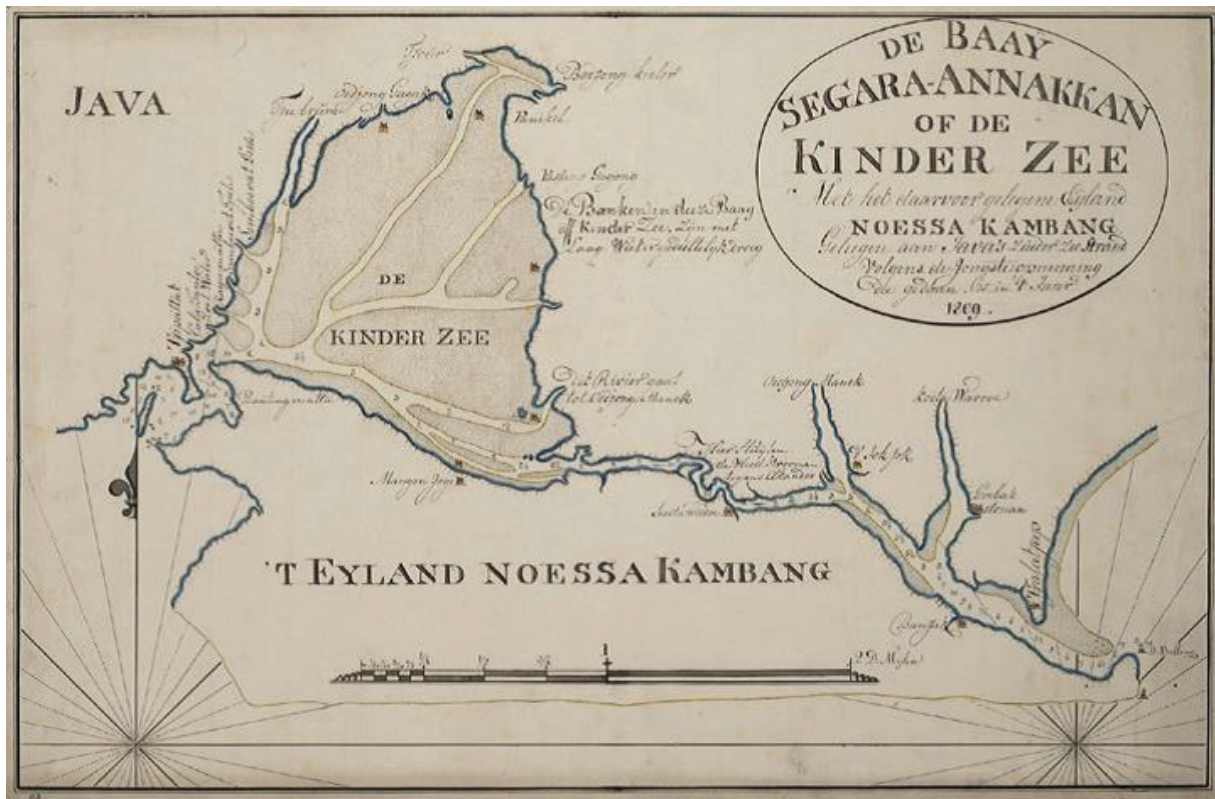
claimants” (Hutton & Haque, 2003, p. 418). In each of these cases unclear tenure carries with it the potential of conflict.

3.1.1 The look and feel of emergent land

In Indonesian the term *tanah timbul* (translated literally as “emergent land”) is commonly used to describe new areas of land resulting from shoreline aggregation. In discussing emergent land in the context of the Segara Anakan Lagoon, it is important to somehow capture a sense of the transition that takes place when sea becomes land. This is not an either/or process where an area is either land or sea. Nor is it one that is easily captured by lines on a map. It is gradual and on-going, defying clear boundaries. McCay (2008) talks about coasts as being liminal and having features, “that make them [...] neither one thing nor the other, transitory, and on the threshold” (p. 7). This depiction is useful in helping maintain a sense of what the sea/landscape of the Segara Anakan Lagoon looks and feels like as it changes. It is an integral part of the story of how the landscape is then modified, used and claimed.

In the Segara Anakan Lagoon, when we think about the transition from water to land we are basically talking about mud, lots and lots of mud. A map prepared by Jan Theunis Busscher in 1809 is helpful in visualizing this (see Figure 2). It shows the familiar clearly defined shoreline of the lagoon, inside of which shaded areas show extensive mud flats that would have been periodically above water. In interviews with lagoon residents, people often referred to the fact that in the past the lagoon was still open water and they could, “see from one village to another.” However, the memory of one resident, describing how when he was a boy of six or seven in the early 1970s he used to go with his parents to a neighbouring village, “sailing in the mud and across rivulets in order to take the straight route [...] it was faster sailing on the mud than through water” (interview, January 2015) blurs the picture – it is not just about open water; rather, the description evokes the liminal, a reality that is somewhere in between water and land.

Figure 2: Map of the Segara Anakan Lagoon, 1809



Source: Lukas (2014a, p. 8)

The transition from water to land involves a gradual accumulation of muddy sediment, followed by pioneering species in a relentless and on-going process of physical change. As a resident of one village in the lagoon described it, “behind this house, to the north, there was mud. It settled and settled and mangroves grew. It got harder and harder and mangroves grew. When it was still new, it was just mud” (interview, January 2015). These changes over time not only have profound effects on the area of land and water in the lagoon, but impact the overall system more broadly, and consequently land use and management. Mangroves tend to rapidly colonize emergent land, and areas on the landward side of the mangroves

become drier, leading to changes in land cover and potential use.¹³ A 1992 management plan for the Segara Anakan Lagoon identified these types of changes as being the root cause of land conflicts in the lagoon, stating that, “government agency jurisdictions over the area have not been able to accommodate these changes and hence, conflicts have arisen” (ASEAN/US, 1992, p. 74). In this way emergent land poses specific governance challenges that other terrestrial areas and long-existing mangrove areas do not.

3.1.2 Tenure in the liminal

In trying to understand the challenges of addressing tenure on emergent land in the Segara Anakan Lagoon it is useful to draw on literature focusing on wetlands, and in particular mangrove, areas. Over recent decades these ecosystems have become the focus of increasing attention at the global, national and local levels as acknowledgement of their ecological and socio-economic values has gained ground in the policy mainstream (Brander & Eppink, 2012; Van Lavieren et al., 2012). At the same time, however, significant land use and land cover change through conversion and degradation of mangrove areas persists (Hamilton, 2013; Spalding et al., 2010). In this context, attention is increasingly turning to better understanding issues of mangrove governance, while seeking new ways to protect and rehabilitate mangrove areas (see, for example, Datta et al., 2012; Gopal, 2014; Schwerdtner Máñez et al., 2014). This discussion has gained salience with the growing interest in the potential of mangroves to contribute to climate change mitigation initiatives (Donato et al., 2011; Locatelli et al., 2014; Murdiyarso et al., 2015).

Efforts at managing coastal wetlands, and mangroves in particular, to sustain their ecological values are confounded by the interrelated challenges of overlapping or unclear jurisdictional responsibilities and multiple interests (Adger & Luttrell, 2000; Karstens & Lukas, 2014; Van

¹³ Lee et al. (2014) discuss the development of the scientific literature from the 1940s to the present day with respect to the idea of mangroves as lateral “land builders.” They conclude that, “the early view of mangroves as land builders, especially in reference to lateral expansion, was not based on solid evidence and is not generally applicable to all settings” (p.732). They do stress, however, that mangroves are important agents in the vertical accretion of soil (p.732).

Lavieren et al., 2012), particular sensitivities to developments in catchment areas (Walters et al., 2008), a persistent tendency to view wetlands as “wastelands” and therefore appropriate for conversion (ITTO, 2012), and the related issue of often unclear and/or unrecognized resource tenure (Adger & Luttrell, 2000; Van Lavieren et al., 2012). These challenges are not unique to mangrove ecosystems, but they are exacerbated by the physical nature of these wetland systems which, due to the dynamic and ambiguous interactions between water and land, cannot be assigned exclusively to the marine or terrestrial realms against which most natural resource policy, planning and implementation are referenced (Adger & Luttrell, 2000).

In policy circles and academic literature, mangrove areas are frequently conceptualized as state or, less commonly in policy circles, common property regimes (Locatelli et al., 2014). In recent years the growing interest in the potential of mangrove ecosystems to contribute to REDD+ has resulted in a burgeoning literature in both the academic (for example, Alongi, 2011; Cormier-Salem & Panfili, 2016; Grimsditch et al., 2013) and policy-related spheres (Herr et al., 2012; Murray et al., 2011; O'Sullivan et al., 2011). While there is a growing body of literature discussing tenure issues in terrestrial forests which are the focus of REDD+ activities (see, for example, Larson et al., 2013; Resosudarmo et al., 2014; Robinson et al., 2014; Sunderlin et al., 2014), the literature on mangroves and REDD+ has, for the most part, not yet dealt with the topic in any depth. An exception to this is Beymer-Farris and Bassett (2012), who, writing about the mangrove area of the Rufiji Delta in Tanzania, argue that insecure resource tenure, coupled with ahistorical framings which cast local resource users as destructive newcomers, led to eviction attempts in 2011 as part of the process of preparing Tanzania to engage in REDD+ initiatives.

Beymer-Farris and Bassett's (2012) analysis concludes that preparations for potential REDD+ carbon initiatives changed the balance between de jure and de facto resource tenure arrangements, leading to conflict and a government response attempting to assert de jure claims, as represented by Tanzania's Forest Act. Beymer-Farris and Bassett (2012), “suggest

that a major consequence of [the] ahistorical framing is a paradigmatic shift in natural resource conservation from community-based natural resource management to fortress conservation” (p. 333). This paper generated international attention (Ecosystem Marketplace, 2012; REDD-Monitor, 2012), and a rebuttal from non-governmental and governmental organizations and academic actors (Burgess et al., 2013). While following a legalistic, de jure line, these authors noted that, “although the legal background to these evictions is [...] very clear, we are equally aware of the potential negative social impacts of people being removed from reserved areas” (Burgess et al., 2013, p. 1353). This case serves to highlight the dynamic and potentially contentious nature of resource tenure in mangroves and the salience of context, in particular temporal considerations, the roles and views of different actors, and the importance of external interests and drivers that impact on local realities.

The example of the Rufiji Delta reflects the general tendency of mangrove policy and management initiatives to pay scant attention to issues of tenure. There are risks to this, as highlighted by Van Lavieren et al. (2012). In a policy brief supported by multiple government, non-governmental and academic institutions, these authors stressed that failure to recognize de facto property realities in planning for mangrove areas can have profound implications for policies and activities aimed at stemming the degradation of mangrove forests, undermining chances of success (Van Lavieren et al., 2012, p. 27).

The relative blindness over time of policy and management initiatives to the complexities of resource tenure in mangrove areas can be partly attributed to the persistent tendency by state agencies to view wetland areas, including mangrove ecosystems, as wastelands, with few direct or indirect values (Adger & Luttrell, 2000; Matthews, 1993; Walters et al., 2008). After all, if an area is considered a “wasteland,” it almost goes without saying that there would be no meaningful property rights, especially if we conceptualize property in the most general sense as concerning, “the ways in which the relations between society's members with respect to valuables are given form and significance” (von Benda-Beckmann et al.,

2006, p. 14). We can see that the issue of “value” is very much tied to which actors we are referring to – for some, wetlands might be valuable, whereas for others they are viewed quite differently. While it can be argued that the explicit narrative of “wetlands as wastelands” has receded in recent decades, most notably starting at the international level with the signing of the Ramsar Convention on Wetlands in 1971, the continued conversion and degradation of mangrove areas indicates that these ecosystems typically remain undervalued (with respect to both economic and non-economic values) and marginal, with Southeast Asia in general and Indonesia specifically being prime examples of this (Hamilton, 2013; Spalding et al., 2010).

If mangrove areas have until recently be considered as marginal with few recognized property rights beyond state control, it can be expected that as these areas start to gain value, whether for their aquaculture or less tangible ecosystem values, tenure arrangements would also evolve. Several studies in Indonesia have looked at the dynamic nature of resource tenure in mangrove areas and how tenure has been shaped over time by different actors. Studies have looked at processes of land cover and tenure changes involved with the conversion of mangrove areas to aquaculture ponds in the Mahakam Delta of East Kalimantan (Baten, 2009; Powell & Osbeck, 2010; Safitri, 2013; Sidik, 2010), Central Sulawesi (Armitage, 2002), and West Kalimantan (Karstens & Lukas, 2014). Each case is marked by the transformation of mangrove areas under de jure state authority and described as either common property or open access regimes into de facto privately controlled plots. This process has, in turn, tended to be accompanied by an increasing concentration of land into the hands of fewer individuals.

In quite a different case in Tongke-Tongke village in South Sulawesi, attention has focused on community-led mangrove planting (Amri, 2005, 2008; Meilasari-Sugiana, 2012). Coastal waters in the area have been described as open access (Amri, 2008). Through the process of mangrove planting and subsequent land aggradation, usable (emergent) land increased. These areas were then claimed by individuals (Amri, 2005, 2008). Amri (2008) identifies a

number of motivations for planting mangroves in Tongke-Tongke village and surrounding areas, including: increasing access to firewood, securing property rights to new land, and protecting residential areas from coastal abrasion and other natural hazards like storms (p. 6).

Whereas the underlying processes and motivations of land cover change in Tongke-Tongke are quite different to the aquaculture cases mentioned above, the move from what have been described as open access (for example in the Mahakam Delta) or common property regimes (for example, in Central Sulawesi) to de facto private control, is similar. Having said this, the case of Tongke-Tongke seems to have been complicated by its very success. In 1995 the mangrove planting group of the village was awarded a national environment prize in recognition of its mangrove management efforts. Following this, the local government increased focus on protection of the mangroves, thereby restricting the ability of residents to cut mangrove trees. As Amri (2008) describes, “it can be said that the prize triggered differing perspectives between the governmental institutions and the local people in terms of the utilization and management of the established mangrove land” (p. 9). Meilasari-Sugiana (2012) summarizes the situation by stating that, “public tenure is attached to the mangroves, but private ownership and communal governance is also assumed” (Meilasari-Sugiana, 2012, p. 188).

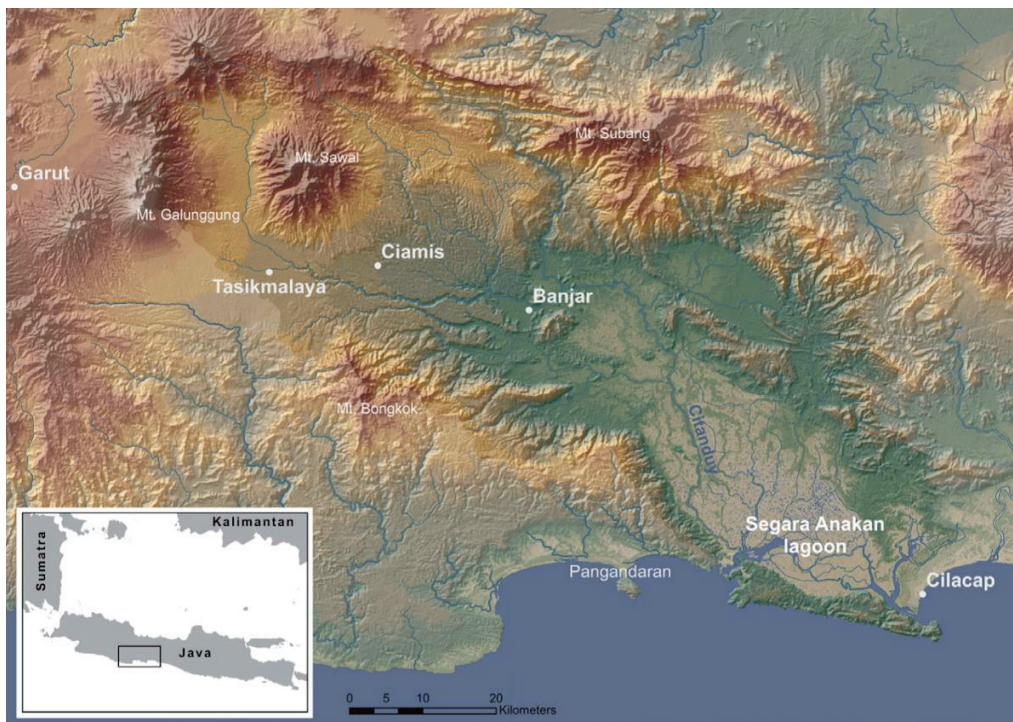
In none of the cases above has the move towards private control been fully recognized by the state through, for example, issuance of land ownerships certificates or official changes in land status. In each case the areas have remained officially classified as state land. However, the move towards private control has, in most cases, received some level of recognition through either the issuance of usage permits (for example, in the Mahakam Delta) (Baten, 2009; Powell & Osbeck, 2010; Safitri, 2013; Sidik, 2010) or recognition of the land as an object of taxation (for example, in Tongke-Tongke) (Amri, 2005). In each of the cases these “interim” rights are also used to transfer usage between individuals. As Safitri (2013) observes in relation to the Mahakam Delta, users “realize that their land claim is legally

insecure but land certificate is unreachable” (p. 10). Obtaining usage permits is seen as a strategy to, “change informal land tenure to semi-formal land tenure” (Safitri, 2013, p. 10). This is in line with what D. Hall et al. (2011) observe as the fact that, “farmers on state land often go out of their way to be seen to pay land taxes in order to secure tax receipts that serve as legible evidence, and tacit state recognition, of their right to farm in the political forest” (p. 29).

3.2 Research location

The Segara Anakan Lagoon is located on the south coast of Java at the mouths of the Citanduy, Cibeureum, Cimeneng and Cikonde Rivers, among others (Figure 3). It is separated from the Indian Ocean to the south by the rocky barrier island of Nusa Kambangan, where there are several high security prisons. Physical changes to the Segara Anakan Lagoon have received much attention in policy, community and academic circles (see, for example, Ardli & Wolff, 2009; Olive, 1997; Ongkosongo, 1983; PSDA Jabar, 2010). For at least the past four decades the fact of decreasing water surface and increasing land area has been the singularly most significant driver of management initiatives related to the lagoon, with concerns focusing on the loss of fish and shrimp spawning grounds, conversion and degradation of mangrove areas, and impacts on up-stream hydrology (ADB, 1996b; ASEAN/US, 1992; PRC Engineering Consultants Inc., 1975). These physical transformations have also been a basic underlying factor contributing to land tenure contestation in the area.

Figure 3: Location of the Segara Anakan Lagoon and its catchment area on the south coast of Java

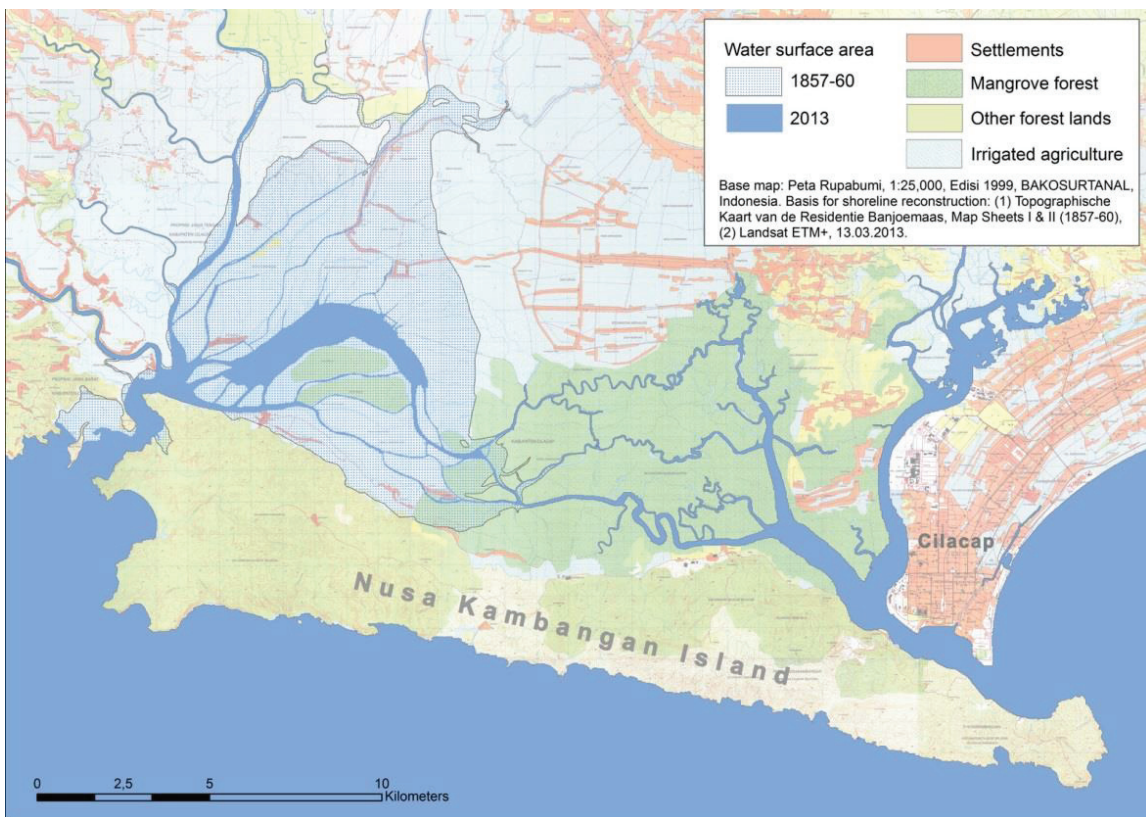


Source: Lukas (2014a, p. 6)

Using historical maps and satellite imagery, Lukas (2014a) has drawn the most comprehensive picture to date of the temporal dynamics of lagoon sedimentation, showing that from the mid-1800s until the present (2013), the water area of the lagoon has decreased from approximately 8,600 hectares to approximately 2,200 hectares (Figure 4 and Lukas, forthcoming).¹⁴

¹⁴ Different estimates of the current expanse of water areas can be found in the literature on Segara Anakan Lagoon. These can be attributed to how rivers, channels and the different portions of the lagoon were incorporated into the calculation (Lukas, personal communication).

Figure 4: Change in the water surface area of the Segara Anakan Lagoon between 1857/60 and 2013



Source: Lukas (2014a, p. 15)

As can be expected in a case of such dramatic environmental change, awareness of this process of sedimentation and speculation as to its causes and possible implications is by no means new. As early as 1931 de Haan, who was involved in preparing a management plan for the mangrove forests of the area, observed that,

“it is foreseeable that the stilt villages will disappear in the typical state they occur now, as the Segara Anakan Lagoon is gradually silting up. In the period from 1900 - 1924, the aggradation amounted to approximately 8% of the surface of the Segara Anakan Lagoon. Considering that this aggradation is progressing with increasing speed due to the numerous reclamations in the hinterland [...] we can expect that the livelihood of these fishermen will be ‘dried up’ within the near future” (de Haan, 1931, p. 73).¹⁵

¹⁵ Translated from original Dutch.

Three general causes of sedimentation tend to have been highlighted in academic, government and popular narratives about the lagoon over recent decades. These relate to soil erosion as one kind degradation (Ardli & Wolff, 2009; PRC Engineering Consultants Inc., 1975; Reichel et al., 2009), a volcanic eruption in 1982 (Olive, 1997; Ongkosongo, 1983; Tim Koordinasi Wilayah & Tim Koordinasi Pusat, 1989) and engineering modifications to the flood basin directly adjacent to the Segara Anakan Lagoon (ADB, 2006; Tim Koordinasi Wilayah & Tim Koordinasi Pusat, 1989).

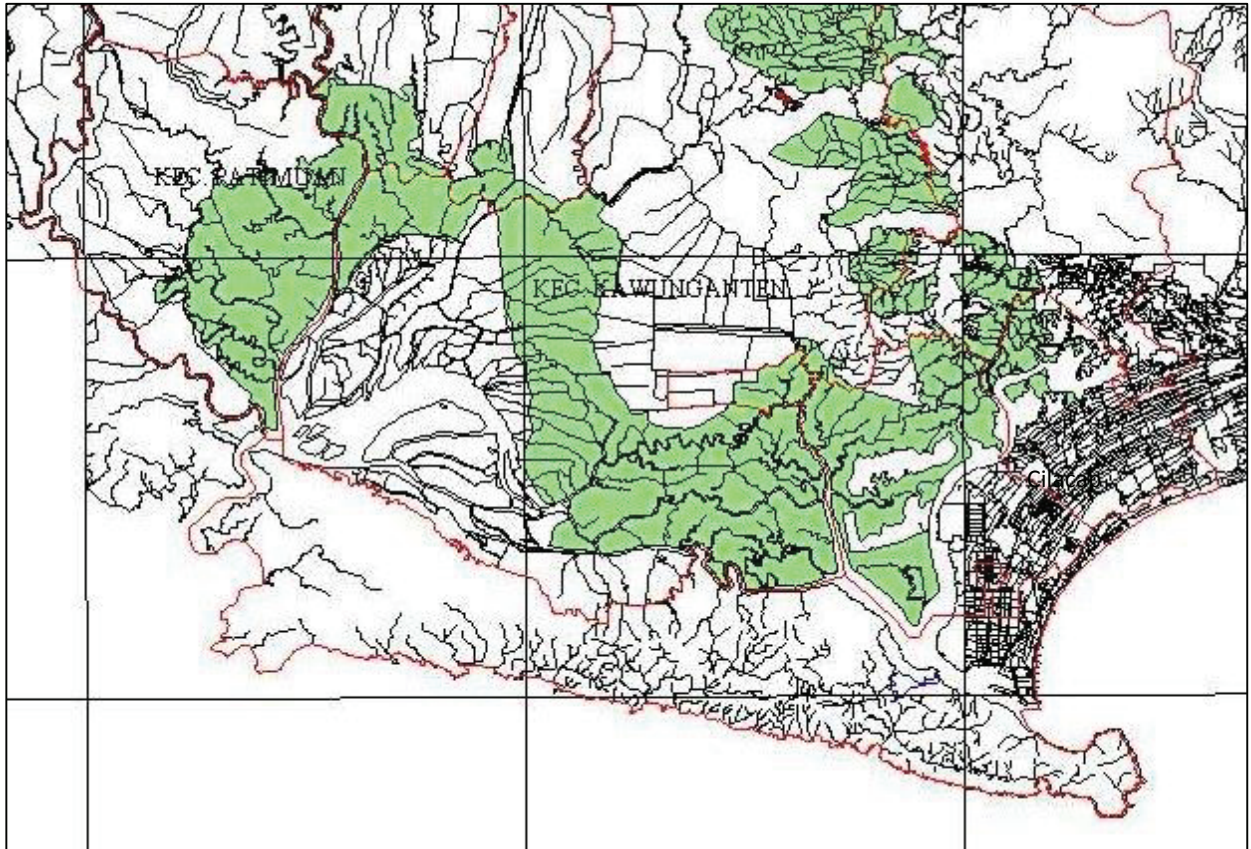
More recently, Lukas (forthcoming) has taken a broader temporal perspective in exploring drivers of lagoon sedimentation, going as far back as the mid-19th century and showing that the range of sediment sources is much more diverse than typically presented. Despite these temporal and spatial complexities, the upland degradation narrative has tended to dominate development planning, with a particular focus on upland farmers' "allegedly unsustainable cultivation practices" (Lukas, 2014b, p. 87). As Lukas (forthcoming) notes, this had resulted in little exploration of other causal factors, to the detriment of attempts to address issues of upland degradation and coastal sedimentation.

Whereas the lagoon itself stretches from the opening to the Indian Ocean at the western end of Nusa Kambangan Island east to the city of Cilacap, this chapter will focus mainly on the western part of the lagoon, where emergent land is most prevalent (see Figure 4). The island of Nusa Kambangan forms the southern boundary of the lagoon, the province of West Java is to the west and Central Java to the east, including the area of uninhabited severely degraded mangrove forest that marks the eastern part of the lagoon.

Administratively the area of interest is part of the sub-district of Kampung Laut under the district of Cilacap. The sub-district currently includes four villages. Prior to 2004 there were only three villages as Klaces was part of Ujung Alang. Large areas of the eastern lagoon are under the management authority of the state forest corporation, Perhutani, as are areas surrounding the western part of the lagoon (see Figure 5). The Ministry of Law and Human

Rights is responsible for the island of Nusa Kambangan, which forms the southern boundary of the lagoon, separating it from the Indian Ocean.

Figure 5: Perhutani managed area (as per district government)¹⁶



Source: BAPPEDA Cilacap

3.3 Projects and narratives

In 1969, at the start of Soeharto's New Order regime, the Citanduy River was declared one of six rivers in Indonesia which would be a priority for development, "indicating its control was in the national interest" (USAID, 1976, p. 11). Agricultural expansion and intensification were at the core of development discourses in the watershed at the time, although there were

¹⁶ Several efforts were made to obtain maps from Perhutani, but these did not bear fruit. It was therefore not possible to confirm spatially what area of emergent land Perhutani claims as being under its jurisdiction.

other issues related to security and stability underlying this designation (USAID, 1985). This focus on the Citanduy River set in motion decades of state-led interventions in the Citanduy watershed and the Segara Anakan Lagoon.

This section highlights changes in state narratives related to management of the Segara Anakan Lagoon and approaches to resource tenure over time. Referring to project and other documentation related to national-level, state-led development initiatives, it is evident that over the period reviewed between 1975 to 2006 there was a shift in state approaches to the lagoon from one which failed to recognize the multiple values of the ecosystem, to one which, on paper at least, placed priority on conserving those values. As Table 2 shows, over this period several large projects were implemented with donor loan funding in both the lagoon and the adjacent area of the watershed. While the focus of this chapter is on the lagoon itself, the table serves to position lagoon management within a broader watershed management context, and highlights the interrelatedness of state-led management and engineering projects.¹⁷ It also gives a feeling for the scope of attention to and investment in the area.

As all this was unfolding, at the rhetorical level there are indications that the importance of addressing land tenure conflicts in the lagoon gained ground in project narratives. However, there are few signs of consequential attempts to resolve issues underlying land conflicts. Related to this, there was also an increasing recognition of the challenges of coordination between different actors in the lagoon and the importance of addressing these.

¹⁷ For more information on the political framings and land use and land cover change in the catchment of the Segara Anakan Lagoon and the implications for lagoon sedimentation and watershed governance, see Lukas and Flitner (under review) and Lukas (2014b, forthcoming, under review-a, under review-b).

Table 2: Major state-led donor funded initiatives in the Citanduy watershed and Segara Anakan Lagoon

Initiative ^a	Executing agencies	External Funder	Financing ^b	Objective(s)	Link to Segara Anakan Lagoon (SAL) Studies and planning.	Sources
Citanduy River Basin Master Plan (1971-1975)	Public Works	USAID	N/A	Comprehensive study to determine an optimal pattern of utilization of water and land resources in the Citanduy River Basin which will lead to increased agricultural production and the attendant improvement in the standard of living of the inhabitants of the area.	Master Plan included sub-project on reclamation of the SAL and its environs.	PRC Engineering Consultants Inc. (1975); USAID (1976, 1978)
Citanduy I (1976-1984)	Public Works; Agriculture	USAID	USD 25,374,000	Elimination of annual flooding by the Citanduy and Ciseel Rivers to increase production of rice and other crops .	Studies. Sedimentation and fisheries resources. Lower Citanduy sub-project of Integrated Irrigation Sector Project was to have included SAL, but because of environmental and technical issues, SAL to be handled separately.	USAID (1976, 1978, n.d.)
Citanduy II (1981-1988)	Public Works; Internal Affairs; Agriculture; Forestry	USAID	USD 39,920,000	To sustain the productive capacity of the basin, enhance that capacity and increase food production through better use of soil and water resources.	Indirect. Project documentation includes little reference to SAL except in the context of describing the watershed.	PRC Engineering Consultants Inc. (1980); Tim Koordinasi Wilayah and Tim Koordinasi Pusat (1989); USAID (1980, 1985)
Lower Citanduy Irrigation Project (1981-1989)	Public Works	ADB	USD 90,700,000	Improve income and employment opportunities and rural water supply facilities and rural roads. Contribute substantially towards achieving the Third Five-Year Development Plan's (REPELITA III, 1979/80 - 1983/84) goal of food sufficiency .	Indirect. The reevaluation of the project issued some six years after the project was completed, noted: increased sedimentation of SAL; sediment flows from uplands 6 times more than reported at beginning of the project; blamed on failure of Citanduy II project; river straightening and raising of levees led to increases in sedimentation of SAL.	ADB (1996a)
Lower Citanduy sub-project of Integrated Irrigation Sector Project (1990-1997)	Public Works; Internal Affairs; Agriculture; Forestry	ADB	USD 35,100,000 (est)	Support to Government of Indonesia's development goals in the agriculture sector under the fifth five-year development plan (Repelita V).	Mainly indirect, some direct. Partial dredging of the SAL under the Lower Citanduy sub-project. Notes that post-construction sedimentation of the Cimeneng floodway (1.0-1.5 m) illustrates the speed of change in the SAL and the importance of a comprehensive approach to development.	ADB (2001)
SAL Environment Monitoring & Optimal Use Planning Project (1982-1985)	Institute of Hydraulic Research	Partly by ADB	N/A	To prepare a definitive plan for ensuring adequate drainage of the lower Citanduy Irrigation Project area ; evaluate the feasibility of using engineering measures to control the future of the SAL.	Evaluate feasibility of engineering measures for SAL.	Ecology Team (1984); PRC Engineering Consultants Inc. (1987)
ASEAN-US Coastal Resource Mgmt. (1986-1992)	ICLARM	USAID	Full amount: N/A; Grant: 5,800,000 USD	Increase national capabilities within ASEAN for developing and implementing comprehensive, multidisciplinary and environmentally sustainable coastal resource management strategies.	Preparation of integrated management plan for SAL. Indonesian pilot site.	Thia-eng and Scura (1992)
Preparation of SACDP (1992-1995)	Public Works	ADB	Full amount: N/A; Grant: 1,700,000 USD	Preparation of SACDP.	Preparation for large loan project in the lagoon. Feasibility stage.	ADB (n.d.); PRC Engineering Consultants Inc. et al. (1994)
SACDP ^c (1997-2005)	Public Works; Internal Affairs	ADB	USD 37,020,000	To conserve and develop the SAL and mangrove complex and enhance and protect the related ecosystem .	Direct implementation in SAL , including 3 components: - Water resources management and sediment control - Community development - Project management and capacity building	ADB (2006)

a. Where possible, information based on loan documents or documents from project documentation; figures are for actual disbursements; c. Segara Anakan Conservation and Development Project

3.3.1 Studies and planning

Between 1973 and 1975, the Ministry of Public Works, with loan support from the United States Agency for International Development (USAID), oversaw a feasibility study for development of the Citanduy River Basin. The resulting Master Plan was issued in 1975 (PRC Engineering Consultants Inc., 1975). Improvements and expansion of irrigation in the lower basin and reclamation of the adjacent Segara Anakan Lagoon for agricultural and fresh water fisheries were central and interrelated components of the plan. Reclamation of the lagoon would not only increase land available for irrigated rice production, but was also intended to improve drainage of the target agricultural area directly north and adjacent to the lagoon.

The “problem” of the Segara Anakan Lagoon was formulated as being, “too much salt water from the Indian Ocean and insufficient drainage” (PRC Engineering Consultants Inc., 1975, pp. IV-19). Building on the justification that, “within the area to be reclaimed from tidal swamps and mangroves, only 25 percent of the lands are being farmed, the remainder being waste lands” (PRC Engineering Consultants Inc., 1975, pp. II-34), and with little evidence that residents of the lagoon were involved in the decision process, the proposed reclamation of the Segara Anakan Lagoon would have completely transformed resource tenure in the area.

Ultimately the reclamation plan was shelved in what a consultant involved in the decision described as, “the seemingly serendipitous meeting of various consultants, agency personnel, and changes in the national economy” (Turner, 1985, p. 399). As the Master Plan was being prepared, the Directorate General of Fisheries was mobilizing resources to study the fisheries value of the lagoon. At the same time, international attention was turning to the link between mangroves and fisheries. In 1975, a study was conducted to explicitly evaluate the link between mangroves and fisheries in the lagoon and associated off shore areas. The results of the study, together with three other independent reports, were presented to the Central Bureau of Planning (BAPPENAS, *Badan Perencanaan Pembangunan Nasional*), which “did not expect these implications for the shrimp industry at all, and decided to make further studies, before reaching a final decision’ (correspondence from one of the participants)” (quoted in Turner, 1985, p. 395).

Over time and following further studies, the reclamation plan lost its lustre, and was ultimately not implemented. The Segara Anakan Lagoon shifted from being valued only in terms of its possible contribution to an expansion of arable areas through reclamation, to being hailed for its contribution to the coastal and marine biological environment (Turner, 1985; White et al., 1989). This reversal was particularly significant given the policy environment at the time, which was shaped by President Soeharto's 1974 instruction to the Ministry of Public Works "to open up one million hectares of tidal influenced areas" for agriculture (Collier, 1979, p. 10).

While activities in the Segara Anakan Lagoon were for the most part put on hold following reduced interest in the reclamation concept, the issuance of the Master Plan initiated a 25 year period of large scale development projects in the lower Citanduy Watershed area adjacent to the lagoon (see Table 2). This was supported with significant loan funding. Starting in 1976 through to 1997 a major focus in the area was on flood protection and irrigation rehabilitation in the lower watershed.

Over this period USAID provided loan support of at least 10.8 million USD for a project in the area estimated to have had a total value in the range of 20 million USD (loan plus Government of Indonesia contribution) (USAID, n.d.). The Asian Development Bank (ADB) contributed loans totalling at least 82.6 million USD for projects in the lower Citanduy area, with total project values reaching approximately 125.7 million USD (loan plus Government of Indonesia) (ADB, 1996a, 2001). The lead agency for these projects was the Ministry of Public Works, which at the time was the most important project implementation department, as indicated by the percentage of the development budget under its control (Hansen, 1981, p. 4).

With the failure to proceed with the reclamation plan for the Segara Anakan Lagoon, development planning for the lagoon itself went back to the drawing board. The lagoon continued, however, to be seen as integral to the success of agricultural development in the lower Citanduy area, as it was realized that, "accelerating lagoon siltation, by impeding drainage from the Lower Citanduy Irrigation project areas, could seriously affect

the Irrigation Project potential” (PRC Engineering Consultants Inc., 1987, pp. 2-4). And by the late 1980s there was recognition of a reverse link, whereby engineering modifications such as the straightening of river courses and building of river levees in the lower Citanduy area to control flooding and improve irrigation had actually increased emergent land in the Segara Anakan Lagoon due to the fact that sediment was no longer deposited on the former flood plain (Tim Koordinasi Wilayah & Tim Koordinasi Pusat, 1989). So in this way, engineering interventions in the lower watershed contributed to physical modification in the lagoon – reducing water area and increasing land area – which in turn contributed to ambiguities in tenure arrangements and land contestation.

The issue of conflicting claims to emergent land was recognized under the Segara Anakan Environmental Monitoring and Optimal Use Planning (SAEMOP) project (1982-1985), conducted under the auspices of the Lower Citanduy Irrigation project. Whereas the 1975 Master Plan was mostly blind to local issues in the lagoon, documentation from the SAEMOP project shows more consideration of ecological and socio-economic issues (see, for example, Ecology Team, 1984; and Economic Team, 1994 referenced in White et al., 1989). Having said this, the focus on engineering interventions remained overwhelming, which is perhaps unsurprising given that the same lead agency (Public Works) and engineering consulting company (PRC Engineering Consultants Inc.) were involved in both preparation of the Master Plan and implementation of the SAEMOP project.

A report from the SAEMOP project highlighted conflicts between local residents on the one hand and government agencies in the form of Perhutani and the Nusa Kambangan Prison Authority on the other (PRC Engineering Consultants Inc., 1987). There was recognition of the need to address tenure issues as, according to the report, “the start of successful development sequence depends on the land ownership [...] residents assured of land ownership are motivated and become active in the development process” (PRC Engineering Consultants Inc., 1987, pp. 1-7). The associated analysis went into little depth about historical or existing de facto tenure arrangements. Despite recognition of tenure issues, there are few indications that a meaningful plan was proposed to resolve conflicts.

It was left to a 1992 management plan for the lagoon prepared by the Directorate General of Fisheries working with the International Centre for Living Aquatic Resources Management (ICLARM), with grant funding from USAID, to propose concrete activities to deal with land tenure issues in the lagoon. The plan and its supporting documentation discussed the history of the conflicts, concluding that, “an equitable resolution of these conflicts is long overdue and is necessary for the government to effectively implement its management plans” (ASEAN/US, 1992, p. 45). Within the context of delineating zonation boundaries for the lagoon, activities proposed in the management plan were aimed at resolving outstanding conflicts, designating land available for communities, and reaching a final decision on ownership of emergent land (ASEAN/US, 1992, p. 74).

According to this plan, it was important to “make sure that the residents of Segara Anakan receive priority in allocation of land” (ASEAN/US, 1992, p. 63). Project documentation does not indicate a high level of local participation in development of this plan, something which is confirmed by a paper later co-authored by members of the project team (White et al., 1998, p. 4). Ultimately the management plan was not implemented, although the plan and information prepared as part of the overall project informed activities in the lagoon which followed.

3.3.2 The Segara Anakan Conservation and Development Project

After over 20 years of studies and planning, in the mid-1990s a project focusing specifically on the lagoon was initiated. The Segara Anakan Conservation and Development Project (SACDP) aimed to, “conserve, develop, and sustainably manage the Segara Anakan environs so as to ensure that economically and socially valuable ecosystems are protected for the benefit of current and future generations” (ADB, 1996b, p. 13). Implemented from 1997 to 2005, the project was originally designed with a total budget of 76.89 million USD. Due to cancellation of major infrastructure work that was originally planned, ultimately disbursements were 37.02 million USD, of which 24.84 million USD was loan funding from the ADB (ADB, 2006).

The project included activities to address both sedimentation and tenure ambiguities and contestation in the lagoon. It also aimed at strengthening management through

development of institutional structures and supporting regulations. The plan to reduce sediment was rather well articulated (see, for example, PRC Engineering Consultants Inc. et al., 1994), and included a program of lagoon dredging and diversion of the sediment heavy Citanduy River directly into the Indian Ocean in order to bypass the lagoon. With respect to dredging, activities were delayed due to irregularities in the tendering process and then because of conflicts with fishers over disruption to fishing areas. Additionally, and more seriously for the objectives of the project, the planned diversion of the Citanduy River was cancelled largely due to external opposition from actors in Pangandaran, where the diversion would have exited into the ocean. According to the Project's Completion Report, "mediation measures, instead of leading to consensus, politicized the mediation process and exposed and worsened differences between the opposition group and lagoon inhabitants" (ADB, 2006, p. 5).

There is also evidence of tension between different components within the SACDP project. Component A of the project, led by the Ministry of Public Works, focused mainly on engineering interventions related to water resources management and sedimentation control, while Components B and C were led by the Ministry of Home Affairs and focused on community development (including mangrove rehabilitation and management) and project management and capacity building (ADB, 2006). In a report prepared under components B and C, consultants noted a basic concern arising,

"from the way [the Department of Public Works] ha[s] implemented river basin management and floodplain development within the Citanduy basin over the last 30 to 40 years [...]. This approach has in the past, and will continue in the future, [to] exacerbate the sedimentation problem within the Segara Anakan Lagoon" (Jeanes & Duiwel, 2003, pp. 10-11).

The authors follow on to suggest that it is,

"not only unfortunate that such drastic engineering measures are now needed to undo an impact partly caused by past flood control and river improvement works, it is also environmentally illogical that the same environmentally impacting 'pattern' of river basin development should be allowed to continue unchanged under the SACDP program" (Jeanes & Duiwel, 2003, p. 11).

Ultimately the proposed engineering interventions were not implemented under the SACDP due to the cancellation of the Citanduy diversion. However, river “improvement” works were partially implemented as originally foreseen under another ADB-financed initiative, the South Java Flood Control Sector Project (ADB, 2006, p. 6).

With respect to issues of tenure ambiguity and contestation, in contrast to the component dealing with sedimentation and water management, the original project plan took a more modest approach. Within the first year of the project a review of the legal and institutional issues affecting the status and management of land was planned. This would in turn result in a report describing the issues and proposing alternatives to resolve competing claims and would cover, “among other things, the use of fishing grounds and the management of mangrove forests and will include a time bound action-plan to confer/confirm rights to land/land use and fishing areas” (ADB, 1996b, p. 33). Project documentation reviewed does not indicate a commitment to actually implement the recommendations of the report.

Reports prepared under the SACDP show that within the project there was at least a core of consultants with a good understanding of land tenure issues in the lagoon (Dudley, 2000; Duewel, 1999; Jeanes & Duewel, 2003). At the operational level this was important in helping to navigate the complexities of compensation to farmers whose land was to be used for disposal of dredging material and also in the design of fisheries activities and mangrove management and conservation initiatives. Such understanding could also have been expected to contribute at the strategic level to addressing long-running tenure contestation in the lagoon.

Under an agreement with the SACDP, in 2001-2002 the Cilacap office of BPN (the National Land Agency, *Badan Pertanahan Nasional*) conducted a cadastral survey in the western part of the lagoon. The survey covered 7,077 units of land which, as a BPN representative who was involved in the survey explained, covered areas where there were already homes and land that was already farmed by residents (interview, January 2015). The intention was that upon completion of the survey, certification would be straightforward – someone making a request could simply attach the map of their land unit to the

request. As such, the cadastral survey represented a significant step in the process towards addressing land tenure insecurities in the lagoon. As a representative from BPN put it, “if we give a certificate, we give certainty” (interview January 2015).

Once the cadastral survey was completed, the district head recommended that as a first stage houses should be certified, but not yet farming land. According to a representative of BPN, at the time of field research 618 homes in the sub-district of Kampung Laut, which covers the lagoon, had been certified (interview, January 2015). There has been no recommendation yet from the district government about the certification of farming land and consequently, at the time of field research no certificates had yet been issued. This is discussed in more detail in section 3.6.

3.3.3 Weak coordination

The importance of coordination between multiple stakeholders at various levels has been on the policy agenda for the lagoon since at least the mid-1980s. At that time there was recognition of the need to, “strengthen the cross-sectional coordination at the decision and policy makers level, cooperation at the program level and team work at the implementation level” (PRC Engineering Consultants Inc., 1987, pp. 1-7). This challenge was and continues to be a ubiquitous one facing coastal resource management in Indonesia.

In the Segara Anakan Lagoon at the time, the situation was described as follows, “the Ministry of Forestry manages the mangroves and the Directorate General of Fisheries [...], the lagoon and offshore fisheries[...]. The Provincial Planning Board of Cilacap (BAPPEDA, *Badan Perencanaan Pembangunan Daerah*) is instrumental in formulating, approving and finding support for any [coastal resource management] plan affecting the area, but real implementation will have to be accomplished by line agencies” (White et al., 1989, p. 65). The integrated management plan for the lagoon prepared in 1992 summed up the problem succinctly, stating that, “clearly, one of the greatest challenges facing the government is to designate one agency to take responsibility for the development of the Segara Anakan area” (ASEAN/US, 1992, p. 47).

Over time and with the decentralization of natural resource management, the situation has become more complicated. In addition to the jurisdiction of district natural resource agencies, national sectoral agencies, and in particular the Ministry of Marine Affairs and Fisheries, remain heavily involved, in part due to the fact that the lagoon straddles the jurisdictions of two provinces. National involvement is also required due to the lagoon's designation in the national spatial plan as part of a national strategic area (*kawasan strategis nasional*) including Pangandaran, Kali Pucang, Segara Anakan and Nusa Kambangan.

The SACDP took on the challenge of coordination by first establishing a Project Management Office that was to be the forerunner of a Segara Anakan Planning and Management Agency (BPKSA, *Badan Pengelola Kawasan Segara Anakan*). According to the project's plan the,

"[BPKSA] will be mandated to oversee, approve, and coordinate all lagoon activities including reporting violations of environmental laws and regulations that have been established for the special area (such as illegal logging, illegal fishing, illegal construction of aquaculture ponds, and infringement across agreed upon land ownership boundaries or zones). Enforcement of laws and regulations will be the joint responsibility of the proper local authorities and [BPKSA]" (ADB.1996, p.19).

The BPKSA was operational by the end of the project, but the project's final evaluation noted the agency's, "weak financial and legal status" (ADB, 2006, p. 21). In line with this, Setyoko and Rosyadi (2009) explain that as a non-structural entity within government, BPKSA was considered hierarchically below the other technical government departments, and as such BPKSA's power to coordinate these departments was weak (p. 98).

Indeed, the agency was subsequently disbanded as an autonomous entity, and responsibility for management of the lagoon was rolled into the district fisheries agency. When asked why the BPKSA was closed, responses from government representatives ranged from the administrative – it was more efficient financially to integrate the Segara Anakan management agency into the existing fisheries agency – to the political – resource management funds are for the whole district, and it was strange to have one area

handled differently from others and having its own management body (interviews, September 2013, November 2013, January 2015).

Whatever the reasons for the change, there is a clear consensus that coordination remains sub-optimal. As one academic familiar with the area put it, “there is no good consortium to manage the area and no integrated program between agencies” (interview, September 2013). A representative from the fisheries agency explained that coordination with other institutions takes place when there are specific activities. This involves, for example, informing each other about the activities and inviting others to participate. However, there are no structural means of coordination (interview, September 2013). A blunter assessment from a different staff person at the fisheries agency was that, “there is no coordination, and organizations are doing their own thing” (interview, September 2013).

One of the key activities of the SACDP was development of a suite of five regulations aimed at conserving the lagoon. These focused on: i) setting the boundary of the Segara Anakan management area, ii) fisheries management, iii) mangrove management, iv) spatial planning, v) establishment and operation of the BPKSA.¹⁸ Implementation of these regulations over time did not proceed as planned, and by the time of the field work, there were fundamental questions raised about the basic conservation orientation reflected in them. For example, water and mangrove coverage had continued to decrease; there was the perception that the value of lagoon fisheries was declining; ownership certificates – on the recommendation of the district head – had been granted for houses and yards on land designated as conservation in the draft spatial plan prepared under the project; and as mentioned above, the BPKSA was not functioning as originally envisioned.

¹⁸ i) Peraturan Daerah Kabupaten Cilacap Nomor 23 tahun 2000 tentang Penetapan Batas Kawasan Segara Anakan; ii) Peraturan Daerah Kabupaten Cilacap Nomor 16 tahun 2001 tentang Pengelolaan Perikanan di Kawasan Segara anakan; iii) Peraturan Daerah Kabupaten Cilacap Nomor 17 tahun 2001 tentang Pengelolaan Hutan Mangrove di Kawasan Segara Anakan; iv) Peraturan Daerah Kabupaten Cilacap Nomor 6 tahun 2001 tentang rencana Tata Ruang Kawasan Segara Anakan; v) Peraturan Daerah Kabupaten Cilacap Nomor 28 tahun 2000 tentang Pembentukan, Organisasi dan Tata Kerja Badan Pengelola Kawasan Segara Anakan.

Much of the discussion of lagoon management has been related to coordination between state agencies. There is little evidence of any meaningful attempts to incorporate community representation in such processes, including in the BPKSA. Since even the attempts at state coordination have not proven successful, perhaps it is not surprising that there has been little focus on involvement of non-state actors. In the end there is no obvious forum for state coordination, let alone inclusion of other actors and interests.

In 2013, the Ministry of Marine Affairs and Fisheries at the national level conducted a series of planning meetings aimed at developing an action plan for the lagoon. The invitation list for a meeting in September 2013 included a broad range of actors from the national level and also the provinces of Central and West Java and various districts (interview, September 2013). This likely reflects the fact that planning for the lagoon is embedded within the national strategic area of Pangandaran, Kali Pucang, Segara Anakan and Nusa Kambangan. Reactivation of the BPKSA was one of the items recommended as part of the action plan.

At the time of field work in January 2015 there was no update on the status of the action plan. It seems possible, however, that with a new government in place as of the second half of 2014, and especially the presence of a Minister for Marine Affairs and Fisheries who knows the Segara Anakan Lagoon well, the direction of the action plan could change. At minimum the fact that actors from the lagoon with close links to the Minister have presented their ideas for future action to her could open up new processes and discussions (interview, January 2015).

Despite weak coordination over time, numerous activities focusing on the conservation of the lagoon's water area and mangroves have been implemented over time. As discussed in the next section, these initiatives have also faced challenges.

3.4 Conservation: Water area and mangroves

Since the fading of interest in the macro reclamation plan for the Segara Anakan Lagoon, planning for the area has focused mainly on development and conservation priorities. Attempting to find some way of balancing these has been an on-going challenge, and one

that was central to the SACDP (see sections 3.3.2 and 3.3.3). Dudley (2000) captures the difficulties of finding this balance in reference to the SACDP, stating that,

“while pretending to promote conservation, the project is actually accelerating the destruction of the very resources upon which the villagers depend. Other government policies are doing the same. If the natural resources are going to be protected for use by future generations, then the government’s policies which are destroying Segara Anakan (including village development policies within the SACDP project) must be changed” (Dudley, 2000, pp. 1-2).

As an example of the dilemmas these conflicts posed to SACDP implementation on the ground, Duiwel (2003) notes that,

“the [...] cadastral surveys and land titling being promoted under [SACDP] auspices, while attempting to accommodate [...] conservation zoning distinctions, in some cases have intruded in “conservation zones” where land rights have been locally allocated, agricultural fields have been formed and mangrove habitat degraded” (Duiwel, 2003, p. 12).

While the tensions between conservation and development may be familiar, the multiple meanings captured by the term “conservation” in the context of the Segara Anakan Lagoon, and the challenges this poses for planning and implementation, are perhaps less obvious. This section unpacks these by looking first at how “conservation” was framed under the SACDP. From there it focuses specifically on mangrove management (and particularly replanting) initiatives to examine some of the contradictions that emerge when one explores what these types of interventions mean to different actors.

3.4.1 Conservation under the SACDP

Conservation activities under the SACDP focused mainly on the western part of the lagoon (see Figure 6). They were aimed at reducing sediment entering the lagoon, removing existing sediment from water areas, and mangrove management. Activities built on an assessment that,

“the only long-term viable and [...] cost-effective approach to preserve the lagoon is to (i) divert the Citanduy River directly to the sea and divert the Cikonde River to a large tributary, the Cibeureum River; (ii) dredge the lagoon in selected areas so as to maintain a balance between the water

surface area and mudflats; and (iii) implement sustainable management practices for mangroves and a critically damaged watershed” (ADB, 1996b, pp. 12-13).

We see here that the focus is on conservation of water area and mangroves. In terms of water area, the project aimed to stabilize the lagoon water body at about 1,729 hectares (ADB, 1996b, p. 38).¹⁹ In terms of mangrove management, 1,125 hectares of village mangrove forests were to be rehabilitated and about 5,000 hectares were to be “managed successfully and protected from exploitation” (ADB, 1996b, p. 38).

Figure 6: Location of SACDP activities

Mangrove conservation activities fell under category 4, Community Development



Source: ADB (2006, p. vii)

With respect to conservation of water area, the project’s completion report noted that,

¹⁹ See footnote 14 for an explanation of the need for caution in comparing lagoon water area estimates from different sources.

“since the key engineering measure of diverting the Citanduy was not implemented, the Project’s environmental objectives were not attained. The lagoon can be expected to further shrink until reaching some equilibrium of brackish water channels amid mud flats. The lagoon’s ecological functions can be expected to be significantly reduced if not almost eliminated over the next decade” (ADB, 2006, p. 3).

Dredging activities, which were conducted from 2002-2005, were seen “as a stop-gap measure in the hope that the Citanduy diversion would eventually be approved for construction” (ADB, 2006, p. 21). This did not happen, and many actors see it as increasingly unlikely given the elevation in 2014 of the former head of opposition to the diversion to the position of Minister of Marine Affairs and Fisheries.

3.4.2 Mangrove management approaches

At the time of field work, mangrove management in the lagoon appeared to be a rather disjointed patchwork of initiatives, with a default focus on short-term mangrove planting activities supported by different actors. There was little meaningful coordination between actors, either in terms of spatial planning, replanting initiatives, patrolling against illegal activities, or sharing of experiences, in so far as these activities were undertaken at all. This was confirmed by various respondents.

Trying to trace the evolution of mangrove planting initiatives proved somewhat confusing. However, there seemed to be general agreement that such initiatives started in earnest in the western part of the lagoon with the SACDP in the early 2000s. In the mid-2000s there was a government-supported mangrove replanting program in Ujung Alang which ended with corruption charges and a court case involving members of the village government (interview, November 2013). Since that time, but not necessarily linked, replanting programs in non-Perhutani areas of Segara Anakan have been mainly funded by the district level Department of Marine Affairs and Fisheries and Segara Anakan Management, Pertamina under corporate social responsibility funding,²⁰ and at least one external funder (Mangroves for the Future). They seem to have coalesced around a single

²⁰ Pertamina, the state oil company which has a large refinery in Cilacap, explained their interest in mangrove re-planting in part due to the fact that it is related to their core business – i.e. planting of mangroves for their carbon sequestration capacity.

individual who has established a mangrove planting group, a mangrove nursery and planting area of approximately 10 hectares in Lempong Pucung sub-village of Ujung Alang. When different actors were asked about current mangrove management in the lagoon, reference was repeatedly made to this individual.

In general, actors in the lagoon tended to show an understanding of the importance of mangroves for their environmental services, in particular for fisheries. However, in the context of the western lagoon there was a general questioning of whether mangrove re-planting is an appropriate conservation strategy within such a dynamic environment where land continues to aggrade because of sedimentation, and there is a preoccupation with trying to secure the water area and depth of the lagoon. Arguments clustered around three concerns, including, i) the contribution mangroves may make to sedimentation, ii) fear of the way that mangroves may be used to strengthen land claims for conservation and by Perhutani, and iii) a general questioning of what comes out of the money invested in such programs.

Mangroves and sedimentation

The 1992 integrated management plan for the Segara Anakan Lagoon explained the link between mangroves and new land as follows,

“due to siltation of the lagoon, new land is building up along its shoreline. This land is constantly subject to colonization by the floating seeds of mangrove trees. This has resulted in new mangrove forest being added, especially at the inner margins of the lagoon” (ASEAN/US, 1992, p. 42).

When discussing mangrove planting activities, community and government actors in the lagoon tend to express concern that it is the presence of mangroves that actually promotes increased sedimentation, and therefore a reduction in water area.²¹ This in turns leads to great scepticism about the wisdom of planting activities, especially at the frontier of emergent land.

As a representative from the district planning body explained, “it is not necessarily the case that we want to have more mangroves, as mangroves act as a sediment trap which

²¹ See footnote 13 for more on mangroves as lateral “land builders.”

leads to less water area [...] there is a need to look at the ratio of mangroves to water area” (interview, September 2013). A representative from the district Department of Marine Affairs and Fisheries and Segara Anakan Management highlighted that the justification for planting mangroves in the Segara Anakan Lagoon is different from the north coast of Java where shoreline erosion is a serious problem. He also mentioned that the department would support mangrove planting but not on new emergent land as in future there might be a dredging program, and the presence of mangroves would mean that the land could not be realistically dredged (interview, September 2013).

This ambivalence to mangrove planting on newly emergent land was mirrored by village respondents. A resident from Ujung Alang said that people wanted to save the lagoon, but if, “mangrove programs are implemented, Segara Anakan will cease to exist [...]. The problem is that when there is a small area of emergent land, mangroves are planted, and more land emerges [...]. Segara Anakan will be killed because of mangroves” (interview, January 2015). In a discussion with staff of the Ujung Gaggak village government they explained that emergent land is a dilemma. A decision needs to be made “if we want to save Segara Anakan or plant mangroves [...]. It is better if emergent land is dredged” (interview, January, 2015).

Politicization of mangroves

In the struggle for recognition of land rights in the lagoon, there is tension between designation of emergent land for conservation and as forest land, and the claims of long term lagoon residents. Mangrove planting on newly emergent land falls squarely in this contentious space, and as a resident put it, “mangroves have been politicized” (interview September 2013). The village head of Ujung Alang explained that, “if mangroves are planted, the area is already claimed” (interview January 2015). Residents mentioned that at the time of SACDP, there were cases of newly planted areas being designated for conservation, meaning that in theory, access would be limited. In the 2011-2031 district spatial plan, much of the Segara Anakan lagoon is designated for conservation (District Regulation, No. 9/2011). This is supposed to be supported by a more detailed plan for the lagoon, but by 2015 this had not yet been drafted.

There is also a fear that if mangroves grow on emergent land, the area could be designated as forest land and therefore fall under the authority of Perhutani. To avoid this, there was a sense that it was better to claim and use land before mangroves became established. The foundations of these fears about Perhutani claiming emergent land have some legal basis, as discussed further in section 3.6.1 and reflected in the 1992 Management Plan for the lagoon which stated that “according to the Forestry Act, newly formed lands that are forested are designated as tidal forests and reserves under the jurisdiction of Perhutani” (ASEAN/US, 1992, p. 46). These concerns about possible Perhutani and conservation claims continue to colour current attitudes to mangrove replanting. In addition to leading to a reluctance on the part of some actors to support mangrove replanting, the pervasive uncertainty and suspicion also contributes to a broader environment of mistrust between actors in the lagoon (see section 3.6.4).

Scepticism about the impact of re-planting initiatives

The general usefulness of mangrove replanting initiatives was also viewed with scepticism by a number of respondents, and there seemed to be a common rhetorical stream from village residents and government officials noting that despite significant funds invested into mangrove planting, there have been few results (interviews, September, November, 2013 and January 2015). One elderly respondent said that in the past mangroves grew naturally with no tending and they were healthy, but now, despite lots of money for planting, there are no results (interview, September 2013).

Several community and government respondents noted that the failure of the planting initiatives of both the SACDP and Perhutani can be attributed to lack of follow-up tending, even if funds had been allocated for such activities (interviews, September, November 2013 and January 2014). Additionally, in Ujung Alang in particular, which is where most post-SACDP mangrove planting initiatives have been undertaken, the village head lamented the lack of communication with the village government and consultation with community members by different actors coming into the village area to plant mangroves and questioned what benefit such programs offered to residents (interview, January 2015).

3.5 Reclamation: Transformation and recognition of the liminal

Several studies have made use of satellite images to document changes in emergent land use in categories such as mangrove forest, rice fields, dry land agriculture, aquaculture, communities and mud flats (see, for example, Ardli & Wolff, 2009; Olive, 1997). Ardli and Wolff (2009) show a dramatic reduction in area of mangrove forest, particularly in the western part of the lagoon and associated increase in farm land, in particular rice fields, and also aquaculture areas. As a compliment to these broad scale analyses, it is interesting to focus on local actions that expedite processes whereby newly emergent land becomes usable for either farming or dwellings. This section draws a picture of different types of community-led “micro” reclamation activities that have been implemented in the Segara Anakan Lagoon over the past 40 years.

Potential reclamation has long been part of discussions related to development of the Segara Anakan Lagoon. As early as the 1930s, de Haan touched on reclamation, noting that without “expensive impoldering” the area would not be suitable for agriculture (de Haan, 1931, p. 55). Reclamation gained broader attention in the 1940s, when Blommestein, a Dutch hydrological engineer stationed in Java, developed a “prosperity plan” for the western part of Java, which included the full reclamation of the Segara Anakan Lagoon through diversion of the Citanduy River to the Indian Ocean and levees to cut off the eastern and western outlets (PRC Engineering Consultants Inc., 1975, pp. 1-3; Ravesteijn, 2002). Aimed at expanding the irrigation system in order to address the serious food situation in Indonesia, Blommestein also noted broader food security issues as referred to in the Rice Report of the Food and Agriculture Organization of the United Nations (Blommestein, 1949, p. 580).

Ultimately the Blommestein plan was not implemented, but the idea of full reclamation was revived again in 1969 when the company PT Indah Karya was commissioned to prepare a development program for the Citanduy River Basin (PRC Engineering Consultants Inc., 1975, pp. 1-4). The report coming out of this work suggested reclamation by “diverting the flood flows of the Citanduy River into the Segara Anakan,” which it was estimated, “would result in completely silting in the Segara Anakan within a period of 28 to 30 years” (PRC Engineering Consultants Inc., 1975, pp. 1-4). The Master

Plan that was issued in 1975 also recommended full reclamation. It envisioned diversion of the Citanduy River to the Indonesia Ocean and prevention of tidal flows entering the lagoon. As mentioned in section 3.3.1 above, this plan did not proceed, and since then macro reclamation has faded from policy dialogue related to lagoon development.

Processes of localized micro reclamation initiated by lagoon residents have, however, been on-going since at least the 1970s. These initiatives in effect aim at hastening the transition from water to liminal to terrestrial, with all the benefits that the latter is perceived as offering. Below, three mechanisms of micro reclamation are considered: i) building up land for homes and village infrastructure, ii) construction of dikes to block salt water intrusion into agricultural fields, and iii) intentional channelling of riverine sediment into low-lying fields to enhance agriculture potential.

A fourth mechanism, the depositing of material from the dredging of the lagoon in the 2000s as part of the SACDP is another form of reclamation that was quite often mentioned in interviews with actors in the lagoon, although was not a strategy led by local residents. There seems to be a real interest among local actors in the potential of future “disposal” areas. For example, one woman who has an agricultural plot on emergent land which is currently unusable because of salt water intrusion explained that she continues to hold on to the land and pay yearly taxes because of the possibility of “disposal,” and the increase in land value that would result (interview, November 2013). Disposal land is elevated, and there is the general perception that after a few years it becomes high quality farming land, outstripping the agricultural potential of lower lying areas.²²

3.5.1 Human made islands for homes and village infrastructure

In January 2015, as researchers prepared to enter a house in Ujung Gaggak for an interview, the couple they were meeting suggested they keep their shoes on – renovations were underway. The floor of the house was being raised because of

²² This is in contrast to the findings of Reichel et al. (2009) who noted the high salinity and high percentage of heavy metals in disposal soil and the fact that plants in direct proximity to these areas died (p. 339). This discrepancy is likely due to the fact that Reichel et al.’s observations were made relatively soon after the disposal soil had been deposited.

increased flooding, and it was dirty inside. Indeed, stepping up into the living room area meant stepping onto a raised layer of compacted earth, ready for a floor covering to be installed. In an empty room off the living room there was earth piled in one corner, and in another the start of the newly raised floor had been packed down. Each day soil was transported by small boat (*prahu*) from emergent land on the north shore of Nusa Kambangan to the house. Once the process was completed, the vertical space inside the house would be reduced by some 30cm. The floor was higher, but the ceiling remained the same, effectively lowering the height of the house.

The image of “short” houses scattered along village streets is not an unusual one in areas of Kampung Laut. Nor is that of new houses being built on high foundations to avoid flooding. These are just two examples of adaptive strategies in areas where the liminal is inhabited. Over time, as has happened in parts of the village of Panikel in the northern part of the lagoon, the land may become more-or-less indistinguishable from other terrestrial areas, but in the meantime, life in these areas is an ongoing process of negotiating the boundaries between water and land.

Up until the 1970s, lagoon residents lived mainly in the type of stilt villages mentioned by de Haan in 1931 (see section 3.2). Since then, however, building patterns have shifted, and now homes are built on land rather than over water. In the older settlements of the lagoon, the emergence of land was in part due to sedimentation, but was also aided by human intervention. As one resident explained, “Motean [a sub village of Ujung Alang] is created land. We used to bring in earth by *prahu*, every day two boat loads” (interview November 2013). Indeed, facilitating the creation of “man-made islands” was one of the first initiatives supported by a food-for-work programme of the non-government organization (NGO) YSBS (*Yayasan Sosial Bina Sejahtera Cilacap*) when it started work in Kampung Laut in the latter part of the 1970s.

3.5.2 Building dikes to protect against salt water intrusion

YSBS was established by a Catholic priest originally from Ireland who first came to Kampung Laut in 1973. Father Charlie Burrows, or Romo Carolus as he is referred to locally, is well known in the lagoon. In fact, as an evaluation of YSBS’s infrastructure work

over the period 2006-2012 notes, people find it “difficult to distinguish YSBS as an institution and Romo Carolus as [a] YSBS representative” (MICD-UGM, 2013, p. 31). A former village head of Ujung Gaggak summarized the role of YSBS in the lagoon as follows, “the challenge was how to convert the land so crops would grow [...]. The money required was not insignificant and was supported by several parties, including our NGO, YSBS [...] which has provided exceptional assistance to Kampung Laut [...] starting from 1980 until now” (interview, January 2015). According to Sulistiono writing in 2011, all rural roads in Kampung Laut had been built by YSBS. Since that time the government’s National Program for Community Development (*Program Nasional Pemberdayaan Masyarakat*) has also started to support road infrastructure in the area, working in cooperation with YSBS (interview with YSBS staff, January 2015).

Since its inception with initial support from, for example, the Catholic Relief Service in the form of food donations from the United States, to the present day, with significant funding for long term programming from Miseror and other donors, YSBS has worked closely with villages in Kampung Laut on infrastructure and other programmes. One of the foci of infrastructure programming has been micro reclamation. As Romo Carolus describes the situation, YSBS’s work in Kampung Laut is in part an effort to “turn the on-going disaster of loss of sea area and fishing grounds into a blessing through the creation of farm land and increased food security” (interview, November 2014; Rm. Carolus, 2012, p. 15).

According to Duewel (1999), development of rice agriculture in the lagoon first started seriously on the emergent land to the north of Nusa Kambangan in the late 1970s and early 1980s with construction of a dike. Then in the mid-1980s it began in the northern areas of the lagoon, and accelerated through the mid-1990s (Duewel, 1999, p. 15). Opening of these lands for farming was also accompanied by dike construction, which is on-going. A long term resident of Ujung Alang who was one of the first people to open land on Nusa Kambangan, said that in the beginning the emergent land was not good for farming because of salt water intrusion. Then YSBS came and built a dike so that the salt water could not enter, and in the 1990s the “farming was good” (interview, November

2014). Since then, the dike has been breached, and now areas of land sit idle because of the salt water intrusion.

Work on dikes along the length of the emergent land on the north coast of Nusa Kambangan started in the late 1970s, supported by YSBS. At that point people were engaged through a food for work program, with support from different sources. Over time the dike, with a width of eight to ten meters, extended approximately 12km east from Klaces through Lempung Pucung, a sub village of Ujung Alang which stretches along the emergent land on the north shore of Nusa Kambangan. There were two parallel dikes constructed – the interior one, closer to Nusa Kambangan, included gates for water management. People living and farming in the area still mention with pride the fact that the yield from the area was so good that in the late 1980s the district head came there to open the harvest (*panen raya*). This was also taken as an indication of support for their right to farm in the area (interviews, November 2013, May 2014).

Since then, the integrity of the dike has been compromised. Salt water intrudes into the land, and much of the area sits idle. As the village head of Ujung Alang explained the situation, “I have communicated with the district head, but have received no response [...]. About 600 hectares of land cannot be used, or not used optimally” (interview, January 2015).

Different causes were given for the reduced effectiveness of the dike. Several residents explained that at one point there was heavy rain and flooding. Water accumulated behind the dike and could not exit, so people breached the dike to let the water out. Since then it has not been repaired and salt water enters into the former farming fields. A second explanation from written sources mentions that the dike was damaged during the last half of the 1990s when large areas of aquaculture ponds, which have since been abandoned, were opened on the seaward side of the internal dike (Duwel, 1999, p. 31; Khuriyati, 2009, p. 89; Suryawati, 2012, p. 156). More recently, the narrowing of the dike from its original width has likely also reduced its effectiveness.

3.5.3 Channelling of riverine sediment into low lying fields

During field work in 1994, Olive (1997) noted that several farmers in Panikel had requested assistance from the village head to construct small canals which were needed,

“to bring sediments carried down the river farther inland to build up land as well as drain excessive water. The farmers were concerned that these lower lands would become swampy if they were not built up” (p. 177).

It is unclear how widely these actions were at the time, although in recent years there seems to be growing interest in this reclamation strategy.

We are talking here not simply of a process of transforming emergent land into farm land, but also a response to changes in the hydrological landscape due to the infilling of water courses flowing south into the lagoon. Such changes again capture the dynamism of the liminal landscape. Land that was emergent became farm land; then, because of the silting up of water courses, became water logged and unusable for part of the year because water could not flow out of the fields to the raised water courses. This is of particular relevance to the villages of Panikel and Ujung Gaggak through which the main sediment heavy rivers flow into the lagoon.

In response to this, farmers who had seen the sediment left on river banks after flood waters had receded began to think of ways to make use of that sediment to raise the level of fields. The justification was simple, “rather than non-productive land where rice cannot be planted [...] flood waters could be directed to the fields and mud brought in” (interview, January, 2015). In the 2006 dry season, a group of residents from Panikel dug in from the Cimenang diversion to an adjacent rice field. When the water course flooded during the rainy season, sediment laden water flowed into the field and after the water retreated, mud remained which was suitable for farming. After this trial, people approached YSBS to support digging of additional channels. But at that time there was no funding available. Later, however, when YSBS received funding designated for food security programming, an opportunity emerged (interview with YSBS staff, January 2015).

In 2011 YSBS worked with farmers in a sub-village of Ujung Gaggak who dug six channels. In 2014 six more were dug, including in neighbouring Panikel. Initially some farmers were

sceptical of the approach, complaining that it would flood their fields. But according to the resident leading the initiative at the local level, “in the beginning we demonstrated [...] and now the people request the channels [...] now that they know there is mud coming into the fields” (interview, January 2015). And indeed, a visit in January 2015 to a field which had been flooded over three days in December 2014, gave a sense of the transformation that one flooding event can make.

A few months earlier, channels had been dug in approximately 600 meters from the waterway, with a width of about two meters. The person in charge in the village was enthusiastic, explaining that as the sediment laden water flows in, it overruns the channels, depositing mud up to 200 meters on either side. So ideally channels should be placed 400 meters apart to ensure optimal coverage of mud. He scrambled down the embankment of a dike to walk through a recently flooded field. Newly deposited mud reached up to his knees, and in the distance a woman was preparing rice seedlings for planting. The appeal of the concept in an area of water logged fields and hunger for agricultural land was abundantly clear.

Unsurprisingly, the Department of Rivers and Waterways in Banjar, West Java, which has responsibility for the Segara Anakan basin was highly sceptical of the breaching of the banks of water channels. YSBS had several high level meetings with the department, and says that there is interest in the concept within the department, especially the bottom up approach which could forestall resistance with which government programs have been met in the past in the lagoon (interviews, January 2015). At the time of field work, YSBS was working to meet a number of requirements from both the government and potential donors necessary for an upscaling of the program, most notably the need for an environmental assessment.

Romo Carolus’s vision for the project, which it seems fair to say is also that of YSBS, is rather ambitious. As he put it, “sediment is valuable” (interview, May 2014). The channelling of sediment is framed not only as improving agricultural potential at the local level to improve food security, but also as contributing to the maintenance of the water area and depth of the lagoon – sediment that flows into fields does not reach the lagoon.

Over time the hope is that the experience of Ujung Gaggak and Panikel will serve as examples for farmers along the Citanduy River, from which the most sediment reaches the lagoon. If those farmers diverted sediment rich flood water flows to increase the elevation of farming fields, the idea is that, in addition to improving the quality of farm land, this would reduce the level of sediment entering the lagoon (interview, January 2015).

3.6 Land claims: Emergent land, emergent conflict

The previous section discussed processes of opening and modifying emergent land for farming. The process is one of incremental changes to the landscape over time to bring more of it under agriculture. This section explores the interests and ways in which different actors assert their tenure claims to emergent land in the lagoon.

The section begins with an exploration of the different legal justifications actors use to assert their claims to emergent land in the Segara Anakan Lagoon. Following this the focus turns to attempts by Perhutani to assert institutional control over the area through the establishment of community organizations at the village level, and direct community resistance to these efforts. The section then explores processes of incremental recognition of land tenure at the village level – although there is no full ownership of farming land, the *de facto* situation on the ground makes it increasingly unlikely that there could be reversal of tenure gains that have been made at the local level to date. Finally, the section concludes with a look at aspects of the relationship between different actors.

3.6.1 Legal and spatial justifications

Several national laws and regulations are invoked when discussing tenure over emergent land in the Segara Anakan Lagoon. To explain Perhutani's claims or perceived claims, the most often cited was the forestry law.²³ People did not provide a specific explanation of where and how the law addressed emergent land, and in fact it is not referenced explicitly within the law. However, clause 1 of the law does define as national forest

²³ *Undang-Undang No. 41 Tahun 1999 tentang Kehutanan.*

(*hutan negara*) forested land which is not covered by existing rights. From here seems to flow the argument that if mangroves colonize emergent land it will be claimed by Perhutani, which is responsible for the management of state forest in Central Java (as per government regulation 53, 1999 about Perhutani). This interpretation is supported by clause 15 of government regulation 28 of 1985 which states that provincial level agencies responsible for state forests are also responsible for forest that is outside state forest areas.

Several respondents also referred to the fact that responsibility for emergent land rests with the authority or owner next to which the new land aggrades. Since land on the west and east shores of the water body in the western lagoon is managed by Perhutani (see Figure 5), the logic is that the emergent land should be managed by the same organization. This was how emergent land (*aanslibbing*) was addressed under colonial law and until the issuance of the Basic Agrarian Law of 1960²⁴ which nullified the previous relevant colonial laws (Supriyadi, 2013, pp. 140-141). The Agrarian Law does not explicitly address emergent land.

Various Perhutani, local government, community and non-governmental respondents mentioned that Perhutani's main interest in asserting control over emergent land was in response to a requirement that 30 percent of each province should be state forest. This was articulated clearly in a 2008 letter from the National Ministry of Forestry to the district head of Cilacap in response to a, "request for ownership to emergent land in the forested region of Cilacap by community members who are using the land." The letter states that, "recalling that the forested area of the Province of Central Java is less than 30%, in accordance with law No. 41, 1999 about Forestry, for provinces and districts/cities with a forested area of less than 30% the area of forest needs to be increased" (letter No. S.639/II-Kum/2008, August 2008. Copies obtained November 2013 and January 2015, translation by author).

Local residents base their claim to new land on the fact that in the past when the western lagoon was mainly water, there were traditional rights (*hak ulayat*) to water areas so

²⁴ Undang-Undang No. 5 Tahun 1960 tentang Peraturan Dasar Pokok-Pokok Agraria.

these should be recognized when the sea became land. But residents also argue their claim to emergent land without referring to individual rights to former sea areas. As one resident of Ujung Gaggak who had been involved in pursuing rights to emergent land explained,

*“according to history things are clear [...]. When this area was water we lived above the water, we found our food here, we were raised here, we were born here and now the area is land we will continue to live here, even if we must become rice farmers... we assume the land is owned by residents of Kampung Laut... the one thing that is clear is that clause 33 of the constitution of 1945 is our reference” (interview, January 2015).*²⁵

Supporting this view is the 2013 analysis presented by a member of a parliamentary legislative team during a meeting with residents of Kampung Laut related to the process of revising Indonesia’s agrarian law. In that meeting it was explained that according to Indonesian law there are two categories of land, forest and non-forest. Forest land is administered by the Ministry of Forestry, while non-forest land is administered by BPN. There are processes to administratively convert forest land to non-forest land, but it is not possible to re-categorize non-forest land as forest land. Since emergent land is new land which was never categorized as forest as the areas under question were previously water, logically it cannot be claimed as forest land (Suparyo, 2013).

BPN also has a position on emergent land. In their opinion it is state land, not automatically under any one ministry. In 1996 an official letter (*surat edaran*) was sent to offices of the Land Agency across the country clarifying that in the case of emergent land, “control/ownership and usage would be regulated by the Agrarian Minister/Head of the National Land Agency” in accordance with existing legislation (Surat Edaran No. 410-1293. Tahun 1996, translation by author). This was followed by a governmental regulation on land planning which stated that emergent land was directly controlled by the state (Government Regulation No. 16, 2004 about Land Usage, clause 12).²⁶

²⁵ For a discussion of clause 33 of the Constitution see Chapter 1 section 1.2.2.

²⁶ *Peraturan Pemerintah Republik Indonesia Nomor 16 Tahun 2004 tentang Penatagunaan Tanah*

Almost across the board when people referred to the current boundary between Perhutani and emergent land they referenced a 1942 map prepared by the US Army. Several residents provided a copy of a hand drawn version of the map, indicating that to their understanding the map correctly identifies areas of emergent land – that is, any land which appeared following issuance of the map is emergent land. Referring to Lukas (2014a), while the map sheets upon which the hand drawn map is based were issued in the early 1940s, the map sheets actually use survey data from between 1924 and 1926 (Lukas, 2014a, p. 9).

In 1997, as the SACDP was just starting, the district government initiated a process to delineate the boundary between state forest (managed by Perhutani) and emergent land. This was supported by an MoU between BPN, the district government and Perhutani in which emergent land was formalized as district government land (Jeanes & Duewel, 2003, p. 6). As a representative from the BPN Cilacap office explained, “there was conflict between Perhutani and residents about who controlled emergent land [...] finally the area of emergent land was returned to the boundary in line with the US Army map” (interview January 2015). A long term field employee of Perhutani explained that authority over emergent land was given to Perhutani in 1986. However, as residents did not agree and conflict ensued, boundary marking was conducted in 1997 based on the 1942 map. Since that time, according to him, any land outside the boundaries (i.e. recognized as emergent land), even if forested, is not managed by Perhutani (interview January 2015).

The 1997 boundary marking process was led by the topographic unit of the army (*Topografi Kodam IV*), with representatives from the local government, BPN Cilacap and Perhutani also participating. There are indications that the boundary markers are not accepted by all actors. A resident of Kampung Laut who was a village secretary (*Sekratis Desa*) at the time of the boundary marking, noted that it was still the New Order regime at the time, and people were afraid of the military (interview November 2013). A Perhutani representative said that there had not yet been feedback from communities on the boundaries (interview September 2013). In Ujung Gaggak there has been direct confrontation between Perhutani and residents about an area in the northwest part of the village (for further discussion see section 3.6.2). In Ujung Alang residents also

expressed suspicions that Perhutani has moved boundary markers (interviews November 2013, January 2015). Neither BPN nor the land office of the district was able to find a copy of any map based on the 1997 boundary marking process.

3.6.2 Attempts to assert institutional control

In 2001, in part in response to the turmoil in the forest sector following the fall of the New Order regime, Perhutani's supervisory board issued a decision on Joint Community Forest Management (PHBM, *Pengelolaan Hutan Bersama Masyarakat*). Decision No. 136/KPTS/DIR/2001 applied to the relationship between Perhutani and villages which bordered state forest areas. These were referred to as "forest villages" (*desa hutan*). Shortly thereafter the Governor of Central Java issued decree Number 24, 2001 on Joint Forest Management in Central Java.

Perhutani subsequently made two attempts to institutionalize Joint Forest Management in the Segara Anakan Lagoon. The first was in Ujung Gaggak starting in 2007, and the second was in Ujung Alang several years later. In both villages the first step in the process was an attempt to establish a Forest Village Community Organization (LMDH, *Lembaga Masyarakat Desa Hutan*). LMDHs are typically legally established village level institutions which sign agreements with Perhutani to jointly implement activities in Perhutani managed areas. An LMDH was established in Ujung Gaggak in 2007. The establishment of an LMDH in Ujung Alang was roundly rejected by community members and the attempt stalled.

There are two very different perspectives in Ujung Gaggak on the establishment of the LMDH. On the one hand, the resident who was head of the organization explained that it was a legal organization established with a recommendation from the village head at the time after a meeting with community members. It was intended to implement the 2001 regulation of the Governor of Central Java. On the other hand, a resident who opposed the LMDH explained that the organization was established without any consultation and that it was not legal. There were also fundamental questions about the basis for Perhutani's claim on the land, and why an LMDH was being established for an area where there was no forest.

In Ujung Gaggak, Perhutani's focus was on blocks (*petak*) nine and ten. This area comprises 537 hectares of mainly rice fields in the northwest corner of the village, close to the border of emergent land with the mainland. The joint management activities involved planting *kayu putih* (*Melaleuca leucadendron* LINN), the leaves of which were to be harvested to make *kayu putih* oil.

According to the former head of the LMDH, support for the organization shifted once a new village head was elected at the end of 2007. In 2008 a team of district and village representatives visited the Ministry of Forestry to request that the area in question be recognized as village land. The Ministry of Forestry wrote in response to the district head that the land in question was state forest and could not be turned over to the village without compensation of an equivalent area of land (*tukar guling*).²⁷ Despite this, community members continued to resist Perhutani's presence, reaching out to SeTAM (*Serikat Tani Merdeka*), an NGO working on agrarian reform issues which had experience with Perhutani in other parts of Cilacap district.

Tensions reached their peak in 2010, starting with a verbal confrontation between Perhutani and LMDH representatives on the one hand and other community members on the other. The same day a number of the *kayu putih* trees that had been planted were cut down. A few days later there was a demonstration in the village against the LMDH. The village head dissolved the institution. Following this there was a flurry of letters from the head of the LMDH to various institutions (including the police, court, Governor, President) claiming that the dissolution of the LMDH was illegal and against the Governor's decree of 2001. In the end the police determined that the village head was within his rights to make that decision. At the same time, the village head wrote a letter to the President requesting that the land be released from Perhutani's claim and that there be a program of mass certification for residents of Ujung Gaggak. There were no results from this request.

²⁷ Letter No. S.639/II-Kum/2008, August 2008. Copies obtained November 2013 and January 2015.

Since then the tension has eased in Ujung Gaggak, although the issue remains. Blocks nine and ten are still officially recognized as Perhutani land, although there are few trees and no attempts at planting. Residents who felt that the land should be village land continue to hold that opinion. In an interview with one of the leaders of the opposition to Perhutani, he expressed the opinion that once one piece of emergent farm land anywhere in Segara Anakan has been certified that would change the tide and Perhutani's claims would be significantly weakened.

In Ujung Alang the trajectory of Perhutani's attempts to assert institutional control was quite different to the experience in Ujung Gaggak. Although there were a few residents who wanted to establish an LMDH, the village government refused and the effort did not proceed. A resident explained that people in the village were "scared that the LMDH would act as the right hand of Perhutani" and therefore they rejected it (interview November 2013). There was also a line of reasoning that residents of Ujung Alang view themselves as sea-oriented, and by accepting the LMDH they would somehow be admitting that the village was in fact a forest village, something which people were unwilling to do (interview November 2013).

Whatever the differences between Ujung Gaggak and Ujung Alang with respect to the establishment of an LMDH, they point to the enduring problem of a lack of communication between actors in the lagoon, and no effective mechanisms for coordination or resolution when conflict does emerge. The conflict is no longer "hot," but it remains in the background, unresolved.

3.6.3 Incremental recognition of land tenure

Section 3.5 considered the different reclamation strategies that have been used by local residents to convert emergent land into arable land. The current section considers how the local government responded to these changes, looking specifically at the issue of land tenure. Here we draw on field research conducted by Olive (1997) in 1994, Khuriyati (2009) in the early 2000s, and the current research project, among others. What emerges is a pattern of village governments encouraging opening of emergent land in large parts of the western lagoon in the early days in various ways and then granting limited rights to

the land. This was done with the implicit and then explicit support of the district government. Over time this has meant a strengthening of both de facto and de jure tenure over emergent land to the point where it is difficult to imagine any meaningful reversal in the de facto situation.

Building on semi-structured interviews, participatory mapping exercises and surveys in the villages in the lagoon, Olive (1997) details the processes whereby people started to use emergent land mainly for rain fed rice agriculture, and how usage was recognized by village and district level governments up to 1994. From the early 1980s, when opening of land for agriculture began in earnest in Ujung Alang, Olive (1997) notes that village governments were supportive. They believed that the land belonged to the villages and agriculture would support socio-economic development (Olive, 1997, p. 158). Olive (1997) also observes that another rationale for promoting rice cultivation was, “to make the new lands ‘productive’, which may ensure their authority to the villages (as opposed to Perhutani)” (p. 158).

From semi-structured interviews in 1994, Olive (1997) identified the main methods through which long-term local residents and immigrants to the area obtained land. These differed between villages and mainly involved residents claiming the land themselves before reporting to the village, whereas immigrants more typically bought usage rights from residents (Olive, 1997, p. 167). Additionally, in the villages of Ujung Gaggak and Panikel, starting in 1988, there were regulations which “permitted outsiders to clear land and receive as payment one-half [or] one-third of the amount of the land cleared” (Olive, 1997, p. 158). In each of the three villages there was a sense that the farmers from outside were a “valuable source of ‘free’ agricultural information necessary for the success of farming in the area” (Olive, 1997, p. 167).

Whereas Olive’s (1997) study covered all of the villages in the lagoon, Khuriyati (2009) focuses almost exclusively on emergent land adjacent to the north coast of Nusa Kambangan. She provides a detailed history of the opening of the area and describes conflicts between residents and the Nusa Kambangan prison authorities. Conflict was especially marked in the eastern parts of Ujung Alang along the shore of Nusa

Kambangan. The authorities objected to opening of land they viewed as being under their jurisdiction. This was primarily in an area closer to the prisons than other tracts of emergent land, and had also apparently been used for a period of time by the prisons.

Residents resisted claims to emergent land by the Nusa Kambangan authority in part by developing counter claims based on traditional sea rights (Khuriyati, 2009). As an example, a resident who has long been farming in this area explained how in the past he had been detained by the Nusa Kambangan authorities for using emergent land. To justify this usage, and obtain his subsequent release, he pointed out that on a map the location where the land was showed as sea. With this he made the point that in the past the land had been water, and therefore it was emergent land and not historically part of Nusa Kambangan. A second strategy he explained was to, “dig as deep as three meters and if there were mussels and shells, it means that the area used to be sea” (interview, September, 2013).

Khuriyati’s study was conducted at the same time as the SACDP was being implemented, and provides interesting reflections on the impacts of the project on interactions between actors in the lagoon. Khuriyati (2009) suggests that the SACDP was instrumental in easing the conflict on the north coast of Nusa Kambangan. As part of the project a legal study was conducted which strengthened the hand of the district government in terms of rights to the emergent land off Nusa Kambangan. This was then reflected in the draft spatial plan for the lagoon, which showed usage zones on the emergent land under discussion (Khuriyati, 2009, p. 103). There are no indications of on-going contestation in most of the emergent land in the area.

In 1989 the district head issued a regulation allowing people in Kampung Laut to use emergent land to cultivate rice (Olive, 1997, p. 161).²⁸ Following this, letters affirming usage rights were granted to residents, first by the sub-district of Kawunganten, of which Kampung Laut was then a part, and later by individual villages. For example, a

²⁸ Olive (1997) refers to Surat Bupati No. 593/01039/02 April 1989, and mentions that the regulation was first proposed in 1988 (p. 161). Savitri et al. (2010) reference a 1988 regulation, “*Surat Keputusan Bupati No. 144/802/25/ Tahun 1988 tentang Distribusi Tanah Timbul Pada Masyarakat Kampung Laut.*” It seems likely that these are referring to the same process, with the 1988 version perhaps being an earlier draft of the regulation.

“Clarification Letter of Permission to Use Land”²⁹ issued by the sub-district of Kawunganten for land off the north coast of Nusa Kambangan in 1989 required that recipients use the land well, not sell or otherwise transfer usage rights, and return the land to the government if so requested (document obtained November 2013) (see also, Olive, 1997, p. 162). A more recent example issued by the village of Ujung Gaggak in 2013 shows a rather different list of requirements. The recipient of the “Clarification Letter as User of Emergent Land”³⁰ is required to use the land well and fulfil village decisions and regulations. If these requirements are not met, the user will be sanctioned in line with village regulations.

While at first glance the changes in requirements for land users over time seem significant between the 1989 and 2013 examples – and in particular with respect to the alienability of land – this is not actually the case. In referring to a body of village regulations and decisions, the 2013 version indicates a shift in the village-level system governing use and transfer of emergent land to one that is more reflective of reality. As a former village head of Ujung Gaggak explained,

“after receiving permission to use the land, people are not allowed to sell to other parties [...] but because in reality these transactions take place, and the village is the umbrella for residents, the village clarified in order to avoid overlaps [...] the name of the user could be changed [...] based on the regulation that emergent land cannot be sold”³¹ (interview, January 2015).

As the land usage system was increasingly brought under the jurisdiction of village governments, with boundaries being recognized and usage rights granted, over time farm land was also integrated into the tax system. As mentioned earlier, following the cadastral mapping conducted in 2001-2002 the district head gave permission for the Cilacap office of BPN (the National Land Agency) to issue ownership certificates for homes in Kampung Laut. At the time of field visits for the current research project, no ownership certificates had yet been granted for farming land in the lagoon, and BPN questioned how such certificates could in any case be issued for land that was designated for conservation in

²⁹ Surat Keterangan Ijin Menggarap Tanah

³⁰ Surat Keterangan Penggarap Tanah Timbul

³¹ In the interview the respondent referred to a district regulation from 1987. It seems likely that he was referring to the regulation mentioned in footnote 28 above.

the district's spatial plan. Farm land was, however, the object of taxation (as indicated through issuance of taxation letters; SPPT, *Surat Pemberitahuan Pajak Terhutang*), which recognizes usage.

The Village Secretary of Ujung Alang noted that this situation is rather unusual as normally when a plot of land is taxable it should also be possible to obtain a full ownership certificate (interview, November 2013). With respect to SPPTs, people simply need to report to village authorities that they are using the land; residents using neighbouring land can confirm usage. The village office has a list of all the plots of land in the village and the users. Transfers of usage rights between individuals should be reported to the village office and the names on the SPPT changed, but people do not seem too concerned about doing this.

People generally evidenced a sense of acceptance of the current situation of usage versus full ownership rights. As one respondent said very simply, in the current situation she now "feels safe" (interview, November 2013). Having said that, when asked, people indicated they would like the option of certification. Similarly, another resident who was interested in certification, but quite comfortable with the current situation explained, all that people ask is to be, "comfortable and safe" (interview, September 2013).

An additional factor for acceptance of the situation might be the fact that since 2007 people have been able to obtain loans under the "*Kredit Usaha Rakyat*" (people's business credit) program which is specifically designed to reach clients who would otherwise be unable to obtain credit (such as, for example, farmers who do not have ownership certificates for their land) (interview, November 2013). It is also possible that people simply do not consider that the cost of certification is commensurate with the benefit. This interpretation is supported by the fact that not all of the home plots eligible for certification in the lagoon have actually been certified.

3.6.4 Tenure claims and relationships between actors

This section explores the relationships between different actors – in this case Perhutani, local residents and the district government – with respect to tenure over emergent land

in the western lagoon. It highlights the lack of communication and coordination between actors, and the continuing deference within government to Perhutani and the Ministry of Forestry. At the same time, there are few signs of meaningful official interaction between Perhutani and local residents. As noted in the previous section, local residents have in effect asserted themselves by continuing to convert and use emergent land regardless of Perhutani's efforts to control or avert those claims.

In January 2015 the village head of one of the villages in Kampung Laut said that when he was recently in the district capital, Cilacap, someone at BPN Cilacap (the National Land Agency) had told him that it was now possible to obtain full ownership certificates for emergent farm land. A few days later, a village government employee in a different village mentioned that the head of his village had announced the same thing in a recent village meeting. It sounded like something had shifted with respect to land tenure in the lagoon.

The following week, in interviews with different people at BPN Cilacap the story started to seem decidedly less clear. BPN was ready to certify farming land, but could not do so until they had a recommendation from the district government. BPN understood that the district had the right to make such authorizations, as had been done in the case of the land plots for homes that had been certified in Kampung Laut. This supported statements by several other respondents who said that the power to authorize certification was clearly in the hands of the district head (as was the case in allowing certification for homes). It was also suggested that it would be strategic for him to employ this authority shortly before the next election for district head.

A visit to the land office of the district government revealed that they could not proceed with supporting certification until receiving a recommendation from the Ministry of Forestry at the national level. They referenced a 2008 letter from the Ministry of Forestry to the head of the district. Written within the context of the Ujung Gaggak LMDH dispute discussed in section 3.6.2, the letter was unambiguous in saying that based on agreements that were made in 1940, emergent land was state forest. As mentioned

earlier, the letter also referenced the requirement for 30 percent of Central Java to be state forest. It suggested the following solutions to the problem of emergent land:

1. For land that was already being used, it should continue to be managed by Perhutani, and residents could go on using it under the Joint Community Forest Management program (PHBM). Residents could use the land, but could not own it, and they should support environmental protection by planting forest species.
2. Alternately, the land in question could be “traded” for land elsewhere (*tukar guling*) in a move that would mean the emergent land in Kampung Laut would be released from Perhutani, but land elsewhere in Cilacap district would be put under Perhutani’s authority (letter No. S.639/II-Kum/2008, August 2008. Copies obtained November 2013 and January 2015).

Although the letter was written within the context of a dispute about a specific area of land in Kampung Laut, the message that “emergent land is state forest” and therefore under the authority of Perhutani seems, for the district land office at least, to have been generalized to encompass all emergent land in Kampung Laut. This contradicts most of the primary and secondary information collected during this research project. The point here is not the “rightness” or “wrongness” of the interpretation. Rather, it speaks to the continuing power of the Perhutani, which was described by one respondent as “a country within a country” (interview, September 2013), and perhaps fear of confronting Perhutani.

In addition to highlighting the power of the Ministry of Forestry and Perhutani, this case also underlines the on-going lack of communication between different government departments with respect to lagoon management. This is not just an issue between the district and the national levels, but also between district level agencies. In fact, several district respondents saw the presence of the researcher as a mechanism for transmitting or securing information from other government agencies.

While the above draws attention to power dynamics between state agencies at different levels, it is also useful to reflect on the dynamics between Perhutani and local residents. At first it is interesting to note that with the failure to establish functioning LMDHs in

Kampung Laut, there is no official channel of communication between residents of Kampung Laut and Perhutani. Additionally, as section 3.6.2 clearly illustrated, local residents are not powerless in their interactions with Perhutani. As one community respondent put it, at a high level Perhutani can say that they have control over areas of land, but at the ground level they fear confrontation and the power of “traditional law” (*hukum adat*), and will let people use the land (interview, September 2013). This sense that Perhutani fears confrontation at the local level was reiterated by several local respondents.

3.7 Summary and outlook

The current chapter highlights disconnects between state approaches to land tenure issues in the Segara Anakan lagoon and the persistent and incremental claiming of land by lagoon residents. Tenure changes have slowly occurred in the lagoon despite attempts by different state agencies to block them. This process goes back at least to the 1970s when lagoon residents and newcomers started to reclaim liminal areas. These efforts were greeted over the following decades with at times heavy handed attempts by state authorities, and in particular the Nusa Kambangan prison authorities and Perhutani, to restrict such efforts. Over time de facto land rights have solidified, and have also received formal backing.

State discourses related to the lagoon at different times since the 1970s have tended to focus on the sometimes interrelated issues of food security, protection of the near- and off-shore fishing industries, reduction of flood risk in areas adjacent to the lagoon, maintenance or expansion of state forest areas, and more recently, climate change concerns. Food security and protection of local fishing areas have also been the focus of lagoon residents. These discourses have in different ways over time been used by various actors to structure debates related to lagoon reclamation, conservation of both mangroves and water area and depth, and issues related to tenure in the area.

Since the fall of the New Order government there remains an interest, in particularly on the part of Perhutani, in classifying emergent land in the lagoon as state forest. This is related to an official requirement that 30 percent of each province should be forest land,

a target that has not yet been achieved in Central Java. Whereas prior to the reform period Perhutani was in a position to try to subdue the aspirations of local residents to secure land rights, in the post-New Order environment this is no longer possible. Instead Perhutani has attempted to strengthen its claims through “softer” approaches such as promoting the establishment of village level institutions (LMDHs) and associated programs, and also through a strategy calling for the recognition of land colonized by mangroves as being forest land. These efforts have met with limited success due to local resistance and a persistent lack of trust.

Both long term residents and newcomers to the Segara Anakan area have for decades reclaimed emergent land to use mainly for rice farming. For long term residents this was in part a response to processes of in situ displacement. Traditionally residents were heavily dependent on the fishery sector but as fishing livelihoods became more insecure due to sedimentation of the lagoon and subsequent loss of fishing grounds, people started to turn to farming. When this process started in earnest, newcomers with more experience as farmers were welcomed as a source of information about farming techniques.

Over time de facto usage rights started to be more formally acknowledged, first through usage and later through land tax payments to village governments. This process of claiming and then gradual recognition through taxing is similar to experience in other liminal areas in Indonesia (see section 3.1.2). Residents do not have full ownership to land, but nevertheless typically did not express a high level of dissatisfaction with the situation. In an even stronger acknowledgement of the rights of residents to emergent land, in the early 2000s following a cadastral survey of the western part of the lagoon, homes and surrounding yards on emergent land became eligible for certification. As an indication of the contradictions inherent in approaches to lagoon management, some of the land certified was in areas zoned for conservation in the 2001 spatial plan of the lagoon.

These changes in tenure have occurred against the backdrop of primarily top-down command and control official management approaches, with little space for engagement

of non-state actors. As would be expected, this approach was most evident prior to the fall of the New Order regime. However, the structures that supported the state system at that time have remained at least partly in place through the reform period. For example, sectoral interests (in the case of Perhutani) and dependence on higher levels of government, still seem entrenched, well beyond what one would expect in the context of decentralization.

Whereas decentralization has seen increased responsibility at the district level, it has not resulted in significant structural changes in the natural resource management system of the lagoon. Authority remains vested solely in state institutions, and there is a sense that the district is waiting for guidance and financial support from the central government before taking significant action. In the meantime, there is little initiative being taken to address pressing issues of coordination, both between government agencies and with other actors, and conflict resolution, including related to land tenure. There is an on-going lack of trust between actors, and in particular between Perhutani and local residents. As section 3.6 highlights, in many ways the situation is more complex than it was prior to the reform period.

Looking at how different actors have engaged with issues of reclamation, conservation and land claims over time, it is interesting to see the strengthening of the position of local actors vis a vis Perhutani. Since it was not possible to obtain maps from Perhutani, and publicly available information is inconsistent, it is unclear exactly what area of the Segara Anakan Lagoon Perhutani officially claims as being state forest. However if we consider the way in which the land tenure security of local residents has progressed over the past decades through an incremental process of modifying and using the land and increasing recognition from village and district governments, it is difficult to imagine a return to a situation where Perhutani could make any kind of viable public claim over large areas of emergent land. As shown by the experience in Ujung Gagak in 2010 resulting from the establishment of an LMDH, there is the risk that the current balance of interests could spill over to open conflict if Perhutani were to assert itself too strongly.

It seems discourses related to the lagoon may be changing as the values of the lagoon shift. For example, with the changing bio-physical environment, the value of the fisheries-related environmental services that were so instrumental in transforming rhetorical approaches to lagoon management in the 1970s and 1980s, may no longer be as significant as they were previously. As a representative from BAPPEDA noted when discussing the need for an updated spatial plan for the lagoon, if the value is no longer the same, does the area still need to be pure conservation, or is there the need for a new concept (interview, January 2015)? Again, such changes in the conceptualization of the values of the lagoon may lead to modifications in the management approach.

As discussed above, formal management of the Segara Anakan Lagoon has seen few significant and enduring structural changes in the past few decades. However, over the same period, land tenure has been transformed. At the most basic level there is now land where there was none previously. From an institutional perspective, areas of the western lagoon that were previously claimed mainly by Perhutani and partly by the Nusa Kambangan authorities are now de facto firmly in the hands of local residents. While lagoon wide state-led planning and management initiatives unfolded, local actors were taking the initiative to increase areas of farm land through reclamation and asserting their rights to that land. This transformation may in turn force changes in management approaches in recognition of this new reality. Having said that, given the seeming intractability of the current divisions and interests in the lagoon, such an outcome should not be assumed.

4. State-led community-based forestry: Shifting control in the protection forests of West Lampung

This chapter focuses on the Way Besai watershed in the uplands of south western Sumatra as an example of a community-based system of forestry management. The area of interest, which is now in the district of West Lampung in Lampung Province, was classified as protection forest (*hutan lindung*) during colonial times, a designation which continues through to the present. Starting in the 1950s through to the 1990s, land cover in the area changed from being mainly forested to a largely agricultural landscape, marked by a patchwork of small scale agricultural plots opened mainly by migrants primarily growing coffee, with some remaining areas of forest. Similar processes of migration and changes in land use at forest margins have been observed in other areas of Indonesia (see, for example, Faust et al., 2003).

Up until the 1980s, there seems to have been few serious efforts by the state to limit such expansion into forested areas in West Lampung. By the 1990s, however, stories of evictions from the agricultural plots and destruction of coffee plants by forestry and security officials abounded. This was a period of sometimes violent state-led exclusion, and relations between state forestry officials and farmers tended to be highly antagonistic and marked by a breakdown in trust. Starting in the early 2000s, these strained relations began to ease. District forestry officials and some farmers started to meet to work out details of engagement under the state's newly constituted community forestry program (HKm, *Hutan Masyarakat*), gradually building up a basis of trust that would lead to a transformation in their relationship and land tenure in the area.

The chapter looks at this transformation, exploring how property rights were negotiated during a shift from government led natural resource management to a more decentralized governance model premised on "community-based" management. The HKm program specifically targets state land categorized as production or protection forest. At the time of writing, licences allowing use of official forest areas were being granted to forest user groups for a period of 35 years. These user groups are then responsible for managing the areas within parameters agreed with the district forestry service.

Focusing on the period leading up to the fall of the New Order regime through to the end of 2013, the chapter looks at how changes at the national level – also mirroring global discourses and priorities – provided the space for new actor coalitions to emerge in Way Besai. These then made strategic use of knowledge and ideas to transform power relations in the area. As mentioned in Chapter 2 (Table 1), the entry point for the chapter is the “rules of the game” of the evolving system. The chapter examines how both formal and informal “rules of the game” were negotiated and implemented, the roles of different actors in the system over time, the importance of establishing relations of trust between them, and the power and influence that were evident in these processes.

During the early years of the reform period, in Way Besai non-state actors had some access to resources through donor project funding provided mainly to non-local research and non-governmental organizations. This strengthened the bargaining position of these actors vis a vis the state and facilitated changes in discourses at the local level. However, over time as project funding to non-state actors declined, the state has increasingly controlled resources (knowledge, financing and capacity building support, among others), thereby further reducing the power of non-state actors.

The chapter examines what “community-based” means in the context of West Lampung. On a continuum between government-led management and a community-based governance system, the arrangement that has evolved in the Way Besai watershed tends to be something of a hybrid, with a tendency to move over time towards increased state control.

The system remains one that involves multiple actors, but the de jure rules at the time of the field research tended to be accepted as set, with little space for renewed local innovation. This also reflects developments at the national level. Ultimately, despite the rhetoric of “community-based” and “participation,” formal power remains heavily vested in the state through administrative requirements and bureaucratic hurdles, which have become an increasingly heavy burden for local actors over time as regulations have been

revised and implementation rules elaborated. Availability of resources also heavily favours the state.

The chapter begins with a general overview of community-based natural resource management (CBNRM). It considers how property rights have been analysed in such systems. Some critiques of CBNRM are also introduced, including issues related to how “communities” are conceptualized in such systems, the ambiguous meaning of participation, and the tendency for such systems to fall short of a full transition from “top-down” approaches to community-based ones.

From there it turns to consideration of the way in which community-based forestry evolved in Indonesia, with a focus on the national policy environment and discourses leading up to issuance of the first post-reform regulation on community forestry. Following this, it zooms in to West Lampung to look in some detail at how changes in the national system were translated and implemented at the district level. Prior to reform, many farmers in West Lampung had been evicted from officially designated protection forest. After the fall of the New Order government, however, new actors came together, forming coalitions which took advantage of the openings offered during the reform period. In doing so they transformed the governance of protection forest in the Way Besai watershed of West Lampung.

4.1 Community-based natural resource management: From marginal to mainstream

The concept of CBNRM means very different things to different actors (Blaikie, 2006; Brosius et al., 1998; Kumar, 2005; McCarthy, 2005).³² In the forestry sector, CBNRM as part of statutory systems typically involves a shift in land tenure arrangements and associated governance systems that vest more rights and responsibilities in local communities (where “communities” are defined differently across systems). In addition to this, definitions of CBNRM typically encompass characteristics related to community well-being, social justice and environmental sustainability (Bowler et al., 2010; Charnley & Poe,

³² Different terms have been used to denote devolution of rights over natural resources to communities under different types of arrangements. These include, CBNRM, community-based forestry, community-based conservation, joint forest management, participatory forest management, and collaborative forest management, among others. In this chapter the terms CBNRM and community-based forestry are used.

2007). In Indonesia, for example, one often hears the phrase, “*hutan lestari, masyarakat sejahtera*” (sustainable forests, prosperous people) in discussions at different levels related to community-based forestry.

While communities have managed natural resources at the local level in many areas of the world for centuries, in the 1970s the concept of CBNRM started to emerge as a potential policy alternative to state-led command and control natural resource management systems and on-going environmental degradation (Charnley & Poe, 2007). Additionally, in line with growing calls in development circles for an increased focus on issues of social equity (see, for example, Chambers, 1983), CBNRM was seen as a way of ensuring that local resource users were meaningfully involved and could derive fair benefits from the management of natural resources.³³

In 1978 the Eight World Forestry Congress was held in Jakarta. The theme of the congress was “Forests for People,” and it was a significant moment on the global stage for recognition of the importance of forests for meeting the livelihood needs of local resource users (Lindayati, 2002; Michon et al., 2007; Peluso, 1993). This is captured in paragraph 7 of the Jakarta Declaration coming out of the congress:

“Such commitment [to rural development on the part of governments] must include action to reduce inequalities in the countryside, notably in the distribution of land and in access to social and support services. It means encouraging self-reliance, mutual aid and cooperation. It means recognizing people as the motive force of development, not simply as the passive object of development” (FAO, 1987).

This evolving mainstream discourse, moving from rhetoric based on the exclusion of local people from forests to recognition of the social justice issues associated with access to forest lands, filtered into development discourse and different national and local contexts in diverse ways over time. The depth and breadth of forest tenure reform differed greatly across the globe (RRI, 2014). How this played out in Indonesia will be discussed in more detail in section 4.2 below.

³³ For a critical history of CBNRM drawing on six case studies from different geographic regions, see Dressler et al. (2010).

The perceived environmental and social equity benefits of CBNRM dovetailed with a global push towards decentralization, especially in the global south (see Chapter 1). This served to move CBNRM closer to the mainstream of natural resource management policy in a number of countries. These policy changes also drew on the work of common property scholars who examined existing CBNRM regimes and sought to deepen understanding of the institutional aspects of such systems (see, for example, Berkes, 1989; McCay & Acheson, 1990; Ostrom, 1990). Over time CBNRM began to evolve from something that had been at the undocumented centre of many local natural resource systems into a component of national resource management programs globally.

4.1.1 Tenure and CBNRM

The mainstreaming of CBNRM globally has been particularly evident in the forestry sector where it takes the form of legislation increasing the property rights of local resource users. According to RRI (2014), the “total forest area [globally] under the legal ownership or control of Indigenous Peoples and local communities [...] increased from 383 Mha (just over 11 percent of global forest area) in 2002 to over 511 Mha (15.5 percent) in 2013” (p. 16). The change has overwhelmingly been in what RRI (2014) categorize as lower and middle income countries, with the majority in Latin America (p. 17). Despite these increases in rights devolved to local forest users, RRI (2014) observes that governments overwhelmingly maintain control over forest land.

While these figures highlight the expansion of community-based forestry as part of statutory systems, they do not capture the variety of property rights that are embedded in the different tenure systems. For example as RRI (2014) notes, “many administrative measures for community forestry [...] are too restrictive or recognize insufficient rights for communities to realize benefits from their forest” (RRI, 2014, p. 39). So even though a system might be labelled “community forestry,” it does not necessarily include the property rights necessary to allow forest users to realize the benefits of CBNRM described in the section above.

A number of studies have used Schlager and Ostrom's (1992) "bundle of rights" conceptual framework to unravel the forest property rights that have been granted to local resource users under emerging "community-based" tenure systems (see, for example, Agrawal & Ostrom, 2001; Cronkleton et al., 2012; Hlaing et al., 2013; Katila, 2008; RRI, 2012, 2014). These studies have tended to focus on the statutory package of rights, often using a comparative perspective. Sunderlin et al. (2008) justified taking a perspective which focuses on statutory systems, "not because it is the most important, but because the official view shapes policy and its implementation, because it is possible to measure recent change, and because there are profound consequences related to this change" (p. 1). There has been less use of the framework to compare changes in property rights due to a shift to community-based forestry over time in a single location or to capture de facto property rights arrangements.

As Cronkleton et al. (2012) observe, "examining which portions of the rights bundle have been transferred to communities is crucial for understanding how community forest management functions" (p. 93). In support of this understanding, the bundle of rights framework is seen as enabling "researchers to explore variations of property rights within common property settings and assess the consequences thereof" (p. 431). It provides a "framework generally capable of capturing the diversity of property rights arrangements present in natural resource systems" (Galik & Jagger, 2015, p. 76).

In order to facilitate a richer understanding of property rights, Schlager and Ostrom (1992) unpack the concept, identifying five different rights (see Table 3). These are then overlaid with different categories of resource users, who have nested and differing levels of rights (see Table 4). A number of authors have explored in some depth the concepts underlying the framework and its utility for the study of CBNRM and natural resource devolution (see, for example, Agrawal & Ostrom, 2001; Ahmed et al., 2008; Cronkleton et al., 2012; Galik & Jagger, 2015; Katila, 2008; Lawry & McLain, 2012; RRI, 2012).

Table 3: Level of action and associated property rights

Levels of action	Property rights	
Operational ^a	Access	The right to enter a defined physical property.
	Withdrawal	The right to obtain the "products" of a resource (e.g., catch fish, appropriate water, etc.).
Collective choice ^b	Management	The right to regulate internal use patterns and transform the resource by making improvements.
	Exclusion	The right to determine who will have an access right, and how that right may be transferred.
	Alienation	The right to sell or lease either or both of the above collective-choice rights.

Adapted from: Schlager and Ostrom (1992, pp. 250-251)

- a. "Operational rules are changed by collective-choice actions" (Schlager & Ostrom, 1992, p. 250);
- b. As Agrawal and Ostrom (2001) note, "for communities to possess collective choice making capabilities, some rules at a constitutional level (set locally or by a national government) must give them this authority" (p. 489).

Table 4: Bundles of rights associated with positions

	Owner	Proprietor	Claimant	Authorized User
Access	X	X	X	X
Withdrawal	X	X	X	X
Management	X	X	X	
Exclusion	X	X		
Alienation	X			

Source: Schlager and Ostrom (1992, p. 252)

Although the "bundle of rights" approach is not the only way of analysing property rights in natural resource systems (see, for example, Ribot & Peluso, 2003), it has "become arguably the most ubiquitous framework for analysis of natural resources and property rights" (Galik & Jagger, 2015, p. 76). Having said this, over time various authors have proposed modifications, either expanding the number of rights included (Galik & Jagger, 2015; Lawry & McLain, 2012; RRI, 2012), or suggesting a general broadening of the framework to better incorporate concepts of duties and power (Galik & Jagger, 2015).

The "bundle of rights" framework is useful in unravelling the statutory "rules of the game" (see above), and can also contribute to understanding de facto property rights in community-based systems (see, for example, Ahmed et al., 2008; Hayes, 2007). However, it is important to recognize that it only captures one part of the overall governance

system. Property rights are dynamically shaped by changes in dominant discourses, often complex arrays of actors operating at different levels, and shifting power relations and resources. Understanding how the “rules of the game” are shaped in any system requires examination of these other elements.

4.1.2 Evolving governance and CBNRM

Despite the conceptual and practical appeals of CBNRM for the forestry sector, its empirical outcomes remain somewhat ambiguous globally and have not yet put to rest debates about the approach (Blaikie, 2006; Child & Lyman, 2005; Dressler et al., 2010; Tole, 2010). Over time a number of studies have tried to understand both the equity and environmental outcomes of the systems (Bowler et al., 2010; Glasmeier & Farrigan, 2005; McDermott & Schreckenber, 2009; Pagdee et al., 2006). At the same time, a more critical strand of inquiry has raised questions about how key concepts are understood and mobilized by different actors and how and why such systems are formed (Brosius et al., 1998; Kumar, 2005; Li, 2002; Murphree, 2000).

In many ways these critiques reflect the tensions that are inherent in the concept of CBNRM and tend to insistently draw attention to the first and perhaps less mainstream of what McCarthy and Warren (2009) identify as two broad agendas embedded in the concept. The first aligns with Paavola’s (2007) focus on social justice (see Chapter 1) and is concerned with, “democratization, equitable resource access, and sustainable development” (p. 14). The second,

“focuses on the effective management of environments, or more specifically on the institutional, political and economic means and processes through which environmental protection and sustainable use outcomes could be achieved, with little or no concern for distributive effects” (p. 14).

For example, in a 1996 workshop about CBNRM, the generic use of terms such as, “community, territory, rights, resources, management, indigenous, and traditional [...] without regard to local contests and wide-ranging political stakes in these terms” was highlighted as problematic (Brosius et al., 1998, p. 159, emphasis in original). As participants observed, “to the extent that these terms carry legitimacy in international

forums, they can be used coercively to create local resource management plans in ways that may or may not empower local people” (Brosius et al., 1998, p. 159). With the dramatic expansion of statutory CBNRM initiatives globally under the rubric of decentralization, especially in the forestry sector, this risk has only increased.

Early critiques shone light on the ways in which “community” as a central actor in CBNRM systems is conceptualized. According to Vandergeest (2006), “some of the more convincing criticisms of CBNRM [...] argue that one of the most serious practical problems inherent in CBNRM practice revolves around unexamined assumptions about the nature of rural communities” (p. 321). Agrawal and Gibson (1999) observe that much of the CBNRM literature tends to describe “community” in terms of a spatial unit, a social structure or as a set of shared norms (p. 633). These, however, are a weak basis for policy, especially when not explained, and do not necessarily result in management systems that are relevant for the boundaries of the natural resources in question (Agrawal & Gibson, 1999; Blaikie, 2006). According to Gauld (2000), such approaches also “ignore those dimensions which are not amenable to purely geographic definition such as those based upon class, gender, ethnic, tribal or ancestral identifies” and fail to consider the manner in which people “become part of or influence a community through kinship, property ownership or other economic, political, cultural and social relations” (p. 242).

In the CBNRM literature and practice there also tends to be an emphasis on the discourses of “indigenous” and “traditional” (Li, 2002, p. 268) which can add layers of complications in real life situations where such distinctions are often unclear. This discourse also resonates with a rather strong thread in the CBNRM narrative which tends to focus on what Agrawal and Gibson (1999) describe as, “‘the mythic community’: small, integrated groups using locally evolved norms to manage resources sustainably and equitably” (p. 640). Related to this is the “notion that ‘community’ is intrinsically good,” something which is seldom challenged (Kumar, 2005, p. 277).

As an example of the complexities that can result when simplistic conceptualizations of community meet complex realities, Li (2002) refers to uplanders in the Philippines and Indonesia. This is of particular relevance to the case study in this chapter. According to Li

(2002), “the extent to which diverse and sometimes mobile uplanders form ‘communities’ coherent enough to have, or to develop, systems of natural resource management and allocation (let alone sustainable and equitable ones) is varied” (p. 268).

The propensity to define communities simplistically as being spatially fixed, small, homogenous and intrinsically good tends to be accompanied by a relative blindness to the different actors, interests and power relations within a community (Agrawal & Gibson, 1999; Kumar, 2005; Li, 1996). These dynamics are, however, integral to understanding how community-based systems are formed and function (as highlighted, for example, by Koch et al., 2008). They are also critical if there is to be a serious focus on social justice issues. It is difficult to ensure processes of meaningful participation, for example, if there is no understanding of who the actors are in the internal system (i.e. within the “community”) or if the system itself was established without taking these complexities into consideration.

While understanding processes of participation within communities is crucial, it is also important with respect to relations between communities and external actors in the governance system. Blaikie (2006) notes that one of the core assumptions of a CBNRM system is that, “communities are supposed to be able to deliver on scientifically specified [natural resource management] principles (which are by definition seldom, if ever, community-constructed and local)” (p. 1944). He continues on to explain that according to the CBNRM narrative, “participatory and inclusionary techniques by which some form of hybrid knowledge can be negotiated and implemented” should help in bridging the space between formal science and local knowledge (Blaikie, 2006, p. 1944).

The use of the term “participation” is ubiquitous in development narratives, and not just related to CBNRM. Cornwall (2008) sees it as “an infinitely malleable concept” which can be used to “evoke – and to signify – almost anything that involves people” (p. 269). This interpretation is supported by an analysis of various typologies of participation. Ultimately, no matter where an interpretation of “participation” sits on any given spectrum, Cornwall (2008) stresses that participation “constitutes a terrain of contestation, in which relations of power between different actors, each with their own

'projects', shape and reshape the boundaries of action" (p. 276). As such, "participation is an inherently political process rather than a technique" (p. 281). Cooke and Kothari (2001), drawing on chapters in their edited volume, came to a similar conclusion, observing that, "proponents of participatory development have generally been naïve about the complexities of power and power relations" (p. 14).

The ample space to interpret key CBNRM concepts and in turn develop locally specific environmental governance systems could support one of the stated strengths of community-based systems – their flexibility and the theoretic possibility that they can be calibrated in response to different and changing social and ecological situations (Lindsay, 1999). In reality, however, as statutory CBNRM systems have matured and more experiences have been analysed, concerns have been raised that they may not actually represent the oft touted "paradigm shift" from central state control over forests.

For example, Gauld (2000) observes that in the Philippines, "the apparent transition in forest policy from top-down towards community-based approaches is not reflected in the way in which community-based forestry is discussed and operationalized by policy makers" (p. 230). He highlights the following three characteristics in particular:

1. *"community-based forestry policy bears many of the hallmarks of scientific forestry in which technical and productivity aspects rather than social and wider environmental considerations are emphasized."*
2. *"strong state control over forest management is understood as being a necessary feature of community-based forest policy."*
3. *"the predominance of a reductionist understanding of 'community' among policy makers" (Gauld, 2000, p. 230).*

The first characteristic runs counter to the heralded flexibility of community-based forestry to be able to adjust to local social and environmental conditions. A similar tendency was noted in a number of other cases, and was described by Blaikie (2006) as reflecting the fact that, "the bureaucratic necessity is for 'blueprints' and replicability, [which deny] the complexity, diversity and internal differentiation of local communities" (p. 1956; see also, Blaikie & Springate-Baginski, 2013, p. 382).

The second characteristic highlights the continuing uneven power relations in the system, with the state maintaining dominance. Devkota (2010) and Maryudi (2012), observed a similar dynamic in Nepal and Indonesia respectively. In cases where community-based arrangements had been established within the framework of the state system, they concluded that administrative procedures served as a way of maintaining control over forest management.

Several authors have also noted that a move from state-centred to community-based forest management requires a fundamental shift in the modes of operation of the forest department and this can be difficult. According to Pulhin et al. (2007), “the adoption of [a] community forestry strategy requires a whole new set of knowledge, skills, values, and attitude within the forestry bureaucracy” (pp. 280-281). In cases like this, it then becomes reasonable to ask whether, instead of undertaking such a top-to-bottom dramatic overhaul, an institution might instead try to modify the rules of the game to move the external system closer to the familiar institutional norms (Springate-Baginski & Blaikie, 2007, p. 360).

4.2 Community-based forest management in Indonesia

Issues of land tenure are at the heart of any discussion of community forestry in Indonesia – whether it be traditional (and often contested) areas, state land (with different functions and also often contested), or private land. There are currently a number of different types of community-based forestry systems in Indonesia (see Table 5). These are found in both state and non-state forests, and vary in terms of their legal basis. There are also overlaps and conflicts in terms of the status of these areas. As discussed in Chapter 1, this is especially the case with respect to areas of traditional forests (*hutan adat*). This chapter focuses on the first type mentioned in the table, *Hutan Kemasyarakatan* in protection forest. To avoid confusion, when referring specifically to this type of management system, the acronym HKm will be used.

Table 5: Types of community forestry systems in Indonesia

	Type ³⁴	Status of land	Allocation function of forest	Local management institutions
1	<i>Hutan kemasyarakatan</i> (HKm)/Community-based forest	State forest	- Production forest - Protection forest	Forest user groups
2	<i>Hutan desa</i> (HD)/Village forest	State forest	- Production forest - Protection forest	Village government or other village-based institutions
3	<i>Hutan tanaman rakyat</i> (HTR)/Community-based plantation forest	State forest	- Production forest	Community groups
4	<i>Kemitraan</i> /Partnership (between company and local community)	State forest	- Production forest	State-owned or private forestry companies with community groups
5	<i>Kawasan dengan tujuan istimewa</i> /Zone with special purpose (Krui area of West Lampung)	State forest	- Production forest	Community groups
6	<i>Pengelolaan hutan bersama masyarakat</i> /Managing forests with local community	State forest, Java	- Production forest	Perhutani and community groups
7	<i>Model desa konservasi</i> /Conservation village model	State forest	- Conservation area	Management unit of conservation area and village government/community groups
8	<i>Hutan rakyat</i> /Privately owned community forest	Privately owned land	- Production forest - Protection forest	Individual farmers; households
9	<i>Hutan adat</i> /Customary forest	Contested (see Chapter 1)	- Production forest - Protection forest - Conservation area	Customary institutions; households

Modified from Siscawati and Zakaria (2010, pp. 25-26), with additional information from Safitri (2010)

The Indonesian government's community forestry targets are highly ambitious. A direct comparison of figures over time is difficult due to a mixing of different categories. However, Table 6, which is based on figures available in July 2015, gives a sense of the scale of the aspirations. For the 2010-2014 period, initially the target for HKm and village forest areas was 2.5 million hectares. By the time the 2015-2019 plan was being drafted, the expected result for the 2010-2015 period, including the categories of community-based plantation forest and "other," had been adjusted to 500,000 hectares. For 2019 the target has been set at 40 million hectares (approximately 30 percent of the national forest estate).

³⁴ For a more detailed discussion of most of these systems, see Safitri (2010, pp. 112-121).

Table 6: Official community forestry targets (in hectares)

Type	Target 2010-2014 ^a	2014 revised ^b	2019 target ^{bc}
HKm	2,000,000	500,000	40,000,000
Village forest	500,000		
Community-based plantation forest	n/a ^d		
Other ^e	n/a ^f		

- a. Source: Menteri Kehutanan (2010)
- b. Source: BAPPENAS (2014, p. 211)
- c. Source: Sumberarsatu.com (2015)
- d. Figures combined with commercial plantations (*hutan tanaman industri*)
- e. Small scale eco-tourism and non-timber forest products
- f. Not quantified separately in hectares

Analyses of why the target is proving so challenging to reach have tended to focus on the complexities of obtaining licences, lack of funding, weak understanding of the HKm program at the local level, and capacity limitations at different levels (Direktorat Bina Perhutanan Sosial, 2013a, 2013b; Kemitraan, 2011, 2012; Sumberarsatu.com, 2015). In the push to implement HKm in Indonesia, there is a strong focus on quantitative measures of area covered and elucidation of processes. There is little questioning of the underlying tenets of the system and tenure and access implications.³⁵

The implementation of HKm in Indonesia and the ambitious spatial targets also raise interesting questions about how the concept of CBNRM has been and is being translated into on-the-ground implementation and what this means for land tenure. Also, are there differences between how HKm was conceptualized and operationalized in the early days of the reform period and how it was addressed as it became a stronger policy priority? These are questions with which the following sections of the chapter will grapple.

To set the stage for the case study in West Lampung which follows, this section explores how state-supported community-based forestry management has evolved in Indonesia. It traces changes in the management of state-designated forest land from a strongly state-

³⁵ Having said this, with the intense interest in REDD+ in Indonesia, land tenure and equity issues remain the focus of advocacy and research attention (see, for example, Resosudarmo et al., 2014; Sunderlin et al., 2014), albeit within the context of forest carbon governance rather than community-based forestry systems per se.

led system through to the reform period and adoption of “community-based” forest governance systems. By reflecting on how the “rules of the game” changed over time, it contributes to an elaborated sense of what “community-based” forest management has come to mean in the Indonesian context.

The focus of this chapter is West Lampung on Sumatra, one of Indonesia’s “Outer Islands” (i.e., outside Java, Madura and Bali). Historically, forest management in the Outer Islands has evolved rather differently than on Java (Vandergeest & Peluso, 2006). Having said this, the experience of forestry on Java is relevant to the Outer Islands because, as Peluso (1992, p. 5) notes, Java is where Indonesian state forest management began. It is also the location of early pilot projects in community-based forest management.

Table 7 provides an overview of the historic trajectory of community forestry policy in Indonesia. It is of necessity a simplification of complicated, multi layered political and social processes. The table summarizes key regulatory instruments and policy approaches. It also presents the dominant and emergent discourses of each period and contentious issues, as captured in scholarly and other literature. Finally, it identifies main categories of actors involved in influencing official forestry policy.

Table 7: Historic trajectory of community forestry policy in Indonesia

Time period ^{a,b}	Policy approaches/official "rules of the game"	Dominant state approaches	Contentious issues	Key actors influencing policy
Early 1800s-1942: Colonial period	<ul style="list-style-type: none"> - Mid 1800s: "scientific" forest management introduced to Java - 1865: Basic Forest Law, focus on Java - 1875: "Eminent domain" declaration, Sumatra (state control of land)³⁶ - Around 1900: Adat Law School's analysis of land tenure rights dismissed notion of "eminent domain" 	<ul style="list-style-type: none"> - State owns and controls forests, especially in Java - Dominance of principles of scientific forestry 	<ul style="list-style-type: none"> - Debates about <i>adat</i> rights - Basis for forest management on Sumatra unclear until end of colonial period 	<ul style="list-style-type: none"> - Colonial government - Academics (Adat Law School)
1942-1966: Transition and Guided Democracy	<ul style="list-style-type: none"> - Continuation of colonial structures; formulation of new statutes - Forestry service focused on consolidation and addressing internal frictions 	<ul style="list-style-type: none"> - Continued dominance of principles of scientific forestry 	<ul style="list-style-type: none"> - Intense debates between Indonesian foresters, should forests in Java be: controlled by state for national economic; used by people living in and near to meet their needs? 	<ul style="list-style-type: none"> - Central government bureaucracy - Forestry service
Late 1960s to mid-1980s: early/mid New Order	<ul style="list-style-type: none"> - Article 33 of 1945 Constitution (see Chapter 1) - 1967 Basic Forest Law - Criminalization of local resident's use of forest resources - Industrialization of forestry sector 	<ul style="list-style-type: none"> - State owns and controls forests - State-centered growth orientation - Continued dominance of principles of scientific forestry - 1978 World Forestry Congress introduced ideas of community-based forestry 	<ul style="list-style-type: none"> - Blaming forest dwellers for land degradation - Government rejection of community forest access and management practices 	<ul style="list-style-type: none"> - Central government bureaucracy - Ministry of Forestry (MoF) - Elites close to government - Logging companies
Mid-1980s to 1997: late New Order	<ul style="list-style-type: none"> - Mid 1980s: Pilot social forestry programs. First as Perhutani initiative, then with Ford Foundation support - 1991: Forest village community development decree, concessionaires officially obliged to support economic development of forest villages - 1993: MoF decree, concessionaires allow customary communities to collect forestry products - 1995: Ministerial decree on Community Forestry (focus: rehabilitate land, local economic opportunities) - Internationally supported social forestry projects 	<ul style="list-style-type: none"> - State owns and controls forests - Continued dominance of principles of scientific forestry - "Social welfare" vs "partnership" approach - Changing discourses of development assistance – sustainability, focus on basic needs - 1994-1999 national development plan, focus on environmental conservation, poverty alleviation, decentralization, local participation - Increased focus on indigenous rights globally 	<ul style="list-style-type: none"> - Continued blaming of forest dwellers for land degradation - Local forest management continued to be viewed as backward by government 	<ul style="list-style-type: none"> - Central government (MoF-emergent internal divisions, reform versus status quo) - Ford Foundation - NGOs (individual, networks, local, international) - Academics - International agencies - Private sector - Perhutani
1998-2003: Reform	<ul style="list-style-type: none"> - 1998: Ministerial Decree, Krui (indigenous forest management) - 1998: Ministerial decree on community forestry (increased legal space for communities to make rules) - Revised forestry law UU 41/1999. Government maintains control; local people like any other user group for use and management - 2001: Ministerial decree on community forestry (key change, district governments authority for granting licenses) 	<ul style="list-style-type: none"> - State owns and controls forests - Recognition of weakness of state-centered approach - Acceptance that local people can manage forests - Decentralization 	<ul style="list-style-type: none"> - Counter discourse: need for radical reform – state should grant full control and rights to local people 	<ul style="list-style-type: none"> - Forest communities and users - NGOs (individual, networks, local, international)³⁷ - Academics - Central government - Provincial government
2004-2014: Post reform	<ul style="list-style-type: none"> - 2007: Government Regulation No.6/2007 on forest system and forest management plan, utilization and forest - 2007: Ministerial Regulation P.37/Menhut-II/2007 on HKm (followed by various implementation regulations)³⁸ - 2014: Ministerial Regulation P.88/Menhut-II/2014 on HKm 	<ul style="list-style-type: none"> - State responsible for forests - Opening of space for assertion of traditional rights - Acceptance, local people can manage forests - "Sustainable forests, prosperous people" (<i>hutan lestari, masyarakat sejahtera</i>) 	<ul style="list-style-type: none"> - Decentralization then partial re-centralization - Resistance from some sectors in Ministry of Forestry 	<ul style="list-style-type: none"> - District government - Legislatures - International agencies - Perhutani - Private sector

a. Information in the table was drawn from the following sources: Boomgaard (2011); Colchester (2002, 2003b); Lindayati (2002, 2003b); Peluso (1992); Safitri (2006, 2010); Siscawati (2012); Siscawati and Zakaria (2010).

b. Time periods are adapted from Lindayati (2002, 2003b).

³⁶ On "eminent domain," Boomgaard (2011) explains that, "the whole organization of the colonial Forest Service more or less hinged on this concept... It was based on the legal notion – now regarded by most observers as a legal fiction – shared by indigenous rulers and colonial states, that the indigenous ruler held 'sovereign' or 'eminent domain' over all lands in the country" (p. 492);

³⁷ Colchester (2002) provides an interesting analysis of local and international networks involved in community forestry during late New Order/ early reform periods.

³⁸ Safitri (2010, pp. 122-131) provides a useful description of the key social forestry decrees from 1995, 1988, 2001 and 2007.

Table 7 provides a sense of the tensions between discourses of “scientific forestry” and “community-based” alternatives that have been represented over time in the sphere of Indonesian forestry policy. It shows a slow weaving together of narratives and actors, within entrenched and strongly hierarchical systems of power. The shadows of these systems remain in the post-reform period and continue to influence forestry policy.³⁹

Narratives of “community-based” or traditional (*adat*) forestry management have been part of the Indonesian “forestry landscape” since colonial times, although largely extremely marginal. As early as the 1970s, the state forest corporation initiated community forestry activities in Java. According to Peluso (1992), the underlying goal of these activities was, “to control forest access by reducing local people’s forest dependence” (p. 152). These initiatives did not change the terms of forest access or the nature of control by the corporation (Peluso, 1992, p. 152). In the 1980s, ideas of social forestry started to seep into discourses of the mainstream forestry bureaucracy, although the concepts were almost exclusively framed within the existing forestry institutional framework, firmly rooted in ideas of scientific forestry and continuing strong state control (Lindayati, 2003b; Peluso, 1992; Safitri, 2010; Siscawati, 2012).

Starting in the mid-1980s, the Ford Foundation in particular was active in promoting alternative forestry models based on the meaningful involvement of local communities, both on Java (with Perhutani) and on the Outer Islands.⁴⁰ This involved something of a balancing act, on the one hand promoting change, “within the parameters set by government policy while at the same time encouraging the introduction of new concepts about community forestry from overseas” (Colchester, 2002, p. 4). The Ford Foundation remained active in the community forestry arena in Indonesia through the reform and post-reform periods. For example, it was instrumental in the 1997 establishment of the Communication Forum on People’s Forestry (FKKM, *Forum Komunikasi Kehutanan Masyarakat*). FKKM included government officials, academics, non-governmental

³⁹ As discussed, for example, in the previous chapter in relation to the position of Perhutani in the Segara Anakan Lagoon.

⁴⁰ Both Siscawati (2012) and Colchester (2002) discuss in more detail the background and nature of the Ford Foundation’s involvement and influence over time.

organizations (NGOs) and private sector interests. Intended as, “an inclusive forum which could stimulate dialogue among all the various ‘stakeholders’ concerned with community forestry” (Colchester, 2002, p. 16), FKMM was to emerge as a key player in the drafting of a new basic forestry law in the early days of the reform period.

What Table 7 does not capture is the dynamism of community-based forestry debates in Indonesia, particularly during the latter part of the New Order regime and the early reform period. Siscawati (2012) describes the struggles and attempts to seek out opportunities that marked efforts by civil society actors during the latter part of the New Order regime. As the state moved forward with its conceptualization of social forestry founded on existing structures, counter-discourses focused on advancing a strategy for the development of forestry management systems that emphasized, “forest ecosystem management [and were] pro-people, location specific, decentralized, and publicly accountable” (Siscawati, 2012, p. 250).

Counter-narratives drew on both the experience of forest communities and international narratives of CBNRM. Diverse actors, from environmental and indigenous rights activists to progressive academics were coming together to advance a community-based alternative to the state approach to social forestry. Framed as part of a response to forestry problems and environmental issues more generally, these efforts also provided space to push for political change at a time when there was little room for direct critical political engagement.

During the late New Order period, activists and progressive scholars sought out existing local forestry practices and used them in attempts to transform state-society relations in the forest sector. With the fall of the New Order government, space suddenly opened for these previously relatively peripheral voices to gain access to the policy mainstream. One of the first ways they did this was through engagement in the process of drafting a reformulation of the basic forestry law of 1967.

Both Lindayati (2003b) and Siscawati (2012) have examined the process of drafting the new basic forestry law in some detail. They describe a tumultuous and contentious

period. Early hope of an open and consultative process soon faded, and non-state stakeholders lost trust in the government process (Lindayati, 2003b, p. 247). Competing drafts of the new basic forestry law were proposed. On the one hand was a vision that hewed rather closely to the state-centred approach of the past. On the other was a vision promoted by FKMM. In this latter version, “local people were assigned to be the prime players in forest management, with *adat* communities granted full management and land ownership rights at the expense of the government’s forest management authority and territorial control” (Lindayati, 2003b, p. 247).

Ultimately the less radical vision was passed into law by the House of Representatives (Law no. 41/1999). Whereas the new law did include significant diversions from the past, as Lindayati (2003a) observes, it did “not signal a paradigm shift. The law maintains principles of state-based scientific forestry while incorporating elements of community-based forest management” (p. 286). Safitri (2006) concurs, observing that, “in general Indonesian forestry legal reforms have nothing to do with changing forestland tenure regime [...]. These facts demonstrate that forestry legal reform in the decentralization period is mere [...] artificial reform, not [a] progressive and substantive one” (p. 6).

Throughout the New Order period there was no formal recognition of existing forms of local forest management practices. As of mid-2015 that continued to be the case in forestry regulations⁴¹, although the situation is dynamic given the 2013 Constitutional Court ruling on traditional rights discussed in Chapter 1. The approach to community-based forestry since the beginning of the reform period has focused on developing and regularizing new systems of community-based forestry (see, for example, types 1 to 4 in Table 5) rather than providing the space for recognition and promotion of previously existing systems.

Since issuance of the new forestry law in 1999, the regulations and implementation requirements for HKm have been refined and elaborated. And the tenets of scientific forestry are evident every step of the way, from the definition of “community,” to the

⁴¹ See also Siscawati (2012).

application process, to the workplanning and reporting requirements. This observation will be elaborated upon in more detail in sections 4.5 and 4.6 below, drawing on the experience in the Way Besai watershed in West Lampung.

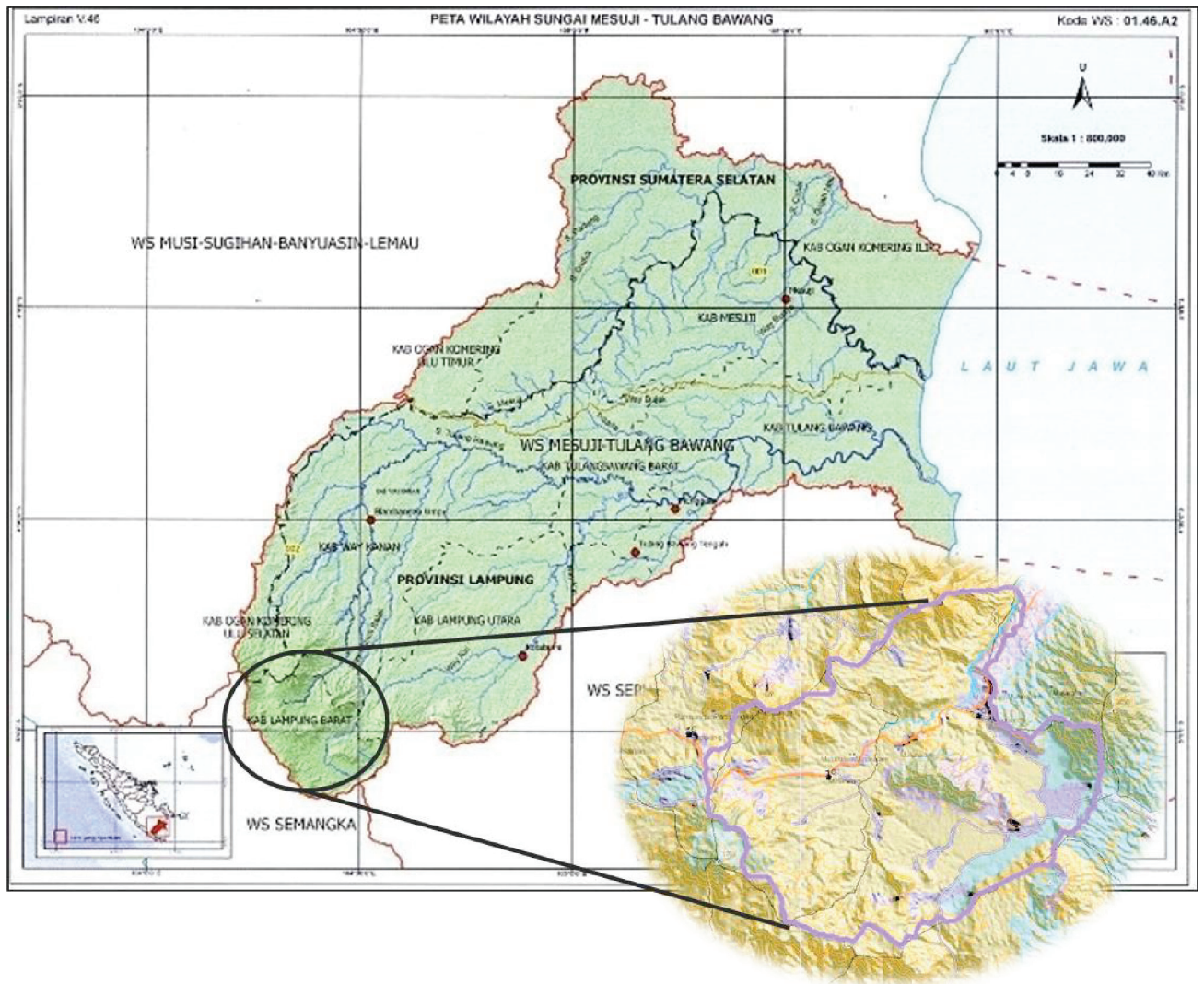
In 2014 a new regulation was issued on HKm which supersedes an earlier regulation from 2007. The new regulation has not fundamentally changed the basic principles of the HKm mechanism. Rather, it clarifies and adds detail. In particular, the 2014 version provides additional definitions, explains in more detail the processes of defining HKm areas and the granting of licences, adds slightly to the facilitation elements of the regulation, and in particular elaborates rather extensively on a separate licence required for HKm holders in production forests who want to utilize forest timber products.

Analysis in this chapter is based on the 2007 regulation as this was the one that was in place at the time of the field research. Given the nature of the changes in the 2014 revision, it is not expected that use of the 2007 rather than 2014 version as the basis of analysis would lead to differences in interpretations.

4.3 Research location

The research upon which this chapter is based focused on a protection forest area in the Way Besai sub-watershed of the Tulang Bawang watershed in Lampung province (see Figure 7). At the time of the research, administratively the area was in West Lampung district, and covered five sub-districts (Way Tenong, Air Hitam, Sumberjaya, Kebun Tebu, Gedung Surian). Approximately 40 percent of the watershed area is classified as protection forest (Verbist et al., 2005). The protection forest also straddled the watershed boundaries.

Figure 7: Map showing Tulang Bawang and Way Besai sub-watershed



Adapted from: BIG (n.d.); DJSDA (n.d.)

Several studies have focused on deforestation rates in the watershed (Ekadinata et al., 2007; Syam et al., 1997; Verbist et al., 2005). Verbist et al. (2005) documented a “steady decline in forest cover from 60% in 1970 to 12% in 2000” (p. 261). Over the same period the area of coffee increased from 7% of total land area to 70% (Verbist et al., 2005, pp. 261-262). Ekadinata et al. (2007) observed that the peak of deforestation was in 1999-2000, directly after the fall of the New Order regime. This was the catalyst that triggered the move towards HKm in the area.

4.4 Land tenure and conflict in the Way Besai watershed, West Lampung

During interviews with HKm farmers in 2013, a number told stories of violent evictions in the 1990s from land where they had been growing coffee. These evictions took place from land that had been officially designated as state protection forest (referred to locally as “*kawasan*”). As one farmer explained,

“at that time [early 1990s] there was no HKm. Elephants were released, houses were set on fire, people were ordered to leave the kawasan. I had a hut there. Suddenly Brimob [police special operations unit] came and ordered us to leave. Our coffee was almost ready for harvest; the coffee plants were cut and the harvest was lost. After that I was rather traumatized at the thought of farming in the kawasan again in case the same experience was repeated” (interview December 2013).

In attempting to describe the anxiety prevalent in the 1990s, and the furtive way farmers accessed their coffee fields, a different farmer said simply, “we were like cats stealing salted fish” (interview January 2013). Others likened it to a game of cat and mouse (*kucing-kucingan*).

These evictions were conducted sporadically not only in the Way Besai watershed, but also more broadly in Lampung province (Kusworo, 2000). This increase in enforcement activities starting in the 1980s in Lampung has been explained by interweaving narratives of state claims to forest areas in the province, characterizations of migrant farmers, and discourses of environmental protection and degradation. In the Way Besai watershed specifically, the situation was exacerbated by the decision in the early 1990s to build a run-of-the-river power plant in the lower reaches of the watershed.

Coffee has been a feature of the landscape of the Way Besai watershed since the late 1800s/early 1900s when Semendonese migrants from South Sumatra started to move into Lampung. According to Kusworo (2014), a transformation of land tenure in Lampung in the mid-1800s by the Dutch colonial administration facilitated this process (through the declaration of “*eminent domain*,” see footnote 36). At that time, non-cultivated land, even if it was recognized locally as belonging to indigenous groups (*marga*), was gazetted

as state property. Among other things, this allowed Dutch administrators to permit migrants to move in and occupy these lands (Kusworo, 2014, pp. 45-48).

Following this, the process of land alienation was continued through the delineating of “political forests” in the province of Lampung. As conceptualized by Peluso and Vandergeest (2001), such lands are not necessarily forested but they serve the interests of the state by providing it with control of vast areas of land, and the possibility to control people and access to resources through different exclusionary processes (see, for example, D. Hall et al., 2011). According to Kusworo (2014), between 1922 and the end of the colonial period, almost one million hectares of land in Lampung had been designated as part of forest zones (p. 28).

In the period between independence and the 1970s the boundaries of these political forests were weakly enforced and actively ignored, both by the state and immigrants moving to or within Lampung. It does not appear that this was happening simply because there was a lack of awareness of forest zones. Rather, in Way Besai, Kusworo (2014, p. 97) notes that in contrast to the colonial period, there were no forestry officers patrolling the boundaries, and village heads did not have the authority to stop farming within the forest zone. This seems to be supported by the experience of one elderly farmer in Way Besai who explained that when he first opened land in the 1960s, “I knew it was protection forest (*hutan lindung*). I wasn’t brave (*berani*) enough to clear the land, but many were doing it so I was ‘forced’ to participate (*terpaksa ikut*)” (interview February 2013).⁴² Kusworo (2014, p. 97) also highlights the ambiguous nature of the boundaries by identifying a number of cases in Way Besai where immigrants were granted either formal or informal permission to use areas of protection forest.

⁴² “Forced” (*terpaksa*) in this context does not imply the use of force employed by someone else. Rather, it indicates a feeling of pressure to do what others were doing. Earlier in the interview the same farmer articulated a similar sentiment with respect to returning to his farm plot after evictions in the 1990s. When asked why he returned, he responded by saying that he returned, “because many friends were going back. If I just stayed quietly at the bottom [of the hill] I would be left behind [...] so I was forced to join [*terpaksa saya juga ikut*] them and open the land from which I had been evicted” (interview February 2013).

The history of land use in the Way Besai watershed, and in Lampung more generally, has been profoundly shaped by migration, both officially sponsored and spontaneous. Referring to Lampung province, Sevin (1989) explains that,

“this southernmost tip of Sumatra [became] in the 20th [century], the privileged experimental zone for all the forms of organized colonization ever elaborated in the framework of the Dutch kolonisatie or the Transmigration programs of independent Indonesia. The voluntary development policies were so successful there that today the government has been forced to take preventive measures in order to protect the natural environment, and [...] to encourage emigration to the other islands in the archipelago” (p. 15).

Underlying the transmigration programs, Sevin (1989) sees an agenda aimed at transforming the swidden practices of Lampungese farmers. As Sevin (1989) says,

“the secret hopes of the central government were to use Transmigration to limit the spread of semi-itinerant farming and increase rice production [...] the Lampung[ese] were supposed to marvel at the technical prowess of the Javanese farmers, and, after admiring the magnificent rice farms installed by the transmigrants, they would be so reduced that they would definitely turn from their primitive ladang [swidden] and adopt the new methods. But in fact, the complete reverse often occurred. With no basic infrastructure in terms of irrigation [...] and no finances to buy fertilizers, the transmigrants, in spite of all their capabilities, were forced to practice upland rice farming which, as no fallow period was allowed, soon reduced the soil’s fertility level to the point of near sterility” (p. 111).

State backed transmigration to the Way Besai region was for the most part conducted under a government program to support veterans of the independence war. As there was no land available for distribution in Java, options were sought outside Java, including in Lampung. The program was managed by the National Reconstruction Bureau (BRN, *Biro Rekonstruksi Nasional*) and in Way Besai mainly involved Sundanese from West Java. Throughout the 1950s official transmigrants moved into the Way Besai area (Sevin, 1989). As an indication of the state’s symbolic (if not material) support for the farmers at the time, in 1952 the sub-district of Sumberjaya in what is now West Lampung was

inaugurated by President Sukarno and Vice President Hatta, something that is still mentioned with pride in the area.

At this time, a number of the new transmigrant villages in the Way Besai area also included land in forest zones (Kusworo, 2014). Some even had legal land titles (Verbist et al., 2005). After the transmigration program stopped, individual migrants continued to flow into the area, attracted by high profits from coffee. This led to a dramatic increase in population, and on-going clearing of forested areas (Verbist et al., 2005, p. 264).⁴³ A farmer explained the situation in the 1980s as follows,

“long term residents knew that the area was protection forest. In the late 1970s, early 1980s, the clearing of the kawasan (protection forest) began seriously as newcomers came from all over because this is the best coffee area. The forest was destroyed, and all that remained were the springs. The hills were red [soil not covered with vegetation]. Long terms residents weren’t brave enough to clear the forests, but the newcomers were because they didn’t know the rules” (interview January 2013).

In the early 1980s a national process of Consensus-Based Forest Use Planning (TGHK, *Tata Guna Hutan Kesepakatan*) began (also referred to in Chapter 1). This involved designating the national forest estate. As Brockhaus et al. (2012, p. 32) note, at the time Indonesia was very focused on generating income from the forest estate, which had a great influence on the TGHK process. Usage categories for the TGHK included:

- “1. Protection forest for watershed protection;*
- 2 Conservation forest for protected areas;*
- 3. Limited production forest, where logging was to be accompanied by measures to reduce impact on soil erosion;*
- 4. Production forest for commercial logging; and*
- 5. Conversion forest for conversion of degraded production forest to agriculture or other uses” (Brockhaus et al., 2012, p. 32).*

⁴³ The population of approximately 16,000 in 1961 had by 1986 risen more than 4.5 times to approximately 75,000 (Sevin, 1989, p. 309), after which population growth levelled off (Verbist et al., 2005).

These categories were based on the criteria of soil erodibility, rainfall intensity and slope. Protection forest included land with a slope of greater than 45 percent, and areas with certain soil types (Moniaga, 1993, p. 134).

The TGHK process took about a decade in Lampung. During that time no community consultations were held (Fay et al., 2000). As one farmer in Way Besai put it, “consensus with whom, I don’t know” (interview February 2013). At the end of the process, the forest estate in Lampung was largely the same as the forest zone gazetted during the colonial period (Fay et al., 2000; Verbist & Pasya, 2004). This, despite the many changes that had taken place on the landscape over the preceding decades, with villages having been established and farm land opened, often with the explicit or implicit support of state authorities. As Kusworo (2014) explains, the justification for still including areas that were no long forested in the forest estate was to meet a requirement set in the 1967 Basic Forestry Law that 30 percent of Indonesia’s land mass should be zoned as forest (p. 94). And so the political forests of Way Besai were defined, and farmers were firmly positioned as illegal squatters.

As the TGHK process was being undertaken in Lampung, the previously opaque and often ignored boundaries of the forest zone started to again take on meaning. In Way Besai, reforestation programs began, and local transmigration programs, aimed at moving people from the forest estate to other areas of the province, were initiated (Elmhirst, 2012; Fay et al., 2000; Kusworo, 2014; Sevin, 1989). Conflict ensued. As one farmer explained,

“in 1989 the New Order, Pak Suharto, was influenced by international pressure, perhaps global warming, and there were rehabilitation activities [...]. They used a military approach, with evictions. Regreening actually started in the early 1980s. But it was just a matter of planting trees then they were gone, planting then they were gone [...]. Newcomers went in and removed the trees [...]. When the newcomers first opened the land, forestry officials just closed their eyes (tutup mata)” (interview January 2013).

These processes foreshadowed the fact that following finalization of the TGHK, “the main policy regarding the forest protection in Lampung Province was to evict as many communities as possible from the newly delineated State Forest Zone” (Fay et al., 2000). In Way Besai the farmer quoted above described the situation as follows,

“but then the military stepped in (turun tangan) between 1987-1989 because the forest was increasingly disappearing and forbidding people from clearing trees wasn’t working [...]. In 1993-1994 there was an operation to remove people from the area [...] people were sent out of the kawasan, but then when the military departed, people entered the forest again [...]. That’s why in 1994 there was an operation to destroy the coffee plants” (interview January 2013).⁴⁴

In Way Besai, the impetus to implement the policy of exclusion was likely strengthened by plans in the early 1990s to construct a run-of-the-river power plant on the downstream portion of the watershed (Verbist & Pasya, 2004). The environmental impact assessment for the plan highlighted erosion from coffee farming practices in the areas upstream of the proposed plant, and the risks that sedimentation would pose to operations of the power plant (Ministry of Mines and Energy, 1994).

So by the 1990s many farmers in Way Besai, including the descendants of those who had been acknowledged by the president and vice president in 1952, were framed as being trespassers on state land. This is in line with the broader conceptualization of migrant farmers in Lampung, which showed,

“an oscillation between their positioning as agents of development, who arrived from Java [...] to bring progress to swidden-dominated outer islands, and, more recently, a positioning as forest squatters or agents of deforestation, who threaten both conservation and commercial enterprise” (Elmhirst, 2012, p. 134).

⁴⁴ State initiatives to halt farming activities in the protection forest zones of the Way Besai watershed unfolded differently across the watershed. All farmers were supposed to leave protection forest areas, but some areas experienced forced eviction, while others did not. A spatial analysis conducted by Ekadinata et al. (2007) shows that evictions took place in the central and southern part of the watershed, but not in the northern areas. It is not clear why this occurred, but it could be that the action started in the south and central areas and there simply was not time to complete it before the New Order government fell.

The latter representation also “chimed with an international agenda of environmental protection and that blamed environmental degradation on the unregulated activities of rural migrants” (Elmhirst, 2012, p. 139).

In parallel with these different positionings of migrant farmers, the nature of state control and recognition of the forest zone in Way Besai also changed over time. During the colonial period the forest zone was gazetted, and it appears there was some control over the area. In the early independence period through to the 1970s, boundaries of the forest zone effectively faded, and forest cover was significantly reduced as coffee agriculture expanded. Starting in the 1980s the boundaries re-solidified, and the state made active efforts to remove farmers from the forest estate. This reached its peak in the mid-1990s in the years leading up to the fall of the New Order regime.

So what did these changes in conceptualization of the forest estate and land tenure over time mean for the property rights of farmers using the area? Table 8 considers both de jure and de facto property rights in two periods, 1950s-1970s and 1980s-1998. It shows that in the earlier period de jure rights were somewhat ambiguous, but over time started to move towards exclusion. De facto, however, farmers were relatively free to exercise the range of rights, although alienation was in the form of informal transfers of rights to other farmers.

By the 1980s, however, the situation had changed. With implementation of the TGHK and the associated re-assertion of the boundaries of state forest, there was no longer ambiguity about the range of rights that farmers had to the protection forest of Way Besai – they had none. The state’s ideal was full exclusion. On the ground – de facto – farmers tried to continue operating as they had before, but this became increasingly untenable as the state’s efforts to remove them intensified.

Table 8: Property rights of farmers using protection forest in Way Besai, 1950s-1998

Time period	Status	Property Rights ^a			
		Access/ Withdrawal	Management	Exclusion	Alienation
1950s-1970s	De jure	Initially ambiguous, then shifting over time to no access/withdrawal rights	Initially ambiguous, then shifting over time to no management rights	Initially ambiguous, then shifting over time to no exclusion rights	None
	De facto	Individual farmers who opened the land or “bought” it from others could access and withdraw.	Farmers managed their own plots, making decisions about what to plant.	Farmers could decide who could access the plots they used.	Farmers transferred informal rights to coffee farming plots.
1980s-1998	De jure	None	None	None	None
	De facto^b	Access and withdrawal decreased over time. By end 1990s, for some farmers no withdrawal as coffee trees had been destroyed. For others there were very limited withdrawal rights as they feared entering the forest estate to access their crops.	Decreasing management rights over time as state actors started to restrict access and farmers in some areas were evicted.	Decreasing exclusion rights over time as access to the areas become increasingly difficult.	Farmers transferred informal rights to coffee farming plots although over time these became less valuable as the situation became increasingly insecure.

- a. For a discussion of the bundle of rights, see section 4.1.1.
 b. 1980s-1998: Many farmers tried to continue operating as they had in the previous period (1950s-1970s). Over time access became increasingly precarious as heavy handed state actions were implemented to remove farmers from the forest estate. By the mid-1990s many farmers had no rights in any of the categories (i.e. they could not use the land).

It was against this background of dramatically reduced access to the protection forest area and escalating violent exclusions that the New Order regime fell. A farmer who went on to become very active in promoting HKm in the Way Besai area explained the situation after the fall of the New Order government as follows,

“in 1998 the bargaining position of the government was weak. The position of the people (masyarakat) strengthened. In 1998 people split into two groups – one “euphoric” and one “reformist.” The euphoric group had the tendency to seek vengeance (balas dendam) and make use of the opportunity and re-enter [the state forest area] and re-claim land uncontrollably. The reformist group was small. Indeed the state had seized their rights, so how could they re-claim those rights through legal means. Which regulation would fit? The one about social forestry. And then the HKm scheme emerged” (interview February 2013).

And so began an effort to transform the relationship between the farmers and the state from one based on heavy-handed state-led exclusion to a more collaborative form of governance.

4.5 Protection forest in Way Besai: Renegotiating the “rules of the game”

This section explores the transition in Way Besai from the strongly state-led forest management approach of the New Order period which over time became increasingly exclusionary, to the governance approach that emerged in the early reform period. To do this it focuses largely at the meso level, where farmers interacted with external actors, rather than at the micro level of dynamics within individual farmers’ groups. The analysis mainly covers the period from 1998 to 2004, when the foundations of the system were established. The section looks at how in such a dynamic period – both on the ground in terms of massive claiming of land by coffee farmers, and politically at different levels – actors came together to develop completely new ways of interacting with each other, as captured in changes in property rights over that period.

Table 9 highlights the overall trends in property rights in the protection forest of the Way Besai area in the early reform period. Fundamentally, farmers for whom access to coffee plots on the hills of Way Besai had been banned, to the point of violent evictions, now had a mechanism that allowed them to seek land use rights. Through HKm licences with farmers’ groups, the state granted farmers rights to use protection forest for a specific period of time.⁴⁵ In return, the groups had to fulfil certain obligations, including: planting trees, not cutting trees, protecting existing forests, avoiding use of riparian strips and steep slopes, implementing soil conservation measures, marking boundaries, preparing maps, regular reporting.

⁴⁵ The period of time covered by HKm licences has changed several times. Initially under the 2001 regulation, this was a short-term licence of five year, followed by a long-term licence of 25 years. In 2007 this was changed to simply a 35 year licence, although in West Lampung the short-term licence remained.

Table 9: Trends in de jure property rights in protection forest of Way Besai, 1997-2004

Time period	Property Rights ^{a,b}			
	Access/ Withdrawal	Management	Exclusion	Alienation
1997	None ↓	None ↓	None ↓	None ↓
2004	Yes, within parameters set in HKm licence proposal and agreements within farmers' groups.	Yes, within parameters set in HKm licence proposal and agreements within farmers' groups.	Yes, based on HKm licence and agreements within farmers' groups.	None

- a. Not all farmers in the area experienced these changes in this period. In fact, at the time of field research in 2013, the process of change was on-going in the Way Besai watershed.
- b. For a discussion of the bundle of rights, see section 4.1.1.

This section shows that the process in Way Besai involved the coming together of a range of actors, space for new ideas to be considered, and rather considerable resources in the form of knowledge, financing and capacity building. This was enabled by the changes in national discourse and policy discussed in section 4.2, including the discrediting of the New Order ideology of heavy handed state control of forestry resources. Farmers, with the support of other actors, now had the opportunity to advance their interests and influence the rules governing interactions between actors in the protection forest. The result was the beginning of a transformation in the relationship between farmers and the state in the Way Besai area.

The path towards this transformation was rocky and marked by a dynamic relationship between elements influencing the emergent governance system. Actors deployed resources both to strengthen the position of farmers (through for example, capacity building, networking, reaching out to farmers who were unaware of the potential of HKm, providing information), and also to shift the discourses driving interactions between actors. Initially a lack of trust prevailed in the area. Farmers feared the state apparatus and tried to avoid contact with forestry officials. The forestry service, on the other hand, tended to view farmers in protection forest as squatters whose presence damaged the functions of the forest.

In addition to a pervasive lack of trust between state actors and farmers, there were two particularly relevant discourses which influenced different actors. One viewed deforestation as leading to the loss of forest functions, with the only solution being reforestation. The second was based on the understanding that coffee needed sun to grow, and would not flourish under the shade of trees. The benefits of agroforestry emerged as an alternative narrative that addressed both of these concerns.

This section continues by providing an overview of actors involved at the time that the protection forest governance system was evolving in Way Besai. From there it considers processes that served to strengthen the trust between actors, and how dominant discourses were transformed in a way that allowed the emergence of new rules of interaction between actors in the system. Details of the requirements and mechanisms to obtain and maintain HKm licences will be discussed further in section 4.6.

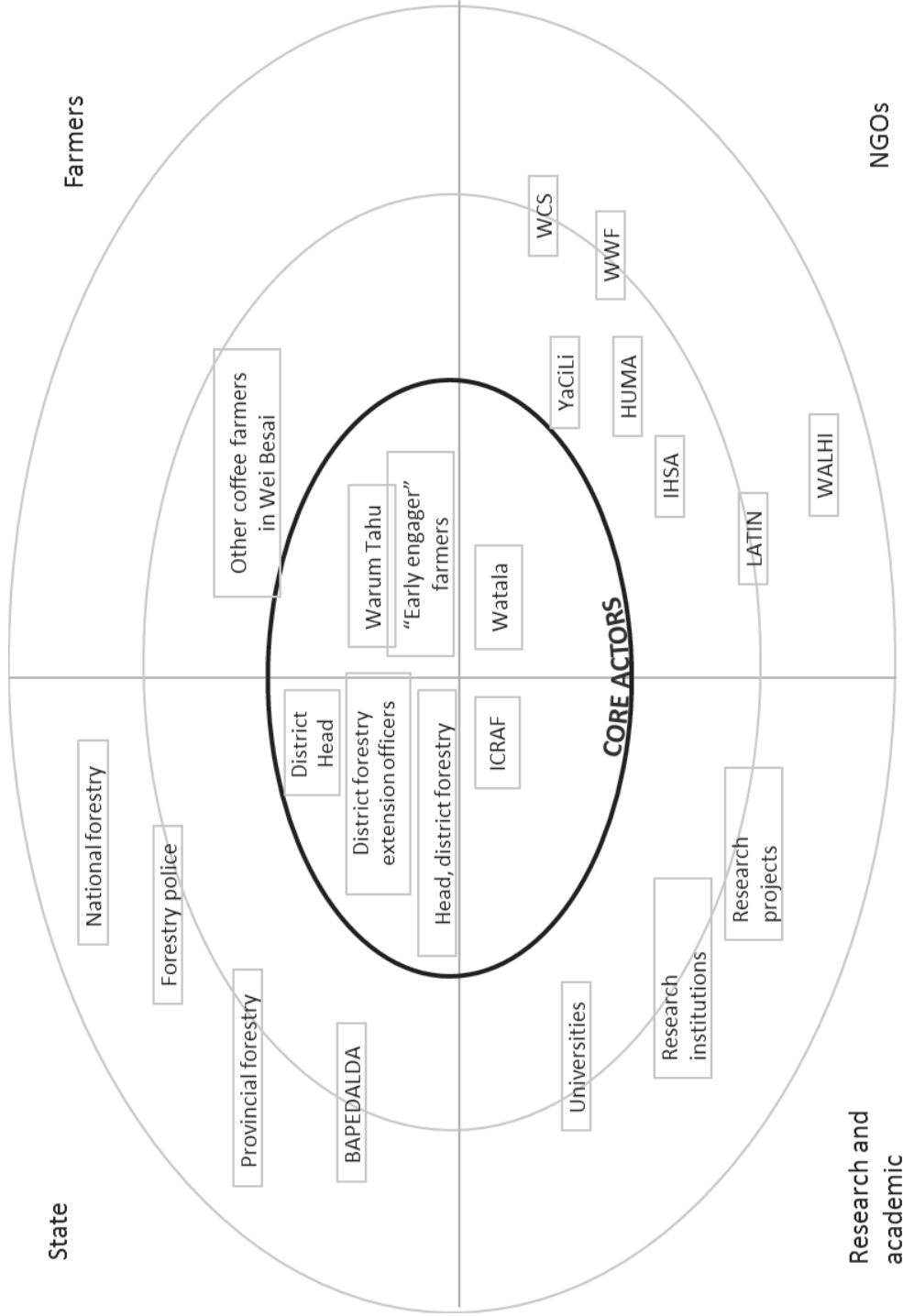
4.5.1 Overview of actors

At the core of the transition under discussion was the relationship between the state and farmers. As Figure 8 shows, neither of these groups was homogenous. Safitri (2006) notes that during the early reform period in Lampung there were differing opinions about social forestry, with “proponents argu[ing] there was no policy choice to solve all forestry problems except continuing community forestry, while the opponents thought that community forestry should be ended since it caused forests to become more degraded” (p. 8).

State actors included a myriad of institutions at different levels, with different positions within and between organizations concerning management of protection forest. For example, in the early days, the national and provincial forestry services, and Environmental Impact Management Board (BAPEDALDA, *Pengendalian Dampak Lingkungan Hidup*), among others, were sceptical of the approach being taken in West Lampung. The forest police in West Lampung were also resistant – their basic approach to date had been based on exclusion, so it was difficult to accept a policy that allowed people to use the forest area. Additionally, there were reports that various local actors

resisted change as it would mean losing the opportunity to demand illicit payments from farmers in return for allowing them to unofficially use the forest area.

Figure 8: Selected core and peripheral actors shaping the emergent governance system (1998-2004)
(see notes a, b)



- a. Donor organizations, which do not fit in the schema as actors directly engaged in influencing the system or associated with one of the four quadrants, nevertheless played a pivotal role in the provision of resources and supporting ideas that shaped the system. Key donors included: Ford Foundation, DFID, funders of various research projects.
- b. This schema does not include all the different actors, but highlights those mentioned during interviews or in secondary sources. As explained in the text, not all of the actors were proponents of HKm. In the early days in particular a number were sceptical.

Schema adapted from Liefferink (2006, p. 52)

On the state side, the impetus for change came from the district level, with the forestry service (*dinas kehutunan*) playing a key role at the functional level. By all accounts the role of the head of the forestry service was pivotal at the time. This was then supported by the district head at the political/administrative level.

Within the community of farmers, there were also differences. In the immediate aftermath of the fall of the New Order regime there were varying responses to claiming rights to land. The “early engagers” in Figure 8 were those who chose to follow a legal means to secure rights. These early engagers were the farmers who, towards the beginning of the process, started to interact with actors from state, NGO and research and academic institutions in trying to find new ways to work together. There were five HKm groups in the first wave of short-term HKm licence grantees in 2000 and 2002.

So why then did these farmers choose to engage with the district forestry service while others did not? A main reason has to do with the fact that in the early days of the reform period when the HKm concept was being introduced in Way Besai, there were significant hurdles to overcome – not least of all the breakdown of trust described in section 4.4 – and very limited human and financial resources with which to address them. As described in more detail in section 4.5.2 below, building trust took time and resources.

At a very basic level, just reaching the thousands of farmers in the area to explain the concept of HKm and convince them that it was a viable and safe alternative was a daunting task. And this was complicated by the fact that the system was still being developed, so in the early days there was little clarity about the rights and obligations of farmers. All of these things had to be worked out and agreed between farmers and the district forestry service.

In the early 2000s Watala, a Lampung-based NGO, was active in reaching out to farmers in Way Besai in order to explain the potential of HKm and then supporting the acquisition of licences. This took time and significant effort on the part of field workers, in part because

farmers were suspicious of outsiders. Watala's resources were, however, limited, so they were not able to reach all farmers.

Individual forestry extension workers also played a role in explaining the potential of HKm and supporting emergent farmers' groups to apply for licences. But again, these individuals were limited in number. It is also worth remembering that HKm represented a completely new way for these extension workers to engage with farmers, and there was little capacity development provided to equip them for the task. As a result, much depended on the initiative of individual extension workers. In the case of one farmers' group, it seems that the fact that two forestry extension workers lived in the community where the group was formed was a factor in the early adoption of the HKm concept.

From interviews with farmers and district forestry officials, it is clear that Watala played a critical role in advancing HKm on-the-ground in Way Besai. This was supported by the scientific work of the World Agroforestry Centre (ICRAF). Other NGOs and individuals provided support to farmers in terms of legal framings of arguments and strategies at the policy level. In the early days, as with the state quadrant, there were also NGOs who were not convinced of the wisdom of sanctioning farmer access to and use of protection forest.

While there were various research initiatives undertaken in Way Besai, it is the scientific work of ICRAF that is consistently raised as having played a decisive role in turning around some of the more persistent discourses related to erosion and deforestation, particularly by advancing the potential of agroforestry. The roles of Watala and ICRAF were highly complementary in moving the early HKm agenda forward, with ICRAF focusing more on research and Watala more on strengthening farmers' organizations. They worked together closely, and as one farmer explained, "they had a very large influence on the birth of HKm in West Lampung" (interview February 2013). ICRAF and Watala had collaborated together previously in West Lampung on the Damar forests of Krui. As a long term Watala field

worker and then manager explained, “there was mutual trust” between the organizations at the time they started working in Way Besai (interview February 2013).

Over time the first five groups which received temporary licences coalesced in a loose coalition, Waremtahu (Forum of Forest Farmers in West Lampung, *Wadah Rembuk Petani Hutan*). Waremtahu then began to reach out to other farmers to explain HKm. As a member of one of the groups explained,

“Waremtahu is a strange organization – there is no leader, no secretary, no treasurer [...]. Our reason for forming the organization was to facilitate us in discussing [...]. If I have a problem, I communicate with friends in the five groups[...] we sit together and solve the problem [...] If there are problems in another group we sit together [...]. After the five groups were established, we had a moral responsibility to farmers who didn’t yet have [HKm] licences [...]. We went voluntarily to other farmers, group by group to explain to them so they could also join HKm” (interview January 2013).

4.5.2 Transforming discourses: Building trust

If trusting someone involves depending on the person’s goodwill towards one, and that, “the trusting can be betrayed, or at least let down, and not just disappointed” (Baier, 1995, p. 99), then the evictions described in section 4.4 could be taken as signalling a complete breakdown of trust between farmers and the state. So how then was the trust necessary to start transforming the system of natural resource governance established in Way Besai in the early reform period?

From interviews with different actors, it appears that building an environment of trust involved a number of inter-related processes at different levels: individual- and group-level “on-the-ground” interactions; negotiations around elements related to the emerging HKm system; and legal/institutional initiatives. The examples which follow give a sense of some of these processes in action. These reflect the notion that trust is a multi-dimension concept, operating at the individual, group and institutional levels.

Individual and group level processes

Across the board when talking about the early days of HKm in Way Besai, people stressed the key role of the head of the district forestry service at the time, Warsito. Warsito's links within government, from the national Ministry of Forestry through the provincial level to the district were helpful in convincing government of the viability of HKm as a means of addressing the seemingly intractable land conflicts in Way Besai. However, it was his direct and respectful approach to farmers that was most often highlighted.

By all accounts farmers appreciated Warsito's openness to considering new approaches in his interactions with farmers, and willingness to engage frequently and intensely with them in their homes and fields. As one farmer involved in the early stages explained,

“we farmers often had different opinions to Pak Warsito but he was open and not set in his opinion [...]. He visited us in our houses, stayed overnight and often saw the process [...]. This was a unique approach and has not been continued by the new generation [...]. They don't come to us, we go to them” (interview February 2013).

A long term field facilitator from Watala explained that Warsito trusted the farmers from the beginning and acknowledged that they could manage the forest. This was a completely different approach to previous forestry officials. Warsito was, “willing to go to the forest on foot, talk to the farmers, go to the hills by motorcycle [...]. These were the things that made the farmers trust Pak Warsito” (interview February 2013). Another farmer and group leader said that he was not sure that HKm would have worked if Warsito had not been the head to the forestry service. As he said, “Pak Warsito was truly a field person [...]. Farmers were motivated by an official who often went to the field” (interview January 2013).

Trust took time, and grew among different groups in different ways and at different speeds. For example, members of the first group to receive a HKm licence, Bina Wana, started

returning to forest land in 1998 after receiving verbal assurance from the district head that they could. Even so, they were nervous. According to a member of Bina Wana, it was only after ministerial decision on social forestry 677/1998 was issued that they “received certainty and trusted” (interview January 2013).

When asked why they were the first group to obtain a HKm licence, members of the group said they were motivated simply by necessity as the economy of their village had fallen some 60 percent since the evictions from the protection forest. Further discussion revealed, however, that one of the reasons they moved so quickly was that two forestry extension workers lived in the community. These individuals helped on a volunteer basis to facilitate the process of preparing the documentation required to apply for a licence. Since the extension workers were members of the community, farmers trusted them.

In addition to the direct contact between forestry officials and farmers touched on above, in the early years the NGO Watala also played an important role in reaching out to farmers to explain the potential of HKm, seeking out those who were interested in joining and working on concrete ways to improve agricultural yields and reduce soil erosion. In the beginning there were three Watala field workers in Way Besai and they divided up the area. As a former field worker for Watala explained,

“in a number of locations we were considered the enemy [...]. They [the farmers] were still traumatized by forestry [...] then suddenly we arrived to discuss how to manage the forest well [...]. They thought we were from the forestry department[...] at that time they didn't trust us” (interview February, 2013).

A farmer in one of the early engager groups describes how when Watala first entered their community there was a reluctance to cooperate because of the past trauma of being evicted. People did not trust Watala. However, one farmer participated in a cross visit arranged by Watala to another area of Lampung where a social forestry program was being implemented (Gunung Betung). This provided the entry point for others to come on board

with Watala's activities. Over time, as one farmer explained, Watala's role was seen as having been, "very important indeed" (interview February 2015).

Negotiating elements of the emerging HKm system

It seems that a second element contributing to the strengthening of trust between actors was the willingness of farmer and state actors to compromise and enter into genuine dialogue and negotiation with each other. Over the course of the interviews, several such examples emerged. One had to do with the number and type of trees that HKm groups had to plant, a second with preparation of the internal regulations of groups, and a third related to a district plan to require payments from farmers using protection forests.

Initially the government said it would require 1,000 trees be planted per hectare on HKm land. This figure was based on previous planting projects in protection forest areas, and in particular the National Movement for Forest and Land Rehabilitation (GNHRL, *Gerakan Nasional Rehabilitasi Hutan dan Lahan*). Farmers objected, fearing that coffee would not grow under such conditions and requested that they be required to plant 100 trees. Finally a compromise was reached of 400 trees per hectare.

Additionally, there were negotiations about an unwritten requirement for types of trees that should be planted – forest trees (*pohon kayu*) versus fruit (non-forest) trees. The government's starting point was 70 percent forest trees and 30 percent fruit trees. However, again there was debate. Farmers objected because they would not be able to cut or gain any other benefit from the 70 percent forest trees. With fruit trees, however, while they could not cut the trees, they would nevertheless derive benefit. Ultimately a reversal of the percentage to 70 percent fruit trees and 30 percent forest trees was agreed.

A second example relates to negotiations around the internal regulations for the early groups. These included, among other things, the rights and responsibilities of group members and groups leaders (*pengurus*), banned activities (for example, cutting trees), and

sanctions for breaking the rules. Each group drafted their regulations, which then had to be approved by the head of the district forestry service. As a farmer explained, groups prepared their drafts which were “not like modern regulations [...] which are difficult to understand [...]. We just wrote” (interview February 2013). Then followed a lively back and forth with the district forestry head. Group representatives would submit their draft, then the forestry head would make “corrections” for discussion. As one farmer explained, sometimes the remarks were interlaced with light hearted remarks like, “if it’s like this it’s easy for *bapak-bapak* [referring to the group leaders], but difficult for me” (interview February 2013). And so the drafting process itself, conducted in an informal manner, seems to have been a way of building trust between the different actors.

A third example has to do with a plan of the district parliament to institute a system of payment to be made by farmers to the government. Farmers, NGOs and the head of the district forestry service objected to this. As the head of forestry at the time explained, under the emergent HKm mechanism, “the farmers had already saved the government millions [of Rupiah] [...]. There were no more fires and no more illegal logging [...]. The farmers had helped the government [...]. A rough calculation showed that farmers had made a contribution of some two to three billion [Rupiah] to the government” (interview February 2013). According to the head of district forestry at the time, the district parliament and district head were convinced, and West Lampung became the only district not requiring this type of payment (interview January 2013).

Strengthening the policy foundation

In 2004 West Lampung promulgated a regulation on community-based natural resource and environmental management (*Perda* 18/2004). According to Safitri (2006, 2010), this regulation directly contradicted provincial forestry legislation aimed at seeking profit from forests. In West Lampung the focus was instead on, “all aspects of natural resource management such as planning, utilising, protecting and rehabilitation, monitoring and evaluation [...] [and it] tends to put the government and the people in a more balanced

relationship (Safitri, 2006, p. 8). With respect to the latter, Safitri (2006) highlights the fact that whereas legislation typically restrains people with obligations and sanctions while government mainly enjoys authority, in the West Lampung regulation there was an effort to narrow this gap by attempting to also impose obligations and sanctions on government (p. 9).

A farmer who was involved in the process of developing the legislation and is active in Waremtahu, explained that in the early 2000s the status and future of HKm was still uncertain. He talked of the “tradition of the New Order government,” and fear among farmers that decisions that were made by the district head could be easily reversed if there was a change in power. As he said, this “created a condition that was traumatic for those responsible for HKm areas” (interview February 2013). In consultation with “network friends” (he mentioned people from the University of Gadjah Mada, Bogor Agricultural University, and the NGOs IHSA and HUMA), it was agreed that a district regulation would provide the security that farmers were seeking. Such a regulation could not be easily changed at the whim of those in power.

According to the farmer, Watala and ICRAF supported the idea and with DFID (UK Department for International Development) funding channelled through these two organizations, preparation of the academic draft of the legislation proceeded. Several natural resource management and human rights NGOs provided legal and technical support, and a process of public consultations was undertaken. Safitri (2010, p. 302) notes that this type of consultative process and involvement of civil society organizations in the drafting of legislation was an exception at the time. As for the end result, the farmer explained that, “even if people [*masyarakat*] haven’t read the regulation, it’s as if they have read it because what is included is what is felt by the people [...] because it was born from us” (interview February 2013).

A second area where farmers' groups sought certainty was the process of monitoring and evaluation of the performance of HKm groups. In the 2001 HKm regulation, groups were initially granted a five year temporary licence before a 25 year licence. Prior to issuance of the long-term licences, an evaluation of the groups' work over the five year period was required. Farmers wanted clarity about the criteria against which they would be evaluated. To support this, in 2003 a workshop including a range of actors from farmers' groups, government, ICRAF, Watala and other civil society groups was held to support development of criteria and indicators (Tim Penghimpuan, 2003, p. ii).

Following the workshop a small team drafted the criteria and indicators which were then field tested. Criteria focused on institutional development, conservation (rehabilitation and protection) and impacts (social, economic, and ecological). A former field officer from Watala who was involved in the process said that, "this was an initiative from the farmers and is only in West Lampung" (interview February 2013). One concern was that, "sometimes official documents are difficult for farmers to understand [...]. We wanted to decrease the gap [...]. We wanted the document to be accepted by government but at the same time not be too difficult to translate to farmers" (interview February 2013).

The indicators and criteria were officially adopted through a decision of the head of West Lampung District in 2004. The system was still in use at the time of field research in 2013, also for the monitoring of groups which have already received long-term licences.⁴⁶

4.5.3 Transforming discourses: Using science

As mentioned earlier, by the 1980s the notion of farmers in protection forests as illegal squatters whose activities destroyed forests and reduced their ecological functions was

⁴⁶ At the time of field research in January 2013 a process of monitoring and evaluation for 24 HKm groups with long-term licences had just been launched. The first step was a meeting facilitated by Waremtahu with funding from the district government with heads of the groups. Details of the criteria and indicators were reviewed one-by-one to ensure there was a common understanding. During the meeting it was stressed repeatedly that this was not a punitive exercise, but rather, should be considered as a baseline intended to identify areas where capacity strengthening for individual groups was required.

firmly entrenched in forestry discourses in Lampung. According to the forestry law of 1999, the main functions of protection forests are to prevent floods, protect hydrology, control erosion, prevent sea water intrusion and maintain soil fertility. While HKm provided the opportunity for people to use protection forest areas to improve their welfare, according to the 2001 regulation on HKm (Menteri Kehutanan, 2001), it required that in doing so they preserve the function of the forest and environment.

Convincing decision makers, and especially the district head who was responsible for issuing licences, that HKm could contribute to restoring and protecting the functions of forests was one of the early challenges of establishing the HKm system in West Lampung. This is where the scientific work of ICRAF played a pivotal role.

ICRAF began working in Way Besai in the late 1990s with the aim of developing a “negotiation support system” to contribute to resolving the conflicts in the area. This work was multi-disciplinary in nature. It had a strong focus on improving understanding of sediment production in the area. The aim was to move beyond simplistic narratives of causes of erosion and unravel complicated linkages between, for example hydrology, topography, lithology and land use. This research was positioned within the broader historical context of land tenure and migration in the area (Verbist & Pasya, 2004; Verbist et al., 2010; Verbist et al., 2006).

Without getting into the details of the findings coming out of the research (Verbist et al., 2010), by all accounts the results related to land cover and erosion were of particular salience to addressing the challenges in the early period of HKm. A farmer involved at the time highlighted that it is not well-known that the research of ICRAF was a key factor in alleviating the concerns of the district head about supporting HKm (remembering, that as mentioned above, there were many actors who simply did not support the HKm approach, believing that it would lead to increased loss of forest functions). As the farmer explained,

“ICRAF’s research strengthened our position [...]. It showed that a coffee plot [kebun kopi] based on multi strata agroforestry had an erosion rate of below three tons [...]. The threshold allowed by the environmental agency was ten tons at that time [per hectare per year] [...]. So the coffee plot was far from that [...]. This was a negotiating tool for us with the district head” (interview February 2013).

In addition to the challenge of convincing decision makers that agroforestry could maintain the watershed functions of protection forests, the other side of the coin was to persuade farmers that their coffee would grow well in agroforestry landscapes. It was mentioned several times during interviews that part of the initial reluctance of farmers to engage in the HKm program was this concern.

Responding this reluctance seems to have been easier than addressing the perceived direct link between deforestation and erosion. Verbist et al. (2005) noted that by the late 1980s farmers with secure land tenure had started to plant more shade trees in older coffee plots (p. 264). These areas then became examples for other farmers. As a forestry extension worker explained,

“in the village next to mine there was a large cempaka tree [...] big and tall [...] it didn’t bother the coffee [...]. I always took the farmers there [...] a small comparative visit [studi banding] [...]. That was the only proof [...]. There were no research results that showed that it didn’t bother the coffee” (interview January 2013).⁴⁷

⁴⁷ Interestingly, this issue of shade trees leading to a reduction in coffee yields was raised periodically during interviews in 2013 as an on-going issue. A number of farmers, including the leaders of the first HKm group, mentioned that over time, as the 400 required trees per hectare grew, coffee yields would go down. The issue now, however, is not whether or not to join HKm because of this, but rather, how to take the time while coffee is still producing in order to develop other income alternatives.

Since it is not permitted to cut trees, a strategy observed during field observations to deal with this in some locations was to prune back the branches of the larger trees to reduce shade. Some farmers were also starting to plant rubber as part of their quota of forest trees, with the expectation that they could later harvest the latex. There was some ambivalence about this in the forestry service (i.e. whether or not rubber should be considered a “forest” tree).

Over time an increasing number of farmers were willing to join the HKm program, although this was likely as much because they did not have much choice if they wanted to continue farming in protection forest as for any other reason.

By 2004, as a result of the types of actions and interactions touched upon above, signs of a transformation of the system of environmental governance system in Way Besai were starting to emerge, although at these early stages only a relatively small number of farmers were involved. Changes in the relationships between the state and farmers were evident through the building of trust and emergence of new ways of engagement. The position of farmers became stronger, supported by external resources and organizations. It was under those circumstances that the “rules of the game” in Way Besai were renegotiated. However, as the section which follows highlights, these conditions were likely unique to the reform period. As HKm entered the “post reform” period, the innovation and dynamism of that early period faded and a move towards a system where the state increasingly controlled and regularized the “rules of the game” started to become evident.

4.6 Mainstreamed HKm: “Rendering technical”

This section explores how in the period following the issuance of Ministry of Forestry regulation 37/2007 on HKm, there seems to have been an increasing effort by the national level state apparatus to “render technical” management of protection forest within the framework of HKm. This continued the process that had started at the district level. Li (2007) refers to the process of rendering technical and improvable as requiring that “an arena of intervention must be bounded, mapped, characterized, and documented; the relevant forces and relations must be identified; and a narrative must be devised connecting the proposed interventions to the problem it will solve” (p. 126).

This section will explore the first of these points. It starts by looking briefly at the requirements to obtain a licence, before proceeding with the obligations to maintain a long-term licence once it has been granted. At the time of field work these latter processes were

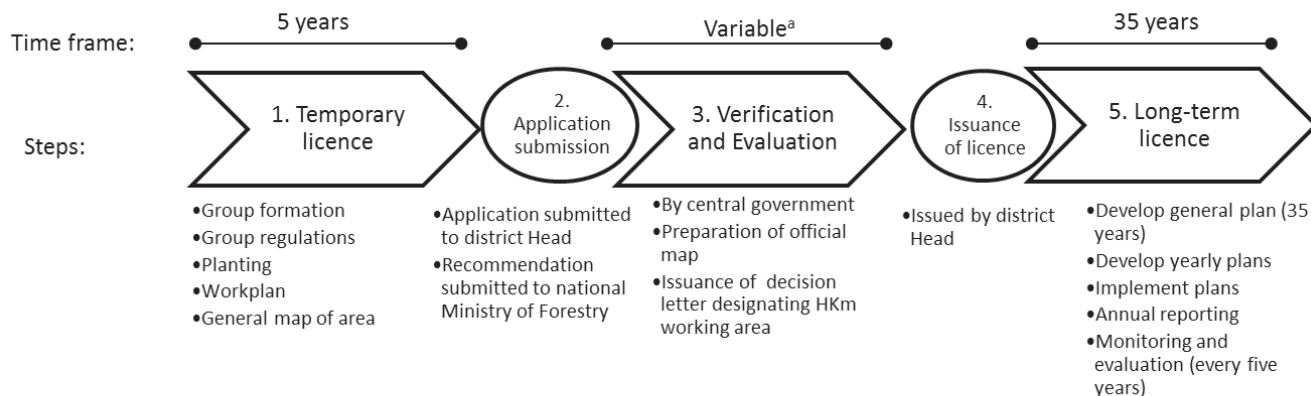
still in the rather early stages and as such are relatively new areas of inquiry in the academic and policy literature (exceptions, which focus on the “early adopter” groups in West Lampung include, Kaskoyo et al. (2014) and Aji et al. (2014)). The “maintaining a licence” sub-section uses the examples of planning, reporting, data collection and mapping to highlight the level of information that is required of farmers.

4.6.1 Requirements to obtain HKm licences

Figure 9 provides an overview of the process of HKm in West Lampung. At the time of field work in February 2013, long-term 35 year licences had been granted to 24 groups including approximately 2,726 individuals and 4,945 hectares of land in the Way Besai area. Five groups received licences in 2007, 16 in 2010 and three in 2012 (data obtained from the District Forestry Service, February 2013). The smallest group covered approximately 68 hectares with 79 members, while the largest had an area of 1,108 hectares and 800 members. In December 2013, the Ministry of Forestry was set to confirm that a further 5,223 hectares was approved for HKm in the area (see Figure 9, step 3). This area would be managed by 12 groups comprising some 3,071 individuals (data obtained from Ministry of Forestry, December 2013).⁴⁸

⁴⁸ Direktorat Jenderal Bina Pengelolaan Daerah Aliran Sungai dan Perhutanan Sosial

Figure 9: Overview of HKm process, West Lampung



a. According to Kemitraan (2011, p. 10), at the time they were writing, under normal conditions the average time required to complete the process at the national level after receiving a recommendation from the district was 350 days.

The 2007 national HKm legislation eliminated the requirement for a five year temporary licence for HKm groups prior to issuance of a long term licence. In West Lampung, however, the district head chose to maintain this requirement as an informal part of the system (see Figure 9, step 1). As the head of the district forestry services at the time of field work explained, groups are,

“provided temporary permission so that they become more solid and have a legal foundation to gather, to share thoughts, and when our officers go there they are not dealing with squatters (orang liar), but are dealing with people who [...] have a legal basis to be a group” (interview February 2013).

The idea is that with a stronger basis, groups will be in a better position to obtain and maintain the long-term licences.

Groups are geographically based, comprised of farmers using protection forest in a specific area. They are newly created to apply for HKm licences. Each farmer has rights to a particular piece of land where he or she has a coffee plot (the vast majority of farmers with HKm rights are men). Plots included in the licence were typically already in use prior to the fall of the New Order government.

HKm group members are usually linked to villages near the area in question, although the village government itself is not structurally part of the groups. Some members come from outside the village. It is, however, expected that the majority of members will be resident near the HKm area. Membership from outside the district is not acceptable. Having said that, although the members of the groups should be district residents they are not always the ones using the land – through various informal arrangements with group members, temporary residents also farm the land (interviews, February 2013).

During the initial period, HKm groups are formed and documented, the internal rules of the groups agreed, trees planted, a workplan developed and a map of the outline of the HKm area prepared. The initial estimate of each farmer's area included in the applications for a HKm licence is based on a figure of 2,500 coffee plants per hectare rather than on an actual measurement of land area (interviews, February 2013).

Preparatory work is supposed to be conducted with support from government or other external organizations. There is a strong focus on the concept of "participation."⁴⁹ As the number of groups expands over time, this presents a capacity challenge for district forestry officers in particular. They are already stretched thin and their basic training is in principles of scientific forestry rather than social forestry and community engagement (Aji et al., 2014).

Additionally, there are costs involved. A study based on experience with HKm programs in West Lampung, Yogyakarta and West Nusa Tenggara in 2007-2008 found that on average it cost IDR 500,000/hectare from the point of program initiation to submission by the local government to the Ministry of Forestry of the documentation required to apply for a HKm licence (Figure 9, step 2) (Kemitraan, 2011). As external project funding to support the HKm process declines, it is unclear whether or not government support will be enough to cover

⁴⁹ This is captured in materials prepared for "field school" programs to provide training of trainers courses to HKm facilitators. The material includes a session on participation which considers the features of participatory groups and basic principles of participatory decision making (Tim Direktorat Bina Perhutanan Sosial, 2013).

these costs. At minimum it seems safe to say that it will not be sufficient to provide the intense level of support that was available to the first wave of HKm groups in West Lampung.

Once groups are considered ready, they submit an application for a long-term HKm licence to the district (Figure 9, step 2). The district then sends a recommendation to the Ministry of Forestry following which the Ministry initiates a process to confirm that there are no other claims on the area, verify the information in the application through field checks, and prepare an official map (DirJen BP-DAS & PS, 2010). If all is in order, the Ministry then issues a decision letter proclaiming that the area is designated for HKm (*SK Penetapan Areal Kerja HKm*) (Figure 9, step 3). Based on this, the district head can then issue the HKm licence (Figure 9, step 4).

According to Kemitraan (2011, pp. 9-10), in 2010 the target for completion of the central government process was 60 days. However, at the time Kemitraan was writing, the target had never been met. Under normal conditions the average time for completion of the process was 350 days.⁵⁰ In 2013, the recommendation for new HKm areas in West Lampung was submitted by the district to the Ministry of Forestry in March, and the decision letter of designation of HKm areas was expected to be issued in December (data from Forestry Service, West Lampung and the Directorate General of Watershed Management and Social Forestry, December 2013).

As the government approval process unfolds, in West Lampung there have been clear indications of differences between the district approach and that of the central government. As one district forestry extension officer explained, “it is difficult when people from the centre come and just follow the regulations without understanding the realities in the field” (interview, December 2013). The district on the other hand, tends to show some flexibility in interpreting regulations in a way that is more reflective of reality on the ground. In cases

⁵⁰ In calling for a speeding up and simplification of the process within the context of meeting ambitious targets for HKm, Kemitraan (2011, p. 10) noted that prior to the issuance of the decision letter proclaiming that an area is designated for HKm, an application had to cross 29 desks in the Ministry of Forestry.

where such differences emerged in 2013, following field visits and meeting with farmers' groups, the centre ultimately followed the lead of the district in agreeing with practices that were not initially considered acceptable by the centre.

For example, in discussions with district forestry extension officers in December 2013, they identified three topics where there was a lack of synchronicity between central and district government officials in terms of the 2013 verification conducted by the central government. During the verification process a team from the central government travelled to the target area to meet with representatives of farmers' groups.

Firstly, according to the central government there should be no rice fields in HKm areas, with no exception. This is in line with the HKm regulation. However, there are areas of protection forest in West Lampung where rice has been grown for decades, and according to district forestry extension officers, it simply is not realistic to ask people to plant trees in the rice areas. And in any case, even if there was no rice, these areas would be swamps, and no trees would grow there. There is agreement that no new rice fields should be opened, but the issue is around the existing fields.

The second point of disagreement has to do with the right of alienation – whether or not one farmer can transfer his or her HKm usage rights to another person. According to the regulation, this is not allowed – if a farmer can no longer use the area, it should revert back to the group. In reality, however, for any number of reasons people may need money, and transferring HKm rights is a way of obtaining it. Nobody seems to have a good handle on how often such exchanges happen; the only certainty is that they do happen.

People are careful not to talk about buying and selling, but rather talk about compensation for the effort that has gone into developing a coffee plot (*ganti tenaga*). For its part, the district government takes a pragmatic approach to such exchanges and does not problematize them as long as they are between local residents. The concern is if people from

outside, who do not have ties to the area and do not understand HKm, start to secure rights. Or if there is concentration of land in the hands of a few individuals.

A third point of discord has to do with a requirement that there be riparian buffer of 50 meters beside streams. The district forestry extension officers considered this to be unrealistic as in these areas there are often coffee plots that have been there since before HKm (interview December 2013).

Notwithstanding the above differences between representatives from the centre and district, the centre accepted the recommendations from the district for designation of HKm areas. As mentioned at the beginning of the section, this meant that by the end of 2013 there was to be more than a doubling of the land area designated for HKm in the Way Besai area.

4.6.2 Obligations to maintain HKm licences

Once a group has obtained a 35 year licence, they enter into a new realm of administrative and technical requirements. These have been increasingly elaborated since 2007 (see, for example, DirJen BP-DAS & PS, 2009). The requirements for licence holders reflect the fact that while property rights have been devolved to local actors, these have been granted within a defined space, which draws heavily from the framework used for large-scale timber concession holders. As one farmer put it, “farmers have to provide information like companies” (interview February 2013).

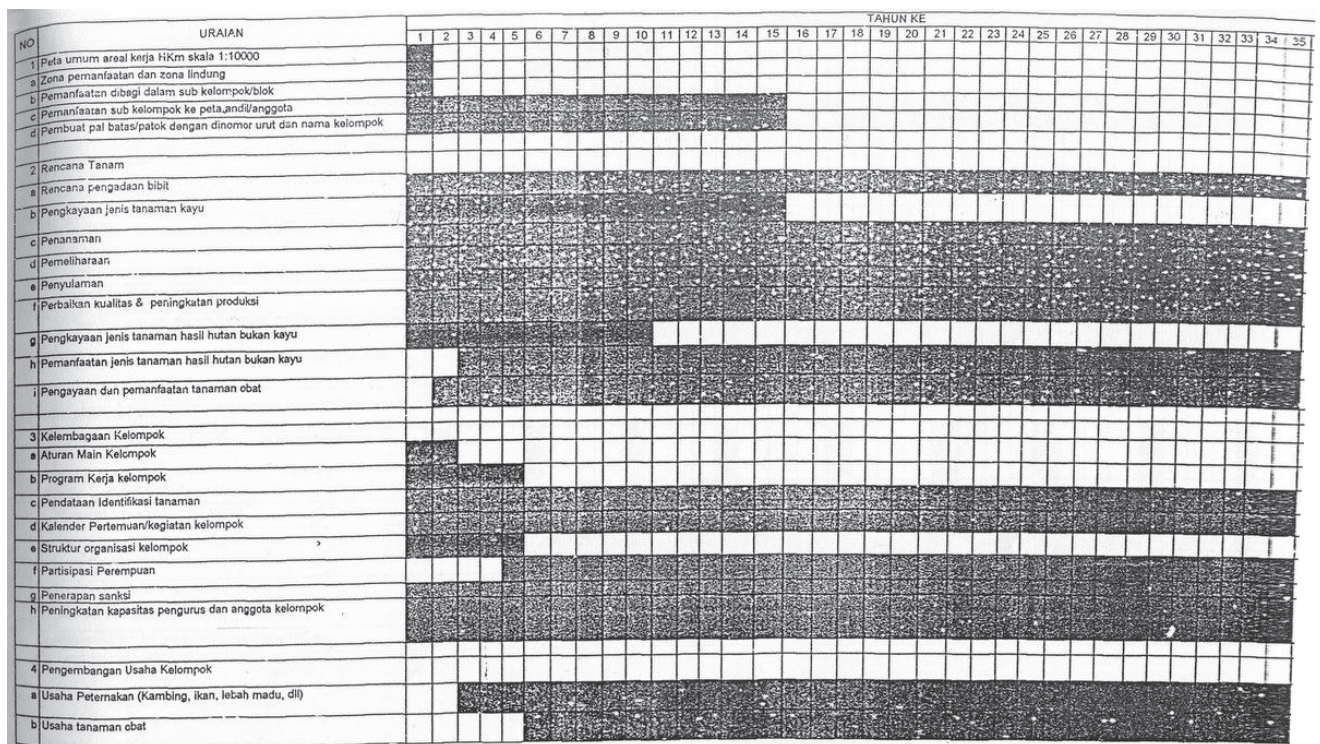
The parallels between the forestry concession system and HKm are most apparent with respect to the preparation of general and operational plans. A representative from the NGO Watala explained that, “friends from forestry acknowledged that these documents were adopted from concessions [...]. The process of giving land to people (*rakyat*) is too complicated; compare it to concessions which have money” (interview February 2013).

After receiving a licence, HKm groups need to prepare a general plan, and yearly operational plans. There is also a requirement for yearly reporting.

The general plan covers the 35 years of the licence period. As an active member of Waremtahu explained, at the time of field work, seven of the 24 groups with long term licences had completed their general plans (interview, January 2013). Several leaders of groups with plans noted that the plans were useful for different reasons. As one explained, “if people complain that we haven’t achieved something, we can refer to the general and operational plans that have been approved by the district head” (interview February 2013). A second pointed out that the plan is useful for identifying where groups are lagging behind expectations and may need additional facilitation (interview, January 2013). The general plan could also provide a way of channelling support to groups.

A group’s general plan includes information about the biophysical condition of the area, the socio-economic situation, spatial planning for the HKm area (for example, utilization and protection zones), institutional matters, and a section on forest protection. The plan includes a Gantt chart which provides an overview of planned activities and implementation over the 35 years (for an example, see Figure 10).

Figure 10: Section of Gantt chart showing 35 year general plan for HKm



Activities in the full plan represented in Figure 10 are typical of the groups in the area, and include eight categories:

1. Defining the HKm area (map at a scale of 1:10,000): Usage and protection zones; usage divided into sub-groups; preparation of map showing plots of individual members; installation of numbered concrete boundary markers around the perimeter of the HKm area every 100 meters including the name of the group.
2. Planting plans: seedling preparation; enrichment of forest trees; planting; tending; improve quality and level of production; enrich non-forest species; use of non-forest species; enrichment and usage of medicinal plants.
3. Institutional: rules of the game; workplan; schedule of meetings/activities; group organizational structure; involvement of women; development of sanctions; capacity development of group management and members.
4. Development of economic initiatives: animal husbandry; joint marketing; non-timber forest products; environmental services; financial services.

5. Mixed crops, multi strata that have both economic and ecological benefits: alternative economic initiatives, capacity building.
6. Forest protection: fire and wood theft; soil conservation (grass strips, sediment traps, terracing).
7. Monitoring and evaluation.
8. Prepare request for second 35 year licence.

From the general plan flows yearly operational plans and reporting. Reporting is not yet well institutionalized in the area. However, if and when the reporting system becomes operational, it promises to generate a vast amount of information. The regulation from the Directorate General responsible for social forestry provides 10 templates for tables to be included in the yearly reports from HKm groups to the district (DirJen BP-DAS & PS, 2009). This information should in turn be consolidated and reported to the Ministry of Forestry.

To give a sense of the magnitude of information involved, consider Figure 11, which is the template for cumulative number of trees planted on HKm land, broken down by whether they are forest or non-forest trees (referring back to the district requirement of 30 percent forest, and 70 percent non-forest), and what species. According to the reporting guidelines, this data would need to be collected for each HKm farmer each year. At the time of the research there were approximately 2,700 HKm farmers under 35 year licences in the Way Besai area, with an additional approximately 3,000 expected to join in the immediate future (and many more to be added in West Lampung outside the Way Besai area). In addition to information on the number of trees, information to be recorded for individual farmers' plots includes the number of coffee and other plants, soil type and slope. Over time, this will add up to a great deal of information to be managed.

Figure 11: Annual reporting template for cumulative planting in HKm area

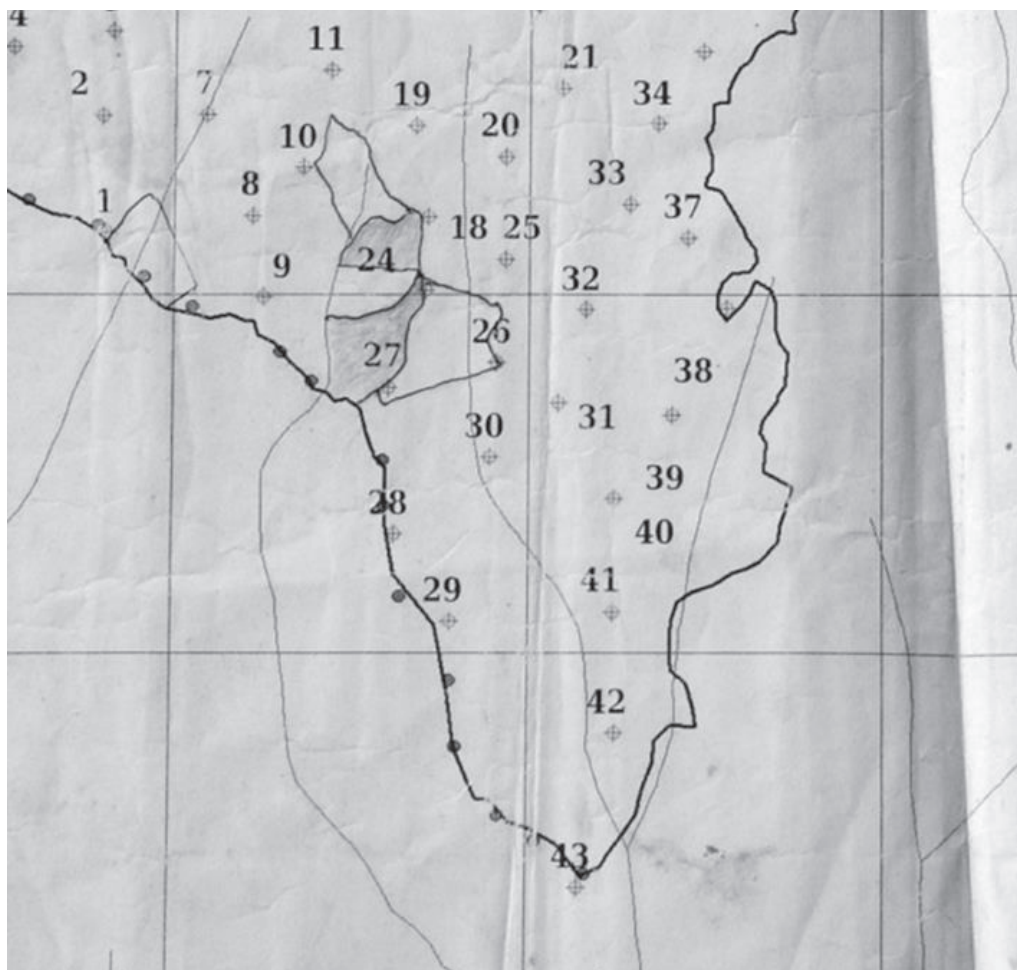
No	Vegetation Type	Last Year		This Year		Cumulative		Note
		Area (ha)	Number	Area (ha)	Number	Area (ha)	Number	
1	Wood a.... b....							
	Non-wood a.... b....							
	Total							

Source: Translated by author from DirJen BP-DAS & PS (2009, Lampiran, chapter VI)

Notwithstanding the challenges of data collection and management, for the most part group leaders with long-term licences seemed to find the main tasks of planting trees and protecting their areas reasonable. However, at the time of field work, the requirement to make a digital map of each plot within a HKm licence area was causing concern. As one group leader put it, this is the “work of professionals being handled by farmers” (interview January 2013).

Figure 12 shows a section of a map being prepared by one of the farmers’ groups. The numbers represent coordinates from GPS readings corresponding to plots used by different farmers. The GPS unit that the group utilized did not have a tracking feature so they used a compass to delineate the borders of the plots.

Figure 12: Early stages of preparing digital map of farmers' plots



At the time of field work there had been some support provided to train groups on how to prepare these maps (for example, from the district government, the Besai hydropower plant and the Strengthening Community-Based Forest and Watershed Management project). However, it was by no means sufficient to support all groups, and capacity was still extremely low. Some groups chose to prepare the maps themselves and some hired an outsider to help. In either case, preparation of such a map represents a significant cost for the groups. At the time of the research no group had completed their map yet.

This section has looked at how, as the HKm program has matured, it has become increasingly “technical” through on-going elaboration of detailed planning, reporting and mapping requirements. With the combination of digital mapping to the level of individual farmers’ plots, information on soil type and slope at the plot level and cumulative yearly information on tree species, coffee plants, and activities at the same level, one can envision a highly detailed geographic data base of a landscape that was previously outside of state control.

The roles of actors in the governance system over the period between 2007 and 2013 also showed changes. With the issuance of the 2007 regulation on HKm and increasing bureaucratization of the program, the national Ministry of Forestry started to exert more influence. Additionally, over time donor funding for NGO and research actors was phased out as development priorities shifted. The roles of these actors in the governance system subsequently declined. Non-governmental actors remain involved as part of monitoring teams, but are less engaged in systematically supporting on-the-ground work in the Way Besai area. State actors now provide the majority of resources supporting the system and consequently have increased power to influence processes.

Farmers remain central actors in the system, although their focus is now largely inward looking. Their priorities have shifted from negotiating with the state about the parameters of the system, to ensuring that the groups meet the requirements of the 35 year licences. Since elements such as the number and proportion of trees per hectare have been set, and a monitoring system established, there is less engagement between state actors and farmers on “higher-level,” cross-group elements of the system.

Farmers continue to provide “peer-to-peer” support across groups in meeting the requirements of the long-term licences. This is primarily through the convening power and capacity strengthening role of Waremtahu. The district government also leverages the position of Waremtahu in its engagement with farmers (as for example, through the 2013

monitoring and evaluation process where Warem tahu led the process of preparing farmers' groups).

As Table 10 shows, over time de jure and de facto property rights in the area have become increasingly aligned. At the level of management, there are emergent issues, such as, for example, the planting of rubber trees on individual plots. Some farmers would like to plant all rubber trees as their 400 tree allocation. At the time of field research in February 2013 the district forestry service did not have an official position on this but tolerated it (interview February 2013). It is uncertain how well rubber will produce at the altitude of Way Besai.

Table 10: Tendencies in property rights of farmers using protection forest in Way Besai, 2007-2013

Time period	Status	Property Rights			
		Access/ Withdrawal	Management	Exclusion	Alienation
2007 - 2013	<i>De jure</i>	<ul style="list-style-type: none"> - Access based on membership in farmers' group. - Withdrawal, non-timber forest products, harvest from fruit trees, coffee 	<ul style="list-style-type: none"> - Overall group management with elected group leader and management team - Individual farmers, decisions on what trees to plant and where on their plots (400 trees, 30% forest, 70% non-forest) - Emergent issues – e.g. growing interest among farmers in planting rubber 	Yes. For example, groups have teams to protect their HKm areas from trespassers (especially illegal loggers)	No
	<i>De facto</i>	As above	As above	As above	Yes, transfers to residents as long as within same district tolerated by district government. ⁵¹

There is also a slight mis-alignment between de jure and de facto rights to alienation. However, this is rather fuzzy. According to national legislation, this is not allowed, and during field verification of new HKm applications in 2013, the team from the central government problematized this practice. However, the district tolerates transfers of usage rights as long as the new right holder is a resident of West Lampung district. The central government

⁵¹ The district level monitoring and evaluation held in 2013 found no indication of transfers to people outside district (interview December 2013).

verification team implicitly accepted this by recommending licences be issued to groups, even though there were indications of such transfers.

4.7 Summary and outlook

This chapter has considered the evolution of property rights and governance systems in the Way Besai watershed of West Lampung, with a focus on protection forest and the initiation and implementation of HKM. These evolving systems are nested within broader macro level international and national shifts in approaches to forest governance and tenure. The analysis in this chapter focused at the meso level of the governance system. This is mainly concentrated on the interactions between district level state actors, leaders of farmers' groups and other actors. The micro level comprises farmers' groups that were specifically constituted to mediate individual farmer's engagement in the system; they were typically not based on existing community groups.

The analysis first looked at how people were using the land prior to the fall of the New Order regime. From at least the 1950s through to the late 1990s, people actively used and opened land that was officially designated as protection forest, primarily for coffee plots. It was shown that while the delineation of protection forest is based on boundaries carried over from colonial times, in the early independence period up until the 1970s there seemed to be official ambiguity about these boundaries and at minimum the state unofficially sanctioned use of protection forest. This was in line with a general approach which encouraged migration to Lampung province.

However, over time the state approach to the boundaries hardened and with it trust between state actors and small scale farmers began to erode. Through the Consensus-Based Forest Use Planning (TGHK) process, the boundaries of "political forests" were set. People who had formerly used weakly enforced protection forest areas with the tacit understanding of state actors, were increasingly viewed as squatters.

There were various reasons for the shift in the state's approach to farmers in the protection forests of Way Besai, including: changes in discourses related to forest conservation, an increasing desire by the state to better control its land and citizens, the decision to build a run-of-the-river power plant in the lower reaches of the Way Besai watershed. The national government, through the Ministry of Forestry, dominated land access in the area. A process of evictions from coffee plots in officially designated protection forest and subsequent re-claiming by farmers ensued. This marked the final breakdown in trust between the actors. By the end of the 1990s and the fall of the New Order regime, the relationship between state actors and farmers was highly antagonistic.

In the early 2000s, following the fall of the New Order regime, there was a dramatic re-alignment of the governance of protection forest in Way Besai to take advantage of the emergent HKm tenure system. Re-establishing the foundations of trust, first at the individual level, was a critical part of this process. Farmers who had previously been viewed by state actors as destructive squatters became partners and legitimate users of protection forest land through the government's HKm program. During the early period of HKm (1999-2004) in West Lampung there was a concerted effort to realign power relations and strengthen the position of farmers vis a vis the state. This took place within the broader context of the reform period and devolution of powers to district level governments.

Through this process, the management of protection forest in the Way Besai watershed moved from a highly exclusionary state-led system to a governance approach that allowed the space for meaningful engagement with other actors, and in particular farmers. At this time the national government did not exert significant influence on the emerging system in West Lampung. In fact, there are indications that the approach of the national and district governments started to diverge somewhat, a situation which continued to the time of field work in 2013. This is in line with D. Hall et al.'s (2011) observation of "various central and local government agencies and functionaries, whose diverse and often contradictory

agendas, rule and enforcement procedures complicate the notion of a singular ‘national’ policy context” (p. 5).

The process of re-configuring the governance approach in Way Besai was time and resource intensive. It was facilitated greatly by the presence of non-local actors such as Watala and ICRAF and the external donor funding they attracted for work in Way Besai. It also seems that in the Way Besai case individuals mattered, and in particular a progressive and well connected head of the district forestry service was instrumental in building trust between actors, contributing to the foundations for a transformation of the system. This was mirrored by a group of farmers who were willing to engage and explore new ways of cooperating.

The process of trust building following the fall of the New Order regime involved a range of informal, individually-based interactions and more formal actions such as drafting of a district regulation to support community-based natural resource management and a monitoring and evaluation system for HKm licence holders. Through this period there was an insistent focus on ensuring meaningful space for farmers to engage substantively. Capacity building and technical support for farmers was an important part of this process.

These developments were complimented by a strong research component that served to counter persistent narratives of deforestation leading to erosion. Instead, a more nuanced understanding was evident in the system that emerged. It reflected the fact that, as Verbist et al. (2005) state, “the hydrological consequences of deforestation can only be understood by taking into account the land use systems that replaced the forest” (p. 255).

By 2007 the Ministry of Forestry’s position on HKm was consolidated through issuance of a regulation on HKm. This was followed by increasingly detailed guidance, including a 2009 document which provided information on requirements to obtain a HKm licence, and also preparation of general and operational plans for HKm groups, and reporting requirements. In 2010 the Ministry of Forestry issued a target of two million hectares to be covered by

HKm by 2014. This was later revised down to 500,000 hectares, but this did not represent a retreat in long term ambitions; the target for the overall category of community forestry, including HKm, was later revised upward to 40 million hectares by 2019, or approximately 30 percent of the national forest estate.

It is perhaps not surprising that against this backdrop of highly ambitious targets and slow realization, there would be attempts to “streamline” and render technical the HKm process through issuance of blueprints for planning and reporting. This fits with the previously dominant mode of operation of the Ministry of Forestry and its tradition of scientific forestry. The preoccupation with boundaries, mapping and information collection also seems in line with this. These processes speak to the point raised in section 4.1.2 that rather than undertaking institutional reform to be able to meet the needs of a changing external environment, an institution might instead work to modify the rules of the game so that the external system is more in line with existing institutional norms.

During this latter period, there was less engagement at the meso level in shaping the rules governing interactions between actors in the protection forest of Way Besai. Rather, the focus of farmers with licences turned towards fulfilling the licence requirements of planting, protection, delineation of geographic boundaries (both through physical markers on the ground and preparation of digital maps), and data collection. Over this period the funding available to external actors also started to decrease as donors began to focus on other regions and priorities. With this, the role of organizations such as Watala and ICRAF in the governance system was reduced.

The experience of the Way Besai area from the late 1990s through to 2013 captures a governance system in flux. In the beginning control of land in the area was fully at the discretion of the national government, through heavy command and control approaches aimed at removing farmers from the area. This resulted in a highly insecure environment for farmers using the area, although many continued to try and farm despite the challenges.

After the fall of the New Order government, the pendulum swung in the other direction as the locus of control shifted largely to the local level. At this time the rules of the game for engagement in HKm in Way Besai were negotiated. Once a level of trust had been built, farmers showed willingness to engage with state apparatus and basically conform to the state system for HKm. This likely has to do with the fact that claims to the land were not based on traditional rights (*adat*), but rather, were primarily made by migrants to the area. As Li (2002) observes, for migrant groups “the reference point for rights and obligations in relation to natural resources is the idea of ‘the state’ and, more specifically, the state system at its various levels [...] than ‘the community’” (p. 268). In the Way Besai case, the “community” in this CBNRM system refers to farmers’ groups constituted, in consultation with state actors, specifically for engagement in the emergent system.

By the second half of the 2000s, the role of the national government in the HKm system started to become more evident through regulatory processes and target setting. Again there was a shift in the locus of control of the governance system. Whereas previously it had rested at the local level with a diversity of government and non-governmental actors, now it started to move towards a stronger (although not exclusive or necessarily dominant) role for state actors and more involvement of the national level.

5. Actors and the transfer of ideas: Towards payments for environmental services in Indonesia

This chapter explores how in the early to mid-2000s a relatively new modality of environmental governance, payments for environmental services (PES) with a focus on watershed services, started to gain a foothold in Indonesia. As mentioned in Chapter 2 (Table 1), it focuses in particular on the role of actors who played a role in bridging emergent ideas of PES at the international level with the local context in Indonesia. Using three case studies, the chapter examines the role of international and local actors in the establishment of the schemes, the processes whereby the new approach was introduced at both the ground and policy levels, and how emergent institutional arrangements were contingent upon both externally designed frameworks and local contexts.

Since the mid-1990s the concept of PES has gained increasing prominence in environmental policy circles globally (Jack et al., 2008, p. 546; Stanton et al., 2010).⁵² Broadly speaking, PES approaches aim to incentivize land use practices that have positive environmental impacts through reducing negative environmental externalities. Such approaches are typically represented as part of a shift in environmental governance from command and control approaches to ones that seek to more directly link land users with beneficiaries of environmental services in a mutually beneficial manner. They started to emerge concurrently with notions of “free market environmentalism,” a perspective which began to gain policy traction in the 1990s and which, “emphasizes the positive incentives associated with prices, profits, and entrepreneurship, as opposed to political environmentalism, which emphasizes negative incentives associated with regulation and taxes” (Anderson & Leal, 2001, p. 4).

⁵² Following Muradian et al. (2010, p. 1201), this chapter uses the term environmental services rather than ecosystem services, with the understanding that, “ecosystem services is a subcategory of the former, dealing exclusively with the human benefits derived from natural ecosystems. Environmental services also comprise benefits associated with different types of actively managed ecosystems, such as sustainable agricultural practices and rural landscapes.”

The type of initiatives labelled as PES that have been developed over the past two decades are diverse. They range from national level programs (for example, in Costa Rica, Mexico and China) to small pilot projects of less than a few hundred hectares. The environmental services covered are varied, as is the level of government involvement, types of beneficiaries and users, and involvement of intermediary organizations. Over time the number of schemes globally has increased dramatically, as has the heterogeneity in terms of geographical distribution, spatial scale, design elements and types of stakeholders involved (Bennett & Carroll, 2014; Bennett et al., 2013; Landell-Mills & Porras, 2002; Stanton et al., 2010).

Against this backdrop, the chapter focuses on the role of different actors in the introduction of watershed PES governance approaches in Indonesia.⁵³ The chapter draws on empirical information related to pilot PES schemes in East Java, West Kalimantan and Lampung. Pilot initiatives specifically designed as watershed PES started in Indonesia in the early to mid-2000s. They drew on international experience, were typically supported by donor funding, and led by organizations within Indonesia with strong external linkages. The key organizations involved in initiating pilot PES projects in Indonesia also collaborated in terms of sharing experience at the pilot project level and in order to influence national PES policy.

The chapter begins by introducing elements of the conceptual framing, which draws on ideas of policy transfer and a range of perspectives on PES. This includes a discussion of the different actors that play key roles in PES mechanisms, and important institutional considerations such as conditionality and tenure. Following this is an overview of the three case studies. The empirically based sections which follow first consider the three cases from the perspectives of their ideational underpinnings and different actors, before focusing down to the locally-implemented pilot projects, and how these reflected approaches to PES. The chapter concludes by considering how policy ideas were transferred through the actors

⁵³ Use of the acronym “PES” from this point on will refer specifically to watershed PES schemes unless mentioned otherwise.

involved in the case studies and the multi-level challenges involved in this process of knowledge transfer and generation. The agency of different actors in shaping the pilot projects is also considered, as are the links between actors.

5.1 The transfer of PES policy ideas

Processes for inducing shifts in natural resource governance regimes differ across time and space. There are scale dimensions ranging from the international to the national to the local levels, with knowledge flowing between them. This knowledge is mediated by different actors. In order to capture these processes, the conceptual framework of this chapter integrates notions of voluntary policy transfer and the evolving PES literature. Early watershed PES schemes in Indonesia drew heavily on international experience. Concepts were introduced into the local context, piloted, and then ideas were modified and attempts made to feed these into national policy mechanisms. At the same time, these experiences were packaged to contribute to international debates and the evolution of PES concepts through publication in academic journals and international policy literature.

5.1.1 Actors and the transfer of ideas

Dolowitz and Marsh (2000) elaborate on the notion of policy transfer, referring to a process, “by which knowledge about policies, administrative arrangements, institutions and ideas in one political system (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political system” (Dolowitz & Marsh, 2000, p. 5). In elaborating an explanatory model the authors, “conceptualize transfer as lying along a continuum that runs from lesson-drawing to the direct imposition of a program, policy or institutional arrangement on one political system by another” (Dolowitz & Marsh, 2000, p. 13). These processes involve a range of strategies, objectives and actors, although as Stone (2004) notes, policy work tends to focus on dynamics within the nation-state and comparison of states, with less attention to how policy transfer can be “facilitated by organizations outside and between the state” (Stone, 2004, p. 549).

We see the influence of these latter types of processes in terms of the spread of PES approaches globally. Hrabanski et al. (2013) provide a comprehensive overview of the policy transfer literature within the context of an analysis of the role of international environmental non-governmental organizations (NGOs) in the spread of market-based instruments for ecosystem services, including PES. The authors explore the role of the NGOs as policy entrepreneurs involved in importing solutions developed elsewhere, and how these are then shaped by the domestic political context. Their analysis, which focuses on the very different cases of Costa Rica, Madagascar and France, explores the influence of the NGOs on the macro policy context. They conclude that, “although large environmental NGOs develop international strategies for ecosystem service and PES-instruments, the dissemination of those strategies depends primarily on the national and local contexts” (Hrabanski et al., 2013, p. 131).

A diversity of actors have been involved in the dissemination of PES in Indonesia. These range from those active at the international level, including multilateral institutions, bilateral donors, NGOs, and research institutions, to the national and local levels including different levels of governments, private sector interests, parastatals, communities, individual landholders, NGOs, and academic institutions. Given the fact that PES schemes tend to comprise newly constituted institutions, often drawing on non-local experience and concepts, it is of interest to examine the actors involved in the design and implementation of PES institutions, and how their ideas and differing access to resources are reflected in the rules of the game which emerge. The role and potential influence wielded by different actors are not necessarily the same between schemes, and can differ within one scheme over time.

The PES literature uses rather specific terminology to refer to actors, although it is not necessarily consistent across the publications (see Table 11). Central to the concept of PES is the notion of providers (sellers) and beneficiaries (buyers or users). Providers are those actors who implement land or resource management activities which are intended to generate the environmental services targeted by the scheme. Beneficiaries are actors who

derive benefit from the actions of the providers. Beneficiaries can be more or less directly linked to the scheme and the providers. For example, in the case of a hydro-electricity facility drawing on a discrete, relatively small watershed and benefiting from sediment reduction activities in the watershed, the link between providers and beneficiaries is rather close. However, in the case of a scheme focusing on the generation of carbon credits through reducing emissions from deforestation and selling those credits on the international market, the link is much weaker.

Table 11: Terminology to describe actors in PES schemes

Term to describe actors	Role
Providers (sellers)	Implement land or resource management activities intended to generate environmental services
Beneficiaries (buyers, users)	Derive benefit from the activities of providers
Intermediaries	Mediate transfer between providers and beneficiaries
External facilitators	External to the implementation mechanisms of the scheme, play a central role in the design, may provide support during implementation

Intermediaries in the context of PES can be defined as, “the agents mediating transfer of resources between users and providers” (Kosoy et al., 2007, p. 447). They often play a central role in the design and implementation of PES schemes, as highlighted by the findings of Bond and Mayers (2010, p. 57) that within their sample of local payment for watershed services initiatives, approximately three quarters of payments to farmers went through intermediaries. There are a range of organizations that play the role of intermediary under different circumstances. In a study of 47 payment for watershed service schemes worldwide, Brouwer et al. (2011) found that, “most intermediaries in the schemes were national governments (41%) or local NGOs (33%). Other intermediaries included local municipalities (11%) and international donors (6%)” (p. 389).

A term not generally used in the PES literature, yet useful for analytical purposes in the scope of this chapter, is that of “external facilitator.” As conceptualized here, external facilitators of PES schemes are differentiated from intermediaries, and are defined as organizations external to the architecture of the PES scheme which nevertheless play a

central role in the design of the system and may provide on-going support during some parts of implementation. In the Indonesia case the line between external facilitator and intermediary is in some situations blurred, with one organization playing both roles, particularly in the set-up and early stages of implementation. In the cases discussed in this chapter, external facilitators also tended to play a key role as a bridge between international experience and local actors.

5.1.2 The diverse world of PES: Ideational and institutional considerations

PES institutions, the stable and repeated norms that frame the schemes, can vary greatly, a fact with significant implications on both the efficiency and equity outcomes of the schemes. As Vatn (2010) notes,

“by changing which perspectives and values apply, institutions have the capacity to change the logic of the situation. They act as rationality contexts which in some settings – like the market – motivate individually oriented action, and in other settings – like the community – motivate actions supporting the interests or values of the wider group” (Vatn, 2010, p. 1246).

Additionally, the very way in which ecosystem services are conceptualized and analysed impacts on the PES systems that emerge. The assessment of ecosystem services tends to focus on bio-physical characteristics at one point in time. This type of framing does not take into account the social dimensions of ecosystem management over time and how the systems that have emerged – and the associated environmental services – might have been affected by different access and power relations. Reflecting more broadly on the relative blindness of the ecosystem services approach to power relations, Berbés-Blázquez et al. (2016) observe that, “uncovering power relationships mediating access, use and management of ecosystem services is critical for proper decision-making pursuing environmental sustainability and social justice” (p. 140).

As the number of PES schemes has increased globally, debate on what is actually meant by the term PES has also grown. This is most simply captured by looking at the number of

different definitions that have been proposed.⁵⁴ This section discusses key points of definitional contestation and different perspectives on conditionality, which is typically presented as one of the central characteristics of PES approaches. It also looks at how tenure issues are considered in PES design.

Definitional contestation: PES continuum

Unravelling what is meant when referring to PES can be surprisingly complicated (Matzdorf et al., 2013). Attempts to define PES are unfolding within the context of a broader discussion about the role of markets in environmental governance (Gómez-Baggethun & Muradian, 2015; Vatn, 2015) and attempts to better define market based instruments for environmental services (Pirard, 2012; Pirard & Lapeyre, 2014). Reflecting on the heterogeneity of market-based instruments for ecosystem services, Pirard and Lapeyre (2014) note that it, “proves challenging to have truly mutually exclusive categories that encompass the range of complex instruments” (p. 112).

Several authors have observed that there is a basic divergence between PES definitions which use an environmental economic lens and those which depart from the perspective of ecological economics (Farley & Costanza, 2010; Fletcher & Breitling, 2012; Gómez-Baggethun et al., 2010; Tacconi, 2012). Fletcher and Breitling (2012) summarize the differences as follows:

“The environmental economics approach [...] prioritizes economic efficiency, and tries to force ecosystem services into the market model. The ecological economics approach [...] focuses on the multiple goals of ecological sustainability, just distribution and economic efficiency and favors a variety of payment mechanisms to achieve these goals, both market and non-market. Appropriate institutions and mechanisms are determined by and adapted to

⁵⁴ Wunder (2015, p. 4) provides a useful comparison of nine definitions of PES that have been proposed since 2005. Although not the focus of this chapter, there is also a body of critical scholarship which fundamentally questions the concept of PES (for example, Kosoy & Corbera, 2010; McAfee, 2012; Milne & Adams, 2012; Norgaard, 2010). Such critiques tend to focus on the commodification of nature and the implications that may have on nature and society, the fact that PES might exacerbate or disguise complex power relations, and concerns that it may lead to unexamined shifts in resource access, further exacerbating inequalities.

the relevant characteristics of the ecosystems and services in question” (p. 2060).

In line with this, definitions can be viewed as resting along a conceptual continuum ranging from authors who lean towards a market-like approach (Engel et al., 2008; Wunder, 2005), to those who propose approaches which incentivize collective action (Muradian et al., 2010). The different perspectives are captured by a vigorous debate that has unfolded in the academic literature about the use of PES as a way of addressing problems of environmental degradation (Muradian et al., 2013; Wunder, 2013).

The approaches towards the extremes of the continuum depart from different theoretical starting points. The market-like approach aims to address what are viewed as market failures with respect to environmental services. As explained by Engel et al. (2008), "in effect, PES programs attempt to put into practice the Coase theorem, which stipulates that the problems of external effects can, under certain conditions, be overcome through private negotiation between affected parties" (p. 665). Building on this understanding, the mainstream definition describes PES as,

"a voluntary transaction where a well-defined environmental service (or a land-use likely to secure that service) is being 'bought' by a (minimum one) environmental service buyer from a (minimum one) environmental service provider, if and only if the environmental service provider secures environmental service provision (conditionality)" (Wunder, 2005, p 3).⁵⁵

It should be noted that users of this definition readily admit that it does not capture the diversity of PES schemes (Wunder, 2008, p. 839). As Vatn (2010) explains, "it is more about what PES should be according to a certain perspective than what it really is or can be" (p. 1247).

⁵⁵ As Farley and Costanza (2010, p. 2063) note, "most of the literature refers to PES as a market based or market-like mechanism, and follows [Wunder (2005)] in defining PES". The author of that definition has recently slightly modified it to include the following elements: "1) voluntary transactions 2) between service users 3) and service providers 4) that are conditional on agreed rules of natural resource management 5) for generating offsite benefits" (Wunder, 2015, p. 8).

In contrast to the definition of PES above, Muradian et al. (2010) suggest a, “conceptual framework [which] is more sensitive to different sources of complexity embedded in PES” (p. 1202). They note that the fact that the widely used definition does not capture the characteristics of the majority of existing PES schemes, as acknowledged by proponents of the definition, speaks to its limited utility. Building on a discussion of the complexities and uncertainties of elements such as markets, ecological processes, distributional implications and social embeddedness, perceptions and power, Muradian et al. (2010) thus propose that,

“it may be convenient to define PES as a transfer of resources between social actors, which aims to create incentives to align individual and/or collective land use decisions with the social interest in the management of natural resources” (p. 1205).

This definition, which is more encompassing than that of Wunder (2005), would embrace a broader range of PES initiatives, which the authors suggest can be clustered according to three criteria: i) the importance of the economic incentive, ii) the directness of the transfer, and iii) the degree of commodification of environmental services (Muradian et al., 2010, p. 1205).

Over the period of about a decade the World Agroforestry Centre (ICRAF) implemented an action research project focusing on the links between poor upstream farmers and downstream beneficiaries of environmental services in Asia (RUPES - Rewards for, use of, and shared investment in pro-poor environmental services).⁵⁶ Building on that experience, authors from ICRAF have consistently called for principles and indicators in PES that reflect both efficiency (realistic, voluntary, conditional) and equity (pro-poor) considerations (van Noordwijk & Leimona, 2010; van Noordwijk et al., 2007), thereby falling somewhere between market-like and collective action on the PES continuum. As described in a comprehensive discussion of the evolution of PES theories and debates in multi-functional

⁵⁶ One of the case studies in this chapter, the RiverCare scheme in West Lampung, was initially implemented as part of RUPES.

landscapes, van Noordwijk et al. (2012) consider that on the efficiency side the binary definition proposed by Wunder (2005) can be replaced by, “sliding scales of the degree to which realistic, conditional, and voluntary contracts of the provision of well-defined environmental services are negotiated and implemented, with additional attention for the fairness dimension of ‘pro-poor’ approaches” (van Noordwijk et al., 2012, p. 396).

This then leads to an understanding of PES that focuses on commoditized environmental services, compensation for opportunities skipped and co-investment in landscape stewardship (van Noordwijk & Leimona, 2010). Following up on this, van Noordwijk et al. (2012) note that, “in practice, most of the currently known PES applications in the tropics [...] involve linkages of complex systems in buyer and seller communities, involving exchanges of multiple asset types,” with “contracts involv[ing] investments and linkages in social capital and individual human capital” (pp. 396-397). From this they conclude that, “buyers and sellers become co-investors in cross-linked systems” (van Noordwijk et al., 2012, p. 397).

Conditionality

One of the central elements of the PES concept is that of conditionality, which at its simplest refers to payment (monetary or non-monetary) only being granted to providers of environmental services upon delivery of such services. Elements shaping conditionality in PES schemes include, for example, the amount and form of compensation for environmental services rendered (for example, monetary payments, in-kind contributions to support land-use change activities, or non-monetary rewards), the timing of payments (up-front versus following achievement of results), and critically, linking of payments to service delivery (for example, input versus output payment arrangements).

Authors exploring the concept of co-investment mechanisms piloted by ICRAF through the RUPES program have taken some care in elaborating concepts of conditionality in PES. They distinguish conditionality at different levels, including, “at the level of input (Did people spend the time on planting trees or guarding the forest?), the condition of the system (Are

the trees growing? Is the forest still intact?), or the actual outcomes for environmental services (clean water throughout the year)” (van Noordwijk & Leimona, 2010, p. 4).

A number of authors have noted that conditionality is a core criterion of PES, distinguishing it from various other environmental governance instruments (see, for example, Bond & Mayers, 2010; Goldman-Benner et al., 2012). It is, however, a challenging issue in complex multifunctional landscapes working with poor farmers. The way it is addressed can vary widely at both the conceptual and practical levels (Bennett et al., 2013; Kroeger, 2013; Meijering, 2008; Sommerville et al., 2011).

Including meaningful conditionality in PES schemes is complicated for a host of socio-economic and biophysical reasons (Goldman-Benner et al., 2012; Norgaard, 2010; Pascual et al., 2010), and the ways in which conditionality is designed into schemes and then implemented by different actors is not a neutral decision based on purely technical considerations. As Muradian and Rival (2012) note, “the design of a PES intervention typically involves political decisions about the users and the resource base that will be targeted, the conditions for the payments, the amount to be paid and the overall goal of the policy” (p. 97).

While it might make intuitive sense to include conditionality as a requirement for a PES mechanism, in reality, monitoring, which underpins conditionality, is often weak. For example, Brouwer et al. (2011) conducted a meta-analysis of watershed services schemes. They aimed at identifying the institutional-economic factors contributing to the environmental performance of these schemes. The authors noted that quantifiable information on the environmental performance of the schemes was lacking in more than half the cases. In those where related indicators were in place, they “referred to the efforts put into scheme implementation (such as area with forest cover) instead of the actual impacts and outcomes of the scheme” (Brouwer et al., 2011, p. 390).

As noted by Farley and Costanza (2010), strict conditionality “can be expensive to enforce, increasing transaction costs substantially” (p. 1063). Wunder et al. (2008) observed that, “conditionality is generally lower in government-financed programs than in user-financed programs, but variable between programs” (p. 841), something which Corbera et al. (2009) see as, “implicitly acknowledge[ing] the political difficulties involved in prosecuting poor land-owners for non-compliance” (p. 751).

Tenure

Tenure arrangements, which play a central role in shaping environmental governance systems, have been less explicitly addressed in the watershed PES literature.⁵⁷ While private property is not a prerequisite for a PES scheme, as shown for example by the issuance of contracts to communal land owners in Mexico (Alix-Garcia et al., 2012), lack of control over the asset producing the environmental service, typically land and land cover, often represents a barrier to participation (van Noordwijk et al., 2012; Wunder & Wertz-Kanounnikoff, 2009). For example, land users may be less likely to invest in an area of land if their tenure is not secure, and lack of clear tenure can make negotiating contracts difficult (Leimona et al., 2009).

Cases of insecure and ambiguous land tenure in Indonesia are abundant and as such, this is a contextual issue worthy of specific focus when considering the evolution of PES in the country. In Indonesia official forest land (areas which are designated as forest, but may not necessarily be forested) is part of the statutory tenure system, although it may be de facto used collectively or by individuals (Angelsen et al., 2012; FAO, 2011).⁵⁸ In addition, there are layers of customary rights that are not officially or not fully recognized by the state, and cases of those rights overlapping between groups. Even within state forest land there are

⁵⁷ With the expansion of REDD+, land tenure arrangements are increasingly the focus of research and advocacy efforts with respect to carbon-based PES mechanisms. Attention tends to centre on the viability of such schemes, who benefits, and the impact such schemes may have on land tenure arrangements and resource access (Larson et al., 2013; Mahanty et al., 2012; Naughton-Treves & Wendland, 2014; Robinson et al., 2014).

⁵⁸ See also chapters 1 and 4 of this dissertation.

sometimes overlapping claims to land, with cases of conflicting licenses for areas of land being issued by different parts of government (Mangkusubroto, 2012).

5.2 Overview of case studies

This section presents the main characteristics of the three schemes that were the focus of empirical work. Key characteristics are summarized in Table 12 and discussed in more detail below.

Table 12: Characteristics of case studies (as of early 2013)

Characteristic	Brantas	RiverCare (RC)	Mendalam
Location	Kota Batu and Malang district, East Java	West Lampung district, Lampung	Kapuas Hulu district, West Kalimantan
Status	Inactive (implementation 2004-2006)	Active (phase 1 2006-2007; phase 2 2008-2009; phase 3 2011-2013)	Completed (implementation 2009-2012), actively seeking continuation
Scale of scheme	Small scale. 40 hectares, approximately 140 individuals	Small scale. Area not available for RC1 and 2; RC3: 23.75ha. RC 1: 70 households (hh); RC2: 25 hh, RC3: 35 members	Small scale – 212 individuals, typically 1ha per individual
Land tenure	Private property	Mixed, private property, protection forest (state land), communal	Mainly untitled land traditionally used by individuals – treated as private property
Providers	Farmers' groups representing small scale farmers in two villages	Farmers' groups representing small scale farmers in three communities	Farmers' groups representing small scale farmers in five villages and one sub-village
Beneficiaries	Brantas River Basin Operator (Perusahaan Umum Jasa Tirta 1, PJT1) (parastatal)	RC1: ICRAF as stand in beneficiary. RC2 and RC3: PLN (state electricity company) run of the river power plant (parastatal)	Potential: PDAM (district water company) Tirta Dharma in Putussibau (parastatal)
Environmental services targeted	Reduced sediment input to hydropower reserves	Reduced sediment input to hydropower reserve	Reduced sediment in municipal water
Activities to enhance service	Tree planting, soil conservation interventions	Tree planting, soil conservation interventions, check dams	Tree planting
Intermediaries	YPP (local NGO)	RC1 and 2: ICRAF RC3: Forum Komunakasi Kelompok Tani Hutan Kemasyarakatan (FKKT HKm) Lampung Barat	WWF
Payment type	Capacity strengthening, livelihood activities, extension, provision of	Capacity strengthening, technical support, provision of micro-hydroelectricity unit (top reward)	Capacity strengthening, technical support, provision of seedlings for trees with

Characteristic	Brantas	RiverCare (RC)	Mendalam
	seedlings for trees with economic value	or scaled monetary reward if top target not achieved	economic value
Performance- vs. activity-based	Activity-based (tree planting, soil conservation activities)	Performance-based (sedimentation reduction)	Aspiration of performance-based (sedimentation reduction)
Conditionality	No	Yes	No

The RiverCare scheme was implemented in the Way Besai watershed in the upper reaches of the Tulang Bawang watershed in West Lampung district, Lampung (for a map, see Figure 7). As mentioned in Chapter 4, approximately 40 percent of this mountainous area is classified as protection forest (Verbist et al., 2005). The equivalent figure for the entire district is 10 percent (Pemerintah Lampung Barat, 2012). By the mid-1990s significant areas were being used for coffee cultivation, which dominates the agricultural landscape of the watershed.⁵⁹

The Brantas scheme was implemented in the upper reaches of the Brantas watershed in the Upper Konto and Upper Brantas sub-watersheds in Kota Batu and Malang District, East Java. The area, in the mountains string of volcanos that run across Java, is known for intensive vegetable cultivation. The sub-watershed of Mendalam in the Kapuas Hulu district of West Kalimantan was the site of PES activities that were conducted on land adjacent to the river and were mainly aimed at stabilizing the river banks, which suffered from erosion and collapse.

The scheme in West Lampung was on-going at the time of field work in February 2013. At that time the future of the RiverCare scheme beyond the phase that ended in 2013 was uncertain, although there was interest from both providers and beneficiaries in continuing.⁶⁰ The scheme in Brantas was completed in 2006. The Mendalam scheme wrapped up active engagement with providers in 2012, although water monitoring activities were planned

⁵⁹ For additional contextual information on the Wei Besai watershed, see Chapter 4 of this dissertation.

⁶⁰ An ICRAF blog posting from February 2015 noted that the national electricity company (PLN) would replicate the RiverCare program at all of its hydroelectric sites in Sumatra. The specific modalities that will be used are not clear from the posting (Finlayson, 2015).

through 2013. Whereas it seems that the Brantas scheme will not be continued in the foreseeable future, the external facilitator of the Mendalam scheme was actively seeking ways of continuing the work, both through re-engagement with the potential beneficiary and seeking external funding.

Tree planting was common across schemes as one of the activities conducted by providers in support of improving environmental services. In the Brantas and RiverCare schemes there was also significant effort put into soil conservation activities such as terracing steep slopes, planting grass strips, and digging infiltration pits. In the case of RiverCare, small dams were also built to control sediment flow.

5.3 Ideas, actors and resources

Each of the three pilot case study schemes was initiated under the auspices of a multi-country donor funded program (see Table 13). Although these initiatives were supported by different donors and led by different organizations, they nevertheless show similarities in their ideational underpinnings. The projects represented, among other things, attempts to introduce new approaches to watershed governance into the Indonesia context. They were part of what Sayer (2007) describes as a, “wave of interest in PES/PWS [payments for watershed services] amongst international environmental organisations, governments and intergovernmental processes” (p. 5).

Along these lines, in a study analysing knowledge co-production in four PES schemes in Indonesia (two of which – Mendalam and RiverCare – are covered in the current chapter), Leimona, et al. (2015) observe that,

“our case studies and other global experiences indicated that currently practiced [payment for watershed services] schemes have remained at relatively small scales and pilot levels (villages or sub-watershed levels) and [the] long-term sustainability of the emerging schemes cannot yet be empirically judged. Most schemes were donor-driven, with a limited budget

and time frame, because this approach is relatively new and requires a large investment to mature” (p. 59).

While the theoretical foundation of the programs discussed in this chapter drew to some extent on the market-oriented conceptualization of PES, each of the initiatives included an explicit focus on poverty, livelihood and equity issues. At the simplest level this is captured in the names of the programs (see Table 13). The initiatives were designed to intentionally stretch the boundaries of the mainstream conceptualization of PES at the time and explore the possibilities and limitations of environment and development “win-win” scenarios. This potential was seen as one of the innovations of PES as a governance approach. As Landell-Mills and Porras (2002) framed it in a document that strongly informed the project led by IIED (International Institute for Environment and Development) (Sayer, 2007), “the critical question is whether markets for forest environmental services can contribute to poverty reduction, while at the same time achieving efficient environmental protection” (p. i).

Table 13: Multi-country programs in which Indonesian pilot projects were embedded

Element	Brantas	RiverCare (RC)	Mendalam
Overall program (multi-country)	Developing Markets for Watershed Protection Services and Improved Livelihoods	Rewarding Upland Poor for Environmental Services that they provide (RUPES)	Equitable Payment for Watershed Services (EPWS)
Time frame	October 2003 to March 2007	RUPES I: 2002-2007 RUPES II: 2008-2012	2006-2012
Countries involved	Develop action learning programs: India, South Africa, Indonesia and the Caribbean (5 countries) Diagnostic work on PWS: China, Bolivia	RUPES I: Building working models of best practices, Indonesia, Philippines, Nepal. Studied other sites in Asia. RUPES II: Action research and policy influence in China, India, Indonesia, the Philippines, Nepal, Vietnam (ICRAF, n.d.-a)	Guatemala, Indonesia, Peru, Philippines, Tanzania
Main expected results	<p>“Purpose: To increase understanding of the role of market mechanisms in promoting the provision of watershed services to improve livelihoods.”</p> <p>Verifiable Indicators: 1. Lessons from action learning incorporated in plans of government, civil and private organizations. 2. Plans for shaping markets for watershed services and livelihoods incorporated in policy initiatives and programs of government, civil and private organizations. 3. Policy initiatives and programs reflect hydrological findings on effects of land use on watershed services” (IIED, 2003, p. 3)</p>	<p>“Integrate rewards for environmental services into development programs to alleviate rural poverty and protect the natural environment”</p> <p>Phase 2 Focus on: i) influencing national policy frameworks; ii) engaging international and national buyers and investors through increased recognition of “business case” for investment; iii) document good practices and support capacity building so intermediaries can facilitate environment service rewards schemes; iv) innovation in effective, efficient, and “pro-poor” mechanisms; v) integrate into rural poverty alleviation strategies and programs initiated by international development agencies. (IFAD, n.d.)</p>	<p>Aims to “establish equitable PWS in ten watersheds in five countries located in Latin America, Africa and Asia[...] to demonstrate how equitable PWS can reverse forest loss through addressing the core drivers of land-use change, as well as improve livelihoods through various forms of compensation, including direct payments”(WWF, 2006)</p> <p>Phase 1: Development of business case to “convince buyers and sellers that PWS is based on ecological and economic conditions.” Signed agreements between buyers, sellers and facilitators. Phase 2: “Successful implementation of PWS in project locations with evidence of sustainable nature resource management and improvement of community livelihoods.” (WWF, 2012)</p>
External facilitators	IIED	ICRAF	WWF (in project documentation CARE and IIED mentioned as partners)
Primary donors	DFID (United Kingdom development cooperation)	IFAD (International Fund for Agricultural Development)	DGIS (Netherlands development cooperation) and DANIDA (Danish development cooperation)
Project lead in Indonesia	LP3ES (Institute for Social and Economic Research, Education and Information)	ICRAF	WWF Indonesia

So how then were these aims pursued, and how were the experiences used? To explore these questions it is useful to draw on documentation from the multi-country programs

under which the projects in Indonesia were implemented, and the specific experiences in the Indonesia context. Again we see similarities between the program design and implementation approaches of the different initiatives, linkages between the programs and collaboration in terms of policy influencing.

5.3.1 Integration of learning objectives into pilot projects

Each of the three programs was designed in some way to contribute to learning about PES. This then was a key area for investment of program resources. In the case of the ICRAF and IIED initiatives this learning was an integral part of program design and was then linked explicitly to influencing policy, as reflected in results statements (see Table 13). For example, Phase 2 of the RUPES program, under which the RiverCare approach was piloted, aimed to influence national-level policy frameworks. Similarly, the IIED-led “Developing Markets for Watershed Protection Services and Improved Livelihoods” project included an indicator focusing on the integration of PES in policy initiatives.

These projects were, however, not purely cases of international PES experience being used to contribute to shaping local implementation and through that, policy. Rather, there was also an expectation that the experiences from the implementation of pilot projects would contribute to debates at the international level. As a project document from the IIED-led project put it,

“the evidence and lessons that this focused initiative provides across a few countries will challenge the international debate at a key moment and move it away from simplistic regulatory or market “magic” solutions towards development of market mechanisms implemented by effective institutions delivering sustainable and equitable benefits. The Katoomba Group and key international water policy dialogues linked to the Millennium Development Goals, into which evidence will feed, provide windows of opportunity to use lessons to influence international fora that bring together major donors, private sector, governments and NGOs” (IIED, 2003, p. 2).

The strong focus that both the ICRAF- and IIED-led initiatives had on action learning was very much in line with the mandates of these organizations. In the case of IIED, the organization's web site talks of building, "bridges between policy and practice, rich and poor communities, the government and private sector, and across diverse interest groups" in part through conducting "research, advice and advocacy work" (IIED, n.d.-b). Likewise, ICRAF's mission, which is to "generate science-based knowledge about the diverse roles that trees play in agricultural landscapes, and to use its research to advance policies and practices, and their implementation, that benefit the poor and the environment" also stresses the focus on linking knowledge to change and engagement in the policy sphere (ICRAF, n.d.-b).

The WWF-led EPWS (Equitable Payments for Watershed Services) program had a less elaborated focus on action learning and policy influence, as reflected in the expected results statements in Table 13. The program focussed more on establishing business cases for PWS initiatives, and taking these through to the stage of implementation. Having said that, promoting experiences from the project within wider "action learning networks" was mentioned in some documentation as part of the program's strategy at the macro level (see, for example, WWF-CARE, 2008).

The orientation of the WWF-led EPWS program, which was initiated several years after those led by IIED and ICRAF, was slightly different to the other two initiatives. This could reflect a shift in the interests of international donors in the interim. EPWS program documentation reflects a strengthened focus on responding to market logic (although this was not as strongly evident in the on-the-ground implementation phase of the Mendalam pilot project in Kapuas Hulu). It is also possible that the orientation of the program, which also involved IIED, could be a logical "next step" following the focus on learning and policy influence of the IIED-led initiative that was implemented earlier. The focus on "business cases" was also evident in the second phase of the RUPES project, which ran from 2008-2012.

The three programs shown in Table 13, and in particular experiences from the IIED- and ICRAF-led initiatives, aimed to feed into an expanded understanding of PES in both practical and conceptual terms and at levels spanning the international to the local. The programs made use of workshops, conferences, working papers, policy briefs and academic papers to disseminate experiences and analyses (see the following for lists of publications from the IIED- and ICRAF-led programmes: IIED, n.d.-a; Leimona et al., 2013; RUPES, 2006).

5.3.2 Linking practical, conceptual and different geographic experiences

The use of pilot projects was a core strategy of each of the programs at the local level. These pilot projects linked the practical and conceptual learning objectives of the programs and efforts to influence policy. They were a central element of the “action learning” approach. How the pilot projects were designed and implemented is discussed in more detail in section 5.4 below.

In addition to the linkages between countries designed into each of the programs, there were various linkages forged between actors in the three programs at the international, national and local levels. For example, IIED and ICRAF had reciprocal representation on advisory groups (Sayer, 2007). ICRAF also provided scientific support to the work of the WWF-led project in Mendalam, for example in terms of analysis of hydrology and livelihoods (see Lusiana et al., 2008; Putra et al., 2008). Additionally, IIED was a partner at the international level in the WWF-led initiative. WWF, ICRAF, and IIED’s Indonesian partner, the Institute for Social and Economic Research, Education and Information (LP3ES, *Lembaga Penelitian Pendidikan Penerapan Ekonomi dan Sosial*), also collaborated in organizing workshops and coordinated in terms of influencing policy in Indonesia.

5.3.3 Policy engagement

Different strategies were employed by the different actors to try and influence the PES policy environment in Indonesia. These included attempts to, i) find space for PES within existing policies, ii) reduce potential barriers posed by existing legislation, and iii) create new

opportunities where PES schemes could emerge. As an example of the first strategy, in the Brantas catchment IIED and LP3ES hoped that through engagement with the parastatal PJT1 (Brantas River Basin Operator, *Perusahaan Umum Jasa Tirta 1*), Indonesia's first integrated river basin management body, concepts of PES would also be promoted and expanded as part of the national policy of "one catchment, one management" (Munawir & Vermeulen, 2007, p. 8).

The need to reduce potential barriers was also salient in the Brantas case, where a variety of governmental and non-governmental actors worked for several years to develop a draft provincial regulation on the management of forestry environmental services.⁶¹ The process, which started in 2005, stretched over three years. Ultimately, however, the regulation was not presented to the provincial parliament.

According to a senior member of the Department of Forestry of East Java who was involved in the drafting process, the major concern while drafting the regulation was ensuring that the payments for environmental services would be managed by someone who would be trusted by all parties. When asked why the draft regulation was not presented to the provincial parliament, a link was made back to a proposed umbrella regulation on environmental services that was planned by the national Ministry of Forestry. The provincial regulation was designed to fit under the national regulation. However, the national regulation was not issued during the time the provincial version was being drafted. Finally, because the process was taking so long, and was using provincial government resources, it was put on hold (interview, January 2013).

Issues of managing fiscal transfers in "semi-public" PES schemes pose a barrier to implementation in the Indonesian context.⁶² As Leimona (2013) observed in an ICRAF blog posting, "fiscal policy in Indonesia had not created sufficient enabling conditions for

⁶¹ *Rancangan peraturan daerah Provinsi Jawa Timur ... tentang pengelolaan jasa lingkungan sumberdaya hutan.*

⁶² At the time of this research, most payment for watershed services schemes in Indonesia involved parastatal companies, for example those focusing on drinking water or hydropower.

implementation of payments' schemes." Fauzi and Anna (2013) explain how the fiscal issue led to delayed implementation of a PES scheme in Lombok. That scheme involved the District Water Company (PDAM, *Perusahaan Daerah Air Minum*) which collected an "environmental services payment" through an addition to residents' monthly water bills. This was supported by a district regulation.

In an interview with PDAM in Kapuas Hulu, the potential buyer in the Mendalam scheme (led by WWF), there seemed to be no objection to PES in principle, but it was repeatedly mentioned that PDAM is owned by the district government, so it is up to the district head (*Bupati*) to make the decision (interview February 2013). In an interview with BAPPEDA (the district planning board, *Badan Perencanaan Pembangunan Daerah*) it was also noted that during a workshop two months earlier, it was agreed that before PDAM can take a monthly contribution from customers, there needs to be a district regulation covering this (thus mirroring the Lombok case) (interview February 2013).

In 2005 WWF, ICRAF, LP3ES and BAPPENAS (National Development Planning Board, *Badan Perencanaan Pembangunan Nasional*) established a new network focusing on PES, COMMITTEES (Community of Interest to Empower Environmental Services for Sustainable Development and Better Quality of Life). The network was formed in part in recognition of the fact that while PES initiative were being piloted at the local level, "significant work [was] required to feed the results into the national policy framework" (RUPES, 2005, p. 5). As a representative from WWF explained, if PES schemes are not complex, then a policy is not really necessary. However, if the scheme is complex (as is the case, for example, in Lombok), with many buyers, then there is the need for a policy (interview October 2012). This is supported by Fauzi and Anna's (2013) analysis of the institutional environment for PES in Indonesia.

In 2009 Indonesia promulgated Law 32 on Environmental Protection and Management, which included a paragraph on "economic instruments of environment" (Paragraph 8). An

“environmental service payment system” was one of the instruments to be further elaborated through a separate government regulation, as was a mechanism of environmental compensation/exchange between regions. Under the second phase of the DANIDA (Danish development cooperation) funded Environmental Support Program (2008-2012), a draft PES protocol was prepared to support implementation of PES. The protocol elaborated non-binding guidelines which drew heavily on the experience of ICRAF, WWF and LP3ES, among others (LPM Equator, 2012a, 2012b). By early 2015, however, the government regulation to support the economic instruments had not yet been issued (Kementerian Lingkungan Hidup, 2015).

5.4 Rules of the game

The rules of the game of the PES pilot projects analysed in this chapter were reflected in newly constituted institutional arrangements embedded within existing institutions such as land tenure. Each of the schemes handled key elements such as how to measure performance payment type and conditionality somewhat differently, although there were also marked similarities (see Table 12). This speaks to the conceptual orientations of the underlying programs, their “action learning” orientations, the actors involved, their linkages with each other, and adjustments for the different local contexts.

Development of each of the schemes would have involved negotiations at different levels between different actors with different levels of power. These would have been between donors (IFAD, DANIDA, DFID) and implementing agencies (ICRAF, WWF, IIED), implementing agencies and local partners (for example, between IIED and LP3ES), and local partners or implementing agencies and farmers (represented in most cases by the leaders of farmers’ groups, often specifically constituted in order to participate in the pilot projects). Each level would have presented different opportunities for meaningful input from actors. This is also influenced by the power and resources that each actor has to employ in their negotiations with other actors.

The decisions made in the design phase of a PES scheme link back to the conceptual starting point of the actors involved. These are likely to vary between actors in the same scheme. Also, given the fact that the cases considered in this chapter were pilot initiatives with strong elements of action learning, it can also be expected that positions of actors would change over time.

The Brantas case offers an illustration of actors with a strong interest in working together who nevertheless had to respond to different conceptual starting points in the early stages of the PES design process. During the design phase, it seems that IIED and its NGO partner (LP3ES) rested at slightly different points along the PES continuum discussed in section 5.1.2. According to a representative from LP3ES, at the beginning LP3ES insisted that the scheme could not simply focus on payments for environmental results but rather, needed to be more comprehensive, also taking into consideration the livelihood needs of target communities. IIED in turn questioned whether the approach proposed by LP3ES was actually drifting too far from the idea of PES (interview January 2013).

The RiverCare scheme seems to have evolved in the most bottom-up manner of the three. The original idea for the RiverCare scheme came from ICRAF-led research on sedimentation in the Way Besai watershed. The research provided information on the sediment yield of different sub-watersheds (Verbist et al., 2010), from which the follow-up of trying to find ways to reward communities to reduce sedimentation emerged. A pilot initiative based on rewards for measurable reductions of sediment was conducted under the RUPES program (RiverCare 1). The targeted level of sediment reduction of 30 percent was apparently based on the expert judgment of an ICRAF hydrologist, with activities agreed jointly with farmers. It is not clear how much agency the farmers had in establishing the rewards that were then set in the pilot scheme.

Each of the schemes had agreements to formalize the relationship between the different actors in the newly constituted arrangement. The agreements included information on the

planned activities and contributions (both financial and technical) from the intermediaries and external facilitators. Agreements ranged from six months to two years. For the Brantas, Mendalam and RiverCare phase 1 and 2 schemes, the agreements were linked to donor-funded initiatives. In each of the cases the expectation was that the schemes would be able to continue and expand following completion of the pilot projects, either with continued donor funding, contributions from beneficiaries, or a combination of both. Ultimately, however, at the time of field work only RiverCare had managed to move beyond a dependence on donor funds. The two-year RiverCare 3 scheme was being fully funded by corporate social responsibility (CSR) funding from the state electricity company (PLN, *Perusahaan Listrik Negara*).

5.4.1 Performance measures and payment type

In the design of a PES scheme decisions need to be made about whether achievements will be assessed based upon inputs (activity-based, for example, the number of trees planted per hectare) or on measurable actual outputs (for example, reduction in sedimentation). There are actually few cases globally of schemes which measure environmental impacts rather than the efforts put into land management activities (Porras et al., 2008). Both of these approaches were represented in the cases analysed.

The Brantas scheme focused on the land management activities. Providers (farmers) agreed to a work plan with the intermediary (the local NGO, YPP) and focused on implementation of that plan. A memorandum of understanding was signed between the intermediary and farmers' group for implementation of activities. Monitoring was conducted by the intermediary and was based on implementation of the agreed workplan (including, for example, tree planting and soil conservation activities).

The Mendalam case piloted elements of both input and output based performance measures. In actual implementation it focused on the number of trees planted, but ultimately the scheme's external facilitator (also intermediary) envisioned a performance

based system, with sedimentation reduction as the indicator. Measurement of sedimentation reduction was piloted over the period 2009 to 2012, but was not linked to provision of payments by providers. Contracts were signed between the intermediary (WWF) and village leaders for implementation of activities. Letters were then signed by individual farmers stating that they would care for the trees on their land. The envisioned beneficiary (PDAM, the district water company), was not explicitly part of the scheme. However, the district government, through the “Forest and Land Rehabilitation” fund, supported broader restoration of degraded land in the watershed, which was framed as a contribution to the EPWS program.

There were similarities in the approach to payments between the Brantas and Mendalam schemes. As mentioned above, in neither case was there a direct link between provision of environmental services and payment. Rather, in both schemes, tree planting, capacity building and livelihood activities were covered by either project or beneficiary funding directly, as was a rather high level of on-going extension support from intermediaries. These could be considered largely “front loaded” payment systems (Fisher, 2012).

In both the Mendalam and Brantas schemes farmers could choose the types of trees they wanted to plant and the assumption seemed to be that one of the measures to ensure the continuation of environmental services in lieu of payment would be the ability to reap harvest from the trees that were planted with support from the scheme. In the Brantas scheme, where land plots were very small at well under a hectare, farmers were typically unwilling to give over their entire area for trees as they needed to be able to use the land while trees were maturing. As a result, farmers could choose how many trees they wanted to plant on any given plot and the location of the trees on the plot.

The RiverCare scheme was the only one of the three analysed that was output based, focusing on measurement of actual reductions of sedimentation. RiverCare 3, which was longer than the previous phases, also included staged input-based performance indicators.

Beyond the life of the different phases of RiverCare it was envisioned that people would continue to protect against sediment in order to ensure functioning of the micro-hydro units received as payment, which would be negatively affected by sediment. The efficacy of this has not been proven yet.⁶³ In RiverCare 3, contracts were signed by the project intermediary and the farmers' group for implementation of activities.

In the RiverCare scheme the payment was either a micro-hydro unit (top reward) or cash payment, depending on the level of sedimentation reduction achieved by the end of the contract period (Pasha et al., 2012). In the case of RiverCare 2 the contract period was one year, and in RiverCare 3, two years. The activities conducted to reduce sedimentation, including for example, tree planting and soil conservation activities, were covered either by ICRAF through the RUPES program or by the beneficiary (PLN) directly in the case of RiverCare 3.

5.4.2 Conditionality

Conditionality varied between the three schemes. Only the RiverCare scheme relied on clear output conditionality. In each of the three phases of RiverCare the level of payment/reward was linked to the level of sediment reduction. The RiverCare program monitored water sediment levels, and also the level of physical activities aimed at reducing sedimentation. Such activities included, for example, tree planting, soil conservation measures and the construction of small dams to trap sediment.

The rewards that the RiverCare groups were entitled to receive were clear, and based on achievement of certain criteria. In each case the final reward was based on percentage sediment reduction compared to a baseline. Although the conditionality requirements were clear, in RiverCare 2 they were not followed exactly, to the benefit of farmers (providers).

⁶³ Over time approaches based on this assumption will likely need to be modified. As the national electricity network expands and communities that were previously not part of the electricity grid are connected, reliance on micro-hydro units can be expected to decline.

According to the agreement, in order to receive the final reward of a micro-hydro unit, the sediment would have had to be reduced by 30 percent. By the end of the scheme, sediment reduction was calculated at approximately 20 percent, which should have led to a lower reward. However, PLN, which provided co-funding to the scheme, along with ICRAF, nevertheless agreed to provide the micro-hydro unit.

In the agreements between the intermediary and the villages where the Mendalam scheme was implemented there were some indications of up front conditionality. For example, payment for tree planting and tending for three months was to be made after planting was completed. It is possible that there were conditionality criteria mentioned in agreements under the Brantas program, but as no original documents were available for review, this could not be confirmed and interviewees did not mention conditionality, even when asked directly. In both schemes financial and capacity building support for implementing of replanting, soil conservation and livelihood activities, were provided based on plans agreed with the community.

5.4.3 Land tenure

The PES schemes were implemented in areas of different tenure arrangements. Under the Brantas scheme, most land was privately owned. In the later stages of project implementation 12 hectares of land managed by Perhutani, the state-owned forest company, was included in the scheme, primarily for its importance in protecting water sources. During the site selection phase for the pilot projects, YPP and PJT1 initially prioritized a site that surrounded the main springs which feed the Brantas River. Intense land use in the area was blamed for flooding and contributions to sediment in the river. However, there was a high level of land tenure conflict in the area so ultimately the site was not selected for the pilot initiatives.

The different phases of the RiverCare scheme were conducted in areas with different tenure arrangements, including privately owned land, and state protection forest areas which was

managed under the community forestry program (HKm, *Hutan Masyarakat*). The RiverCare 1 and 2 schemes were implemented in HKm areas, although dedicated RiverCare farmers' groups were formed. These were distinct from the HKm farmers' groups, but there was a great deal of overlap between the groups in terms of individuals involved and approaches taken. In this way the RiverCare pilots benefitted from the foundational land tenure work and trust that had been built by not only ICRAF through the RUPES program, but also other government and non-governmental actors. RiverCare 3 in contrast was conducted in an area of privately owned land plots in a sub-watershed that contributed high levels of sediment to the Way Besai River.

Both statutory and customary land tenure systems were present in the areas where the Mendalam scheme was implemented. As one village head and PES farmer explained it, land enrolled in the PES scheme was mostly private based on tradition.⁶⁴ Under this system individual rights are recognized by the head of the village as having been handed down through generations. There are stronger levels of recognition available for residents who need land certificates for example to use the land as collateral, but for the purposes of the PES scheme it was enough for the farmer to have rights recognized under the traditional system.

5.5 Summary and outlook

This chapter has explored how in the early and mid-2000s concepts of watershed PES started to gain a foothold in Indonesia. It considered this by exploring three donor-funded initiatives implementing PES pilot projects in Indonesia. In selecting these cases there was an intentional focus on selecting diverse examples, although there were significant similarities between programs and linkages between actors at the time in Indonesia. The programs employed strategies at different scales, ranging from local pilot projects to national level policy engagement to international sharing of experience. At the same time actors engaged,

⁶⁴ "*Hak privadi secara adat*" (interview February, 2013).

to a greater or lesser degree, in attempts to expand and deepen the conceptual understanding of PES. There were also formal and informal linkages between the institutions and individuals working on the different initiatives.

The cases were implemented under different land tenure arrangements, ranging from protection forest under HKm management (RiverCare), to private land (Brantas and RiverCare), to untitled land managed as part of a traditional system (Mendalam). The RiverCare pilots implemented in areas of HKm management benefited from previous work that had been done to address land conflict issues in the area; implementing a PES-type arrangement would not have been possible prior to this resolution. In Brantas, a preferred location for the pilot project was rejected because of land tenure conflict. As such, in these cases land tenure issues influenced planning with respect to the location of the pilot schemes.

In terms of what Stone (2012) describes as, “‘soft’ forms of transfer – such as the spread of norms, standard setting and development of professional communities or networks (Ladi, 2011) – as a complement to the hard transfer of policy tools, structures and practices” (p. 484), external facilitators in the PES programs played a primary role in introducing new concepts to the Indonesian context. This was, however, not a uni-dimensional, one-way flow. Rather, it was designed as a multi-dimensional partly south-south mechanism, with international experience both informing and being informed by the Indonesian experience. This multi-dimensionality was evident through the frameworks of the programs, each of which was implemented in several countries and included various mechanisms to share experiences. It was also reflected in literature based on the experiences of the projects (see, for example, Bond & Mayers, 2010; Leimona, van Noordwijk, et al., 2015). On-the-ground PES pilot projects were a key strategy in the learning objectives of the various programs. Pilot projects were also essential to the policy influencing aims of the initiatives.

In the Indonesian context, commercial scale hydropower and drinking water companies tend to be parastatal organizations, as do broader-mandated River Basin Operators. As such, the development of PES arrangements with these organizations as beneficiaries of environmental services poses some specific policy challenges. This is particularly the case with respect to transfer of fiscal resources. In this context, each of the programs aimed to use the pilot project experiences to influence policy to a greater or lesser extent. ICRAF, with its longer-term engagement through the ten years of the RUPES program was in a particularly strong position to sustain this engagement.

Attempting to influencing policy indirectly from outside the state system can be a time and resource consuming process, and it depends on government actors to achieve results (Stone, 2000). Looking back at over a decade of attempts to influence PES policy in Indonesia shines light on these challenges. Each of the primary external facilitators involved in the schemes examined – ICRAF, WWF and LP3ES – invested quite heavily in policy engagement at the national level. The formation of the COMMITTEES network in 2005 was a tangible part of this process, although there were numerous other consultations and interactions, both formal and informal. The draft PES protocol is testimony to this (LPM Equator, 2012a, 2012b). However, even after these efforts, supported by financial resources, knowledge and international networks, progress at the time of field work had been modest, and the challenges that were evident in the mid-2000s remained.⁶⁵

Efforts were made to overcome some of these barriers by targeting lower levels of government and working closely with beneficiaries. These attempts had, however, met with mixed success, as was the case in the East Java (Brantas) where the draft provincial regulation aimed at regulating financial flows from PES schemes stalled after several years of drafting effort, but before ever being presented to parliament. In Kapuas Hulu, the location of the Mendalam scheme, it was clear that the district water company would be unlikely to

⁶⁵ The situation remained much the same at the beginning of 2015, as discussed in section 5.3.3 with respect to Law 32/ 2009 on Environmental Protection and Management and its supporting regulations.

proceed with a PES initiative without a district regulation, something that was not in the works at the time of field research.

In contrast, in West Lampung, where the RiverCare program was implemented, PLN was very engaged in the program, to the point of fully funding RiverCare 3. Funding came from the company's CSR allocation. CSR funding is a legal responsibility, but what the money is spent on is discretionary, and as such can be influenced by changing individuals and priorities in an organization. For this reason, support for PES likely cannot be considered stable until it is internalized as part of the company's operational costs.

Actors along the PES "institutional chain" from environmental service providers (in all cases small scale farmers) through beneficiaries to intermediaries, external facilitators and donors had different levels of agency in shaping the schemes that emerged. It appears that for each of the schemes the space for environmental service providers to influence the institutional elements of the schemes was rather limited. Attempts on the part of external facilitators, intermediaries, donors or beneficiaries to incorporate the interests of providers were naturally bounded by assumptions already built into the frameworks of the broader programs of which the pilot initiatives were a part. There was space for farmers to negotiate items such as the species and location of trees to be planted on their land, the type of soil conservation activities, and the technical and financial support required, but broader engagement in institutional design was limited.

With respect to the Mendalam and Brantas pilot schemes, at the ground level it was difficult to identify how, from the perspective of the farmer involved (environmental service providers), the initiatives were fundamentally different from other rural development projects, particularly from the perspective of conditionality. The schemes incentivized land use change by directly providing inputs such as technical support, extension services, training, and seedlings (these could be considered as front loaded payments for achievement of input results). In this way the projects did serve to show what was possible

through the use of incentives, that is, a move to land use practices which are understood to result in less sediment in rivers and are therefore presumably appropriate for a PES scheme.

Conditionality mechanisms in PES schemes serve a dual function. Firstly, they are intended to contribute to the achievement of environmental impacts (additionality). Fisher (2012) highlights the importance of, “designing payment systems in synchrony with ecosystem service provision” (p. 52). Care needs to be taken in designing front loaded payments as over time providers may choose to stop or reverse the activities upon which the scheme is based. It is here where the broader understanding of PES which is closer to the collective action end of the continuum changes the logic of the situation – if people are not solely motivated by external compensation, the changed land use incentivized may be more likely to continue beyond the duration of compensation mechanisms (Muradian & Rival, 2012). Secondly, conditionality mechanisms serve to link actors in a PES scheme. As such, conditionality considerations are not purely a technical matter of linking inputs to (environmental) outputs. Rather, they are influenced by the interests, power and resources of different actors engaged in the schemes.

The experience of transferring ideas of watershed PES to the Indonesian context highlights the challenges that actors face in navigating the boundaries between the “technical” and the “political” both in terms of the design of the schemes in local contexts, and also with respect to the broader policy environment. It becomes particularly apparent that with respect to PES, at different levels “the process of adopting simple ideas is remarkably complex and requires considered analysis of the political context in which the idea was articulated, injected and accepted” (Stone, 2012, p. 489).

6. Environmental governance: Dynamic hybridity and land tenure

The empirically-based chapters of this dissertation have examined change and complexity in evolving systems of environmental governance in Indonesia, and explored interactions with resource tenure. This final chapter compares and contrasts the case studies. In doing this, it elaborates a notion of dynamic hybridity in environmental governance and resource tenure systems. The chapter explores how different analytical and theoretical perspectives – for example, a more nuanced focus on trust between actors, considering ideational changes and representations as captured in the changing values of resources, and the “bundle of rights” approach to understanding property rights – can explicitly encourage a temporal (dynamic) perspective in analysing changes to resource tenure specifically, and environmental governance more generally. This is then overlaid on the concept of hybrid governance regimes which are those comprised of different and changing constellations of community, state and market-based social mechanisms.

The cases focused mainly on the transitional period from the end of the New Order regime (late 1990s) to the time of field research in 2013-2015. Analytically they rested at the meso-level intersection of interactions between local resource users, the state and other external actors. The cases were geographically dispersed and loosely categorized as falling into the ideal states of a state-led management system (Segara Anakan Lagoon; Chapter 3), community-based management (HKm, *Hutan Masyarakatan*; Chapter 4), and payments for environmental services (PES; Chapter 5). They explored both unplanned shifts in environmental governance and land tenure (Segara Anakan Lagoon) and those that were deliberately planned and implemented through targeted programs (HKm and PES).

The Segara Anakan case was characterized formally over time by a state-led, command and control approach to natural resource management, although the actual situation in the communities of the lagoon proved to be quite different. The HKm and PES programs were explicitly labelled as such by initiators. Again, closer examination showed that in reality these

initiatives also tended to be more reflective of hybrid systems than the ideal types. It is these convergences and divergences that are of interest in this chapter.

The temporal and spatial scales of the environmental governance systems considered also differed. Developments in the Segara Anakan Lagoon and HKm cases had more temporal and spatial breadth and depth than the PES case. In the Segara Anakan Lagoon and the HKm cases the changes occurred over time and affected spatial areas with somewhat coherent ecosystem boundaries (areas of newly emergent land in the Segara Anakan Lagoon case and a highland watershed in the HKm case). At the time of field work the PES examples had not moved beyond the small scale pilot stage based on relatively short time scales.

The Segara Anakan Lagoon and HKm cases were nested in and influenced by changes over time in state policies, the values attributed to land, resources available to try and affect change, and the role of different actors. In the PES case, new systems were initiated by external actors building on international experience. These actors selected the sites for small scale pilot initiatives. In contrast to the Segara Anakan and HKm cases, the PES examples did not mainly emerge in response to needs from local resource users to address urgently-felt issues.

Capturing changes in environmental governance and resource tenure required integrating a range of historical, spatial, political, social and other factors. In doing this the dissertation drew on the perspectives of political ecology, complimented by the analytical framework elaborated by Arts et al. (2006) to explore policy arrangements. As such, each of the cases focused to a greater or lesser degree on relationships between diverse actors, the discourses they employed, shifts in rules and regulations, differences in power and influence, and the dynamic interactions between these dimensions.

This final chapter compares and contrasts the case studies before concluding with reflections on the approach used and future research needs. It begins with a rather specific focus on the issue of trust and how this evolved – or not – between actors in the HKm and Segara Anakan

Lagoon cases in particular. This is a theme that emerged rather strongly in these cases. It appears that placing some focus on trust could be an interesting way of deepening the understanding of relationships between actors over time in an environmental governance system.

From there the focus broadens to a consideration of changes in resource tenure over time, using the lenses of property rights and land tenure. This approach proved helpful in looking beyond formalization and state approaches towards land tenure.

Following this the chapter turns to a discussion of environmental governance, which is closely interwoven with issues of resource tenure. The section highlights the dynamic hybridity of the three cases – systems change over time and move along continuums between the different social mechanisms of community, state and market. While the ideal type labels are widely used and have some utility, there is nevertheless the risk that they can mask more complex realities. For this reason it seems prudent to exercise caution when drawing firm lines between them.

6.1 The importance of trust in times of transition

Trust, or lack thereof, is a theme which emerged in each of the cases. This is perhaps unsurprising given the importance of interactions between different actors in environmental governance systems and the fact that, "trust pervades the most diverse situations where cooperation is at one and the same time a vital and a fragile commodity" (Gambetta, 1988, p. i). The Segara Anakan Lagoon and HKm cases in particular speak to trust in times of transition. They provide an interesting contrast in how issues of trust were or were not addressed. Trust did not emerge as strongly in the PES case, although it was implicitly a foundational aspect of being able to implement the pilot projects.

Trust has been defined as, "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another"

(Rousseau et al., 1998, p. 395). This understanding captures the notions of risk and interdependence. With respect to risk, Luhmann (1988) describes trust as being,

“based on a circular relation between risk and action, both being complementary requirements. Action defines itself in relation to a particular risk as external (future) possibility, although risk at the same time is inherent in action and exists only if the actor chooses to incur the chance of unfortunate consequences and to trust” (p. 100).

The notion of trust is multi-dimensional (Lewis & Weigert, 1985; Rousseau et al., 1998; Uslaner, 2002) and challenging to pin down (Gambetta, 1988; Hartmann, 2001). As Rousseau et al. (1998) say, trust, “may be a ‘meso’ concept, integrating microlevel psychological processes and group dynamics with macrolevel institutional arrangements” (p.393).

Drawing on work in an edited volume which includes contributions from different disciplines, Braithwaite and Levi (1998) observe, “a variety of perspectives on trust, ranging from trust that is rationally grounded to trust that springs from shared identity and emotional connectedness” (p 376). These align somewhat with what Lewicki et al. (2006, p. 992) describe as the “behavioral tradition of trust” and the “psychological tradition of trust.” Taking a slightly different perspective, Pretty and Ward (2001) identify two different types of trust, “the trust we have in individuals whom we know; and the trust we have in those we do not know, but which arises because of our confidence in a known social structure” (Pretty & Ward, 2001, p. 211).

There is also a temporal dimension to trust, which recognizes that trust is dynamic and reflects the changing nature of relationships between actors over time depending on a range of factors (Lewicki et al., 2006; Rousseau et al., 1998). For example, times of significant social, political and economic changes – transitional periods – can open the space for transformations of existing patterns of interdependence and trust between actors, but also carry the risk that historical patterns will be perpetuated.

This temporal dimension is the jumping off point for comparing how trust did or did not develop in the Segara Anakan Lagoon and HKm cases in the period of transition following the fall of the New Order regime. It serves to highlight both the dynamic nature of trust, and the challenges in shifting long-standing power relations and patterns of interaction. The focus here will be specifically on relationships between small scale resource users and state forestry representatives (in the Segara Anakan Lagoon case, the state forestry corporation, and in the HKm case, the district forestry service).

One of the more significant achievements of the early HKm process in the Way Besai watershed in West Lampung was the growth of trust between small scale coffee farmers and the district forestry service. Over the same period, while the agency of small scale resource users in the Segara Anakan Lagoon was strengthened, distrust between small scale resource users and the state forest corporation persisted. Shining light on these differences illuminates some of the opportunities and challenges of building trust between actors around environmental governance during times of transition.

Following the fall of the New Order regime the forestry department attempted to re-align the relationship between small scale resource users and the state through the introduction of new programs to work with communities and allow them access to state forest areas. In the Way Besai watershed this was operationalized through the HKm program, and in the Segara Anakan Lagoon, the establishment of village institutions to implement joint community forest management programs (LMDH, *Lembaga Masyarakat Desa Hutan*). In Way Besai the HKm program gained traction; in the Segara Anakan Lagoon the LMDHs were roundly rejected by residents.

In both cases, prior to the fall of the New Order regime there had been conflict between state forest representatives and small scale resource users. In the HKm case the basic issue was around claimant rights to resources (access, withdrawal, management) (as shown in Table 4). Farmers were not claiming ownership rights and the state's claim to protection forest areas was generally recognized.

In contrast, in the Segara Anakan Lagoon the issue was around ownership rights (including exclusion and alienation). In this case, recognition of an LMDH was understood by opponents as constituting an acknowledgement of the state forest corporation's rights to the land, thereby weakening the position of local residents. In this respect the stakes of cooperation were considerably higher in the Segara Anakan Lagoon than in West Lampung, that is, loss of ownership rights to the land. Without resolution of the underlying land conflict, it became difficult to start the process of trust building necessary to institute joint forest management.

The way in which the conflicts manifested themselves also differed. In the Segara Anakan Lagoon in the time directly preceding the fall of the New Order regime, while the conflict was present, it did not mainly take the form of direct confrontation. In contrast, during the same period in Way Besai, farmers were being evicted from their land and their coffee trees destroyed. With this, livelihoods were being ravaged. For many farmers the situation was dire.

In his careful unpacking of the concept of "basic trust," Hartmann (2015) sees it as, "a fragile achievement that should never simply be taken for granted" (Hartmann, 2015, p. 10). He resists the notion that the alternative to basic trust is some kind of chaos or other extreme, but rather, suggests that,

"the alternative to a general stance of trust is, according to my position, not a state of war or an unlivable pre-social natural state but a social state that will make it more difficult for many involved members to achieve their ends or may even hinder them from achieving them at all. That's not war, it just is a world with a reduced quality of living" (Hartmann, 2015, p. 11).

This seems to very much describe the situation in Way Besai at the time the New Order regime fell – both from the side of the state and the side of the farmers.

Under these conditions, in the early stages of the HKm case the head of the district forestry service began to reach out to farmers within the context of the emergent HKm framework. A small number of farmers were initially open to such overtures. Hartmann (2015) mentions that, “all accounts of trust gain in strength if it can be shown that the notion of trust envisaged by them somehow rests on having chosen the trust option and thereby actively sidelined other possible courses of action” (Hartmann, 2015, p. 13). Referring back to the definition of trust above, this appears to be what happened in Way Besai. The interdependent actors, represented in the early stages by a relatively few individuals on both sides, were willing to take the risks inherent in the action of starting to cooperate with each other rather than continuing along the path of conflict. The fact that some farmers initially chose this route, while many did not, supports the idea that those who engaged were explicit in choosing trust as opposed to other courses of action.

These small yet highly significant steps in Way Besai in the early days also reflect the importance of individuals. By all accounts, the willingness of the head of the district forest service to engage with farmers who had been labelled as “illegal” and viewed as destroyers of the forests, was critical to advancing the concept of HKm in Way Besai. The importance of individuals is not unique to Way Besai; as Blaikie and Springate-Baginski (2007) observe in relation to South Asia,

“[t]here are many cases of dedicated and socially aware forestry officials who have achieved a democratic, open and widely representative participatory forest management; but it usually takes a great deal of effort and flair and a long-term relationship to build up trust” (Blaikie & Springate-Baginski, 2007, p. 372).

From these initial links of trust forged at the individual level, the HKm program gained traction and other farmers became involved. Over time the role of trust between individuals became less important as the program became increasingly institutionalized and detailed rules were formulated to guide the relationship between actors.

In the Segara Anakan Lagoon, the conflict was not as overt or as violent as in the HKm case. At first glance this might suggest that the Segara Anakan Lagoon might provide more fertile ground for the development of trust. However, given the stakes involved – the loss of potential land ownership rights – the risks of engagement for resources users in particular were significantly higher in the Segara Anakan Lagoon case than in the HKm case. Additionally, the very fact that the conflict was so intense in the HKm case meant that there was likely much more appetite on both sides to engage in building relationships that could over time enhance the quality of life.

The comparison of the evolution of trust in the HKm case and continuing lack of trust in the Segara Anakan Lagoon case provides interesting insights into the relationships between actors. Both cases involved small scale resource users and state forestry representatives. Both involved a history of conflict that was on-going at the time the New Order regime fell. Despite these similarities, trust started to emerge in the HKm case, but mistrust has persisted in the Segara Anakan Lagoon.

So why then were the outcomes in terms of trust so different? As a starting point, it is interesting to consider the institutional frameworks – HKm and joint community forest management programs represented by LMDHs – that were relevant in the two cases. Both were designed to allow small scale resource users legitimate access to state forest. The starting point for engagement was, however, very different in the two cases.

In the HKm case many farmers had been evicted from their land in the period immediately preceding the fall of the New Order regime, while in the Segara Anakan Lagoon this was not the case. In the Segara Anakan Lagoon, over time farmers or fishers turned farmers were increasingly able to use the land without threat from the state. The HKm farmers, who were effectively no longer able to use the land, and had no traditional claims on it, had very little to lose by engaging with the forestry service within the framework of HKm. As long as trust was maintained and the program ran as planned, they would in fact be materially better off by having secure usage rights for a specified period of time. In contrast, the risk of

engagement in the Segara Anakan Lagoon case was much higher. People were already using the land, and did not seem to be under immediate threat, so why would they risk recognizing the LMDHs and potentially sacrificing ownership claims?

Additionally, in the HKm case there was a government representative with significant authority who was willing to go out on a limb in trying to engage with farmers. He took the initiative in signalling that he trusted the farmers and wanted to engage with them in a meaningful and respectful way. In the Segara Anakan Lagoon case there is no indication of a similar type of engagement. This can in part be explained by the fact that there were significantly fewer actors in the HKm case and their interests and the values they placed on the land were clear. In the Segara Anakan case the number of actors, different values they placed on the water and land, complicated the situation. As an example, while in the HKm case the district forest service was clearly the lead agency on the government side, in the Segara Anakan Lagoon there were multiple district and national level government agencies involved, and coordination between them was weak. In such a situation it becomes challenging to undertake the delicate work of fostering trust between disparate actors with very different interests.

6.2 Shifting resource tenure over time

The evolution of resource tenure systems in the three cases varied significantly. In the PES case the pilot schemes were driven by external actors piloting a new natural resource management modality. As such, the pilot projects were spatially small and the time scales rather limited. Although the notion of expanding the concept of property rights linked to environmental services is embedded in the idea of PES, in the pilot projects there were no indications of enduring changes in property rights resulting from the pilots. This was the case with respect to both environmental services and the land where the pilots were implemented. In general the PES schemes included different types of land tenure systems, ranging from privately held land to protection forest to areas where statutory and customary systems overlapped. Although tenure was not uniform, in each case land tenure was uncontested at the time the pilot initiatives were implemented.

While the local conditions of the Segara Anakan Lagoon and HKm cases differed significantly, they both nevertheless provide interesting insights into how shifts in how actors value natural resources, and especially land, are over time translated into changing property and resource tenure systems. Von Benda-Beckmann et al.'s (2006, p. 14) notion that property is the way that members of society give form to valuables is helpful in conceptualizing this. Paying attention to changing values of the emergent property object, in this case land, serves to encourage analysis that has an explicit focus on temporal changes.

For example, since the colonial period much of the land in the Way Besai watershed in West Lampung has been designated as state forest. This designation persisted through the post-independence period up to the time of field research. It has not been fundamentally challenged (for example, with traditional land claims). However, over the same period of time, the values placed on the land by small scale farmers and the state forestry agency in particular have changed significantly. At times the values these actors attributed to the land have been rather similar, while at other times the gap between them has been large.

During the 1950s, for example, the values of the two sets of actors seemed rather aligned. At that time the state allocated the land for transmigrant veterans of the independence war – both parties recognized the value of the land for small scale agriculture. Over time, however, the perceived value of the land diverged as the state increasingly adopted highly exclusionary forestry practices across the country.

The boundaries of the protection forest were also solidified as the forestry department worked to reach a requirement in the 1967 forestry law that 30 percent of Indonesia's land area should be designated as forest. In Way Besai, watershed protection for the purposes of erosion reduction took on added urgency with the decision in the early 1990s to construct a run-of-the river power plant on the Way Besai River. At the same time, small scale coffee farmers continued to value the land for its agricultural potential. Over time, however, their

livelihoods became increasingly fragile as the state began to evict them from the land in an attempt by the state to realize the value it placed on the land.

The Segara Anakan Lagoon case proves more complicated when considering the evolving value of the land and emergence of property rights. The case is unusual because the starting point was no land. In the early days, as new land emerged from sediment, it was largely considered as wasteland with limited utility for farming or forestry. Over time, however, values started to shift.

Small scale resource users, whether fishers trying a hand at farming as their fishing areas declined or land-poor newcomers seeking new opportunities, started to reclaim the littoral and bring it under agricultural production. At the same time the state forestry corporation sought to solidify claims to the land in order to contribute to meeting the requirement that 30 percent of the land area in Java be designated as forest. Conservation of the biological functions of the lagoon as a nursery for marine biota also became a priority. In the 1990s the land was in demand by entrepreneurs interested in opening aquaculture ponds. Later mangroves and the land upon which they grew began to take on new climate change mitigation values.

Using the “bundle of rights” approach elaborated by Schlager and Ostrom (1992), Chapter 4 tracked how changing values in the Way Besai area translated into shifting de facto and de jure withdrawal, management, exclusion, and alienation property rights in the post-independence period. A gap between de facto and de jure property rights – between small scale farmers and the state – began to emerge in the 1980s (Table 8) and was solidified by the 1990s (Table 9). It was only after a re-alignment of the governance approach in the early 2000s, which incorporated new agreements on property rights, that the gap closed (Table 10).

Whereas it is possible in the HKm case to see patterns between the changing values of land and emergent property rights, this is less evident in the Segara Anakan Lagoon case. There

are a number of reasons for this. First of all, the very nature of the area under question – open water that transformed to regularly exposed mud flats that became land – meant that its status (both physical and legal) was ambiguous and contested. This contrasts to the Way Besai case where it seems the basic designation of state forest was never seriously called into question, although property rights within that space were contested.

Additionally, the Segara Anakan Lagoon was of direct interest to a greater diversity of actors than the HKm case – for example, local fishers, local fishers who started farming, non-local small scale farmers, entrepreneurs interested in opening aquaculture ponds, the state forestry corporation, the Nusa Kambangan prison authorities, the fisheries agency, and the Department of Public Works, among others. The values each of these placed on emergent land differed, and their agency to assert rights to the land varied over time.

Quite different resource tenure systems emerged in the HKm and Segara Anakan Lagoon cases as the values of the land changed. In the HKm case the resource management regime has over the past decade and a half been increasingly well articulated and documented. In the Segara Anakan Lagoon the process has been less systematic, and more about emergent practices of land claiming gaining traction at the local level. The developments speak to theories of common property, and the appeal of private property, particularly with respect to land rights.

Forestry resources are often considered as common pool resources. Although these can be covered by different property regimes – for example, private, state or common property – as Saunders (2014) notes, over time there has been a tendency for common pool resource theory to be used as justification for the design and implementation of community-based natural resource systems.

The property regime of the HKm community-based forestry initiative in Way Besai does not neatly fit into one of these categories of property regimes. Instead, different regimes seem to be overlaid hierarchically on areas of land. The area is state land (protection forest), within

which newly constituted resource user groups – not based upon previously existing institutions – are granted usage rights for 35 years through purposefully formed community-based natural resource management arrangements (similar to the processes described by Saunders (2014)). Within the groups, individual members are then assigned plots of land, the primary economic use of which is coffee cultivation.

The land, which is ultimately the property object at the centre of the HKm scheme, is then treated with some of the characteristics of private property. Coffee cultivation plots are demarcated and designated for use by the individual who holds use rights to the plot. These use rights are granted by the head of the group which holds the licence for the area. Users of individual plots have specific obligations detailed in the group licence agreements with the government – for example, planting a certain number of trees, protecting strips of riparian land and regular reporting to the group’s management team. Beyond this, farmers make decisions about planting and harvesting within the frame of a coffee-based agroforestry system. They can also exclude people from the land they manage. Although they are officially not permitted to sell the land, as Table 10 shows, there is some de facto right to alienation through transfers of usage rights to residents of the same district.

Such nesting of private ownership (or in this case perhaps it is better to say, “ownership-like arrangements”) within communal systems is not unusual and reflects the fact that there is no definitive relationship between resource characteristics and preferred resource management regime (Klooster, 2007; Ostrom & Hess, 2008; Vatn, 2005). For example, Ostrom and Hess (2008, p. 21), discuss irrigation systems in which farmers may own their individual plots of land, but participate in communally organized irrigation systems. Typically, however, as in the irrigation example, the arrangements respond to the attributes of the resources.

In the Way Besai HKm case, where agriculture rather than some other use of forestry resources is central to the system, the community-based forestry system seems designed to facilitate control of the HKm areas rather than responding to management requirements resulting from the characteristics of the resource. Specifically constituted farmers’ groups are

granted rights to use the land but in implementing that function they resemble an intermediary tasked with facilitating and controlling rights transferred to individual farmers. As such, the groups seem to act as an extension of the hand of the state in managing use of the land – supported by increasingly detailed state-provided guidance – with the end point being a resource management system that on the ground resembles private property (or a lease arrangement) with restrictions on how the land can be used.

Whereas the HKm case saw the property rights of small scale coffee farmers formalized and incorporated into the statutory system through membership in farmers' group with HKm licences, the development of land tenure arrangements in the Segara Anakan Lagoon case was quite different. Under HKm there was a deliberate attempt to bridge the differences between actors with respect to property rights. In the Segara Anakan Lagoon, on the other hand, state actors and small scale resource users have approached formalization from different perspectives using different strategies, and at the time of field research the different strands had not yet connected.

In 2001 the National Land Agency (BPN, *Badan Pertanahan Nasional*), under contract by the Asian Development Bank funded Segara Anakan Conservation and Development Project, conducted a cadastral survey of the areas of emergent land in the Segara Anakan Lagoon. This was an explicit attempt to address land tenure conflicts in the lagoon, especially those between people farming the emergent land, and the state forest corporation which claimed areas of emergent land. According to BPN, the aim of the process was ultimately to grant ownership certificates and the associated legal certainty to farmers and residents of emergent land. Following the mapping exercise, the district head gave permission for homes and surrounding yards to be certified; at the time of field work in early 2015, farm land was not yet certifiable.

The cadastral mapping exercise can be seen as an attempt by the state to, as D. Hall et al. (2011) discuss with respect to such processes more generally in SE Asia, “make the conditions of land use and access more ‘legible’: that is, more comprehensible to and governable by the

state” (p. 34). Cadastral mapping was a critical step towards formalization of land rights, a strategy which at the time was gaining increasing attention in development policy circles globally.

The work of De Soto (2000) had a significant impact on this move towards embracing formalization. De Soto’s basic premise was that through legalizing the informal assets of poor people the assets could be turned into productive capital. Mobilizing this formerly “dead capital” (De Soto, p. 7) would then contribute to reducing poverty. The notion captured the imagination of policy makers globally.⁶⁶ As Otto (2009) explains it, “part of the attractiveness of De Soto’s design is the suggestion that it can all really be done” (p. 175). Bruce (2012) speaks of land formalization being, “a ‘silver bullet’ of contemporary development discourse” (p. 31).

While De Soto’s recommendations garnered support in policy and development circles, accolades were by no means universal. Various authors lamented the simplicity of De Soto’s premise and failure to draw on the rich body of empirical work related to land formalization and property rights in the global south (see, for example, Bruce, 2012; Otto, 2009; Sjaastad & Cousins, 2009; von Benda-Beckmann, 2003). As Otto (2009) summarized, “De Soto’s theories seem to be based on mistaken assumptions about the context of legalization projects [...] related to a given country’s legal system itself, while others have to do with the law’s political, administrative, economic or social contexts” (p. 187). Additionally Otto (2009), observes that, “De Soto has surprisingly little to say about the concrete situations of conflicting and overlapping claims to land, often by unequal parties, which are omnipresent in most developing countries” (p. 193).

It is this latter point, together with a general lack of coherence within government, which seems particularly relevant to the situation in the Segara Anakan Lagoon with respect to the certification of farming land. Issuance of certificates requires approval from the district head

⁶⁶ For example, in the 1990s De Soto served as a consultant to the Indonesian government. He was tasked with identifying assets in the extralegal sector (De Soto, 2001).

who, according to the district land office, could only proceed if there was a recommendation from the (national-level) Ministry of Forestry. While it is to be expected that certification in areas where there are known land conflicts would be contentious, this does not seem to be the situation for all emergent land in the lagoon. Yet it was interpreted as such by the land office, which deferred to the Ministry of Forestry.

At the time of the cadastral mapping, and indeed up until field work in 2015, in the district spatial plan much of the emergent land areas of the lagoon were designated for conservation. A finer resolution plan for the lagoon is supposed to be prepared flowing out of the more general plan, and could include a broader range of uses. However, until such an inter-sectoral planning process has been completed, certification will be difficult. The delay in this more detailed planning means that 15 years after the cadastral mapping the situation remains unclear.

The bio-physical characteristics of the lagoon – and especially newly emergent land that is being brought into agricultural use – mean that it is an intrinsically challenging situation with respect to land rights. This has contributed to on-going contestation between local residents and the state forestry corporation in some areas of emergent land. However, any attempt to formalize land rights in the area is also complicated by power discrepancies between the Ministry of Forestry and lower levels of government and lack of clarity and communication between them. Weak communication is also evident between government agencies at the district level. The lack of a coherent vision for the lagoon has also stymied spatial planning, and therefore contributed to the complexity of the land rights situation.

While the situation with respect to the formalization of land rights into the national system has seen little progress, the situation in the fields of the Segara Anakan Lagoon looks quite different. Efforts to claim property rights for new land started at least in the 1970s with intentional diking of subsequent farming areas and building up of land under stilt houses. These micro reclamation initiatives had continued through to the time of field research.

In addition to physical changes to the land, and then subsequent farming activities, other means have been employed to assert land rights. Following the fall of the New Order regime, as mentioned in the section above, the state forest corporation employed a strategy of Joint Community Forestry Management to try and mute conflict with local communities in the areas it manages. This arrangement is supported by the establishment of village-level organizations (LMDH) and explicitly acknowledges the corporation's rights to land, which community members can use for limited purposes. The state forest corporation tried twice to establish these organizations in two different villages in the lagoon. In both cases there was strong community resistance, and the LMDHs never took root. In this way residents were sending a clear message that they did not recognize the corporation's claims to the area.

Land rights have also been asserted by administrative means at the local level through incremental recognition of land tenure. Since the early days of opening land for agriculture village governments were supportive. This was also a way for them to assert their authority, thereby resisting control by the state forest corporation. In the 1980s people cleared the land and then reported to the village. By the end of the 1980s, these rights were given added validity through the issuance of a regulation by the district head stating that people in the lagoon could use emergent land for cultivating rice. From there rights have continued to be recognized with different types of letters issued by village authorities and also payment of land taxes by land users.

It is evident that in the Segara Anakan Lagoon there is a disconnect between official approaches towards the formalization of land rights, and the incremental and persistent claiming of land by local resource users. While de jure processes have stalled, de facto rights have solidified to the point where it is difficult to imagine that they could be meaningfully reversed. In this way it seems likely that over time local actions to claim land rights are forcing the hand of the state.

An analysis of property rights in the HKm and Segara Anakan lagoon cases in particular supports the observations by various authors that simple typologies of property systems –

private, common and state property – are not particularly helpful in understanding the full complexities of property rights (see Chapter 1, section 1.2.3). And when this is carried forth into the policy arena, it supports the trend that Otto and Hoekema (2012) observe of, “a rapidly growing consensus among international and national decision makers, experts in development studies and in land tenure matters that the way forward should be based on careful assessments of the very specific local situations within a country” (p. 21).

Using the lenses of property rights and land tenure and considering changes over time encourages us to look beyond formalization and state approaches towards land tenure. This broadens our understanding of the evolution of land tenure in a given location. It revealed that local resource users, through their actions on the land they farm and in the communities where they live, showed greater agency in influencing their rights than might otherwise have been assumed.

This agency was clearly evident in the early days of the HKm process, where farmers’ representatives played a key role in setting the rules of the game. However, as argued in Chapter 4, this agency weakened over time – especially for new groups entering the system – as the HKm process was increasingly bureaucratized. In the Segara Anakan Lagoon the agency of small scale resource users is not as obvious. Nevertheless, through strategies such as opening of land, micro-reclamation, village recognition of land usage and payment of land taxes, small scale resource users have slowly but surely strengthened their rights to the land, to the point where it now seems that any significant reversal is extremely unlikely.

6.3 Changing environmental governance

In each of the cases analysed there were changes over time in how decisions were made about the use of natural resources and the actors involved in those decisions. In the PES case the changes were exploratory – pilot projects to try out new governance mechanisms. They were an attempt to trial ideas that were gaining traction in other areas of the world. But they were not simply a one-way transfer of international experience to Indonesia; they were explicitly designed to explore new ideas in the Indonesian context and channel these

experiences back into the international arena, thereby influencing ideas and policy approaches at a broader level.

In the Segara Anakan Lagoon and the HKm cases, changes were closely linked to the shifts in property rights and land tenure discussed in the previous section. Emergent environmental governance systems were relentlessly shaped by the way in which small scale farmers over time modified and used the land. This seeming inevitability is captured by the observation of D. Hall et al. (2011) that in Southeast Asia,

“the scene was set during the 1980s and 1990s, when it became clear to governments across the region that it was politically and logistically not feasible to evict millions of people who were living and farming in the state-claimed political forest. The compromise was to formalize these de facto smallholder land occupations so the state could benefit from increased revenue, legibility and control but retain the land's public status.”(p. 43).

In this way the de facto land use patterns of small scale farmers over time resulted in de jure changes to both resource tenure and environmental governance systems.

In order to better compare how environmental governance evolved in the three cases, it is interesting to return to Lemos and Agrawal's (2006) conceptualization of hybrid environmental governance regimes, and from there expand the analysis using the notion of dynamic systems which move along continuums between social mechanisms (state, community, market) over time. This notion of hybridity and change, which captures the shifting loci of steering of the systems, also reflects the relative power of different actors within the system.

In the Segara Anakan Lagoon (state-led) and HKm (community-based) cases, we see movement from positions closer to the ideal types (although not exclusively so) to those reflecting increasing hybridity. In the PES (market-based) case hybridity was already built into the pilot projects when they were introduced to Indonesia.

In the Segara Anakan Lagoon case the system evolved from one where the locus of control rested mainly with the state to one where local farmers, supported by village representatives, played a pivotal role in driving change, in particular related to land tenure. In contrast, in West Lampung when HKm initially emerged, a relatively small group of farmers played a central role in establishing the core elements of the system. Over time, however, the locus of control started to shift increasingly towards a more dominant role for state actors. The PES case was quite different from the other two as the pilot projects which were introduced never claimed to be near the ideal type of a market-based system; from the beginning they incorporated elements that would reflect a hybrid system that rested along the continuum between market-like and collective action (community).

In the period leading up to the end of the New Order regime, in both the Segara Anakan Lagoon and HKm cases there were extreme gaps between different actors with respect to aspirations for natural resource management. The division was most acute between state institutions and small scale natural resource users, and in both cases led to situations of conflict. These gaps were evident spatially through attempts to harden state forest boundaries (HKm and the Segara Anakan Lagoon) and emergent spatial plans (Segara Anakan Lagoon). Both of these mechanisms reflected the state vision of the areas, with little recognition of the reality on the ground or the aspirations of small scale farmers to use the land. The official systems in place at the time were strongly hierarchical and based on command and control mechanisms.

Over time these gaps were addressed – or not – quite differently in the two cases. In the HKm case in West Lampung there were explicit efforts to take advantage of the space offered by reforms in the forestry law in 1999 to push for implementation of a system of community-based forestry management. In contrast, in the Segara Anakan Lagoon, while changes in governance were planned, steering control remained firmly in the hands of the state, and ultimately the changes were not implemented as envisioned. The two cases shine light on the dynamic hybridity of emergent governance regimes, and the agency of small scale resource users in affecting change, as discussed above in section 6.2.

During the early days of the reform period in West Lampung there was a focused effort to transform the management of protection forest in the Way Besai watershed from a system of heavy-handed hierarchical command and control to one that provided more space for actors to constructively engage with each other. The revised forestry law provided the framework for a relatively small group of actors comprised of small scale coffee farmers, the district forestry service, a provincial-level NGO and the World Agroforestry Centre (ICRAF), among others, to work out details of the system. This effort was supported by funding from external donors for projects granted to the NGO and ICRAF.

Research supported through these projects played a key role in shifting scientific and policy discourses linked to erosion and the emergent HKm system. Initially discourses were based on the understanding that erosion was caused by deforestation, the only solution to which was reforestation. However, ICRAF-led research which focused on understanding sedimentation production in the area helped to move the debate beyond a simplistic understanding of the causes of erosion, unravelling linkages between factors such as hydrology, topography, lithology and land use (Verbist et al., 2010). The research showed that from the perspective of erosion control, multi-strata agroforestry systems were a viable alternative to reforestation programs.

The process took time and individual commitment and effort and resulted in a realignment of governance of the protection forest. As discussed above, building the foundations of trust played an important role in the process. In the early days, accounts indicate that the farmers, supported by the NGO and research institute, were highly instrumental in setting the rules and regulations of the new system. These included, for example, expectations of number of trees to be planted on coffee plots in protection forest areas used by farmers, establishment of farmers' groups, and monitoring and evaluation standards.

In the early 2000s, notions of community-based forest management were still evolving at the national level and there remained significant space for local innovation. Local actors – both

state and non-state – in West Lampung took advantage of this. However, with the issuance in 2007 of a national regulation on HKm and increasing engagement on the part of the national Ministry of Forestry, the locus of control began to swing back towards the state in a process which was supported by subsequent detailed spatial targets and guidance documents.

Over time, and in line with Gauld's (2000) observations from the Philippines, it would seem that although the mechanism is labelled "community-based," as it is operationalized within the statutory forestry system it increasingly resembles more traditional top-down approaches. This is evident, for example, in the detailed and technical planning processes and data collection requirements for each small coffee farming plot, hierarchical newly formed single-purpose farmers' groups representing the "community" in the system, detailed spatial delimitation of individual plots, and a general strengthening of state control.

In the Segara Anakan lagoon over the same period the situation looked quite different. The fall of the New Order regime and the decentralization which followed coincided with the implementation of a large state-led conservation and development project. This initiative was the culmination of at least 20 years of debate and planning focusing on the lagoon. Throughout this period and later supported by the project, state-led command and control structures remained officially dominant.

With the conclusion of the project, the separate lagoon governance mechanism envisioned under the project was integrated into existing government structures, and there was little space for constructive engagement between actors with an interest in the management of the lagoon's natural resources. Steering functions remained nominally in the hands of state structures, including the district government and the state forestry corporation, but in reality many actions occurred outside the purview of these entities. In some ways the system could be characterised as being one of, "command with little control." Decisions over land use in particular were effectively in the hands of local residents and village representatives, and these were hardly integrated into the district plans. Even at the district level there appeared

to be little coherence between different relevant agencies, particularly with respect to land tenure.

In the 2011-2031 spatial plan for Cilacap district, large areas of the Segara Anakan Lagoon are designated for conservation. A more detailed plan is expected to be drafted focusing specifically on the lagoon. It seems likely that given the changing values of the lagoon, including those driven by incremental and persistent actions of local resource users to bring areas of the littoral into agricultural use, any new spatial plan will see less focus on conservation. In this way – although not necessarily through formal negotiation or structures – local residents have pulled the locus of control with respect to natural resource management decisions closer to the local level.

In the PES case, pilot projects were intentionally designed by external actors to deepen and expand conceptual understanding of PES beyond a market-based interpretation. The case was also about addressing gaps, although not gaps between different actors as evident in the Segara Anakan Lagoon and HKm cases. Rather, the gaps were between situations where river sediment loads were seen as a problem, and a desired situation of reduced sediment loads.

Although the PES case does not present changes in natural management approaches that are as firmly anchored in the local context as the HKm and Segara Anakan Lagoon examples, it nevertheless provides interesting input with respect to the notion of dynamic hybridity. Initially the PES pilot projects were designed to approximate systems resting along the continuum between market and community mechanisms.⁶⁷ However, the companies involved as part of the pilot schemes – companies responsible for provision of drinking water, river basin management and hydro-power generation – were state owned, meaning that state entities were an integral part of the systems. As such, the state's role was more than establishing a potential regulatory framework.

⁶⁷ It is recognized that the notion of “market” needs to be used with caution as in fact in the majority of the pilot projects external donor funding rather than other mechanisms was significant in shaping incentives.

This then introduces a potential move towards Agrawal and Lemos' (2007) notion of hybridity based on multi-partner governance (community, state, market). Having said this, it is necessary to use caution when drawing firm lines between the social mechanisms of community, state and market. For example, as Vatn (2015) notes,

“a core message is that while markets may function differently dependent on which actors are involved, it is the form of interaction between them – the trading – that defines whether we are faced with a market or not. Hence, states may command. They may, however, also trade” (p. 231).

And in fact, a similar caution is necessary when using the ideal type labels of community-based, state-led or market-based more generally. The labels of community-based and PES in particular are widely used in both academic and policy circles. As the case studies in this dissertation have shown, however, behind these labels are often dynamic hybrid realities.

The need for careful consideration of hybridity in environmental governance systems and also temporal dynamics, echoes the call for analyses of property rights that move beyond simple typologies of property systems, as discussed in the previous section. These parallels are perhaps unsurprising given the tight intertwining of contestation over property rights and changing environmental governance systems, as highlighted in this chapter and throughout the dissertation.

6.4 Reflections on research approach

In the early stages of this research, as the idea of comparing different environmental governance systems and evolutions in property rights began to take shape, it was a somewhat intimidating prospect. Of necessity the research would require quite a broad spatial, temporal and conceptual focus, and it was rather unclear where it would lead. As the research was being formulated there was already a (limited) body of empirically-based literature focusing on property rights in the HKm case, but less was available referring explicitly to property rights in the Segara Anakan Lagoon and PES cases.

Despite this, the characteristics of the Segara Anakan Lagoon and PES cases indicated that they could be fertile ground for an exploration of environmental governance and resource tenure change. At minimum in the Segara Anakan Lagoon it was likely to be fruitful to use the lens of property rights to explore how the transformation from water to liminal to usable land unfolded. The watershed PES case presented an evolving approach that was relatively new in Indonesia. Given these conditions, there was certainly value in asking how new governance arrangements might be changing property relations.

The broad focus of the research allowed for a comparison of the way environmental governance systems developed and property rights evolved under quite different circumstances. From the beginning the idea was to remain open to emerging ideas. This proved rewarding, but it was not without difficulties. While going to the field is exciting and talking to people is always interesting and enlightening, exploratory research is about much more than this. While it requires being open and sensitive to unexpected yet potentially fruitful avenues of inquiry, at the same time it also needs to be structured and maintain a focus on ultimately contributing to understanding, generalizations and theory.

In grappling with the best way to meet these challenges, it was decided to compare the cases over time using an analytical framework comprised of the broad, inter-related and dynamic dimensions of actors, resources/power, rules of the game and discourses (Arts et al., 2006). Although each case had a slightly different entry point (as shown in Table 1), comparing cases using this framework resulted in insights that might otherwise have remained hidden.

For example, the importance of trust building between actors would have emerged in a study focusing only on HKm. However, an elaborated notion of the importance and elusive nature of trust in environmental governance systems benefitted from a comparison with the Segara Anakan Lagoon case where there was a distinct lack of trust between different actors. This lack of trust in the Segara Anakan Lagoon case would not necessarily have appeared as clearly in a single case focusing on the lagoon. By comparing the Segara Anakan lagoon situation with the HKm case, however, the lack of trust in the lagoon and potential

implications were thrown into stark relief. This also helped to deepen understanding of long-standing issues in the lagoon.

The emergence of trust as an issue of particular salience was not something that had been anticipated when the research started. However, it appears that a careful consideration of trust could provide a useful and nuanced way to conceptualize relationships between actors in a system over time. How links of trust are forged or broken or eroded over time could potentially reveal strategies or challenges that might otherwise not be apparent.

The cross-case comparison also provided more weight to the notion of dynamism in environmental governance systems. Individual case studies would have highlighted this over time in one system (for example, the move from a strongly state-led system in West Lampung to HKm). However, a comparison of the three cases added depth and texture to the notion of temporal dynamism.

The PES case was quite different from the others in terms of its temporal scope and also the drivers of change. This had not been fully appreciated when the research started. Whereas the changes in the Segara Anakan Lagoon and HKm cases were embedded in shifting dynamics between actors over time and macro social and political factors among other things, in the PES case the pilot schemes were introduced by external actors intent on piloting and potentially improving an approach being tried in other countries. As such the schemes did not emerge mainly from locally-felt needs for changes in environmental governance. This would have been evident in a single case study, but comparing the PES case with the other two, provided a broader perspective. It highlighted the lack of historical embeddedness of the PES schemes, and the specific challenges that this poses to gaining long-term traction in any one location.

Despite the analytical rewards of the broad focus of the research, it also posed challenges. Most notably, there was an on-going tension between the desire to understand each system in increasing depth, and the reality that covering systems in different geographic locations

was time-consuming. Finding the balance between depth and coverage was a constant struggle which was particularly evident in the Segara Anakan and HKm cases. In both cases, additional time in the field may have provided more opportunity, for example, to delve into the opaque arena of shifting power relationships over time and the implications of these.

This sense that there is always something more to uncover if only given more time, is likely a tension that is partially inherent in exploratory research. The objectives of the current research initiative were intentionally rather broad, providing the space to consider previously unconsidered issues that arose during empirical work. While this approach presented exciting opportunities, it was not always easy. How and where to draw lines around this “exploration” became a question that the researcher sometimes needed to address directly while in the field. Given limited time, which lines of inquiry deserved more attention, and which should be carefully placed aside?

While there was always the lingering feeling of needing more time for field work, the research benefited from the flexibility to conduct two periods of field research for both the Segara Anakan Lagoon and HKm cases. The research stays were not particularly lengthy for each of the cases, ranging from ten days to four weeks. However, the breaks between periods of field research provided a valuable opportunity to analyse field data, reflect on the findings and revisit the literature where necessary before the second field visits. In this way some of the challenges mentioned above were mitigated.

In the Segara Anakan Lagoon land rights continue to be highly contested. For example, representatives from the state forestry corporation were willing to meet the researcher, but were cautious in answering questions. In particular, when the discussion turned to spatial information and specifically, discussing land under the authority of the corporation or accessing maps, lines of communication effectively shut down. In these circumstances it can be expected that when talking with a researcher, different actors would have certain positions that they were intent upon pushing, based on their interests in the outcomes of the contestation. In order to try and understand the broad range of concerns and positions, the

researcher tried to meet a range of actors, using different entry points to identify respondents.

6.5 Future research needs

Given the broad focus of the research, a number of future research needs can be identified, ranging from site specific to wider ranging. Three potential research foci, however, stand out as being of particular interest. One is inspired by the comparison of the three case studies, while two flow specifically out of the HKm work. The first picks up the notion of trust and would seek to contribute to a better understanding of trust in environmental governance systems. The second would compare meso-level HKm processes across a range of different conditions, while the third would focus on micro processes involved in the establishment of HKm implementation mechanisms.

The first area of potential research would aim to develop an empirical foundation that could contribute to generalizations about, among other things, the role of trust in different environmental governance systems – how trust might develop, how it might erode, and how trust might contribute to the effectiveness of such systems. This research would not necessarily focus on one type of system. Rather, it would be interesting in the early stages to maintain a rather wide focus, considering as broad a range of actors as possible at different levels under different conditions in a variety of geographic settings. The historical trajectories of the systems would also be an essential consideration. It would be important to move beyond defined programs (for example PES and HKm) and also consider systems around which it might be more difficult to place both conceptual and spatial boundaries. Depending on the findings, the focus of the work could then be specified further.

As discussed in Chapter 4, Indonesia is undertaking a significant expansion of the HKm program across the country. The case study in West Lampung conducted as part of this research focused on one of the earliest examples of HKm in Indonesia in the post New Order period. When HKm in West Lampung began, the program was in its early stages and there was rather significant space for local actors to exert influence over the details of program

design at the local level. Chapter 4 explored this space, and the importance of individuals in the process. It also argued that as the program became increasingly bureaucratized, the space for local agency in West Lampung shrunk, with the state increasingly taking the lead. In this way the HKm system appears to be being increasingly integrated into the Ministry of Forestry culture and structure, rather than representing a real shift in power to non-state actors.

Following up on this work, as a second area of potential research, it would be interesting to examine a broader range of existing HKm sites under different conditions to confirm whether the empirical findings from the current research can be generalized. For example, the current research focused on an area where there appeared to be no significant *adat* claims to the land in question. Would the situation look different if there were such claims? How might meso-level interactions differ under those circumstances? Another example would be to look at areas which are not under coffee agro-forestry cultivation, but where non-timber forest products are the primary resources being used by the HKm groups. It would also be interesting to consider how the HKm process unfolds in areas where there may be existing community-based natural resource institutions. Are these mechanisms incorporated into the HKm system and how, or are new institutions formed which parallel or supersede existing structures? It would also be important to understand in other areas how the new property rights resulting from HKm licences impact on existing property rights.

Considering the ambitious government targets for HKm looking forward, it can be anticipated that the HKm program will be aggressively rolled out further across the country. This then leads to the third research need. Under these circumstances, in addition to seeking understanding of meso level processes and impacts, it seems prudent to shine increasing light on interactions at the micro level. Hundreds, if not thousands, of farmers groups seem likely to be constituted nationally over the next few years, which could have profound impacts on local governance systems and land and resource access. Under these circumstances, locally specific questions of how these groups are constituted, who they represent, how power and resources are allocated, what participation at the group level

means, how groups shape land and resource access, and how they interact with the meso level system all gain particular salience.

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Annex 1: Interview guidelines, Segara Anakan Lagoon, visit 1

Lagoon residents, November 2013

A. Personal information (lagoon residents)

1. Have you always lived here and if not, where did you live before and when and why did you move here?
2. What are your (family's) livelihood strategies?
3. How much and what kind of land do you cultivate (house garden, tambak, other)? Where is it?
4. Are you the owner of that land?
5. What natural resources do you use? From which areas? For what purposes? Has your usage changed over time?
6. What are the three most important farm/mangrove/fisheries related problems you face?

B. Changes in land use and land cover

1. What kinds of environmental changes have you noticed in your area over the past years and decades?
2. Have land use and land cover changed in this area over the past years and decades? What kind of changes? When? Where? Driven by whom? What causes?
3. Do you view these changes as positive or negative and why?
4. What do you think could be effects of these changes? Who do you think could be affected in what way?
5. Have you noticed any change in mangrove cover? What changes? When? Driven by whom and why?
6. Who owns, manages and uses which areas? Has this changed over time?

B. Land and mangrove management

1. Have there been any initiatives/interventions/policies to manage mangroves in this area? If so: What kind? When? By whom? What resources/networks?
2. What do you think about these initiatives/interventions/policies? What effects did they have, etc?
3. Are there any rules and regulations for land and mangrove use? If so, what kind of institution at which level?
4. Do you think land and mangrove use should be managed in a different way and if so, in what way?
5. Are you aware of any cases where there have been conflicts over who can use land/mangroves in your area? What were the causes? How were the conflicts expressed? Were they resolved? If yes, how?

C. Sedimentation

1. What do you think are the causes of sedimentation in the Segara Anakan Lagoon?
2. Do you view sedimentation as positive or negative and why?
3. Where is tanah timbul in your area?
4. Who uses tanah timbul (new land) in what way?
5. How are decisions made about who can use tanah timbul and for what?
6. What do you think about this process?
7. Do you think that decisions about who can use tanah timbul should be made in a different way and if so, in what way?
8. What is the relationship with state agencies regarding tanah timbul? Village, Perhutani, other?

Suggestions of who else to meet.

Annex 2: Interview guidelines, Segara Anakan Lagoon, visit 2

Lagoon residents, December 2014

A. Personal information

1. Have you always lived here and if not, where did you live before and when and why did you move here?
2. What are your (family's) livelihood strategies?
3. How much and what kind of land do you cultivate (house garden, tambak, other)? Since when? Where is it?
4. Are you the owner of that land? What is its status?
5. What natural resources do you use? From which areas? For what purposes? Has your usage changed over time?
6. What are the three most important farm/mangrove/fisheries related problems you face?

B. Land management

1. How are land allocations determined in this area? Are there differences depending on location (e.g. between dusun)?
2. What is the process if someone wants to open unused land?
3. What is the process if someone wants to "buy" land from someone else?
4. What documentation is used?
5. Do people pay any fees or taxes? To whom?
6. Who uses tanah timbul in what way? Aquaculture? Farming?
7. How are decisions made about who can use tanah timbul and for what?
8. What do you think about this process?
9. Do you think that decisions about who can use tanah timbul should be made in a different way and if so, in what way?
10. Are you aware of any official mapping/land allocation activities that have taken place to mark land boundaries? Who initiated these activities? Who was involved?

C. Mangrove management

1. Do people plant mangroves beside their houses? Why?
2. Are there mangrove areas in your village, where? What are they used for?
3. Have there been any initiatives/interventions/policies to manage mangroves in your area? If so: What kind? When? By whom? Targeting which areas? What resources/networks?
4. What do you think about these initiatives/interventions/policies? What effects did they have, etc?
5. Are there any rules and regulations for mangrove use? If so, are there different rules/regulations for different areas? If so, what kind of institution at which level?
6. Do you think mangroves should be managed in a different way and if so, in what way?

7. Are you aware of any cases where there have been conflicts over who can use mangroves in your area? What were the causes? How were the conflicts expressed? Were they resolved? If yes, how?

D. Relationship with state agencies

1. What is the relationship with state agencies regarding tanah timbul and mangrove areas?
2. Is Perhutani active in your village? In what way?
3. Are you aware of attempts to establish an LMDH in the village? If yes, who was involved; what were their interests? What programs were proposed? What happened? What do you think about it? Future prospects?

Suggestions of who else to meet.

Annex 3: Interview guidelines, HKM West Lampung

December 2013

A. Introductory questions: Farmers' perspectives

- How long have you been living here? In case moved in: from where?
- What is HKM and what do you think about it?
- In what ways has the establishment of HKM affected you and your family? Effects on yields? Opinion about/experience with the planting of 400 trees/ha?
- How strictly are HKM rules (e.g. planting of 400 trees/ha) enforced? In what way are these rules enforced and by whom?
- Have there been any cases of non-compliance, and if so how have these been handled?

B. Granting of cultivation rights

- How was it determined which farmers could receive cultivation rights for which plot? Who played a role in making these decisions?
- How much did you have to pay for receiving your cultivation right?
- How much do you have to pay (more or less) regularly for your cultivation right?
- Did you have to pay anything to anybody for being able to cultivate the land prior to the establishment of the HKM?

C. Sale of cultivation rights, Any HKM-induced out-migration (?):

- How many cultivation rights have been sold?
- Who sells and why?
- Do the sellers move out and if so, to which area, adopting what livelihood strategy?
- Who buys and why?
- Where are the buyers from, and how much land do they own?
- Who works on the land that has been "sold"?
- How much was/is usually paid for the cultivation rights?
- How is the sale of cultivation rights handled within the farmers groups? Are there any restrictions, requirements and/or payments?
- Is there anybody who tends to oppose the sale of cultivation rights?
- Do you know what opinions the leaders of the farmers' groups have about the sale of cultivation rights?
- Future outlook on the development of sales of cultivation rights: How do you think will the frequency of the sale of cultivation rights develop in the future? Why do you think so, and what are possible consequences?

D. HKM-induced in-migration and land cover changes

- Have any people moved into this area since the establishment of the HKM? If so how many people moved in at what time?

- Where did they come from and why did they move into this area?
- Have the newcomers received cultivation rights, and if so how and from whom? Did they have to pay for receiving these cultivation rights and if so, to whom and how much?
- How and by whom had the land been used before the newcomers arrived? Has land cover been changed since then, and if so how and by whom?

E. Concluding questions

- What are the pros and cons of the HKM scheme?
- Are the problems and possible solutions discussed within the farmers' groups?
- How is the relationship between the leaders of the groups and sub-groups and the farmers?
- How were the Ketua Kelompok (head of group) and Ketua Sub-kelompok determined?
- Who is the Ketua Kelompok of your group?
- What major current and future challenges do you see with regard to HKM?
- What do you think will the situation be in 35 years?

Suggestions of who else to meet.

Annex 4: Interview guidelines, payments for environmental services

December 2013

1. Obtaining an understanding of the motivations and processes that lead to the design and implementation of PES (with a particular focus on land tenure where applicable).

Can you tell me about the history of the scheme?

- How did it come about?
- What were your views when you first heard about it?
- What do you think about it now?

Can you tell me about the initiation process of the PES?

- Who/which organisation came up with the initial idea of implementing a PES in this watershed?
- What were the reasons behind this idea?
- What were the steps taken?
- Who got involved in what way and why (external or internal motivation)? Who did not (want to) get involved and why? *Keep in mind gender aspects.*
- What hindrances and what kinds of opposition occurred?
- Which potential implementation sites were taken into consideration?

Why was the target area finally chosen, and to whose interests does this decision support?

- Did degradation patterns or hydrological characteristics, tenure aspects, personal/organisational networks, socio-economic and political considerations, (*or which other considerations*) influence site selection?
- Based on your knowledge or impression, how would you rate the level/magnitude of land degradation in the PES area as compared to other areas within this watershed?

Have land tenure arrangements/land tenure issues influenced the planning, site selection and implementation of the PES and if so, in what way?

- What is the tenure status of the land covered by the PES?
- What kind of land (with regard to tenure) is – based on your knowledge or impression – particularly degraded within this entire watershed?
- Do tenure issues play any role in this watershed with regard to land degradation/conservation?

2. Understanding how the interests of different actors have been reflected in these schemes.

- Which other actors were involved (create list, rank according to their importance)
- Who you think was most important/influential, why? HOW did they exert their influence (resources, communication, knowledge, partners on the ground)
- Who were the less visibly involved players that you also deem influential? HOW did they bring in their influence?
- Who would you say was most able to force their own position upon other actors?
- If you could give more power to any of the (five) most important actors, who would that be and why?

3. Exploring how PES complement or replace other approaches towards natural resource management.

How has land/resource use changed as a result of the PES?

Has there been any change with regard to who owns, manages or uses the respective land/resources? (women and men; locals and migrants; other)

Prior to the implementation of the PES, were there any initiatives/interventions/policies aiming at addressing the same issues that the PES is supposed to address now? If so: What kind? When? By whom? What resources/networks?

Has the PES replaced or complemented these previous forms of intervention? If complemented, in what way? If replaced, what do you personally see as advantages and disadvantages of the PES as compared to the previous?

- Is the PES scheme included in any government documents? If yes, how?

4. Obtaining an updated overview of the institutional arrangements of PES (complementing literature based knowledge)

How many hectares does the PES currently cover (did it cover at maximum) and how many people/farmers are (were) involved?

As far as you know, how does the PES scheme function?

- Who are the key players in the scheme (*buyers, sellers, intermediaries, government, NGOs, donors, other*)?
- What are the roles of each of the players?
- How does the contractual relationship work, what are the rights and obligations of the different parties? Would it be possible to obtain a copy of the contrac(s)?
- Who defined and drafted the terms and conditions of the contracts?
- Have there been cases where contracts have been discontinued or payments reduced because of non-compliance?
- Who made the decisions about non-compliance?
- What kinds of discussions were there leading up to the decision on non-compliance?
- *For the organisations:* I can imagine that during the planning and implementation phase the different interests of the different parties collided with each other. Who tried to push which ideas, and how far could the different interests be balanced/accommodated?
- *For farmers and/or other respondents who might have less of an overview of the entire process (i.e. if they cannot reply to question above):* To what extent do you find your/farmers' etc. interests accommodated in the design of the PES?

5. Obtaining respondents' views about the direct and indirect effects, achievements, problems, and future relevance of the PES

Could you explain to me what you see as the benefits and problems of the PES scheme?

- What direct and indirect benefits do you see with the PES scheme (*natural resources, livelihoods, women and men, vulnerable groups, relationships between involved actors*)?

- What direct and indirect problems do you see with the PES scheme (*natural resources, livelihoods, women and men, vulnerable groups, relationships between involved actors*)?
- How are you personally/How is your organisation affected by the PES?
- Do you think it would be beneficial and realistic to expand PES in your area – if yes, why; if no, why?

Declaration in accordance with Article 6 of Doctoral Degree Regulations

Hereby, I declare that:

1. This doctoral dissertation is my own work. It was conducted without unauthorized assistance.
2. Only the referenced sources and aids were used.
3. Due reference has been made to all works either quoted or used as the basis for ideas. Direct quotations from published or unpublished work of another are clearly identified as such.
4. A software-based plagiarism assessment is permitted.

Bremen, 27.05.2016

(Jill Heyde)