Landscape transformation in Jambi province, Sumatra

An analysis of land tenure regulations under translational dynamics

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Hukum tegak pada yang benar,

undang tegak pada yang lurus.

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Abbreviations and Glossary

Adat	Generic term for ethnic institutions
AMAN	Aliansi Masyarakat Adat Nusantara/ Indigenous People Alliance of The Archipelago
BAL	Basic Agrarian Law
Bangsa	Ethnic or cultural group
BAPPEDA	Badan Perencana Pembangunan Daerah/ Regional body for planning and development
BFA	Basic Forestry Act
BPN	Badan Pertanahan Nasional/ National Land Agency
BPS	Badan Pusat Statistik/ National Statistic Office
BRIMOB	Mobile police brigade
CIFOR	Centre for International Forestry Research
CPO	Crude Palm Oil
CRC	Collaborative Research Centre
Desa	Village
Dinas Kehutanan	District Forestry Office
Domein Verklaring	State land under the Dutch
DTE	Down to Earth
Dusun	Village
FAO	Food and Agriculture Organization
FAOSTAT	Statistic Division of FAO
FNR	Fachagentur Nachwachsende Rohstoff e.V
FOE	Friends of the Earth
Hak Menguasai dari Negara	State's rights to control
Hak milik	Right to own
HuMa	Perkumpulan untuk Pembaharuan Hukum Berbasis Masyarakat dan Ekologis
IDR	Indonesian Rupiah
IISD	International Institute for Sustainable Development
ILO	International Labor Organization
Impress Desa Tertingal	"Underdeveloped villages"
IPCC	International Panel on Climate Change
Kabupaten	District
Kampung	Village
KAT	Komunitas Adat Terpencil / Traditional remote communities
Kawasan hutan	State forest land
Kepala Desa	Village head

KKPA	Koperasi Kredit Primer untuk Anggota/ Primary Cooperative Credit for Members
Kubu	Collective name for non-Muslim hunter-gatherer
Marga	Village under the Dutch
Masyarakat hukum adat	Customary communities
MK35	Mahkamah Konstitutsi Nomor 35/PUU-X/2012/ Constitutional Court Decision on Indigeous land rights
MoF	Ministry of Forestry
NES	Nucleus-estate-smallholder
NGO	Non-governmental organization
NLA	National Land Agency/ Badan Pertanahan Nasional
OECD	Organization for Economic Co-operation and Development
Pasirah	Public authority responsible for land under the Dutch
Perda	Regional Regulation
PTPN 6	Perseroan Terbatas Perkebunan Nusantara
REDD+	Reducing Emissions from Deforestation and forest Degradation
RT	Rukun Tetangga/ hamlet
Sekretaris Desa	Village secreatry
SKTT	Surat Keterangan Tanam Tumbuh/ Type of land title
Sporadik	Type of land title or process to obtain a land title
Suku	Ethnic or cultural group
Surat Edaran	Governmental curricular
Surat hak milik	Type of land title
Tahura	Taman Hutan Raya / Grand forest park
Tanah adat	Customary land
Tanah ulayat	Communal land
TNBD	Taman Nasional Bukit Duabelas/ National Park Bukit Duabelas
TSM	Transwakarsa Mandiri
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environemtn Programme
USDA	United States Department of Agriculture
WRM	World Rainforest Movement

1 Introduction: Transforming ecological landscapes; transforming social landscapes

The world is changing. “The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased” (IPCC 2013: 4). The world has always been changing though. But, an increase in pace (acceleration) as well as an expansion in space (globalization) in the name of economic growth is currently steering towards peak limits of biophysical resources. An increasing world population with an ever increasing demand for food supply, clothes, mobility, communication, luxurious goods and unchecked consumption has developed sophisticated methods to exploit nature to satisfy demands (LeMonde diplomatique 2015: 62). In this context terms like environmental pollution, global warming, and mass deforestation are pronounced with dire consequences of species extinction as well as ecosystems degradation (Castree 2001: 1). With dynamic changes in human population and capitalistic modes of production causing an increased demand for natural resources, ecological landscapes have been changed over time. These changes in the ecological landscapes foster changes in the social landscapes.

In many tropical areas, rainforests are cleared in order to exploit timber and other forest products and plant crops for food, feed and fuel use (FAO 2012: 9). Commonly it is assumed that, when natural forests are cleared, all forest functions and services are lost. However, complete conservation is not realistic in many settings and might also not be required from an ecological perspective. Surprisingly, the determinants of different patterns of deforestation and the roles of resulting transformation systems of tropical rainforests for conserving biodiversity as well as ecological and socioeconomic functions have so far received little attention in scientific research (Collaborative Research Centre 990: 2012).

One crop that became popular with an increasing world population in combination with capitalistic consumption patterns and changing food habits is palm oil (UNEP 2011: 1). Oil palm is also frequently mentioned in the context of deforestation of tropical rainforests and the ecological and socioeconomic functions of these tropical rainforests (Rhein 2014; Brandi et al. 2013; IISD 2013; Sheil et al. 2009) Palm oil is today the worlds most produced and consumed vegetable oil (FAOSTAT 2014). It is cultivated in large monoculture plantations hence rapidly transforming the landscape. The oil palms take up space at the expense of forests and other crops (Euler 2015: 2). The area under oil palm cultivation worldwide has

almost tripled between 1990 and 2014 (from 6 million to almost 18 million hectares), while the production of Crude Palm Oil (CPO) has more than quadrupled (from 13 million to almost 54 million tons) (FAOSTAT 2014). While the entire population in a cultivation area is impacted by the changes in the environmental landscape and its potential ecological consequences, it might also only be possible for parts of the population to benefit from this rapid transformation. Certain groups or individuals might lack access to land, to seed capital, to knowledge or might face other constraints, restrictions or retentions. It might only be parts of the population in an area interested in supporting this transformation or being able to be part of this transformation. Consequently, these monoculture plantations are transforming the social landscape, producing winners and losers (Sheil et al. 2009).

The boom crop oil palm is receiving growing global attention. Many studies haves focused their research activities on boom crops in general and on the boom crop oil palm in particular (de Konick, Bernard & Bissonnette 2011; Hall 2011; Vermeulen & Lorenzo 2010), not only in an environmental but also in a socio-economic context. In some narratives oil palm is portrayed as having the potential to erase poverty by offering economic wealth and rural development opportunities (Gilbert 2012; Sheil et al. 2009). Other narratives talk of evictions of local communities, human right abuses, conflicts, and of unequal access to benefits (Colchester 2011; McCarthy 2009; Knoke & Inkermann 2015; Sheil et al. 2009; Komarudin et al. 2008).

Oil palms are rapidly transforming landscapes and its ecological and social consequences have awakened an interest for the rural areas of tropical countries. Research on the topic also involve political framings as predetermining factors for transformation but too often assumes an economic advantage for local land users to be among the main driving forces (Lambin et al. 2001; Feintrenie et al. 2010; Euler 2015; Gatto 2015). Many of these narratives however, seem to be superficial in their explanations, missing out the complexity of motivations, constrains and retentions in the system of drivers of land use change. It is in this context, striving to understand this complexity beyond economic reasons as driving force, in which the research at hand has been carried out. In an interdisciplinary research project on “Ecological and socio-economic functions of tropical lowland rainforest transformation systems” funded by German Research Foundation it was made possible to shed light on drivers as well as on consequences of changes in the ecological as well as in the

social landscape of transforming human-environment relations. With an interest on the complexity of drivers of land use change "case studies providing the spatial and temporal resolution necessary to identify and account for major variations […]" (Nüsser 2001: 242) are the core of investigation. Hence understanding current changes, it is indispensable to look into the history of land use change and landscape transformation in the research area and not only start the investigation on a recent temporal scale with the appearance of boom crops.

1.1 Transformation of lowland rainforests in Sumatra, Indonesia

The research is implemented in one of the largest regions of tropical lowland rainforest in Southeast Asia, namely Jambi Province in Sumatra, Indonesia. The two dominant cultivation systems in Jambi are rubber and oil palm monoculture plantations. These two crops are referred to as major transformation systems (in the research design of the CRC 990 as well as in the following script) as vast areas of forests have been transformed by the establishment of rubber and oil palm plots as well as plantations.

The overarching questions of the human dimensions team of the project, in which the research at hand was carried out, focuses on drivers and impacts of land use change and tradeoffs of transformation processes. With answers to these questions it is hoped to enhance more sustainable policy formulation. It is in this context that the work at hand argues for seeing the drivers of land use change not only in economic reasons (as assumed in many narratives) but in a broader political and institutional setting which needs to be seen in its historic emergence. When trying to understand the current situation, with its winners and losers and the crops that are cultivated, research must include historic dimensions. The starting point here shall be the colonial time in which first major changes in management systems as well as land tenure occurred. Before 1906, when the Dutch colonial administrative came to power in the area, shifting cultivation was the predominant cultivation practice (Colchester 2011: 11). Especially cassava and sweet potatoes as well as fruit trees were cultivated for subsistence. It is also around this time that rubber was introduced to the research area Jambi province by the Dutch (Locher-Scholten 2004: 276). Until today it remains the dominant crop even though the expansion of oil palm has been massive and rapid. In 2010, more than 1.2 million hectares of Jambi province were under

rubber cultivation while approximately 900.00 hectares are under oil palm cultivation (Kantor Pengolahan Data Elektronik Prov. Jambi 2014). Rubber also remains the crop that is regarded by the local population of today as traditional, even though imposed onto the area by the Dutch. The Dutch also initiated a shift in tenure perception: land was seen as a commodity, opening resource exploitation to foreign investors. Prior to Dutch colonialism land was not privately owned, it was under communal management (van Dongen 1910: 10). This approach of land commodification was taken up by ensuing Indonesian leaders ruling the country after independence, especially by the second president Suharto. Laws have been initiated by rulers producing laws and a setting allowing for large scale monocultures, foreign as well as national investments in resource exploitation and hence for landscape transformation (Colchester 2011: 9, McCarthy 2000: 92, Steinebach 2013: 68).

Political and institutional regulations play a crucial role in landscape transformation. The regulations set the scene for access to resources, especially land. In this line it is argued that boom crops, in our context oil palm, increase the pressure on land. But the boom crop as well has to be seen with its track it came along when transforming the landscape. When trying to understand human-environment relations in general and when trying to understand transforming landscapes, it is indispensable to illuminate on the history of the region (Roca & Agnew 2011: 1). Even though oil palm is often regarded as the crop having brought massive change to the research area, changes in the landscape are rooted in way earlier times. It is the regulations in land tenure paving the way for changes in the landscape as they are found today or, as Lund (2013: 14) puts it: “The presence of the past in the present is notable”. The first changes in the social scene in regard to access to land started with the land tenure regulations introduced by the Dutch colonialization. The independence period and the time of political decentralization have been determined as further landmarks in the history of transforming access to land.

Against this background the work at hand raises a number of research questions based on the initial working hypotheses: The degree of regional landscape transformation in terms of fragmentation and degradation is stronger depending on sociocultural factors (i.e. share of migrants) and political power structures (pluralism of law, i.e. traditional, state) than on pure economic and physical advantages. These sociocultural and political factors derive from historical processes concerning population and settlement development, like for example

spontaneous migration and the establishment of transmigration villages. In order to discuss this hypothesis the following questions are examined:

- What are the main drivers of land use change?
- How did the political approaches to land tenure change in Indonesia since pre-colonial times?
- How have policy narratives accompanying different political periods shaped the social and environmental landscape in Jambi province?
- How are different sets of rules negotiated and enforced amongst different actor groups at different periods of time?
- How did these changes in the political arena in regard to land tenure regulation impact land use change and the agency in land use decisions of local actors?
- How are political and institutional framings translated on the local level?

1.2 Structure of the dissertation

The chapters presented in this dissertation build on one another and constitute one another. The theoretical approaches, methods used and empirical results (presented in journal articles) are organized in main chapters. At the same time the topics intertwine. Despite the fact that thematic areas are organized in chapters, a clear cut separation of the topics was not realistic hence not desirable. This means that empirical data can for example be also found in the theoretical chapter, when there was need to explain a theoretical approach along an e example from the case studies.

The first chapter being the introduction, chapter tow provides an entry point to the field of human-environment relations. As a human geographer conducting qualitative research on human-environment relations, the information gathered often appeared complex and ambiguous. Selected theoretical approaches proofed highly relevant in supporting data analysis as well as data organization. These selected approaches that assisted in making sense and use of data are presented in chapter two.

The methodological approach is explained in chapter three, providing an overview on how data has been gathered during a total time period of eleven month spent in Indonesia.

Important here is the inductive and participatory approach, allowing to understand the drivers fostering transformation from the perspective of the local population.

The thesis is further structured along four publications[1] (chapter four till eight) of which the author of this thesis was either the lead author or has contributed a significant part to the content[2]. To ensure comprehension of local perspectives, all publications were written in collaboration with Indonesian researchers. Since the CRC 990 is an interdisciplinary research project it was desirable to illuminate on certain aspects from the perspective of different disciplines. Chapter four, as the first chapter constituting a publication, sheds light on changes in land tenure regulations over time. It is argued that in order to understand the cultural landscape transformation, it needs to be seen in its historical context. In order to do so, chapter four analyses the history of land tenure regulations from first changes in land tenure changes as introduced by the Dutch until the present looking at impacts on land use decisions.

While chapter four provides a broad overview of changing land tenure regulations over time, chapter five zooms into one particular aspect of land tenure regulations, namely land formalization through land titling. The chapter focuses on the history of land titling in the research area and explains de facto impacts on land use actors through these titling processes. These processes again have an impact on land use decisions hence on landscape transformation. Strategies of local land use actors to access land against the background of various regulatory processes are presented in this chapter.

Having read chapter four and five, it becomes apparent that changing regulations and the introduction of boom crops creates winners and losers. It is also brought to the surface that it is often the indigenous population in the area struggling to cope with new actor groups and an ever increasing complexity of land tenure regulations. Consequently, chapter six looks at a particular case within the frame of land tenure formalization: indigenous land titling. The chapter uncovers how a process intended to bring forward a more just way of land titling might not lead to the intended outcome.

[1] One accepted, one in revision, one published as discussion paper and one in preparation
[2] Details on the authors' contribution to the particular publications are provided in a footnote at the beginning of the respective chapters.

Chapter seven shows how the regulative framework is one central aspect determining land use change and cultural landscape transformation. It further shows how the regulatory framework is the predetermining element and how other drivers consecutively impact land use decision and cultural landscape transformation.

Having gained a thorough understanding of land tenure regulations as one main driving force besides others, chapter eight discusses the political and institutional impacts on landscape transformation in the research area and shows the relevance of the research since the outcomes can be transferred to other areas under transformation where similar processes are observed.

The concluding chapter wraps up the discussions, points to additional research that would enrich knowledge on the processes mentioned here and gives hints on more sustainable policy formulation.

2 Theoretical conception

A research endeavor within the field of human geography dealing with processes and problems centering on change, transformation and development, which is led by theory, problem-oriented as well as relating to the actor is consequently settled within the realm of development geography (Müller-Mahn & Verne 2010:4).It is hence not surprising that the work at hand mirrors many of the dimensions inherent to development geography. As already outlined it is not assumed that it is merely economic factors driving the decisions of land users. Development geography rather looks at the wider role of institutions within the economic development process. The social dimension within the field of development geography takes actor-oriented and agency-based approaches into consideration. Especially the agency of actors exposed to unequal power relations are of interest. Following Ribot and Peluso (2003: 155f) power is defined in two ways. The first way is to see power as the "[…] capacity of some actors to affect practices and ideas of others". The second way in which power is seen is that it is "[…] emergent from, though not always attached to, people. Power is inherent in certain kinds of relationships and can emerge from or flow through the intended and unintended consequences or effects of social relationship" (ibid: 156). From a political point of view, actors impacted by power asymmetries, political interest and space components deserve particular attention. Culture is considered as further determining factor, an engine, for social and political differentiation, also in human-environment relations (Bohle 2011: 748f). The theoretic approaches applied when working on these dimension of development geography are outlined in the following sections.

2.1 Human-environment relations and social nature

Looking at human-environment relation, as done in this work, is a classic field for human geographers. For over a century geographers have sought to describe and explain the society-nature interface. There are many ways of how geographers can look at and analyze this interface. The conventional way is to investigate this relation in regard to what humans do to nature, how they transform nature (Castree 2001: 1).

A more recent and critical approach in analyzing the human-environment interface is to investigate "who constructs what kinds of nature(s) to what ends and with what social and ecological effects" (Braun & Castree 2001: xi). Geography remains one of the few subjects

dedicated to exploring the relations between humanity and nature. “Nature is defined, delimited, and even physically reconstituted by different societies, often in order to serve specific, and usually dominant, social interests. In other words, the social and the natural are seen to intertwine in ways that make their separation - in either thought or practice - impossible” (Castree 2001: 1). Nature or the environment or the natural landscapes become a social nature which is meant to describe “the geographical and historical dialectic between societies and their material environments” (Fitzsimmons 1989: 106). While the material environment is in the following referred to as environmental landscapes in which ecological consequences can be described, the social nature, in the following often referred to as cultural landscapes, remain at the center of attention.

In this context of analyzing human-environment relations and perceiving nature as a social nature, the starting point of this research project is Political Ecology. Broad in its scope, the analysis of environmental change takes political, economic, and cultural powers (Bryant 2001: 167) into consideration, while recognizing variables acting at multiple scales (Robbins 2004: 11). One of the goals of Political Ecology is to explain “[…]environmental change in terms of constrained local and regional production choices within global political economic forces [….]” (Blaikie & Brookfield 1987: 17). These constrained choices and the factors constraining the choices are at the heart of the actor-oriented research undertaking at hand. Doolittle (2010: 69) points out that the multiscalar approach in the context of Political Ecology offers the advantage of stretching over spatial, temporal and organizational dimensions. More precisely Political Ecology can be seen as the “interaction between a changing environment and the socio-economy; in which landscapes and the physiographic processes acting upon them are seen to have dialectical, historically derived and iterative relations, with resources and political sets of relations which shape them” (Blaikie 1999: 132). Historical aspects will be the focus of the following chapters while frameworks established by politics and institutions as drivers of environmental change and social transformation are illuminated.

Another interest of Political Ecology research is the construction of the environment. This means to examine how powerful bodies (e.g. governmental organizations) create or construct, amongst others, scientific explanations in order to control landscapes and human activities (Forsyth 2011: 37). In this context the starting point for field work was what

environment and what forest as a characteristic feature is and means to the people inhabiting the area. Despite the fact, that not until long ago, most probably until the 80s, shifting cultivation was common in the research area, people perceive this kind of cultivation as completely obsolete. Statements by interview partners like “Why should we have a sleeping forest?” indicate that something in the perception of the local actors must have changed within the period of time under investigation (1900-1999 = before colonialization until decentralization). “Attention needs to be paid to ways knowledge comes to be made in different places and how different kinds of knowledge gain hold in people’s minds” (Hulme 2010: 563). This knowledge is always embedded in a social and institutional context (Sarewitz 2010:29). Since knowledge informs policy narratives, they in turn have an impact on structuration, the mediation between structure and agency (see Giddens 1986). This knowledge and the policy narratives as well as the structuration they shape need to be seen in their path dependent and contextual setting. “Narratives here are ‘stories’ about the world which frame problems in particular ways and in turn suggest particular solutions” (Leach et al. 1999: 229). This is for example the case in regard to shifting cultivation and the policy narratives during the Suharto period, the second president of Indonesia. Shifting cultivation was made to be looked at as something backward, a waste of land that could instead be exploited to eradicate poverty through monoculture plantations (Steinebach 2013: 65). These policy narratives and the resulting structuration are to a certain extend shaped by national law.

2.2 Policy narratives and land tenure regulation

Laws, regulations, politics and institutions are presented to have a crucial stake in setting the scene (Tröger 2004: 24). But a thorough analysis on what role they play can only be carried out if clarity persists on what these notions actually mean. When trying to understand changing landscapes in Indonesia, from a Political Ecology perspective, it is needful to understand the rules regulating access to land and natural resource management. The picture to be found when studying laws is ambiguous.

2.2.1 Law as process and institutional pluralism

“Law is the highest level of social control, and legal punishments usually are reserved for the most serious breaches of norms“ (Peoples and Bailey 2011: 191). The conventional category

law understands law as rules enforceable by the government of a certain country (Moore 1978: 17). Laws are further widely perceived as conscious and rational attempt to direct society. The self-image of law is that law constitutes the intentionally constructed framework of social order. It is also seen as a conscious attempt by society to be rational and fair, orderly and just. This logic puts legal aspects and the state at the core. The here drawn picture, however, seems to be a category of our own culture. The legal rule-systems include general principles of application and interpretation which can themselves be interpreted in various ways (ibid: 2). Law has two inherent characteristics which prevent the full rationalization of any legal system. Laws are always a piecemeal historical process by which legal systems are constructed. They bring along a not fully aggregate effect of the multiplicity of regulatory sources and arenas of action. The rules are mere elements of a cultural part-order (ibid: 3). Rules and laws are not something that is fixed. The continuous making and reiterating of social and symbolic order is seen as an active process, not as something which, once achieved, remains (ibid: 6). For every occasion a person says that something cannot be done because it is against the rules there is clearly an occasion where the same person would say that this is a special case where an exception should be made. In many circumstances the people involved exploit the rules and indeterminacies as it suits their immediate purpose, sometimes using one resource, sometimes the other within a single situation (ibid: 39). In short, laws are not static; they underlie a constant change depending on the setting and the actors.

Beside the fact that rules can be interpreted, the expression ‘different resources’ indicate that there is more than just one set of rules actors can choose from. Especially in post-colonized countries, where external law systems have been imposed on the regulatory processes of a country by the colonizers, actors are exposed to several set of rules to choose from. Franz von Benda-Beckmann and Keebet von Benda-Beckmann (2011: 171) speak of ‘legal pluralism’ in situations “[…] where co-existing interdependent legal orders that have different legitimations and are based on different organizational structures are prevalent”. Often, when trying to categorize the co-existing legal orders, they are subdivided into formal laws, being the laws as predetermined by the state and informal or customary laws.

Changes in resource use patterns are not only shaped by constructed knowledge or the law and the structuration they are embedded to. Their impacts trigger down to an institutional

level mediating resource use and access to resources on the local level. Institutions are more than the rules created by the state; they at least encompass de jure and the facto rules. In order to understand land tenure regulations in Indonesia analyzing institutions seems to be adequate for the time being, as land tenure and resource use regulations extend beyond the jurisdiction of the state. The notion institutions in the context of regulatory processes gained momentum in the rise of the New Institutions Economics. Here, according to North' (1990: 3) definition, institutions are "the rules of a game in a society or, more formally, are the human devised constraints that shape interaction". These rules or institutions are connected to the past as it is the past influencing current and future decisions. North further distinguishes between formal and informal institutions. Formal institutions here are rules that human beings devise, such as a constitution, law, regulation, etc. while informal institutions are norms, conventions, values and patterns of behavior (ibid: 4). This dichotomy of formal versus informal, granting the state a central role in rule-making and enforcement is rejected here. For the context of Indonesian land tenure regulation this approach might serve as a first approximation, but seems not sufficient as perspectives on (in)formal regulations differ amongst actors. Etzold et. al. (2009: 9) point towards the fact that a judgment on (in)formality is a construct as "the question what is formal and what is informal [….] can only be answered in perspective of the actors involved". There is "no clear demarcation line between the formal and the informal" (ibid: 9) as different actors refer to different sets of rules to justify their behavior. Behavior thus can be informal and formal at the same time depending on the institutions referred to. This might help to get closer to the complexity and controversies of Indonesian land tenure regulations and the controversies met during field work. Since the dichotomy between formal and informal is here rejected, the informality notion is used in a different connotation that will be explained later on. This connation is outside the realm of institution but deals with informality as strategy mainly, but not exclusively applied by the state.

When trying to grasp the dynamic of rules and laws that frame access to land, resource exploitation and transformation of the landscape it became apparent that categories like formal versus informal or legal versus illegal are too short of what the data revealed. One reason for this is, as will be shown in ensuing chapters, that formal from a European perspective has the connotation as the good side, the one accepted by the state and the one that should be desirable for members of society (Coy 2001: 30). At the same time, the

informal is associated with non-written categories, are connoted to be less stable and to be less congruent with what the state foresees (Coy 2001: 31). The categories legal and illegal are closely related to the labels of formal and informal. It is though always from the perspective of the state as the sole determinant actor identifying what is right and what is wrong. The data to be presented later however reveals that reality is messier (Benjaminsen & Lund 2003: 4); reality is more complex than what two confronting categories could grasp.

Rejecting the dichotomy of formal versus informal and legal versus illegal implies accepting that "rules enshrined in formal law provide only part of the picture" (Lund 2008: 134). Regulatory processes, including rules, exist to organize and stabilize intermediacies. At the same time, processes of situational adjustment redefine rules or relationships. Although social reality is partly congruent with national laws, it is also impacted by the socio-cultural context of the local actors making the law applicable to their local setting. In the ensuing chapters, laws are analyzed as processes, as existing orders that are "endlessly vulnerable to being unmade and reproducing themselves. Even staying as they are should be seen as a process" (Moore 1978: 6). "The social reality is a peculiar mix of action congruent with rules (and there may be numerous conflicting or competing rule-orders) and other action that is choice-making, discretionary, manipulative" (ibid: 3).

One the one hand this shows that laws and rules are dynamic in itself and that they are object of constant remaking. At the same time, there is a pool of rules to choose form. The rules to choose from is more than what the national legislative provides. The whole pool of rules available is often referred to under the term institutions.

2.2.2 Institutional briocolage

Institutions in regard to land tenure regulations reveal a complexity of different sets of regulations to be taken into consideration when assessing rules governing resource use. In situations that have multiple sets of resource regulations in "[…] place, actors get into conflict with either the one or the other set of institutions as they cannot align their actions in concordance with both. The matrix of institutions in effect in such a situation is proposed to be called modes of regulation" (Etzold et. al. 2009: 7). Over time, different political settings brought different sets of rules governing resource use. For the case of Indonesia this was the Dutch Forestry Law in 1865, the Dutch Agrarian Law in 1870, the Basic Agrarian Law (BAL) under the first president in 1960 and the Forestry Law in 1967 under the second

president, just to name a few (see also figure 1). Since these sets of rules were added layer for layer rather than being reconciled, the research project refers to trajectory political layers. Drumbl (2007: 126), even though in a different context, but still matching the context of frameworks for accessing land, speaks of the multilayered regulatory sediment, a thick legal geology.

Of special interest here is the question how actors identify institutions to adhere to and which institutional settings they might wish to alter. Furthermore, it is of importance to understand why some institutions are more assertive than others. It was assumed for long that a differentiation into weak and strong or formal and informal institutions can answer this question. The research at hand, however, reveals that it is more complex than this and that a dichotomy to divide institutions is not be sufficient in order to understand dynamic regulations and changing landscapes.

Institutions are seen here as all regulatory processes determining access to land. There is no judgment on legitimation involved here when using the term institutions. In a discussion with Christian Lund (personal communication August 2014) he put it very simple: "Rules are rules". Accepting this statement means understanding that it is not important for the outcome which sources the rules comes from and whether they are called formal or informal. The importance is what impacts they have hence how and by who rules are legitimized. The message of this statement is also that a focus on what is formal institution and what is an informal institution is not beneficial when trying to understand transforming landscape. It is illuminating though to investigate on formalization or legitimization processes when trying to understand de facto impacts of land tenure regulations. The decision to still work with the term institution was Frances Cleaver's concept of institutional bricolage which[3]. Cleaver (2001: 26) talks about institutional bricolage when talking about the process in which social actors consciously as well as unconsciously "draw on existing social and cultural arrangements to shape institutions in response to changing situations". To negotiate the confusing and conflicting regulations, local actors consciously as well as unconsciously, through daily interactions and the constant use of resources, craft regulations. This results in "a rich diversity of pliable institutional arrangements" (ibid: 29). The actual local resource use and management arrangements are likely to be a complex blend of, customary and state

[3] Especially in an early stage of data analysis had an impact on the work when trying to organize a first set of data gathered in the field

laws (ibid: 29).By adding political layers on land use regulations, social actors in response altered the institutional matrix they referred to. This makes it necessary to not only speak of trajectory political layers but also about trajectory modes of regulations. It is the past regulations and experiences shaping today's institutional matrix.

2.2.3 Rural informality

In the process of further analyzing the data, controversies were met that were not explainable by seeing that different actors refer to various sets of regulations at different point in times. Actors were following a pattern which did not seem to be congruent with customary law, nor with de jure laws neither with a mix of these regulatory frameworks. In particular, these controversies refer to situations in which state actors as well as local land use actors have agreed to use areas which are not assigned for cultivation. It turned out that ambiguous concepts of land use were fostered by multiple maps assigning boarders to certain areas under a particular land status or by a frequent change in land status, for example protection forest or cultivation area.

According to Roy (2009: 826) informality is a concept used to create a flexibility that could not be available when sticking to what de jure or de facto rules encompass. The state plays a crucial role within the (in)formality discourse and needs to be put into focus. Informality is understood as a strategy, used by the state but also by other actors, to create leeway for certain actions. We speak of state informality when state authorities consciously establish regulations and frameworks that are blurry enough to leave them with the opportunity to benefit. Roy exemplifies the concept of informality with the phenomena of 'unmapping' as an instrument in Indian city planning. She argues that through consciously not mapping parts of the city the state itself can alter land use and acquire land in violation of its own ban on such alterations (Roy 2009: 81). Roy (2009: 826) declares that "informality lies within the scope of the state rather than outside it. In many instances the state itself operates in informalized ways, thereby gaining a territorialized flexibility that it does not fully have with merely formal mechanisms of accumulation and legitimation". It is this understanding of informality applied to this research project.

State informality adds to the frame created by legal pluralism with its various interpretations opportunities. In the Indonesian context state actors seem to use a similar concept, which the author refers to as over-mapping. The historical background presented in chapter four illuminates on this strategy and exemplifies how this phenomenon adds to the set of

regulations governing resource-use, local actors are impacted by in the context of institutional bricolage.

2.2.4 Mimicry of the legal

At this point it is worth summarizing the concepts introduced so far which help to understand and interpret the data to be presented in ensuing chapters. The research field and the regulations organizing access to land are often ambivalent. Laws are seen as a dynamic process (Moore 1978). Actors in their historic and social context consciously as well as unconsciously choose from different set of regulations or institutions in order to legitimize a decision (Cleaver 2001) in the case of this research most probably a land use decision. Informality as a concept, mostly used by the state, understood as not mapping certain areas in order to retain territorial flexibility, add to the complexity (Roy 2009). When analyzing the data however, one phenomenon stood out that could not be explained by the analytical concepts discussed so far.

The data revealed regulations in use to access land that are neither explainable by understanding law as dynamic law nor are they state informality or institutional bricolage. Especially in the context of land titling, local actors - these are the local representatives of government institutions as well as land users - have created a land title that is almost the same as national law but not quite exactly what the national law foresees: When trying to structure this phenomena the term *mimicry* seemed to be feasible for what had been observed.

Initially the term mimicry is used in biology to describe a “phenomenon characterized by the superficial resemblance of two or more organisms that are not closely related taxonomically. This resemblance confers an advantage—such as protection from predation—upon one or both organisms through some form of “information flow” that passes between the organisms and the animate agent of selection” (Encyclopædia Britannica 2014). The imitation of certain animals for example cozens the enemy and makes the prey look more dangerous than it actually is.

The term mimicry has been transferred to the social sciences. The most known case of the notion mimicry in social sciences is to be found in post-colonial studies and here in particular under its famous thinker Homi K. Bhabha. Bhabha, a post-structuralist and post-colonialist, uses the term in the context of discourse analysis and the location of culture (Bhabha 1994).

In his book the "Location of culture", Bhabha (1994: 126) defines mimicry as "neither the one nor the other, […] half obedient, half unruly". He here refers to the colonial discourse, trying to point out that it is not as stable as it is seems to be. Bhabha does not see the colonized people as passive victim who can in the best case scenario assimilate to the power discourse. He rather sees a subversion and power potential in the mimicry strategy. Through mimicry, it only seems like the colonized are adhering to the colonial discourse. In the end however, they are characterized by cultural differences using this power discourse to take up an antagonistic or agonistic position within the power discourse (Struve 2013: 141). On the discourse level, mimicry works in a double way. One the one hand, specific aspects used by the colonizers are turned into own, local aspects in a way that makes them look deceptively genuine. At the same time there is always something remaining that cannot be read in the "still not exact" or the "almost the same" (Struve 2013: 144). The context in which Bhabha explains the mimicry is cultural assimilation in colonized and post-colonized settings. Hence, he refers to the strategy as cultural mimicry.

The term mimicry is also known in the context of global health law. Less intensively elaborated than in Bhabha's texts on the "Location of culture", Michael Bélanger (2011: 29) briefly mentions the term mimicry. He refers to the term legal mimicry when talking about a "discrepancy between the formulation of national legal texts and local reality (administrative, political, economic, social, cultural)" (Bélanger 2011: 29).

Another context in which the term legal mimicry can be found is International Law and here in the Mark A. Drumbl's work on international law and international criminals. He uses the term to explain how national actors mimic international law which might lead to an externalization of justice (Drumbl 2007: 124).

For the context of this work, a combination of the ways the term mimicry has been used so far and a development of these concepts proofed fruitful. The phenomena, in which national regulations are imitated but are still not the same than what the national legislation foresees, matches what Bhabha describes as "almost the same but not quite [….] almost the same but not white" (Bhabha 1994: 132). Land tenure regulations are translated to better match the local or personal reality. According to Chambers (1997: 56f) the personal reality is "[…] what we construct for ourselves – what we perceive, know and believe". This is opposed to the physical reality that exists outside us, consisting of physical things.

Translation here refers to more than the conventional understanding of changing a word form one language into a different language. The meaning of translation extends to a context of de- and re-construction, an adjustment of meaning. While making use of language and procedures used in the rules as put in writing by the national government, meaning, procedures and application shift in the translation (Struve, 2013, p. 131). This translation is linked to, but is not congruent with, the broad sweep of national legislation. It is also thinkable that local actors use mimicry as a strategy of subversion as Bhabha further describes. However, he talks of cultural mimicry which can encompass the legal aspect but does not necessarily point to regulatory frameworks. Since the law aspect is however central to the empirical data presented here, the term has been extended to “mimicry of the legal”. Different from Bélangers and Drumbls notion “legal mimicry” it seems more adequate to turn the words around the result being the term “mimicry of the legal”. The words are swapped as legal mimicry transports the idea that the mimicry itself is legitimized, hence legal. The cases presented later on however present an imitation of the national law which is legitimized by local actors but not by the judicative institutions of the state. This should not entail an assessment in the sense that one of these is better or worse. It only seems to be a term with more accuracy in reliance to what is presented later on.

In the context of cultural landscape transformation and the case studies presented later it is argued that actors translate fragments of national land formalization programs and regulations into local actions. Here, mimicry refers to the imitation of national law, a modified translation of local land-tenure regulations embedded in power asymmetries.

2.3 Legal rules, social behavior and the landscape

All concepts presented so far served as tools to in depth analyze the relationship between rules and social behavior and their impacts on landscape transformation. As explained in the action-theory oriented approaches of political ecology, this approaches supports explanations on environmental degradation in the context of marginalization on the one side and of powerful global economic assertiveness on the other side. The legal rules are dynamic; law is seen as a process. Local actors choose from various pools of dynamic rules, they consciously as well as unconsciously draw from different sets of regulations, a process referred to as institutional bricolage. The government representatives have the power to create leeway for certain actions by not clearly defining certain normative areas. They retain

territorial flexibility by applying the concept of rural informality. Confronted with this complexity and dynamic processes of legitimization, local actors imitate certain rules, also as subversive strategy when rules do not seem to match the context or are merely unachievable.

The regulatory processes provide the frame for actions in the landscape, they provide information on how, where and when the landscape can be transformed. The relationship that local actors have towards these regulatory processes in the end is what de facto determines the changes in the landscape, in the environmental as well as in the social landscape. This relationship between legal rules, the social behavior and the landscape became the focus of this study. It became apparent that local actors often do not adhere to the rules provided by the national government. Government representatives as well seem to find strategies to bend these rules. The relationship between legal rules and social behavior is a story on how dynamic rules are and how rules are legitimized (or not) through social behavior. How this relationship has been investigated on, is presented in the ensuing chapter.

3 Methodology and research area

The research focus on actors' land use options within changing and sometimes overlapping regulatory frameworks called for a qualitative research approach. Methods within the field of social sciences are usually differentiated into quantitative and qualitative methods. While quantitative methods seek to verify or falsify certain circumstances or hypotheses, qualitative methods rather aim at exploratory undertakings. Qualitative research seeks to explore and understand (Meier-Kruker & Rauh 2005: 4). In order to understand the changing landscape in the research area by exploring underlying causes and drivers, an actor-oriented approach was applied. Actor-oriented approaches analyze transformations by exploring the behavior of decisions-makers and actors (Schwanitz 1997: 18). This is line with the main interests of human-environment interactions and with the context of striving to understand how local actors perceive and change their landscapes. As already outlined in the theoretical chapter, the approach was to not enter the field with too many prefabricated assumptions. At the same time, it is impossible not to have any presumption on a certain topic. As Gary Fine (2004: 11) puts it: "As 'natural' persons we are continually learning from our situational exposure and from what we have been assured by others. We are inductive theorists. But we then use this learning to assume and to create expectations about how the world operates. We are deductive theorists."

To gain a deep understanding of the dynamic processes changing the landscape, an inductive approach of progressive contextualization was applied. Progressive contextualization "refers to a path of inquiry where human-environmental interactions are explained by 'placing them within increasingly wider or denser contexts' '' (Vayda 1983: 265) to determine the next step in inquiry while in the field (Doolittle 2010: 78).

An 'as-inductive-as-possible-approach' allowed to gain insights and to develop empirically based theories favorable for understanding the underlying individual decisions for specific land use options and thus the processes of land use change. Even more, it allows understanding the structures and frameworks governing land use decisions and the impact local actions have on these regulatory frameworks as well as the impacts of the regulatory processes on the local actors. In this context, methods applied here were participatory observation, problem-centered interviews with stakeholders on the village level as well as problem-centered interviews with households, discussions with key informants, narrative

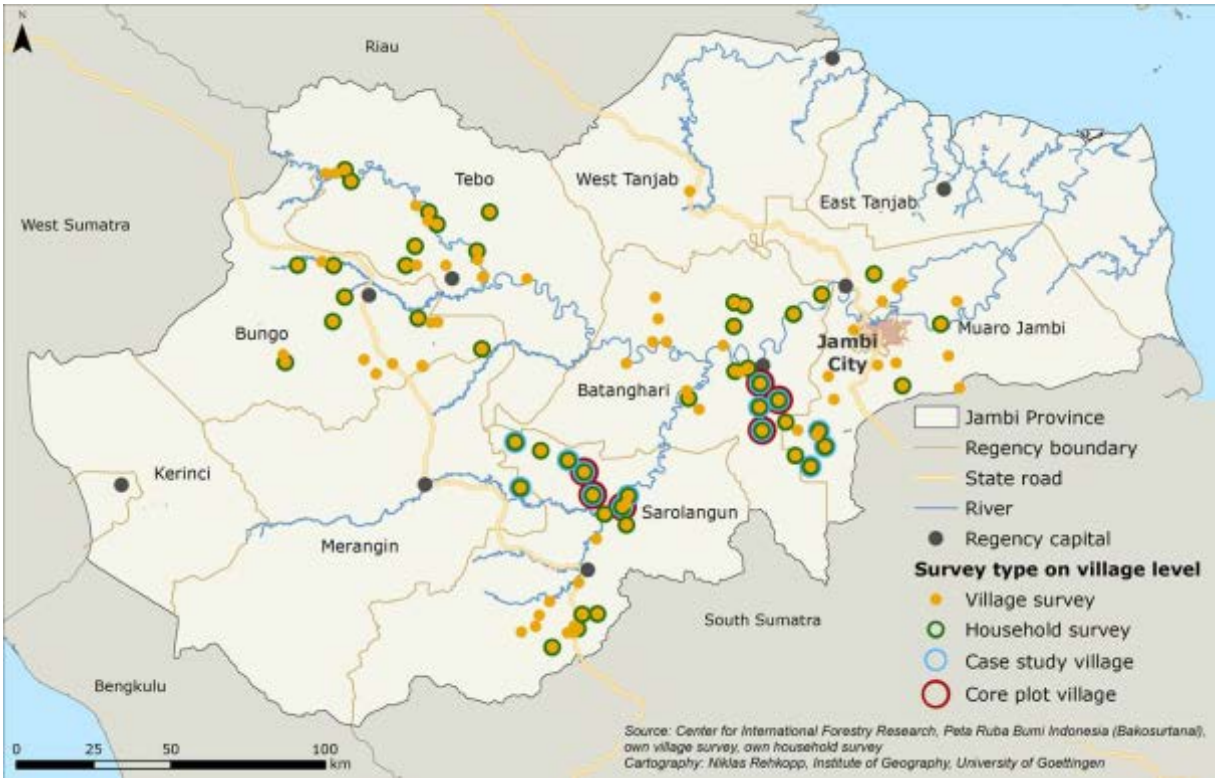
interviews and participatory tools such as mapping and timelines which will be introduced in the following sections.

3.1 Identification of research villages and procedures in the villages

Jambi province, Sumatra is one of the largest regions of tropical lowland rainforests. The province has experienced massive changes in the ecological as well as social landscapes (CRC 990 2012). Mainly rubber, introduced by the Dutch and oil palm as a recent boom crop has brought tremendous changes. An ideal setting for studying ecological trade-offs as well as drivers of land use change. In order to decelerate this transformation, nature conservation areas have been implemented by state organizations. Laws have been passed pointing out restrictions in these areas, zoning huge amounts of land as off limits to agricultural use. This makes it on the one hand even more interesting to investigate ecological trade-offs, at the same time it provides a setting in which changing land use regulations and their translation can be studied. The project as a whole aims at providing science-based knowledge on how to protect and enhance the ecological functions of tropical forests and the agricultural systems transforming forests, while improving human welfare. Further, the program aims at providing baseline information on how to integrate agricultural land use and conservation issues. For the overall research design of the project, two landscapes and 32 core sites - including transformation systems and forest reference sites - were selected for detailed analyses (Collaborative Research Centre 990 2012). The two conservation sites are the national park Bukit Duabelas and the ecosystem conservation concessions Harapan Rainforest. The research villages are located in proximity of these two conservation areas (see map 1, villages listed as case study villages, see also map 5). Within these two research areas (Bukit Duabelas and Harapan) the villages were selected to best serve the research questions. It was of importance to work in rather old villages and to ensure heterogeneity in terms of main cultivation patterns and to visit autochthonous as well transmigration villages. This is due to the possible different access legitimization rationales of autochthonous and transmigration villages.

The supervising counterpart from the University of Jambi has long standing research experience in the region and pre-identified a certain number of villages matching the criteria listed. The following step was then to visit all villages pre-selected, to introduce the research

team and the planned undertaking. It was also an important precondition that the village heads agreed on cooperating with a researcher from abroad. This is not only the case to ensure a high degree of quality of data gathered, but also because it was planned that the research team (this is the author of this dissertation plus one field assistant) would stay in the villages for longer periods. Only after the village head agreed on cooperating could the village be finally selected.



Map 1: Overview research area and research village of the human dimensions group

By the time field work was completed, ending with the second field trip in October 2013, a total number of 11 villages had been visited as research villages. The initial number of villages planned for was smaller than this figure. During the first visit with Dr. Ibu Rosyani, the Jambi counterpart, work was conducted in 9 villages. During the stay in the villages other settlements proofed to be of relevance for the research question at hand. For several reasons, expanding the sample was not always possible. For some villages, however, it worked out to select them as additional research villages. So more villages were visited and the list amended accordingly. One of the villages not in the initial list is Singkawang. Singkawang became the village were the biggest dataset was gathered and where the author spent most of the time at (see Table 1).

Table 1: List of research villages

Research are	***Name of village***	*Kabupaten/District*	*Kecamatan/Subdistrict*	*Village origin*
Harapan	**Markanding**	Muaro Jambi	Bahar Utara	Old village
Harapan	**Bakti Mulya/Unit V**	Muaro Jambi	Sungai Bahar	Transmigration village
Harapan	**Mekar Jaya**	Batang Hari	Bajubang	Transmigration village
Harapan	**Singkawang**	Batang Hari	Muara Bulian	Old village (first written evident from 1927)
Harapan	**Senami/Jebak**	Batang Hari	Muara Tembesi	Informal settlement within a protection forest
Bukit Duabelas	**Gurun Mudo**	Sarolangun	Mandiangin	Old village
Bukit Duabelas	**Desa Jernih**	Sarolangun	Air Hitam	Old village
Bukit Duabelas	**Bukit Suban**	Sarolangun	Air Hitam	Transmigration village
Bukit Duabelas	**Mentawak Ulu**	Sarolangun	Air Hitam	Transmigration village
Bukit Duabelas	**Mentawak Baru**	Sarolangun	Air Hitam	Transmigration village
Bukit Duabelas	**Desa Baru**	Sarolangun	Air Hitam	Old village

In total, a time of 11 months was spent in Indonesia in the frame of research trips. These 11 months stretched over two years: from June 2012 to December 2012 and from June 2013 to November 2013. Beside the time spent in villages, time was also used for language courses in Jogjakarta, for expert interviews in Bogor, Jakarta, Jambi city and for being at the Agricultural Institute in Bogor where many fruitful discussions with Indonesian counterparts took place. The time actually spent in the villages was 15 weeks. It turned out, that for some villages it was indispensable to spend a lot of time with participant observation, while in other villages less time was ‘needed’. This is due to several reasons: interview partners needed more or less time to get used to a foreigner conducting interviews, interview partners were not available or the importance of sharing time with interview partners in their fields, assisting them in their harvest or any other every day activity. It also proofed

very beneficial to visit the same villages several times. It helped the actors in the villages to gain confidence in their opponents, they felt more respected and more taken serious and less like mere research objects. The result of this is that in some villages only a couple of consecutive days were spent. In other villages, the research team stayed for almost two weeks in a row and still went back several times. In many villages a strong bond was established with the people inhabiting the respective villages or sub-villages.

A usual visit in a village would start at the *Kepala Desa's* house, the head of the village. This visit allowed the research team to explain the intention of the research project and what the agenda in the village would look like. The *Kepala Desa* serves as gate-opener to interview partners and most of the time is also the host household for the research team. This again, proofed very beneficial for the research. Through his position the village head knows the inhabitants well and can provide advice who to talk to when trying to learn more about a certain topic. At the same time, village heads also have many visitors who start to be interested in the case of the research team and often even offered to become interview partners. He (in actually all cases the village head was a man so were the *Secretaris Desa*, only in one village was she a woman) would also tag the team along to weddings, village meetings, common activities like village upgrading activities, in short, he would temporarily make the research team part of the village community. Also, being affiliated to the village head, equips the research team with trust. In most of the cases, the village head is a respected person in the village and having him introducing the researcher team to potential interview partners allow the interviewee to be less shy or in other words, more open.

As a first step at the beginning of each stay in all villages a village profile was compiled. This was most of the time done with the *Sekretaris Desa*, the village Secretary, as their position makes them in charge of village statistics, etc. The village profile, a quantitative demographic appraisal, served as a first orientation: how many people do live in the village, what is their ethnic background, how many schools, how many mosques does the village have, what is the water source, how many people are connected to the electricity grid, how many households cultivate rubber/palm oil, what are other income generating activities, when was the village founded, has the village been part of another settlement in the past and so on. When, from this starting point, the interview partners and neighbors were told that the research focus is on the history of land use change, the villagers usually had a very clear

picture of who should become an interview partner. This means that the interview partners were mainly identified by using the snowball effect. Additionally, in order to allow for interdisciplinary research, part of the interview partners are a sub-ample of a household survey carried out by another sub-project of the Collaborative Research Centre 990. The data gathered serve as supplement to the data gathered in the standardized household survey (for more information on the overall research design of the human dimension group 990 see Faust et al. 2013).

Even though the author of this dissertation studied the Indonesian language prior to commencing field work in the research villages, it would have been impossible to conduct the interviews without the help of an assistant, at least at an early stage of the research. With great patience the field assistants (only one assistant at a time, but in the first year the team consisted of a different assistant than in the second year) translated, explained, took notes, pictures, and drove the motor bike and so on. The fact that information gets lost mis- or reinterpreted when using a translator is well noted. Working in a team meant that assistants were involved in every decision taken and were familiar with goals and interests. Through this team work the error hopefully remains as minimal as possible. At the end of the second field stay language skills proofed proficient enough to more or less manage an interview without the help of a translator. The work of the assistants never became indispensable though. Coming from an alien cultural background it was important to be taught everything from conducts of behavior when it came to greetings, addressing or thanking people to eating, showering in rivers and how to wash clothes in water that seemed dirtier than the clothes themselves.

3.2 Participant observation

To embrace what the assistant was teaching but also to become familiar to the villages and their inhabitants, as well as using it as a data gathering method, lots of time was reserved for participant observation. Participant observation as a method supports to gain a holistic understanding of certain topics and their contexts. It is the classic method in which the researcher participates in the every-day- social life of the community in the research village (Spradley 1980). Schensul et al. (1999: 91) list the reason for using participatory observations as follows: “to identify and guide relationships with informants, to help the researcher get

the feel for how things are organized and prioritized, how people interrelate, and what are the cultural parameters. To show the researcher what the cultural members deem to be important in manners, leadership, politics, social interaction, and taboos […] and to provide the researcher with a source of questions to be addressed with participants". Usually, in the first couple of days spent in a "new" village, no interviews were conducted. The time was used with participant observation to exactly do what Schensul et al. (1999) describe. The time was used to get to know the people, understand what they are spending their time with, and to develop lots of questions which were raised at later stages. Participatory observation hence also supports the inductive procedure in the field.

3.3 Problem-centered interviews

All together a total number of more than 100 semi-structured problem-centered guideline interviews mainly with farmers were conducted. Semi-structured interviews serve the purpose of allowing the interview partners to place their own ideas and thoughts on a certain topic while at the same time making sure that all areas of importance to the researcher have been mentioned (Desai & Potter 2006: 145). The guidelines for the interviews covered a wide range of topics (see questionnaire in the annex).

Prior to commencing field work the assistant translated the guidelines from English to Bahasa Indonesia. Again, the guideline questionnaire was discussed, this time with the assistant equipped with the responsibility to make sure the interview partners would understand the questions. It would also be the assistants' task to rephrase questions in case the interview partner would not clearly understand what was meant by the question. It was of crucial importance to agree on the questions with the assistant to be very sure the assistants have a clear understanding what certain questions were aiming at. Only after everybody felt confident with the guidelines developed, was it possible to commence work in the field.

By giving interview partners the opportunity of first presenting their own perspective of whether or not there had been a change in the landscape and if so what their opinion on reasons for this change are, topics and problems were uncovered that might have not come to the surface when conducting different types of interviews. By conducting open interviews, topics like external actors inducing a change, land certification schemes and their impacts on

change, customary laws, “pests” causing problems through increased monoculture, corruption and overlapping land tenure regulations were problematized. With this information from a first field trip, a more pointed questionnaire towards changes in land tenure regulations was developed for the second field stay. By working with the modified questionnaire during the second stay, data was gathered on changing customary laws, changing actors and stakeholders, as well as on different types of certification. During this time the topic of unclear rules and intransparent implementation procedures by government apparatuses as well as by customary leaders came to the surface. These changing set of rules which in turn changed the landscape seemed different in different research villages as well as areas, while similarities were found at the same time. These similarities as well as the differences needed to be analyzed in the ensuing qualitative content analysis using the program MaxQDA.

Complementing to the problem-centered guideline interviews narrative interviews were conducted. Here, it was decided to conduct narrative interview following McAdams (1993: 252). His narrative interviews actually aim at learning about people’s biography. They were modified to develop a village biography with focus on land use changes. In the genuine framework interview partners are asked to think about their life as a book with different chapters. They are then first urged to assign their life chapters’ titles to then provide a short outline what each chapter with its title entails (McAdams 1993: 256). In the case of the history of land use changes in a particular village, key informants were asked (this could a village authority, an elderly person, etc.) to do the same for the village history. Furthermore, we asked our partners to think about the best moment the village ever experienced, the worst moment the village ever experienced as well the earliest significant event in village history the interview partners themselves can remember, the earliest event in village history they can remember from narratives by others plus any additional event that might have not fit any of the given categories but that the interview partner considers worth mentioning.

As a matter of conduct working in line with ethical standards, at the beginning of every interview it was asked if the person is voluntarily agreeing to conduct an interview. It was then explained what the interview data would be used for and that the data would be handled confidential (Meier-Kruker & Rauh 2005: 73; King & Horrocks 2010: 45).

3.4 Participatory rural appraisal

As part of a triangulation process but also to still gain a deeper understanding of the village history concerning land use change timelines as a method selected from the repertoire of participatory rural appraisal methods, were conducted. In this process approximately seven people were invited to the house of the *Kepala Desa* in the evening. Participatory rural appraisal activities, as group activities, were conducted in the evenings to allow a high number of people be able to participate and not having to cancel a planned activity in order to be able to participate. In a comfortable atmosphere with tea and snacks the group of people was asked to first, on different sheets of paper, write down major events in the village history. The groups' next task was then to bring them into a chronological order to then add the year in which the named event occurred. The session ended with a concluding discussion to see if each and every participant is confident with the result. Listening to these conversations and discussions can reveal as many information as the sheets written on (Kumar 2002: 118-123).

The time line as well as the narrative interviews helped to identify points in history where major changes occurred. Rather than exact years, it was more often events that marked changes rather than a certain date in time. Time periods as listed by the interview partners were often expressed like "under President Sukarno" or "after independence". The changes as listed by the interview partners were later compared with changes in national land tenure regulations in the time periods identified. The outcomes are presented in chapter four, "The refrigerator in the forest".

Also from the repertoire of participatory rural appraisal methods resource maps were conducted. Resource maps help to get a deeper understanding of the spatial perception of the local actors. Also as a group gathering in the evening, key informants were asked to draw a map of their village. The instructions remained minimal in the beginning, leaving room for interrogation the map once the first sketch had been finished (Asia Forest Network 2002: 18; Kumar 2002: 71-79). Again, discussions amongst the participants during the act of drawing revealed information on frictions on boarders, landmarks of the village and features that had changed in the past.

3.5 Unstructured interviews

During more or less the whole time while being in Indonesia, informal interviews played a crucial role. People showed a lot of curiosity towards a female researcher from outside Indonesia. The author was constantly confronted with the question of what the purpose of visiting Indonesia was. Whenever the research topic and in this context an interest in the history of land use change and its underlying reasons was mentioned, people had an opinion and happily shared this opinion. But especially the informal interviews in the villages, conversations while cleaning the dishes with the women of the house, when driving to a certain spot that was of interest, while cooking, visiting relatives, during village meetings, etc. informal interviews always proofed to be a thankful way of improving the understanding of certain issues. Not having a recorder at hand, not having a piece of paper with at hand and not taking notes allowed people to more easily share what their opinion on land use change was. “Unstructured interviews provide the interviewees with the opportunity to take the discussion in whichever direction they choose” (Desai & Potter2006: 144). These interviews are more like a simple conversation and allow covering topics that were completely unexpected. For example did we learn during one of these informal interviews that the young woman we talked to, lived in a village inside a protection forest, where settling is actually not allowed. Before this conversation we did not know settlements within protection forests exist, so we could have never asked for them. This informal interview coupled with our inductive approach of progressive contextualization led us to a new research village revealing a complexity on overlapping perception on land tenure regulations that we could have only had a presentiment for and which is elaborated in the chapter “The refrigerator in the forest”.

3.6 Expert interviews

The partly contradicting answers given by interview partners sometimes raised more questions than they explained certain issues. This is when it became apparent that several expert interviews might help to shade light on certain themes: who is responsible for what kind of land certification, on which land and under which concession are certain land use activities allowed while others are not, where contradictions are and what consequences they have. With this approach of including expert interviews the research became multi-

sided. Multi-sided, however, also means not to include an expert view plus a local actors' view, but to also hear various kinds of experts. For an overview on experts interviewed see table 2. To call the actors listed experts does not imply that the farmers interviewed are not experts in their own field. When referred to expert interviews here, I refer to experts as employed by government institutions, non-governmental organizations or civil society organizations (Gläser & Laudel 2010: 11). It means, that they, on a meta level work on the topics of question. The interviews often helped to gain a deeper understanding on the issues raised during interviews. Sometimes the answers given by experts still raised more questions as they revealed controversies and more inconstancies among for example government institutions and their areas of authority than that they brought clarity. With time it became apparent though that even contradicting answers were a result that pretty much fitted whatever was there to be read in the changing landscapes. It became clear that on the matter of land tenure regulations there is no clear cut answer to one question. Different actors, at different times, in different settings, refer to different sets of regulations. In the beginning this seemed confusing but with an increasing numbers of interviews conducted, with more time spent in the villages and with an increasing reading of governmental regulations it appeared that they all have their legitimation. Having different sources of legitimization for certain behaviors at the same time, conforms with the concept institutional bricolage in the theoretical chapter. It is the concept applied to explain the empirical material presented in chapter five.

Table 2: List of expert interviews conducted

No	Name of institution/organisation	Type of institution/ organization [4]
1	BAPPEDA - Badan Perencana Pembangunan Daerah/ Regional body for planning and development	Government instiution
2	AMAN – Aliansi Masyarakat Adat Nusantara Indigenous People Alliance of The Archipelago	Independent community-organization of indigenous people
3	PT Riset Perkebunan Nusantara Indonesian Research Institute for Estate Crops	Research, development, and service based company
4	Sajogyo Institute	Center for Agrarian Studies and Documentation Indonesia

[4] According to the websites of the organizations

5	BPN – Badan Pertanahan Nasional Jakarta/ National Land Agency	Government institution
6	The Indonesian National Commission on Human Rights	National Human Rights Institution Indonesia
7	Dinas Kehutanan Jambi District Forestry Office	District Forestry Office
8	Dinas Kehutanan Muara Bulian District Forestry Office	District Forestry Office
9	CIFOR - Centre for International Forestry Research	Non-profit, scientific facility
10	Lembaga Adat	Governmental customary institution
11	Working Group Forest Land Tenure	Network organization of governmental, non-governmental and civil-society groups
12	PTPN 6 – Perseroan Terbatas Perkebunan Nusantara	State Company
13	Sawit Watch	Non-governmental organization

3.7 Post-processing interviews

After every interview, whether structured or unstructured, conversational or officially recorded, expert or local smallholder, narrative interview or participatory rural appraisal method, the research team met to discuss several aspects. It would usually start with typing up and discussing the notes (usually in English) that the team took during the interview. If it was an interview without notes, minutes were typed up from memory (also in English). This allowed to have a first set of electronic data plus the notes in the field book providing a certain degree of security in case of losing one of the data sets (Meier-Kruker & Rauh 2005: 75). It also gave the opportunity to identify gaps, controversies, further fields of interests, additional questions as well as the option to place a question at a different point in an upcoming interview or else to rephrase a question or to simply leave it out. In short, after every interview the questionnaire was reconsidered; only possible in a qualitative research approach (King & Horrocks: 37). Additionally, every day an impression of the day, controversies met (Doolittle 2010: 69) and questions raised and answers found were noted in a field book. These notes were also typed up and partly discussed with the field assistant. Often, the notes from the field book were also discussed with our hosts, who were most of the times the *Kepala Desa*.

For every interview (again, this includes all types of interviews) interview partners were asked for permission to record the interview. About 15% of all interview partners in the villages stated they would be more comfortable without a recorder which was of course respected. For all the interviews that were recorded (97 in total), transcripts were compiled. Since the interviews were conducted in Bahasa Indonesia the transcripts as well are penned in Bahasa Indonesia. Interviews took about 45 minutes on average. The shortest interviews took about 20 minutes only while longer ones where usually stopped after a maximum of 1.5 hours. During some interviews additional material like books on customary laws or maps were provided. All typed up notes, but mainly the English memos from the interviews were analyzed through content analysis using MaxQDA.

3.8 Qualitative content analysis

The vast amount of data was to be analyzed with a computer-based qualitative content analysis, supported by the programme MaxQDA. After the first field trip the first data set compiled during this time was analyzed. This program allows organizing data in small pieces to be analyzed consecutively. In the focus of this qualitative content analysis is a theory-led system of categories which is developed along the data material. The categories determine certain aspects which can then be filtered from the material (Mayring 2002: 114). This supports the researcher in being able to search the text for aspects relevant to a certain topic (Gläser & Laudel 2010: 198). Mayring (2002: 116) distinguishes three different forms of qualitative content analysis, summary, explication and structuration. Mainly the first two forms have been used to analyze the data gathered during the two field trips. Summary refers to an analysis which reduces the material in a way that ensures that relevant contents remain but at the same time allows for an abstraction which remains a representative of the empirical data. In practice this means that categories a predetermined. For the empirical analysis for the chapter five “mimicry of the legal” for example, the focus was on different kinds of land certificates. The different names of the certificate served as categories. The material was then read, line per line, to look for information on these different titles in use. The result was a detailed overview on titles met in the field, local actors’ definition on what rights and duties these titles entail and so on. In the next step, the explication, parts of the text have been detected where further material was needed in order to gain a deeper

understanding of what the information of a certain passage was actually about. Using the case of the chapter on “Mimicry of the legal” again it became clear from the data that *Sporadik* is regarded as one of the most common title deeds in use. In the first step of the analysis, the coding was applied for the memos. Wherever the memos did not reveal sufficient information, the transcripts where analyzed as well. Still, for the case of the title *Sporadik* it seemed like that more information on a definition of the term was needed. Where did the term come from and is the definition provided during interviews in line with what the national regulation foresees? For this reason, interviews with government representatives as well as official government texts have been analyzed using MayQDA as well. This analysis revealed, as will be explained in detail in chapter 6, that different definitions and procedures of implementation exist on different scales, in parallel.

As already briefly mentioned, the work conducted using MaxQDA in this research project at hand would start with coding the memos, not the transcripts yet. Once the notes proofed interesting, controversial, unclear, etc. at a certain point, the transcript would be used and codified as well.

3.9 Limitations and advantages

The author of this work is well aware that already by choosing certain theories and methods, the outcome, the results of the analyzed empirical data, are a construct. All questions of scientific work however, are based on the opportunities and limitations of knowledge. Having put the focus on the social reality of local actors in Jambi province, a qualitative research approach supported by ‘open’, not standardized methods, like mainly semi-structured interviews, participatory rural appraisal and participatory observations has proven adequate. Limitations still remain obvious. A first limitation was that the researcher did not speak the language of the local actors fluently. Even though the language competency improved constantly to an extend that in the end interviews could be conducted without the help of a translator, nuances in the language that might contain relevant information remain hidden to the researcher. Being accompanied by translators minimizes this adverse effect, but, in the course of the translation information can get lost as well. Also, the fact of having been socialized in a cultural context alien to the context in which the research was carried out might bear limitations. Not being able to read certain

lingual expressions and not being able to appropriately behave according to the cultural context might have left some doors closed. At the same time, this can also open doors. Situations obvious and thus invisible to researchers from the cultural context might be explained to a researcher alien to the context and might offer information that might have remained hidden otherwise.

The open qualitative approach and the opportunity of living within the villages offered room for triangulation. Numerous discussions with inhabitants of the villages in order to ground check whether or not certain perceptions have been understood or not by the researcher, helped to understand the context better. Time constraints might also have been a limitation. At the same time, the time spent in the villages was very intense. Leaving the villages and returning there proofed beneficial. On the one hand there was time to reflect on certain topics and on the other hand the villagers became more confident in dealing with a *bule*, a white person when returning to the village.

In the end, the quality criterion for qualitative research mainly rests on the traceability or confirmability. Having in detail elaborated on the methodological approach, the results presented in the ensuing chapters, are traceable.

4 'The refrigerator in the forest': Historical trajectories of land tenure regulations fostering ambivalent landscape transformation in Jambi Province, Sumatra, Indonesia[5]

Abstract

Indonesia has attracted increasing global attention in recent years due to concerns over large-scale deforestation. The island of Sumatra in particular is severely affected by the rapid expansion of monoculture cash crops. Since Dutch colonial times, land tenure regulations here have generally favored such resource exploitation. The current National Development Plan continues to see Sumatra as a center of resource production in order to eradicate poverty and accelerate national development. This developmental focus, however, is accompanied by contested land use scenarios.

Taking a historical perspective, this research discloses different layers of past and present land tenure regulations to understand present contestations of land use, resource exploitation, and their social consequences. Based on a village case study, the research demonstrates how different political eras and their accompanying land tenure approaches are inscribed in today's local landscape. We found that de jure regulations which were added to customary laws created a situation of legal pluralism. Ensuing institutional regulations paved the way for state informality, favoring ambivalent de facto resource use approaches. Our case study explains how local actors craft institutional arrangements in a process of institutional bricolage to use 'their' resources.

4.1 Introduction

Indonesia has attracted increasing global attention in recent years, due to deforestation, excessive resource extraction and large-scale cultivation of monoculture boom crops, especially oil palm (Potter 2008: 69). In the process of accelerating economic growth, land has been turned into a contested commodity. This process is accompanied by decreasing opportunities for local communities to access land, and forced transformation of local

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livelihoods. In Sumatra, many remaining forested areas have been designated as protection areas, with further restrictions on communities' access to the land on which they depend for their subsistence livelihood. Against this background, ambivalent situations like the following can be observed:

Signposts at the gates of a protection forest in Jambi Province, Sumatra, Indonesia, state:

> The law of the Republic of Indonesia, Number 41 Year 1999 on Forestry, Paragraph 50 on Forest Protection and Nature Conservation says: (1) The destruction of the forest infrastructure and facilities is strictly prohibited. (2)[6] …… (3) No one is allowed to a. cultivate, use or occupy illegally a forest area; b. encroach the forest, c. cut trees in the forest area.

Signs carrying these passages of Forestry Law can be found frequently in and around the Taman Hutan Raya - Sultan Thaha Syaifuddin Senami Forest Reserve, referred to simply as 'Tahura'[7] by the local population.

While we were studying one of these signposts, a refrigerator loaded on a truck driving into the protection forest passed by (see picture 1). Why should a refrigerator be driven into a conservation forest? Contrary to the stipulation of Paragraph 50 (3), the forest reserve seems to be a place of bustling human activity: a busy tarred road leads into the forest, along which trucks loaded with bunches of oil palm fruit leave the forest reserve while vehicles loaded with furniture and other household items enter it. Following the furniture and refrigerator into the protection area, well-established settlements, rubber and oil palm cultivation as well as signs of active logging become apparent, existing side by side with a provincial forestry office (*Dinas Kehutanan*).

[6] Not listed on the signpost: (2) 'Anybody who has received the license of forest area use; the license of utilizing environmental services, the right of timber and non-timber forest product utilization, the license of timber and non-timber forest product collection; is not allowed to undertake any activities leading to forest damage.'

[7] Tahura or Taman Hutan Raya is 'a grand forest park [that] shall be a nature conservation area intended to provide a variety of indigenous and/or introduced plants and animals for research, science, education, breeding, enhancement, culture, recreation and tourism purposes. Nature Conservation areas as defined in Article 1 Recital 13 consist of the following areas: a National Park b. Grand Forest Park and c. Natural Recreation Park.' (Act of the Republic of Indonesia No. 5 of 1990 concerning Conservation of Living Resources and their Ecosystems)

Picture 1: Truck loaded with furniture passing the main gate to the Protection Forest Sultan Thaha Syaifuddin ©Y. Kunz

This episode from Jambi is an apt example of current controversial land-use approaches and land-related conflicts all over Sumatra. Decreasing access to agricultural land for smallholders is a starting point from which to explain this situation, but it does not seem to reveal the whole story. The apparent lack of concern of the actors involved in handling this ambivalent situation calls for an investigation of regulatory frameworks in order to explain the outlined scenario.

Against this background, this article has two objectives: first, to describe the historical emergence of the current controversial land-use approaches and, second, to explain the ambivalent behavior patterns of land-use actors by combining the theoretical concepts of institutional bricolage and state informality.

In Indonesia, there are numerous institutions regulating access to land. As well as state institutions passing corresponding laws, customary or traditional institutions with long-established systems of governing access to land operate in parallel. While customary land-tenure systems are theoretically acknowledged by the Indonesian constitution and referred to in the basic land regulations, in practice, local claims are widely disrespected by the state. Thus, local communities are often restricted from accessing and benefiting from land within existing power relations (Hall 2011; Ribot & Peluso 2003). Land-use conflicts produced by an

overlap of codified laws and customary regulations have been investigated by a number of scholars (e.g. Afiff & Lowe 2007; Bakker & Moniaga 2010; Beckert et al. 2014; Galudra et al. 2014; Hein & Faust 2014; McCarthy 2006; Peluso & Lund 2009; Steinebach 2013; Urano, 2014).

Further developing this perspective, the study illuminates actors' land-use decisions as the outcome of a blend of customary regulations and de jure land-use regulations. Our analysis focuses on the chronological emergence of institutional pluralism and the question of how actors deal with the resulting complexity de facto. We argue that actors craft their own sets of rules, choosing from a vast variety of current and past de jure laws as well as customary rules, and that actors' decisions are further impacted by state informality. We follow the refrigerator, as a representation of current controversial land-use approaches, into the forest to dismantle the emergence of overlapping layers of land-use regulations and their impacts on local actors' approaches to resource use.

4.2 Institutional bricolage and state informality: Framing the landscape

In the context of land-use decisions in Indonesia, actors' decisions are framed by legal pluralism and by competing legitimacies, as well as by processes of informality. Franz von Benda-Beckmann and Keebet von Benda-Beckmann (2011: 171) speak of 'legal pluralism' in situations "[…] where co-existing interdependent legal orders that have different legitimations and are based on different organizational structures are prevalent".

Competing legitimacies are the result of local actors, both local authorities and land-use actors, consciously as well as unconsciously, through daily interactions and the constant use of resources, crafting regulations (Cleaver 2001: 29). The actual local resource use and management arrangements are likely to be a complex blend of customary and state regulations (ibid: 29). It is a process in which people draw on existing social and cultural arrangements to shape institutions in response to changing situations, a process referred to as 'institutional bricolage' (Cleaver 2000: 380). This concept supports the analysis of local actors' translation of state laws and customary rules blending into a legitimized reality.

State informality adds to this frame created by legal pluralism, with its opportunity for various interpretations. Informality is understood as a concept, used by the state to create

leeway for certain actions. We speak of 'state informality' when state authorities consciously establish regulations and frameworks that are blurred enough to leave them with the opportunity to exploit this leeway for their own purposes. Ananya Roy (2009: 81) exemplifies the concept of informality with the phenomenon of 'unmapping' as an instrument in Indian city planning. She argues that through consciously not mapping parts of the city the state itself can alter land use and acquire land in violation of its own ban on such alterations. In the Indonesian context, state actors seem to use a similar concept by producing several maps for the same area or by a frequent change in land status, which we refer to as 'over-mapping'. The historical background to this paper illuminates this strategy and exemplifies how the phenomenon of over-mapping adds to the set of regulations governing resource-use that local actors choose from in the context of institutional bricolage.

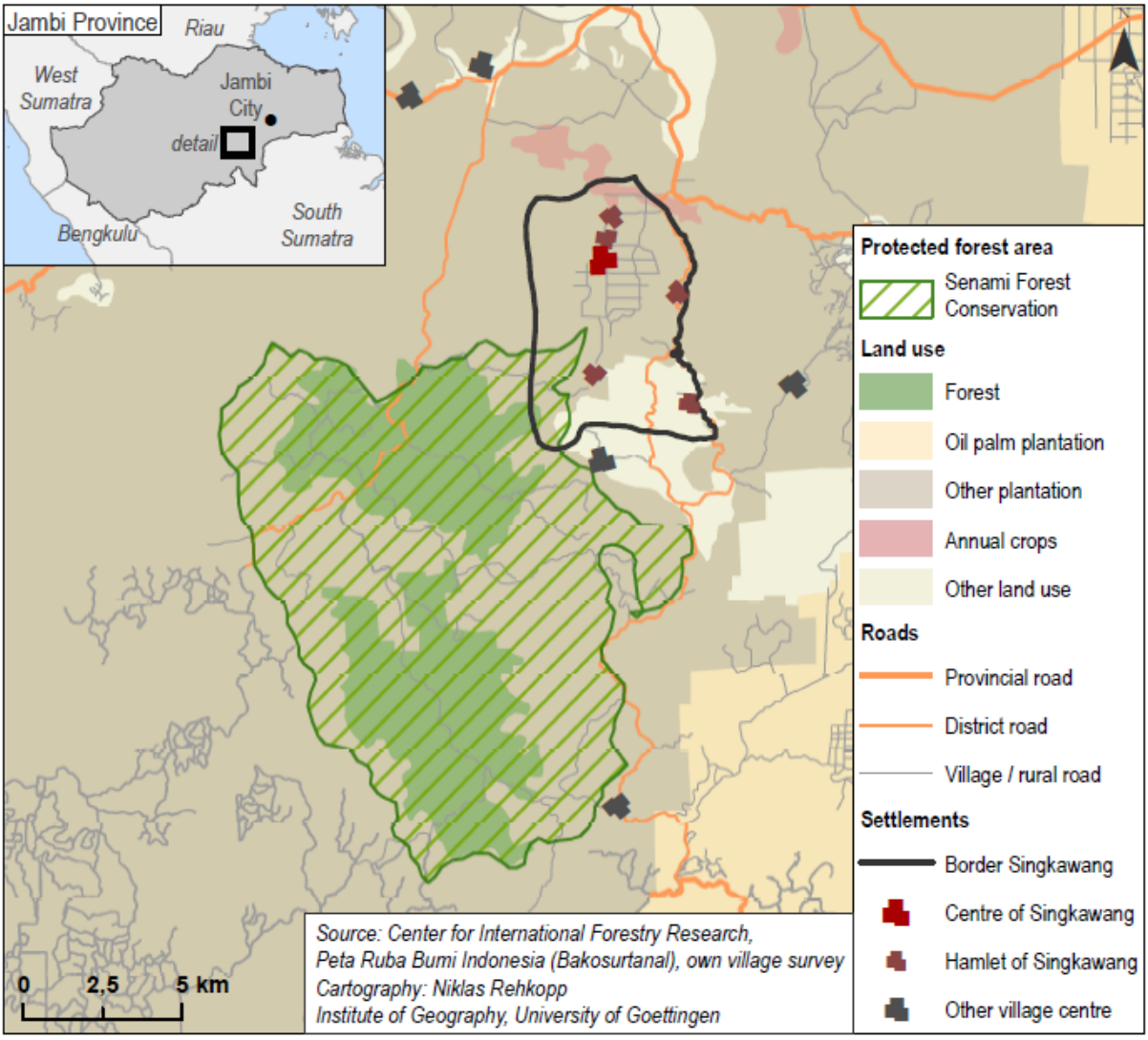
Specific and often multiple social identities (Cleaver 2003: 17) impact institutional bricolage as well as the agency of social actors. It is also in this context that legitimization takes place. The meaning and effect of a law in a particular place depends on the 'history, the social setting, the power structure and the actual configuration of opportunities' (Lund 2008: 134). Especially in situations of legal and institutional pluralism, different, competing legitimacies are at play. Hence, rules do not embody intrinsic legitimacies, their legitimacy must be actively established (Sikor & Lund 2009: 6). When authorities of different institutions overlap, social actors are likely to reference property claims to different politico-legal institutions, making property relations appear ambiguous to outsiders (ibid: 8).

4.3 Research region and methods

The Indonesian Masterplan for Economic Development identifies six development corridors to enhance economic growth. Within these six corridors, the island of Sumatra has been designated as a center for the exploitation of natural resources and as the Nation's Energy Reserve (Coordinating Ministry for Economic Affairs, Republic of Indonesia 2011: 46). Jambi province, located in central Sumatra (see map 1) is no exception. Fieldwork was conducted in Jambi province in two consecutive stays in 2012 and 2013[8] (see map 1). Covering a total area of 5.3 million hectares (BPS 2011: 3), it has the second-highest production of palm oil of the Sumatran provinces (after neighboring Riau). The total area in Jambi province under oil

[8] The empirical data presented here is only a cutout of the whole dataset.

palm cultivation is approximately 941,000 hectares, while rubber has a share of approximately 1,284,000 hectares (the numbers vary greatly between sources, figures here are for 2010 from Kantor Pengolahan Data Elektronik Prov. Jambi, 2014). Apart from oil palm, rubber and timber, coal exploration is currently experiencing rapid expansion.



Map 2: Singkawang, Batang Hari District, Jambi Province, Sumatra

We use the case study of the village Singkawang to reveal the long-term consequences of multiple layers of conflicting regulations and their impact on local actors' land-use decisions. Singkawang is the oldest village in the region and it borders the protection forest mentioned in the introduction. Its encroachment on the forest reveals the impact of various sets of regulations. Singkawang hence became the focus of the field stays, with a total time of more than three weeks spent there. Singkawang's 337 households (unpublished village statistic, Singkawang 2013) mainly cultivate rubber (380 hectares in 2010) and oil palm (202 hectares

in 2010) (BPS 2011: 16). Within the administrative borders of the village, which is sub-divided into six hamlets (*RT)*[9], there are almost no other crops such as vegetables or rice.

The first residents of Singkawang are members of an ethnic group called Batin Sembilan, also referred to as Kubu[10]. Almost all members of the group of the Batin Sembilan in the village of Singkawang live in the village hamlet *RT 04* bordering the Tahura protection forest (see map 1). The protection forest itself covers 15,308 hectares, with several villages bordering it (Dinas Kehutanan Batang Hari, no date: 1). This area was originally used by the Batin Sembilan families for shifting cultivation and rubber gardens. After a first attempt by the Dutch government to establish a nature reserve on this site in 1933 (verbal announcement), the area was finally put under formal protection status in 1999 to preserve the endemic ironwood trees (Dinas Kehutanan Batang Hari, no date: 1). Inhabitants of *RT 04* frequently interact with the inhabitants of the protection forest and cultivate land within the protection forest.

We applied a qualitative research approach to study the political and institutional impacts on actors' land-use options. With an inductive approach, we gained insights that helped us to understand individual land-use decisions and thus the processes of landscape transformation (Faust et al. 2013: 5). During the field stays, we conducted problem-centered interviews with stakeholders at the village level, as well as problem-centered interviews with households, and carried out focus group discussions with key informants, using participatory tools such as resource mapping and timelines. These tools shed light on institutional pluralism regarding land tenure. An interview focus was put on perceptions of land-use change over time and the underlying causes. In Singkawang itself a total number of 23 guideline interviews have been conducted with household heads of varying age and gender. Additional interviews were conducted in the settlements within the protection forest. Interview partners were selected following a snowball effect. Key informants served as experts for certain topics, such as the customary leader on the historic development of customary land-tenure regulations. Data was also gathered through participatory observation and numerous informal interviews conducted while staying at the household of

[9] *Rukun Tetangga* – an administrative category referring to a neighborhood or hamlet

[10] ''*Kubu"* was a collective name used by the sedentary population to refer to non-Muslim hunter-gatherer bands or shifting cultivators who led a more or less nomadic life in the vast forests' (Steinebach, 2013, page 70). This appellative common name was also applied to the Batin Sembilan groups of the area around Singkawang and beyond.

the administrative head of hamlet *RT 04* in Singkawang. All observations and interviews required fluency in the Indonesian language and mutual trust. Further interviews were conducted with government officials from, for example, the provincial forestry office and the National Land Agency as well as with non-governmental organizations.

To fully understand the historical emergence of land-use approaches, a literature review was conducted, focusing on four different periods: (1) the Dutch colonial administration (17th century until 1949), which introduced the first changes to local ideas of property rights and access to land, (2) the period under Sukarno, the first Indonesian president, in which a rather socialist approach was foreseen (1950–1965), (3) the Suharto era (1965–1998), and (4) the period from the beginning of political and economic decentralization (2004) until the present.

4.4 Results: Land tenure regulations in Indonesia

To understand ambivalences found in today's landscapes, it is necessary to dismantle past layers of land-tenure regulations, starting with the colonial period. Even though the Batin Sembilan were already integrated into a political and economic organization of the Sultanate Jambi that ruled the area, with its own categories of land use and land rights prior to Dutch colonization, it is with the Dutch Colonial Laws that far-reaching transformations of land-use regulations started (Steinebach 2013: 70).

4.4.1 Towards land control: Dutch colonial laws

In Jambi province, the Dutch colonial government took over political and administrative rule in 1906 (see figure 1). At this time, the area around Singkawang was mainly inhabited by Batin Sembilan or *Kubu* groups. Access to land was regulated by *adat*[11], a customary communal land-use approach. The inhabitants of Singkawang practiced shifting cultivation to grow different types of cassava and sweet potatoes for subsistence (van Dongen 1910: 10). Fruit trees were planted to provide food and to serve as markers for territorial claims. Dutch influence on land-tenure regulations in Indonesia started with the Dutch Colonial Forestry Law of 1865 and the Dutch Agrarian Law of 1867, emerging from a capitalistic

[11] '*Adat* in Indonesia has become a generic term to indicate an often undifferentiated whole constituted by the morality, customs, and legal institutions of ethnic or territorial groups. (…) Political and economic claims are based on that law in order to carve out a greater role for *adat* leadership in village government and recognition of *adat* rights to natural resources' (von Benda-Beckmann and von Benda-Beckmann 2011: 168). For more information on customary rights in Jambi see Steinebach, 2013

interest in agricultural and forest production (see figure 1) (von Benda-Beckmann and von Benda-Beckmann, 2011: 894). Noer Fauzi Rachman (2011: 15) calls the inauguration of this set of rules a ‘landmark of the liberal era in which colonial rulers facilitated European corporate capital to invest in the Netherlands Indies in order to extract export commodities’. Uncultivated land under this new law was classified as wasteland and transferred to the status of 'state land'. Von Benda-Beckmann (2005: 7) refers to this classification process as ‘the hour of birth of one of the biggest colonial raids’. The Dutch administration (and others that followed) failed to note the value of the shifting cultivation system, and regarded land under this system as wilderness to be occupied and ‘civilized by industrial plantation agriculture’ (Steinebach 2013: 72). That European concepts of individual property could not be superimposed upon the community-based property regulations in the Singkawang region was either ignored or misunderstood.

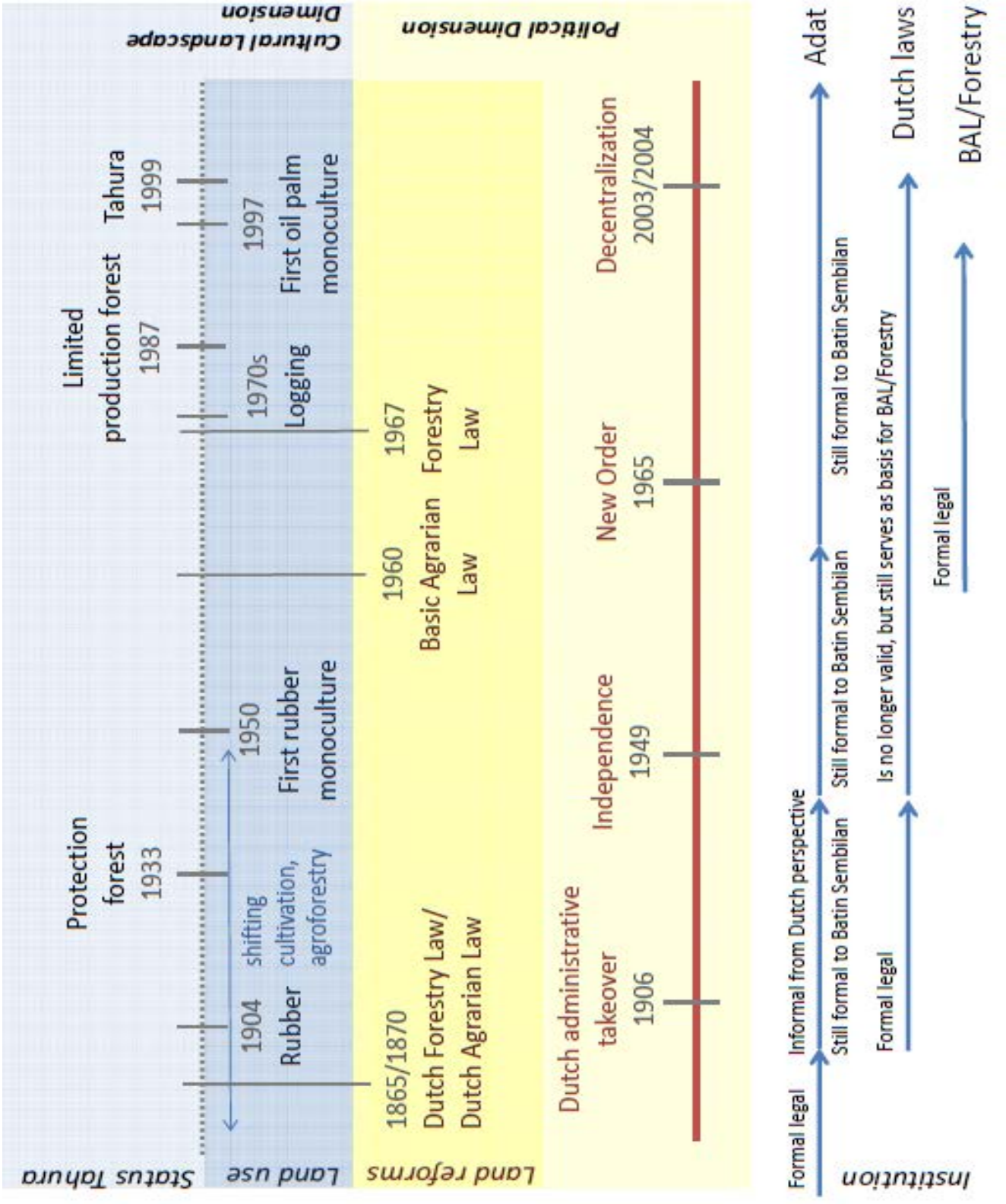


Figure 1: Singkawang cultural landscape timeline, own illustration

Land under communal property, such as the territories managed by the different Batin Sembilan groups, or other forms of land that could not be assigned to individuals was declared state domain under the new Dutch laws (Peluso 1992: 64). Labelling land as unproductive and thus turning it into state land contradicted *adat,* or customary rights and the local perspective of classifying land. From the local perspective, this transformation was an arbitrary classification.

A second arbitrary classification in the area of Singkawang, from the local perspective, was the declaration by the Dutch Colonial Administration of a protection forest on Batin Sembilan territory in 1933. Local people were de jure prohibited from farming and gathering forest products from the gazetted area, which would later become the Tahura forest reserve. During this period, an overlap of land-tenure regulations emerged, and contradictory perspectives on legitimacy evolved. Empirical data from interviews does not date back until the early colonial period, but it can be assumed that the Batin Sembilan started to be impacted in their decisions by their *adat*, as one set of regulations, and the Dutch Colonial Laws as a second set of regulations, paving the way for an institutional bricolage. De facto, the Batin Sembilan most probably continued to follow their *adat* land regulations and legitimization (see institutions figure 1).

4.4.2 Land as a commodity or The Basic Agrarian Law

'Everything was controlled by the government; the government had to be asked for everything. […] Until independence, land was [de facto] communally handled as it belonged to the ancestors, kinship groups and the community'[12] is how one interview partner summarized the felt impact on land-tenure regulations after independence and its accompanying rules.

Contrary to this statement, Sukarno, the first Indonesian president, actually tried to simplify land issues by introducing the Basic Agrarian Law (BAL) in 1960. The main intention of the BAL was to solve land issues that had been created through the restructuring of land rights and dispossession by the Dutch colonial administration. In particular, it redeemed the state domain and replaced it 'with a new legal-political concept called State's rights to control (*Hak Menguasai dari Negara*)' (Rachman 2011: 22). The basic principles that the concept followed were based on the first Indonesian Constitution from 1945, Article 33, stating that

[12] Interview with a key informant in Singkawang, 28.07.2013

all land in Indonesia has a social function and that land matters shall be controlled by the state as the authority representing the Indonesian people (MacAndrew 1986: 21). The BAL further set out a maximum ceiling size for land holdings and fundamental types of land rights, such as the right to own land (*hak milik*). Customary laws were, in a context of legal pluralism, recognized by the BAL, but only as long as customary interests were 'not contrary to the national interest and the interest of the State' (BAL, Article 5)[13].

In Jambi province, migrants started to move to the area of Singkawang, attracted by an increase in rubber monoculture and labor opportunities due to a rising demand in the sector. According to interviews, migrants from Java and other areas of Sumatra had already arrived in the early 1960s in Singkawang, hoping to find occupation in the rubber plantations to earn money and purchase land. 'My mother came here in 1965 to work in the rubber fields. Here, my parents had the opportunity to buy land. In Java, where they came from, land was not affordable[14].' These land-seeking migrants, attracted by the booming rubber economy, were granted access to land by the Batin Sembilan (Martini et al. 2010: 6). Newcomers to the area acknowledged *adat* regulations and the Batin Sembilan as legitimized authorities in charge of land tenure. Even though legitimized by migrants from Java, the Batin Sembilan felt that 'Customary law ceased with Indonesian independence. Since then the government manages all land and is in charge of land tenure.'[15]

An institutional overlap favoring a blend of different sets of regulations was now created by three different approaches of land-tenure systems: the customary laws, the Dutch Colonial laws and the newly introduced BAL. The BAL reproduced the land classification of forest and agrarian areas, hereby maintaining the classification introduced with the Dutch Agrarian Laws from 1870 (see also Figure 1). From the perspective of the communal institutions, local residents were permitted to clear land and cultivate it. There was no de jure recognition of being allowed to clear land as there were no permits from the respective ministry.

Local actors further negotiated competing legitimacies in a process of institutional bricolage by merging different sets of regulations. Intermarriages between Batin Sembilan and migrants initiated land purchases to people from outside the village community, as new

[13] [8] Republic of Indonesia, 1960, 'Basic Regulation on Agrarian Principles. Act No. 5 of 1960', http://faolex.fao.org/docs/pdf/ins3920.pdf. [27.04.2014]
[14] Interview with a local farmer in Singkawang, 20.07.2013
[15] Interview with a key informant in Singkawang, 28.07.2013

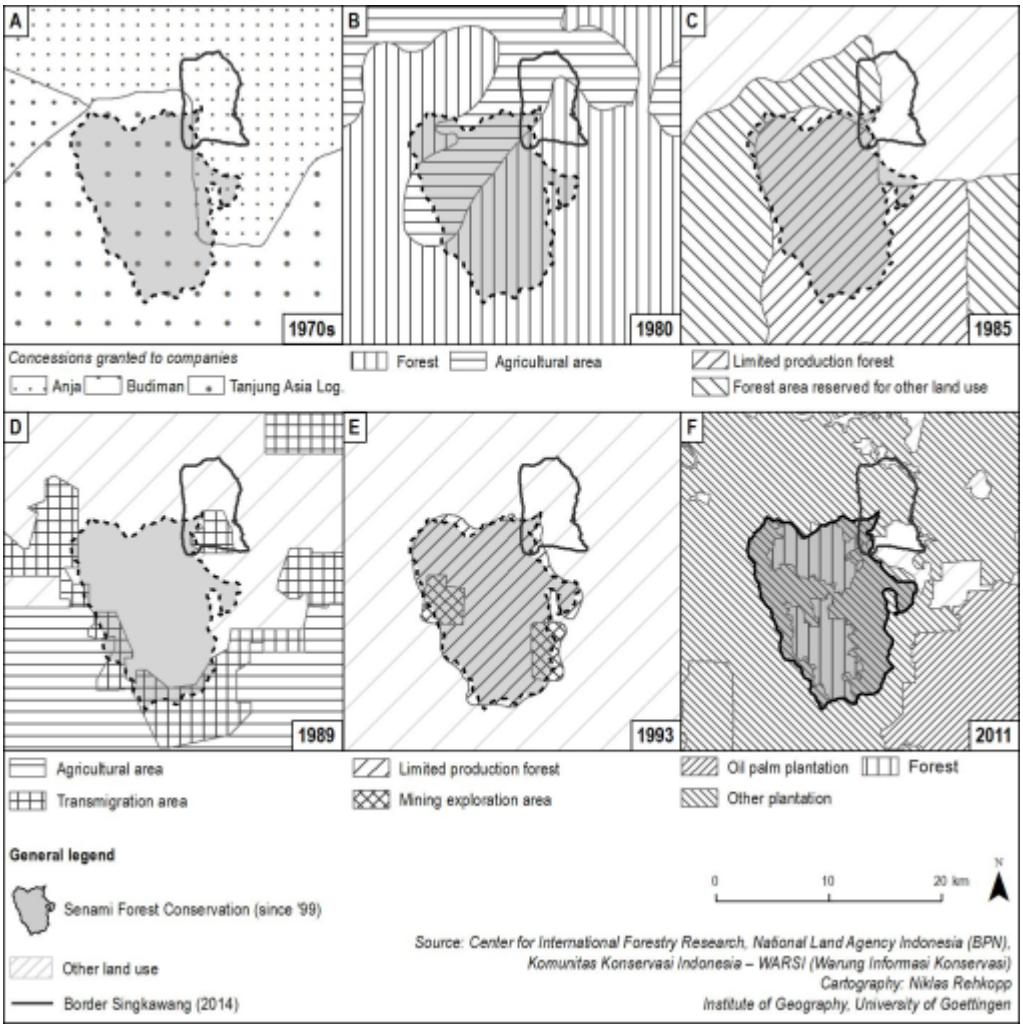
community members influenced local land-allocation policies. Initially, land could not be sold according to *adat* rules as it was not owned individually. Following national regulations the land could not be sold either as the Batin Sembilan did not have de jure titles to the land. And still, land started to be traded as a commodity with the new rules in place fostering a fragmented landscape transformation.

4.4.3 Land for development not for the people: The New Order

A time of even more severe transformation in the arena of land tenure was inaugurated with the fall of Sukarno in 1965. Under his successor Sukarno, the newly established and far-reaching Forestry Law of 1967[16] was passed (see figure 1). The approach of the government changed towards the goal of including Indonesia into the global capitalist system (Rachman 2011: 43). The 'land for development' policy was directed at national economic growth. Laws were released to attract foreign investment (Law No 1 Year 1967 on Foreign Investment[17]) and almost the whole area of Jambi province was designated as concession areas for various companies (see map 2a; note that the boundaries of the Tahura Forest are provided for orientation; it was only established in its current shape as a protection area in 1999).

[16] Republic of Indonesia, 1967, 'Undang-Undang Republik Indonesia Nomor 5 Tahun 1967 tentang Ketentuan-Ketentuan Pokok Kehutanan'
http://www.hukumonline.com/pusatdata/download/lt4c2e033860cb4/node/13512 [27.04.2013]

[17] Republic of Indonesia, 1967, 'Law No1/1967 concerning Foreign Investment'
http://www.flevin.com/id/lgso/translations/Laws/Law%20No.%201%20of%201967%20on%20Foreign%20Investment%20%28BI%29.pdf [27.04.2013]



Map 3: Changing land-use allocations over time for Singkawang and the Senami Forest Conservation

Under the Forestry Law, the Ministry of Forestry has the so-called one-sided authority to designate an area as 'forest', regardless of vegetation cover. This allowed for a flexible approach to land designation that was applied to the majority of Indonesia's land mass, resulting in more than 140 million hectares of forestland, or approximately 74% of the landmass, falling under the jurisdiction of the Ministry of Forestry in a process of state informality (see map 2b) (Indrarto et al. 2012: 23). The state and its forestry institutions thus became the single largest landlord. Responsibilities were distributed amongst institutions in charge of forested areas and the remaining areas. The National Land Agency (NLA or Badan Pertanahan Nasional) governs land use and land tenure for the non-forested area, whilst the Ministry of Forestry governs the area assigned as forest land (Indrarto et al. 2012; Hein 2013; McCarthy 2006; Rachman 2011). In the 1980s, a mapping exercise was carried out by the Ministry of Forestry to identify areas of responsibility. The land was not only mapped according to forest or non-forest area but also according to the types of forest (see map 2b):

limited production, production, protection and conservation forests (see map 2c) (McCarthy, 2006 5). Obviously, the land mapped was far from being 'empty' land. According to expert interviews, more than 3,000 villages (out of approximately 30,000) across Indonesia now found themselves located within a forest area, and only approximately 20% of the newly identified borders were ground-checked to see if they matched the reality of people inhabiting the area[18]. Labeling the land as 'forest' leaves the Ministry of Forestry with a flexibility it could not have if the land was under a non-forest jurisdiction. The land-use activities of local people on land that had been newly labeled forest land, all of a sudden became illegal.

With the Foreign Investment Law, also from 1967, a number of non-place-based actors were added to the scene, further impacting the land available to local smallholders. This was, from a state perspective, an important feature to bring forward the main streams of development policy and the attraction of foreign investment, as planned under the Forestry Law. In order to advance the Indonesian economic situation, all land was needed, even forested areas (see map 2a, concession granted for forested areas and see footnote 14). The protection status of the Tahura was changed, and with it the rules governing land use as well as the borders in the area. Although officially placed under protection in 1933, then changed to state forest in the course of the mapping exercise (map 2b), the area became a limited production forest in 1985 in line with the land-for-development-policy under Suharto (see map 2c). With the introduction of transmigration villages in the 1980s in the bordering district, oil palm was introduced as another monoculture crop, on an area actually classified as forest (see map 2d). The Indonesian transmigration program moved millions of people from densely populated islands like Bali and Java to islands such as Sumatra. The vast majority of the transmigrants who were moved to Jambi were contract farmers in oil palm development estates equipped with de jure land titles. Through this program, households were provided with infrastructure, a house, and a living allowance intended to support the people until the first harvest (Fearnside 1997: 553f).

In the area around Singkawang, oil palm companies, in cooperation with transmigrant villagers, started to establish plantations independent from transmigration schemes. Within a short period of time, the land available to non-transmigrant communities decreased

[18] Interview with the National Land Agency in Jakarta (15.08.2013) and an Expert at the Bogor Agriculture University (27.06.2013)

drastically. Additionally, logging businesses that were granted concessions for the forested areas were increasingly 'disturbed' by semi-nomadic Batin Sembilan groups. These groups are related to the groups in Singkawang but are not sedentary in the way the groups in Singkawang itself are. In response, the Social Department initiated a social housing project to settle these groups. Wooden huts were provided, along with a certain amount of land for agriculture[19]. The status of the area was changed to a protection forest again in 1999, making the social housing project an island with a special status within the protection forest. The housing project attracted people from outside in search of farmland, who also started to settle and cultivate around the social housing project or else bought houses from the local Batin Sembilan population who did not wish to settle here. State informality, through changes in the status of the area as well as the different sets of regulations, offered an immense variety of regulations to choose from. The opportunities for an institutional bricolage seemed to have reached its peak but were to be expedited with the decentralization process.

Decentralizing regulatory authorities: The fall of Suharto

With the fall of Suharto in 1998, a decentralization process was initiated that especially affected the forest sector. After three decades of highly centralized governance, responsibilities were, in theory, distributed more evenly between the central government in Jakarta and the governments on the provincial and district level. Law No 22/1999 on Regional Governance and Law No. 25/1999 on Fiscal Balancing between the central and regional governments were issued in May 1999 shortly before the Autonomy Law was released that allowed this redistribution of powers. Following the regional autonomy, the district level was now authorized to issue concession permits (Barr 2006: 38–41). 'As a result, many local regulations conflict with higher-level policies and laws, while increased decision-making powers and the quest for locally generated revenues have led to indiscriminate licensing for inappropriate forest conversion' (Indrarto et al. 2012: xi).

In Singkawang, this caused major changes for the Batin Sembilan. Almost all households living in the hamlet *RT 04* were approached by an oil palm company to provide their agricultural land to become contract farmers. Many of the Batin Sembilan, until now mainly rubber farmers, were not eager to engage in a contract with the oil palm company. The

[19] Interview with a local farmer in Singkawang, 23.09.2013

company, however, managed to employ a charismatic customary leader from the village as their right hand. He convinced the Batin Sembilan that the deal was beneficial, especially with the thought in mind that in addition to committing their land on village territory to the company, they could still 'open' land in the Tahura. 'Since then' one interview partner reported 'you can count the people in *RT 04* who still have their land [on the fingers of one hand]'[20]. All households in *RT 04* interviewed started to cultivate more land inside the Tahura. 'We do not have to seek permission if we open land in the protection forest. There, we do not have to apply for a certificate. And if we do not open too much land, we will not be sent to jail[21]' one inhabitant of *RT 04* explained the situation to us. Aware of the national rule of not being allowed to cultivate in the protection forest, the de jure rules are blended with customary rules. The migrants, as a second group of local actors, remained with their land within the administrative borders of Singkawang, the land they were once granted access to by the Batin Sembilan groups. Human activities continued and even intensified within the Tahura conservation area, leading to several conflicts between the local communities and the provincial forestry office, whose authority is largely ignored by the local population in and around Singkawang.

The overlapping, contradictory set of regulations and the fact that the economic sector won a convincing customary leader, drove the Batin Sembilan of Singkawang to engage in, from the Ministry of Forestry perspective, illegal activities and encroach into the protection forest. Even though the Batin Sembilan of Singkawang had for long time had small patches under cultivation within the borders of the Tahura, the area under cultivation constantly increased. One interview partner justified the behavior by stating: 'Even though it is a protection forest, we cannot disturb this forest, because it has already been cut down by the government'[22]. The fact that the officials from the provincial forestry office, as another set of local actors, seem to be involved in cultivating the forest, encroachment into the forest area seems to be legitimized by an institutional bricolage fostered by different sets of regulations but also by state informality.

[20] Personal communication with an inhabitant of Singkawang, 23.07.2013
[21] Interview with an inhabitant of the village inside the Tahura, 26.09.2013
[22] Interview with a local farmer in Singkawang, 28.07.2013

4.5 Discussion: State informality, competing regulations and landscape realities

The forest mosaic we find in Jambi province and around Singkawang is an ambivalent one. The ambivalences to be found in the landscape are a result of processes of informality. In the case of the Tahura, the government does not ground-check borders, but designates areas as natural landscapes that have long been and still are shaped by human environment interactions (see map 2). In this landscape with diverse human activities, it cannot be expected that local actors adhere to state rules, which, to maintain flexibility, government officials themselves do not formulate clearly. Recently, the Ministry of Forestry itself stated that approximately 10,000 hectares out of the 15,830 hectares of the Tahura are under crop cultivation (Antaranews Jambi 23 Februari 2013) (see map 2f). The maps presented here (map to 2a to 2f) reveal a rather arbitrary change of land classification over time, not in line with the de facto land-use. Different ministries for the current point in time have produced varying maps displaying contradictory land-use information and borders. The Indonesian institutions in charge seem to maintain flexibility by over-mapping areas by assigning multiple land-use categories.

What cannot be seen at first sight in the forest mosaic, but became clear through the results of this study, are the direct results of the competing legitimacy processes. The oil palm concessions are de jure granted a permit by the state authorities. For rubber and oil palm plots, smallholders use various land certificates, legitimized by various socio-political institutions, but not recognized by the National Land Agency, de jure in charge of land titling. In the first place, this was created through new sets of actors, the Dutch colonial administration as well as migrants, bringing different sets of laws, different cultural preferences and behavior. This had already started with the introduction of codified laws that ignored the politico-legal authority of the Batin Sembilan. At the same time, the institutions of the Batin Sembilan were legitimized by migrants as they acknowledged the authority of the Batin Sembilan in matters of land tenure. Limited access to land that can be de jure legally owned and a continuously rising demand for land created a social structure that separated people with formal legal access from the people without. Certificates can be obtained only on land under the jurisdiction of the National Land Agency. Obtaining a title from the National Land Agency is, however, costly and a long process. The winners in this scenario are concession holders and transmigrants. Through the transmigration program, de jure legally legitimized access was granted to those participating in the program.

Governmental laws added after independence, and the competing legitimation processes that arose with them, as well as unclear authorities have created loopholes allowing and accelerating resource exploitation, not only in Singkawang but also beyond (Indrarto et al, 2012: 20). In terms of the protection forest this becomes particularly obvious. The National Land Agency, the Ministry of Forestry and the now decentralized political bodies often have to deal with overlapping or unclearly defined responsibilities. Rules prevalent on signboards scattered throughout the area are ignored, reinterpreted, or modified by all actors involved at any given time. Interview partners reported that rubber cultivation is allowed inside the Tahura but not oil palm. Other actors, mainly descendants of migrants from Java, state that it is permissible to clear land but only for Batin Sembilan from Singkawang. One interview partner also reported that the government kept the land as alternative land to be cultivated by people who could not manage to gain access to land somewhere else. None of these regulations is in line with the rules by the Ministry of Forestry, but what they all have in common are legitimizing arguments for cultivation in the protection forest, displaying the institutional bricolage against different socio-cultural backgrounds. The Batin Sembilan as well as migrants do not see why they should adhere to rules to protect the forest. 'Why should the government be allowed to give out a concession while we are not allowed to use the land?'[18] was a statement from one villager living in Singkawang, cultivating rubber inside the protection forest.

The competing regulations shape local actors' access options, which in turn shape landscape realities. For a long time, the Indonesian government has, with varying levels of vehemence, followed a rationale of accumulation, leading to large monoculture plantations. Existing land-tenure systems, as established by the local population, were widely disregarded. Our analysis reveals that competing legitimation processes, negotiated over time through institutional bricolage and informalities, facilitate unsustainable resource exploitation by favoring large-scale monoculture and pushing local actors to encroach on protected areas. Transforming landscapes are thus an arena onto which competing regulations and their accompanying legitimizations are projected.

4.6 Conclusion

Overlapping regulations and diverse governmental allocations of land, especially concessions, to particular stakeholders, create an unequal situation for local actors. These conditions, combined with national policies, define the scope of access opportunities conceded to different cultural groups in particular places. Landscape transformation is driven by a complex network of rules and actors and is open to various interpretations and actions. As new layers of reforms and sets of rules are added, loopholes for informality increase, creating competing legitimacies. Even though 'the primary purpose of law is to provide certainty, the current practice of Indonesia's land law does not create this' (Bakker & Monagia 2010: 188).

The landscape transformation could mainly be achieved by implementing capitalistic concepts of land use and European notions of rights and property. The Dutch laws, the BAL and the Forestry law facilitated foreign access to Jambis' natural resources, while limiting access to land for the local population. These changes in the natural landscape are inseparably interwoven with demographic changes and transformations in local social structures.

The introduction of large-scale plantations and transmigration projects also divided the local population into people with de jure access to land, wage workers, and people with precarious livelihoods using land without certificates. In order for land and natural resources to be managed more equitably, controversies and their roots need to be addressed. It is the government's responsibility to decrease the informality created in the land tenure sector in order to increase social and ecological sustainability.

The case study shows that multiple, unreconciled layers of land-tenure regulation, and the various ways in which local actors respond to them, favor a rapid exploitation and thus transformation of landscapes. Human–environment relations need to be seen in their historic and institutional context. Still, as many other situations studied in Indonesia show, the case of Singkawang allows for abstraction. If the Indonesian government is interested in protecting the natural environment and improving people's livelihoods, de jure regulations on land use that take local resource management practices into consideration need to be seen as a starting point. If local actors and their practices were to be taken into consideration in planning processes and had been from the beginning, there would be fewer

contradictions, fewer overlaps and thus less leeway for informality. Only by avoiding territorial flexibility through informality can the central government show a more convincing interest in the natural and social environment, not only in Singkawang and the Tahura, but in the rural Indonesia of today.

5 Mimicry of the legal: Translating *de jure* land formalization processes into *de facto* local action – Experiences from Jambi province, Sumatra, Indonesia[23]

Abstract

In Indonesia, as in many other countries of the global South, processes to formalize rights over land have been implemented with the intention of reducing deforestation, decreasing poverty and increasing tenure security. Literature on de jure processes of land formalization is widely available. There is a gap in the literature however, illuminating the discrepancy of de jure land titling procedures and de facto strategies to legitimize land claims. Led by the theoretical approaches of "Law as Process" and "Politics of Scale" this study closes this gap by analyzing the impacts of national tenure formalization processes on de facto local level patterns of land titling. Using empirical material from 16 villages in Jambi province, we show that the outcomes of the state-led land reforms and land tenure formalization processes are imitated and translated into locally feasible actions. We refer to these translation processes as "mimicry of the legal". The land formalization endeavors fostering mimicry of the legal in turn allow for resource exploitation and rent-seeking behavior.

5.1 Introduction

In Indonesia, as in many other countries of the global South, processes to formalize rights over land have been implemented with the intention of reducing poverty and increasing tenure security (Sjaastad & Cousins 2008: 8; De Soto 2000). In the context of an increasing pressure on the resource land and increasing difficulties for local communities to access land, the formalization of land rights seems to be an obvious step. The concept of using land titling as a tool to stimulate investments in order to eradicate poverty and to foster more sustainable land-use practices has been discussed, often controversially. Many studies focus on the benefits and disadvantages of property formalization in regard to land, as well as on hurdles to implementing land registration programs (Benjaminsen et al. 2008; Bromley 2008; Hall 2013; Sjaastad & Cousins 2008; Toulmin 2008). Camilla Toulmin, in particular, points to the fact that securing rights has become even more urgent, given the rise in demand for land for large-scale cultivation (2008, p. 10).

[23] Kunz, Yvonne; Hein, Jonas; Mardiana, Rina; Faust, Heiko: Mimicry of the legal: Translating de jure land formalization processes into de facto local action - Experiences from Jambi province, Sumatra, Indonesia. Accepted for publication by the Austrian Journal of Southeast Asia Studies. As the lead author Yvonne Kunz is responsible for the majority of the chapters' content.

An increasing pressure on land is notably prevalent on Sumatra, Indonesia. Rising demands for land occur especially in the context of large-scale monoculture cultivation as well as through the expansion of conservation areas. Transmigrants, an increasing number of independent smallholders, as well as investors from other parts of the country further contribute to a rising demand in land as a resource. Since the beginning of colonization, more than 15 million hectares of Sumatra's forest land have been converted mostly to monoculture plantations (De Kok et al. 2015: 29), often in the context of land-tenure formalization processes. These processes were, for example, realized through transmigration programs and titling programs initiated by the government and supported by the World Bank in combination with the intention to boost cash crops. The participants of these programs were granted formal land titles and often also seedlings with the obligation to cultivate a certain crop, usually rubber or oil palm. These contract farmers are bound to sell to state-run processing facilities (McCarthy, 2009, p. 115). Today, about 70% of Indonesia's oil palm plantations are located on Sumatra[24] (Coordinating Ministry for Economic Affairs, Republic of Indonesia, 2011, p. 53) and about 84% of Indonesia's smallholder rubber comes from Sumatra (Peramune & Budiman 2007: 9). Sumatra, of all Indonesian islands, also has the highest share of transmigrants resettled from densely populated Java, Madura and Bali (Cribb 2000: 57; Miyamoto 2006: 8).

Indonesia's recent attempts to formalize land tenure have been pushed by the UN-backed REDD+[25] mechanism. The national REDD+ strategy refers to the "[…] constitutional right to certainty over boundaries and management rights for natural resources" (Indonesia REDD+ Taskforce 2012: 18). The process of formalizing rights, which normally involves changing them, can be complex when different phases of formalization occur consecutively or even simultaneously. Rather than fostering sustainable and socially inclusive growth, this complexity can create leeway for actors to develop their own interpretations of land-tenure formalization processes. This leeway in turn encourages rent-seeking behavior as well as resource exploitation (Lund 2008, p. 135).

While there is literature on the *de jure* procedures of issuing title deeds, on the institutions in charge, on land-use planning and on the designation of protected areas in Indonesia (for example Sahide & Giessen 2015), there is a gap in the literature on the links between *de jure*

[24] Indonesia is palm oil producer number one in the world.
[25] Reducing Emissions from Deforestation and forest Degradation

land titling procedures and *de facto* actions on the local level. This study closes this gap by analyzing the discrepancy between national land formalization processes and the *de facto* local level dynamics of land titling. This paper therefore starts by embedding the work in a theoretical conception, establishing the underlying understanding that the law is often not followed but imitated and translated on different scales. Translation here refers to de- and re-construction, an adjustment of meaning. While making use of language and procedures as outlined in the initial rule, meaning and application shift in the translation (Struve 2013: 131). This translation is linked to, but is not congruent with, the broad sweep of national legislation: starting with the pre-colonial period, through the first major changes in tenure regimes under the Dutch, and the major development interventions of titling programs that followed, we explore the history of land-titling programs in Indonesia.

Led by "law as process" (Moore 1978) and "politics of scale" (Brenner 1998; Meadowcroft 2002; Neumann 2009; Swyngedouw 2010; Towers 2000; Zulu 2009) literature, we combine theory and empirical data from Jambi province, Sumatra to shed light on a confusingly high number of different kinds of land titles in use and their relation to public authorities. The paper analyses the impacts of tenure formalization processes on local realities. We argue that actors - these are state representatives as well as farmers - translate fragments of national land formalization programs and regulations into local actions. Refining concepts devised by scholars of international law (Bélanger 2011; Drumbl 2007) and post-colonial scholars (Bhabha 1994) we call these processes "mimicry of the legal". In our case, mimicry refers to the translation of national law to local land-tenure regulations embedded in power asymmetries (Bélanger 2011: 25; Drumbl 2007: 123). In two case studies we illustrate this mimicry process of national policies. The first case introduces the formation of the informal settlement Transwakarsa Mandiri (TSM) within a private conservation concession and REDD+ pilot initiative, while the second case reveals the translational dynamics of village-scale land titling. The cases demonstrate that formalization of land-tenure systems is not simply applied as predetermined, but is reinterpreted and translated by local public authorities and land users into a local reality. Local actors construct new village scales of regulation for facilitating access to land and property. By using fragments of national policies and regulations, as well as the language and symbols used by the central state, local public authorities seek to legitimize the exceeding of competencies and rent-seeking behavior. The

ensuing empirical material leads to the conclusion that access to land is rather obtained by mimicry of the legal than by applying *de jure* procedures.

5.2 Theoretical conception

This paper analyses the translation of national formalization endeavors into *de facto* processes of regulation on the local level. This implies that "rules enshrined in formal law provide only part of the picture" (Lund 2008´: 134). Sally Falk Moore (1978) in "law as process" presents the idea that regulatory processes, including rules, exist to organize and stabilize intermediacies. At the same time, processes of situational adjustment redefine rules or relationships. Although social reality is impacted by national laws, it is also impacted by the socio-cultural context of the local actors making the law applicable to their local setting. We analyze processes as existing orders that are "endlessly vulnerable to being unmade and reproducing themselves. Even staying as they are should be seen as a process" (ibid: 6). It is the local actors embedding normative rules into their local reality. A land-registration program, for example, can spark the motivation of people striving for a certificate. Smallholders might for certain reasons not be able to participate in a national land-titling scheme or might lack the (financial) capacities to obtain a formal land title. Actors are aware of a national rights framework securing claims, in this case land, hence making it property backed by the central government. The authority in charge of *de jure* acknowledgements and securing of land rights is a central government institution. The perspective of local land users on what secures and legitimizes claims can differ. And local authorities, as well, in their multiple identities, can have a different perception from that foreseen by the national legislators. Actors "develop certain readings of the law that may be technically [*de jure*] incorrect, though considered 'the law' by the administrators and, in consequence hereof, by the local population. […] What is commonly accepted as the reference point, the law, may in fact be a social construction that differs significantly from the normative law. The rule of law is often the rule by those who define it" (Lund 2008: 135).

In line with Swyngedouw (2010), we assume that questions of access to natural resources, including land, can be further explained by analyzing the socio-spatial configurations of scales. We consider scale as socially produced, thus "[…] as the outcome of socio-spatial processes that regulate and organize social power relations" (ibid., p. 8). Different public

authorities construct different scales and acknowledge and secure rights. In frontier landscapes, public authorities with varying capacities and ranges of legitimacy compete with each other (Tsing 2005; Fold & Hirsch 2009; Peluso & Lund 2011). They seek to constitute different – and often competing – rights as property (von Benda-Beckmann et al. 2009: 18; Sikor & Lund 2009: 5). The legitimacy of public authorities in issuing land titles is in many cases characterized by "[…] endless chains of reference to bigger authorities" (Lund 2006: 693), and thus has a scale component. Authorities governing forests and land operate on different government levels and consequently create different – and sometimes overlapping – scales of regulation (Towers 2000: 26). More explicitly, scales are shaped by actors while they are structuring the social practices of actors (Marston 2000: 220; Towers 2000: 26, Hein et al. 2015). Relevant scales of regulation that overlap and compete with each other are the village scale of regulation and the national scale of regulation. The village and national scale compete with one another, but at the same time the national scale of regulation is structuring the village scale. When "actors […] attempt to shift the levels of […]decision-making authority or the level and scale which most suits them…where they can exercise power more effectively" (Lebel et al. 2008: 129) the literature speaks of politics of scale (Towers 2000, Brenner 2001). Actors marginalized at a specific scale, at the national scale for example, might seek to "jump scales" to higher or lower scales in order to achieve their interest (Smith 2008: 232, Zulu 2009: 695). For peasant farmers in many parts of Indonesia it is almost impossible to access a land title or forest concession from the Ministry of Forestry or from the National Land Agency. Peasants consequently jump to the village scale of regulation to legitimize land claims (Zulu 2009: 695, Hein et al. 2015).

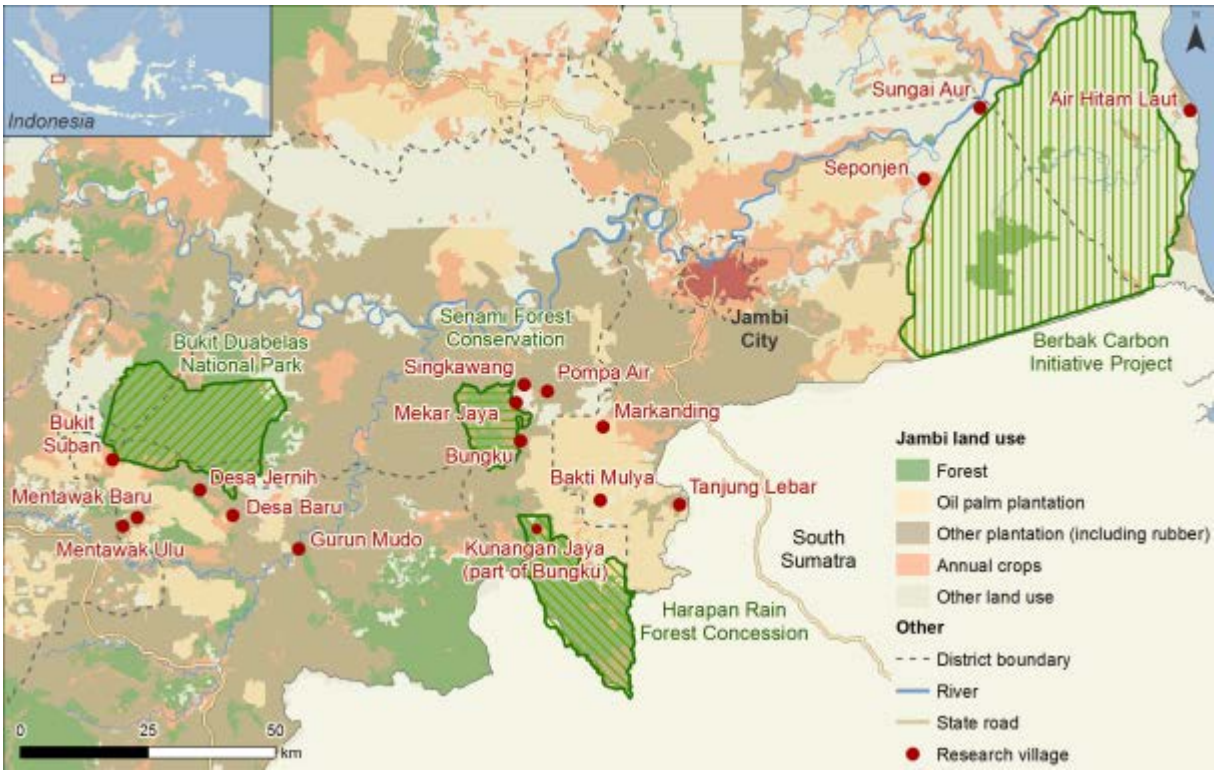
By acknowledging that rules are dynamic and that certain actors "jump scales" it becomes apparent that the regulatory processes used at the village scale are different from the formulation of these processes on the national scale. They are "almost the same but not quite [….] almost the same but not white" (Bhabha 2000: 132). These are the words of Homi K. Bhabha to describe what he refers to as mimicry. Applying the term in the postcolonial discourse context, he sees mimicry as a strategy. Inherent to this strategy is a subversion and power potential. On the discursive level mimicry works in a double way. On the one hand, specific aspects used by colonizers are turned into own, local aspects in a way that makes them look deceptively genuine. At the same time there is always something remaining that cannot be read in the "still not exact" or the "almost the same" (Struve 2013: 144). Since the

regulatory and legal aspects are central to the context of land formalization dynamics, the term has been extended to “mimicry of the legal”. Regulatory processes played out at, and amended between, scales is exactly what we will present in the following paragraphs, the outcome being what we refer to as mimicry of the legal.

5.3 Methodology and research area

In order to analyze asymmetries in the national *de jure* procedures of formalizing land ownership and de-facto local-scale land titling, a multi-sited qualitative approach was applied (Marcus 1995, Hein et al., 2015). Through literature reviews of governmental as well as academic documents, we gained an understanding of the process of *de jure* land-tenure formalization in Indonesia and, in particular, in our research area: Jambi province, Sumatra. Complementary, 75 expert interviews were conducted with national government representatives, local authorities and representatives of non-governmental organizations between June 2012 and November 2013 to learn about the *de jure* perspective on land-formalization processes at different times.

To study the village-scale processes of tenure formalization it was crucial to investigate a variety of villages that differ in their origin and in their locality features. The research is part of a larger Collaborative Research Centre (CRC 990 on Ecological and socio-economic functions on lowland rainforest transformations systems in Jambi province, Sumatra, Indonesia).



Map 4: Overview research area[26]

Core plot villages, around which all of the 24 research center groups work, were predetermined by the overall research design. In accordance with this design, we identified 16 villages (see map 1) from across Jambi province. Amongst them are transmigration villages and local resettlement villages, as well as villages of pre-colonial foundations. Despite the heterogeneity of the villages and the fact that transmigrants are granted title deeds by the National Lang Agency, mimicry of the legal dynamics were found in all villages. The research villages are all located in the proximity of protected areas managed by the state or by private conservation companies. The village territories of some villages (e.g. Bungku and Singkawang) overlap with state forest, with protected areas and with the private conservation and REDD+ pilot initiative 'Harapan Rainforest' (Badan Pengelola REDD+ 2015). Overlapping claims, e.g. village-scale land titles competing with titles (concessions) issued by the Ministry of Forestry or by the National Land Agency, are common for many of the villages investigated. Information on land-tenure systems and land-titling processes was mainly gathered through semi-structured interviews in all of the villages (119 interviews across all villages) between May 2012 and October 2013. Interview partners were selected following the snowball effect and present a wide variety of affiliations: village

[26] Other land use here refers to acacia, eucalyptus, coconut, mangrove, ponds, primary and secondary swamp forest, rubber, settlements, shrubs, swamp, tea

representatives, customary leaders, independent small-holders, contract farmers, employees of companies and the like. The interview focus was on differences in the local actors' perception of the intention as well as of the motivation to obtain title deeds. Information was also gathered through participatory observation and numerous informal interviews conducted while spending several weeks in the villages, usually with the household of the village head.

5.4 Historical development of tenure formalization in Jambi, Sumatra

The emergence of land formalization during the colonialization period does not imply that land tenure had been unregulated before the Dutch colonial period. In precolonial times, it was the Sultan in charge of land- and resource-management regulations. The different ethnic groups (*Batin* groups) inhabiting the research area at this time were mostly given autonomy by the Sultan in their land decisions. Their elected chiefs were in charge of decisions made in regard to access to land as well as in regard to what the land could be used for (Locher-Scholten 2004 48). Land, during this time, was not regarded as an asset that individuals possess, but as a common good that was guarded and preserved by the community (Warman et al. 2012: 17). The maintenance of the land was regulated through *adat* rules, the rules in use by indigenous communities. These *adat* rules permitted different *Batin* lineages to control land and forest along different rivers. The boundaries between different lineages were demarcated by water courses, specific trees and other landmarks. Within the territory of a lineage, only lineage members were allowed to establish fruit gardens and dry rice fields (Hein et al. 2015). Migrants and other outsiders had to pay tenancy to *Batin* groups for accessing land rights (Tideman 1938: 78). Amongst these *Batin* groups are the Batin Sembilan, a group that plays a role in the case study as the ethnic group that has been living in the research area for generations. Until today Batin Sembilan leaders are approached by land-seeking actors to be granted access to land. By acknowledging their authority as group in charge of land tenure, the access granted is legitimized on the village scale, however not recognized on the national scale.

5.4.1 Colonization and land tenure

Western concepts of private property rights were introduced to the research area at the beginning of Dutch colonialization in 1906 (Locher-Scholten 1994: 268). The Dutch colonial

government sought to strengthen land control and started to enact regulations aimed at formalizing access and property. The Agrarian Act was issued for Java and Madura in 1870 and for Sumatra in 1874 (*Sumatra Domein Verklaring*). The main intention was to "facilitate the growth of private investment in the agricultural sector" (Biezeveld 2004: 140) by establishing a concession system allowing mainly European businesses to run plantation estates. Colonization imposed laws, land-use categories and a Western concept of private property, by imposing a jurisdictional system with implications for land tenure. In Jambi, the colonial jurisdictions undermined the previous water-shed and lineage-based social and territorial structure of the *Batin* groups. The Dutch colonial administration established the *Marga* as a new jurisdiction consisting of five to six villages, and the *Pasirah* as a new public authority responsible for land tenure of the native population within a *Marga.* The *Pasirah* remained a relevant public authority until the enactment of the village government law in 1979 *(Undang-Undang Republik Indonesia No.5 Tahun 1979 tentang pemerintahan desa, UU 5/79)* (Hein et al. 2015; Galudra et al. 2014).

5.4.2 Independence and the Basic Agrarian Law

The independence period, commencing in 1945, was, in regard to land, characterized by a dual system of land laws: Dutch land tenure regulations and customary rules. Until the enactment of the Basic Agrarian Law (BAL) in 1960, the dualism remained, mostly equipping non-Indonesians with land certificates for land that was mapped, measured and titled. For Indonesian citizens, the *adat* law usually continued to be the legitimizing regulation that organized access to land (MacAndrews 1986: 19).

The BAL sought to abolish this dualism. This was to be achieved by revoking regulation of land as contained in various Dutch laws on land. The basic principles, as outlined in these regulations, were based on the first Indonesian Constitution from 1945, Article 33 stating that all land in Indonesia has a social function and that land matters shall be controlled by the state, as the authority representing the Indonesian people (MacAndrew 1986: 21). The BAL further sets out the fundamental types of land rights, the most important ones for our context being the right of ownership (*hak milik*) and the right to cultivate (*hak guna usaha*). The right of ownership (*hak milik*) needs to be registered with what today is the National Land Agency (NLA) and the holder is given a certificate as evidence of the title (Organization for Economic Co-operation and Development [OECD] 2012: 109). Article 19 of the BAL made

land registration through the NLA mandatory, but set no time limit for registration. This means that all landholders should hold a certificate issued by the NLA and indicating that the land-holder is granted the right to own (*hak milik*). The empirical data to be presented in the case studies show that this mandatory registration is widely interpreted, mimicked and subject to shifting levels of decision-making.

5.4.3 New Order and the economic development paradigm

The BAL was passed under the first president Sukarno, who hoped to establish an Indonesian socialism. The BAL can be considered as important element of Indonesian socialism. By introducing a maximum size for land holdings (20 hectare) and a redistribution of land to landless or poor households the law aimed at promoting agrarian justice. Sukarno's "Guided Democracy", during which most of the provisions from the BAL were not operationalized, ended with a military coup and made way for the New Order government under General Suharto in 1965 (Thorburn 2004: 37). The new policy narrative that came with the military-led government was characterized by export-led economic growth and development (Barr et al. 2006: 23; Rachman 2011: 43). For Jambi province this meant that vast areas of the province were designated as concessions for forest exploitation, neglecting the rights of local indigenous communities such as the Batin Sembilan. In order to achieve these development goals, a number of laws and programs, often closely or directly linked to land formalization processes, were implemented or passed during a 32-year period of a centralized and authoritarian government.

5.4.3.1 Transmigration program

The transmigration program in Indonesia is the largest government-sponsored voluntary resettlement scheme in the world (World Bank 1988: iii). People had already been moved from densely populated islands such as Java and Bali to less populated places such as Jambi by the Dutch Colonial Administration (*Batang Hari Delta Kolonisatie Project*) (Sevin & Benoit 1993: 105). This was continued under President Sukarno with the intention of equipping landless farmers with land, but gained momentum during the New Order regime and Suharto's strive for development. The program contained "provisions for land development, basic infrastructure, selection and transport of settlers to the sites, housing, subsistence packages, and supporting agricultural services" (ibid: 555). The Directorate General of Transmigration, in cooperation with the Directorate General of Agrarian Affairs, was to

provide each general transmigration household with right-of-use titles (*hak pakai*) for their house, the land that was ready for cultivation on arrival and land to be set aside for other cultivation purposes. After a total of five years on the site, households would be granted full right-of-ownership titles (*hak milik*) issued by the NLA (World Bank 1979: 33). For Jambi Province, where 70,000 households were moved to under the transmigration program between 1967 and 1995, this would translate to a total area of approximately 438,000 ha equipped with *de jure* title deeds (Miyamoto 2006: 8). Participants of a sub-program called *Swakarsa* received, compared to the "full transmigrants", "only" a plot titled by the government and subsidies for relocation (Fearnside 1997: 3). The term Swakarsa plays a major role in the mimicry dynamic of the first case study. It is a term mimicked from this national program and used in the name of the village presented in the case.

5.4.3.2 Forestry Laws and the National Land Agency

Not only did the transmigration program initiate major changes in land-tenure regimes during the Suharto period, but also the newly established Forestry Law (BFL) of 1967, passed under his time in government. Under the BFL, the Directorate General of Forestry within the Ministry of Agriculture (later upgraded to the Ministry of Forestry) has the so-called one-sided authority to designate forest areas, regardless of the vegetation cover of a certain area. With this newly acquired authority, more than 140 million hectares of forestland or approximately 74% of the land mass of Indonesia fell under the jurisdiction of one ministry (Indrarto et al. 2012: 23). Indigenous and local communities were disappropriated and their land became part of the state forest land (*kawasan hutan*), and thus eligible for corporate exploitation via a concession system (Contreras-Hermosilla & Fay 2005: 9). For local communities it is close to impossible to receive a land certificate for state forest land. Nevertheless, as the case studies will show, local land users still hold title deeds for the land they cultivate.

The National Land Agency (Badan Pertanahan Nasional, BPN) and formerly the Directorate General for Agrarian Affairs governs land use and land tenure for the non-forested area whilst the Ministry of Forestry governs the area assigned as forest land (Indrarto et al. 2012; Hein 2013; McCarthy 2006; Rachman 2011). In terms of land-formalization processes and rights of ownership to land this has two major implications: the BAL does not apply to forest land, thus right-of-ownership land certificates issued by the National Land Agency (NLA) only

apply to non-forest land. The NLA is responsible for the administration of all non-forest land activities, including land reform, land use, land titling and land registration (OECD 2012: 109). The local reality, as to be presented in the cases later on, differs. Titles are issued on forest land and titles are also issued by institutions different from the NLA. The two most common ways according to the NLA to acquire right-of-ownership land titles outside the transmigration program are sporadic and systematic registration. Sporadic registration is the process that identifies, adjudicates and registers rights of ownership to land on an *ad hoc* basis, usually when walk-in customers approach the NLA and request registration of their parcel regardless of the intentions of their neighbors in this regard. Systematic registration identifies, adjudicates and registers rights to all adjacent land parcels in a selected locality and within a given period of time (World Bank 2002: 3). In a process of mimicry, the term sporadic is reinterpreted on the village level and given a new meaning with a translated legitimization. The process will be explained in detail in the case study section.

In the process of obtaining a land certificate, the role of the village head (*Kepala Desa*) is crucial. Based on Government Regulation 24/1997, it is mandatory to have a proof of ownership signed by the village head certifying the right of ownership in case no written proof exists. Article 7 in Regulation 24/1997 further authorizes the village head to be in charge of land deeds in peripheral areas without a Land Title Registrar (*Pejabat Pembuat Akta Tanah,* PPAT). These regulations and the powers given to the village head are widely played out in local reality land titling processes. As to be seen later on, the village head is regarded as a legitimized authority in the context of issuing land titles. Again, the competency exercised by the village head is not exactly what the national regulation indicates, but they are, in Bhabhas (2000: 122) words “still not exact […] but almost the same”.

5.5 Land-tenure formalization in the post-decentralization era – the status quo

Despite all the efforts fostering land formalization, until today, only a very small number of smallholders hold *de jure* certificates. “Only about 45 percent of the 85 million existing parcels [all over Indonesia] are registered, but most of these registered parcels are not yet

mapped" (Deininger et al. 2010: 11)[27]. Nevertheless, smallholders interviewed still state that they hold land titles. How does the local reality here match the statistics as recorded by the NLA and the National Statistic Office? Local actors have established their own titling system, modelled locally, imitating the national juridical system but based on locally relevant scales of regulation, such as village territories. Even though this system looks arbitrary, it is not: it follows a complex pattern of a translation of national conception into local feasibility.

Adding to the complex regulatory framework, access to *de jure* formal tenure is easier to obtain for certain groups, such as the transmigrants, than for spontaneous migrants or groups inherent to the area[28]. This disequilibrium has been translated into a more feasible local set of rules. Two cases will illustrate the mimicry of the legal as a local translation of national formalization processes. The first case is the formation of a particular informal settlement within state forest land and its way of formalizing its existence; the second one is a type of a title deed that was found in all villages, by the name *Sporadik*.

5.5.1 Mimicry 1 – The formation of Transwakarsa Mandiri/ Kunangan Jaya 1

The forests of Kunangan Jaya have been used for shifting cultivation and hunting and gathering activities by the semi-nomadic Batin Sembilan since precolonial times. In the 1970s and 1980s the area became part of the logging concession of PT Asialog and of the oil palm concession of PT Asiatic Persada. As a consequence some Batin Sembilan families have been displaced and shifting cultivation was prohibited. Yet, a few families resisted and remained in the area until today. The formation of the *Transwakarsa Mandiri* settlement in the hamlet of *Kunangan Jaya* of Bungku village can be considered as an active spatial strategy of Batin Sembilan elites, village elites and district elites to regain full control over land that had been used and owned by the local population prior to Suharto's appropriation policies.

The settlement can be considered as a procedural mimicry of the legal national resettlement policies such as the transmigration program or the program for "underdeveloped villages" (*Impress Desa Tertingal*, IDT). National policies are structuring *in-situ* access and property relations and provide legitimacy to them. The mimicry of legal policies, legal procedures and

[27] No data available for Sumatra or Jambi province in particular

[28] Worth mentioning here is the Constitutional Court Decision MK35 from 2012 (Mahkamah Konstitutsi Nomor 35/PUU-X/2012) declaring that customary forest is no longer categorized as part of state-owned forest. Instead, customary forest has been changed into the category of "forests that are subject to rights". Ownership rights cannot be granted on state forest land. Land to be taken out of this category can be granted access through ownership rights. Once implemented this would allow indigenous groups to be granted ownership rights for parts of their customary land.

narratives are used to legitimize and justify settlement formation and hence forest conversion.

The name of the settlement Transwakarsa Mandiri (TSM) refers directly to the state-backed *Swakarsa* transmigration program, even though the TSM settlement has officially no relation to the *Swakarsa* program and none of the settlers has received any support from the transmigration authorities (Hein, in preparation).The formation of the TSM settlement in 2003 can be traced back to an agreement between a Batin Sembilan leader living in the district capital Muaro Bulian, a Javanese teacher and second-generation transmigrant and the former village head of Bungku[29]. The former village head of Bungku married into a Batin Sembilan family and claims to represent the formal village government and customary authority at the same time (c.f. Hein, et al. 2015; Mardiana 2014). The three leaders started off by requesting a forest conversion and settlement permit from the logging company PT Asialog. The company stopped logging activities in the 1997. PT Asialog refused to issue a permit, delegating this to the Ministry of Forestry as the authority in charge. They applied for a permit from the Forestry Service office in the district of Batanghari but never received a formal permit. Instead, the Javanese teacher Pak Kumis[30] claims that he received a permit to establish a farming group from the district head for converting forests into smallholder rubber plantations. It is impossible to verify this claim; nevertheless it seems likely that the TSM project was supported by district officials since the settlement became *de facto* legalized through support given by the Agricultural Agency of the district of Batang Hari[31]. The Agricultural Agency provided agricultural extension services for the settlers, such as fertilizer, soy, and corn seeds. Today, the elementary school in the settlement receives operational support from the district's education agency, further legitimating the settlement. For legalizing individual land claims, the village government of Bungku issued village-scale land titles. First, mainly SKTT (Surat Keterangan Tanam Tumbuh)[32] or titles and, today, settlers also hold *Sporadik* titles (see second case).

The formation of the TSM settlement had, according to the three leaders running the project in the first place, three objectives which were all in line with objectives of the transmigration

[29] Personal communication (P.C.) with Pak Kumis, Bungku, 09.09.2012 and 10.07.2013
[30] Fictitious name
[31] P.C. with farmer, Bungku, 10.07.2013
[32] SKTT is a title issued by the village government of Bungku which certifies rights over an existing rubber or oil palm plantation. The title only acknowledges the ownership over crops, not over land.

program. The settlement should provide land for landless households, create welfare, and should reduce unemployment. Additionally, it aimed at supporting poor Batin Sembilan households. As the program for "underdeveloped villages" (IDT), the three leaders claimed that encouraging the Batin Sembilan to be sedentary and teaching them "modern farming techniques" would support them in reaching "development". Following the central transmigration program, migrants participating in the TSM program should act as model farmers for local semi-nomadic groups. However, during field research in 2013 only 20 Batin Sembilan households lived in the settlement and only five to nine houses for Batin Sembilan had been built by the program.

To access land, migrants had to pay a development or administrative fee of approximately 700,000 to 1,000,000 Indonesian Rupiah per hectare[33]. The fee was meant to finance public infrastructure such as roads, electricity supply, and housing for Batin Sembilan and for an elementary school (Hein, et al. 2015). By using the term "development fee" the organizers of the TSM settlement concealed the fact that the land was actually sold. As land trade is not in line with the principles of the state-backed transmigration program, the concealment of this fact in particular, and the whole formation of the settlement in general, can be considered a strategy of mimicking the de jure process.

Settlement formation and road construction started in 2004. In 2010, the conservation company PT REKI received a conservation concession from the Ministry of Forestry and started to implement the "Harapan Rainforest" project. The concession includes the area of the TSM settlement. During the same year, the conservation company, supported by the forest police and the mobile police brigade "BRIMOB", entered the settlement and announced that the settlers had to leave the area within two months[34]. Most of the settlers left only temporarily and returned after the police operation ended. In 2011, a participatory tenure mapping process involving PT REKI, district and provincial forest service, the Ministry of Forestry, village government and representatives from the settler community and conflict mediation started. At the time of field research in 2012 and 2013 the situation was calm but the conflict was not yet resolved.

[33] P.C. with farmer, Bungku, 24.08.2013
[34] P.C. with farmer, Bungku, 24.08.2013 and with NGO activist, Jambi, 18.07.2013

Many key informants in the settlement reported that they felt betrayed by the organizers of the settlement arguing that they were not aware of the fact that the settlement is located within the state forest. A Batin Sembilan elder living in the settlement complained that the TSM settlement has not created benefits for his family or other Batin Sembilan[35]. He argued that they have lost most of their customary land to Javanese, Sundanese and Minangkabau migrants and the remaining land is too small for providing a livelihood for their children[36].

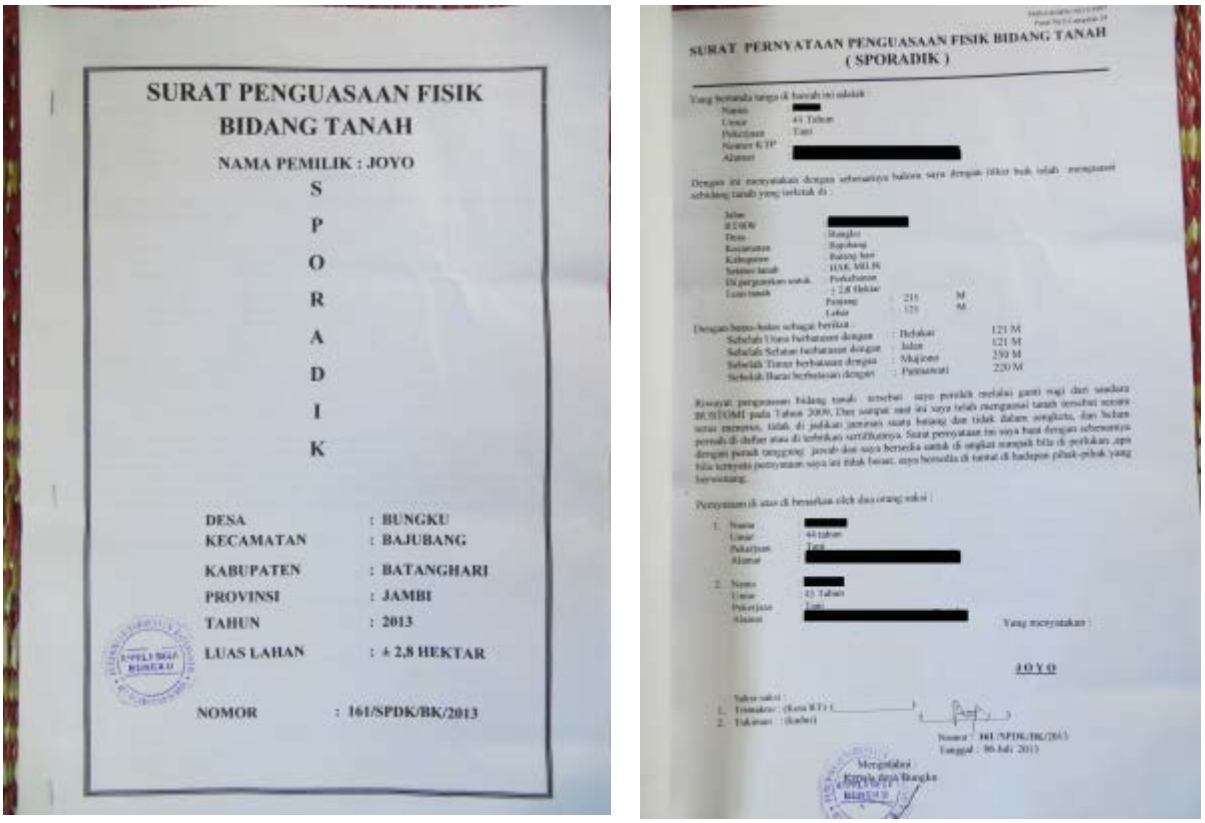
The formation of the settlement has been facilitated by two scalar strategies. First of all the actor coalition jumped to the district scale for formalizing and legitimizing the settlement and agricultural practices within state forest. They circumvented the Ministry of Forestry by requesting support from the Agricultural Agency of the district of Batang Hari. The settlement as such was constructed as new scale of regulation which has been reproduced by migrants requesting land. Regulations for the settlement and the name of settlement imitated national polices and laws on transmigration and tenure formalization for further legitimizing the conversion of state forest.

5.5.2 Mimicry 2: Sporadik – A title in the name of a process

The second case exemplifying translation of *de jure* processes of obtaining a title into local reality by mimicry of the legal is the application of the term *Sporadik*. Data reveals that amongst all 16 villages visited, peasants secure tenure and gain access to loans by using a title deed referred to as *Sporadik*. Even though a high number of different titles in use was met (for example, *segel, surat jual-beli, PRONA, SKT*, SKTT etc.), *Sporadik* seems to be the most common proof of ownership amongst local actors and was considered the strongest village-scale land title by key informants. According to interview partners, the *Sporadik* (see picture 1) is a land-tenure proof for land which is measured, with the measurements approved by witnesses[37]. "If we want to obtain a *Sporadik*, our land has to be measured, we have to report the location of the land to the village head, the bordering plot owners have to approve the information and the *Sporadik* can be issued"[38] is how one interview partner explained the process. In some villages it was reported that the *Sporadik* is signed by the village head and in others also by the sub-district head (see Figure 1). The de jure certificate in contrast is only valid if signed by the NLA. The mimicked *Sporadik* (see picture 1) provides

[35] P.C. with farmer, Bungku, 23.08.2013 and 24.08.2013
[36] P.C. with farmer, Bungku, 24.08.2013.
[37] PC with farmer in Gurun Mudo 05.07.2013
[38] PC with farmer in Desa Baru, 21.08.2013

detailed information on the land-holder, the size of the plot and the location of the plot. It further contains the names and addresses of two witnesses confirming that the holder of the *Sporadik* is the person owning this land. It also indicates the type of right, in this case the right to own (*hak milik*). Several interview partners also reported that the *Sporadik* can be used as collateral to obtain a loan from a bank.


SURAT PENGUASAAN FISIK
BIDANG TANAH

NAMA PEMILIK : JOYO

S
P
O
R
A
D
I
K

DESA : BUNGKU
KECAMATAN : BAJUBANG
KABUPATEN : BATANGHARI
PROVINSI : JAMBI
TAHUN : 2013
LUAS LAHAN : ± 2,8 HEKTAR

NOMOR : 161/SPDK/BK/2013

SURAT PERNYATAAN PENGUASAAN FISIK BIDANG TANAH
(SPORADIK)

JOYO

Picture 2: Sporadik title in Bungku, one of the research villages

According to the National Land Agency, a *Sporadik* is the process by which a single person obtains a land certificate without being part of a program[39]. This is opposed to the process of *Sistematik,* in which a group of people hand in a bundled application to certify a certain number of plots. Both processes result in a *de jure* land certification issued by the National Land Agency (MacAndrews, 1986, p. 28) (see Figure 1).

From the perspective of local actors, *Sporadik* is a proof of ownership and not a process. This proof of ownership is less binding than a certificate. It is, however, binding enough for the holder not to strive for more. Most interview partners holding a *Sporadik* do not see their

[39] PC with a member of the NLA in Jakarta, 15.08.2013

land tenure as insecure and are not planning to buy an official National Land Agency certificate soon.

Fig.: *Sporadik* in perspective

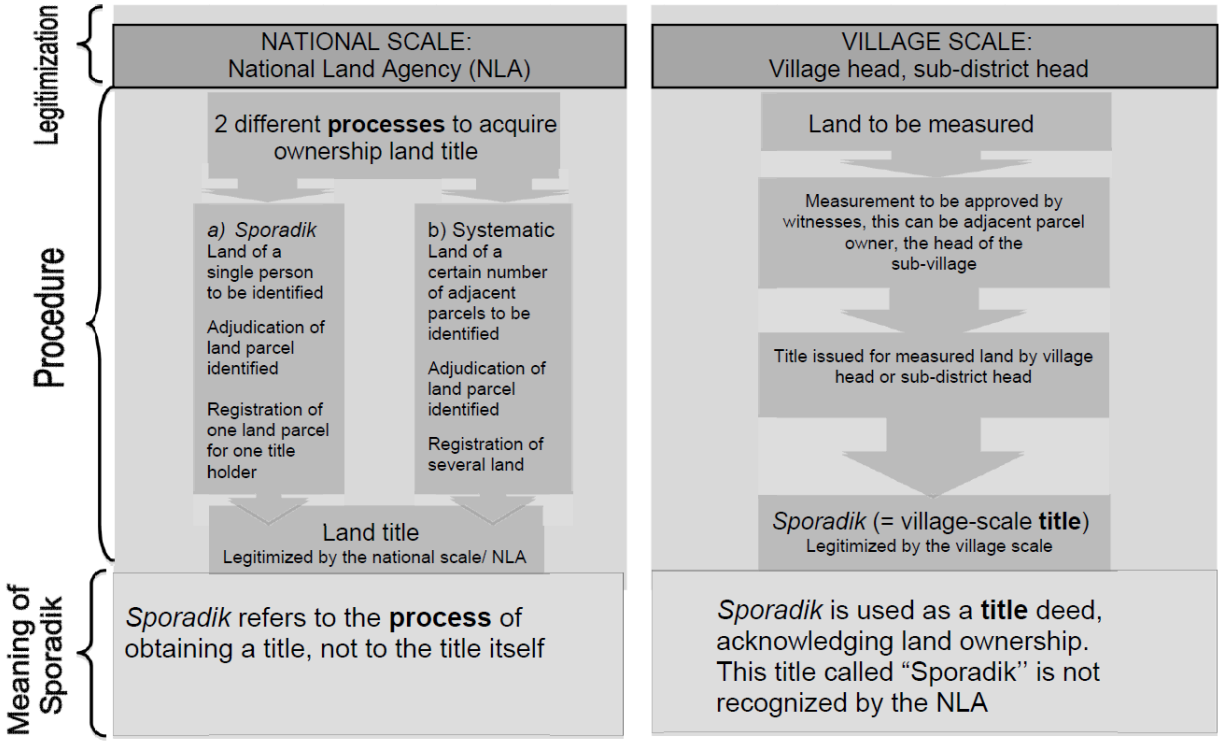


Figure 2: Sporadik in perspective, own illustration

Interestingly, experts (local government officials, representatives of state-owned companies as well as local offices of the NLA) during interviews also referred to *Sporadik* as a certificate proofing ownership, which allows the holder to borrow money from the bank. It mimics the legal certification by imitating the procedures for obtaining a land certificate issued by the National Land Agency, using vocabulary and tools which the NLA uses. The certificates are issued and signed by the village head, most probably due to the crucial role given to the village head by the earlier mentioned Article 7, Regulation 24/1997. The fact that local banks accept the *Sporadik* as collateral on loans, as is the case for *de jure* land certificates, displays the scope of the mimicry of the legal. However, even though, from the local actors' perspective, this serves as legitimization, it is not acknowledged by the NLA central office.

In two villages, it was reported that a *Sporadik* was issued as a title for plots within the boundaries of the state forest. This is, according to the National Law, not possible since right of ownership titles cannot be issued for state forest and since the *Sporadik* is not a title itself but the procedure to obtain a title through the NLA. This further displays mimicry of the

legal under the precondition that law is a process: a title which is *de jure* not a title on a piece of land that cannot be owned by an individual is issued by a political authority not legitimized to issue titles. And still, most parties at the village-scale consider the right as legitimate.

The reason why titles are obtained by mimicry of the legal and not through the *de jure* procedure does not seem to be a lack of knowledge on the side of the local actors. Local actors are aware that it is actually the NLA that is in charge of issuing the right of ownership through a land certificate. It is rather an issue of access: the high costs of obtaining a land certificate, the distance to the national offices and limitations imposed by the Ministry of Forestry seem to be a motivation for imitating the procedures in a locally feasible manner. Local public authorities benefit from this mimicry as the *Sporadik* does not come free of charge. "People prefer *Sporadik* as it is cheaper and it is not to be applied for by an office far away"[40] is how one interview partner summarized the arguments.

The scalar implications of the *Sporadik* title are worth focusing on. Even though it is usually the NLA issuing land certificates, supported by local documents, the highest political scale, that is the national scale, is simply left out by smallholders. The document indicates that the person holding a *Sporadik* has the right of ownership (*hak milik*) that can only be issued by the NLA (see picture). This new village-scale of land tenure regulation fits perfectly to one of the dominant modes of production in the landscapes, namely smallholder oil palm and rubber cultivation. Pre-existing modes of production such as shifting cultivation have been regulated by lineage and water-shed scales of regulation. Tree crop cultivation has contributed to the transformation of lineage-based property to individualized and commodified property. The *Sporadik* title provides a minimum of tenure security and access to loans, both are relevant for farmers entering tree crop production (Hein et al., 2015). Local public authorities' respond to this demand by producing village-scale titles and smallholders through scale jumping re-produce a village-scale of land-tenure regulation. This combines mimicry of the legal and active scalar restructuring, since village authorities have expanded their competencies in legal and in spatial terms through issuing land titles named *Sporadik*. The term *Sporadik*, here used for a title issued by village authorities, is only considered as a *process* for obtaining a land title by the NLA and not yet a land title.

[40] PC with a farmer in Gurun Mudo, 05.07.2013

5.6 Conclusion

Processes of land-tenure formalization have been initiated by many colonial and post-colonial governments in the global South. Multilateral organizations such as the World Bank have promoted land-tenure formalization and the allocation of land titles as keys to rural development. Recent formalization activities in Indonesia include a detailed mapping of untitled land claimed by local communities and a review of allocation procedures for land and forest rights. The resulting map is intended to reduce the risk of overlapping land rights in the future. Whether or not this initiative will avoid overlaps remains to be seen since the formalization endeavors so far have not effected the planned intention on the ground. Title deeds not issued by the NLA but on the village scale are not included in these initiatives.

Empirical data in the villages reveal procedures and titles deeds adjusted to the local context through mimicry of the legal. The empirical material shows that laws in regard to access to land which seems unrealistic to obey are an invitation to local actors to mimic. All villages under investigation have established their own local titling system. Village authorities have successfully installed village-scale land tenure regulations accepted by local smallholders and by the local offices of the NLA. Only in transmigration villages do the majority of inhabitants hold a national juridical title deed. But the land provided through the transmigration program does not seem to be sufficient any more, leading inhabitants of transmigration villages to seek to expand the land under cultivation. By doing so, the transmigrants also engage in obtaining land titles, mainly *Sporadik*, further stabilizing the village scale of land-tenure regulation. In some villages, *Sporadik* titles are issued for land within the state forest and within the private conservation initiative “Harapan Rainforest”, indicating that property rights legitimized by village governments and by the national government, entangled with different scales of regulation, compete with each other. Banks accepting *Sporadik* documents as collateral for loans are a strong hint of how the mimicry of the legal is regarded as a legitimized claim by a wide range of local actors.

In the future, it will be interesting to monitor the developments under the REDD+ strategy. The strategy refers to the constitutional rights over clear boundaries of natural resource management rights. Crucial for smallholders holding a *Sporadik* title will be whether a village-level land title is accepted as a natural resource management right or not by the national government in the context of the REDD+ readiness process.

A situation in which rules are used, abandoned, bent, reinterpreted and side-stepped is inherent to rule-systems. That this is done by imitating the *de jure* legal system, while at the same time jumping scales and producing village-scales, seems to be a particular case. In the case of Indonesia, massive amounts of money have been invested to accelerate national land-formalization processes. But still, until today, for vast areas the local reality remains a mimicry of the legal.

The reasons for mimicking national laws seem to be manifold and might have not been exhausted completely in this study. Unclear competencies and overlapping competencies might be one reason as the role and the power granted to the village heads indicated. Here, local authorities are exceeding their competencies. At the same time local land owner legitimize the exceeding of competencies. For land users it is cheaper, less-time-consuming and sufficiently secure to obtain a title through the village head. Since the banks further legitimize these competencies, legitimization for the translated procedures is further strengthened. It seems to be a privilege to companies to get access through concessions on forest land; here the mimicry seems to serve as subversive strategy to gain more agency and access to land. The majority of the actors involved on the local level do not seem to see the rationale in the land titles issued by the NLA. Only an opportunity to be eligible for a higher loan by the bank seems to legitimize the certificate issued by the national scale.

Mimicking the national law provides land titles and land use where it would be - according to the central state - not possible. This makes a legitimized access more equal, since it is mainly exclusive to the transmigrants to hold a title deed. The consequences of the mimicry on the local level however, remain the creation of leeway for rent-seeking behavior, since the mimicked *Sporadik* titles are bought from the village heads and sometimes district heads. What also remains is a flexibility in regard to land use that allows for an exploitation of the landscape and accelerates the expansion of small-scale agriculture in the forest frontier areas of rural Indonesia today.

6 Separating sisters from brothers – ethnic relations and identity politics in the context of indigenous land titling[41]

Abstract

Indigeneity is a global discourse of empowerment, generating communal identity and territorial rights. Indigenous identity displays its power in the context of land right conflicts when dispossessed communities reclaim their territories from states and companies on behalf of globally defined indigenous rights. Titling of indigenous land is usually perceived as an act of justice by social activists and anthropologists. A challenging step towards titling is the identification of who is and who is not "indigenous". In Indonesia, this is a highly political process involving not only the affected communities and the state but further actors like NGOs contributing to the identification of "indigenous" communities.

We investigate the impact of becoming „indigenous" on community access to contested land in Sumatra, Indonesia. We focus on the heterogeneous population in and around a national park in Jambi province. The national park is inhabited by the Orang Rimba, semi-nomadic shifting cultivators who claim the area as customary territory. The national park area is also claimed as customary community land by villagers who live outside the park while cultivating rubber trees inside the conservation area. From the perspective of customary laws both groups can prove tenurial rights derived from history. According to state law both kinds of communal claims and activities are illegal. The Orang Rimba are included into the global community of indigenous groups due to media campaigns by international supporters. This strengthens their position whilst the village communities are excluded from the category of "indigenous" peoples. Hence their agricultural activities are criminalised as forest encroachment.

We will discuss how titling of indigenous land is not always an act of justice. It does not only produce winners but also losers. We will highlight the cleavages, tensions and contradictions in and between communities at the local level produced by the global fight for indigenous rights.

[41] Steinebach, Stefanie; Kunz, Yvonne: Separating sisters from brothers – ethnic relations and identity politics in the context of indigenous land titling. To be submitted to Austrian Journal of Southeast Asian Studies. Yvonne Kunz has contributed 30% of the content, mainly in the 'National legislation' section.

6.1 National legislation and global discourse

In 2013, the Consortium for Agrarian Reform, an Indonesian consortium of farmer organizations, fishermen, indigenous people and NGOs, reported 369 agrarian conflicts involving local communities on a total area of 1.28 million hectare all over Indonesia. The conflicts – mainly related to the plantation and the forestry sector- involved 139.874 households and left 21 fatalities during violent conflicts over contested land (Consortium for Agrarian Reform 2013: 2).

Most of these conflicts are rooted in land dispossessions of local rural communities during the Suharto-era (1965-1998) in which about 70% of Indonesia's territory was declared forest land under the jurisdiction of the state (1967 Forestry Law[42]) (Indrarto et al. 2012: 23; Contreras-Hermosilla & Fay 2005: 9).

The Forestry Law was revised in 1999 (Act No. 41/1999 on Forestry[43]) but still decreed that all forest, and the natural richness within it, is under the control of the state (article four) and instructs the central government to regulate its management and exploitation. The law then (article five) discerns between state forest (*hutan negara*), where no private rights can be granted, and private forests that are "subject to rights" (*hutan hak*) where private rights can be issued. According to the Forestry Law, customary forest (*hutan adat* or *hutan ulayat*) is classified as a sub-category of state forest and can only be recognized (not owned) when found still to be relevant and not to conflict with national interests. The vague definition of 'national interests' left the power of the state virtually uncontested and beyond control (Bakker & Moniaga 2010: 189).

Against this background, the Constitutional Court of the Republic of Indonesia in May 2013 made a remarkable decision - causing cheer among Indonesian indigenous peoples and land rights activists:

[42] Republic of Indonesia 1967, "Undang-Undang Republik Indonesia Nomor 5 Tahun 1967 tentang Ketentuan-Ketentuan Pokok Kehutanan"
http://www.hukumonline.com/pusatdata/download/lt4c2e033860cb4/node/13512 [07.12.2015]
[43] Republic of Indonesia 1999, "Law of the Republic of Indonesia Number 41 of 1999 regarding Forestry"
http://theredddesk.org/sites/default/files/uu41_99_en.pdf

With this decision, commonly referred to as MK 35[44], the court accepted the juridical review of some parts of the 1999 Forestry Law requested by the Indigenous Peoples' Alliance of the Archipelago (Aliansi Masyarakt Adat Nusantara - AMAN) (AMAN 2013).

MK 35 declares that customary forest is no longer categorized as part of state owned forest. Instead, customary forest has been changed into the category of "forests that are subject to rights". This shift of status and categorization by the courts' decision results in the erasure of the word "state" from article 1.6 of the Forestry Law No. 41/1999 that now reads: "*Adat* forests are ~~state~~ forests located in customary communities' territory" .This revision and re-categorization implies that customary communities (*masyarakat hukum adat*) are recognized as a rights bearing subjects (Rachman 2013: 3).

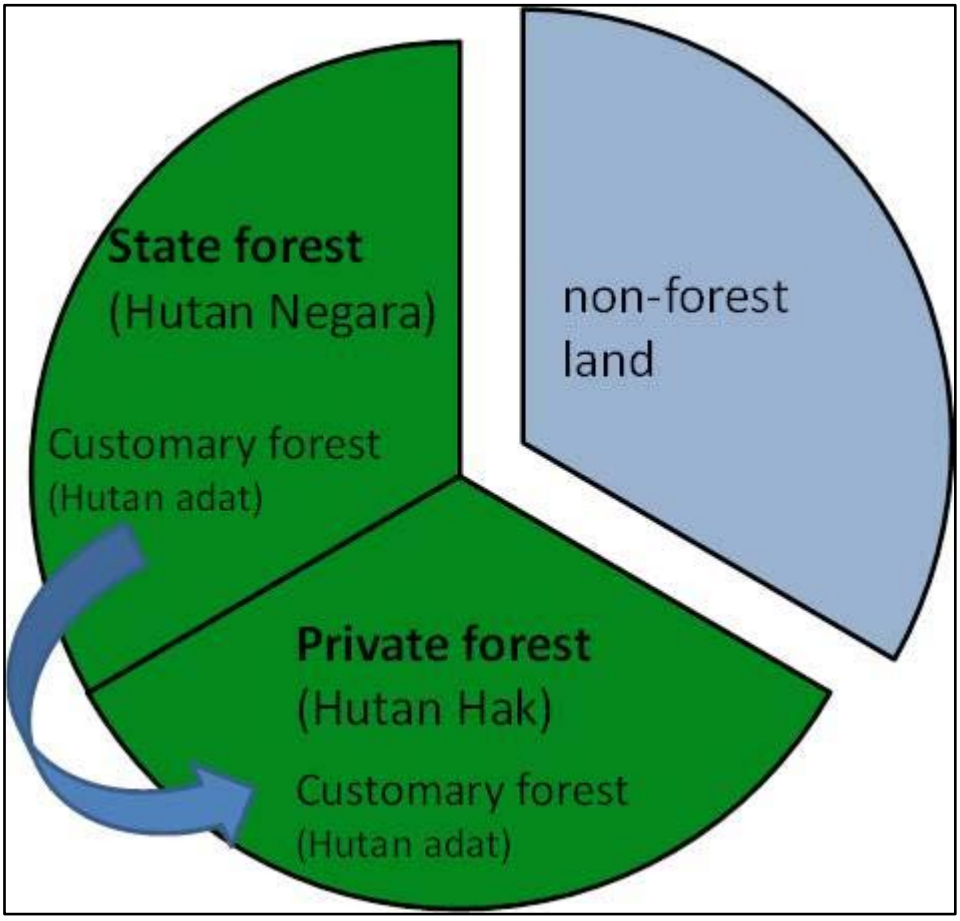


Figure 3: Revision of Forestry Law No. 41/1999 through MK35

This opportunity of land titling for customary groups within forest areas caused unease among the Ministry of Forestry (MoF) – scared to lose authority over vast forest areas. The

[44] Mahkamah Konstitutsi Nomor 35/PUU-X/2012, http://www.mahkamahkonstitusi.go.id/putusan/putusan_sidang_35%20PUU%202012-Kehutanan-telah%20ucap%2016%20Mei%202013.pdf

Ministry reacted by sending out a curricular (*Surat Edaran*), addressed to all provincial governors and district heads as well as to all heads of regional level forestry services (Down to Earth 2014: 7). This immediate legal response to MK35/2012 by the MoF was a regulation (62/2013) which sets out the rules for and stages involved in gazetting (legally determining) the Forest Zone. The document informed the authorities on MK35 and, referring to amended article 5 (3) of the 1999 Forestry Law, the circular asserts that determining the status of customary forests requires the legal recognition of the existence of the indigenous people through a regional regulation (*Perda*) (Down to Earth 2014: 8).

The Forestry Minister at this time, Zulkifli Hasan, in an interview with a Jakarta-based civil society[45] organization stated to see "no problem with MK35 as long as the customary forests are proposed and legalized by regional regulations." And: "It should be clear who the community members are." (Perkumpulan untuk Pembaharuan Hukum Berbasis Masyarakat dan Ekologis HuMa 2013).

This question of identifying who these communities or its members are is of crucial importance to the discussion of this paper. We will elaborate the processes of community identification and categorization along the example of Jambi province and the conflict around a national park where different communities claim the conservation area as their customary land. The empirical data presented in the following sections derives from qualitative data gathering in the research area.

6.2 Jambi – national legislation and local realities

Jambi province is one of Indonesia's most important locations for the production of rubber and oil palm. The total size of the province is 5.3 million hectares (BPS 2011: 3); where in 2010 licenses to plant 1.3 million hectares with oil palm have been issued to several agro-business companies (Rambe 2014)[46]. Approximately 800.000 hectares are already reserved for mining purposes (Biro Perencanaan Sekretariat Jenderal Kementerian Kehutanan 2013: 86). About 650.000 ha of the province are planted with rubber trees by independent farmers (Dinas Perkebunan Jambi 2011) and 2.1 million hectare are defined as state forest and are

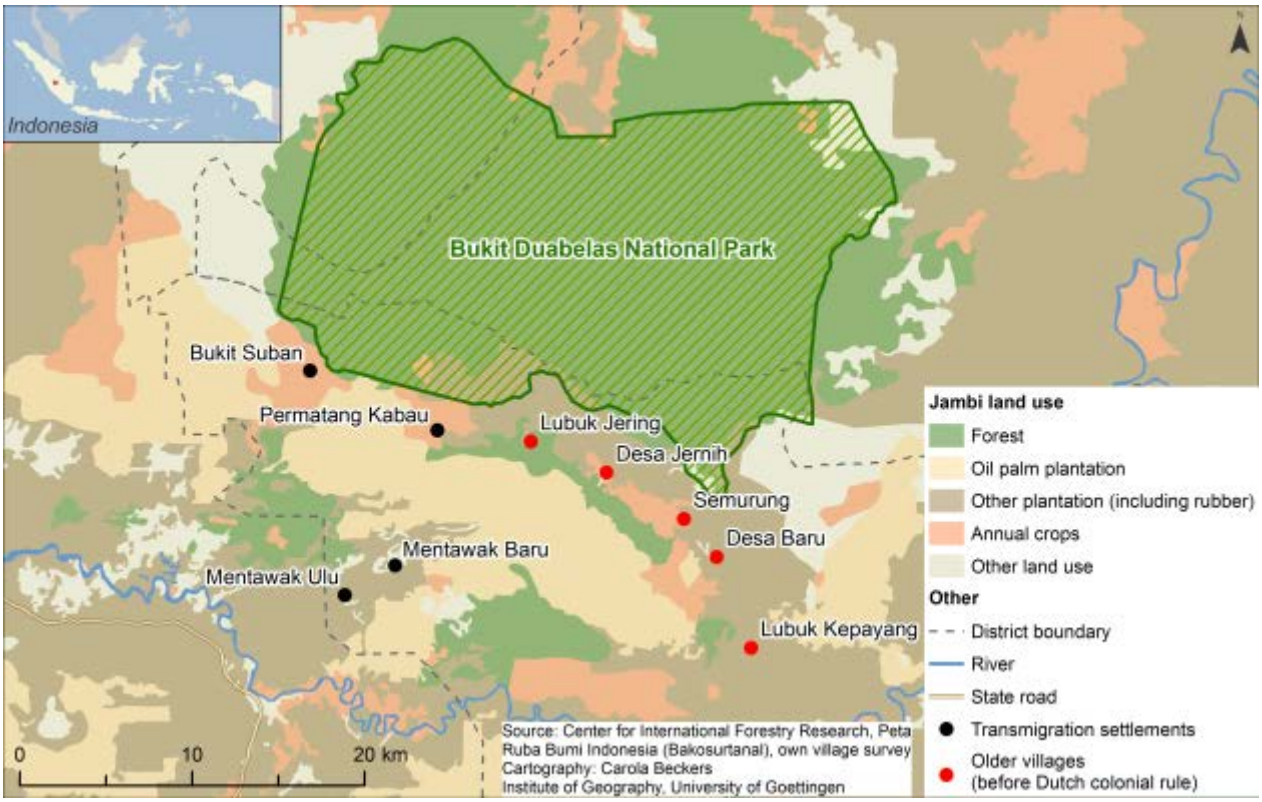
[45] Forestry Minister Zulkifli Hasan is interviewed in a film by the Jakarta-based civil society organization HuMa. The interview is available online http://huma.or.id/publikasi/film-hutan-adat-paska-putusan-mk-35.html
[46] Another 400.000 ha were already planned to be planted with oil palm

under control of the Ministry of Forestry, including industrial timber plantations and conservation areas (Biro Perencanaan Sekretariat Jenderal Kementerian Kehutanan 2013: 85).

Jambi has a population of 3.4 million people (63/km^2) (BPS Jambi 2014: 127), about 80 percent of Jambi's population works in the agricultural sector (ibid). The area of agricultural land that is legally available to farmers and communities is limited for the benefit of large scale plantation business. Hard fought access to land in Jambi is mirrored by the national trend of increasing land use conflicts: In 2011, 44 conflicts on 222.688 hectares were reported (Priyan 2012). These conflicts do not only occur between companies and local communities, but also between communities.

One of these contested areas is the Bukit Duabelas National Park (Taman Nasional Bukit Duabelas - TNBD). The park was established in 2000 and encompasses 65,000 hectares of tropical lowland rainforest (Warsi 1999), any kind of human agricultural activity inside the conservation zone is prohibited by law. The conservation area falls into the administrative jurisdiction of several regencies and districts and is surrounded by oil palm plantations and different kinds of villages. We will focus on the southern area of the TNBD and its surroundings, located in the district Air Hitam[47]. The district encompasses 9 villages, 4 of these are transmigration settlements established by the Indonesian government (see map 5) of the Suharto regime as part of social engineering, development policies, and nation building.

[47] Air Hitam covers an area of 471 km^2 and consists of 9 villages. Population: 23.650 persons. Population density: 50.21 persons /km^2. Population growth :2000 until 2010: 15.338 to 23.757 (4,47%) (BPS 2010)



Map 5: Bukit Duableas and Air Hitam

Landless peasants from the densely populated island of Java were allocated huts and about 3 hectares of land per household accompanied by a certificate of ownership (*surat hak milik*) which made them holders of legal land titles (World Bank 1979: 33). The remaining 5 villages already existed before Dutch colonial rule which started to be in effect in Jambi in the year 1906. The Melayu residents of these old villages (Lubuk Kepahiang, Lubuk Jering, Dusun Baru, Sungai Jernih, Semurung, see map 1) claim parts of the TNBD as customary land and forest, *tanah adat* and *hutan lindung.* These villagers usually do not hold de jure title for private or communal land.

The National Park area is inhabited by about 3000 Orang Rimba – literally people of the forest - semi-nomadic rainforest dwellers whose ethnic identity is inseparably interwoven with their rainforest surrounding. The Orang Rimbas´ livelihood consists of hunting, gathering of forest products as well as shifting cultivation and cultivation of jungle rubber (Steinebach 2008). The Orang Rimba, like the non-transmigrant villagers, claim the national park area as their customary land, *tanah adat*.

As agricultural land outside the national park area is not available any more, the still forested national park has turned into a contested island of livelihood security for villagers and Orang Rimba likewise.

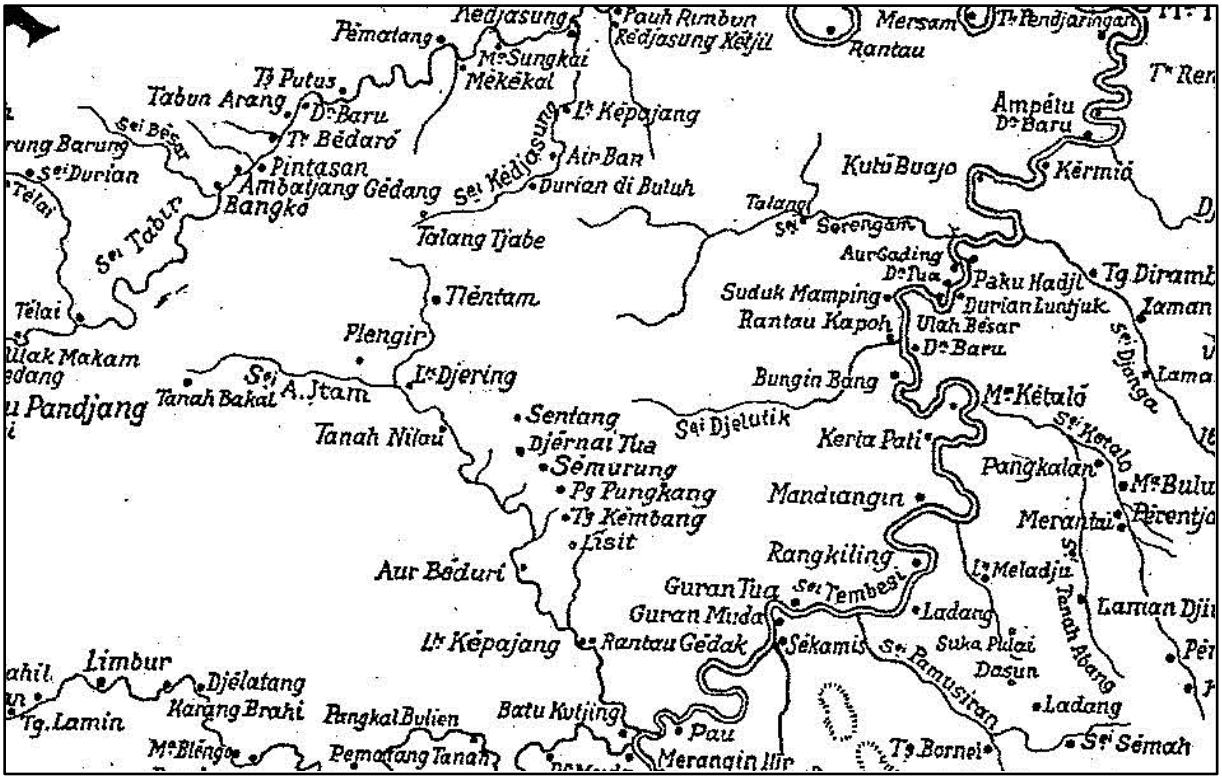
Conflicts occur between the national park management and the Orang Rimba, but also between the National park management and villagers[48]. Sometimes violent conflicts over land and tree tenure inside the TNBD have evolved between the Orang Rimba and the village residents. In this situation, the possibility of indigenous land titling seems a promising endeavor to regain authority over customary land, especially to the Orang Rimba communities who started mapping their claims right after the court's decision was announced. According to AMAN, the Orang Rimba can be easily identified as "indigenous people" in contrast to the Melayu villagers with their competing claims.

In order to understand the impact of the court's decision on these competing claims and the social structure of the Air Hitam region, a look back in history seems indispensable.

6.2.1 Pre-colonial legitimations of post-colonial claims

The current population of the Bukit Duabelas area traces back their origins at least to the founding of this Islamic sultanate Jambi Melayu II in the 15th century. By that time, Jambi was inhabited by different "*suku*" or "*bangsa*" (ethnic or cultural groups), following their own customary laws, *adat* (Locher-Scholten 2004: 48). *Adat* does not only regulate the social interaction within society, but also the use and belonging of natural resources and land tenure. Settlements were found along the nine main rivers and their tributaries determining Jambi's infrastructure until the 21st century. The sultans' court was settled at the Batang Hari River. Along this central river and its larger tributaries were the territories (*kalbu*) of the so called Bangsa Duabelas – the twelve people (see map 2)

[48] Efforts have been made by the forest department to resettle the Orang Rimba from the park area.



Map 6: Villages and rivers in the research area around 1900, Source: Hagen 1908

The Bangsa Duabelas hold genealogical ties with the Sultan's court since the 15th century and due to their common descents, the Bangsa Duabelas formed what the Dutch later called "genealogical adat communities" (genealogische rechtsgemeenschappen, Haga 1928). They were distinguished by the Dutch from the "territorialized adat communites" (Haga 1928) which do not hold kinship ties with the ruler's court and are not of common descent.

The Bukit Duabelas area was part of the Bangsa Duabelas´ territories and Air Hitam was ruled by a line of queens - descendants of the sultan's sister. Land was allocated to the residents for communal use and borders between village communities were defined by the hearing distance of a gongs sound (Nasruddin 1989). Land could not be owned privately, neither be sold nor bought. The inhabitants of Air Hitam were responsible to deliver firewood from the forest that today is the Bukit Duabelas National Park to the Sultan's court due to their kinship ties.

The Orang Rimba were part of these complex socio-political structures in different ways: They were never direct subjects of the sultan, but they maintained economic relations with the ruler's middlemen, called *jenang*, and with the more sedentary Melayu population around them. The Orang Rimba also claim genealogical bonds with the sultans ruling dynasties. With the local elites, the Orang Rimba maintained a patron-client relationship that

lasts until the present day. This patron-client relationship is as well derived by kinship relations between the Orang Rimba and the village population:

The Orang Rimba, like the sedentary Malayu, combine matrilinearity with uxorilocal residence patterns and with matrilineal inheritance structures of land, forest and tree tenure. In case of divorce a man returns to his sister's place as she is held responsible for her brothers living. According to local lore, villagers and Orang Rimba are common descendants of a pair of siblings once living in the forest. The pair parted and one continued to live according to the forest laws (see left side of the figure) whereas the other settled in a village (see right side of the figure). The Orang Rimba are regarded as progeny of the female sibling, hence they are obliged to perform their respective duties in the patron-client relationship with the villagers conceptualized as descendants of the male lineage.

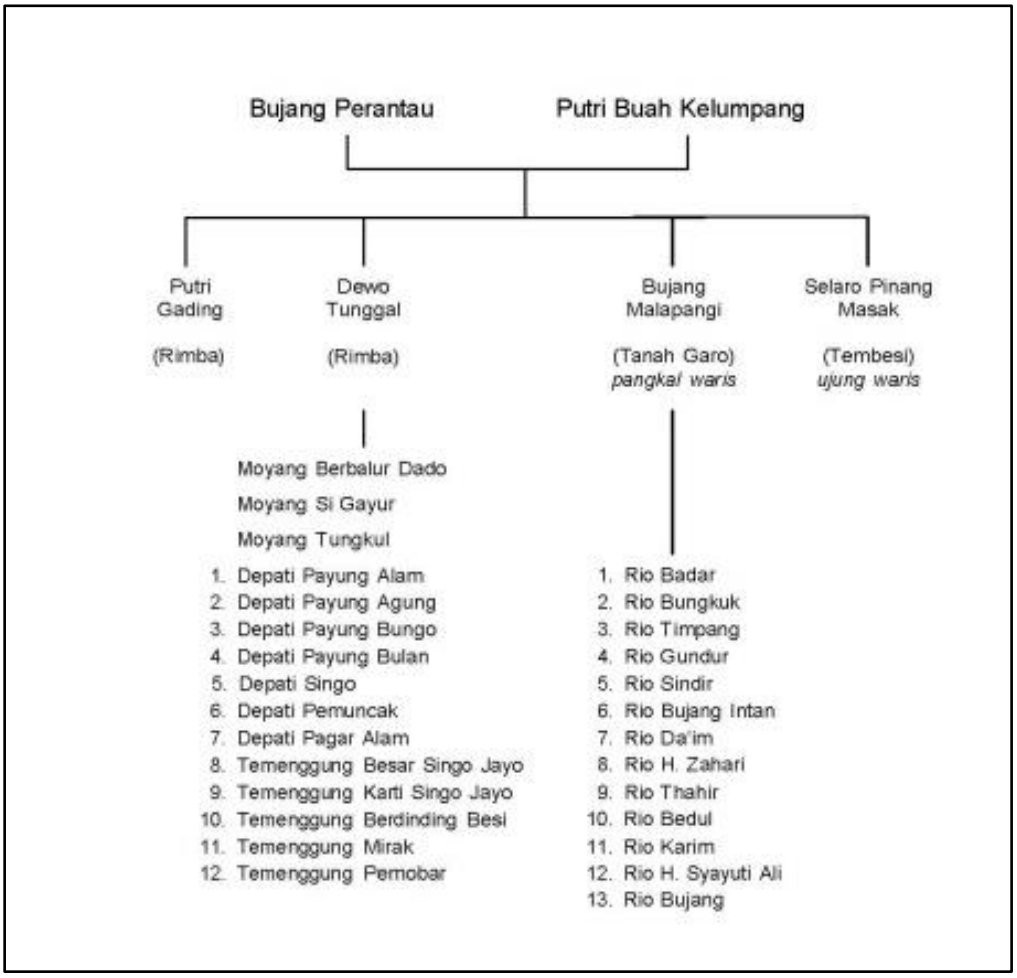


Figure 4: Kinship relation between Orang Rimba and Melayu villagers, own data

Far-reaching administrative and juridical changes came with Dutch colonial rule in the first half of the 20th century. During colonial administration, the territories called *kalbu* were mutually divided and merged into 30 districts.

Apart from political restructuring, the Dutch introduced western concepts of nature-culture dichotomies turning socio-cultural landscapes into empty spaces and exploitable resources. Additionally, European concepts of property were applied and all, especially forested areas that did not show signs of agricultural cultivation to the Dutch, were declared as property of the state (*Domein Verklaring*) (Biezeveld 2004: 140). Dutch colonial rule replaced kinship based socio-political structures and land tenure systems with concepts of citizenship and legal frameworks based on ideas of the European nation state which should provide the basis for further resource exploitation and dispossession of the local population after Indonesian independence.

Following the Indonesian independence in 1945, another juridical and political reorganization changed the local rights of (forest) resource use, land tenure and conceptions of communal ownership (*tanah adat, hutan adat, hutan lindung*, etc.), when the 1967 Forestry Law was implemented.

The exploitation of Indonesia's "natural resources" must be seen in connection with Suhartos politic of nation-building and national development. This development was aimed at economic growth and guidance to development for the population as a project of rule (Barr 2006: 23; Rachman 2011: 43).

In 1979, a governmental decree[49] again restructured the political and social organization of the population in the Bukit Duabelas region. The former village entities, called "*dusun*" or "*kampung*", were turned into so called "*desa*" and given new political structures, hierarchies and institutions that should formally replace the customary structures and laws of *adat* (Warren 1990: 24). The villages in the district of Air Hitam were allocated communal land, village boundaries were defined and resident identity cards were issued. Even though the village borders did not match with the communities former territorial claims, the act of

[49] Republik of Indoensia 1979, Undang-undang Republik Indonesia No.5 Tahun 1979 tentang Pemerintahan Desa, http://www.keuangandesa.com/wp-content/uploads/2015/04/UU-No-5-Tahun-1979-Tentang-Pemerintahan-Desa.pdf

village constitution finally turned the village residents into acknowledged citizens of the Indonesian nation state.

In contrast, forest dwelling groups like the Orang Rimba were defined as traditional remote communities (*Komunitas Adat Terpencil - KAT)* (DEPSOS 2003). These groups along the equitation – forest dwelling, nomadic, shifting cultivation = remote, uncivilized, backward - occupied the "tribal slot" (Li 2000) and were described as isolated from development and progress (Saudagar 2002: i) by Indonesian governmental institutions. The Social Department of Jambi stated that there is a "big gap and much difference in the aspects of value system between [the Orang Rimba] and local socio-culture" (Depsos 2003:10).

The Orang Rimba now were categorically isolated of the social structure of the Bukit Duabelas area and turned into a minority group deprived of any rights. State policies and national legislation transformed local kinship based socio-political structures and land tenure systems into administrative categories of citizenship and codified legal rights. The Orang Rimba, like other communities all over Indonesia, became the constituting "other" of the modern Indonesian villager and citizen. But in the end, both groups, the Orang Rimba and local villagers have been equally deprived of their customary land tenure by the nation state.

6.3 Global discourses meeting local realities

These politics of marginalization, suppression and dispossession generated smoldering conflicts that erupted after the downfall of Suharto and with the beginning of political decentralization and a more non-governmental-organization (NGO) - friendly climate since the year 1999 when freedom of speech allowed to question political decisions and to articulate local (indigenous) identities and accordingly rights over natural resources.

It was the official line of Suharto's regime that Indonesia is a nation which has no indigenous people, or that all Indonesians are equally indigenous (Bertrand 2004: 45). Certain groups were marginalized since they were regarded as tribal or isolated groups. "Typically, they lived in hinterlands or mountain areas, thereby geographically distant from urban centers and from the reach of the state. They were treated as second-class citizen, as 'primitive" or "backward" groups, that lacked the "modern" characteristics of "Indonesian" citizens" (ibid). The internationally recognized category "indigenous and tribal peoples" (as defined in

International Labor Organization ILO convention 169[50]) has no direct equivalent in Indonesia's legal system (Li 2000:149).

Growing political freedom facilitated the foundation of AMAN which mobilized "isolated groups" in many regions of Indonesia and promoted their interests to the national level. This movement mainly draws its legitimacy from an analogy with the notion "indigenous peoples" as identified by convention 169 of the ILO (Benda-Beckmann 2011:185). It links the local concepts of traditional communities to the global discourse of indigeneity and indigenous rights.

The convention takes a practical approach and only provides criteria for describing the peoples it aims to protect. Self-identification is considered as a fundamental criterion for the identification of indigenous and tribal peoples, along with the criteria outlined below in article 1(1): "tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations; peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions" (ILO 1989).

Members of the Orang Rimba community from Air Hitam were part of the first congress of indigenous people of the archipelago, the hour of birth of AMAN in 1999. For them the derogatory governmental categorization as "Remote *Adat* Community" suddenly offered the chance to join AMAN and to transform the negative national categorization into a global category of rights. The acknowledgement as "indigenous people" makes the Orang Rimba, as Tyson called it, different and "special" (Tyson 2011). Still they form the constituting other, but this time in a positive sense as international laws and conventions like Human Rights might be applied, national laws and politics discriminating traditional communities can be challenged by international rights and regulations often overlapping national legal orders.

[50] http://www.ilo.org/indigenous/Conventions/no169/lang--en/index.htm

Whereas the Orang Rimbas´ activities to reclaim their customary forest area as *hutan adat*, are promising, the village communities cannot formulate claims to *hutan adat* as they cannot be identified as indigenous people according to the Forestry Department:

Population group	**Community perspective land category**	**State perspective land category**	**De jure proof of ownership**	**Potential impact of MK35 on tenure security**
Orang Melayu 	Tanah ulayat /adat communal	State	No certificate	Decrease in opportunity to be granted de jure access
 Orang Rimba	Tanah adat	State	No certificate	Possibility to gain de jure access
Trans-migrants 	Right to own (*hak milik*)	Right to own (*hak milik*)	De jure certificate	Not impacted

Table 3: Impact of MK35 on different actor groups, ©Y.Kunz and S. Steinebach

Conditions to be acknowledged as "indigenous people" (*masyarakt adat hukum*) is the existence of customary *adat* structures and socio-political organisation according to *adat* as well as land use regulated by *adat*. If no functioning *adat*-structures can be detected, the status as *hutan adat* will not be granted or can be annulled by the Ministry of Forestry (Campbell 2002: 114).

Even though the village communities would fulfil the criteria as "indigenous people" according to the ILO convention, due to the forced conversion of socio-political structures and territorial boundaries by the Suharto regime, their claims will not be acknowledged by the governmental institutions.

6.4 Conclusion

In our case study we presented a situation where the complex interaction of global discourses and national legislations shape local realities and identities that restrict and enlarge people's room for agency at the same time. The global category of "indigenous people" touches political and social dimensions of power relations between citizens and the state, it can be understood as dispute over the legitimacy of alternative forms of land tenure, and over the value of alternative notions of property tied to local identities and agro-ecological regimes, and finally over who should have privileged access to resources in the local domain (McCarthy 2007:99).

To understand land tenure, it is indispensable to fully understand the political and historical context under which they were shaped. Land tenure conflicts are the outcome of competition over power, ideology and local history, leading to changing patterns of inequality (Peluso 1995) in which self-identification as "indigenous" becomes a process and a positioning (Li 2000) that realigns the ways they connect to the nation, the government, and the "non-indigenous" population. Cultural differences are highlighted while territorialized and historical ties with the sedentary populace are erased and replaced by antagonisms of "specialness" and "citizenship".

Indigenous land titling is indeed an act of justice if viewed from the perspective of community rights and long neglected communal claims against the state. But on the horizontal level it might also create social injustice. An act of justice from the global perspective creates injustice on the local level as it separates brothers from sisters and produces winners and losers with respect to historically equally rooted land tenure.

7 Rubber vs. oil palm: an analysis of factors influencing small-holders' crop choice in Jambi, Indonesia[51]

Abstract

The rapid expansion of the oil palm area in many tropical countries has raised concerns about its negative impact on local communities, food security, and on the environment. While the expansion of oil palm in early stages was mainly driven by large private and public companies, it is expected that smallholders will outnumber large estates in the near future. For policy formulation it is hence important to better understand who these smallholders are and why they have started to cultivate oil palm. In this paper, we used a rich dataset collected in the province of Jambi, which is one of the most important production areas for oil palm, to analyse smallholders' decision making by combining qualitative, quantitative, and experimental methods. We identified agricultural expertise, lacking flexibility in labour re-quirements, availability of seedlings, and investment costs as the major constraints for farm-ers to cultivate oil palm. Important reasons for oil palm cultivation are the higher returns to labour and the shorter immature phase of oil palm. We also showed that oil palm farmers are neither risk-averse nor risk-loving, rather, they appear to be risk-neutral.

7.1 Introduction

Growing global demand for vegetable oils and biofuels has led to a strong increase in the oil palm area in many tropical countries during the last decades. The global area harvested in-creased from about 10 million ha in 2000 to 17 million ha in 2013 (FAOSTAT 2014). It is expected that this trend will continue over the next decade (USDA 2009). Most of the oil palm plantations were established on formerly forested land (Koh and Wilcove 2008) and to some extent on land, which had been used for rubber and food crop cultivation. This rapid expansion of the oil palm area has raised concerns about its negative impact on biodiversity (Koh and Wilcove 2008; Fitzherbert et al. 2008), climate change (Fargione et al. 2008), and

[51] 4. Schwarze, Stefan ; Euler, Michael; Gatto, Marcel; Hein, Jonas, Hettig, Elisabeth ; Holtkamp, Anna-Mareike; Izhar, L; Kunz, Yvonne; Lay, Jan ; Merten, Jennifer; Moser, Stefan; Mußhoff, Oliver; Otten, Fenna; Quaim, Matin; Soetarto, Endriatmo; Steinebach, Stefanie; Trapp, Katharina; Vorlaufer, Miriam; Faust, Heiko (2015): Rubber vs. oil palm: an analysis of factors influencing small-holders' crop choice in Jambi, Indonesia. Published in the Efforts Discussion Paper Series. Yvonne Kunz has contributed 10% to this publication. She was mainly involved in writing the section on 'Key policies' as well as in providing empirical statements from interviews.

food security (ADB 2008). Moreover, NGOs have reported that the expansion of oil palm plantations entails human rights violations, land conflicts and other negative impacts on local communities (FOE 2008; WRM 2001).

While the expansion of oil palm in early stages was mainly driven by large private and public companies, smallholder farmers have increasingly started to cultivate oil palm as well (Gatto et al. 2015). In Indonesia it is estimated that smallholders account for 37% of the annual production and for 35% of the area under oil palm (BPS 2015). It is expected that smallholders will outnumber large private and state companies in production as well as oil palm acreage in the near future. It is hence important to better understand who these smallholders are and why they have started to cultivate oil palms. There is relatively little information available in the literature about these farmers. The majority of studies on oil palm smallholders rely on case studies in a few selected villages, making generalizations difficult (Belcher et al. 2005; Susila 2004; Cramb and Sujang 2013; Rist et al. 2010; Cahyadi and Waibel 2013). Exceptions are Lee et al. (2013) and Hasnah & Coelli (2004), who analyzed productivity of oil palm smallholders in Indonesia. Both studies, however, contain hardly any information about the motivation of smallholders to cultivate oil palm as well as their reasons against cultivation.

This study adds to the literature by providing empirical evidence of smallholders' reasons for and against the cultivation of oil palm. We build on a rich dataset collected in Jambi province, Sumatra, which is one of the most important production areas for oil palm in Indonesia. In the research area, however, rubber is still the most important crop for smallholders with a much longer history of cultivation. The crop choice involves hence a decision between rubber and oil palm cultivation and our analysis at the micro-level will focus on these two crops. We combine the results of quantitative, qualitative, as well as experimental research approaches to provide new insights into the decision-making process of oil palm smallholders. Specifically, the following research questions will be addressed:

1) What are major constraints for farmers to engage in oil palm cultivation?

2) What are reasons for smallholders to engage in oil palm cultivation?

3) What are behavioural differences between oil palm and non-oil palm farmers?

The paper is structured as follows: Section 2 describes the conceptual framework used to analyse smallholders' land use decisions. We differentiate between internal and external factors and the latter are described in Section 3. In Section 4 we introduce our database, the analytical procedures as well as the study region. Section 5 presents and discusses our results, while Section 6 concludes.

7.2 Conceptual framework

The analysis of smallholder behaviour with respect to land use change is guided by a conceptual framework developed by Hettig et al. (2014). They base their concept on the seminal deforestation model by Angelsen & Kaimowitz (1999), which Hettig et al. (2014) update and extend as part of a reviewing process covering the recent empirical and theoretical literature on land-use change. In line with Angelsen & Kaimowitz (1999), they model land use change as the outcome of an agents' decision making process at the micro level. Unlike previous models (e.g. Angelsen & Kaimowitz 1999; Lambin & Geist 2006; Rudel 2007), their concept furthermore emphasizes the relevance of key policies as well as household characteristics and endowments, which take on a leading role in our analysis.

Crop choice and land use decisions of farming households are directly and indirectly influenced by macro-level variables which are assumed to be the underlying causes of land use change. We refer to them as external drivers in order to stress their overarching character and the fact that they exert their influence from outside the decision system. External drivers arise from the international or national level and comprise broader socio-economic forces such as policies and global market signals.

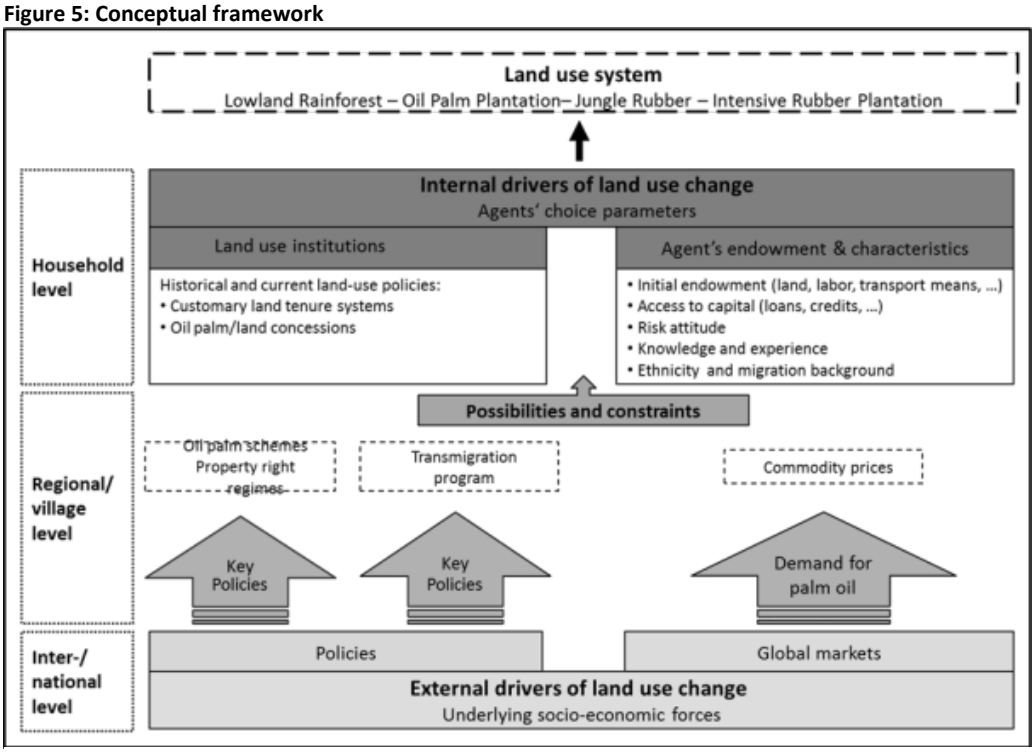
The decision making process is further determined by drivers which have an immediate impact on the agents' choice and hence on land use change. They operate at the micro level and include households' characteristics and endowments, institutions, infrastructure, markets and technology. Since these drivers can be endogenous to decision makers and occur within the agent's scope, they are classified as internal drivers.

We adapt the concept of Hettig et al. (2014) and apply it to our research questions. Our framework, which is depicted in Figure 1, highlights the different spatial scales at which the influencing factors work. It shows how the external drivers of land use change at the (inter-)

national level are channelled through the regional level and hereby relate to the internal drivers at the local and household level and, eventually, to the land use decision.

For the purpose of our study, there are mainly three transmission channels from the external to the internal drivers. First, there are policies, like property right regimes and schemes for oil palm development, which directly influence land use decisions at the regional and local level. Second, there are policies, which are translated into migration and resettlement programmes for the region. And third, global market forces create demand for palm oil influencing regional commodity prices. It is via these transmission channels that external drivers significantly influence the internal drivers of land use change, such as tenure and land institutions, capital endowments and other household characteristics. These are crucial parameters for land use decision making at the household level and hence determine the land use system. For example, participants in oil palm schemes were not only often the first smallholders engaged in oil palm production, but they also received official land titles for their plots as well as subsidized loans for the procurement of inputs. This access to land and capital, together with initial endowments, strongly influences a household's decision to cultivate oil palm, which is associated with high investment and input costs. The expansion of oil palm cultivation among smallholders is hence the outcome of a decision making process, which is determined by the interaction between internal and external drivers.

Figure 5: Conceptual framework



Source: Adapted from Hettig et al. (2014)

7.3 Research area and methods

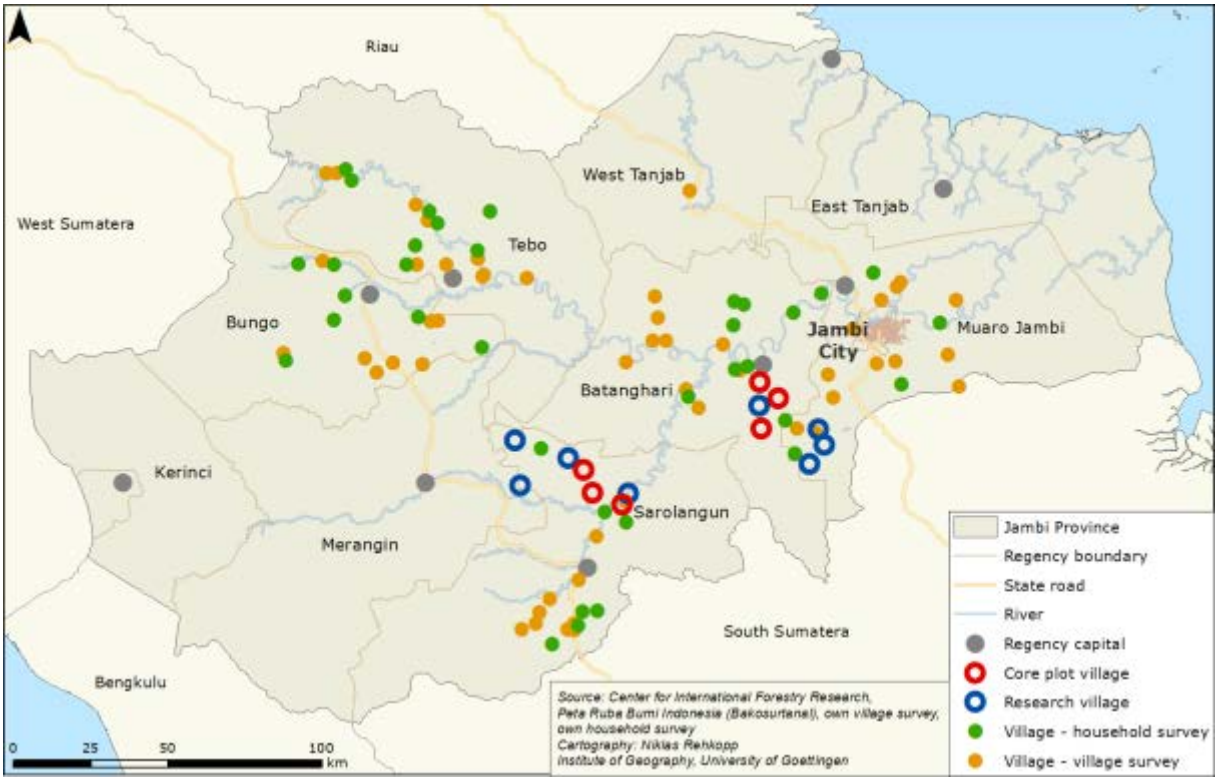
Jambi province is one of Indonesia's most important locations for the production of rubber and palm oil. Today, the province is the fourth largest crude palm oil (CPO) producer in Indonesia, the third largest producer of rubber, and the biggest producer of red areca nuts (Coordinating Ministry for Economic Affairs 2011). The total size of the province is 5.1 million ha of which 2.1 million ha are classified as forest area. In 2013, 721,400 ha were planted with oil palm (BPS 2015) and a further increase is expected in the next decades (Coordinating Ministry of Economic Affairs 2011). Jambi has been one of Indonesia's REDD+ pilot provinces since 2013. The provincial REDD+ strategy aims to review the current land allocation policy and to enhance law enforcement (Hein 2013). The consequences of Jambi's provincial REDD+ program are not yet foreseeable but they might decelerate Jambi's oil palm boom. About 456,900 ha of the province are planted with rubber (BPS 2015). Jambi has a population of 3.4 million people (63 people/km2), of which about 80% are working in the agricultural sector (BPS 2015).

In Jambi province our international collaborative research centre (CRC) focuses on ecological and socioeconomic functions of tropical lowland rainforest transformation systems. The socioeconomic projects of the research centre follow an extensive complementary approach, as they all concentrate on different levels of analysis, starting from the plot and household level up to the national and international level. Moreover, they follow complementarities in terms of their methodological approaches; both quantitative and qualitative tools are developed, applied and adapted to the specific Indonesian context. A joint sampling framework has been developed for the different data collection activities (Figure 2). Starting at the household level in villages, where research plots for the biotic and abiotic research projects of the CRC are located (so-called core villages), we investigate additional villages surrounding them (research village). Further we extend the data collection to the regional level with household and village surveys. National and international levels are analyzed through stakeholder interviews with governmental and non-governmental experts (Faust et al., 2013).

The qualitative data collected focus on political, institutional, and cultural drivers of land use change. The methods applied for this paper include participant observation, semi-structured interviews with stakeholders at village level, problem-centred interviews with households,

focus group discussions with key informants, participatory tools like mapping, timelines and comparative cultural study (Faust et al., 2013). When quoting from the interviews, pseudonyms have been given to each respondent to meet the balance between protecting the privacy of the research participants and retaining the context and usefulness of the data.

Map 7: Research villages in Jambi province



A quantitative village survey conducted in 98 villages focuses on the role of socio-economic and agro-ecological conditions as well as contractual arrangements for land allocation (Gatto et al., 2015). Information was collected on land allocation, demographic characteristics, income activities including contractual arrangements, access to resources and technology use, institutional aspects, conflicts concerning land and resource use, input and output prices, risk perceptions, and village organizations. A quantitative household survey among 701 farming households focuses on current land use patterns and changes over years, the institutional framework (migration, contracts etc.), input-output data from all major plots, off-farm income activities, and food and non-food consumption (Faust et al. 2013). During cleaning of the data, 4 non-farm households were excluded from the analysis leading to a sample size of 697. These households cultivate 363 oil palm and 947 rubber plots, of which 301 and 857 plots were in productive stage. Moreover, the risk attitude was assessed experimentally by conducting Holt and Laury Lottery experiments (Holt & Laury 2002) with

223 local farmers. The payoffs of the Holt-Laury lottery are shown in Table 1. The experiment was adapted to the case that at least some of the participants have limited education. The probabilities were visualised by coloured balls instead of numbers, which makes the experiment more easily understandable (Ihli & Musshoff 2013).

Table 4: Payoffs of the Holt-Laury lottery

Choice	Option A	Option B	Differences in the expected payoffs
1	With 10% price of IDR 4,000 With 90% price of IDR 3,200	With 10% price of IDR 7,600 With 90% price of IDR 200	IDR 2,340
2	With 20% price of IDR 4,000 With 80% price of IDR 3,200	With 20% price of IDR 7,600 With 80% price of IDR 200	IDR 1,680
…	…	…	…
9	With 90% price of IDR 4,000 With 10% price of IDR 3,200	With 90% price of IDR 7,600 With 10% price of IDR 200	IDR -2,940
10	With 100% price of IDR 4,000 With 0% price of IDR 3,200	With 100% price of IDR 7,600 With 0% price of IDR 200	IDR -3,600

Notes: The Holt-Laury lottery is a ten paired lottery-choice decisions between option A and option B. Each option has two possible payouts which systematically change their probabilities. Option A has a moderate payout-spread and is therefore the “safe choice”, whereas option B has a high payout-spread making it the “risky choice”. Ex post, one pair is randomly chosen and paid out. The total number of “safe choices” is the Holt-Laury value applied for the analysis.

Source: Authors’ own illustration according to Holt & Laury (2002).

Various econometric methods are applied to analyse the data. The importance of inputs in oil palm and rubber production is investigated by estimating a translog production function. We further use a logit model to estimate the effect of risk attitudes on production decisions and a left-censored Tobit model to assess the effect on oil palm acreage.

7.4 External drivers of crop choice

According to our conceptual framework, which has been presented in Section 2, we differentiate between internal and external factors. The latter refer to macro-level variables, which affect through different transmission channels the internal drivers. In this section, we will describe key policies and global market signals, which are important for the purpose of our study.

7.4.1 Key policies

Property-rights regimes in Indonesia and smallholders' access to land

The most important legislations governing land rights in Indonesia are the Basic Agrarian Law (BAL) of 1960 and the Basic Forestry Act (BFA) of 1967. The BFA classified about 70% of Indonesia's land area as state forest land, which is thus not subject to the BAL. Based on the BFA, the state has the authority to divide state forest areas into several land use categories with different policy objectives, such as timber production and conversion of the forest area into agricultural land. Moreover, the Minister of Forestry has the authority to issue logging and plantation concessions to private, foreign, and domestic companies. The remaining 30% of the country's land are subject to the BAL and fall under the authority of the National Land Agency (NLA). The BAL recognizes private ownership and vests control of all unregistered land, which is the vast majority of agricultural land in Indonesia (Galudra et al. 2014).

After the fall of the Suharto regime in 1998, the legal situation concerning the control over and the use of natural resources changed considerably. Particularly the districts (*kabupaten*) gained key decision making powers through the new regional autonomy legislation (Law 22 and Law 25), which was implemented in 2001 (McCarthy 2004). According to these laws, the districts gain decision making power in all aspects, which are not explicitly assigned to the central government and the provinces. The central government remains responsible for setting policy guidelines and standards, while the provinces mainly play a role for coordination. The decentralization laws, however, were designed without a well-developed implementation plan. Thus power was transferred only gradually with varying degrees and speed depending on the region and its leading actors and their claims to the restitution of resources and rights (Hauser-Schäublin & Steinebach 2014). Moreover, in 2002 the Ministry of Forestry regained control over the state forests (Barr et al. 2006), which implies that only the decision making power about the control over and the use of natural resources outside of state forests was shifted from the central government to the districts. The districts have, for example, the authority to allocate land to companies for oil palm and rubber cultivation as long as the land is located outside of state forests. As the majority of land is classified as state forest, the decision making power of the districts with respect to land use is, however, limited.

Since the fall of the Suharto regime, customary laws have gained in importance across Indonesia (McCarthy et al. 2012). In this context, customary land refers to land tenure of local communities, who - according to codified law - usually do not hold legal titles for their claimed territories. This implies that customary land cannot be sold and bought legally. Land that can be traded freely among smallholders is restricted to the category of private land accompanied by a land owner's certificate (*Sertifikat Hak Milik* SHM). While local communities had been largely deprived of their land by the constitutional land laws, the transmigrants were granted official land titles by the state.

As a consequence the availability of private land for land seeking smallholders is limited. This leads to the emergence of "illegal" land markets where access is granted through customary land tenure systems of local autochthonous communities. Access through customary tenure systems is hence often the only option for potential buyers but provides less tenure security due to overlapping claims of the state and communities. It is, for example, often not clear if land has already been designated for other uses. In Jambi province the majority of smallholders with the exception of transmigrants acquired access to land through customary tenure based arrangements (Hauser-Schäublin & Steinebach 2014).

Today different semi-formal land titles issued by village and sub-district authorities are used to legitimate land ownership and to facilitate "illegal" transactions of land, which is in legal terms under the authority of the Ministry of Forestry (Hein 2013). Village heads legitimize land transactions through issuing village level land titles. By issuing village land titles within state forests, village governments expand their competences formally and spatially. The title *Surat Ketarangan Tanaman Tumbuh* issued by village governments is not legally binding but certifies rights to rubber or oil palm plots (ibid). The title *Sporadik* is also issued by village authorities and certifies rights to land and is even accepted as collateral for accessing loans.

7.4.1.1 Oil palm smallholder schemes

Between 1977 and 2000, oil palm cultivation has been heavily promoted by the Indonesian government through nucleus-estate-smallholder (NES) schemes and through a special rural microfinance programme called KKPA ('*Koperasi Kredit Primer untuk Anggota'*, which translates to `Primary Cooperative Credit for Members'). Participants in the NES scheme received 2 to 3 ha of land under oil palm at the periphery of a governmental estate. Agricultural inputs and extension services were provided by the government through a loan system. After

loan repayment, the participants received formal titles for their land. At the core of the plantation area an oil palm mill was established, allowing the processing of the fresh fruit bunches within a short period after harvest. From 1984 onwards the scheme has been opened-up for private companies. In exchange for oil palm concessions and access to subsidized capital provided by the state, private companies had to assure the involvement of smallholders, who in turn guaranteed to produce the required commodities at an agreed quantity, quality, and price. The schemes were often coupled to the transmigration program, which was dominated by migrants from Java and Bali, but also included a share of local farmers. Since 1995, the NES scheme has been replaced by the KKPA programme, which provided subsidised loans to cooperatives to cover the costs for plantation establishment (Zen et al. 2005). The KKPA programme phased-out in 2000, because the state no longer subsidised the loans (McCarthy et al. 2012).

After 2000 the state reduced its role to the supervision of private sector - community partnerships. In the so-called partnership schemes, which were implemented from 2005 on-wards, villages provide land in return for the inclusion in private oil palm plantations. The specific arrangements vary largely and depend upon negotiations between the villages and estates (McCarthy et al. 2012).

7.4.1.2 The transmigration program

In 2015 the total population of Indonesia is projected to reach 255.5 million while in Jambi province the population will reach 3.4 million. However, the provincial population has been growing above average for the last decades and is projected to do so in the future. The total population of Jambi has tripled since 1971 and doubled since 1980. It is expected that it will further increase with an average annual growth rate of 1.2% until 2035, which will be above the national average of 0.9%. At the same time the total fertility rate in Jambi province declined from more than 6% in 1971 to 2.3% in 2012, which is below the national average of 2.6%. Hence, in-migration likely accounts for the above-average population growth (BPS, 2015).

Already in 1905 the first transmigration project was implemented under Dutch colonial rule aiming to reduce population pressure in Java. Transmigrants were sent to Sumatra, “the most accessible of the outer islands” (Fearnside 1997: 553). During 1905-1941, some 190,000 people were moved. After World War II, Sukarno launched a new transmigration

program in 1950. However, he was not able to reduce population pressure on Java largely due to his rejection of family planning programs (Fearnside 1997).

The World Bank-sponsored transmigration program under Suharto's New Order regime was implemented in 1967. This program likewise aimed to counterbalance population densities between mainly Java and Bali and, for instance, Kalimantan and Sumatra (Bock 2012). Sumatra has accepted roughly one third of all transmigrants (540,000 out of 1.6 million house-holds until 1993), and Jambi province accepted 70,000 households until 1995 (Miyamoto 2006). Transmigrants accounted for more than 90,000 families towards the end of the New Order Regime in 1997 (Potter 2012).

Apart from the above described general and state-sponsored transmigration other forms of spontaneous transmigration exist, which increasingly replaced it. Partly sponsored migrants, for instance, had to bear travel expenses themselves but were given land titles on site, others moved completely independently from any migration scheme (Fearnside 1997).

Even after the end of the government program, transnational migration has not come to an end. "Transmigration from Java to rural areas of the 'outer islands' appeared finished in Indonesia after the fall of the Suharto regime in 1998 and decentralisation in 2001. However, the rapid growth of oil palm plantations in the past decade has led to a renewed call for transmigrants by district heads seeking an expanded labour force. A new system has evolved on a district-to-district basis with applicants in 'sending districts' (…) being matched to re-quests from 'receiving districts' […], which largely depend on levels of plantation investment near proposed new transmigration sites" (Potter 2012: 272).

7.4.2 The demand for palm oil

Oil Palm fruits produce two distinct types of oils: crude palm oil from the mesocarp and palm kernel oil from the kernel. In 2011, 68% of palm oil and palm kernel oil were used for food purposes, followed by industrial uses (27%) and biodiesel (5%) (USDA 2012, as cited in FNR 2012). Palm oil represents the largest constituent of edible oil with a production of 59.4 million tons in the marketing year 2013/14. Together with palm kernel oil (7 Mt) it accounted for 38.8% of the world's oil and fats production. In the same year, Indonesia accounted for 50% of the global palm oil production as well as of global palm oil exports. The largest importers of palm oil are the EU, China, and India representing 50% of world imports (USDA 2015).

Palm oil is extremely competitive due to its high productivity and low production costs (Sheil et al. 2009; Scholz 2004). Oil palm trees produce up to 10 times more oil than other leading oilseed crops such as soybean or rapeseed (Mba et al. 2015; Thoenes 2006).

For the coming decade the OECD-FAO Agricultural Outlook 2014 expects a further increase in vegetable oil demand due to global population growth, increases in income and rising demand for biodiesel. It is expected that targeted biofuel blending mandates will increase global and Indonesian biodiesel production by 54%. Global trade of biodiesel, however, is predicted to increase only slightly due to domestic biodiesel targets or import restrictions in the European Union (OECD-FAO 2014).

7.5 Internal drivers of crop choice

The above described external factors affect through different transmission channels the internal drivers of land use change, which will be described in the following section. We will begin by describing land use change at the village level, the evolution of oil palm production among smallholders, and the socioeconomic characteristics of the producers. We then proceed with major constraints as well as reasons for farmers to cultivate oil palm.

7.5.1 Land use change at the village level

We begin our analysis by investigating land use changes at the village level, which does not include concession areas. This implies that the changes presented in Table 2 are driven by decisions of individual households and not by large-scale governmental and private enterprises.

Jambi's lowlands are subject to tremendous land-use changes. Most prominent are the rise in oil palm area and the loss in forest area. Oil palm acreage increased more than tenfold between 1992 and 2012 (Table 2). In 2012, oil palm plantations account for about 13% of the total area. In this respect rubber is much more important as it occupies about 52% of the total area, while the increase was much more moderate with 6% and 41% for plantation and jungle rubber, respectively. In the same time period, the forest area decreased drastically by 63%. The forest area share decreased from about 28% in 1992 to less than 10% in 2012.

Table 5: Land use and land use changes between 1992 and 2012

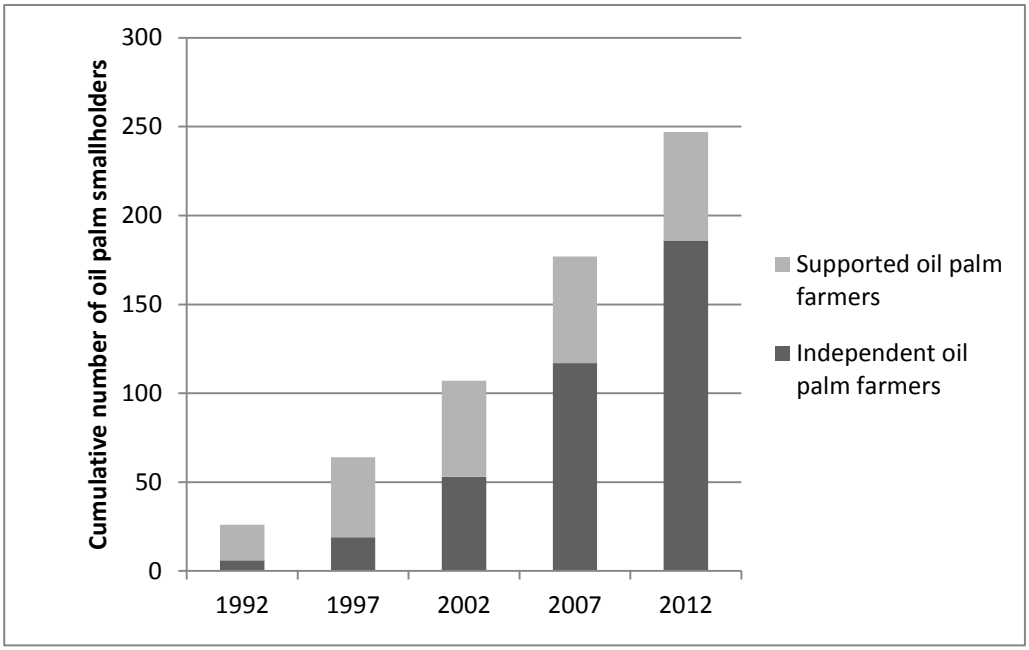
	Change in area (%)			Area shares (%)		
	1992-2002	2002-2012	1992-2012	1992	2002	2012
Oilpalm	362	149	1050	1,2	5,6	12,6
Plantation rubber	9	-3	6	35,3	39,5	35,0
Jungle rubber	-17	71	41	13,0	11,0	17,1
Fallow	5	4	9	12,9	13,9	13,1
Forest	-38	-40	-63	28,2	17,9	9,8
Paddy rice	-26	-28	-47	4,2	3,2	2,1
Other agriculture	504	30	686	0,4	2,3	2,7
No agricultural uses	33	26	67	4,9	6,6	7,6

N=72 in 1992, N=76 in 2002 and N=90 in 2012, Source: village survey

7.5.2 Evolution of smallholder's oil palm production

Smallholders started to cultivate oil palm in the late 1980s. All of these smallholders participated in NES schemes. The number of supported oil palm farmers – these are farmers, who participated in NES or KKPA schemes - increased until 2002 (Figure 3), when the support of the government stopped. Given the usual repayment period of 9 to 10 years (Zen et al. 2005), it can be assumed that almost all of the supported farmers are not bound to estates anymore. They can hence decide by themselves how to use their land. From the mid 1990s onwards, more and more independent smallholders – these are farmers, who did not participate in NES or KKPA schemes - engaged in oil palm cultivation and today they outnumber supported smallholders.

Figure 6: Evolution of smallholder's oil palm production



N=247, Source: household survey

7.5.3 Socioeconomic characteristics of oil palm smallholders

We further refine our analysis of smallholders' oil palm expansion by looking at farm, household, and village characteristics of producers of oil palm vs. farmers, who do not cultivate oil palm. All values reported in Table 3 refer to the year 2012. Out of the 697 interviewed farmers, 247 reported to cultivate oil palm, which is equivalent to a share of 35%.

Oil palm producers cultivate significantly more land than non-oil palm farmers (Table 3). On average, oil palm farmers cultivate 6.51 ha of land compared to 3.31 ha of non-oil palm farmers, which is equivalent to almost twice the area. Oil palm farmers started to grow oil palms, on average, in 2003 cultivating 3.57 ha, which represents 65% of the total acreage. 25% of them received support from an oil palm company. Rubber is cultivated by 62% of the oil palm farmers representing 33% of the total acreage. On average, oil palm farmers started to grow rubber in 1998, which is five years earlier compared to oil palm. As rubber cultivation started earlier and the area under rubber does not differ between oil palm and non-oil palm farmers, it seems, that oil palm is rather added to the farmers' land use portfolio than substituting other land uses like rubber. Non-oil palm farmers are rather specialised in rubber production. 95% of the non-oil palm farmers cultivate rubber on 3.18 ha, which is equivalent to 91% of their cultivated area.

With respect to household characteristics, oil palm farmers own significantly more land and the share of certified land is higher, which is mainly due to supported oil palm farmers, who received official land titles after debt repayment. The share of female headed households is significantly lower in case of oil palm farmers. The two groups do not differ significantly in terms of household size, age and education of the household head.

Table 6: Socioeconomic characteristics of oil palm and non-oil palm farmers

Variable	Oil palm farmers (N=247)	Non-oil palm farmers (N=450)	All farmers (N=697)
Farm characteristics			
Cultivated area (ha)	6.51** (10.26)	3.31 (4.65)	4.45 (7.31)
Year when oil palm cultivation started	2003 (6.14)	na	2003 (6.14)
Area under oil palm (ha)	3.57** (5.78)	0	1.26 (3.83)
Share of oil palm in total farm size (%)	65**	0	23
Share of supported oil palm farmers (%)	25	na	9
Share of households cultivating rubber (%)	62**	95	83
Year when rubber cultivation started	1998 (9.68)	1997 (9.78)	1997 (9.75)
Area under rubber (ha)	2.87 (6.07)	3.18 (4.65)	3.07 (5.19)
Share of rubber in total farm size (%)	33**	91	71
Household characteristics			
Land owned (ha)	8.16** (16.57)	3.96 (7.13)	5.45 (11.57)
Share of land with title (%)	54**	38	44
Share of female headed households (%)	5**	12	9
Number of adult household members	2.96 (1.21)	3.00 (1.25)	2.98 (1.23)
Age of household head (years)	44.84	44.66	44.72

	(12.25)	(12.16)	(12.18)
Education of household head (years of schooling)	7.87 (3.67)	7.31 (3.60)	7.51 (3.63)
Village level characteristics			
Share of households residing in a village, where oil palm is cultivated by smallholders (%)	100**	95	97

Notes: Mean values are shown with standard deviation in parenthesis. *, ** indicate differences are significant at the 5% and 1% level, respectively, Source: household survey

Concerning village characteristics, we find that 95% of the non-oil palm farmers live in villages, where other smallholders grow oil palms. This finding indicates that beyond access to mills further constraints to oil palm cultivation must exist. These constraints will be investigated further in the following section.

7.5.4 Constraints to oil palm adoption

Qualitative research identified agricultural expertise, lacking flexibility in labour requirements, availability of seedlings, and investment costs as the major constraints for farmers to cultivate oil palm. These factors will be described in the following paragraphs.

7.5.4.1 Differences in management and agricultural expertise

Oil palm is a relatively new crop in the research area and hence knowledge about crop management is not widespread among the local population. Training on oil palm cultivation was almost exclusively given to participants in oil palm schemes. For rubber the situation is different, because it is a long-established crop in Jambi. As previously indicated in Table 2, rubber was cultivated on almost 40% of the area in 1992, while oil palm occupied just 8.6% at that time. Additionally, household survey data reveals that rubber plots are significantly older than oil palm plots (Table 4). The average age of rubber plots is 19 years compared to 12 years in case of oil palm. As one farmer stated: “In former times people from Bungku did not know oil palm. In 2002/2003 began the building of the asphalt road by the district government and access to Bungku became more easy. Since then many outsiders came and planted oil palm. Since then the people of Bungku became familiar with oil palm. Most of these new-comers come from Java, Jambi, Medan Lampung and Bangko. I myself do plant rubber because I do not have any experience with planting and tending oil palm” (Pak Toni, September 2012)

The use of external inputs also differs significantly between the two tree crops (Table 4). Expenditures for oil palm production are almost four times higher than for rubber. On average, oil palm farmers spend IDR 2.5 million per ha and year, while rubber farmers just spend IDR 0.7 million per ha and year. These higher total expenditures are mainly driven by higher fertilizer and herbicide use. Fertilizer is applied on 81% and herbicides are used on 83% of all oil palm plots. For rubber plots, fertilizer and herbicides are applied on 27% and 47% of the plots, respectively. Moreover, if fertilizer is applied, the expenditures on oil palm plots are more than two times higher than on rubber plots. A farmer testifies: "Actually I prefer rubber because I grew up with rubber [...]. Rubber also only has to be fertilized twice a year – in the beginning of the hot season and the beginning of the cold season. Oil palm needs other and more fertilizer" (Pak Achmad, September 2012).

Table 7: Plot characteristics and input use of rubber and oil palm

Variable	Oil palm plots (N=301)	Rubber plots (N=857)
Plot characteristics		
Plantation age (years)	11** (6.2)	17 (9.9)
Distance from home (km)	3.2** (4.1)	4.7 (9.7)
Distance from road (km)	0.6** (1.4)	1.0 (1.7)
Share of plots under sharecropping (%)	3**	18
Material input costs		
Share of plots fertilizer is used (%)	78**	28
Expenditures on chemical fertilizer[a] (1,000 IDR per ha)	2253** (1827)	889 (931)
Share of plots herbicides are applied (%)	81**	49
Expenditures on herbicides[a] (1,000 IDR per ha)	346 (260)	336 (266)
Share of plots material inputs are used (%)	93**	81
Total expenditures on material inputs (1,000 IDR per ha)	2595** (2465)	719 (932)

Notes: Mean values are shown with standard deviation in parenthesis. Only productive plots were included in the analysis. *, ** indicate differences are significant at the 5% and 1% level, respectively. [a]Conditional on using fertilizer and herbicides, respectively.

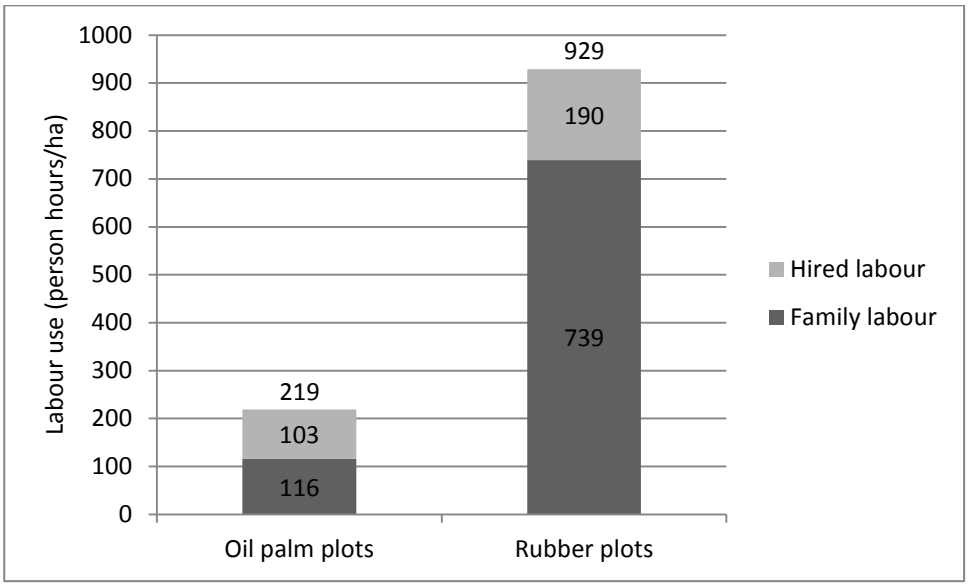
Source: household survey

7.5.4.2 Labour requirements and flexibility

Labour use on rubber plots is more than four times higher than on oil palm plots (Figure 4). On average, rubber requires 929 hours of labour per ha and year and oil palm just 205 hours per ha and year. Family labour use is even almost seven times higher on rubber plots than on oil palm plots. On rubber plots 739 hours of family labour per ha and year are used while it is just 116 hours on oil palm plots. "We migrants from Kerinci prefer oil palm instead of rubber. We did not have experience neither with oil palm nor rubber. But oil palm is less work than rubber" (Pak Eddi, September 2012).

During the interviews, the respondents, however, stressed, that labour use in rubber is much more flexible than in oil palm. Oil palm should be harvested twice a month and the fruits have to be processed within 24 hours. During peak times of harvesting, labour and transportation must be guaranteed. Rubber could be tapped every two days but can also be left idle for various reasons like shortage of labour. "The only restriction we have in the rubber harvest is the rain. Rubber does not decay. If you harvest oil palm it has to be sold directly. If you wait for one or two days, you will lose. This makes it difficult" (Pak Dedi, July 2013).

Figure 7: Labour use on oil palm and rubber plots



N=301 for oil palm and N=857 for rubber
Source: household survey

7.5.4.3 Availability of oil palm seedlings

Until recently oil palm seedlings and saplings were not easily available to smallholder farmers outside the NES schemes. They were not available from traders and the Governmental Agency for Plantations (DINAS Perkebunan) did not distribute seedlings to smallholders until 2000. Rubber seeds were easily available from traders and they could even be collected in existing rubber plots. “The village head was the first to plant rubber in Bungku. We worked in his rubber gardens and secretly collected rubber seeds in the early morning dawn to plant rubber ourselves” (Pak Mik, August 2012). Additionally, rubber seeds were distributed to local communities by the provincial government promoting further cultivation of rubber. “In the beginning we did not understand how to handle rubber or oil palm. We received rubber seeds from the government” (Ibu Mira, September 2012).

However, it seems that availability of oil palm seedlings has changed considerably. According to household survey data, the share of farmers, who obtained or purchased seedlings in 2012, does not differ between oil palm and rubber (Table 5) indicating similar access to seedlings. In terms of sources of purchased seedlings, estate companies and output traders are more important for oil palm than for rubber. Official dealers, farmer groups/cooperatives, and government sources are more important for rubber than for oil palm.

Table 8: Sources of seedling for rubber and oil palm (%)

Variable	Oil palm	Rubber
Share of farmers, who did not obtain seedlings in the last 12 months	85.8	89.0
Share of farmers, who obtained seedlings for free	0.4	0.7
Share of farmers, who purchased seedlings	13.8	10.3
Sources of seedlings if purchased		
Estate company/contractor	8.8	0.0
Official dealer	14.7	30.0
Unofficial dealer	11.8	15.0
Farmer group/cooperative	8.8	15.0

Output trader	32.4	11.7
Government	2.9	8.3
Other farmer	20.6	20.0

N=697, Source: household survey

7.5.4.4 Investment costs

The investment costs for oil palm are significantly higher compared to rubber. On average, the investment costs for oil palm amount to IDR 1.99 million, while for rubber IDR 0.76 million are spent (Table 6). Main reasons for the higher investment costs are higher expenditures on seedlings and fertilizer. "I have 4 ha land. I plan to plant 2 ha with oil palm and 2 ha with rubber. Because oil palm needs a bigger investment than rubber" (Pak Achmad, Sep-tember 2012).

Table 9: Investment costs in year 1 of rubber vs. oil palm plots

Variable	Oil palm (N=12)		Rubber (N=19)
Material input costs (1,000 IDR per ha)			
Expenditures on seedlings	1447 (1588)		526 (852)
Expenditures on chemical fertilizer	436 (896)		82 (354)
Expenditures on herbicides	94 (162)		128 (238)
Expenditures on other inputs	12 (28)		47 (126)
Total expenditures on material inputs	1990* (1927)		762 (1001)

Notes: Mean values are shown with standard deviation in parenthesis. * indicates differences are significant at the 5%. The number of observations is much smaller than in the household survey, because questions about investment costs were only asked to households that had established a new plantation in 2012, Source: household survey

7.5.5 Reasons for oil palm cultivation

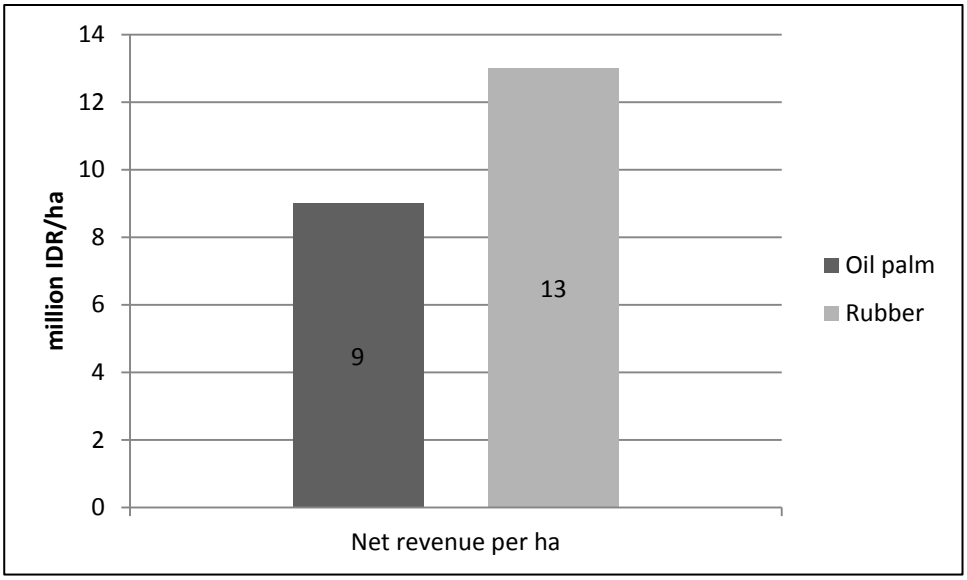
Apart from the above mentioned constraints to oil palm cultivation, the respondents also stressed various advantages of oil palm over rubber cultivation; particularly the higher returns to labour and the shorter immature phase of oil palm. We will elaborate these points in the following paragraphs.

7.5.5.1 Returns to land and labour

Higher returns have often been mentioned by the respondents during the qualitative interviews as an important reason for oil palm cultivation. “Of course oil palm needs bigger investment than rubber, but to own oil palm makes the heart happy” (Pak Eddi, September 2012). There is also the hope, that the investment into oil palm will improve the livelihood of future generations. “[People] plant oil palm because they want to have a better live for their children and grandchildren” (Pak Nurdin, September 2012).

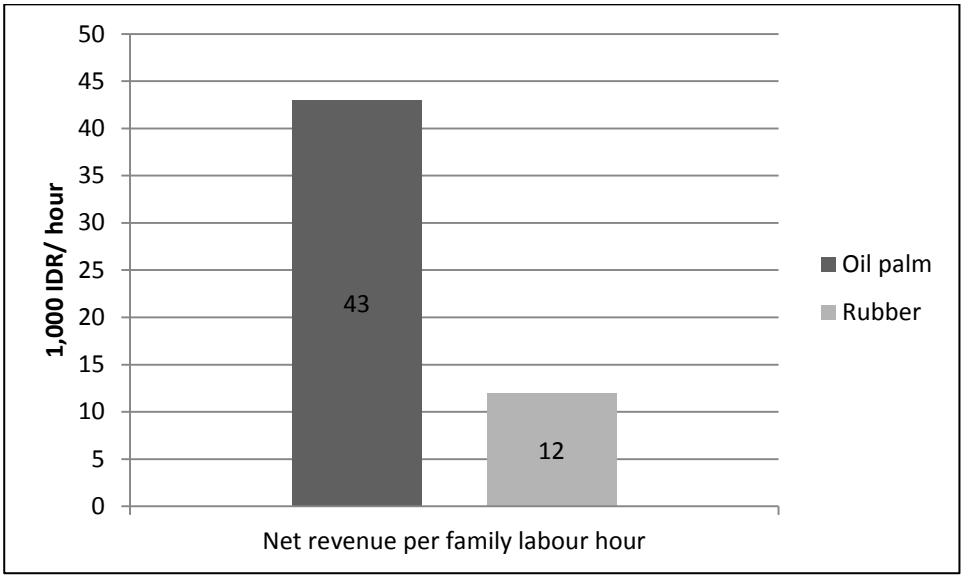
Household survey data, however, suggests that the returns to land are higher for rubber than for oil palm. On average, the net revenues per hectare of rubber are IDR 13 million, while they are just IDR 9 million for oil palm (Figure 5). The returns to land for rubber are hence one-third higher than for oil palm. But to yield such net returns, rubber cultivation requires more than four times more labour than oil palm as shown above. This leads to much lower returns to family labour for rubber (Figure 6). Every family labour hour used in oil palm returns IDR 43,000, while the return is just IDR 12,000 per hour in rubber. This difference in returns has also been highlighted during the qualitative interviews. “[We] get better income from rubber than from oil palm. But rubber means a lot of work” (Pak Januar, June 2013). Why the respondents then consider oil palm as the better choice to improve livelihoods? The lower labour requirement of oil palm enables households to cultivate more area and to engage in other income activities, such as running a food stall, which increases total house-hold income. “One person can take care of 2 ha of rubber. But in comparison to that, one person can manage about 10 ha of oil palm plantation. [...] We only need to work in the oil palm plantation two times a month, so the other 28 days we can find some other work" (Pak Januar, June 2013).

Figure 8: Returns to land for rubber and oil palm plots



N=301 for oil palm and N=857 for rubber
Source: household survey

Figure 9: Returns to labour for rubber and oil palm plots



N=301 for oil palm and N=857 for rubber
Source: household survey

7.5.5.2 Immature phase of rubber

Another reason for cultivating oil palm mentioned during the qualitative interviews is the difference in the immature phase. Oil palm trees become productive four years after planting and they are then used for about 20 years. Farmers start to tap rubber trees about seven years after planting and the trees are tapped for about 25 years. While both crops

need a long term perspective, farmers deemed the difference in the productive period an important argument for their crop choice. “Most people here plant rubber, but for a quick return oil palm is faster. If people plant rubber, they often have to wait 7 or 10 years for the first yield. But from oil palm, you can make a living of faster” (Pak Zain, September 2012). Another respondent explained: “The reason why I changed my first field into palm oil is so that I can harvest earlier” (Pak Taufik, August 2013).

7.5.6 Elasticities of inputs in oil palm and rubber cultivation

We further investigate the importance of inputs in oil palm and rubber cultivation by estimating a production function. We chose the translog functional form due to its flexibility. The dependent variable is the natural logarithm of the yield in kg per plot in 2015. All continuous independent variables are also log transformed. Table 7 presents the estimation results. The estimated coefficients represent the partial production elasticities of the inputs used and can be interpreted as the percentage change in output per one percent change in the input used.

In general plot size, labour and capital determine production and productivity in both crops (Table 7). The magnitude and significance, however, differs between oil palm and rubber. Higher labour input increases, ceteris paribus, the output level in both crops, although the scale is higher for rubber. A one percent increase in labour leads to a rise of the output level of 0.31%, while for oil palm the increase is 0.22%. The higher labour elasticity of rubber might be explained by differences in labour deployment. In rubber a rise in labour input means an increase in tapping frequency, which directly leads to a higher output. In oil palm additional labour does not directly lead to higher yields since the output mainly depends on the ripeness of the fruits. In terms of plot size, the results show a higher elasticity in oil palm production. A one percent increase in plot size leads to a 0.75% increase in output, which is the highest partial elasticity of all production factors. For rubber, the increase is 0.50%. These results suggest that it makes economically more sense to allocate additional land to oil palm rather than rubber, even though the average returns to land are lower. For capital, the results reveal a higher elasticity in oil palm cultivation compared to rubber. Moreover, fertilizer application, which is modelled as a dummy, is important in both systems, while the applied amount appears to be less relevant for oil palm production.

Summing up the point elasticities of plot size, labour, capital and fertiliser provides us with a measure of scale elasticities of 0.98 for rubber and 1.09 for oil palm. The scale elasticity indicates decreasing returns to scale for rubber production and slightly increasing returns to scale for oil palm. Increasing returns to scale indicate a rather capital-intensive production. Higher investments into the production, as tractors, seedlings etc., generally correlate with high scale elasticities. Decreasing returns to scales are mostly found in labour-intensive types of production, where smaller volumes of production are also efficiently feasible. Keeping this in mind and considering the calculated returns to land and labour, the estimation displays a labour- intensive rubber production and a capital- intensive oil palm production.

Table 10: Estimation results of the partial production elasticities

Variable	Oil palm (N=280)		Rubber (N=724)
Log plot size	0.747*		0.504***
Log labour	0.220**		0.314***
Log amount of fertiliser	0.047		0.114**
Log number of trees	-0.07		-0.056
Log plantation age	0.164**		-0.027
Log capital	0.080***		0.053**
Fertilizer used (dummy)	-0.141*		-0.091*
Batanghari[a]	0.130*		-0.104**
Muara Jambi[a]	0.195*		-0.11
Tebo[a]	0.245		-0.007
Bungo[a]	0.124		-0.04
Intercept	0.647***		0.587***

Notes: Estimated coefficients are shown. For clarity, this table only displays the partial elasticities; squared terms and interaction terms are omitted. *, **, *** indicate differences are significant at the10%, 5% and 1% level, respectively. [a]Base category is Sarolangun.

These results confirm our previous findings. The large amount of labour and the lower return to labour in rubber production coincides with the finding of the labour-intensive production via the scale elasticities. The high elasticity of labour and the intensive use of labour may

indicate limitations in the availability of labour in rubber production. Vice versa the results suggest a shortage of land with respect to oil palm production.

7.5.7 Risk attitudes and crop choice

Changing land use towards a perennial crop like oil palm can be seen as an investment. Since each investment implies risk, the farmers' risk attitude might influence such an investment decision. This section analyses the effect of the risk attitude on the decision to start oil palm production and on the acreage dedicated to oil palms. We use a logit model to estimate the effect of risk attitude on the production decision and a left-censored Tobit model to assess the effect on oil palm acreage. The risk attitude is measured by the Holt-Laury value (Holt & Laury, 2002), which decreases with risk aversion. The estimates indicate a relation between risk attitude and land use decisions and should not be interpreted as a causal relationship due to the potential endogeneity of risk attitude in the regression models.

The Holt-Laury value shows a significant inverted U-shaped influence on both the production decision and the oil palm acreage (Table 8). This indicates that especially risk-loving as well as very risk-averse farmers have a lower probability to cultivate oil palm compared to farmers with moderate risk attitude. Moreover, the latter farmers also tend to have bigger oil palm plantations than their peers. The difference accounts for up to 1 ha compared to risk-loving farmers.

These results suggest that the extreme risk-averse farmers are less willing to make the high initial investments needed for establishing oil palm plots, since it is too risky for them. Apart from that, it might also be that there are options to generate a more stable income, which are hence preferred by risk-averse farmers. Furthermore, risk-loving farmers are also less likely to have oil palms and they also tend to establish smaller oil palm plantations. This might indicate that alternative investment possibilities exist, which are more profitable than oil palm, but also more risky. All in all it seems that oil palms are preferred by the moderate risk-averse farmers. Investment in oil palms seems to be too risky for the risk-averse, while the generated returns are considered too low by the risk-loving farmers.

Table 11: Estimated coefficients for the decision to cultivate oil palm and oil palm acreage

Variable	Decision to cultivate oil palm		Oil palm acreage
Holt-Laury value	0.37**		0.53**
Holt-Laury value squared	-0.02*		-0.03**
Local migrant (dummy)[a]	0.62		0.85
Transmigrant (dummy)[a]	3.42***		4.94***
Years in school	-0.17		-0.72**
Years in school squared	0.00		0.03*
Age	-0.05**		-0.07***
Land (ha)	0.06		0.23***
Intercept	0.11		1.32

Notes: Estimated coefficients are shown. *, **, *** indicate differences are significant at the10%, 5% and 1% level, respectively. [a]Base category is non-migrant.

Beyond that, transmigrants show a higher probability to cultivate oil palm than non-migrants. They also tend to have bigger oil palm plantations. Moreover, younger farmers have a higher probability to cultivate oil palm and they tend to have bigger oil palm planta-tions than older farmers. The farm size significantly determines oil palm acreage, but shows no significant influence on the probability to start cultivating palm oil.

7.6 Conclusions

The rapid expansion of the oil palm area in many tropical countries has raised concerns about its negative impact on local communities, food security, biodiversity, and climate change. While the expansion of oil palm in early stages was mainly driven by large private and public companies, smallholder farmers have increasingly started to cultivate oil palm as well. It is expected that smallholders will outnumber large private and state companies in production as well as oil palm acreage in the near future. For policy formulation it is hence important to better understand who these smallholders are and why they have started to cultivate oil palm. In this paper, we used a rich dataset collected in the province of Jambi, which is one of the most important production areas for oil palm, to analyse smallholders' decision making by combining qualitative, quantitative, and experimental methods. In following such a multi-dimensional, we provided empirical evidence that allows for an in-

depth understanding of smallholders' land use choices, which is intended to support politicians in formulating appropriate regional policies. In particular, we wanted to better understand the major constraints and reasons for farmers to engage in oil palm cultivation, and explore behavioural differences between oil palm and non-oil palm farmers.

Building on a conceptual framework of land use choice, we differentiate between internal and external factors. The latter refer to macro-level variables at the international and national level, which affect through different transmission channels the internal drivers of oil palm cultivation. Government policies, such as the transmigration program, promoted the uptake and spread of oil palm. But also prevailing property-rights regimes determine the access to private land and thus who is able to further expand oil palm cultivation. Another fundamental factor that influences land use choices is the prospective demand for palm oil and related international prices for the commodity. Currently, the world is experiencing a sharp decline in crude palm oil prices which negatively affects profitability and likely disincentive smallholders to invest in oil palm. The price-effect, however, seems to be location dependent. In Africa, where palm oil production is dominated by large-scale estates the price drop creates opportunities for smallholder farmers. Estates increasingly contract-out their production and thus spread the associated risks with farmers (Ghazoul et al. 2015).

At the household level we identified internal factors that influence smallholders' choices to cultivate oil palm instead of rubber, which is still the dominant crop in our study region. For instance, compared to rubber farmers, oil palm farmers cultivate more area and own more land, and also have more formally titled land. Partly, this may be explained by being supported by the government or companies. Another reason are the lower labour requirements in case of oil palm, which allow the farmer to expand agricultural activities without hiring additional labour. The lower labour requirements have also been identified as a major rea-son for smallholders to grow oil palms. We further showed that returns to land are higher for rubber than for oil palm. Due to the differences in labour requirements, the returns to labour are, however, higher for oil palm than for rubber. The higher returns to labour and the fact that oil palm smallholders appear to employ excess labour in cultivating addition oil palm plots make oil palm cultivation more profitable, and thus attractive. Crop choice seems also to be affected by farmers' risk preferences. We showed that oil palm farmers are neither risk-averse nor risk-loving, rather, they appear to be risk-neutral. This

risk neutrality seems also to be in line with farmers' appreciation of the relatively short time period before oil palm yields and an income can be generated. A risk neutral farmer would probably be more inclined to choose oil palm, which will guarantee an earlier cash inflow. In addition, oftentimes risk can be reduced when oil palm is cultivated because of the availability of con-tract farming arrangements with private companies that provide, among others, credit and extension services.

However, in this paper we also identified constraints of oil palm cultivation, and thus factors that prevent smallholders to cultivate oil palm. By econometrically estimating the production functions of oil palm and rubber, we found that rubber is highly labour intensive, as discussed, whereas oil palm is capital-intensive. Qualitative interviews support this finding. For many farmers, who lack access to formal credit, the high investment costs associated with palm oil production pose a considerable barrier. Moreover, the high agricultural expertise required negatively affects the decision to cultivate oil palm. In many cases rubber cultivation, which has been an established crop for many decades, seems to be the more viable and secure choice.

8 Discussion: Transforming landscape realities

At the latest Conference of the Parties in Paris 2015, Monique Barbut, Executive Secretary of the Desertification Convention compared land to the queen in a chess game. “Like the queen in a chess game”, she said, “land will fill a place as the Queen of both international development and climate change actions. Unlike other pieces on the board, the Queen provides cover and supports our ambitions on many fronts; food, energy, water, climate, biodiversity, jobs, migration and security” (UNCCD 2015). This quote once more reveals that land has always been and still is a peculiar resource. Land is the most basic resource to secure survival. It allows for the production of food, it in many contexts defines the economic as well as the social standing of actors in society. Then, access to land extends beyond the pure mechanism of sustaining a livelihood (Coy 2001: 29). This makes and has always made land a resource worth fighting for. With changing consumption patterns, increasing demand and with a growing world market, the pressure on land increased as well. With an increasing pressure on and interest in land, actors try to find ways to secure access to the resource land. “All land use and access requires exclusion of some kind” (Hall et al. 2011: 4). Approaches to secure property rights to land, consequently de jure excluding certain actors from this land, have become more and more complex. So have the ways in which the resource land is exploited. Especially powerful actors have tried and are further trying to secure exclusive access to vast amounts of land. These are often large companies trying to expand the area under boom crop cultivation. Consequences, ecological as well as socio-economic, have been discussed in the previous chapters.

8.1 Produced realities through land tenure regulations

Transforming realities under the influence of changing land tenure regulations have been described as having an impact on the ecological as well as on the social landscape. Ecological landscape realities are not at the core in the previous chapters. It has however been discussed in this work that the area of forested land has decreased tremendously in the research area in the timeframe considered. With a decrease in forest cover, ecological services decrease as well. Providing more detailed information on the ecological trade-offs in the research area is also part of the wider Collaborative Research Centre 990 and has been assessed in numerous publications (Allen et al. 2015; Barnes et al. 2015; Guillaume et al.

2015; Hassler et al. 2015; Sahner et al. 2015; Schneider et al. 2015). The research at hand further supplement these results on ecological trade-offs by explaining drivers impacting the transformation of cultural landscapes as well as socio-economic consequences.

The socio-economic consequences seem to be less straight forward compared to the ecological consequences. Sub-groups of the Collaborative Research Centre 990 with a more economic-centred focus have been assessing changes in income and consumption structures. Using quantitative data, it is made possible to assess these changes. It remains difficult however to determine drivers of change, underlying causes as well as winners and losers in this scenario when applying quantitative methods only. In Sumatra, Indonesia, there are actors able to benefit from a transformation, whilst others are not. The cultivation of oil palm as well as rubber is an income opportunity. At the same time, while actors with access to land might be able to increase their income, the actors excluded from land, loose out. At different points in time and at different places, the actors able to benefit or to not benefit differ. The question of how these opportunities to access and benefit from land are framed, have been discussed in depth and shall be summarized here.

8.2 De jure land tenure regulations

De jure land tenure regulations as a framework impacting access to land are a reality. They are discussed, decided upon and passed by state apparatuses hence made a reality. For the case of Indonesia, different actors have been part of these institutions in power making land tenure regulations a reality. Different actors follow different interests and diverse approaches of pursuing these interests. The effects are changing land tenure regulation approaches over time, in the case of Indonesia leading to overlapping approaches controlling access to land, hence overlapping realities.

The Dutch colonial administration introduced regulations on land in their own favour. The so-called *domein verklaring* equipped the administrators with the right to land for all uncultivated areas and for land which could not be proven to be owned from a European perspective. It further implied that all land under state administration, the *domein*, could be used to facilitate investments in the agricultural sector. Many of these investments came from Europeans in the context of the plantation estates establishment. The *domein* also brought along the narrative of a nature-culture dichotomy, of land that needed to be

exploited to serve human mankind and a capitalistic interest. Non-Indonesians were equipped with land certificates for land that was mapped, measured and titled. This did not apply for Indonesian citizen. Customary approaches to access land which have been in place before the arrival of the Dutch continued to exist, a first overlap in land tenure regulations.

With Indonesian independence the intention of the regulations in regard to land tenure was to abolish this overlap, the contradictions created by land tenure regulations as imposed upon the Indonesian people by the Dutch. It took 15 years from independence to the passage of the Basic Agrarian Law (BAL) which put the abolishment of these contradictions into writing. The BAL redeemed the *domein verklaring* which turned land labelled to be idle into state land. Under the new concept this land was controlled by the state as representative of the Indonesian people. Customary rights were to be recognized and all land holdings were to be formalized through land certificates. Even though the regulations sought to abolish the dualism of land rights of Dutch and customary laws, a dualism remained, now between Indonesian laws under the control of the state and customary laws.

With the introduction of the Forestry Law in 1967 the rules managing access to land fell back to the concept of the rules as implemented by the Dutch. Under this law, all land declared as waste land, was turned into state land. The borders of the newly declared state land were mapped in the 80s. Whether or not the areas were covered with trees and whether or not people settled and cultivated on the land remained largely ignored. The Foreign Investment Law, also released in 1967 added to this land for development narrative, attracting foreign investments to the resource land, another parallel to the narrative of the Dutch colonial administration.

8.3 Customary arrangements

Customary arrangements have been regulating access to land ever since humans have been using land in the research area. And, they changed over time, but they never disappeared. Shifting cultivation was a common practice, most probably until the 1980s, amongst local groups. In times of the Sultanate it was a watershed and linage based concept that organized land use. Land was not seen as an individual property but as a common asset. According to *adat* rules and the logic of communal ownership land could not be sold. The elected chief of a group was in control of resource use and land tenure. This fact remained, also at a time,

when Dutch colonial administrators introduced private ownership to land and at a time when migrants moved to the area. Newcomers often request access to land from customary leaders. Especially through intermarriages between migrants and members of the customary groups, land started to be sold, which was not part of the concept of communal land holdings. The institutional court decision from 2012 (known as MK35) strengthened the right of customary claims to land. For the first time it was officially decided in a court that indigenous groups are right-bearing subjects. Customary forests have until 2012 been part of the state forest, a land status which includes that no ownership title can be obtained on this land. With the institutional court decision, customary forests can be taken out of the status of state land. Whether or not this is a more just way of land rights has been discussed in chapter six. So far, the right of indigenous groups to customary forest under the decision MK35, has not been made a reality anywhere in Indonesia yet.

8.4 De facto land tenure regulations

While de jure regulations as well as customary arrangements keep on changing, local actors, embedded to their social, cultural and historical context were still actively negotiating for agency and access to land. Actors do not simply follow de jure rules. They neither simply follow customary rules. They create an individual rule cocktail. Depending on their socio-cultural background, the rules in place at a certain moment in time and the intention they are pursuing, they refer to the institution that best fits their interest (Benjaminsen & Lund 2003: 5) . Consciously as well as unconsciously local actors mix different sets of regulation. One example for such a cocktail of rules legitimizing access to land is the approach some of the transmigrants interviewed during field research report about. They were selected as transmigrants from Java, being resettled to Jambi province. In one of the research villages for example they were given a house, a garden surrounding their house and a plot of land to cultivate rubber. They participated in a de jure programme with the reception of a de jure title deed granting them the right to own the land as final stage of the programme. In order to expand the land under cultivation, especially in the context of a growing family, transmigrants sought access to land on the state forest land through customary leaders. For part of the land they cultivate, access is legitimized through de jure regulations, part of the area under cultivation has been granted access by customary rules.

The de facto rules, the rules actually applied by actors, are impacted by overlapping land tenure regulations. But, there is more than overlapping regulations determining the de facto rule. De facto rules are also shaped by the circumstance that rules are dynamic. This becomes again visible in ways resource use is legitimized. In chapter four, various legitimization rationales are offered to explain land use in the protection forest Tahura. Migrants to the area explained, that it is illegal to log in the protection forest. Adding to the information, interview partner stated that the rule is expanded by the fact that it is permitted for the Batin Sembilan, but not allowed for non-Batin Sembilan group members. This is a dynamic rule embedded to a specific socio-cultural setting. The same person legitimizing the logging for a certain group of people, while others are not permitted to do so and the fact that de jure none of these groups is allowed to log in the forest indicates the dynamic intrinsic to rules.

The legitimization and reasoning shaping de facto rules are also impacted by the behaviour of state representatives. To stick with the example of logging and cultivating in the protection area outlined in chapter four it has been shown that state actors over-map areas in order to remain with a territorial flexibility. By creating confusion on the boarders through a frequent change of land use status and the boarders defining these statuses, leeway has been created. This leeway is used by state actors to seek rent by not seeing what people do in the forest or by assigning areas for cultivation in the forest as well as by providing seedlings and individually crafted rules for the protection forest. This flexibility is created by state informality.

Overlapping regulations, dynamic rules and state informality in their sum constitute a great deal of what de facto rules are made of. Another phenomenon which was found during field research and which has been discussed in depth is a strategy of power and subversion, here referred to as mimicry of the legal. Seen as a strategy, local actors mimic de jure land tenure regulations. They make the rules in use almost look like de rules by the state, but only almost. They are a localized translation making de jure rules fit the local context. Approaches to explain the reasons for mimicry of the legal are diverse. They can be seen in rent seeking-behaviour by local elites. In the case of the sporadic land titles for example it is especially the village heads collecting a fee for issuing land titles that are no de jure titles. It can be also seen as a strategy of local actors to make de rules, which seem unrealistic to obey to,

achievable for their context. De jure title deeds must be applied for at far away offices, using a bureaucratic language, most of the actors are not familiar with. Actors applying for a de jure certificate have to except long-lasting and time-consuming procedures, and they have to pay a high and often unaffordable fee. The localized translation of the de jure right of ownership certificate is easier to obtain and seems to serve similar purposes. One of the strongest motivations of obtaining a certificate is access to loans for which the certificate serves as collateral. Here, the mimicked version of the certificate can be used as well. The banks legitimize the mimicked certificates by accepting them as collateral. Having a certificate legitimized by banks conveys the message that the strategy of the mimicry is embedded deeply enough in the local system not to strive for more, in this case for the de jure certificate.

The consequences of these de facto rules as results of overlapping regulations, dynamic rules, state informality and a mimicking strategy of power and subversion are inscribed in the ecological landscape. They are however as well inscribed in the social landscape.

8.4.1 Impacts on physical landscape realities

As outlined, the most straight forward consequences of development and economic growth policy narratives and their accompanying land tenure regulations is that they foster large scale concessions taking up space. This space is often taken up at the expense of forest. This was already the case during the time of Dutch administration and was followed especially by the land for development policy under Sukarno. The result being 15 million hectares of forest converted to areas under agricultural use since colonialization (De Kok, Briggs, Pirnanda & Girmansyah, 2015, p. 29). In order to invert this path and to preserve the endemic ironwood trees, the protection forest serving as plot in the previous chapters was set up. The Dutch already started to set up protection zones in the area, the Indonesian government made it an official protection forest in 1999. The ecological reality for this protected landscape however is a protected area of more than 15,000 hectares under protection out of which 10,000 hectares are under cultivation due to information by the Ministry of Forestry (Antaranews Jambi 23 Februari 2013). Detailed figures are not available for the Bukit Duabelas National park, the plot for the story told in chapter six. Having two groups, the Orang Rimba and the Melayu people claiming customary land inside the forest reserve can be seen as an indicator for land under cultivation in this area as well. This

number is made possible by overlapping land tenure regulations, unclear authorities and state informality. Smallholders and local government representatives further contribute to the degradation of this area by mimicking land tenure formalization processes, a process in which also land titles for the protected area are issued. The ecological result of overlapping tenure arrangements, state informality and a mimicking process, is a degraded and fragmented landscape mosaic. This mosaic consists of vast monoculture plantations, scattered settlements, largely unprotected protection areas and countless seemingly randomly arranged smallholder plots. Forest or areas used to cultivate food have to be searched for.

8.4.2 Impacts on social landscape realities

The transformations experienced in land tenure regulations and in the changed approaches to land as property are not only inscribed in the ecological environment. They have an impact on the social landscape as well. In other words, the ecological realities in turn have social consequences. The space taken up by concession can consequently de jure not be used by local smallholders, they are excluded. When migrants arrived to the research area, they sought access to land through the customary leaders. Migrants recognized the authority of the local population and their *adat* as legitimized managers of the land. Through interethnic marriages *adat* rules started to intersperse with approaches to land tenure regulations of the migrant groups. Until this time, smallholders followed the same path to gain access to land; they followed the customary regulation even though state formalization processes to tenure had already been decided upon with the Basic Agrarian Law in 1960. With the establishment of transmigration villages, de jure access was granted to those participating in the programme. For Jambi province this amounts to a total number of 70,000 households equipped with right of ownership land titles and an area of approximately 438,000 ha equipped with *de jure* title deeds (Miyamoto, 2006, p. 8). Migrants and the autochthonous population are not holding land titles. Even though interviews did not reveal information on severe conflicts between the groups of title holders and non-title holders, this differentiation has been constructed by the state and by those requesting titles. At the same time, the land provided under the transmigration program was land managed by groups living in the area before transmigrants arrived; these groups were deprived off their land. Winners and losers were produced; a separation into de jure landless people and the title and concession holders was created, depicting the beginning of a social

transformation. Those falling in the category of the landless people developed equilibrium strategies. Mimicry of the legal processes were established in order to also gain a written legitimized access to land. In other cases, actors were turned to illegal behavior without changing anything in their behavior patterns. This is the case for smallholders who were settling or cultivating in an area that was in the processes of the mapping exercised declared state forest as explained in chapter four. Changing the status of the land in a certain area without ground checking the realities turned countless farmers into criminals, illegally occupying land.

These social transformation and separation coupled with the changing land tenure regulations create a fertile ground for conflicts. These conflicts arise between concession holders and smallholders when the concession was issued for a piece of land claimed by smallholders as their land that they have been cultivating for generations. Conflicts also arise between smallholders and state apparatuses. Changing land status making settlers and farmers commit illegal actions does not remain without discussions and disputes. Especially when public servants employed by the state are involved in land use in areas designed as non-farm land, this is perceived as unjust by local smallholders. But also amongst the smallholders tensions arise as the case of indigenous land titling has shown in chapter six. The conflicts and unequal shifts of power relations are mostly not approached by open conflicts but are rather silent subversive activities like the mimicry of the legal.

8.5 Landscape realities outside the research area

The presented findings on overlapping regulations in regard to land and the way actors translate them to their social setting might sound unique and arbitrary. But they are not. The findings presented in the previous chapters can be scaled up as research from other parts of the world provides similar findings. Assessing literature on overlapping land tenure regulations reveals that overlapping tenure regimes inscribed in ecological and social landscapes are not an Indonesian phenomenon per se. Trajectory land tenure regulations inscribed in contested landscapes can be found in many countries, especially in the global South. A literature review reveals that this is in particular the case where the pressure on land is extremely high due to agricultural potential and due to processes of altering legal status of rights paving the way for the right itself to become subject of negotiation,

reinterpretation, and redefinition (Benjaminsen et al. 2008: 34). As in Indonesia, Camilla Toulmin (2008: 11) reports that rights to land in Sub-Sahara African countires stem from many different sources, deriving from different points in time. These include customary rights of those settlers who claim to have settled in the region first. An additional source derives from conquest, which could be translated as rules introduced by colonizers. A third source can be the right of long occupation which might resemble customary rights but can also contradict them. In Burkina Faso, Ghana and Cote d'Ivoire, land to the tiller policies contradicts the rights of the first settlers. Rights can also be impacted by market transactions. In this context a "[…] broad range of contracts allowing access to land is found in southern Benin" (Toulmin 2008: 12). Also for Mali, Toulmin states that the rights to land often involve a series of overlapping claims. A study on land control in Columbia reveals overlapping tenure regimes dividing land use into informal, legal and illegal as starting point for violent land conflicts (Grajales 2011: 772). Rob Cramb and Patrick S. Sujang (2011: 146) explain that for the case of Malaysia "layering dissonant institutional arrangements (customary and statutory) and the sharp shifts in government policy […] have created very complex and hence often indeterminate land-use and land-tenure situations". The complex and indeterminate contexts open leeway for negotiability of rules. The rapid pace of changes provoked by an increasing interest in land for example due to boom crops as well as through changing de jure approaches to manage land creates ambiguous situations.

In several countries, again as the case in Indonesia, the central government has declared vast amount of the land masses as under the jurisdiction of the state. In Thailand about half of the land masses are declared forest reserve belonging to the state. A quarter of this land however is under cultivation making the settlers and cultivators commit illegal activities (Bromley 2008: 23). Derek Hall (2010: 848) mentions a case from Thailand in which a forest reserve was announced on an area that was home to eight million people, many of them had been living there for generations. In Burkina Faso, the government claims ownership of all land, again, as in Indonesia and Thailand, putting "vast majorities of the rural population in a situation of de facto-illegality" (Toulmin 2008: 13).

In all countries mentioned, as in Indonesia, overlaps were sought to be abolished by formalizing land rights, coupled with the intention of fostering agricultural investments and eradicating poverty. In a publication on the formalization of property Daniel W. Bromley

(2008: 23) lists examples from Thailand, Kenya, Ghana, Burkina Faso and Rwanda where formalization of land rights did not make a difference on the yield productivity of the parcels. Bromley explains the not-changing investment patterns after formalization of property rights by the perspective that ownership is a social fact and a social idea. In many cases the goal of straightening out overlaps was not achieved either. In many rural areas in the South, formalized property systems compete and even destroy well-established effective local systems, opening door to opportunism and possible chaos. When faced with the choice of seeking to have rights to access land acknowledged, local actors often opt for local solutions rather than trying to approach "[…] predatory, understaffed, underfunded or otherwise deficient state apparatuses" (Sjaastad & Cousins 2008: 3). Ownership can only work as a concept if the concept is agreed upon and widely shared. This does not seem to be the case in the process of formalizing property rights in many countries of the global South. If the approaches of regulating ownership are not shared, the approaches as predetermined by the government might rather be mimicked than followed. This process, here developed as the mimicry of the legal concept, can also be found in several publications with empirical material from various countries. Sjaastad and Cousins (2008: 3) only touch upon the topic in their publication on "Formalizing land rights in the Global South". They point out that "[…] local communities will resist formalization if the solution offered seems inappropriate". One form of resistance can be the mimicking of the legal. Benjaminsen et al. (2008: 32) describe a case from Mali where a clear demand for accessible and affordable processes of formalization was found. This demand, again as is the case in Indonesia, "is reflected in the existence of informal sales contracts that in the absence of access to official registration procedures, imitate official documents" (Benjaminsen et al. 2008: 32). In Burkina Faso different documents, depending on the circumstances, were found supporting the sales of land (Toulmin 2008: 13). In Niger, the formalization of claims to land seems to have similar consequences. Insufficient administrative preparedness of the authorities in charge made farmers opt for "informal formalization" (Benjaminsen et al. 2008: 32). Local land use actors continued to seek registration from chiefs, de jure not authorized to secure claims, but who have an interest in rents and authority with unsolicited consequences.

Indigenous land titling has been presented as ground-breaking for the Indonesian context in chapter six. It was a breakthrough in Indonesia indeed. Other countries have made this step way earlier, often with ambiguous outcomes. In Cambodia, Protestant Buong have to proof

that they life a traditional lifestyle if they want to be granted a collective title. Their way of living as Protestants contradicts with the idea of what "real" Buong are, but only real Buong can be granted a communal title for their land (Wenk unpublished). In Cambodia, the recognition for communal land was promulgated in 2001. So far, 15 years later, only few communities have been granted a title. Communities struggle to keep up with process of applying for communal land title while the governments grants concessions to large plantations for the area in question. In practice, the legal framework and administrative procedures to secure such claims have opposite effects (Leemann 2014).

8.6 Which reality counts[52]?

Even though, complex tenure regimes can only be understood in their specific setting and context (Sjaastad & Cousins 2008) similarities can be found in various contexts. If ecological and social landscape realities are to be understood it has to be acknowledged that de jure regulations are not congruent with reality. If environmental landscapes and humans living in and with these landscapes are to be protected, policies need to be developed which are in line with reality rather than outside these realities. Existing regulations need to be checked against the background whether they are an upright attempt to protect people and their environment or if the regulations are framed in a way which helps powerful actors to gain or retain control over resources.

The in-depth analysis of de jure regulations and the discrepancy inscribed in landscape realities in the research context as well as examples from other cases has proven that it is de facto regulations and not de jure regulations shaping ecological and social landscape realities. It is not enough to design policies which provide secure tenure. These policies need to be upright. Once they are upright, they need to be ground checked. So far, overlapping land tenure regulations remain prevalent, allowing for informality and mimicry. The overlaps create a fertile basis for changes in land control. In this process powerful elites manage to benefit.

[52] Title in dependence on Robert Chambers' book "Whose Reality Counts?"

9 Conclusion

To make transformations of rural landscapes, ecological and social, more sustainable it is de rigueur to understand the main drivers of land use change. The previous chapters contribute to a more comprehensive understanding of these drivers, especially in the context of rural Indonesia. Empirical findings have shown that regulatory processes are a predetermining factor for land use-change. Supplementing factors such as market demand, management and agricultural expertise, labour requirements and flexibility, availability of seedlings, investment costs, returns to land and labour or risk attitudes either directly impact the regulations or else play subordinate roles as factors being embedded to the framework. What needs to be stressed again here is that the political frameworks providing the regulations did not and do not remain unmodified. Where the rules and concepts regulating access are not shared, they are negotiated, transformed and mimicked. The outcome, the de facto rules, are what in the end shape the framework for land use-changes.

The way in which political approaches to land tenure in Indonesia changed over the last 150 years fostered an increase in the discrepancy of de facto and de jure regulations to land. The policy narratives accompanying the different political periods within these 150 years shaped the social and environmental landscape. They moved away from communal access to land and shifting cultivation as main mode of production towards a capitalistic development approach in which investments and exploitation were at the heart of the discourse. These narratives did not pass without ecological degradation, social exclusion and conflicts. The social exclusions and the accompanying conflicts in particular offered an arena for negotiation of rules. Again, these negotiated rules provide the framework in which further land use decisions can be taken or in some cases in which they cannot be taken. The translation of political and institutional framings by mimicry of the legal, by institutional bricolage and by informality seem to be of great importance to the framework of regulations, to de facto rules regulating access to the resource land and to the impacts inscribed in the landscape. In simple words this means if we are to understand the impacts of a protection forest it is not enough to see what the legislative definition of a protection forest is. If we are to understand what the impacts of a land reform will be it is not enough to read the content of the government decrees. If we are to understand what the impacts to the social and ecological landscapes are, we need to look for the impacts in their physical environment, not in government decrees or in answers to standardized questionnaires. This

does not apply for the Indonesian context only. As cases from other countries have shown, the findings allow for abstraction and can be taken beyond the research area.

To conduct research in a way that allows understanding the context of changing regulations and their impacts on landscape realities is time consuming. Additionally to the reading of governmental decrees from different periods of time and additionally to asking standardized questions, the impacts need to be observed, lived and felt. The research at hand might not have managed to explore the impacts to the fullest. The time spent in Indonesia was seized to 11 months. With more time in the field, with more proficient language skills, a more comprehensive picture of the political and institutional impacts might have been drawn. It took literature reviews, time and sensitivity to gain insights into impacts of overlapping regulations. Combining qualitative data and quantitative data from the research village can help to gain an even deeper understanding. A first attempt to combine different sets of data can be read in chapter seven. This has not been bailed out completely and more insights could be gained by further analyzing the data available. A more in depth analysis comparing the two landscapes in which research has been carried out could also provide further information on why changes occur. Further research would also be helpful in understanding where mimicry of the legal processes started exactly and which actors were involved launching the first mimicries. Knowing where the mimicry originates would reveal information on whether this is rather state-led or led by actors on the local level. If it was local-context-led this would indicate that local land users strive for more equal access opportunities. This would reveal a starting point for more sustainable policy formulation. It would also be interesting to investigate how impacts of overlapping regimes will further shape the landscape. The ecological landscape might be, at one point in the future, depleted to an extend at which oil palm cultivation as well as rubber cultivation might not be possible in a lucrative way anymore. What then will be next then in a landscape where the vast majority of the households depend on the cultivation of these crops?

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Appendices

Appendix A: Interview guide first field stay

CULTURAL LANDSCAPE TRANSFORMATION – A GEOGRAPHIC HISTORICAL ANALYSIS

TRANSFORMASI LANDSKAP BUDAYA- SEBUH ANALISIS SEJARAH GEOGRAFI

INTERVIEW GUIDE FOR THE FIRST FIELD VISIT (October 2012 – December 2012)

PETUNJUK WAWANCARA UNTUK KUNJUNGAN PERTAMA (Oktober 2012- Desember 2012)

The overall intention of the first field visit is to commence a process of progressive contextualization in an inductive manner as foreseen in the analytical framework of political ecology applied here.

Keseluruhan kunjungan lapangan pertama adalah untuk memulai proses progresif induktif contextualization dalam melihat analitis ekologi yang diterapkan di sini.

I. Overall research question for the first field stay

I. Keseluruhan pertanyaan penelitian

What are the main drivers of land use changeover time from a local perspective?

Apa yang menyebabkan perubahan tata guna lahan berubah begitu *cepat* dari perspektif lokal?

II. Research region

II. **Daerah penelitian**

Two research sides: Bukit Duableas and HarapanRain Forest, at least 4 villages per side

Terdapat di dalam dua daerah penelitan: Bukit Duabelas dan Hutan Harapan, paling sedikit 4 desa di dalam dua daerah penelitian

III. Methods

III. **Metode**

Semi-structures interviews, times lines, resource maps, transects

Wawancara semi struktur, time line, pemetaan sumber daya dan transek

Interview guide for **semi-structured interviews**

Panduan untuk wawancara semi struktur

SEQUENCE OF QUESTIONS IS SUBJECT TO CHANGE, NOT ALL QUESTIONS WILL BE ASKED IN ALL INTERVIEWS

PERTANYAAN DIBAWAH DAPAT DIGANTI, TIDAK SEMUA PERTANYAAN DITANYAKAN DALAM SEMUA WAWANCARA

1. Household characteristics/ Karakteristik Rumah Tangga
    a. Gender of respondent Jenis Kelamin Responden
    b. Month/Year and *place* of birth of respondent Bulan/tahun dan tempat lahir
    c. Ethnical Background(including *religion*) of respondent Etnis dan agama
    d. Marital Status of respondent Status perkawinan
    e. How many people live in your household? Berapa banyak orang yang tinggal/ hidup di rumah tangga yang bersangkutan?
    f. Are there household members who do not live in your house at the moment? Apakah ada anggota keluarga yang tidak tinggal di rumahmu pada saat sekarang ini?
    g. What is your occupation and occupational status (self-employed, employed fulltime, employed halftime, casual laborer) Pekerjaan dan status pekerjaan = Wira usaha, pekerja full time. Pekerja paruh waktu, buruh (pekerja lepas)
    h. What is the occupation of other household members? Apa pekerjaan dari anggota keluarga?
    i. Did you graduate from school/high school? Apa status pendidikan terakhirmu?
    j. Are your children in school? Apakah anakmu juga sekolah?
    k. Where you born “here”? Dimana tempatmu lahir? Apakah disini?
    l. Since when do you live “here”? Sejak kapan kamu tinggal disini?
    m. Why did you decide to leave the place where you were staying before and how did you decide to move to this place? Mengapa kamu memutuskan untuk meninggalkan tempat dimana kamu tinggal sebelumnya dan bagaimana kamu memutuskan untuk pindah ke tempat ini?
    n. What impact did the move have on your livelihood? Was your situation better before you moved, after you moved? Apa dampak kepindahanmu bagi rumah tanggamu? Apakah situasinya lebih baik sebelum kamu pindah, apakah setelah kamu pindah?
    o. Where did your parents live? Dimana tempat tinggal orangtuamu?
    p. What was the profession of your parents? Apa profesi dari orangtuamu?

2. Land Use/ Tata Guna Lahan
    a. Do you own land? If yes, how much? Apakah kamu memiliki lahan? Jika ya, berapa luasnya?
        i. How did you gain access to this land? (inherited, bought, certificate) Bagaimana akses kamu mendapatkan tanah tersebut? (Warisan, beli, bersertifikat)
    b. Which food crops are you cultivating? Apa jenis tanaman makanan yang kamu kultivasi?
    c. Which cash crops are you cultivating? Apa jenis tanaman yang saat ini kamu kultivasi?
    d. Since when are you cultivating the crops you grow now? Sejak kapan kamu mengkultivasi tanaman yang sedang tumbuh saat ini?
    e. What were you growing before? Apa tanaman yang kamu tanam sebelumnya?
    f. What are the pros and cons of your actual land-use compared to what you were growing before? Apa ada pro kontra tentang tanaman yang anda tanaman saat ini bila dibandingkan dengan tanaman yang anda tanamam sebelumnya?
    g. Do you ever use shifting cultivation? Did you use shifting cultivation in the past? Apakah kamu pernah menggunakan tenik ladang berpindah? Apakah dulunya anda menggunakan teknik ladang berpindah?
        i. If yes, how often? Jika ya, berapa sering?
        ii. In case it has changed, how and why? Bila sudah tidak lagi, mengapa dan bagaimana?
    h. Did your parents own land? Apakah ini ladang/lahan milik orangtuamu?
        i. What did your parents cultivate? Apa yang ditanam oleh orangtuamu?
    i. What did the majority of farmers cultivate 10 years ago, 20 years ago, 30 years ago? Apa yang biasanya ditanam oleh petani 10 tahun yang lalu, 20 tahun yang lalu, 30 tahun yang lalu?
    j. Are there new actors using the land? (new actors compared to when your parents where cultivating the land?)
    Apakah disana banyak tokoh baru yang menggunakan lahan? (Bisakah bandingkan bagaimana perbandingan tokoh tersebut dan orangtuamu yang menanam lahan)

3. Settlement pattern/ Pola Penyelesaian
    a. Did the settlement patternin your village change? Apakah pola penyelesaian di desa anda berubah?
    b. Did the size of your village change? Did an expansion of the village take up space that was usually used for farming? Apakah luas desamu berubah? Apakah ekspansi didesamu mengambil lahan yang biasanya digunakan untuk pertanian?

c. Did many people move away? Apakah banyak orang yang pindah?
d. Did many people move to your village? Apakah banyak orang yang pindah ke desamu?

4. Population structure/ Struktur Populasi
    a. Are there (many) migrants in your village? Can you tell in percent how many people came moved to your village due to transmigrations programs, how many moved here without being part of a transmigration program, how many people are Orang Rimba that decided to settle here, how many originally come from this region? Apakah di desamu banyak transimigran? Dapatkah kamu menceritakan dalam presentase berapa banyak orang yang datang ke desamu melalui program transmigrasi, berapa banyak yang pindah kesana tanpa program transmigrasi, Berapa banyak orang rimba yang memutuskan untuk bertahan disini, berapa banyak penduduk asli di desa ini?
    b. Has the ration of young and old people changed? Apakah jumlah orang muda dan orang tua berubah?
        i. If yes how? Jika ya bagaimana?
        ii. If yes what do you think why? Jika ya, mengapa kamu fikir begitu?

5. Cultural landscape/ Lanskap budaya
    a. What is cultural landscape to you? (Maybe there is a story to how the landscape was formed, a myth, etc.) Apa itu landskap budaya menurutmu? (Apakah ada cerita bagaimana landskap terbentuk, sebuah mitos, dll)
        i. What is nature to you? (only in case question a will not be understood and does not lead to an answer) Apa itu alam menurutmu? (Dijawab bila dimengerti, jika tidak tidak apa-apa)
        ii. What is forest to you?(only in case question a will not be understood and does not lead to an answer) Apa itu hutan menurutmu? Dijawab bila dimengerti, jika tidak tidak apa-apa)

    b. Is there something special about the landscape/environment “here”? Apakah ada yang spesial tentang lanskap/ lingkungan disini?
        i. If yes what and why is this special to you? Jika ya, Apa dan bagaimana hal spesial itu menurutmu?
    c. Which importance does the forest and its products have to you/does the forest and its products have/used to have for your parents? Seberapa penting hutan dan produk hutan tersebut menurutmu/ apakah hutan dan produknya sudah / dulunya digunakan oleh orangtuamu?
    d. Do you think the cultural landscape/nature/forest/landscape changed since you moved here/were a child/from when your parents were children?

Menurutmu landskap budaya/ alam/hutan, landskap berubah sejak kamu pindah kesini/ masih kecil/ saat orangtuamu masih kecil?

i. If yes, what changed? What was better before, what is better now? Jika ya perubahan apa? Apakah lebih baik saat ini? Ataukah sebelumnya?
ii. If yes, why do you think this changed/these changes occurred?/Can you identify reasons why these changes occurred? Jika ya, menurutmu mengapa perubahan ini berubah/ terjadi? Dapatkah kamu memberi alasan mengapa perubahan ini dapat terjadi?
iii. How did the changes you observed start? Bagaimana perubahan terebut dimulai?
    1. Who introduced a new cash crop? (certain social groups, ethnical groups?) Siapa yang memulai memperkenalkan jenis tanaman baru? (grup sosial saat ini, ataukah etnis?)
    2. Who cleared land? (certain social groups, ethnical groups?) Siapa yang menebang lahan? (grup sosial saat ini, ataukah etnis?)
    3. Who introduced innovations in the village? (certain social groups, ethnical groups?) Siapakah yang memperkenalkan inovasi di Desa ini? (grup sosial saat ini, ataukah etnis?)
iv. Did the identified changes have an impact on your life/livelihood?/ Did something in your life changed since the identified changes occurred? Apakah perubahan ini berdampak di kehidupanmu? Atau rumahtanggamu?/ Apakah sesuatu di kehidupanmu berubah sejak adanya perubahan jenis tanaman ini terjadi?
    1. If yes, what impact did the changes have? Was the situation better before or after the changes? Jika ya, apa dampak yang terjadi? Apakah situasinya lebih baik, ataukah lebih buruk?

e. Are there development project in your area? Apakah ada proyek pengembangan di daerahmu?
    i. If yes, what kind of projects and have they changed the cultural landscape? Jika ya, apa jenis proyek dan sudahkah mereka merubah landskap budaya?
f. Are there conservation projects in your area? Apakah ada proyek konservasi di daerahmu?
    i. If yes, what kind of projects and have they changed the cultural landscape? Jika ya, apa jenis proyek dan sudahkah mereka merubah landskap budaya?

6. Land tenure/ Land Teburial
    a. How do you know which land belongs to who? Bagaimana kamu mengetahui status kepemilikah tanah di desamu (milik siapa)?
        i. Are there maps? Apakah terdapat pemetaan
        ii. Are there stones or something else to mark the edges of the plots? Apakah ada batu atau sejenisnya yang menandakan kepemilikan lahan?
    b. How do you know what kind of land can be used for what? Bagaimana kamu mengetahui jenis tanah yang mana yang dapat digunakan untuk ditanami sesuatu?
    c. Have there been major changes in the tenure system? Apakah terdapat banyak perubahan pada sistem tenurial?
        i. Who owns the land you are cultivating? Siapa pemilik lahan yang saat ini sedang kamu tanami/ urus?
        ii. Who owned the land when you started cultivating your land? Siapa pemilik lahan ketik kamu memulai menanam lahanmu?
        iii. Do other people have the right to use your land? Apakah orang lain juga memiliki hak untuk menggunakan tanahmu?
        iv. Did you have the right to use other pieces of land in the past? Apakah kamu memiliki hak untuk menggunakan lahan lainnya diwaktu dahulu?
        v. Would you prefer to own land somewhere else or grow something else? Apakah kamu lebih memilih memiliki lahan di tempat lainnya ataukah menanamsesuatu yang lain?
        vi. Does your village own community land? Apakah tanahmu merupakan tanah yang dimiliki komunal?
        vii. Is there land which belongs to the state around your village? Apakah ada tanah yang dimiliki pemrerintah di desamu?
        viii. Is there land which is owned by companies around your village? Apakah ada tanah yang dimiliki oleh perusahaan di desamu?
    d. When did Bukit Duableas/HarapanRain Forest become a national park/restoration forest? Kapan bukit dua belas atau hutan harapan menjadi taman nasional/ hutan yang dilindungi?
        i. How did Bukit Duableas become a national park/Harapan a restoration forest? Bagaiman Bukit dua belas bisa menjadi taman nasional/ hutan harapan menjadi hutan yang dilindungi?
        ii. Did you/your village support the idea of turning the area into a national park/restoration forest? Apakah kamu/ penduduk di desamu mendukung ide pembentukian taman nasional atau hutan lindung ini?
            1. Why was the idea supported? Mengapa kamu mendukung ide tersebut?
        iii. Were some people against the idea of changing the area into a national park/restoration forest? Did they try to stop the efforts of changing the area into a national park/restoration forest? Adakah

seseorang atau sekumpulan orang yang menolak ide untuk perubahan taman nasional/ hutan lindung? Apakah mereka berusaha untuk menghentikan upaya perubahan daerah tersebut menjadi taman nasional/ hutan lindung?

1. Why were people against it? Mengapa mereka menolaknya?

iv. Do you own/used to own land in that area? Apakah kamu memiliki/ menggunakan lahan di area tersebut?

v. Do you cultivate/used to cultivate land in that area? Apakah kamu mengkultivasi/ dulunya menggunakan lahan di area tersebut?

e. What is adat to you and do you think it meant something else to your parents? Was it used/regarded and implemented in a different way at the time your parents were starting their family? Apakah adat menurutmu dan apakah itu berarti yang lain oleh orangtuamu? apakah itu dulunya diperkenalkan dan diimplementasikan menjadi sesuatu yang lain pada saat orangtuamu memulai berkeluarga?

<u>Wrapping up questions/Pertanyaan lebih dalam</u>

a) What do you personally think why did land use, settlement pattern and population structure change? Menurutmu secara personal mengapa tata guna lahan, pola penyelesaian dan struktur populasi berubah?

Appendix B Interview guideline second field trip

CULTURAL LANDSCAPE TRANSFORMATION – A HISTORICAL GEOGRAPHIC ANALYSIS

TRANSFORMASI BENTANG LANDSKAP BUDAYA- SEBUAH ANALISIS SEJARAH GEOGRAFI

INTERVIEW GUIDE FOR THE SECOND FIELD VISIT (July 2013 until October 2013)

PETUNJUK WAWANCARA UNTUK KUNJUNGAN KEDUA (Juli 2013- october 2013)

Guideline semi-structured interviews

Panduan untuk wawancara semi struktur

1. Household characteristics **(karakteristik rumah tangga)**
    a. Gender of respondent (Jenis kelamin)
    b. Month/Year and place of birth of respondent (Bulan / Tahun dan tempat kelahiran)
    c. Ethnical Background (including religion) of respondent (*Suku dan agama*)
    d. Marital Status of respondent (*status perkawinan*)
    e. How many people live in your household? (Berapa banyak orang tinggal di rumahmu*?*)
    f. Are there household members who do not live in your house at the moment? (Apakah ada anggota rumah tangga yang tidak tinggal serumah saat ini*?*)
    g. What is your occupation? (*pekerjaan*)
    h. What is the occupation of other household members? (*pekerjaan anggota keluarga yg lain*)
    i. Did you graduate from school/high school? (*lulus sd/sm*)
    j. Are your children in school? (*anak-anak sekolah?*)
    k. Where you born “here”? (*dimana kamu lahir “disini”*)
    l. Since when do you live “here”? (*sejak kapan tinggal “disini”*)
    m. Why did you decide to leave the place where you were staying before and how did you decide to move to this place? (Mengapa kamu memutuskan untuk meninggalkan tempat tinggalmu sebelumnya dan bagaimana kamu memutuskan untuk pindah ke tempat ini*?*)
    n. What impact did the move have on your livelihood? Was your situation better before you moved, after you moved? (Apa dampak terhadap kehidupanmu*?* Apakah situasimu lebih baik sebelum kamu pindah*,* setelah pindah*?*)
    o. Where did your parents live? (Di mana orangtuamu tinggal*?*)
    p. What was the profession of your parents? (Apakah profesi orang tua*mu?*)

2. Land Use (**Penggunaan Lahan**)
    a. Do you own land? If yes, how much? (*Apakah kamu memiliki tanah? Jika ya, berapa banyak?*)
        i. How did you gain access to this land? (inherited, bought, certificate, bukasendiri) (*Bagaimana kamu mendapatkan akses ke tanah ini? (Warisan, membeli, sertifikat, bukasendiri)*)
    b. Are you cultivating food crops and if yes, which food crops are you cultivating? (*Apakah kamu menanam tanaman pangan dan jika ya,tanaman pangan apa?*)
    c. Are you cultivating cash crops and if yes, which cash crops are you cultivating? (*Apakah kamu menanam tanaman dan jika ya, tanaman apa?*)
    d. Since when are you cultivating the crops you grow now? (*sejak kapan menanam tanaman yang sekarang?*)
    e. What were you growing before? (*sebelumnya tanam apa?*)
    f. What are the pros and cons of your actual land-use compared to what you were growing before? (*Apa pro dan kontra kamu yang sebenarnya pada penggunaan lahan dengan membandingkan apa yang kamu tanam sebelumnya?*)
    g. Do you ever use shifting cultivation? Did you use shifting cultivation in the past? (*Apakah kamu pernah menggunakan ladang berpindah? Apakah kamu menggunakan ladang berpindah di masa lalu?*)
        i. If yes, how often? (*jika ya, seberapa sering?*)
        ii. In case it has changed, how and why? (*Dalam kasus itu telah berubah, bagaimana dan mengapa?*)
    h. Did your parents own land? (*Apakah orang tua kamu memiliki tanah sendiri?*)
        i. What did your parents cultivate? (*Apa yang orang tuamu tanam?*)
        ii. How did they gain access to the land? (*Bagaimana mereka mendapatkan akses ke tanah?*)
        iii. What is happening on the land your parents used to own now? (*Apa yang terjadi di tanah orang tua kamu digunakan untuk memiliki sekarang?*)
    i. What did the majority of farmers cultivate 10 years ago, 20 years ago, 30 years ago? (*Apa yang sebagian besar petani tanam pada 10 tahun yang lalu, 20 tahun yang lalu, 30 tahun yang lalu?*)
    j. Are there people who do not stay in the village who are using land in the village? (*Apakah ada orang-orang yang tidak tinggal di desa yang menggunakan tanah di desa?*)
    k. How do you know what kind of land can be used for what? (*Bagaimana kamu tahu apa jenis tanah dapat digunakan untuk apa?*)
        i. Are there adat rules informing you on what you are allowed to grow where? (for example what you are allowed to plant next to a river, etc.) (*Apakah ada aturan adat memberitahu kamu apa yang kamu diizinkan*

untuk tanam dimana? (Misalnya apa yang kamu diizinkan untuk menanam sebelah sungai, dll))

l. Do you know what category the land you own falls under (*kawasan hutan*, *hutan ulayat*, *hutan tanaman*, *hutan rakyat*, *hutan hak*, *hutan desa*, *hutan adat*, *tanah ulayat)* (*Apakah kamu tahu termasuk apa kategori tanahmu (kawasan hutan, hutan ulayat, hutan tanaman, hutan rakyat, hutan hak, hutan desa, hutan adat, tanah ulayat)*)

m. Did you have the right to use other pieces of land in the past and now you do not have access to them anymore? (*Apakah kamu memiliki hak untuk menggunakan bagian-bagian tanah lainnya di masa lalu dan sekarang kamu tidak memiliki akses kepada mereka lagi?*)

   i. If yes, how did these rules change? (*Jika ya, bagaimana ini berubah aturan?*)

n. Would you prefer to own land somewhere else or grow something else? (*Apakah kamu lebih memilih untuk memiliki tanah di tempat lain atau tanam sesuatu yang lain?*)

o. If you do not cultivate oil palm yet, would you prefer to do so? (*Jika kamu belum menanam kelapa sawit, apakah kamu memilih untuk melakukannya?*)

   i. Would you have to consult somebody if you want to change from one crop to another, for example kepala adat? (*Apakah kamu akan berkonsultasi dengan seseorang jika kamu ingin mengubah dari satu tanaman ke tanaman lain, misalnya kepala adat?*)

p. Does your village own community land? (*Apakah desamu memiliki tanah bersama (tanah ulayat)?*)

q. Is there land which belongs to the state around your village? (*Apakah ada tanah milik negara di sekitar desamu?*)

r. Is there land which is owned by companies around your village? (*Apakah ada tanah yang dimiliki oleh perusahaan-perusahaan di sekitar desamu?*)

s. Do you own/used to own land in protected areas (Tahura, B12 or Harapan) (*Apakah kamu mengakui/menggunakan untuk memiliki tanah di kawasan lindung (Tahura, B12 atau Harapan)*)

   i. Do you cultivate/used to cultivate land in that area? (*Apakah kamu tanam/gunakan untuk mengolah lahan di daerah itu?)*

3. How were competing formal and informal institutional arrangements over land negotiated during different political eras? (**Bagaimana persaingan aturan kelembagaan formal dan informal atas tanah dinegosiasikan selama era politik yang berbeda?**)

   a. What is hukum tanah adat/hak ulayat to you and do you think it meant something else to your parents? Was it used/regarded and implemented in a different way at the time your parents were starting their family? (Apa hukum

tanah adat*/h*ak ulayat bagimu dan apakah kamu pikir itu berarti sesuatu yang lain *pada* orang tua*mu?* Apakah itu digunakan/dianggap dan dilaksanakan dengan cara yang berbeda pada saat orang tuamu mulai berkeluarga*?)*

b. Something special/unique about Indonesia is its pluralism of law. For example that there is hukumtanahadat and hukumtanahpemerintah. (Sesuatu yang istimewa/unik tentang Indonesia adalah pluralisme hukumnya. Sebagai contoh bahwa ada hokum tanah adat dan hukum tanah pemerintah.)
What is the difference between the two types of law? (*Apa perbedaan dari keduanya?*)

c. Is one of them more important (to you) than the other? (Apakah salah satu dari mereka lebih penting (*bagi*mu*)* dari yang lain*?*)

d. Has this been different in the past? (Apakah ini mungkin berbeda di masa lalu?)
    i. If yes, when did it change/how/why? (Jika ya*,* kapan itu mengubah / bagaimana /mengapa*?)*

4. <u>How did changing institutional arrangements determine access to land over time?</u>
<u>(**Bagaimana mengubah aturan kelembagaan menentukan akses terhadap lahan dari waktu ke waktu?**)</u>
    a. Are there rules on buying/selling/cultivating land? (Apakah ada aturan tentang membeli/menjual /mengolah tanah*?*)
    b. How do you buy land? Who can buy land? (Bagaimana kamu membeli tanah*?* Siapa yang bisa membeli tanah*?*)
    c. How do you sell land? Who can sell land? (Bagaimana kamu menjual tanah*?* Siapa yang bisa menjual tanah*?*)
    d. Who decides what to cultivate on the land? (Siapa yang memutuskan apa yang harus ditanam di lahan*?*)
        i. The person alone? (*Diri sendiri*)
        ii. The environmental condition (soil, weather, etc.) (Kondisi lingkungan (*tanah,* cuaca, dll*)*)
        iii. Adat rules? State rules? (Aturan adat*?* Aturan negara*?*)
    e. Who is allowed to cultivate the plot next to your plot? (Siapa yang diizinkan untuk mengolah petak tanah samping petak tanahmu*?*)
    f. Did any of the above-asked changed? If yes when, why, how? (Apakah apapun yang di*tanyakan diatas* berubah*?* Jika ya kapan, mengapa*, bagaimana?*)
    g. You own land which you cultivate. So the land belongs to you. Is this the same following adat law and state law? Or does one of the systemstreat your right to access the land differently? (Kamu sudah memiliki tanah yang kamu tanami. Jadi tanah milik kamu. Apakah ini sama *mengikuti* hukum adat dan hukum negara*?* Atau apakah salah satu sistem memperlakukan hak kamu untuk mengakses tanah berbeda*?*)

i. Has this changed? (*apakah ini berubah?*)

h. Did rules in regard to land change when companies entered the village/the area? (Apakah aturan *berubah* dalam hal lahan ketika perusahaan memasuki desa/daerah*?*)

i. How did the companies gain access to land (if there is a company nearby)? (Bagaimana perusahaan mendapatkan akses ke lahan (*jika ada* perusahaan di dekatnya)*?*)

j. What was the land, now used by companies, used for before? (*Digunakan untuk apa sebelumnya tanah yang sekarang digunakan oleh perusahaan?*)

k. Did rules for the society in regard to land changed after companies entered the scene? (Apakah aturan bagi masyarakat dalam hal tanah berubah setelah perusahaan memasuki tempat*?*)

l. Did rules in regard to land changed when migrants/transmigrants entered the village/the area? *(*Apakah aturan dalam hal tanah berubah ketika migran/transmigran memasuki desa / daerah*?)*

5. How did these changes affect social arrangements of communities at different periods of time? (**Bagaimana perubahan ini mempengaruhi tatanan sosial masyarakat pada periode waktu yang berbeda?**)

   a. Did changes in the relation of hukum tanah adat and state law change when new people/companies came to the village? (Apakah *hubungan* perubahan dalam hukum tanah adat dan hukum negara berubah ketika orang baru/perusahaan datang ke desa*?*)

   b. Did the change of hukum tanah adat or new government laws in terms of land change the structure/relation of/amongst the community/society? **(**Apakah perubahan hukum tanah adat atau hukum pemerintahan baru dalam hal tanah mengubah struktur/hubungan/antara komunitas/masyarakat*?)*

6. How did the implementation of hukumtanahadat change? (**Bagaimana implementasi hukum tanah adat berubah***?*)

   a. Did hukumtanahadat change when migrants entered the village? (Apakah hukumtanahadat berubah ketika migran memasuki desa*?*)

   b. Did hukumtanahadat change when a new president came into power? (Apakah hukumtanahadat berubah ketika presiden baru berkuasa*?*)

   c. Did hukumtanahadat change when new companies came to the village? (Apakah hukumtanahadat berubah ketika perusahaan-perusahaan baru datang ke desa*?*)

   d. If any of the above is answered with yes, how/why did hukumtanahadat change? (Jika salah satu di atas dijawab dengan ya*,* bagaimana / mengapa hukumtanahadat berubah?)

Focus 2: Maintaining access

Fokus 2: Mempertahankan akses

1. Do stronger informal institutional arrangements make social groups less prone to external powers of exclusion? (**Apakah aturan kelembagaan informal yang kuat membuat kelompok-kelompok sosial kurang rentan terhadap kekuatan eksternal pengecualian?**)
    a. Do you think your village still follows adat laws/adat laws in regard to land? (Apakah kamu pikir desamu masih mengikuti hukum adat / hukum adat dalam hal tanah?)
    b. If new people from outside want to buy land do they have to follow your adat laws? Do you think it is the same in other villages? (Jika orang-orang baru dari luar ingin membeli tanah *apakah* mereka harus mengikuti hukum adat*mu?* Apakah kamu pikir itu adalah sama di desa-desa lain?)
    c. Is it more difficult for people from outside to buy land then for people from the village? If yes, what is the difference? (Apakah lebih sulit bagi orang-orang dari luar untuk membeli tanah daripada orang-orang dari desa*?* Jika ya, apa bedanya?)
    d. Land in Jambi Province is becoming scarcer. Do you think your adat helps you to protect your land from people from outside in favor to the local society? (Tanah di Provinsi Jambi menjadi semakin langka*.* Apakah kamu pikir adatmu membantu kamu untuk melindungi tanah*mu* dari orang-orang dari luar yang mendukung kepada masyarakat lokal?)

2. How did some groups manage to maintain access while others did not? (***Bagaimana beberapa kelompok berhasil mempertahankan akses sementara yang lain tidak?***)
    a. Did you ever sell land? If yes, to who? (Apakah kamu pernah menjual tanah*?* Jika ya*,* siapa*?*)
    b. Did you ever sell land to a company or to people from outside the village? If yes, why did you do this? Do you have to consult a ketua when you do so or the kepalaadat? (Apakah kamu pernah menjual tanah kepada perusahaan atau orang-orang dari luar desa*?* Jika ya*,* mengapa kau melakukan ini*?* Apakah kamu harus berkonsultasi dengan ketua atau kepalaadat ketika kamu melakukan hal tersebut*?*)
    c. Are there people in your village who sold their land to a company or to people from outside? If yes, why did they do this? (Apakah ada orang di desa yang menjual tanahnya kepada perusahaan atau orang-orang dari luar*?* Jika ya*,* mengapa mereka melakukan hal ini*?)*

3. What are the social institutional determinants for farmers to resist oil palm? (**Apa faktor penentu kelembagaan sosial bagi petani untuk menolak kelapa sawit?**)

a. Are there many people in your village cultivating oil palm? (Apakah ada banyak orang di desa menanam kelapa sawit*?*)
b. Why do they cultivate oil palm? (Mengapa mereka menanam kelapa sawit*?*)
c. Why do others not cultivate oil palm? (Mengapa orang lain tidak membudidayakan kelapa sawit*?*)
d. Is it related to finances or to customary laws, state laws or any other arrangement? (*Apakah* berhubungan dengan keuangan atau hukum adat*,* hukum negara atau aturan lainnya*?*)
e. Do you think more people would like to cultivate oil palm? (Apakah Kamu berpikir lebih banyak orang ingin membudidayakan kelapa sawit*?*)
f. Why would they like to do it/not like to do it? (Mengapa mereka ingin melakukannya / tidak suka melakukannya*?*)

4. Additional (***tambahan***)

a. Is there something you know about the interrelation of climate change and forest? (Apakah ada sesuatu yang kamu tahu tentang keterkaitan perubahan iklim dan hutan*?*)
b. Have you ever heard about REDD? (Pernahkah kamu mendengar tentang REDD*?*)
c. If yes, where did you hear about it? (Jika ya, di mana kau mendengar tentang hal itu*?*)

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