Adaption strategies of oil palm smallholders towards certification schemes

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A micro scale approach from Jambi, Sumatra

A THESIS

by

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Acknowledgement

[31. August 2016 – An interview situation]

Me: *Are you satisfied with the results of your harvest?*

Oryza: *Apakah Bapak puas degan hasil panen?*

Pak Adlin: *Sebagai manusia kita tidak akan pernah merasa puas namun yang penting ialah Selalu merasa bersyukur*

Oryza: *As human beings, we never feel satisfied but the important thing is that we have to be grateful.*

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Abbreviations

CRC	Collaborative Research Center
E	Interviewed expert
EFForTS	Ecological and Socioeconomic Functions of Tropical Lowland Rainforest Transformation Systems
EFTA	European Fair Trade Association
e.g.	For example
FAO	Food and Agricultural Organization of the United Nations
FFB	Fresh Fruit Bunch
fg	Member of the farmer group
FONAP	Forum for Sustainable Palm Oil
FSC	Forest Steward Council
FTM	Fair Trade Movement
GATT	General Agreement on Tariffs and Trade
GD	Group discussion
GHG	Greenhouse Gas
ISPO	Indonesian Sustainable Palm Oil
KUD	Koperasi Unit Desa (farmer cooperation)
m	Migrant
NGO	Non-governmental organization
NMG	Non-market-goods
nm	Non-migrant
MBI	Market based instruments
RSPO	Roundtable of Sustainable Palm Oil
VA	Interviewed village authority
WWF	World Wild Fund

1 Introduction: Changing perspectives

Current discussions on climate change, energy transition, losses of biodiversity and food security take place on a global scale. While this leads on the one hand to a decentralization of governance structures, the division of responsibilities remains on the other hand often unclear. These issues become even more severe when environmental problems are discussed in the context of developing and emerging countries of the Global South (Freytag et al. 2016).

Within this context, the palm oil industry is probably among the most diversely discussed industries. This palm oil industry is essentially defined by three core characteristics: Firstly, palm oil is a unique product in terms of properties as well as efficiency within value chain end products. This makes it globally a valuable good, which is in high demand. Secondly, oil palm only grows in tropical regions that nurture the world´s most valuable ecosystems. Thirdly, two countries are responsible for 80% of the world production. The pressure on their natural capital is therefore high (Levin 2012). Clearly, these three facts suggest a complex relation between economic wealth, the conservation of precious ecosystems and unbalanced responsibility division.

In this regard, Indonesia as the largest producer of palm oil, is of special interest when focusing on sustainable transformations. The transition of a nation-state-based regulated palm oil industry to a global transnational palm oil supply chain has triggered fast land use change. These changes caused environmental and social conflicts (Oosterveer 2014). This fast land use change and its impacts are studied by a collaboration research center called “Ecological and Socioeconomic Functions of Tropical Lowland Rainforest Transformation Systems” (EFForTS), which elaborates the impact of oil palm on ecosystems and human dimension. This master thesis contributes to this research by focusing on private governance impacts and here in particular regulations that occur through the certification scheme instrument.

Academic void

Previous research has found the vertical dynamic of a value chain to be defined well by private stakeholders’ motivations, while the horizontal dynamic has often been ignored by private initiatives that make use of market based instruments. Especially, the dynamics on the micro scale are insufficiently understood and therefore disregarded within the decision making processes of private decision makers. Within the agricultural supply chain the micro scale refers primarily to the producer but also incorporates considerations on the roles that national governments, small NGOs, the media and scientific researchers

play in this context (Oosterveer 2014; Smit, Wandel 2006). In this context, several authors have reported that obstacles regarding communication emerge within the implementation phase of micro scale certification schemes which aim at supporting sustainable transformations. Here, it is especially smallholder certification that faces different issues.

Within the field of oil palm, these experiences are made. Two palm oil certifications are of special interest for Indonesia: First, the roundtable of sustainable palm oil (RSPO) certificate (issued in 2004) and second, the Indonesian sustainable palm oil (ISPO) certificate (issued in 2011). These schemes are however not yet soundly implemented. For example, the study by Brandi et al. (2015) on the RSPO certificate finds by asking 194 small farmers within a pilot project area that 74% of the sampled smallholders have never heard about RSPO certification. Furthermore, while the aim of the ISPO certification was to complete the mainstreaming process of the certification scheme by the end of 2014 (Dera 2009:15), only 63 of more than 2000 eligible companies in Indonesia were certified. In addition, a new regulation from 2015 now also excludes smallholders and companies that grow oil palm for biofuel production from the mandatory ISPO certification process (E_16.09) (Aurora et al. 2015:15).

Hence, stakeholders that aim at applying the national ISPO as well as those that promote the transnational RSPO certification, face problems within the implementation stage and in particular when it comes to smallholder certification. Even though a few studies try to identify existing obstacles within smallholder certification, researchers claim that there is still a lack of knowledge on this topic so that further research is needed (Brandi et al. 2015; Partzsch 2011).

Master thesis approach

Regulative instruments like certification schemes are constructed according to the top down approach. In fact, the RSPO certificate was enrolled in Europe by nongovernmental organization (NGOs) in cooperation with palm oil retailers and traders. This demonstrates the transnational importance as well as also the geo-political complexity associated with this topic. While one major focus of this thesis is to provide insight information on this system it is considered impossible to focus on all stakeholders' interests. In addition, arguing from a top down perspective turned out to be inefficient. Such an approach will hence not be pursued here (Smit, Wandel 2006). As pointed out above, problems seem to occur on the micro scale and therefore at the end of the supply chain. Previous research has failed to provide sufficient insight into smallholders' institutional background, which is considered to be crucial for understanding the obstacles associated with top down approaches (Vatn 2015).

Hence, this thesis takes a different view by arguing from a button up perspective. Therefore, a case study in rural Jambi, Sumatra was conducted to gain background information on smallholders' institutional context. The applied method is the adaption theory. Adaption theory is a methodological approach that aims at explaining people's changes in behaviour due to environmental or economic forces (Zilberman et al. 2012). This thesis argues that it is more likely that new innovations such as a certification scheme will be accepted and implemented by smallholders if they perceive them as helpful. They must hence work effectively as risk reduction strategies to tackle these forces. Therefore, the following research question shall be answered:

Research questions

- What kind of forces are recognized and perceived as issues by independent smallholders in Indonesia?
- Are certification schemes considered to be adequate answers to these forces?

Against the background of smallholders' oil palm businesses that are affected by forces, this master thesis aims at firstly identifying the concerns that smallholders perceive as threats to their oil palm plantation and which they incorporate into their decision making processes. Secondly, the question whether certification schemes are perceived as adaption strategies for risk reduction is to be answered. This would support this thesis title that there is a convergence towards a mainstreaming process of certification.

Research method brief overview

A case study approach is used to elaborate upon the research questions. Therefore, one village was chosen where independent smallholders were in the process of receiving the RSPO certificate. Data was gathered in the period from July 2016 to September 2016.

A number of methods were used to gather the data. These include semi-structured interviews, expert interviews, group discussions, and social network analysis by drawing network maps. The questionnaires were designed to elicit information on the following aspects: motivation for smallholders to grow oil palms, family history, most recent as well as future challenges that smallholders face as well as their understanding of certification schemes.

Interviews with 25 independent smallholders were carried out to see what effect regulation instruments might have on these independent smallholders. In addition, net mappings were conducted to identify stakeholders that are important for smallholders' decision making processes in the context of their oil

palm plantations. Moreover, group discussions, interviews with village authorities and experts' interviews were conducted to gain detailed knowledge, background information and double check statements on different issues provided within the interviews of certified farmers.

Structure of the thesis

This thesis is divided into seven chapters, which will be subsequently introduced: Firstly, chapter one reviews the state of the art on global governance and the use of regulation instruments. This aims at embedding the conceptual framework and providing necessary definitions. Secondly, chapter two introduces most recent findings on certification schemes and in particular certification scheme findings on smallholders within the oil palm business.

Chapter three provides a detailed description of the research site and the methods applied to gather the data. Chapter four gives a detailed overview on the results of the case study. Thus, this chapter introduces the stakeholders that are identified to be important by the independent smallholders. The therewith associated relationships are divided into support-, command- and money flow-relationships. The chapter subsequently sums up how independent smallholders perceive regulation instruments. Moreover, current challenges as well as future ones are outlined. Finally, this chapter reports results in terms of questions associated with the certification process and sustainability.

Chapter five goes on by discussing results. It refers in this regard to the conceptual framework and therefore the theory of adaption. The chapter begins by clarifying the smallholders' institutions and moves on by identifying external and internal forces. This represents the basis for discussing whether certification schemes are perceived by independent smallholders as effective adaption strategy.

Sixthly, chapter six elaborates upon the growing trend to use regulation instruments to obtain sustainability transformations. However, this issue has not been discussed from an ethical perspective very often. Without going deep into the discussion some critical points shall be briefly outlined.

Seventhly, in the concluding section, the main points of the discussion will be summarised. Furthermore, the research question will be answered so that the approach of this thesis becomes comprehensive. This is finalized by providing some critical assessment about the case study itself and offering some recommendations for further research.

2 Conceptual framework: What is the point?

"Information and knowledge are different. The difference lies in what we as analysts do to the information. Sometimes, especially in policy and consulting work, we encounter perfunctory claims to objectivity, such as: "let the naked facts speak for themselves." However, no "naked facts" ever spoke to anyone except through concepts, however vaguely defined" (Lund 2014:226).

The underlying conceptual framework of this thesis follows a micro scale approach in order to analyze the adaption strategies of oil palm smallholders towards certification schemes. To capture the complexity of this approach some background information needs to be provided. Chapter 2.1 will present why the topic is of interest, and give a brief introduction about regulation instruments and their development over time. Chapter 2.2 will describe how political ecology offers a new perspective for evaluating the effects of certification schemes, and chapter 2.3 will concentrate on recent literature findings about certification schemes.

2.1 Regulatory instruments for sustainable transformation

The fact that natural resources are decreasing worldwide provides evidence that the current economic system is not in balance. Researchers believe the paradigm of the self-regulated-markets to be one reason for this lack of balance. The General Agreement on Tariffs and Trade (GATT) was established in 1948, and supported the deregulation of tariff barriers such as consumer duties and quantitative restriction. Consequently, step by step, member states agreed to lose control, and therefore supported the idea of a free trade market that would bring economic growth (Hatanaka et al. 2005).

Assuming that trade is regulated by supply and demand excludes two important categories of goods. First, goods that are delivered by governments, such as safety and education. Second, goods that are delivered by our ecosystems, like fresh air, clean water, and biodiversity (Marggraf, Streb 1997). Naturally, both types of goods are not priced, because they are not traded in markets. These non-market-goods (NMG) are special in the fact that individuals cannot choose to avoid them, nor are they able to price them which eventually leads to the classical economic problem of negative externalities being present. Thus, not paying attention to NMG's falsifies the picture of a self-regulated world, which leads to exploitation and social and environmental crises (Polanyi, MacIver 1957).

Awareness that ecosystem destruction is caused by human activity, and that deregulation can cause harm, were triggered by a variety of scandals. These include the dieback of the forests, increasing air pollution, the oil crisis in 1973 and 1979, Tschernobyl in 1986, and various food scandals, for example the mad cow disease and the foot and mouth disease (Swinnen 2015). This leads to a rising consensus that a functioning environment, and food safety in particular, is important for society and that a transformation is needed. Within this thesis the term "transformation" follows the definition published by the German Advisory Council on Global Change (WBGU 2011).

Transformation is "focusing on the analysis of political system changes. […]The far-reaching processes of social, economic, cultural and political change" (WBGU 2011:420).

This broad definition allows the author to analyze changes within its context. One of the first researchers who wrote about "The great transformation" were Polanyi and MacIver (1957). They claimed that the society of the 19th century was ruled too long by the idea of a self-regulated market, which caused "Annihila[tion] [of] the human and natural substance of society" (Polanyi, MacIver 1957:2). Since then researchers and policy makers try to indentify the conditions that can lead to a system, via public and private intervention, under which an economic organization can work without harming the world population in the long-term (Beckert 2007). This approach links the word "transformation" to the term "sustainability", since it touches all three pillars of sustainability under the simplest definition and as defined by the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. Representatives of 178 Nations obligated themselves to rule their countries after the principles of intergenerational justice (United Nation 1992). After the Rio Conference the need for environmental policies was recognized on a global scale. This encouraged several countries to establish their own sustainable concepts. However, implementing the main ideas of sustainable transformation turned out to be hard to realize in practice, which led to criticism. To gain understanding on this obstacle, a closer look into environmental policy making is needed. A short evaluation of the most common regulation instruments is helpful in understanding the challenge of integrating NMGs.

Every implemented course of action targeting an environmental policy stakeholder to reach environmental goals can be understood as an environmental regulation instrument (Jänicke et al. 2003:100).

Drawing a distinction between the main categories of regulatory instruments will provide a deeper understanding about the thesis topic (Jänicke et al. 2003; Pirard, Lapeyre 2014; Vatn 2015):

Legal instruments are implemented in the law of a political system such as a state or the European Union. Examples of legal instruments include bans, approvals, threshold values, process or product standards, and the environmental criminal law (Jänicke et al. 2003). The instrument is often used to "*codify existing norms to strengthen their function (Vatn 2015)*" and an example for such legal instrument would be a law that prohibits consumers to smoke in public. It is therefore the approach that can be classified as the administrative branch to avoid environmental impairments. According to Vatn (2015), two main arguments offer explanations for why people are motivated to follow legal instruments. The first, focusing on individual rationality, claims that the individual, e.g. the smoker, can link a law to their own cost-benefit-assessment. This means that "if *expected costs of punishment are higher than the expected gains of breaking the law"* (Vatn 2015) the consumer will follow the law. If however there is no adequate punishment, the consumer is unlikely to abide to the law, e.g. continues to smoke in public, since personal benefits outreach personal costs. The second, arguing from the social rationality perspective, claims "*the law is followed because it is right to do so*" (Vatn 2015). Exemplarily, Tyler (1990) recognizes social rationality as the main reason for the effectiveness of legal instrument. He found that the individual cost-benefit-assessment is not the primary deterrent in people's decision to follow or to refuse a law. On a broader level however, the success or the failure of a law also depends on its acceptance within society. Failures to accept a law can cause problematic situations. Further problems of legal instruments are the costs associated with them. Another weak point, and cause of dispute, concerning legal instruments is their cost intensive nature, i.e. they are often criticize to be not cost-efficient. Therefore, legal instruments are widely considered as conflicting policies. Depending on the situation in a political system, some stakeholders have the power to soften legal instruments or even make political systems skip their implementation processes. Further critical points are that legal instruments do not promote sustainable innovation, because once a legal instrument is implemented in the law it is not flexible to react to new innovations, nor does it set enough incentives for stakeholders to work on those innovations (Vatn 2015; Jänicke et al. 2003).

Economic instruments are defined as market based instruments (MBIs). These instruments put a price on nature or non-market-products which eventually incentivizes stakeholders in the global trade system to no longer ignore NMGs (Pirard, Lapeyre 2014). Using MBIs to internalize ecosystem goods and services became popular within the last 30 years, and this application is constantly rising. To categorize MBIs Pirard, Lapeyre (2014) chose six different types of MBIs: Direct markets instruments, tradable permits instruments, reverse auctions, coasean-type agreement instruments, regulatory price changes, and voluntary price signals instruments (see Pirard and Lapeyre 2014). The idea to deal with environmental

problems by using the trade system is criticized, on the one hand, due to the questionable feasibility of giving natural goods a marked based value (price), and, on the other hand, because those instruments are against the cost-by-course principle of the environmental law. This is due to the fact that industries that have caused harm to the environment, without paying for it in the past, can get monetary incentives to invest in better technologies instead of paying for their past damage (Jänicke et al. 2003). Nonetheless, researchers and political institutions such as the United Nation Environmental Programme support the development of MBIs. Their argument is that MBIs are more cost-efficient. By using MBIs the freedom of choice is maintained and the protection of the environment is allocated to those market participants that can protect at the least cost. Consequently, researchers hope that MBIs will save more resources than other instruments (Vatn 2015). In a review that was conducted by Pirard and Lapeyre (2014) to understand the popularity of MBIs it was found that their popularity stems from their ability to provide incentives, an improvement of efficiency and resource allocation, and "*their capacity to fill the gap between existing their capacity to fill levels" (Pirard, Lapeyre 2014:110)*. Moreover, advocates argue that stakeholders adapt faster towards MBIs due to the fact that incentives are economic signals to improve their profit making strategies. Additionally, because there is no command-and-control system MBIs are more flexible and, therefore, can be implemented in political systems with poor law enforcement. That is possible due to the structure of MBIs that target private entity interests and allows them to measure their conservation targets (Pirard, Lapeyre 2014).

Information - Next to the two presented instruments in the authors view it is necessary to see the distribution of information as crucial driver of transformation because neoclassical policy maker argue that they have full information, which is not realistic. This point emphasizes that, when talking about sustainable transformation, information is fundamental. When information is structured and presented in the right way it has several advantages. Firstly, it can create acceptance of an issue and lead to new preferences and secondly it can lead to a change of habits. Examples of information instruments include trainings, education programmes, signs, and standardized environmental reports. For governmental systems it is crucial to provide information for criticism. Information is also an important instrument for non-governmental organizations (NGOs) as information can create power. For example, if an NGO blames a cosmetics company for selling products that can cause cancer, these products will likely vanish from the market the next day. This is because a cosmetics company cannot afford to damage its image. Political decision processes can take a long time, consequently, information instruments can be a more efficient way to deal with certain topics, e.g. health issues (Jänicke et al. 2003; Vatn 2015).

All of these instruments require people or institutions to implement regulations, and people or institutions that need to be directed. In the past the majority of political interventions within the agricultural sector focused on one part of the value chain. Usually, respective policies target one main stakeholder, which was often either consumer *or* producer. This minimizes uncertainties, because the more stakeholders become involved in an intervention the more side effects can appear. Therefore, less is known about the impact of interventions that target more than one actor (Swinnen 2015). Within the last decades, deregulation processes triggered substantial changes in agricultural markets. Some stakeholders have lost or changed power, while others have newly appeared as global players. This transformation led to an adjustment of political instruments. In the beginning of the 19th century, regulation instruments were used primarily by governments to protect their countries. The common instruments were tariff and non-tariff barriers. Tariff barriers, customs duties, quantitative restrictions, and non-tariff barriers can be implemented through subsidies as well as social and ecological standards (Hatanaka et al. 2005; Hauff, Claus 2012). Some researchers argue that one reason for the rising amount of social and ecological standards is the desire to protect national markets. According to this literature stream, the main reason is to gain back traceability within the global food market, and the possibility to judge products, processes, and producers. Hence, the purpose is to ensure the quality of the product and, therefore, its safety. Another reason is to reduce the transaction costs by clarifying the requirements for products in the international market, and developing common languages (Hatanaka et al. 2005). This development shows that after decades of deregulation free trade regulation instruments within the complex agricultural trade system are needed to ensure human safety, social justice, and the ending of environmental exploitation. Finding the best appropriate instrument cannot be done without focusing on the stakeholder within the supply chain of interest. Therefore, political ecology is needed and will be explained within the next chapter.

2.2 Society-environmental research

The current development that is outlined within the introduction shows that natural resources and human interaction need to be discussed in a new way. Within this thesis "a new way" means to change from the top down view to the bottom up perspective, and to embed the research question in the context of smallholders' lives. That is what human-environmental science tries to do by analyzing the development of the natural environment as a dynamic construct which is linked, if not driven, by human interactions. The human-environmental-science outlines natural and social circumstances and their interactions, and shows that circumstances and interaction are observed and judged from different angles, depending on whether the space or time perspective is taken (Pesqueira, Glasbergen 2013). This framework is required

in order to understand the complexity of human interactions within the agricultural trade system, and to analyze and discuss the suitability of regulation instruments to trigger sustainable transformation.

This chapter is named "A conceptual framework" because there exist not a single theory that explains everything, but instead several theoretical and conceptual approaches that help to create a closer understanding about people's action. This is why the framework depicted in figure 1 has gaps. The choice for these drivers to be incorporated into the model is motivated by research that suggests that these are the most appropriate explanations for gaining knowledge about smallholder perceptions. Incorporating more factors and hence drawing a complete picture, is considered to be impossible.

Figure 1: *Conceptual framwork part 1/3 (own illustration)*

2.2.1 Political Ecology: A new way to look at external regulations

Political ecology was introduced in the UK and the USA in the 1980's, as part of human-environmental-research, in order to offer a concept, which allows the analysis of complex structures that are linked to social, political, and environmental science. Following human and physical geography, political ecology, as human-environmental-research, is the third pillar of geography (Krings 2008). Political ecology concentrates on global change and asks for political, geographical and historical reasons which allow for the analysis of sustainable transformation. It describes the interaction between society and environment. This interaction has to be seen as a process where the dynamic can change at any time. Therefore, stakeholders within the context of this thesis can gain importance and lose it. Hence, the conceptual framework that is drawn in figure 2 is a dynamic, rather than a static framework.

In the past, environmental problems were often seen as one-dimensional models of causality, e.g. explaining forest loss through population growth. Therefore, political ecology not only looks at political

power structures, but also social tension, and justice between different actors (Escobar 2006). It tries to look at every scale involved in the discussed issue, and then builds explanatory chains. Researchers that follow political ecology approaches agree that non-place-based actors do have an important role in local land degradation conflicts. Again, scales are dynamic, which means they can be negotiated and newly constructed (Freytag et al. 2016; Krings 2008; Moran 2010). Although, as seen in figure 2, this thesis concentrates on the micro scale and on smallholders, other stakeholders and scales need to be not excluded from the conceptual framework.

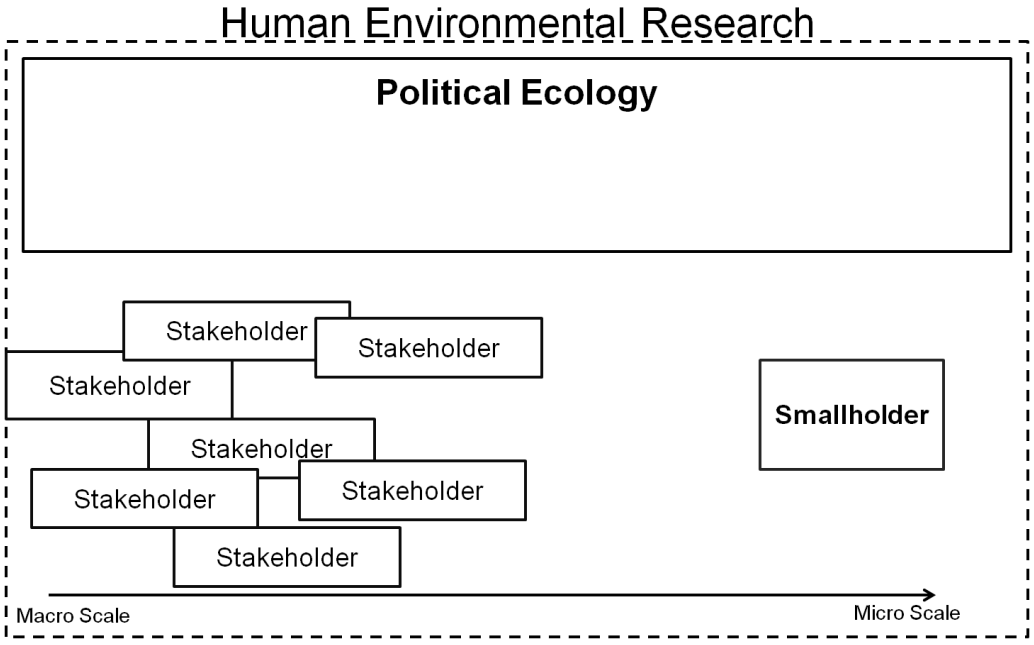

Figure 2: *Conceptual framework part 2/3 (own illustration)*

Ecological politics try to grasp and understand the whole context. By doing so, social science became especially important. For instance, an analysis of how social groups construct and utilize the term "nature" helps to understand that in some cases social groups do not separate the human, supernatural and biophysical world (Escobar 2006). In addition, knowledge about smallholders' motivations to participate is required so that it can be analyzed whether they adapt to regulation instruments like certificates or not.

2.2.2 Adaption Strategies – space for process

As seen in chapter 2.1, the implementation of regulatory instruments is considered to be important, but at the same time obstacles are present. Since this thesis follows a bottom up-, rather than a top down approach, space of process is provided. This space creates the possibility to analyze the extent to which oil palm smallholders are affected by certification schemes. Therefore, an approach is needed that

captures the impact of regulatory instruments without focusing solely on them. It hence offers the possibility to incorporate the influence that non regulation instruments have on smallholders' everyday lives into account. Consequently, this thesis argues with the concept of adaption strategies. Originally the concept of adaption was developed in biology and became an important part within the political ecology, as well as in the climate change discussion, because it allows for the analysis of people's reactions towards environmental shocks, like floods or droughts (Smit, Skinner 2002). After Nyong et al. (2007:791) adaption strategies are:

"[…] strategies that enable the individual or the community to cope with or adjust to the impacts of the climate in the local areas. Such strategies will include the adoption of efficient environmental resources management practices […]. "

Within this thesis adaption will cover not just environmental shocks caused by climate change, but shocks that force individuals or communities to adapt. Thus, adaption strategies will be defined as:

A change or adjustment in behavior that is provoked due to internal and external forces and reduces the risks associated with internal and external forces.

Internal forces occur on the individual household level, which requires micro adaption. External forces have an impact on the system – such as changes in environmental policy, economic condition, or new technologies, and require macro adaption (Bryant et al. 2000; Chiotti, Johnston 1995; Smit, Skinner 2002; Zilberman et al. 2012). While in the past macro adaption strategies have risen in response to shocks, researchers such as (Orlove 2005) try to provide frameworks that change the reactive behaviour into proactive strategies. This means "adaption in anticipation of the major changes predicted by scientists" (Zilberman et al. 2012). Thus, the research questions focus on the adaption strategies of smallholders, linked to their oil palm businesses, to see whether they are influenced by certification schemes at all, and, even more important, in what way they are influenced? Roger (1962, cited by Smit, Skinner 2002) helps to answer these questions by proposing that adaption can be seen as a process with different stages.

1. Stage of awareness: realization of internal and external forces
2. Stage of interest: realizing that these forces might be harmful
3. Stage of evaluation: occurrence of public debate
4. Stage of trial: experimenting with options to combat these forces
5. Stage of adaption: adoption of new practice to prevent harm, new institutions

As seen in stage five, some other terms are crucial within the discussion of adaption strategies. First, the term of adoption that is defined as change in practice, and is seen as the last stage of the adaption process. Adoption plays an important, if not the most important, part of adaption strategies as seen in the definition of adaption strategies from Nyong et al. (2007).

Initially adoption theory was introduced within the agricultural sector in order to understand the processes during the Green Revolution, and was originally a topic of sociology. Later, it became popular within economics to explain human behavioural patterns. Literature findings show that there is a difference between individual adoption and aggregate adoption. Aggregate adoption is known as diffusion, and is measured with the amount of agents that adopt a particular practice or new innovation. Researchers found that gaining new knowledge is easier within a group. Additionally, when the chosen adaption strategies require the adoption of new ideas within a group, risk can be minimized and shared (Collier, Dercon 2014). Individual adoption can be measured by looking at the extent of adoption (Feder et al. 1985).

A lot of studies try to find out what triggers adoption of new management methods. European case studies that looked at adoption of soil conservation practice found that the decision depends not only on the farmer, but also on external factors. To give a short overview of the debate, different paradigms exist within the adoption theory to explain the motivation of farmers to adopt sustainable practice (Prager, Posthumus 2010):

- Researchers argue that farmers act after the economic constraint paradigm, which follows the argumentation that farmers act to maximize utility.
- The innovation-diffusion-adoption paradigm claims access to information to be the key factor when it comes to the decision of a farmer to adopt.
- The adopter perception paradigm claims that the perceived need of innovation is the starting point of an adoption process.

Here perceptions are built primarily on personal and physical factors. This paradigm is seen as the most practical within this context. The concept of adopter perception follows the argument that is given by Erz Similarly (1985, cited by Prager and Posthumus 2010:4):

"Said does not mean it's heard – heard does not mean it's understood – understood does not mean it's agreed – agreed does not mean applied – applied does not mean retained"

While studies about adoption processes have been primarily conducted in Europe, case studies in the global south have to be sensitive about different culture and governmental contexts. Especially because researchers, who work on entrepreneurial theories think that adoption of innovation is more likely to happen in a stable institutional context. Whether a new idea will be accepted and adopted by someone depends on a process which is described by Martin et al. (2015:48). First a new idea, such as a more sustainable practice, needs to:

"*circulating within an organizational field, accepting them as norms, it is necessary to establish the institutional context within which the actor operates, critically evaluating the extent of their embeddedness in the relevant range of structures at industry, national and international levels".*

Hence, Pesqueira, Glasbergen (2013) outline that sustainable practices need to be internalized as norms to become institution. Thus, the term institution is crucial in this idea. Institutions are defined as the norms and rules of society. Some of them are formulated stronger than others. Nevertheless, they are either well known or hard to understand for other societies. They have influence on everyday life and decision making processes (according to Braun and Schulz 2012, cited by Freytag et al. 2016). Some researchers distinguish between formal rules, like the law, and informal constraints, such as social conventions within groups (North 1990). This separation helps to systemize and understand the way groups or individuals act, which can highly influence the resilience of the environment (Dietz et al. 2003). It is not enough, for example, to provide information about better methods of practice, to improve vulnerability on the micro scale, when people live in an institution that promotes deforestation (Orlove 2005). This example illustrates the importance of institutions.

2.2.3 The point of this chapter – the conceptual framework

As seen in the conceptual framework, when talking about certification schemes a lot of stakeholders are involved that live in other contexts and act on other scales. Research can try to understand these contexts but there will always be a "black box". This fact requires a concept that provides room for uncertainties, on the one hand, and allows for the gaining of knowledge in order to minimize these uncertainties at the same time. Taking into account that the stakeholders of interest live in another institutional field, as seen in the *grey box* (see figures 3), the stakeholders do not know what matters to the smallholder, and what influences their daily lives, without doing research. It is considered that this knowledge is essential in understanding how they perceive top down approaches.

Smallholders are place-based-actors, which means they work and live where adaption strategies, in the context of oil palm management, take place (Smit, Skinner 2002). Chapter 2.1 shows that there are forces affecting smallholder businesses. Therefore, it shall be asked what kind of forces, and which stakeholders, have an impact on smallholder decision making processes. As seen in figure 3 it is assumed that the influence of stakeholder to the smallholders is not alike, and needs to be distinguished after their task and position in the institutional network of smallholders.

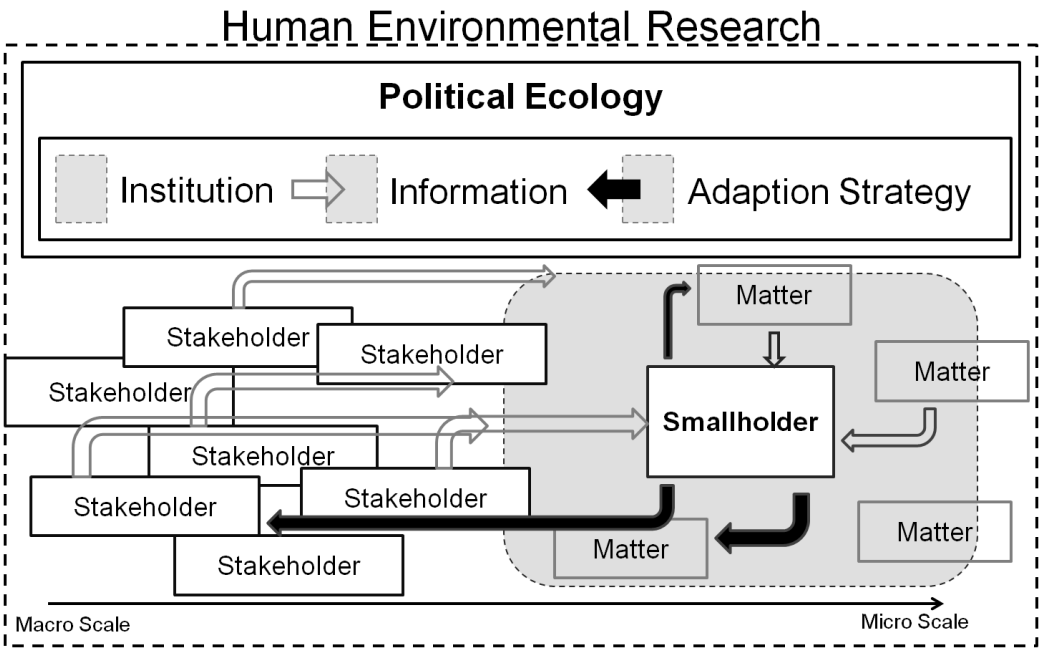

Figure 3: *Conceptual framework part 3/3 (own illustration)*

Smallholder preferences and choices are assumed to be influenced by individual values and social influences. Although, individuals do an assessment and try to weigh their options, transaction costs, and outcomes but their decisions follow a subjective logic and cannot be calculated (Dietz et al. 2003; Stern (1995) cited by Moran 2010). The light grey arrows illustrate the information concerning possible adoption strategies. It is claimed that some of the information is of no interest for the smallholder, which is shown in figure 3 by the gray arrows that enter, but will not turn into, an adaption strategy. The adaption strategy being shown by the black arrows. Hence, two arguments are possible in this case. First, after the smallholders' perception no risk reduction takes place when applying to a gray arrow. Second, information that is given by a gray arrow does not meet a current risk/interest of the smallholder. In addition, some information might be of interest but the smallholders do not get to know about it, such as the gray arrows that do not enter the institutional context of the smallholders.

Next to stakeholders referring to the oil palm business of a smallholder, pictured on the left side of the conceptual framework (cf. figure 3), it is likely that within their institutional network other things matter that requires adaption strategies. To emphasize this possibility the boxes with "different matters" are drown within the institutional space (cf. figure 3). The idea is that information about adaption possibilities such as sustainable practices or other innovations may trigger the smallholders' decision to act and reduce vulnerability. That is the point where an adaption strategy is born (black arrows). The actor takes one information/innovation, adopts it, and uses it to solve a problem/concern. To analyze this is the purpose of this conceptual framework, and, therefore, this thesis. First, it asks what problems do smallholders have, and what information from which stakeholder is important to solve these problems. Moreover, it shall analyze what role certification schemes play within this context, and whether there is a process towards certification to reduce risk, and improve smallholders livelihoods, or not.

To sum up, information proceeds in a cognitive way and is based on individual perceptions, such as values and attitudes, together with the economic resources that are available, the institutional contexts, and technology which is affordable. While this concept of adoption in figure 3 looks similar to those stages proposed by Roger (1962, cited by Smit, Skinner 2002), it is important to understand the difference between these concepts. Adaption is a response to a significant occurrence and consists of many actions; whereas adoption is considered to be an action within the adaption process that can happen due to many reasons. Since little research is done to understand the risk management on the micro scale within this master's thesis, the focus lies on risks smallholders perceive, and specific actions they choose to mitigate these risks (Feder et al. 1985; Smit et al. 2000; Smit, Skinner 2002). The theory of adaption allows for this, and is, therefore, chosen to be the point of this chapter.

2.3 State of the art: Certification schemes

As outlined in 2.1, sustainable transformation is not only of interest for government regimes, but for many different stakeholders. Due to globalization more and more actors are involved in the policy making process. It was outlined that in the past regulation instruments targeted a single stakeholder, most of the time. By doing so, uncertainties are reduced because the more stakeholders involved in one intervention the more negative side effects can appear, which means it is easier to control interventions with fewer actors. Therefore, less is known about the impact of interventions that target more than one actor (Swinnen 2015). Hence, due to the rising complexity of agriculture supply chains, on the one hand, and the rising number of stakeholders that are involved, on the other hand, it is important to gain knowledge on instruments that target more than one stakeholder (Hatanaka et al. 2005). So do certification schemes.

2.3.1 Certification schemes as key driver for global governance

Therefore, this thesis will focus on certification schemes in the global governance context.

Governance within this context encompasses local, national, and international spheres of society and is, therefore, called global governance (Vatn 2015).

The word governance is quiet powerful as it sums up processes, on the one hand, and structures, on the other hand. To understand what is meant by processes some examples are given that are linked to certification schemes. One process element is to formulate goals, or to shape priorities for all stakeholders who are involved in a certification scheme. Certifications should trigger sustainable transformation within the agricultural sector. Thus, a global approach is necessary. Certification schemes on the global level need coordination, which is another important aspect of the process of governance. Especially if public actors, companies, NGOs and the civil society are involved in the process, as it is often the case with certification schemes. Governance, consequently, is a necessary construct which provides direction, and works towards developing compromises and determining priorities (Vatn 2015). Additionally, the process of governance takes place within structures. It needs to be set in a specific context. Each decision-making-procedure, or actor constellation, refers to different structures. The definition of global governance is a new step towards discussing sustainable transformation. It implies the tasks of governmental systems, but also encompasses the action of other stakeholders within the certification scheme discussion. This emphasises that, next to the top down political decision making by governments, many other actors feel responsible to do political decisions. Since this is preferably done by applying certification schemes, a closer look into the general idea of a certificate is required (Vatn 2015; WBGU 2011).

The construction of a certificate is rather complex. The initial idea is that consumers will pay an extra amount of money to get more quality, protect the environment, or promote social issues. Certification initiatives work with standards, for the most part, to ensure that these promises can be fulfilled. Hence, a producer or retailer needs to meet requirements to get a certificate, which will be controlled by third-party audit companies. Most certification schemes are alike in their procedures. An application from the supplier or producer, that wants to gain a certificate, is required. Thereafter, the third-party-auditor, chosen by the certification agencies, conducts a pre-assessment and prepares a review. Following this field audits will be conducted, and if the supplier or producer meets all required standards the third-party-auditor hands over the certificate and the allowance to label the product, area, or facility (Hatanaka et al. 2005). Within the category system of Pirard, Lapeyre (2014) certification schemes belong to the category

of voluntary price signals, because it depends on the consumers' willingness to pay a premium on the market price, and in most cases it is the producers' free decision to take part in the certification scheme.

Certification schemes seem to be a "magic box" (cf. figure 04), as they appear to combine the interests of each stakeholder in the supply chain. Moreover, by compiling a catalogue of standards certification schemes seem answer, not one, but all environmental and social problems (McDermott 2013; Vatn 2015).

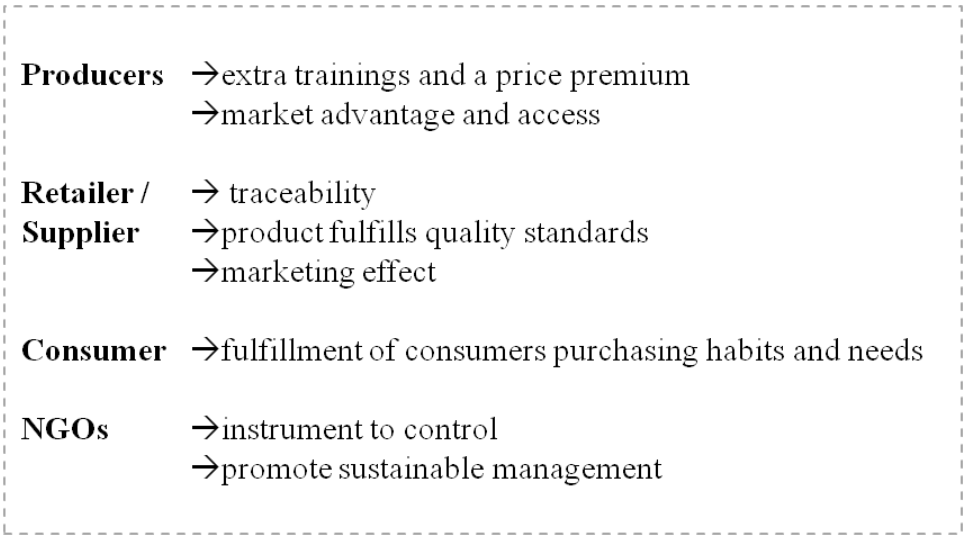

Figure 4: *Advantages of certification schemes – the magic box (own illustration after Hatanaka et al. (2005) and Rametsteinera, Simula (2003)*

On the international level there are two sectors where certification schemes were first enrolled. The forest sector, through the Forest Steward Council (FSC), and smallholder businesses in the Global South, through the Fair Trade Movement (FTM). The development of the FTM, and its effects on smallholders, will be displayed in the next chapter. The example of the FSC will be described in brief to give an idea about how certification schemes were established in practice.

Forests were a main focus of the early environmental politic in Europe and America. This was due to the forest dieback which was one of the first environmental topics discussed on the political stage and in the media. Prior to the European movement, the dust bowl in 1930's USA was also seen as a result of too much forest harvesting. These two examples in history lead to a rising awareness of the importance of healthy forests. According to Cashore 2006) the slow governmental reaction, in response to the forest issue, frustrated the civil society so that NGO's where founded to protect the forest ecosystems. This is seen as the base requirement for future developments by (Klooster 2005). After the United Nations Conference on Environment and Development, forest conservation was considered to be one of the most

important topics in the world. One result was the Forest Stewardship Council (FSC), which was innovative for different reasons. First, it was an international approach. Second, it was enforced by NGOs and private foundations, which can be seen as the starting point for global governance within environmental policy. Third, the idea to create a certificate that asked for criteria and principals, and was linked to the market by hoping consumers were willing to pay an extra amount of money, was not common at that time (Auer 2012; Bernstein, Cashore 2007; Cashore, Stone 2012; Rametsteinera, Simula 2003). Today the FSC is recognized not only by consumers and retailers, but also by producers and governments of countries who trade with timber. After the FSC was established environmental NGOs, like the World Wild Fund (WWF) and Greenpeace, started campaigns against huge furniture sellers who sold uncertified tropical timber and raised the awareness of the topic. The FSC label caused there to suddenly be a dialogue between retailers and consumers. Retailers had to justify their decision to buy uncertified wood and, therefore, NGOs were able to ask that question in public. Due to those campaign's, even before the FSC was launched, governments from Germany and the Netherland reacted by ceasing the purchase of tropical timber for public buildings (Klooster 2005; McDermott 2013). This example shows the new dynamic in the policy making context where governments are not longer the powerful initiator for environmental politics but the adapter of NGO work. The certification scheme in this case was one, if not the only, reason why the forest in the north is well-documented and lots of research was conducted to learn about timber production and its impact on the ecosystem in different parts of the world. The majority of certified forest is located in the global north. According to McDermott (2013) this is linked with the fact that the dominant wood producers are located in the global north, and that the interest in the green market is bigger in the global north than in the global south. Hence, in the global south there is still a huge lack in sustainability management practices and traceability of timber. Primarily, this is the case for small or community forests (Klooster 2005; Rametsteinera, Simula 2003). That is why research in this area is needed, and this thesis now focuses primarily on smallholder business.

2.3.2 Certification for smallholder businesses

Using the definition of the Food and Agricultural Organization of the United Nations (FAO), smallholders are farmers who have 1 to 10 hectares of land to grow agricultural products for the market and family consumption. According to this definition 80% of the farmland in Asia and Sub-Saharan Africa is managed by smallholders (FAO 2012). Moreover, smallholders in those regions are responsible for 80% of the food supply, and are therefore crucial for food security in these regions, as well as for the global market. Furthermore, smallholder business is seen as important because it creates an income possibility in rural areas without being employed by someone else. In addition, according to the FAO (2012), by comparing smallholders with large mechanized agro-businesses, smallholders mitigate climate

change through supporting carbon sequestration and reduced emissions. Their traditional practice is more sustainable because they are not using as much fossil fuel and don't have heavy machines that destroys the soil structure. Another point in favor of smallholder businesses within these areas is it can lower the urbanization process and prevent food scarcity by making the agricultural sector an attractive employer. To provide a good livelihood for smallholder is, therefore, considered to be important by stakeholders such as the FAO. Especially since smallholders often suffer from globalization. For instance, the 2008 and 2011 financial crisis caused an increase in food prices, which lead to hunger in the rural areas of developing countries. Often they have to decide whether they want to extend their farm, become purely self-sufficient, or sell their land and move to a town/find other work in the village (Arias et al.

Hence, critics argue that smallholders need to adapt to the market otherwise they will be excluded in the long-term. As described in chapter 2.1 this means they need to adapt with the standards global companies and governments ask for. According to the opinions of researchers this can only be done by public policy intervention. That is why more and more certification schemes try to include smallholders, such as FSC that started the initiative Small and Low Intensity Managed Forest, to make the label available for small-scale forest owners (Arias et al. 2013; Auer 2012; Brandi et al. 2015; Rametsteinera, Simula 2003).

It can be asked why existing certification schemes obviously need to put extra effort to include smallholders. In fact, the first certification schemes were linked directly to smallholder business. To understand the shift towards certification schemes that are hard to access for smallholders this development will be presented in brief.

The first certification scheme was developed out of the fair trade movement (FTM). Initially primary religious institutions from the USA, in 1946, imported handcraft products from less development countries. Later on Oxfam UK was one of the most important actors who tried to promote smallholder businesses in developed countries. This FTM was initiated by civil organizations due to the fact that the market system was recognized as unfair. These organizations focused especially on countries that were excluded from the world trade system due to political reasons. In 1964 Oxfam founded the first food and agricultural organization that focused only on Fair Trade products. In 1973 coffee was the first agricultural product to be imported from Guatemala (Hauff, Claus 2012). Until 1980, the FTM was more producer rather than consumer orientated. Through new institutions like the European Fairtrade Association, and other national certification organizations, it was no longer the producer but the product that the FTM focused on. Therefore, the role of the producer changed. The smallholder is not longer a person who receives donors from western countries, the smallholders become a trading partner and they

have more responsibilities, to provide not only fair traded but also high quality products. For example meeting the new standards the market asks for. That means it was no longer the possibilities of the producer that were important, but the interests of the consumer. To extend the import of fair trade products labels were introduced so that consumers could buy fair trade products in the supermarket instead of just specialty shops. Due to the fact that more and more labels and organizations worked in this area the Fairtrade Laballing Organisaiton was built in 1997 to coordinate these organizations. This includes a strict control and certification system to ensure that all products that had been sold with a fair trade label were produced under the same fair circumstances (Hauff, Claus 2012).

This shift creates various obstacles for smallholders and is barely understood by researchers. Thus, there is a lack of research on this point, there are not many case studies that give information about this issue in general (Elder et al. 2013). The outlined findings are the most recent ones:

For example, Carlsen et al. (2012) found that whether a certification uptake is successful or not depends on political compatibility among industry, public land ownership, and civil society groups. Another point that can limit certification uptake is the desire of smallholders to be independent and resistant towards outsider interference (Carlsen et al. 2012). McDermott (2013) argues that different scales are important to look at while trying to understand the distribution of certification schemes. Additionally, the context needs to be considered to understand how decisions are made. Especially, the differing goals of various actors within the process make it difficult to interpret and measure the local impact of certifications.

Due to the change from producer orientated trade to market related trade, smallholders need to invest to meet the standards the market asks for. The market, here, refers to consumers who are able and willing to buy food for a premium price. They have the power. To certify smallholders requires cost coordination, especially within the vertical supply chain. This implies transfer of technology or knowledge that is necessary to fulfill the requirements of the market. Hence, to take part in a certification process is costly and time consuming. Following (Rametsteinera, Simula 2003) smallholders do their own cost-benefit calculation. Therefore, it is less likely that they join a certification scheme if they need to change their current management system profoundly. Hence, they argue that certification schemes won't be successful for those who need the most improvement. The only alternative to change this is for stakeholders who want them to improve to pay the costs. Another idea is to implement group certification, that means establish groups so that smallholders can go through the process together and will be managed by a group leader (Auer 2012). While this provides the most incentive, other problems like "free riding" may arise

(Swinnen 2015). All this still leaves the question whether certifications have an impact in regard with sustainable transformation unanswered.

Within their research concerning Fair Trade certified coffee farmers Giovannucci, Potts (2008) found those arguments to be proven. Other positive results were found in Vietnam within a case study about smallholder certification of FSC in 2010. Smallholders could increase their output up to 50% (Nagiah, Azmi 2012). These two examples show that there is no easy judgment whether certification schemes can or cannot work for smallholders.

To sum up, while there are a lot of obstacles to face, the focus of these still lies on the top down approach of the certification process, and not on the producers themselves. So far, performance is only measured by adapting to a catalogue of principles and criteria which is seen as an evidence-based approach (Arias, et al. 2013). Since this thesis works on palm oil certification the next chapter will provide an overview about recent literature findings.

2.3.3 Certification for oil palm smallholder

As mentioned above in chapter 2.3.2 the certification process by theory produces challenges for smallholders. Especially, when it comes to palm oil, which is a highly sensible and political topic. On the one hand, palm oil is a unique product in terms of properties as well as efficiency and, on the other hand, palm oil is produced in the tropical forest region, one of the world's most valuable ecosystems (Nagiah, Azmi 2012). In the last decades the demand for palm oil has been on the rise. Oil palm can only grow within10 degrees of the equator, both north and south. The countries and the area where palm oil can be produced is limited, which creates conflicts of various scales. Because of that, oil palm has become the main driver for deforestation (Laurance et al. 2010; Martin et al. 2015; Oosterveer 2014; Silva-Castañeda 2012). This shows a huge dynamic in the land use change, especially in those countries which own 85% of the market Namely, Indonesia and Malaysia. In addition to its popularity within the food and cosmetic sector, the demand for palm oil for biofuel is constantly rising. Not only the producing countries, but also the European Union see palm oil as a good alternative to coal and oil and, therefore, as one answer to the climate change debate (Mohr et al. 2016; Nagiah, Azmi 2012; Partzsch 2011).

This leads to increased production and pressure on the land use in these countries, because the EU and also Japan do not have the capacity to meet their demand. The production has doubled since 2000 (Hansen et al. 2015; Partzsch 2011). Similar to the FSC movement, NGOs started to raise attention regarding the fast land cover change in these regions by starting campaigns concerning the impact of palm

oil production. This caused the European Union, France, Germany, the Netherlands, and the United Kingdom to act by signing a paper declaring:

"*As European countries and as member states of the European Union, we take note and declare ourselves supportive of the private sector-driven Commitment to Support 100% Sustainable Palm Oil in Europe "(Hansen et al. 2015:2).*

One year prior to this a law was enrolled by the European Union which forced retailers to label palm oil on the ingredients so that consumers could distinguish whether their products contain palm oil or not (The Guardian 12/12/2014). This put pressure on the companies and governments of the production counties, and forced them to act too. But what could be understood as sustainable palm oil and what role do smallholder play in this discussion? The answer to the first question comes from WWF in 2004 that started to provide a standard for the palm oil supply chain that claimed to be sustainable. They named this the RSPO. To be more precise, sustainable is defined by the RSPO through 39 criteria, which are summed up within 8 broader principles. For each criteria producers who want to be certified need to show evidence. This evidence-based-approach and the mechanism of principle and criteria to measure sustainability is similar to other certification systems like FSC (Silva-Castañeda 2012; Laurance et al. 2010). The RSPO task force works constantly to improve the standard. The next review will be in 2018. Currently the 8 principles are:

Principle 1: Commitment to transparency
Principle 2: Compliance with applicable laws and regulations
Principle 3: Commitment to long-term economic and financial viability
Principle 4: Use of Appropriate Best Practices by Growers and Millers
Principle 5: Environmental responsibility and conservation of natural resources and biodiversity
Principle 6: Responsible consideration of employees and of individuals and communities Affected by Growers and Millers
Principle 7: Responsible Development of New Plantings
Principle 8: Commitment to Continual Improvement In Key Areas of Activity (RSPO 2015)

For more details see (RSPO 2015). By designing the standard WWF and environmental/nature NGOs work together with social/development NGOs, growers, processors, traders, consumers, goods manufacturers, retailers, banks, and investors. This is a new step for global governance where NGOs, and

the business implementing a private initiative, come together to trigger sustainable transformation within the oil palm sector (Pesqueira, Glasbergen 2013).

Besides the RSPO standard there are various other standards and certification schemes that claim to implement better practice. To name some, the Rainforest Alliance, the Palm Oil Innovation Group, the Malaysian Sustainable Palm Oil, and the Indonesian Sustainable Palm Oil (SPOTT 2017). Because RSPO is the biggest organization on this field it is explained in more detail.

The second question brings this chapter to the point: Is it important to integrate smallholders within certification schemes? This question will be discussed within the case study. This part only describes the current findings in general. The role of smallholders within the palm oil discussion is not secondary. In Malaysia and Indonesia 40% of the area that is used for oil palm is managed by smallholders. In Thailand it is 75%, and in West Africa smallholders are responsible for 90% of the total output (Nagiah, Azmi 2012). Since recently they got attention within the "sustainable transformation discussion" by the industry and NGOs, and also by researchers. It became clear that small and big producers cannot be treated the same when it comes to creating a more sustainable supply chain but, due to their market share within the sector, they cannot be ignored either (Martin et al. 2015). It would be an impossible task to try to describe the circumstances of a typical oil palm smallholder this is going to be an impossible task which makes it difficult to find a common management strategy.

According to Vermeulen, Goad (2006) in general smallholders are less productive than huge companies but there is a wide spectrum in the productivity which has several reasons and is hard to identify, because of their different household strategies. Reasons that were named within the literature are: intra-household relationships, or access to knowledge, and infrastructure (Martin et al. 2015). Furthermore, the ownership status of the plantation seems to be a big issue in this context, where smallholders have uncertainty about their ownership it is less likely that they will spend money to meet the required standard, which is a proper land title for instance. Moreover, smallholders often struggle to get loans from banks, in addition, they often save their income for other expenses than the oil palm plantation. Martin et al. (2015) argue that oil palm smallholders are disconnected from the market due to the geographical remoteness of their plantations. According to him, this fact creates distrust towards outsiders, and a culture of independence. Moreover, oil palm smallholders have been found to lack information about technical innovation, the market, and political decisions (Brandi et al. 2015; Vermeulen, Goad 2006). For example, by asking 194 small farmers Brandi et al. (2015) found out that within one of the pilot project areas of the RSPO certification, 74% of the farmers never heard about RSPO certification at all. Moreover, recent studies

found that even when they are aware of those initiatives and got training they sometimes do not change their activity or invest in better planting materials and fertilizer (Martin et al. 2015).

While there are a lot studies pointing out that there are differences between big and small oil palm growers, little research is done to analyze the behaviour of oil palm smallholders. Few ask the question why the smallholders act in certain ways, and what their level of understanding sustainable transformation is. As we have seen from empirical evidences, the instrument of certification is not the 'magic box' as it seems to be when looking at it theoretically (McDermott 2013).

3 Empirical approach: Finding a case?

Previous research has overlooked the context of smallholder business and in particular their perception of regulation instruments such as certification schemes. The purpose of this thesis is to capture the reality as detailed as possible by studying the individual biography of participants and gaining understanding for their living environment (Mayring 2008; Flyvbjerg 2006).

Research can be seen as the attempt to answer questions. The selection of the best method depends on the research questions. This master thesis asks open questions to gain new knowledge rather than confirm existing knowledge. In addition, we analyze the interpretation of individuals to capture how people behave within different institutional context. Within this context it is considered to be impossible to objectify facts due to their reliance on social action. Hence, action regarding a special topic depends on an individual's opinion about this topic. Therefore fieldwork was conducted in the environment in which the group of interest is acting. According to Lamnek, Krell (2010), the result of an interview is not the opinion of the interviewee but of the researcher when the context of actions is ignored. Additionally, the researcher may miss or misinterpret results from quantitative methods. For instance, when a test person puts a cross at "don't know" in a questionnaire, it does not necessarily mean that the person has no knowledge about this topic. Other explanations could be that the person does not understand or feel involved with the question, cannot put the answer into the categories that are given or does not want to give the answer out of other reasons (Lamnek, Krell 2010).

Thus, a qualitative case study within the field of interest is chosen to be most appropriate to answer the research questions (Lund 2014). Moreover, a single case study is the best opportunity to fulfill the mentioned requirements due to the possibility to apply the methods chosen without any of the restrictions

that a comparative or quantitative study would require (Flick 2016). A case study must provide several things, most significant of which is a purpose. Hence, research questions must be applied, which is already done in chapter 2. Next, the case area and participants need to be defined, which will be outlined in chapter 3.1.1 and 3.1.2. Finally, in chapter 3.1.3 we will introduce the applied methods (Mayring 2008).

3.1 Case study design

The case study design is divided into three phases as shown in figure 5. Due to the researchers interest in environmental policy implementation, the research was conducted on smallholder certification within the Collaborative Research Centre (CRC 990) "Ecological and Socioeconomic Functions of Tropical Lowland Rainforest Transformation Systems (Sumatra, Indonesia)" as part of the research group C "Human dimension" in the science section CO2 which deals with "Socio-cultural and institutional transformation processes in rural Jambi".

The CRC 990 is a joint research approach of the University of Göttingen, the Bogor Agricultural University, University of Jambi, the Indonesian Institute of Science and the Tadulako University. Thematically it is divided into three main research groups: environment processes, biota and ecosystem services and human dimension. The CRC 990 has worked in Indonesia since 2012 and is now in its 2nd circle that is going until the end of 2019. For more details see (CRC 990 2017).

The admission within the science section CO2 in February 2016 is the starting point of the case study. It gave access to events that provided useful knowledge about the research area and the topic of certification, allowing for the generation of assumptions before entering the field. Another crucial part of the pre-phase was the preparation of the research permission. The fieldwork took place from the 15th of July until 15th of September 2016. In the first week a basic language course was undertaken to learn essential social graces and orientation within everyday life in Indonesia. Organization and preparation of the village stay took the first two weeks out of the six weeks in Jambi. Research within the chosen village was done in three visits over a three-week period. First, a one day trip to introduce the purpose of the research and get permission from the *kades*[1].

[1] *kades* = head of a village

[2] administrative district of Jambi province (cf. figure 10_No. 1)

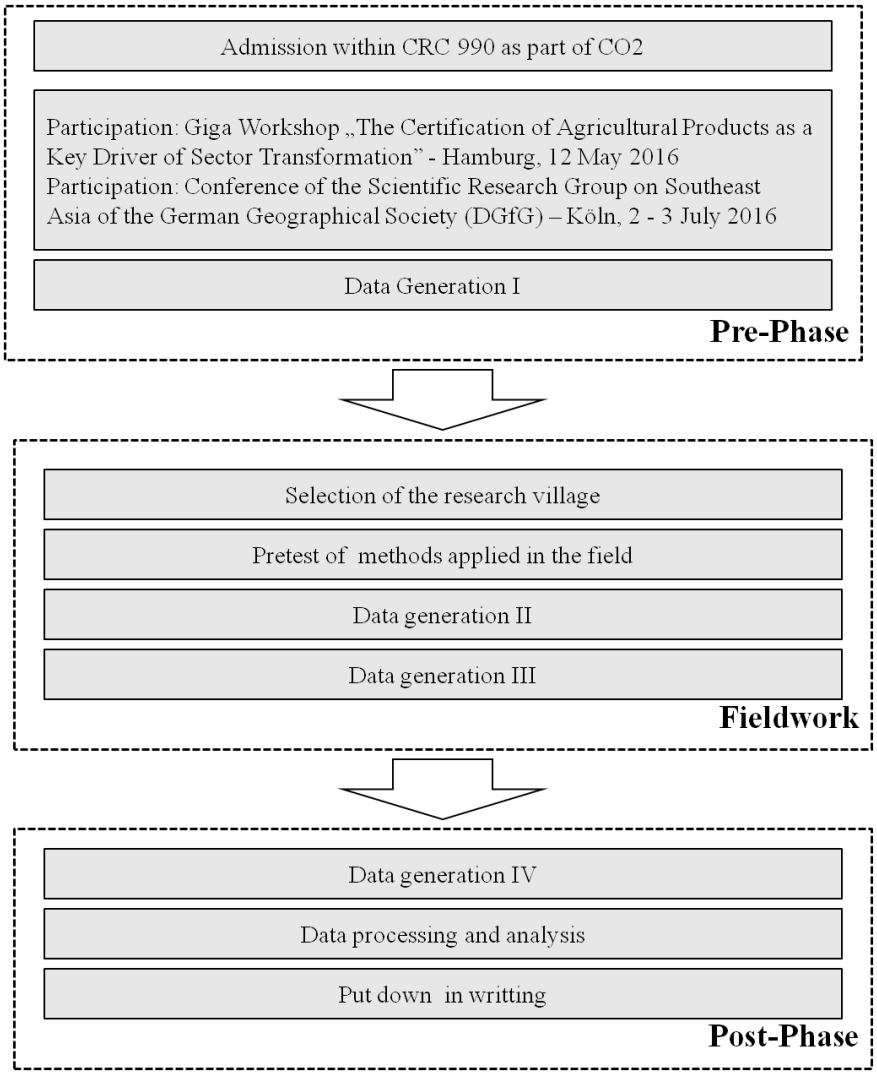

Figure 5: *The research design (own illustration)*

Then a one week stay was arranged within a guest family. Thereafter, the research team returned to Jambi for a weekend to evaluate and reflect the first findings, followed by another two weeks in the village. The last two weeks of the fieldwork phase were used to evaluate the collected data and meet other stakeholders. The post-phase was used to summarise process and interpret the collected data by using the conceptual framework.

This case study design describes a process which is circular rather than linearly defined. Thus, at any time of the research process reflection took place of the case study design and adjustments were entered as needed. The data collection was divided into 4 different steps. After each step the researcher questioned, whether the selected methods and collected data is useful answering the research questions (Flick et al. 2015). Hence, people that were involved in the case study participated in the research process.

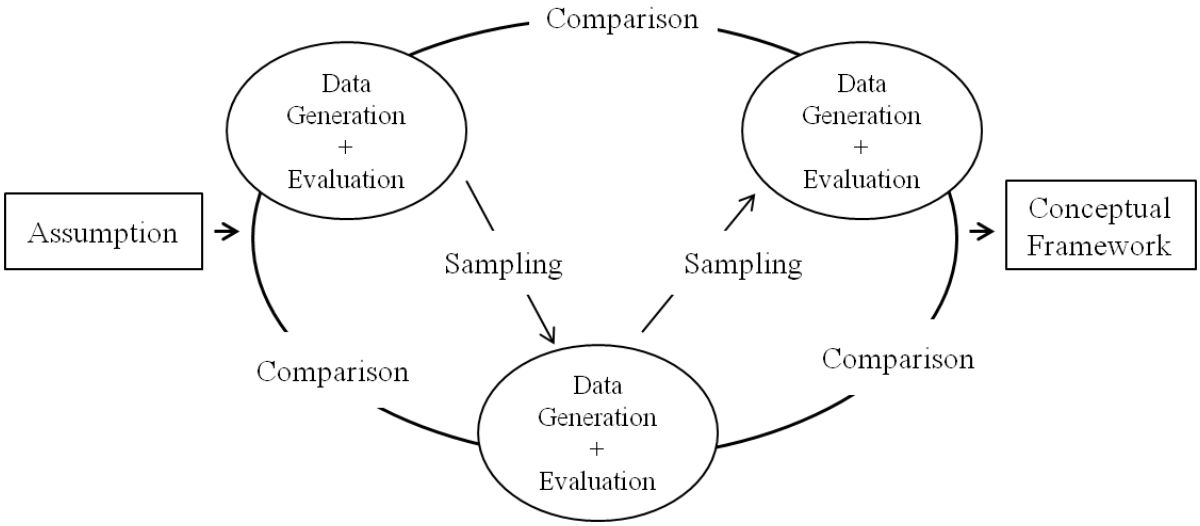

Figure 6: *Circular Research Process (own illustration after Flick 2016)*

The circular research process refers to the Grounded Theory, which defines theories during the research process. Within this case study, the circular research process was considered suitable, to find the theory that fits best to the generated data rather than to define a new theory (Brüsemeister 2008).

3.2 Selection of the case study area

The conducted case study took place in Jambi province which is located in Indonesia on the island Sumatra, as this is the research area of the CRC 990. The research area was chosen because of its fast land use change within the last decades. The CRC 990 tries to understand the dynamic and impact of fast land use change on various scales and topics, to gain more knowledge within these fields. Looking at certification schemes is considered to be of interest by the human dimension group of the CRC 990 since several researchers are working on this topic targeting different research designs. While none of them chose to work with qualitative methods this gap shall be filled by this thesis (CRC 990 2017).

The purpose of a case study is to find answers, rather than discover existing stories about the village community. Hence, to be able to extrapolate findings and set them in another context, the framework needs to be described (Flick 2016). Before focusing on the research village, information about the development of the oil palm business in Indonesia and its meaning for smallholding is important to understand the final selection of the research village and the case studies topic.

3.2.1 Indonesia and the oil palm business

Focusing on the micro scale of the palm oil supply chain means to concentrate on Indonesian oil palm plantation owners. There are three main categories of plantation owners in Indonesia as shown in figure 7.

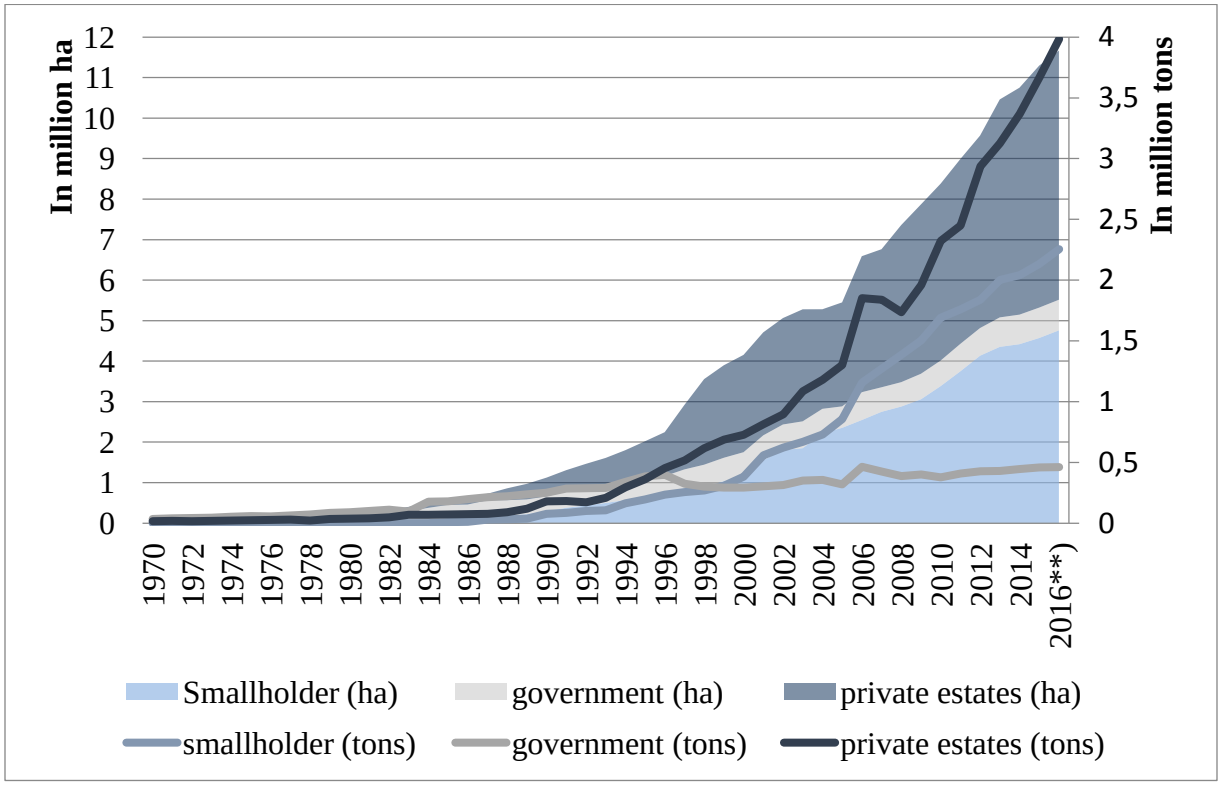

Figure 7: *Development of the oil palm sector in Indonesia (own illustration, Badan Pusat Statistik 2015)*

Approximately 49% of the oil palm plantations belong to private companies, 10% are plantations of the government and 41% of the plantations are owned by smallholders (World Growth 2011; Obidzinski et al. 2012). When looking at figure 7 and 8 it becomes obvious that the development due to its fast dynamic, caused not only prosperity but also problems. To evaluate the oil palm sector, this chapter will, first look at its development in Indonesia and describe its relevance for the Indonesian economy. Lastly, it will point out how Indonesia's reacts to the rising environmental problems caused by the oil palm sector.

The oil palm was introduced to Indonesia in 1848. The first estates and oil palm plantations were established in North Sumatra after 1911 by the Dutch (Corley, Tinker 2003, cited by Jelsma et al. 2009). Figure 7 shows the fast growth of the sector caused by the support of the government during 1968 - 1988, followed by investments from the private sector (Jelsma 2009). The reason for the rising interest in palm oil production was the rising demand but also the purpose to develop rural areas which will be explained in chapter 3.2.2.

While there is a growing trend within the oil palm sector, all other economy sectors cannot be ignored. As seen in many countries that become industrialized there is a shift from the primary sector to the industrial and service sector. In 2015 the service sector is the most important sector in Indonesia, responsible for 43% of total GDP. The industry sector delivers 40% of the total GDP. The agricultural sector is the smallest sector and is continuously decreasing, with 21% of the total GDP in 1990, 16% in 2000 and 14% in 2015 (The World Bank 2017).

Within the agriculture sector the major products are rice, paddy, palm oil, chicken meat, coconuts and rubber. When looking at products that were partially produced for exportation the major products are palm oil, rubber, palm kernel oil, cocoa and coffee. Thus, palm oil is especially important as an export product for foreign exchange earnings. In fact, after coal briquettes, oil palm is the second most important export good which generates a value of $12.3 billion which is approx 8% of the whole exported value of $161 billion (Simoes 2017). Within the last 25 years the palm oil production tripled as seen in figure 7. In 2014 it was approximately 30.5 million tons CPO which was 48% of the world's production (Aurora et al. 2015; World Growth 2011). Following Aurora et al. (2015) palm oil production is responsible for 3% of the national GDP. Additionally, 1% of Indonesia's population earns their money directly in the palm oil business, which is approximately 3 million people. The number of people that profit indirectly is estimated at 6 million, which makes palm oil the most important "employer" in rural areas. However, the number of people working in the agricultural sector is declining. In 1990 55% of all male employment had worked in the agricultural sector. In 2013 this number dropped to 35% (The World Bank 2016b).

In the beginning of the palm oil boom, the government of Indonesia was centralized and authoritatively ruled from Jakarta. Since 1999, the course changed and local legislature got more power. The approach was to gain more interest for public affairs in the communities and integrate them in the process of steering rather than continue the top-down approach. With this regulation local governments were allowed to decide about topics such as education, health, forestry and fishery (McCarthy 2007; Schott 2015). According to Zen et al. (2005) the fact that the kabupaten got more influence and power had an impact on socio-economics in rural areas but also caused problems at some points. Following Schott (2015), the decentralization law gave rise to more corruption. In addition, deforestation rose dramatically to gain land for agriculture figure 8.

Thus, this strong dynamics in industry as well as in the land use caused large environmental damage. At the moment, Indonesia is one of the biggest Greenhouse Gas (GHG) emitters in the world. Due to the long drought period in 2015, caused by the El-Nino-Effect, the fire period was extended. Thus, now

Indonesia is the third biggest GHG emitter, right after China and the USA. At the same time, Indonesia is a country that suffers from climate change (Auswärtige Amt 2016; Siregar et al. 2012).

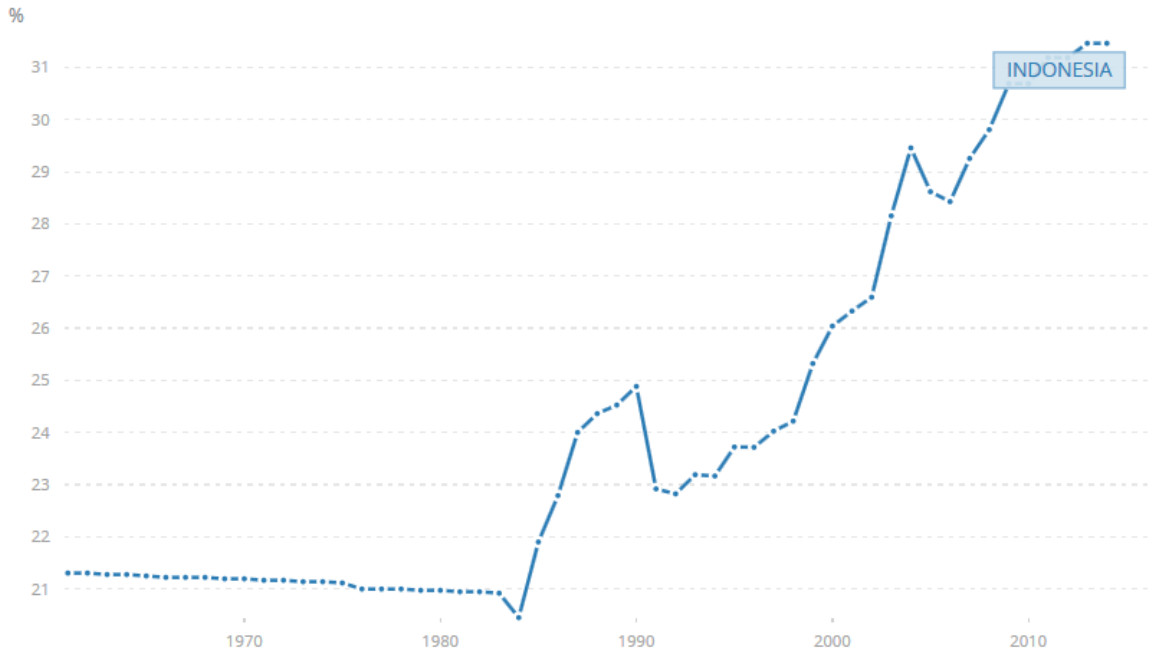

Figure 8: *Land for Agricultural (% of land use) (The World Bank 2016a)*

The Indonesian government does not ignore this development: by declaring climate goals they send a political signal to the world. The government of Indonesia wants to reduce the GHG emission to 26% by 2020, or up to 41% if they get support from international partners. Additionally, by 2025 they want to raise their energy supply from renewable energy to 23%. After the climate declaration in Paris, Indonesia is working on an action plan to implement these goals (Auswärtige Amt 2016). Another measure is a new agency for peat blog habilitation, which will work on the problems of peat and forest fire. Moreover, Indonesia wants to declare 2.7 million ha forests as common forest and established a one-map-policy that shall help to manage the different land use interests (Auswärtige Amt 2016; Ruysschaert, Salles 2014).
Furthermore, as part of the ASEAN region, Indonesia agreed to integrate the Action Plans made by the ASEAN Environment Ministers such as the Haze Action Plan in 1997, which includes a zero burn policy that was adopted within the 6th EAN Ministerial Meeting in April 1999. This policy focuses primarily on palm oil plantations but excluded smallholder due to their limited resources to apply zero burning techniques (ASEAN 2003).

Another strategy to answer the climate change debate is Indonesia's support for the biofuel sector. Since 2007 biofuel is mandatory for the transport sector. The biofuel policy aims to reach 5% in 2006, 10% in 2010 and 25% in 2015. To support this goal they spent 12 billion US$ for 60 biofuel projects (Business Wire 2007, cited by Obidzinski et al. (2012). This plan was removed due to the financial crisis in 2008 that leads to an increase in CPO price making biofuel too expensive compared with fossil fuels. The private sector, banks and government institution also supported the production of biofuel: in late 2007 17 companies that were producing biodiesel reduced or suspended their production, which leads to a decrease in production by 60%. Therefore, the expectation to create 3.6 million jobs within the biofuel industry in rural areas and reduce poverty by 16% until 2010 failed. Researchers estimated the produced amount of 400 kiloliter of biofuel by 2010 could occupy 10,000 - 20,000 people (Sandker et al. 2007; Obidzinski et al. 2012). It turns out that there is more than one obstacle to face in reaching the goals of the biofuel policy implemented in 2006. Most of them are linked to the global trade system. Not only the fluctuation of CPO price but the increasing demand of the global food market makes it more effective to export than producing biofuel for the national market (Obidzinski et al. 2012).

Another solution to lower the GHG emissions is the implementation of the Indonesian Sustainable Palm Oil certificate (ISPO). The certification was introduced in March 2011 by the Ministry of Agriculture. According to the government, the ISPO shall "ensure the adherence of palm oil plantations to government laws and regulations" (Suharto et al. 2015:3). If that is the case it can be called sustainable palm oil. In Contrast to the international RSPO certificate the ISPO certificate is mandatory. While until March 2015 every plantation owner was obligated to get certified by ISPO, regulations were updated. Now it is not longer mandatory for smallholder and for companies that produce biofuel for the local market (Suharto 2015).

3.2.2 Development of oil palm smallholding in Indonesia

Chapter 3.2.1 shows that the importance of the agricultural sector is decreasing within the country's GDP, but it is still the main employee for the rural population. In addition, according to (World Growth 2011) farm cultivation and downstream processing, especially within the oil palm sector, reduces poverty and gave access to education and healthcare. Since the palm oil boom started, land area held by smallholders and their yields are rising quickly (cf. figure 7). Therefore, they can no longer be ignored by the government when it comes to extension services or sustainability.

The fact that a large number of people in Indonesia live either in overpopulated areas such as Java or underdeveloped remote islands make poverty reduction an important topic for Indonesian politics. Hence,

the government of Indonesia implements a *transmigrasi programme*. The idea was to support oil palm companies with subsidies and land concessions to establish in remote areas and plant an oil palm plantation. A certain number of plantation they run on their own while another part they must split into smaller plantations of about 2 ha each. This plasma schemes or nuclear estates were handed over to participants of the programme to take care of once plantations were ready to harvest. This market intervention was especially promoted in the Suharto area (1967 – 1998), which explains the starting point of the palm oil boom and the growing number of smallholders. While in the first years the focus of these programmes was on crops that were already established, such as rubber, in the mid 1980s it was primary oil palm that was promoted by the government (Zen et al. 2005; Gamino 2012).

Hence, people who took part in this programme were provided with a management package that contains the service of opening the plantation, planting high-yielding trees, and the company taking care of the plantation until it was ready to harvest. After that the administration of the plantation was given to cooperatives. Those cooperatives manage extensions and are responsible for supplying fertilizer and pesticides. Additionally, they take care of credits such as the repayment of the plasma. Depending on the programme they got two to three ha for oil palm and one ha to built a house. There were programmes that brought people from other Indonesian islands, especially Java, or programmes for people that live close to the plantation area.

The idea to combine estate and smallholding was introduced in Africa in the 1950s by the Commonwealth Development Corporation. Since then it has become a popular instrument of development programmes and was adopted by the Indonesian government (Graham and Floering 1984, cited by Zen et al. 2005). The situation of the settler, most of the time, improved when the plantation was fully grown, by the age of nine or ten. By that time usually they also complete paying their repayments and therefore fully own the land. Zen et al. (2005) show that settlers who became oil palm farmers in mid-1990 are mostly doing well in the mid 2000s. This of course depends on the management of the cooperative and the farmer themselves. There are also examples where cooperatives on nucleus states failed. This can be for several reasons. For the first programmes, the new villages did not have a food supply and the people suffer from scarcity. In addition, the communication of the estate management and the local government was lacking. These kind of conflicts rose after the decentralization that gave more power to the kabupaten, who enrolled new regulations.

Zen et al. (2005) estimated that until 2003 400,000 settlers took part in programmes that cover an area of approx. 900,000 ha. In total, smallholders account for two third of the oil palm plantations and their

harvest produces about 40% of Indonesia's palm oil (Rist et al. 2010; Badan Pusat Statistik 2015). Next to the rising numbers of companies that took part in the transmigrant programme more and more so called independent farmers have changed their plantations into oil palm plantations.

Independent oil palm farmers are not contractually bound to a company. Hence, they have full autonomy to choose how they manage their plantation. This includes, for instance organizing the harvest or buying fertilizer but also taking care of all financial issues (Nagiah, Azmi 2012). By comparing the performance of independent farmers with the performance of smallholders groups, both seem to have their advantages and disadvantages. According to Zen et al. (2005) the majority of independent smallholder plantations are not well managed, which is shown by low-yielding palms with an average of 10 tons a year compared to 21.3 tons of estate plantations. At the same time, they do not have any support and therefore access to new technologies or knowledge about best practices (Nagiah, Azmi 2012). Additionally, plantations of independent farmers are often planted without terracing and they lack in fertilizer.

On the other hand, researchers found that independent farmers perform better in maintaining their business due to their extended decision-making power. Independent smallholders often have an advantage in buying new land because as local people they do not have to apply for land like estates and outsiders, therefore not having to pay expensive application fee, and they have higher decision making power (Nagiah, Azmi 2012; Zen et al. 2005).

3.2.3 Selection of the research village

Jambi became a province in 1957. Due to the transmigrant programmes and the economic growth in Jambi, people from other provinces moved to the city or to the nearby countryside. Agriculture and forestry was in the past and is still an important sector and pull factor for this area. Therefore, its population is a heterogeneous mixture out of different cultures and attitudes. Next to the native people that were mostly from Malay origin, there are a lot of Javanese, Minang (West Sumatranese), Bugis and Chinese (South Sulawesi) (Rist et al. 2010; Siregar et al. 2012). Furthermore, approximately 51% of the oil palm plantations are managed by smallholders, which makes it especially important to look at this group (Brandi et al. 2015).

Several reasons explain why the province of Jambi and especially the village of Merlung are interesting to look at. First, as outlined in chapter two this thesis focuses on sustainable transformation. Jambi is a province that has had one of the fastest land use changes within the last decades (CRC 990 2017). The island Sumatra counts nearly 70% of all oil palm plantations. Next, in regard with oil palm smallholders

Jambi is especially important due to the fact that oil palm was introduced by the transmigration programme in the early 1980, explained in chapter 3.2.2, and therefore directly linked to smallholder business. Moreover, from the 1970 until present, primary forests have nearly vanished in Jambi (Feintrenie, Levang 2009; Laumonier et al. 2010). This fast land use change not only creates prosperity within the area as planned by the transmigrant programme but conflicts in regard to new versus old habitats and the remaining forest.

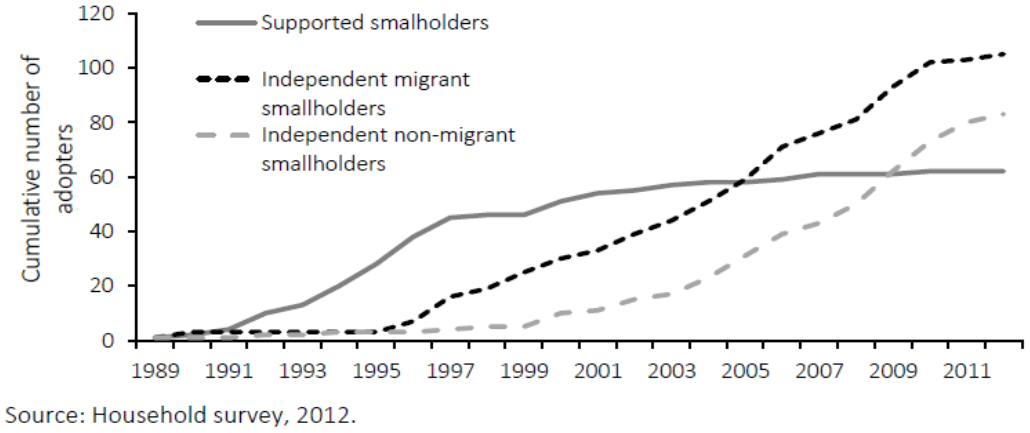

Figure 9: *Development of oil palm smallholders in Jambi (Euler et al. 2015)*

This development took place within the shift from a centralized governed country to a more decentralized governed country, which needs to be considered while analyzing these processes. One result of this was that the governor of Jambi promoted the extension of oil palm plantations by setting a target of 1 million ha oil palm plantations by 2005 (Hein et al. 2015; Kunz et al. 2016; Nurrochmat 2005). Hence, according to Feintrenie, Levang (2009) action is needed and the implementation of eco-labeling is highly recommended to avoid further land degradation which links this area to the thesis topic.

A village was found that met certain criteria considered as interesting to conduct the case study. It is an old village that is surrounded by 9 transmigrant villages and 4 oil palm companies. The village is located in an area where land use change and oil palm have a significant impact. In addition, the village gave a chance to find local people that can describe this land use change and can represent the heterogeneous mix of local people and people that have moved there within the last decades.

The village of Merlung is part of the *Kabupaten Tanjung Jabung Barat*[2]. Merlung is located east of the

[2] administrative district of Jambi province (cf. figure 10_No. 1)

Bukit Tigapuluh National Park and directly on the Sumatra Main road (Jl. Lintas Sumatera). Merlung is an old local village that has grown very fast within the last decades. Detailed records of the population development do not exist. In 2013, 5,492 people lived in the village. Approximately 70% of them are non-migrants. The area is around 50 km^2. According to the village head, approximately 35 km^2 of this land is plantation, which is separated into 20 km^2 for oil palm, 10 km^2 for rubber and 5 km^2 open land, the rest is the village area (VA_26.08, E_09.08).

Figure 10: *Case study area (own illustration with ArcGIS)*

Many of the people interviewed, moved to Merlung because they got a job offer or they heard that the Jambi province is a prosperous region (Nr. 4_m). Before the road was built and the transmigrant programme started Merlung people were mainly rubber farmers, some of them were nomadic. According to (Nr. 11_m_fg) most people were poor, many children did not get high educations and the crime rate was high. The development started after 1970 when the road was built (Nr. 1_nm_fg). After 1992, when the first transmigrants families arrived many people stayed in Merlung instead of moving to the SP villages (Nr. 9_nm). The first company that moved to the area started working in 1993 (VA_30.07). Today most people earn their money through their oil palm plantations, followed by entrepreneurs, daily labourers, people that work for the government and rubber farmer. In Merlung independent smallholders

started growing oil palm around the year 2000 (VA_13.08). The first election of the village head took place in 2014. Before that the *bupati*[3] chose someone from the kecamatan[4] office to be kades of Merlung village. In the past there were a lot of different kades. According to (Nr. 5_nm_fg) one got arrested in 2007 because he bought land with the village money. In the past, Merlung had community land (ole ole land). This was turned illegally into an oil palm plantation by a company, which caused protest from some people. These people got 0.8 ha compensation from the company (Nr. 15_m).

3.3 Sample Selection of case studies

The topic of this thesis as well as the selected research area suggests a stratified rather than a purely random sample selection. This indicates, to select subgroups within the village population. Hence, random people from the defined subgroups are chosen to minimize a systematic biases within the sample group and allows generalization not of the whole village population but for the sample group chosen (Flyvbjerg 2006). To get as much information as possible and compare different statements with each other three different groups are seen as important to work with:

I. Independent smallholders that live in Merlung

Within this thesis households that own and manage oil palm plantations without having a contract with an oil palm company are selected to be in this subgroup of the sample. They are selected for three different reasons: First, this thesis is interested in the decision making processes of oil palm smallholders. Working with scheme smallholder would be rather difficult due to the company's influence on their management practice. Second, as seen in figure 9, independent smallholders, both migrant and non-migrants, rose in number within the last decades while the number of scheme smallholder remained static. Therefore, special emphasis on independent smallholders is required. Third, research on independent smallholders is still limited (Nagiah, Azmi 2012; Brandi et al. 2015). For this group a theoretical sampling was chosen as recommended by the circular research structure introduced in chapter 3.1. The aim of theoretical sampling is to gain new knowledge about the topic of interest and stop or change the process when applied method does not deliver new information (Glaser, Strauss 2009). Moreover, due to several distractions, such as time, it was not possible to interview all independent smallholders in the village. Hence, after applying a rather random sampling in the first week within the research village two characteristics were identified as important:

[3] *bupati* = head of a kecamatan

[4] *kecamatan* = administrative district

1. Whether smallholders were migrants (m) or non-migrants (nm): This was important due to the fact that interviewees used it to distinguish themselves. In addition, it is considered interesting how the transmigrant programmes were perceived by non-migrants.

2. Whether smallholders were part of the farmer group[5] (fg) or not: This was important due to the fact that the *gapoktan* was found by a local NGO to support independent smallholder with extension services. In addition, some members of this group are in the process of getting the RSPO certificate.

In the first week we worked with mostly independent smallholders that were part of the gapoktan. It turned out that answers were often quite similar. Therefore, within the next stay the focus was on non-migrant smallholders and smallholders that are not in the gapoktan. The sample now consisted of 25 independent smallholders (cf. Appendix). 24 of them were still oil palm smallholders, one household sold their oil palm plantation and stayed with rubber, 6 out of 25 households were non-migrant and 11 out of 25 households were not member of the gapoktan. After 25 independent smallholders participated in the case study it turned out that the amount of knowledge that was gained with the addition of another participant remained minimal. In addition, fewer open questions remained. Therefore, sample saturation was reached (Glaser, Strauss 2009; Flick 2016).

II. Village authorities (VA)

The second important group in this case study is the authorities of Merlung. To reflect the gained knowledge in the research process background information about the history of the village and the current socio-demographic structure was necessary. Therefore, the village head was interviewed twice. The first time at the beginning of the study to introduce the researchers' purpose and a second time at the end of the study to summarise our findings and answer any remaining questions. In addition, one interview was conducted with the head of the gapoktan and another with an inhabitant who was familiar with the history of the town.

III. Experts (E)

In contrast to group I and II, working with people that did not necessarily act on the micro scale is important to evaluate the research findings within a bigger frame. To keep anonymity within the thesis statements will be quoted by using the capital letter E for expert and the date the interview took place.

[5] *gapoktan* = farmer group within the research village

Sawit Watch

Sawit Watch based in Bogor is a NGO that supports the rights of plantation workers, smallholders and local communities in Indonesia. They were founded in 1998 due to the fast land cover change from forest into oil palm plantations. They try to raise awareness for their topics on all scales of the palm oil supply chain. Moreover, they are working closely with RSPO Indonesia but not without criticizing their work. "Their network structure has allowed them to adopt an "insider-outsider strategy" (Silva-Castañeda 2012).

Setara

The NGO Setara was found in 2006 and is based in Jambi. First they focused on conflicts between palm oil companies and smallholders and then changed their focus to increasing smallholder's power by, for instance forming farmer groups. Once a farmer group is fully built Setara also supports smallholders to get RSPO certification. Setara starts working in Merlung in 2013. Not every member of the gapoktan is joining the certification process. In addition, four other farmer groups of villages that were close to Merlung worked together within the certification process (E_09.08). Within the case study Setara was interviewed twice. The first interview took place before the first stay in the village and the second were held after the field work in the village was done.

RSPO Indonesia

Another important actor is the RSPO office in Jakarta. The RSPO is especially of interest as it is a new kind of cooperation within the global governance movement. They combine a NGO with business stakeholders and build a private governance initiative. They work as a self-organized, non-hierarchical alliance and try to promote sustainable palm oil production. RSPO follows the approach that NGOs and business partners using the global trade system as coordinating mechanism and sharing decision-making power with each other (Pesqueira, Glasbergen 2013).

FONAP Germany

To get an expert opinion from an organization that works on another stage of the supply chain, but also has deep knowledge about the micro-level, the Forum for sustainable Palm Oil (FONAP) was interviewed in the pre phase of the research process. FONAP tries to promote sustainable palm oil to retailers and other companies that process palm oil. It was founded in 2013 and is funded by German Federal Ministry for Food and Agriculture. Its board consists of private trade and retail companies such as Unilever and Rewe but also NGOs such as WWF.

3.4 Applied methods within the case study

A mixed method approach was chosen to highlight the research question from different perspectives. As seen in figure 11 four different steps of data generation took place within the case study.

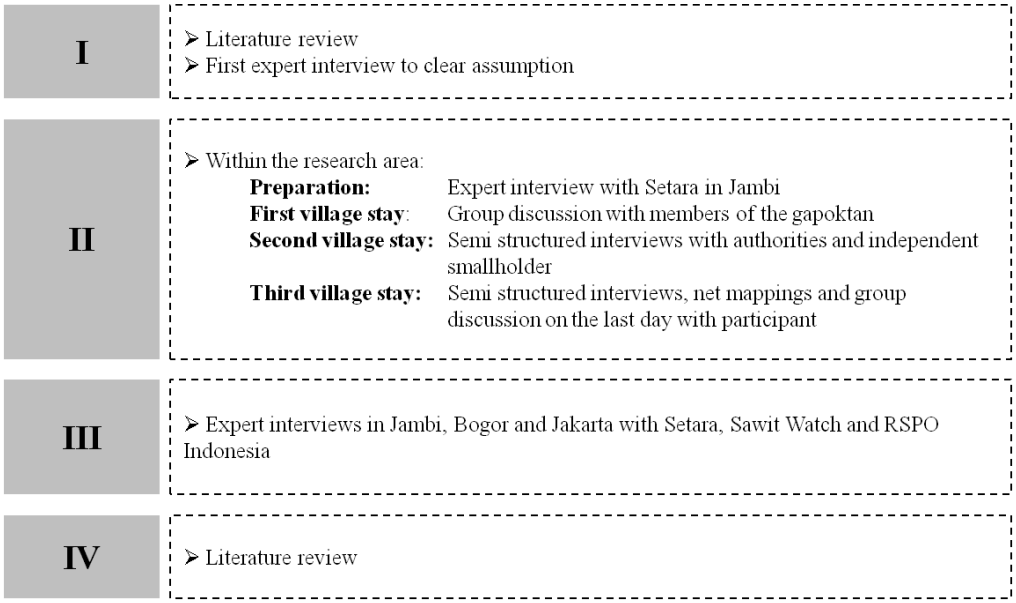

Figure 11: *Overview of method mix applied in the research process (own illustration)*

During all three steps of the case study design literature review was fundamental. Next to that other methods that were considered to be useful were:

Semi-structured interviews

Semi-structured interviews were seen as the most appropriate within the field study. The structure within the interviews consisted of the same introduction that gave each participant the same background information. Open guideline questions were asked in the same order. Starting with general information about the households and covering open questions about their story to become an oil palm smallholder and their way of managing the oil palm plantation. Asking as open questions as possible with the aim to gain knowledge about their ways of decision making and the obstacles they face when it comes to oil palm plantations (Mayring 2008).

Expert interviews

In contrast to the focus of the individual interviews, the focus on the expert interviews was not the interviewed person but the experience they have and the group they represented. The objective of the

expert interviews was to gain knowledge about specific topics such as the development of ISPO or the experience Setara had while working in Merlung. Another purpose of the conducted expert interviews was to ask and double check information that were already generated but remained unclear (Flick 2016). Each interview was prepared carefully. Interviews were conducted throughout the case study and helped to form assumptions, evaluate given answers and confirm interpretation.

Group discussion (GD)

Focus group discussions are seen as important for gaining knowledge about perceptions and opinions regarding the topic of interest, due to the dynamic that develops within a group. Group discussions are a good possibility to get more information and see how smallholders act with each other (Flick 2016). According to Mayring (2008) some individual perspectives are linked really strong to social interaction. Therefore, these perspectives can only be imposed within a group discussion. In addition, they can provide the researcher with information about common values that the group possesses and points where they disagree. Thus, this method was used within the case study.

Two focus group discussions were held within the case study. Both took approximately two hours. The first took place during our first visit in Merlung. Participants were members of the gapoktan, including the village head. All in all 10 people participated. The purpose of the group discussion was primarily to get in touch with the oil palm smallholders and to introduce the researcher's plan. It turns out that the participants had quite different opinions about the certification topic. These findings as well as the welcoming atmosphere lead to the decision not to add another village but concentrate on Merlung.

The second focus group discussion was organized on the last evening of the first stay. All participants of the case study were invited and 11 people took part. The second group discussion had several aims. First, we wanted to thank everybody for their participation, second we presented them with some findings that were considered to be of interest for the smallholders. Third, we asked some open question regarding future challenges and observed the discussion.

Net -mapping

Next to the common methods a rather innovative method was applied. The net mapping method joins two methods that are known as social network analysis and power mapping tool. In general, the method is used to gather in-depth information about multi-stakeholder governance. The method collects qualitative as well as quantitative data. In addition, participation is fundamental within the net-mapping method due to the fact that participants draw the net map together with the interviewer. It can be beneficial for

participants to reflect on their social network and increase their understanding of the importance of "the political arena in which they were working" (Schiffer, Waale 2008). The main idea is to identify networks that "tend to be located outside existing hierarchies" (Schiffer, Waale 2008:1). Therefore, the method helps to understand, who is influencing independent smallholders in their decision making process and what goals they have. In addition, it creates insights about key actors and whether independent smallholders depend on their network. According to Borgatti, Foster (2003) the structure of social networks is responsible for the development of organizations. Thus, it decides the performance of individuals.

Within this chapter, we explain how we used the method in the case study. Each case study is unique. Thus, the methods of net mapping required an adjustment to suit this case study. Several pretests took place and the research questions were adjusted, to avoid confusion during the application. Finally, 17 independent smallholder households and two experts took part in the net mapping-method. The method consists of four steps:

1. Gather all stakeholders on a map that have an influence on smallholders' decision
2. Define links and built a network by drawing support, command and money flows
3. Identify power of stakeholder by building influence towers
4. Qualitative Discussion

3.5 Data generation, processing and analysis

Since most participants in the case study spoke Bahasa Indonesia, help of a research assistant was needed. Therefore, each interview was translated. Both the researcher and the research assistant took notes during the interview. In addition, nearly every participant agreed to be recorded. After the interview took place the research protocol was written as soon as possible. This was done to make sure that memories and the atmosphere of the interview stayed present. After a protocol was written it was checked with the notes of the research assistant and adjustments were made where possible. This made sure that interviewee's responses were set in the same context. In addition, after the village stay, all records were again listened to and double checked with the research minutes. The same was done with the expert interviews, except they were held in English. Therefore, translation was not necessary most of the time. Still, to ensure the content to be correct they were double checked by the research assistant. Conversation about the interview content was considered as really helpful since the cultural background of the smallholder sometimes lead to answers that were hard to understand.

While the analysis of the data was part of the whole case study, the final processing and interpretation was done in the post-phase of the case study. Therefore, the qualitative software MAXQDA was used to structure the research findings by category and identify different codes and sub-codes. Finally, the interpretations were written down in the thesis. The literature review was processed with the software Citavi. Furthermore, to visualize data and conduct quantitative analysis Microsoft Excel 2010 and RStudio were used.

3.6 Quality criteria

An important part of qualitative research is to ensure the research quality. It is important that the data is high quality and that it is not set into the wrong context by the interpretation of the researcher. Mistakes can occur at different steps during the research process. Especially, whenever choices are necessary. To ensure the quality of the research traceability needs to be given by describing the research process in detail as done within this chapter. Next, interpretations of our findings require argumentation. Hence, background information is important to make people understand the line of argumentation of the researcher. This was done by a detailed state-of-the-art conceptual framework. Moreover, to ensure quality the researcher shall work as close to the object of interest as possible. This is approved by the village stays during the fieldwork, the interview conduction within the interviewee's house and the attendance of several events in the village community such as weddings, independence celebration, and harvest process and farmer group's meetings. To guarantee communication validity, interviews and net-mappings were conducted with the same participants. Often this was done in two appointments. The second appointment allowed us to double check answers or let participants add information. Furthermore, data and method triangulation was carried out by using different methods and conducting smallholder interviews, expert interviews and working with data of studies that deal with the topic of interest (Flick 2016; Mayring 2008).

3.7 Obstacles during the case study

As in every case study obstacles occurred that required adaption of the research process. First, finding participants was sometimes difficult. Most of the time participants needed to be asked by smallholders that we interviewed already. Therefore, most of the participants were more or less in one social network and it is unclear whether this network is different to others in the village. According to Lund (2014) generalization is possible anyway due to the fact that the researcher cannot get all information from

everybody in the group. Thus, "generalization from some observations to the group as such is inevitable" (Lund 2014:226).

In addition, a lot of smallholders we asked directly were quite suspicious. Some thought they needed to have special knowledge or a certain amount of plantations to talk to us. It was hard to tell them that we were just interested in their opinion and that it was not about right or wrong. In addition, when we arrived for the appointments many smallholders were not at home or did not call back. Therefore, it was not possible to plan during the village stay. As already expected, a lot of smallholders have not been in contact with the topic of certification. If that was the case we tried to explain the general purpose and ask for their opinion about it. With this step we might have influenced them but it turned out to be helpful, since a lot of people remembered that they had heard of it.

Also, in both group discussions more than 10 people attended but only some of them discussed with each other. During the question, what do smallholders think is the biggest challenge for the future, most of them followed the opinion other smallholders gave.

4 Results: Understanding the context of oil palm smallholding

This chapter will present the result of this case study. As mentioned before, the purpose is to envision the reality in as detailed a manner as is possible to understand if and how people respond to certification schemes. Therefore, the focus will remain on the questions who and what influences independent smallholders, as well as the challenges they have faced recently and will prospectively face. Finally, the discussion will be concentrated on the manner in which they perceive certification schemes.

4.1 Impacts on smallholder's oil palm management

Several points which capture external as well as internal impacts on smallholder's oil palm management need to be brought to attention. Internal impacts will be explained by analyzing the social network of independent smallholders and their motivations to grow oil palm. In addition, smallholder's perception regarding regulation instruments will deliver information concerning external impacts.

4.1.1 Main actors and influences

In this chapter, a summary of the collective findings of all methods applied is provided, in particular those of the net-mapping described in the methods. The described networks refer only to the management of oil palm plantations. Before focusing on some actors that are of certain relevance, actors that were generally named by smallholders are going to be presented in figure 12 to 14. Within the graphic, actors are represented by circles. The size of the circle is linked to the influence the actor has on a smallholder's decision to manage oil palm. As seen, the family category has the most influence on smallholder's decision making process, with regard to their oil palm plantation. This was argued primarily by suggestion of family members to invest in oil palm or buy another plantation. In addition, a lot of smallholders report that parents or other relatives had oil palm and that they gained their knowledge about the plantation from them. Next to that, employees are seen as an important actor group. Nearly every interviewed smallholder employs labour, most of which is only for the harvest process but some of which do have daily labour as well. Therefore, without employees they cannot manage the oil palm plantation due to the fact that they do not have time or the plantation is too far away. One smallholder added that he did not know how to harvest as he explained that it is very complicated (Nr. 3_m_fg).

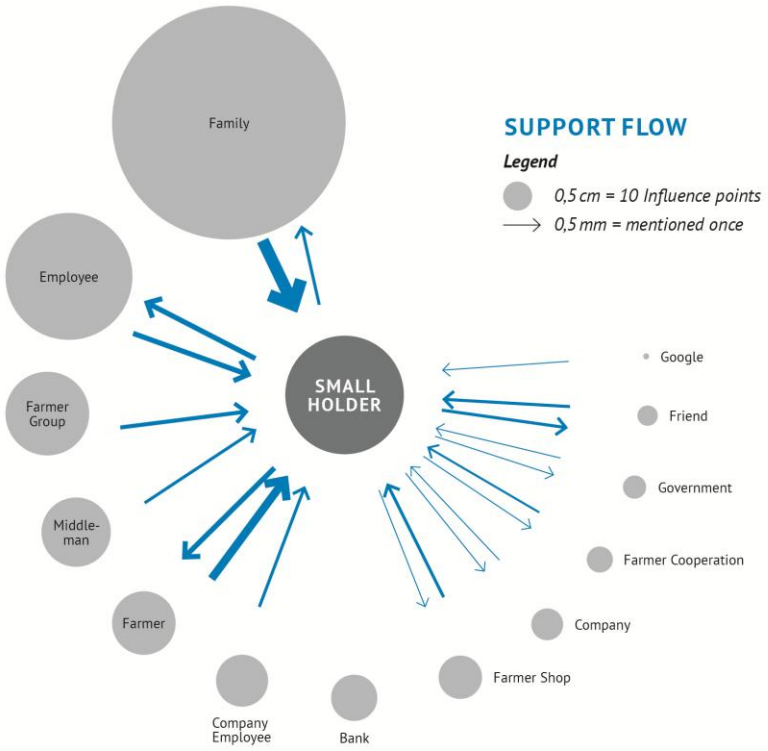

Figure 12: *Network with support flows (own illustration)*

Next to that, smallholders are influenced by other farmers' opinion, the farmer group and the middleman. Other farmers' opinions are seen as relevant due to the fact that a lot of smallholders lack experience with oil palm management. Hence, they trust farmers who have obtained good results. The middleman and the farmer group both provide equal services. They provide fertilizer and sell the Fresh Fruit Bunches (FFB) to the company. In addition, the middleman frequently provides credits for smallholder. Since not every smallholder joined the farmer group that is build by the NGO Setara, they have a tide relationship to the middleman. Moreover, they name some more actors that are important but they do not have a huge impact on the decision making process of smallholders', such as the companies, companies' employees, friends, NGOs or the government.

Additionally, the figures 12 to 14 refer to different flows. The size of the arrow represents how often smallholders named this particular flow. First, smallholders were asked to draw arrows of support in blue. This includes information, training, knowledge and moral support. It turns out that the largest share of support comes from the family. Next to that, as explained before, farmers are seen as an important source of information. Moreover it turns out that smallholders perceive themselves as important, within the context, due to the fact that arrows are most often drawn in both directions.

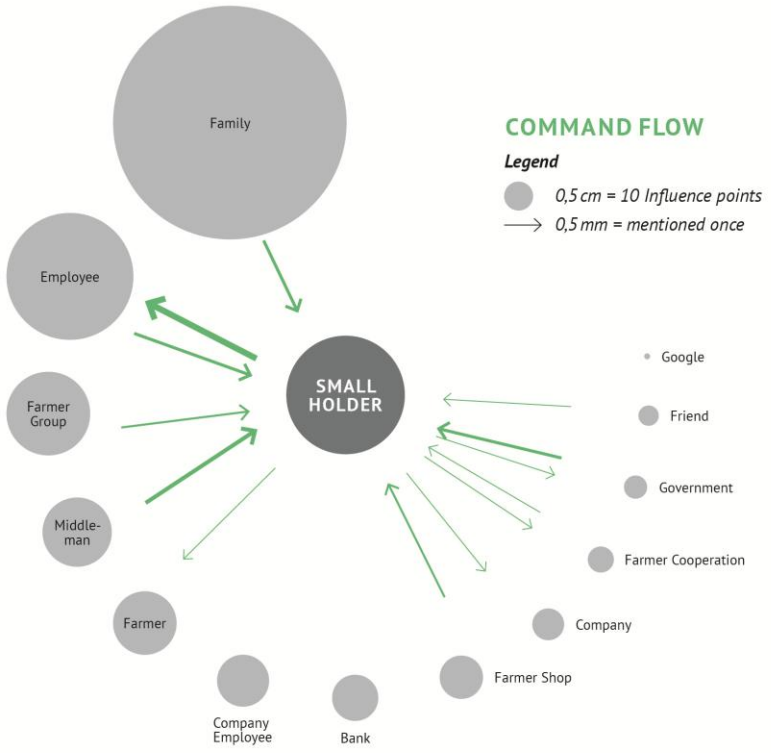

Figure 13: *Network with command flows (own illustration)*

Secondly, smallholders were asked to draw flows of command in green. This flow includes commands smallholders have to follow, such as standards and criteria. Although, the family is considered to have a huge impact on smallholder's decision making process, smallholders do not perceive that they give instructions on management of the oil palm plantation. Smallholders who work with middlemen in order to sell their FFB need to follow their criteria about the harvest quality and time. One smallholder said that the government sets the price and another added that they forbid burning of land. In terms of the relationship with the employee, smallholders do give instructions regarding requirements. Smallholders explained that most of the time they ask employees what the most urgent matters are concerning the plantation and then the employer decides what they shall do.

The final flow is that of money and is drawn in red. Smallholders were asked about sources of money and associated flows. Therefore, flows drawn include the salary they have to pay to the labour, in addition to the money they receive through the harvest. This is provided by the actor to whom they sell it to, namely the farmer group or the middleman. Few companies were named within this context. The bank is perceived as an actor from which smallholders can obtain money from and are required to pay back their loan with credit. Moreover, family is seen as a crucial source of money.

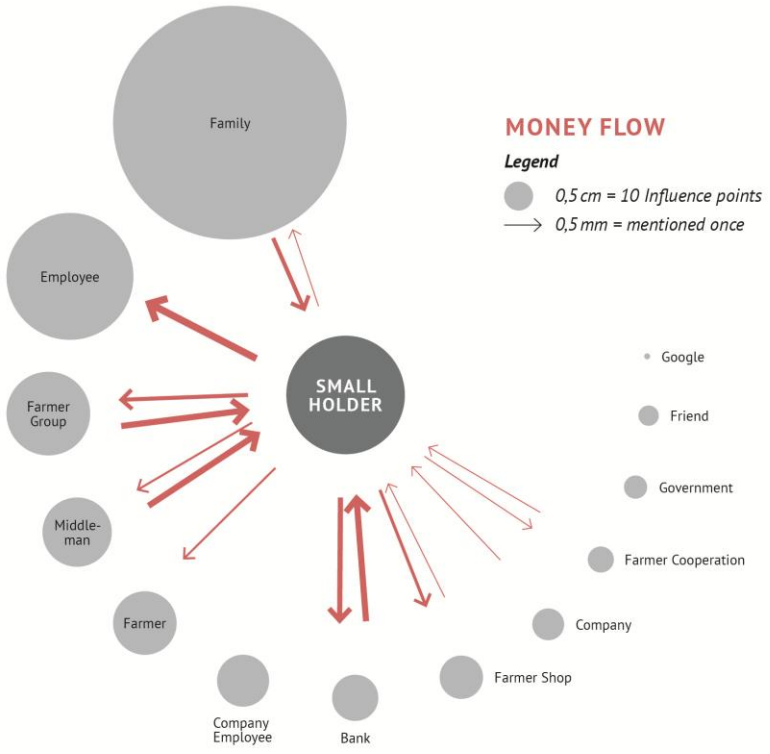

Figure 14: *Network with money flows (own illustration)*

Within the interviews and the net mapping, some actors turned out to be more important within the thesis context. Therefore, relevant findings regarding these actors will be presented below.

Farmer group (gapoktan)

Different types of farmer groups exist. Some are stricter, such as *koperasi unit desa* (KUD)[6] and some are not as strict, for example the gapoktan. According to experts, most independent smallholders do not favour KUDs because this is the farmer group that exists in the company and the rules are too strict. To form a farmer group is seen as important in order to get a bargaining position towards the company and to save management costs, by organizing fertilizer distribution and the harvest process together. When entering the gapoktan, people need to pay an entrance fee of about 50 000 Rp and a subsequent 10 000 Rp for each harvest, so that the gapoktan can save money (Nr. 19_m_fg). In addition, members have to maintain a good relationship with each other and need to follow the schedule of their famer groups. They also need to wait until the first seed drops and then they can harvest an FFB, to ensure a good quality and consequently a good price from the company (Nr. 17_nm). According to the group leader, these are rules they decided together within a meeting (Nr. 7_ nm_fg).

There are several motivations for smallholders to join or to reject the gapoktan. Refusals were argued as follows: Some smallholders say that they have plantations that cannot be harvested yet, so they wait to enter the farmers group (Nr. 25_m). Others feel loyal to the middleman (*toke)* and therefore do not join the farmers group (Nr. 12_m). A lot of famers think that their plantation is too small or too far away from the village to join (Nr. 25_m/Nr. 14_m/Nr. 6_m). For instance, one smallholder said that she is not confident enough to join because she has less than 4 ha (Nr. 13_m). Some of the farmers that were interviewed had never heard about the gapoktan (Nr. 23_m). After asking the question about why they do not join the gapoktan, some say that as independent smallholders they do not have to (Nr. 21_m). Some have doubts because of bad experience relatives had with farmer groups in the past (Nr. 6_m). Others are apprehensive because the farmer group is still young (Nr. 5_ nm_fg). According to the farmer group members, the operation fee is still high because very few farmers organize their harvest together. Subsequently, the price for the FFB is not better than that of the middleman. During the rainy season, it is possible that the operation costs are even higher (Nr. 19_m_fg). On the other hand one smallholder said they got 100-150 Rp per kg more than from the middleman (Nr. 15__m_fg).

[6] *KUD* = farmer cooperation

Farmers who joined the gapoktan named several reasons for doing so. One farmer joined because of the certification process (Nr. 25_m). Another reason for joining is that "within a group it can be easier to regulate and if they are in group and have a problem, they can solve it together "(Nr. 20_m_fg). Other arguments were that they can sell the FFB together and that it is easier to access fertilizer and good seeds. Another advantage to mention is that members can buy the subsidies fertilizer from the gapoktan. Gapoktan members like that the money flow is more clear (Nr. 20_m_fg /Nr. 19_m_fg /Nr. 16_nm_fg /Nr. 7_ nm_fg /Nr. 5_ nm_fg /Nr. 3_ m_fg /VA). Some farmers say that as independent farmers within a group they become stronger, if they do things together (Nr. 10_ nm_fg). One smallholder said he joined because he loves organization and wants to know more about it (Nr. 3_ m_fg). Despite this, one member hopes to be independent in future and therefore not to need the gapoktan anymore (Nr. 5_ nm_fg).

Middleman (*toke*)

Toke is the name given to a person that picks up the FFB from the plantation and delivers it to the company. Independent smallholders often depend on the toke, due to the fact that transporting the FFB to the company would be too expensive. Crucially, the company only accepts deliveries that have a certain amount of FFB. Hence, people get a lower price when selling FFB to the toke (Nr. 25_m/Nr. 20_m_fg /Nr. 15__m_fg).

Smallholders name the good relationship to the middleman and open bills as a reason against joining the farmers group, where they could have more traceability regarding the FFB delivery. A good example of this was on smallholder who explained: "I want to join the farmer group but I cannot because in the past the one who helped to build a plantation is the middleman and he hasn't paid back all the money to the toke" (Nr. 25_m). Smallholders feel loyal to the middleman when the middleman has helped them in the past (Nr. 12_m). "The middleman opens the access and makes the way easier. So people feel wrong if they sell it to the gapoktan" (Nr. 21_m). Additionally, the middleman often gives credit to the independent smallholders and delivers fertilizer (Nr. 21_m, E_26.08).

Companies

Within this context, the term company refers only to the oil palm companies that are processing the FFB. Four companies are located near the research village and per experts' opinion, these companies are one of the main actors. Reason being that without them no market exists for smallholders to deliver their FFB. Hence, creating a sound relationship between independent farmers and the aforementioned companies is considered crucial. Unlike plasma smallholders, these independent farmers do not have any preexisting relationships when they start their business (E_08.09/ E_14.09). As shown in the results, companies do not work proactively to improve this relationship. Only one independent smallholder mentioned that a

company provided extension services, where independent smallholders may join however on the plantation area (Nr. 17_nm).

A lot of independent smallholders obtained their knowledge about oil palm management from people who work for the company, proved within the network analysis (see figures 12 to 14). Some had previously been working in a company in order to save money to purchase a plantation.

Independent smallholders tend to share information with one another. Some argue that they do not need extension services because they have an example from the companies (Nr. 22_m/Nr. 18_m_fg /Nr. 16_nm_fg/Nr. 7_ nm_fg /Nr. 6_m/Nr. 5_ nm_fg). Thus, independent smallholders agree that a good relationship with the company is considered to be important and seen as an advantage (Nr. 8_m_fg). For example, one smallholder said "As I was a village head, I got in contact with a company and this company now helps me. Therefore, I do not need a farmer group" (Nr. 5_ nm_fg).

Another topic named by smallholders where companies are involved is that of seed supply. Smallholders mentioned that the seed at the companies is better quality but is too expensive for independent smallholders (Nr. 15__m_fg). Moreover, when buying seed from the company it is considered to be good quality. One smallholder said "As they do not have a laboratory they order it from a company to make sure it is good seed (Nr. 5_ nm_fg)". A particular smallholder blamed a company for selling seeds of an oil palm species that produces FFB, with a weight less than other FFB species. The company responded that it is the best quality, however did not address the point regarding the weight per FFB. The company pays the smallholders according to the weight of the FFB and does not consider the quality. The smallholder felt fooled (Nr. 18_m_fg).

NGO Setara

Setara is recognized to be a bridge between the village and the government, as explained by one smallholder "Setara helped me to further the ideas of the smallholders to the government" (Nr. 5_ nm_fg). When Setara started their work in Merlung, only 7 or 8 farmers attended the Setara meetings. As Setara came once again, asking these attending farmers to bring friends, the farmer group rose in number. In 2015, they built a roof organization that includes 111 farmers. Before that, the group consisted of many different groups depending on the living area of the farmers (Nr. 7_ nm_fg).

When Setara introduced the RSPO certification, some farmers were suspicious about the real purpose of the certificate. One farmer mentioned that "At first I thought it's only about the mapping of palm oil

plantation and land, so that people can buy our land" (Nr. 3_ m_fg). Setara explained that it is to support the smallholders and answer their questions. One smallholder points out that Setara helped that the farmers communicated with each other as "They built the character of the group" (Nr. 3_ m_fg).

4.1.2 The influence of regulation instruments

This chapter will look at how independent smallholders are influenced by external instruments. When asking about rules they have to follow, a lot of smallholders negate that rules exist for oil palm smallholding. Smallholders explain that plasma farmers have to follow rules from the companies, however as they remain independent, they do not have to follow any rules (Nr. 18_m_fg / Nr.17_nm/ Nr. 5_ nm_fg). Another explanation that is given for this is that "There are no standards for oil palm farmers, no exact regulations because the government lacks in care" (Nr. 5_ nm_fg). When asking whether smallholders would like to follow more standards, there is no negative reply. One smallholder said that it is good to have advice so that they can be productive in long term perspective (Nr. 11_ nm_fg). Another opinion is that if the government wanted to implement new policies, there would need to be equal justice for all oil palm growers. For instance, would the government decide to allow less oil palm plantations in future, this should not just be decided by law. They should also give smallholders another marketing strategy (Nr. 6_m).

The following examples are regulation instruments that were mentioned within the interviews:

<u>Land certifications</u>

Three types of land ownership were mentioned within the interviews. First, the seller and buyer agreement, second, the sporadic and, third, the official land certificate. Nearly all interviewed smallholders want to apply for an official land certificate or owned it already. The majority were still in the process of getting one. Therefore, many smallholders need to save money. The usual way for them to attain this certificate is to apply for each plantation separately, due to the fact that they could not afford to apply for all plantations at once (Nr. 25_m). For instance, one smallholder said "It arrived on the 31st of August at the kades office. It cost 2,5 Mil Rp, however he paid 1,5 Mil Rp, leaving a further 1 Mil Rp. to be paid, prior to picking it up" (Nr. 25_m). Smallholders argue that they need to hurry to get a land certificate as it is getting more expensive (Nr. 11_ nm_fg).

One smallholder reports "In the past, the type of farmers were nomadic, they built rubber plantations and then people feel they have to move" (Nr. 11_ nm_fg). Therefore, farmers are afraid that there will be some farmers that claim land which does not belong to them. According to an independent smallholder's

perspective, to become a legal owner of the land, a land certificate is necessary (Nr. 21_m/Nr. 17_nm). Another motivation to get the land certificate is that with possession of a land certificate, they can borrow money from the bank (Nr. 14_m).

Smallholders and the village authority mentioned that there are a lot of complications when applying for a land certificate and that it should be easier to register for the official land certificate (VA_26.08_73-77). Some mention that there is a programme from the government called PRONA[7], where famers can apply for land certification together in a group making it easier and less costly. Members of the farmer groups are in the process of collecting the required documents, so that they can join. According to the smallholders, they need ID cards, buyers and sellers, as well as sporadic for it (Nr. 5_ nm_fg).

According to experts, there is an issue that lot smallholders have converted protected land and therefore have difficulties acquiring a land certificate (E_14.09).

Seed certificate

Choosing seeds with high quality has proven to be a problem for smallholders. Especially those smallholders who bought plantations where oil palm was planted already do not know whether bad harvest results depend on the seed quality or on other reasons. According to smallholders' statements, many seeds had been sold which were of poor quality. Therefore, the government gave a warning to the seed seller and a result is that the situation is improving (Nr. 1_nm_fg). Hence, a certificate that proofs the origin of the seed informs smallholders about the quality. Smallholders consider this as important, as demonstrated by one smallholder "I bought the land and planted certified seeds, so I doesn't have a problem with that (Nr. 7_ nm_fg)".

Extension service

Results show a lot of the interviewed smallholders do not know about extension service or have never joined one (Nr. 21_m/Nr. 18_m_fg). Some of them mention that extension services took place in the past, however only for transmigrants who were going to become plasma farmers (Nr. 17_nm). Smallholders who had joined extension services did so in another area, or at one of the companies' plantations, where extensions were organized together with the government (Nr. 11_ nm_fg/Nr. 5_ nm_fg/Nr. 17_nm). Smallholders that are part of the gapoktan joined the extensions that were organized by Setara (Nr. 7_ nm_fg).

[7] *Proyek Operasi National Agraria*

When asking for the benefit of training, smallholders say that their results improved. One reason for this is considered to be a fixed schedule which they use to fertilize. Another advantage was that they had to spend less money on pesticides and that the "environmental impact rose" (Nr. 7_ nm_fg). When asking, what they have learnt from the training with Setara, one smallholder answered that it is important to know the origin of the seed and that the burn method to clear land should not be used. He said that after the training, he has better results and that he now follows a fertilizer schedule. (Nr. 20__m_fg). In addition, Setara helps them to process the FFB on their own, so that they do not need the service of the middleman anymore (Nr. 3_ m_fg). Some other farmer says that there is no impact, because Setara "told them what they already knew" (Nr. 3_ m_fg).

Despite the view of smallholders who do not want to join extension services, or think it is not necessary to join, most smallholders as well as the VA agree that there should be more extension services. This should enable farmers to learn how to distinguish good and bad seeds from each other or learn how to improve their management system (GD_05.09/ VA_26.08_73-77, Nr. 18_m_fg)

Subsidies

Most smallholders know about subsidies for fertilizer. They blame the government for giving subsidies for fertilizer but not giving any support with regard to the plantation management. For smallholders, it seems difficult to access the subsidized fertilizer, due to the fact that it is not readily available everywhere and the amount is not enough for everyone. Some smallholders also say the subsidized fertilizer targets the palm, however they need fertilizer that targets the fruits as well (Nr. 15__m_fg/ N. 8_ m_fg/ VA_26.08).

Moreover, some smallholders wish that there were also subsidies for pesticides (N. 8_ m_fg). One smallholder said that he heard about subsidies for seeds, however there are no more details about it so that they cannot profit from this (Nr. 5_ nm_fg). According to some smallholders, subsidies can be acquired from the government in order to build a cattle farm on the plantation (Nr. 10_ nm_fg /Nr. 7_ nm_fg /Nr. 5_ nm_fg).

Burning law

When asked what kind of rules and laws they have to follow while growing oil palm, a lot of smallholders mentioned the law that prohibits them from cleaning their land through means of fire (Nr. 16__nm_fg /Nr. 6_m/ Nr. 5_ nm_fg). According to the interviewee's perception, smallholders get arrested or punished if

they burn their land regardless of the law (Nr. 24_m/ Nr. 19_m_fg /Nr. 17_nm). Another smallholder said that they are allowed to burn the land, however consequently they are forced to cut all the trees down and gather this in one spot in the middle of their field (Nr. 23_m).

Most of the time smallholders know about the law from other smallholders. One smallholder said "people, who told me, had been told by the kades about the law". Another smallholder heard about the law directly from the government via television, as well as from the company where he is working. Without further prompting, he added the purpose of the law "is regarding environmental problem and pollution" (Nr. 19_m_fg). Some mentioned that the law is a disadvantage or even a punishment for smallholders because they cannot afford to pay for bulldozers to clean the land (Nr. 17_nm/Nr. 16__nm_fg /Nr. 6_m/Nr. 1_nm_fg).

Quality standard

One smallholder also added that the government gives standards for the quality of the CPO, however famers sometimes harvest fruits that are not ready as they need the money (Nr. 11_ nm_fg). In contrast, the majority of smallholders say that it is the gapoktan that requests a special quality, to ensure that all smallholders deliver the same quality and nobody has to suffer if one smallholder harvests fruits with bad quality. Additionally, experts confirm that the quality standard of independent smallholders is worse. Hence, they get less money than the plasma smallholders.

Price standards

Smallholders were asked about their opinion regarding regulations from the government. More specifically, they were asked whether they wish to have regulation and in what field they would like to be regulated. Smallholders named the uncertainty about the price of FFB, as well as its fluctuation as an important issue (f. e. Nr. 14_m/Nr. 8_ m_fg /Nr. 6_m). Some say they wish that the government would give a fixed price. One smallholder linked this directly to the motivation to grow oil palm "It would be better if there were criteria from the government with regard to the price so the farmers still have a spirit to grow oil palm" (Nr. 25_m). One smallholder mentions that the government should decide on a price, which should be equal for all farmers and ensures that companies have to follow this set price (Nr. 21_m).

One smallholder says the government already decided on the price of the FFB and that the companies have to follow this price. In his opinion, "it depends on the demand of the CPO of the world. For example, this month the demand of CPO is high because India and China import a lot however if the demand is decreasing, the price is also decreasing" (Nr. 15__m_fg). Another smallholder added that the

price should follow the trend. That means if the price of fertilizer goes up, the price of FFB shall rise too or there shall be a price standard for fertilizer (Nr. 14_m).

According to a smallholder's statement, the government of Jambi wants to change the price policy of palm oil in Jambi. This smallholder is convinced that the government would not harm the palm oil industry and therefore is looking forward to this new policy. Moreover, he suggests that the price should be stable for at least one week. This will support the plantation owner because now there is a new price every day from the company (GD_05.09).

Others

Within the interviews, some other regulation instruments were mentioned briefly that will be described here. One smallholder said that to support independent smallholders in 2014, the vice minister had allowed every smallholder to clear 2 ha of forest per person and burn it. This policy, however, is not active anymore (Nr. 17_nm).

4.1.3 Motivation to manage oil palms

The motivation of the interviewed smallholders to grow oil palm was different. Some joined the transmigrant programme in the past because they were poor. For many different reasons they sold their plantations and bought new land near the village, becoming independent farmers (Nr. 13_m). One interviewee who had been working at the company said that he wanted to have his own plantation because he did not want to be "as tied up as the plasma farmers" (Nr. 10_ nm_fg). In addition to this, some people bought a plantation because they saw that the plasma farmers are doing well (Nr. 7_nm_fg). Despite the fact that many farmers started without any background knowledge in farming, some independent smallholders grew up in an oil palm environment or their parents had been oil palm farmers already. Therefore, they wanted to continue doing this while simultaneously being independent smallholders (f.e. Nr. 6_m/ Nr. 5_ nm_fg).

The main motivation to become an oil palm smallholder is the improvement of the smallholder's livelihood. Many interviewed smallholders were teachers and said the salary from the government is not a lot. They need the plantation to save money for their children's education and future prospective (E_14.09, 35-35/Nr. 23_m/Nr. 22_m/Nr. 15_m_fg). Interviewees claimed they want to be oil palm smallholders because they have seen people receiving a regular income from it (Nr. 20_m_fg). Furthermore, some smallholders admit that they were not interested in buying a plantation in the first place however people asked for help because they needed money. Moreover, friends convinced them that

it is the right thing to do. In addition to this, some smallholders said that they want to own a plantation because in the village everybody has one. When asking why oil palm, one smallholder answered "As the majority does it. Plantations with the most potential are oil palm. If people want to make another plantation like kasawa, it is really hard because there are still a lot wild animals. It cannot be planted here, however, due to the soil". Another argument was that oil palm is easier to manage than rubber and that the demand of oil palm will never cease (Nr. 24_m/Nr. 21_m, Nr. 19_m_fg /Nr. 3_ m_fg/ Nr. 2_m_fg).

Most of the interviewed smallholders want to buy more land to grow oil palm in the future (f.e.: Nr. 21_m, Nr. 19_m_fg/ Nr. 18_m_fg). Thus, land is becoming increasingly expensive. Several smallholders said that in the future: "people who have the plantations are in middle high category. The poor ones are going to stay poor" (Nr. 5_ nm_fg). Hence, motivations need to be distinguished between non-migrants and migrants. There are still more non-migrants than migrants that live in Merlung. Also, some smallholders estimate that the migrants do have more land (Nr. 5_ nm_fg). One smallholder explained that "the locals sell their land to buy luxury things" (Nr. 3_ m_fg). In general, smallholders often sell their plantations if they need money (Nr. 22_m). According to the VA, as people always need money there will always be plantations which you can buy (VA_26.08).

4.2 What concerns?

As explained in chapter two, communities or individuals adapt new strategies due to shocks that occur to them. Therefore, it is interesting to see what challenges are perceived in their everyday lives which might force them to adapt. Hence, experts as well as independent smallholders were asked to name the kind of challenges they face at the moment and in the future, when thinking about their oil palm management. To distinguish between perceptions of experts and independent smallholders, chapter 4.2.1 and chapter 4.2.2 are purposely chosen to analyze differences within chapter 5. Chapter 4.2.3 concentrates on future challenges smallholders might face. Results of this chapter refer only to the oil palm business of independent smallholders. Therefore, challenges they face within their households or within any other businesses are not included.

4.2.1 Experts view of current challenges

Experts agree with their perception regarding current challenges presented to independent smallholders. For instance, lack of knowledge about sustainable practices, the decreasing price of the FFB, or the quality of the FFB, are seen as main challenges according to experts. Aside from this, experts mention the weak bargaining position of smallholders who act individually towards the company as a method of

challenging them. Following their argumentation, pure independence is leading to access problems. One example for this is the extended supply chain. The dependence on a middleman leads to higher transaction costs and therefore less income for the smallholder (E_09.08, E_XX, E_08.09, E_SW).

In addition, one expert said that the mindset of the people is a challenge because some of them are not interested in learning about a more sustainable way, when they do not perceive an immediate benefit. Furthermore, when they are willing to join training, the challenge is to make them apply the new management practices such as the RSPO standards. It is especially considered to be a problem if independent smallholder were asked to change their usual pattern (E_14.09).

Moreover, the accesses to finance and to land were considered to be big challenges for independent oil palm smallholders (E_27.06). Another challenge is the missing traceability of the FFB price. According to the experts, the government names a certain price but companies pay less to the independent smallholder, due to a reduced quality. For smallholders, that means they cannot maintain their plantation. Thus, they cannot fulfill the required quality standard of the company and therefore will get even less money (E_08.09). In addition, experts mention the problem of the quality of seed (E_14.09).

4.2.2 Perceived current challenges

Smallholders named no more than four challenges. To take into account the idea that people name the challenge that is perceived to be most present, the first figure 15 shows which challenge they name first, second etc. Therefore, after the challenges in brackets, the numbers refer to the amount of times smallholders mentioned the particular challenge. For instance, high management cost is named three times as a first challenge and three times as second challenge. Hence, after this scheme challenges are weighted to illustrate priorities. In addition, people were often referring to one main problem but using other phrases to describe it. In these cases, challenges were categorized and will be analyzed in chapter 5 in detail. One example of this is the category “management cost” for increasing cost of fertilizer or the rising employee fee etc. Asking independent smallholders about their current challenges, the categories given in figure 15 were named.

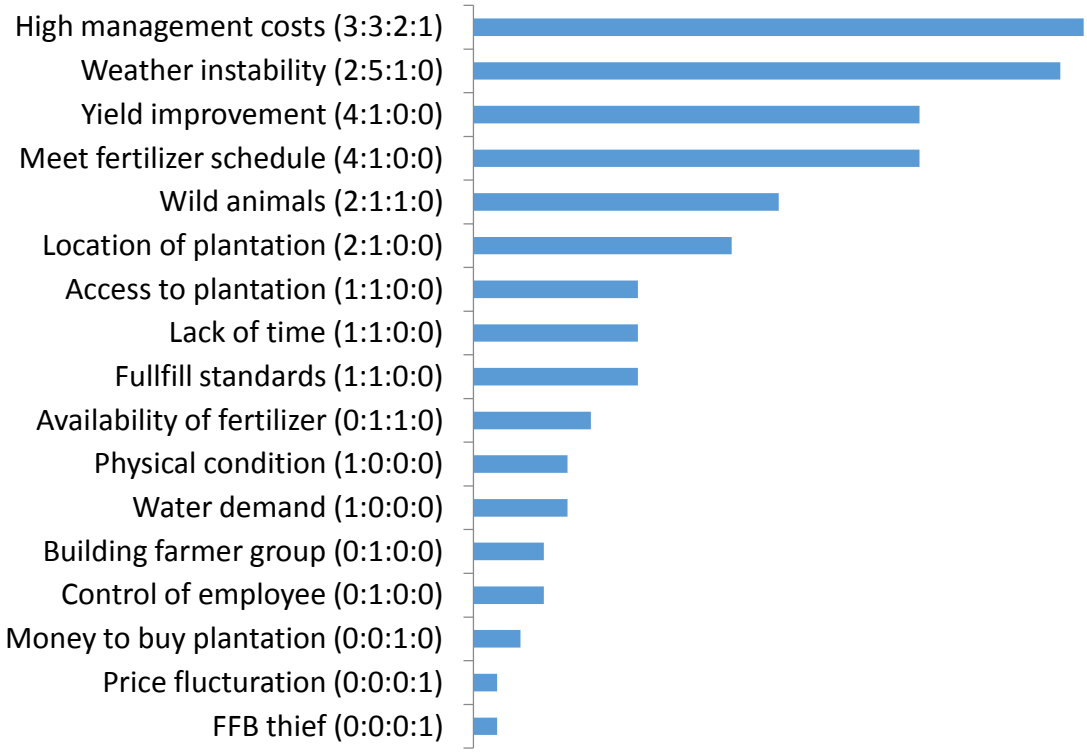

Figure 15: *Summary of named challenges first (own illustration) (weighted after challenges that were named when asking "What challenges are you facing currently?")*

Management costs

Especially when it comes to the price of management costs, including the employment fee and cost for fertilizer and pesticides, nearly all smallholders confirmed that management costs are increasing while the price of the FFB is decreasing or stable (Nr. 25_m/Nr. 23_m/Nr. 22_m/Nr. 20_m_fg / Nr. 19_m_fg / Nr. 15__m_fg / GD_05.09). When asked to give an example, one farmer said that in 2006 they got around 1400 – 1500 Rb per kg FFB, which is still the same today. For the fertilizer, to buy a 50 kg sack NPK in 2006 they had to pay 75 000 Rp while today it costs 165 000 Rp (Nr. 14_m). As for the employment fee, one farmer said that the employment fee is higher in Merlung compared to other regions (Nr. 12_m). In addition, it becomes costly to buy land. Therefore one smallholder said that if they want to buy another plantation, they need to do it now (Nr. 11_ nm_fg /Nr. 5_nm_fg). Another farmer added that due to the decreasing income, the motivation to manage the plantation has dropped. He said it is hard work and he felt he was not getting rewarded for it (Nr. 15__m_fg).

According to some smallholders, due to the high management cost it is hard to just be a farmer, as it costs a lot of money to manage the plantations (Nr. 15__m_fg). For instance, they said that "Sawit belongs to people who have money because it requires a lot money to manage sawit" (Nr. 5_ nm_fg).

Weather instability

When asking smallholders about their challenges, a lot of people named the trek disease. They described it as a decrease in the amount of harvest due to the fire and smoke from 2015, which caused damage so that flowers during this period hardly turned into FFB. They said all smallholders suffer from that (Nr. 25_m). Some described this phenomenon without naming trek (Nr. 21_m/Nr. 13_m/Nr. 11_ nm_fg). Smallholders say that due to the "trek", farmers have a decrease in yield by 70 % (Nr. 20_m_fg).

Most farmers admit the challenge they face with the natural conditions, such as weather. For instance, "dry season means a lack in soil water and therefore the harvest is decreasing and they cannot fertilize (because the soil does not absorb the fertilizer). This causes a long dry season and smoke that lasts for a long time, as well as no rain so the palms lack water" (Nr. 20_m_fg /Nr. 18_m_fg /Nr. 16__nm_fg /Nr. 15__m_fg / Nr. 2_ m_fg). This effect is greater if it is the rainy season because they cannot access the plantations and some smallholders said they cannot fertilize, due to the fact that their plantations were flooded during rainy season. Another cause was that the road could not be used during rainy season (Nr. 12_m/Nr. 16__nm_fg). If they cannot bring the harvested FFB to the mill within 24 hours, the weight decreases and therefore they get less money from the company. This happens occasionally because of the bad road condition and the rainy season (Nr. 3_ m_fg).

Meet fertilizer schedule and availability

Fertilizing the plantation regularly is considered as an important factor to most farmers, since they link the lack in fertilizer to a reduced harvest (Nr. 23_m/ Nr. 21_m). As the cost of fertilizer has been rising, some farmers cannot afford to fertilize after the schedule (Nr. 15__m_fg / Nr. 4_ m_fg /Nr. 3_ m_fg). For instance, one woman said"…now I have a plan to buy 6 sacks of urea, therefore I have to add 100.000 Rp more for the middleman and then I will have enough for the 6 sacks, however the plantation needs 8 sacks. I should fertilize every 3 month but I am doing it when I have money" (Nr. 13_ m).

In addition, with regard to the fertilizer, smallholders reported that they have difficulties getting the subsidies fertilizer (Nr. 6_m). Moreover, there seems to be a distribution problem. Smallholders mentioned that they could not buy a particular fertilizer that they needed because it was sold out (Nr. 14_m/Nr. 12_m/Nr. 18_m_fg).

Wild animals

Especially, if the oil palms are young, smallholders need to protect the plants due to forest pigs or monkeys which pull the plant out of the ground (Nr. 5_ nm_fg). Moreover, when asking why smallholders do not grow other plants, one smallholder said: "plantations like kasawa are really hard to manage because there are still a lot wild animals" (Nr. 24_m).

Location and access to plantation

Some plantations are situated within the hillside where proper roads are rare. Therefore, they have to deliver the FFB by motorcycle (Nr. 6_m). One smallholder mentioned that because his plantation is located in the low land it gets flooded. In addition, some smallholders mentioned that they have bad access to the plantation and when it is the rainy season, they cannot access their plantation at all (Nr. 7_ nm_fg /Nr. 12_m/Nr. 3_ m_fg).

Lack of time

As nearly all farmers interviewed had additional or main occupations and therefore a lack of time to manage the plantation, which was mentioned frequently (Nr. 24_m/ Nr. 9_nm/Nr. 7_nm_fg). For farmers who do not have time they depend strongly on employees. If the employees are too expensive, smallholders cannot afford to let them do everything that needs to be done. Therefore, the plantations lack in management (Nr. 10_nm_fg). One farmer said that he knows that it is better to cut the grass at the plantation rather than using pesticides, however as he had no time he used pesticides (Nr. 3_ m_fg).

Physical condition

Some farmers mentioned that it is physically exhausting to manage the plantation, especially during harvest due to the fact that one FFB can have a weight about 50 kg. In addition, some farmers were quite old and therefore not in the best physical condition anymore (Nr. 17_nm/ Nr. 16_nm_fg).

Seed

A challenge is the uncertainty of whether the seed could be responsible for the bad quality of the FFB or not. For instance, by saying: "Maybe I got a bad price because of the seed. Back then the seller said the seed is good" (Nr.21_31.08_38-38). The smallholder is referring to reasons why the harvest of his plantation was not satisfied. Nearly all smallholders knew that it is important to look for good seeds when starting an oil palm plantation. Thus, the decision regarding the seed is going to be in effect for 25 years (Nr. 21_m/Nr. 19_m_fg /Nr. 18_m_fg / GD_05.09).

4.2.3 Perceived future challenges

During the interviews, when asking about challenges which farmers might face in the future most of them said they are afraid about the price development (Nr. 19_m_fg /Nr. 6_m). For instance, they said that they are worried about the competition with other companies by comparing it with rubber or the coconut. In these industries people could earn a lot of money in the past and then the price dropped so that they could not make any profit from it (Nr. 22_m/Nr. 3_ m_fg). One smallholder said that he is afraid that too many people will convert their land into oil palm plantations because if there is too much FFB, the price will decrease (Nr. 4_ m_fg).

Despite the price issue, another worry that was mentioned more than once is the stability of the weather. One farmer said "Maybe later if there is rain it can help the palms to heal but if there is dry season as mentioned before, then the situation is getting worse". Therefore according to that smallholder the challenge is more about the instability of the weather than change in price of FFB" (Nr. 21_m). Another challenge that was named during the interview was the politics of the government, for instance if they stop promoting oil palm and start concentrating on another fruit (Nr. 6_m). Moreover, people are worried about the future because of the increasing cost of management, as many said that if the price is continuing to rise, at some point they cannot manage their plantations anymore (Nr. 5_ nm_fg).

To discuss this matter in detail, within the second group discussion a grid analysis was done. In each corner of the grid one of the main challenges was named, hence the fluctuation in the weather, the price stability of the FFB and the rising cost of management. In addition to this, due to the interest in regulation instruments, on one column rising standards from government/companies were added. Independent smallholders and experts were asked to put a mark in the grid where they think the most important future challenge will be and they were asked to explain their choice.

As seen in figure 16, when it comes to future challenges most smallholders agreed that the decreasing price of FFB as well as the increasing standards of oil palm companies and the government will be a challenge in the future. In contrast, experts' opinion was heterogeneous.

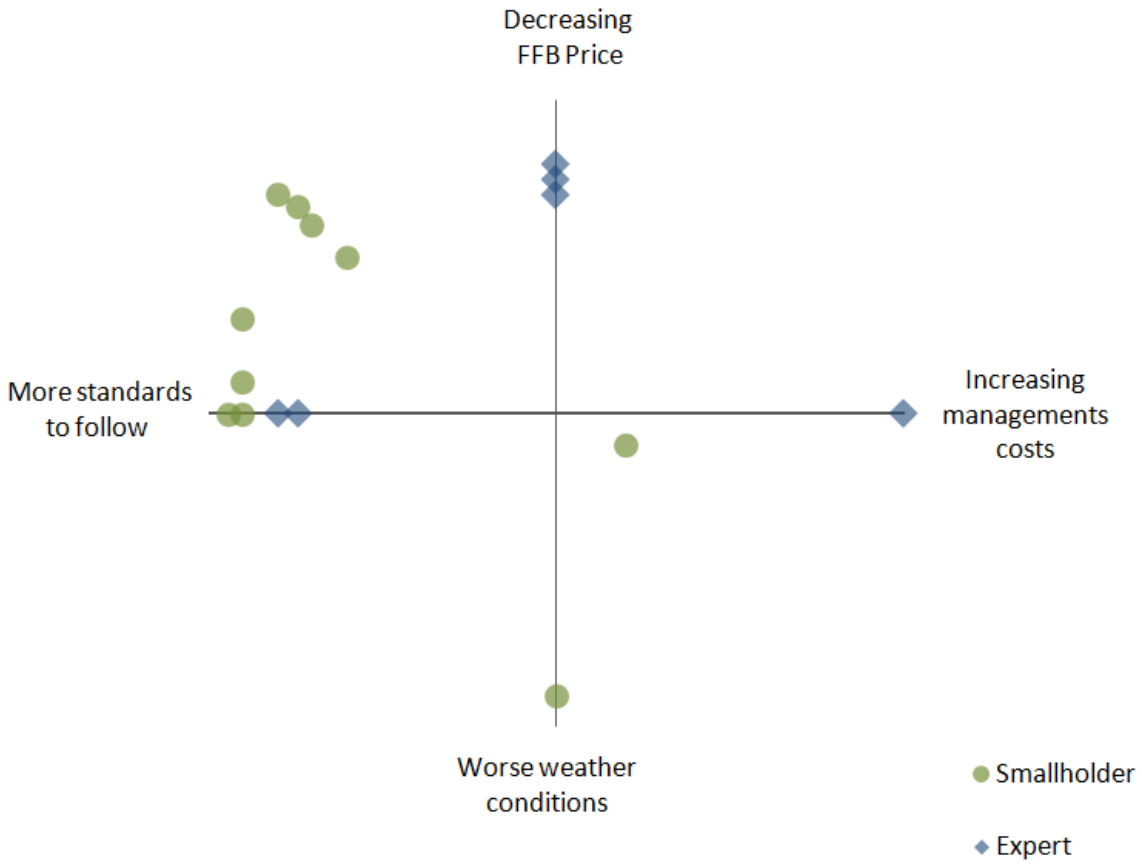

Figure 16: *Future challenges perceived by independent smallholder and experts (own illustration)*

It turns out that many smallholders considered the actions from the government and companies, with regard to stricter policies, to be the urgent future challenges. One smallholder argued that governmental decisions influence the company and therefore the smallholder. If the government cuts the subsidy for the fertilizer, independent smallholders cannot simply decrease the salary of the employee. Therefore, they depend on the policy. Due to the fact that the smallholder is always the last actor, they will suffer most. When the government put a tax on the fuel price in the past, the company gave less money to the smallholders because they had higher expenses. This negative effect was amplified as smallholders still had to pay for the expensive fuel (GD_05.09). Additionally, smallholders are worried that in the future the government will change the palm species. These smallholders argued that before oil palm there were a lot of coconut tree plantations and they changed it into oil palm plantations. Moreover, smallholders are afraid that the government is going to limit the export of palm oil, resulting in an excess supply and the FFB price will decrease automatically (GD_05.09). According to one participant, the problem is not the Indonesian government but the demand of the world. The Indonesian government will not harm

independent smallholders but smallholders are afraid that the world will not accept the FFB of Indonesian smallholder, if they do not meet the criteria of the European countries. Therefore, farmers that already follow the rules of the company will have no problem. Therefore smallholders join the RSPO certificate because the FFB is already recognized by the world, if they have a RSPO certificate (GD_05.09)

One smallholder added that in his opinion the most urgent future challenges are the decreasing price and that fact that the government asks for more standards. The smallholder continued that decreasing the FFB price affects their financial condition and they cannot afford enough fertilizer for the plantation, in addition to the policies of the government being too much. It could be justified if there is a rule that smallholders can join the certification programme and subsequently the government shall give a better price to the smallholder (GD_05.09). Another smallholder said it is more about the price and the weather conditions because if it is the rainy season, it costs a lot to come the plantation and if the FFB price is still decreasing he cannot afford to harvest during this time (GD_05-09).

Smallholders explained that the weather is unpredictable and they cannot do anything about it and therefore it is not their biggest challenge. Some argued that they do not choose the management cost because the salary of employee is increasing due to inflation (GD_05.09).

Experts also chose different future challenges and the argumentation is similar to the argumentation of the independent smallholders. The VA explained that he is worried that in the future the companies are going to make a rule that they just accept special oil palm species. If this occurs, they will not accept all the other FFB from other species so a lot of smallholders cannot sell their FFB anymore (VA_06.09). In addition to this, one expert said that his organization is worried about the development of the palm oil industry in Indonesia due to the fact that production is increasing around the world. For example, India started growing oil palm and for them it is easier and cheaper to buy palm oil from their own country, as well as being cheaper to transport it from India to China. They are worried that the same could happen with Africa and Europe which would affect the Indonesian oil palm industry and therefore the independent smallholders (E_16.09). The expert who chose the decreasing price to be the main future challenge explained that the decreasing price triggers the other named challenges. According to the expert, smallholders cannot afford fertilizer to manage their plantations and therefore their FFB quality does not meet the criteria of the company (E_08.09).

4.3 Perception of certifications for sustainable oil palm management

The research village is considered to be of special interest since a group of independent smallholders is in the process of getting their RSPO certificates. To determine whether information about this process or certification in general has spread, not only members of the farmers group but also other farmers were asked about their knowledge of the certification process and their opinion. It turned out that some smallholders have not heard about the RSPO or ISPO certificate, while many others had heard about the certificate from plasma farmers that worked in a company close to the village. The focus of this thesis was to determine whether there is a progression of smallholders towards certification schemes and the findings presented in this chapter supports this approach. First, the chapter focuses on smallholders' perception about the purpose of certificates. Secondly, how smallholders perceive the process of getting certified will be outlined and finally, due to the fact that Indonesia established its own certificate, smallholders and experts were asked about their opinion about the responsibility of certification schemes. The last chapter will focus on the topic of sustainability awareness in general, by looking at indirect links to the topic without a direct link to certification schemes.

4.3.1 Recognized purpose of certification

Results indicate that the perceived purpose of a certificate and the motivation of independent smallholders to join the process were alike. Thus, both topics will be discussed together in this chapter. Smallholders often mention that with a certification, the palm oil can be exported and the world accepts or recognizes their palm oil. This is a valid reason of why it is important to have a certificate (Nr. 24_m/ Nr. 10_ nm_fg /Nr. 3_ m_fg). Some farmers named specific expectations, such as that they will get a different price for FFB and that the price difference of the certified FFB will motivate other famers to join (Nr. 25_m). Other expectations were that it will have environmental impacts for example "that the soil stays fertile" (Nr. 7_ nm_fg). In addition, to these expectations, another mentioned was a rise in certification awareness for smallholders' welfare within the whole supply chain (Nr. 7_ nm_fg). According to (Nr. 10_ nm_fg) people from the company hope that independent smallholders join the certificate so that their FFB quality is raised and their results are as good as those from plasma farmers. Some mentioned that the company advises smallholders to join the certification process, otherwise they can run into difficulties in the future. When asked what these difficulties could be they answered that the companies are going to be stricter at selecting the FFB (Nr. 8_ m_fg).

4.3.3 Perceived certification processes

This title is chosen to be plural due to the fact that experts and independent smallholders perceive the certification process differently.

Perceived certification process by independent smallholders

To answer the question of how independent smallholders perceived the certification process, nearly all smallholders that joined the process replied that it was easy and that they just need to hand in some documents and fill out a form. They added that it was easy because they got support and training by Setara (Nr. 20_m_fg /Nr. 10_ nm_fg/Nr. 2_ m_fg). When asked what they had to change, some answered that now they had to look whether they recruit the right employees who know how to manage the plantation. They also have to pay attention when buying seed to ensure it is good, while simultaneously looking at the environmental impact (Nr. 20_m_fg /Nr. 3_ m_fg). They said that Setara is in charge of completing the certification process. Some farmers said that after the training with Setara, they changed the way they used the fertilizer, illustrated by one farmer who reported "In the past I just spread of the fertilizer at once but now I spread it with a schedule, one after another" (Nr. 10_ nm_fg /Nr. 8_ m_fg). One smallholder said that before the training he did not know really what he was doing because there were no regulations. Now he follows the instructions such as wearing a helmet and boots and using a fertilizer schedule (Nr. 8_ m_fg).

Some smallholders admit that they need to change a lot and that they have difficulties with the requirements. One argued that it is not possible to fulfill all the standards because the plantation already exists, so he cannot fulfill all standards such as how to open the land and how to plant the seeds (Nr. 20_m_fg). Moreover, one farmer entered the process without paying attention to the certification topic or standards. He heard that they can get a better price and that is why he joined (Nr. 19_m_fg). Another smallholder said that he is not going to change anything unless there is an audit on his plantation. He said that during the last audit, the representative only brought the auditors to the best managed plantations (Nr. 2_ m_fg).

With regard to this stage of the process, one smallholder said that they do not have the certificate yet because there is still a problem with some members that failed during the last audit which have to fulfill the requirements. One farmer has a "captivated area" on his plantation and therefore has problems meeting the standards of RSPO (Nr. 1_nm_fg). Some farmers criticize that at the moment there is no justice as although they follow the regulations of RSPO, they have not received any special treatment. If they follow the rules they feel they should being recognized (Nr. 8_ m_fg).

Some people have heard about the process from friends or relatives that work in the company or had to go through the process because they were plasma farmers (Nr. 17_nm/Nr. 21_m). When comparing the certification process for plasma farmers and independent smallholders, one answered: "The difference with the certification process in Merlung is that it is managed by Setara and they don't have to pay for it. In the plasma plantation, they have to pay for the certification a monthly fee" (Nr. 8_ m_fg). One farmer said that if he wants to build another plantation he needs to follow a lot of rules, such as leaving an area of space 50 m from the river. He said that there is a company that was allowed to do it and that RSPO should there are equal rules for smallholders and for companies (Nr. 1_nm_fg).

Smallholders that have never heard about a certification were interested in it and asked what kind of criteria they have to follow to join, for example whether they have to own a certain amount of ha to get a certificate or if it is really necessary to join the farmers group (Nr. 24_m/Nr. 23_m).

Perceived certification process by experts

Within the experts' interviews, other points were seen as crucial in the process. One major point was the fact that the interviewed smallholders did not know about the principles and criteria they have to follow. According to one expert's opinion, it is normal that the most independent smallholders do not know about the principle and criteria. The internal control team within the group of people that get certified should, however, take care of it. They should know about it and are responsible for the compliance with the RSPO certificate (E_14.09). According to another expert's opinion, independent smallholders that are in the process do not know about the definition of RSPO or the standards for the environmental treatment because they do not remember these from the training however they understand the meaning. They know that they have to limit the chemicals used to enrich the area and that they should not use poison to catch fish (E_08.09).

Another topic that was not mentioned by the independent smallholders was the issue about the "critical land". This is land that is of certain value for an eco- or climate system, such as peat land or forest. After RSPO criteria, people are not allowed to turn forests into oil palm plantations after 2005 (RSPO 2015). According to one expert, in Sumatra many people that are independent smallholders are not originally from the area due to the transmigrant programme. They come and buy land from the local people and do not know whether this land was a forest or not. He further explained that for companies it is easier, as after RSPO criteria they can compensate by protecting another forest or by planting a new forest. For independent smallholders it is not possible due to their limited resources (E_16.09/E_14.09). In addition,

one expert assumed that it is more likely that smallholders will manage plantations on critical land, to prevent themselves getting punished while still benefitting from the FFB deliveries of the smallholders (E_16.09). In fact, one expert admits that in Merlung many plantations that are in the certification process failed the land use analysis of RSPO and that is why the process is continuing due to the fact that people try to find a solution (E_14.09).

Experts described how the certification process will succeed with independent smallholders and all agree that it is important not to start by introducing RSPO but by providing trainings to improve smallholders' management practices. According to the experts, it is important that they benefit from the certification process by applying the management practice (E 14.09/E_08.09/E_27.06). In addition, it is important to build an organization which strengthens their bargaining power towards the mill and lowers their transaction costs (E 08.09). Once a stable farmer group exists, the topic of certification can be introduced to the smallholders. According to one expert, it is far easier to certify plasma smallholders because they have got all information from the company and work in cooperation (E_14.09).

4.3.2 Recognized responsibility to implement certification

Next to the voluntary RSPO certificate, Indonesia introduced the obligatory ISPO certificate and since it was considered interesting to look at the perception of independent smallholders and experts regarding the question of who should be responsible for implementing a certification. As mentioned before, few people know about both certificates and in fact, just one independent smallholder had heard about ISPO. Therefore, questions were asked such as who should be responsible and why?

According to (Nr. 24_m), the government as well as companies from other countries have to be responsible for the implementation. He argued about whether there is a rule that smallholders need to have a certificate and if so there must also be a rule about the export of the palm oil. Therefore companies and the government need to work together. In addition, some say if there will be a standard or certification it should come from the company and not from the government, due to the fact that the company already has a good standard (Nr. 21_m/ Nr. 6_m).

When asking whether companies or the government should be responsible for implementing certifications, smallholders linked companies not with the whole supply chain industry but with the companies they deliver the FFB to. If that is the case, the independent smallholders feel separated from plasma farmers. They argued that if the company is responsible for the implementation process, they will need to live on the plantation area of the company. Therefore, it would be better if the government would introduce it: " as the government can explain it first and can make the process easier" (Nr. 23_m).

By asking directly, what their opinion is about a certificate that comes from Europe, smallholders answered that they are not interested in where it comes from but whether it is good. If that is the case, many people would agree (Nr. 17_nm/Nr. 14_m). Another argument was "If it's good from the government it can also be from the government" (Nr.23_02.09_77-78). Some seemed to have a stricter opinion about where support should come from: "It should be the government – especially the agricultural agency of the kabupaten. They should give more instruction as an extension service to people and they should give subsidy for better seeds" (Nr. 15__m_fg). In addition, one smallholder hopes that the government will support smallholders that are willing to get a certificate and that the government "will recognize farmers who accept the RSPO" (Nr. 7_ nm_fg). Moreover, one smallholder added: "The Indonesian government should be more passionate when doing the socialization if they don't want to be beaten. However, the fact is that the government lacks in socialization and lacks speed" (Nr. 3_ m_fg). During the group discussion, one smallholder said that he preferred the RSPO certificate due to the fact that the ISPO is just from Indonesia but RPSO is from the world and in addition, RPSO is the first certificate that started. This is why ISPO is late (GD_05.09).

When asking experts whether RSPO and ISPO are competing, one admitted that he would lie if he said they were not competing at all, but he sees both certificate as complementary and the main task is to make sustainable oil palm a norm on the ground (E_14.09). According to another expert, both certificates are not satisfying. The expert's organization does not accept the ISPO certificate due to the fact that it is not strong enough. The requirements of the ISPO certificate are the same as what is required by the law. He added that by 2012, all oil palm companies were obligated to have the ISPO certificate. In fact, at the end of 2012 just three out of over 2000 oil palm companies had the ISPO certificate which proves that all other companies do not follow the law. The problem is the government does not punish oil palm companies (E_16.09). The organization accepts RSPO because it has a stronger standard but is blamed to be too weak. For instance, the RSPO is always searching for solutions and never gives sanctions to the companies (E_16.09).

According to the opinion of another expert, the existence of ISPO proves that there is a change because ISPO is a direct response to the RSPO certificate. Since RSPO had the power to create a better atmosphere within the stakeholder systems and allows joint projects to reach sustainable palm oil, the chance is given by the ISPO too (E_27.06).

Following experts, as well as the opinion of several independent smallholders, the companies that are located close to the village do have an important position within the question about who should be responsible. One expert argued that oil palm companies are important because they are on the ground and they provide knowledge, resources and access to local communities. Thus, the government needs to collaborate with the private sector to reach their targets (E_14.09). In addition, independent smallholders do not have any formal relationship to the company and therefore, do not get much support from the company with regard to the certification process. Therefore, the government has to provide assistance for the independent smallholders to get certified (E_16.09).

4.3.4 Perception about sustainability oil palm management

Since the topic of sustainability within the oil palm production is rather critical, this chapter will focus less on the regulation instruments and more on the sustainability factor of oil palm, by looking at the three pillars of sustainability. Thus, to determine whether there is a discussion on the micro level, this would indicate a sustainable transformation.

Social impact

According experts, one of the main reasons for smallholders to invest in oil palm plantations and adapt to sustainable practices is their subsequently improved livelihood. They want to support their family, send their children to good schools or buy proper clothes. If they understand that sustainable practice can help them to generate a good future, not only for their children but also for the next generations, they will be motivated to do it. For instance, by trying to buy good seed material and not only the cheap kind, due to it affecting their relative's future (E_14.09). Since oil palm companies came to the village, Merlung developed really quickly. Now they have schools and less criminality than in the past and one smallholder explained that because of the oil palm, all 4 of his children could get an education (Nr. 6_m).

Another important impact on the village development is the main road that was built to connect different parts of Sumatra with each other (Nr. 7_ nm_fg). Merlung also got several schools and a health care facility within the last years. According to VA, the oil palm does not have a direct impact on the village due to the fact that oil palm smallholders do not pay any taxes, which is acceptable as long as people have an occupation (VA_26.08). In addition, there is a regulation that people that open a new business should pay taxes but the VA did not care as long people have a job as they can pay tax later (VA_26.08).

Another issue that was found during interviews with smallholders, as well as experts and village authorities, was that when it comes to the management of oil palm plantations people distinguish between

migrant and non-migrant smallholders. For instance, one VA said that to make an organization such as a farmer group work, the majority must be migrants because a lot of the non-migrants are Malay ethnic and they do not like organizations or new projects. The VA continued by saying that non-migrants are really hard to get, they are not active and hard to regulate. For migrants, they are already used to being ruled by the government (VA_26.08). In addition, smallholders and experts agreed that local people do have another mindset and therefore other priorities. Hence, they sell their plantation when they need money (Nr. 3_ m_fg/E_14.09). According to one smallholder's view, non-migrants are lazy and therefore do not manage their plantation well, so they cannot save the yield and sell the plantation when they need money to pay for education fees or a wedding. Therefore, in the future non migrants will not be the owner of the plantations but will be the workers on the plantations. Although more non-migrants than migrant people still live in Merlung, the majority of plantations are owned by migrants already (Nr. 5_ nm_fg /Nr. 3_ m_fg).

Another conflict that was perceived with regard to companies was where a company took land that was owned by the community, calling it *ole ole land*. After some protest, they agreed to give each person who protested 0,8 ha planted plantation as compensation. Experts give other examples of problems that occur with regard to companies' relationships to smallholders. According to one expert, companies knowingly donate plantations to smallholders which are hard to manage or which are located on protected land. Companies feel that they are not in the wrong because although the land may be hard to manage, they are still giving smallholders an income possibility (E_16.09).

Economic impact

Nearly all interviewed independent smallholders have another occupation and use oil palm plantation as a side occupation. The majority of them were government employees as teachers in school. Some worked for an agro-forestry company or had their own shops or offered repairmen services. Government employees said that the monthly salary is not high, therefore, they need the plantation to add to their income. Some smallholders said that before they became an oil palm smallholder and moved to Merlung, they were poor (Nr. 4_ m_fg). Moreover, smallholders said that due to the oil palm plantation they could afford to build a house and have a regular income (Nr. 2_ m_fg/Nr. 1_nm_fg).

Next to the argument that the oil palm plantation creates a stable livelihood, smallholders said that it is also very expensive to manage a plantation. Per the opinion of one smallholder, people cannot depend on only oil palm because they need another source of income due to the high management costs. The

smallholder added that oil palm is something tailored to those who have a middle and higher income and that the poor people are going to stay poor (Nr. 5_ nm_fg).

Environmental impact

The area surrounding the villages showed that the plantations harm the environment and results showed that independent smallholders care about environment. Two smallholders said that it is good to keep the environment in a viable condition and the certification shows that the world cares about looking after the environment (Nr. 24_m/Nr. 14_m). Within the group discussion, one farmer said that it is good that the government prohibits people from opening land like they want to because of the environment's sake (GD_05.09). When asking about future challenges, one smallholder said he is worried about the impact of sawit on the environment. His challenge for the future is the question of how he can convince other smallholders not to burn the land and how he can convince people to stop hunting wild animals (Nr. 7_ nm_fg). Moreover, another smallholder said that the sustainable management and the certification are good because "it can save the environment. There is no air pollution and that prevents global warming and keeps the existence of wild animals" (Nr. 24_m).

On the contrary, when asking a VA about the land use in Merlung, the VA said next to the village there is 35 km^2 which consists out of 20 km^2 oil palm plantations, 10 km^2 rubber plantations and 5 km^2 productive land which is not used. When asked whether there is forest, the VA answered that some of the 5 km^2 could be forest (VA_26.08). In addition to this, while asked whether there is still land available, the VA said there will always be plantations available, as "Sometimes people sell their land for their own need (for marriage of their children or education fees) and so there is always an area of empty land" (VA_26.08).

Independent smallholders discuss about sustainable management practices. Certain topics were discussed more than others, for instance how smallholders will deal with the prohibition of use of fire to clean the plantations. Bulldozers were considered to be too expensive and despite this, one smallholder said that a bulldozer will compact the soil so that they cannot use it anymore (Nr. 5_nm_fg /Nr. 1_nm_fg). Independent smallholders are of different opinions when it comes to the use of pesticides. Nearly all of them were aware that pesticides are not good for the environment yet some used it anyway because they do not have time to cut the grass on their own or the money to pay someone to do so (Nr. 3_ m_fg). Other smallholders explained that if they use pesticides, the soil gets dry and then they need more fertilizer. With grass on the plantation it is not the case (Nr. 4_ m_fg). Another smallholder said that he does not cut all the grass on purpose because some grass prevents the insects from destroying the palms. Therefore, he

does not use pesticides at all (Nr. 1_nm_fg). Another topic that was mentioned is the topic of organic fertilizer which is considered to be positive from the smallholders, especially in improving the condition of the soil (Nr. 12_m). A few smallholders talked about the possibility of getting a cow farm on the plantation, so that they can sell the cows for meat production and their excrements as organic fertilizer (Nr. 14_m/Nr. 10_ nm_fg / Nr. 7_ nm_fg /Nr. 5_ nm_fg). Another farmer said that he would like to add more natural fertilizer, such as the leftovers from the milling process, however it is too expensive to pick it up from the company (Nr. 6_m). Another smallholder had goats to produce organic fertilizer because the price for the other fertilizer was rising and according the smallholder, sometimes farmer shop sells fake fertilizer (Nr. 25_m). Moreover, one smallholder explained that chemical fertilizer vanishes quickly in the ground but organic lasts longer, therefore he uses chicken feaces once a year (Nr. 3_ m_fg).

Furthermore, people recognize that since oil palm plantations expanded the natural environment changed. For instance, one smallholder said that next to his plantation is a biotope but because the plantation absorbs all the water, soon the biotope will not have water anymore (Nr. 11_ nm_fg). Some other farmers are worried that the soil will get worse and the oil palms will lack in water (Nr. 12_m/Nr. 4_ m_fg / Nr. 20_m_fg /Nr. 14_m). They are afraid that in the future longer dry seasons will occur (Nr. 11_ nm_fg). Other smallholders said that since oil palm plantations are everywhere the weather will subsequently get hotter (Nr. 23_m/Nr. 4_ m_fg).

The interviewed smallholders recognize that there is a change in the environmental system since the companies began to grow oil palms in Merlung. For instance, the quality of the water has been decreasing. In response the company built bathrooms that people can use, instead of using the river (Nr. 16__nm_fg). One smallholder explained that he is worried about the environmental impact of sawit, due to a case where a company threw leftovers in the river causing skin problems and fish dieback. People protested against this case in 2007, which led to the company ceasing to throw the rubbish in the river and instead burying it (Nr. 5_ nm_fg).

5 Discussion I: Adaption strategies towards certification schemes?

This chapter shall summarise and discuss the results of the case study that were described in chapter 4. An analytical approach is used to determine whether results prove that smallholders use or accept certification schemes for risk reduction. Before answering this question, it is important to focus on certain points. First, the most certain challenges for independent smallholders need to be analyzed. Hence, a deeper look into the institutional background of independent smallholders is needed to gain a better understanding of how adaption strategies are implemented and developed on the micro scale. Second, to reach the abstract topic of certification, it is considered important to analyze how regulation instruments are perceived in general. Finally, chapter 5.3 tries to answer the second research question of whether there is a need for risk reduction strategies which certification schemes provide.

5.1 The context of smallholders' adaption strategies

This thesis has emphasized more than once the importance of looking at the context of independent smallholders, to understand the occurrence of obstacles regarding topics of global governance and therefore, sustainable transformation. This requires looking at the context to identify the institutional logic of independent smallholders and what stakeholders they recognize as important, with regards to their businesses and what other forces they perceive. This is considered important due to the fact that adaption, as well as institutional theory, argue that the risk reduction option requires adequate perceived economic or symbolic value (Martin et al. 2015).

As outlined in chapter 4.1.1 and summarised in figure 17, it became obvious that independent smallholders perceive those stakeholders who they are related to or at least work closely together with as important. Figure 17 illustrates that these stakeholders have the most flows regarding support, commands and money. Thus, stakeholders that try to rule in terms of implementing regulation instruments are not perceived as important at all, such as companies, the government or the RSPO. This finding defers considerably from experts' opinion about important actors, who named the local oil palm companies as the most important actor. Next to this, the government, as well as certification institutions, are seen as important. The middleman, the farmers group, experts and smallholders' perception is almost the same.

By focusing on figure 17, it can be assumed that information on its own is not enough to start an adaption process. It needs to be delivered to the right person at the right time and in an appropriate way. The

connection to other stakeholders, their reputation and trustworthiness are all important. Therefore, case study results support recent literature that claims that implementing policies does not work in a linear top down approach (Moran 2010; Köhne 2014). Moreover, it can be assumed that independent smallholders perceive support as the most important flow, since this was most often recognized and drawn by independent smallholders. This needs to be further explained for family support, as it was mentioned in terms of emotional support such as the motivation to buy a plantation, whereas support of the farmers group and other farmers refers to information about how to manage the plantation (cf. chapter 4.1.1).

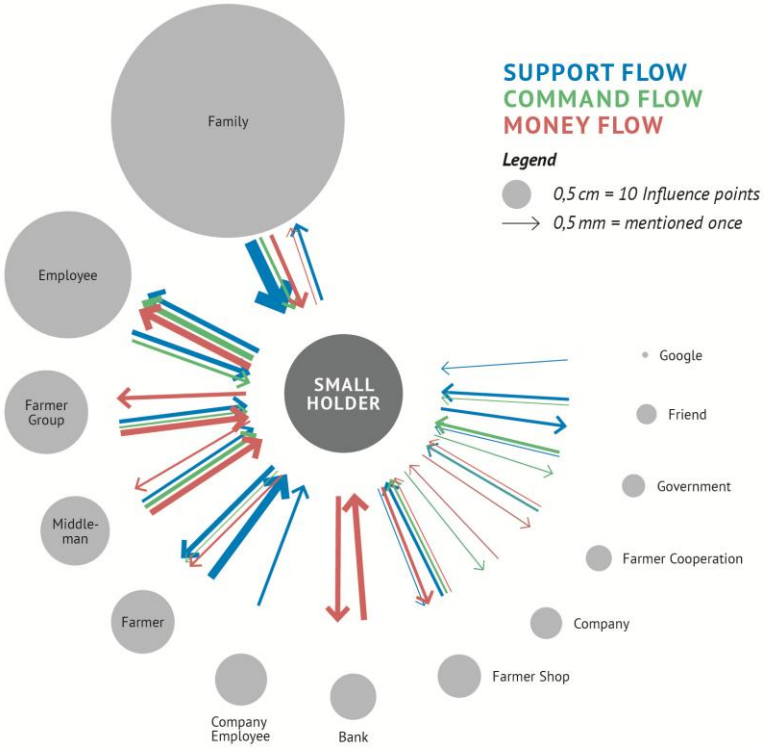

Figure 17: *Summary of social-network-analysis (own illustration, for a detailed view see figures 12-14)*

Again, figure 17 demonstrated that information flows do not follow the top down approach from the macro scale to the micro scale of the palm oil supply chain. Less perceived information came from village authorities or even the national government and other institutions. Remarkably, previous research has demonstrated that the influence of the local government is rather important to enhance smallholders' bargaining power towards the companies and therefore, support sustainable transformation on the micro scale (Rist et al. 2010).

Money seems to be an important topic for independent smallholders. Nearly every smallholder mentioned that managing oil palm is expensive and some even said that only rich people can afford to manage oil palms (cf. chapter 4.2.2_management costs). In contrast, commands which refer to standards and criteria which they feel responsible to follow are not named very often, apart from commands which smallholders give to their employees.

On the one hand, although the farmers group has only been introduced recently, it has become one of the most important stakeholders for independent smallholders. This shows that progress is possible and smallholders are able to adapt or include new institutions. On the other hand, many independent smallholders still rely on the middleman or even the farmers' cooperation with plasma farmers. Interestingly, independent smallholders often mentioned that they would like to be part of the farmers group. Reasons why they are not a part of the group already refer mostly to responsibilities towards other stakeholders or the location of the plantations (cf. 4.1.1_farmer group).

Regarding the conceptual frame of this thesis, adaption strategies can be implemented to meet internal as well as external forces. Internal forces of independent smallholders mean looking at households' micro adaption strategies, which was not the topic of this thesis as it goes far beyond the impact of smallholders' oil palm businesses. Results show that the motivation to grow oil palms, as outlined in chapter 4.1.3, is often as insurance for people's livelihoods. Hence, becoming independent smallholders can be seen as an adaption strategy. Looking at the biography of smallholders selling and buying activity of land, most smallholders said that they sold their land because they needed money. Therefore, independent smallholders use the oil palm business to diversify their income possibilities and decrease vulnerability to external shocks. In fact, nearly all smallholders had different ideas about how they could improve their income situation in the future. Buying another plantation was mentioned, as well as opening another business, so that their household depends less on oil palm. It can be assumed that due to the perceived relevance of the family, internal forces are weighted higher than external forces. For instance, one farmer reported "I have two concerns when talking about money. First, my daughter and second the plantation" (Nr. 17_nm). Hence, perceived risk with regards to the family will be reduced first, while risk adoption possibilities which reduce risk to their oil palm plantations may be less important.

However, by asking independent smallholders about their perceived challenges with regards to their oil palm plantation, external forces were named. To set these results in a wider frame, the conceptual frame as outlined in chapter 2.2 will be applied. This is considered necessary, as results indicated that perceived challenges of independent smallholders are linked to each other as well as to named stakeholders.

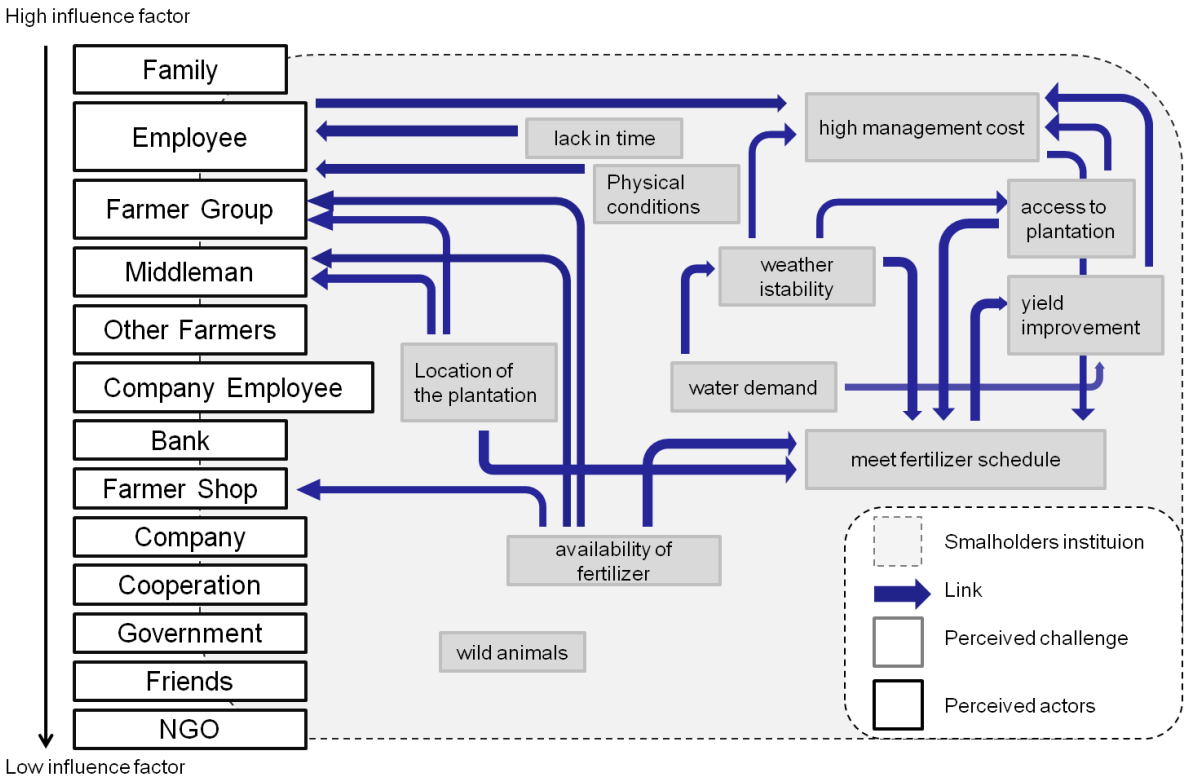

Figure 18: *Institutional background of independent smallholders (own illustration)*

Figure 18 provides an overview about smallholders' institutions, which is drawn in light gray such as in the conceptual frame in chapter 2.2. The construction relies on statements given within interviews with independent smallholders, net-mapping and group discussion. On the left side within black framed boxes, actors are named that have an impact on smallholder's decision making processes, with regards to their oil palm management. Actors that receive a lot of influence points are on top and those with the least influence points are on the bottom. A detailed rating scale was displayed in figure 18. Within the gray boxes, challenges were named as explained in chapter 4.2.2. Blue arrows show inter-linkages between perceived challenges, as well as between perceived challenges and actors. This aids the understanding of the importance of some actors, as explained below.

For instance, "employees" is named as the second most important stakeholder, since every independent smallholder has another occupation. In fact, some of the independent smallholders never work on their plantation. Therefore, without employees they cannot manage their plantation at all which explains their importance. Next to smallholders' lack of time to manage their plantation, another challenge they perceive is in terms of old plantations. They said it is exhausting cutting branches or harvesting FFB, which again requires employees due to the fact that some smallholders see themselves as too old to do

these jobs. Thus, hiring labour will increase management costs, which is named as most recent challenge of independent smallholders.

Another chain of causality that is given by independent smallholders starts with the challenge to meet the fertilizer schedule, for several reasons. Firstly, it is perceived to be linked to weather instability. Interviewed smallholders reported that during the dry season, the soil is too hard to absorb the fertilizer. Moreover, smallholders see the high demand of water as a challenge which is perceived to impact the yield. In addition, if it is the rainy season, strong rain events will wash away the fertilizer before the soil can absorb it. Secondly, during rainy seasons, a lot of independent smallholders report that they cannot access their plantation due to bad road conditions, therefore they cannot fertilize. This connects the perceived challenge "weather instability" with the challenge "access to plantation", which is also linked to the challenge that smallholders cannot "meet their fertilizer schedule". This is perceived to be important to "increase yield" and therefore, another linkage to another challenge that is perceived by independent smallholders (cf. figure 18). Next to that, a third problem that supports the challenge to "meet the fertilizer schedule" is the availability of fertilizer and particularly the availability of subsidized fertilizer (cf. chapter 4.). Interviewed smallholders reported that they cannot get the fertilizer they need in the farmer shop. In addition, the farmer shop does not sell subsidized fertilizer. Some smallholders argued that they joined the farmer group for that purpose. Some other farmers said they buy fertilizer from the middleman but this is expensive. The challenge "location of plantation" refers to the fact that some plantations are located far away from the village. Therefore, farmers reported that they need employees which they can trust or more time to manage their plantations. One smallholder said that he sometimes does not fertilize regularly because he is too lazy to go to his remote plantation (Nr. 6_m). The location of the plantation has an impact on the possibility of whether smallholders can collect FFB together within the farmers group or if they need to pay a middleman to pick up the FFB. This is due to the fact that at the moment, the farmers group just collects within one area and its transaction cost would be too high if it was collecting within the whole area. This explains inter-linkages between "location of the plantation" to both middleman and farmers group. The importance of the farmers group relies among other reasons on the possibility to buy subsidized fertilizer and for some famers to join the FFB collection. For the middleman, besides buying fertilizer and arranging the transport of the FFB to the company, smallholders can get credit from the middleman, which explains influence points. Employees, the farmers group, as well as the middleman are all necessary for independent smallholders to manage oil palm in general. When talking about high management cost, smallholders were referring mostly to the fact that due to increasing costs for fertilizer and employee fees, as well as the decreasing cost for FFB, the winning range is shrinking (cf. chapter 4.2.2).

To evaluate challenges that were named by independent smallholders with regards to adaption strategies, stages of adaption as outlined in chapter 2.2.2 can be applied. Referring to these stages, it can be said that independent smallholders are aware of external forces such as economic development or weather instability, which fulfill the requirements of the stage one of awareness. Stage two is fulfilled because independent smallholders already realize that these forces can harm them, due to the fact that many farmers reported that they cannot afford to buy fertilizer because of external forces. In addition, within interviews and group discussions, it became clear that public debate about the named challenges occur, which shows that stage three of the adaption process is reached. Stage four and five are more complex to evaluate, since they ask for adoption of new practices. It remains unknown whether independent smallholders experiment with different practices before they choose one. It is assumed that this depends on the timeline of an adaption strategy, whether the smallholder has a few months or years to find a better opportunity and on resources that are available.

One example that could be identified within the case study demonstrates that due to high fertilizer cost, independent smallholders try to find other sources of fertilizer. For instance, joining the farmers group to get an additional source for fertilizer. Moreover, farmers plan to have a cattle farm on their plantation or own goats for their faeces. Another farmer bought FFB leftovers from the companies and used it as fertilizer (cf. chapter 4.2.2). Therefore, despite farmers choosing different adaption strategies, there was no farmer who reported that he had tried different things and chose the best option, as required by theory of the fourth stage of the adaption process.

In addition, while the theory of adaption argues that perceived challenges lead to adaption strategies and therefore, a change in behaviour, results of the case study illustrate that not every challenge is perceived as a force to act on by independent smallholders. Hence, not every risk is perceived as adaptable. Three chains of causality are given that support this view.

First, within the interviews, one of the greatest challenges smallholders had to face turned out to be weather instability. Therefore, within the group discussion weather instability was chosen for the grid analysis and smallholders were asked to pick their most urgent future challenge. By asking about the reason of choice, it turned out that less independent farmers picked weather instability due to the fact that it was considered as a natural thing where they cannot do something about it. Thus, smallholders argued they do not have to fear something they cannot change (GD_05.09).

Second, during the group discussion smallholders argued that it is normal that the employment fee went up, due to inflation. They assumed that this is a course of the economic development of the country and therefore, cannot be changed.

Third, as seen in figure 18, most of the perceived challenges are linked to each other after smallholders' perceptions. Currently, independent smallholders are affected by the dry period which occurred in 2015 and fire that affects the harvest quantity. They call it a disease, a *trek*. According to independent smallholder statements, due to this disease they suffer from crop loss of 50 – 70%. Thus, they cannot afford to buy fertilizer. This, however, is leading to less FFB which makes the situation worse. The point that the suitable fertilizer sometimes is not available or that during rainy seasons smallholders cannot enter their plantation, supports this view. In fact, this vicious circle described by independent smallholders creates a feeling of powerlessness. Independent smallholders hope that the government will pay more subsidies or a better price for the FFB on the one hand. On the other hand, they wish that their palm oil "heals" from the *trek* disease. Both options, however, do not involve any active adoption towards a new practice.

This concept in figure 18 is not a fixed picture but a dynamic process. Once a stakeholder is recognized by a smallholder, it does not necessary mean this stakeholder has an impact on the way a smallholder grows oil palm. Figure 17 shows that new actors, such as the farmers group, can quickly rise in importance while others remain of less importance, such as the governance. This can indicate a change within the stakeholder system, where stakeholders such as the middleman will lose their influence in the future. Another scenario could be that there is an adaption strategy but if some issues occur, stakeholder constellation could change and therefore adaption strategies can change too. While some scientists suggest that once a famer adopts for instance a conservation practice, he will stick with it, this thesis claims that this statement cannot be true (Prager, Posthumus 2010).

Since smallholders' businesses are not stable, their management practices will change if they are more convinced by a different strategy, which requires the adoption of another practice. These do not have to be a more sustainable alternative, as it would be defined after RSPO's perspective. For instance, one farmer said that he convinced his parents in law to use pesticides because he was worried that it would be too exhausting cutting all the grass by hand. Another strategy that could be identified was that some independent smallholders reported that they sold their plantation where oil palm was already planted by someone else and bought empty land on purpose, to ensure that the seed they planted is of good quality.

Hence, they bought certified seed to reduce uncertainty. This, however, might lead to further deforestation rather than saving the remaining forest (Appendix).

5.3 The impact of external regulation instruments

Becoming an adoption opportunity requires an internalization process to become institutional (Pesqueira, Glasbergen 2013). Subsequently, it is considered to be of interest how regulations are perceived or constructed by independent smallholders in Indonesia, as well as whether independent smallholders perceive these policies as an attempt to reduce risk (Smit, Skinner 2002).

Figure 19 summarises regulation instruments and how they are constructed by independent smallholders, while a detailed description about independent smallholders' statements is given in chapter 4. This will give a detailed view into the question of whether independent smallholders can be governed in general, as questioned by experts (E_08.09, E_14.09, E_16.09).

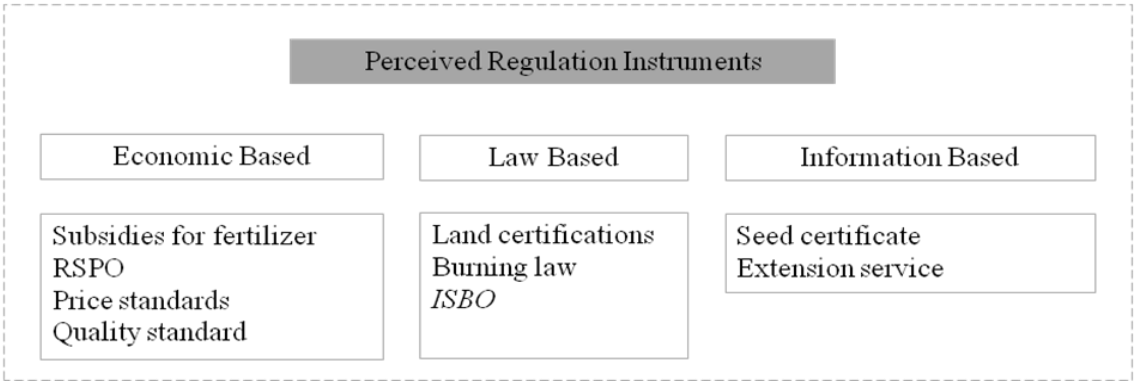

Figure 19: *Perceived regulation instruments by independent smallholder (own illustration)*

Economic based instruments

The following instruments are categorized as economic instruments, due to the fact that they are all perceived as support for smallholders to do business. For instance, providing subsidies for fertilizer gives an incentive for smallholders to fertilize. Moreover, it will support those smallholders that cannot afford to buy fertilizer. The problem that the price of fertilizer has increased is being recognized by the government. Therefore, risk reduction is provided. In practice, the distribution of subsidized fertilizer seems to be a problem. Interviewed smallholders agreed that the amount of subsidized fertilizer is not enough and that they cannot buy it everywhere.

In the case of the price standard, independent smallholders are not aware of whether a price standard exists or not. Most of them just know the price for FFB from the middleman. They wish to receive a price standard, in order to reduce uncertainties. Hence, it can be assumed that this would improve the possibility of long term instead of short term planning, which was considered to be a problem by experts (E_27.06, E_08.09).

Command flows that were perceived by independent smallholders were mostly linked to the quality standard the middleman or the farmers group asked for (cf. figures 17). Independent smallholders consider it as important that all smallholders keep a certain quality standard of their FFB, due to the fact that they depend on joined collection of FFB and will get less money from the company if quality requirements are not met. Perception about the RSPO will be explained in more detail in chapter 5.3.

Law based instruments

It remains unknown why independent smallholders are aware of some regulations but have never heard about others, such as the ISPO certification. For instance, the fact that most of the interviewed smallholders knew about a law that prohibits clearing their land by burning proves that the institutional logic of independent smallholders can be influenced by regulation instruments. It can be assumed that they accept the existence of the law because they still suffer from the drought and fire brought about in 2015. Therefore, stage three of the adaption process is reached which means people discuss the issues and alternatives. These alternatives, however, are hard to realize due to the fact that they lack the capital to afford a bulldozer (cf. 4. 2). Thus, the government should realize this point and support smallholders with the adoption stage. In terms of the land certificate, according to independent smallholders' statements, the government introduced a programme to make it easier for smallholders to apply for the official land certificate. In this example, obstacles have been analyzed by the government and support is applied where it is needed.

Information based instruments

As already explained in chapter 2.1, the delivery of information is a powerful instrument. According to Smit & Skinner (2002), providing information about climate change and potential options will promote adaption in general. Hence, the government shall support knowledge transfer into rural areas by providing information such as extension services (McDermott 2013; Bandiera, Rasul 2006). Experts, as well as independent smallholders, agree that the government puts too little emphasis on providing extension services. A lot of interviewed smallholders never joined training. Some of them said there has never been training and some just did not feel they needed training. It can be assumed that they never thought about

other sources of knowledge, as they were used to learning everything through family and friends. Within this network, they do not perceive that they need to adapt to other sources (cf. 4.1.1). They learned how to manage oil palm from their friends and family, which again explains the importance of the family in figure 17.

5.3 Certification instruments for risk reduction?

As explained within chapter 2.1, the concept of certification to gain sustainable transformation is rather complex. The approach of this thesis is to identify whether certification targets the interest of independent smallholders. Hence, it aims to answer whether independent smallholders understand certifications as an adaption strategy, to deal with external and internal forces. Internal forces are not analyzed in detail within the case study, the focus of this chapter instead lies on external forces.

In this thesis, external forces are distinguished by natural forces and constructed forces. Natural forces are forces that occur through weather instability and constructed forces are forces that occur through the global market, such as management costs and availability of fertilizer. In addition, to find a detailed answer another distinction will be made between reactive adaption and proactive adaption. Reactive adaption means whether certification schemes are seen as a solution for current perceived challenges. Proactive adaption refers to the question of whether certification schemes help prepare for challenges that are recognized in the future by independent smallholders. To structure this chapter, the following questions will be answered by comparing results of the case study with requirements of the RSPO certificate:

Are certifications an answer to natural forces?

One of the main challenges independent smallholders named were weather instabilities, due to the fact that smallholders cannot manage their oil palm plantation properly during rainy seasons, as well as during drought, as explained in chapter 5.1. After the RSPO requirement, independent smallholders should fertilize according to a fixed schedule and maintain documents about the used fertilizer and the amount of FFB per harvest (RSPO 2015). In fact, most smallholders that were in the process of certification knew that they should document these things but no one did it. It can be assumed that they do not understand the purpose of it, due to the fact that weather instability does not allow fertilizing according to a schedule anyway. Thus, after the stages of adaption, smallholders know that weather instability and a lack of fertilizer on the plantation is harmful, however, they do not see a solution for this problem in the certification approach.

Furthermore, smallholders named wild animal as a problem, especially on new planted areas where wild pigs or monkeys often destroy the seedlings. While protecting high conservation value (HCV) areas and species is a main issue of the RSPO requirements, those values seem to be out of the institutional logic of many independent smallholders (RSPO 2015). According to the farmer's group leader, one of his challenges is to convince the village people not to hunt endangered species (Nr. 18_m_fg). In addition to this, one village authority named the remaining forest as a leftover that can be used to build oil palm plantations, which shows another interpretation of resources (VA_26.08).

Another topic that is named by RSPO and independent smallholders is the use of pesticides. According to the RSPO requirements, it shall be minimized if possible and this opinion was shared by some smallholders. They argued that soil conditions are better if a light grass-cover remains on the plantation. In contrast, some argued that due to their other occupation, they do not have enough time to cut the grass so they have to use pesticides (cf. chapter 4.2.2_management costs) (Partzsch 2011; RSPO 2015).
Therefore, standards and criteria that are considered as important by the RSPO rarely fit within the institutional background of independent smallholders. Although it does not seem to be institutionalized yet, some smallholders know about the fact that pesticides are not good for their plantations and that endangered species need to be protected. Some even know that they should build terraces in their hillside plantation to prevent the fertilizer from being washed away by the rain. Some said that they do not have the money for it, while one farmer explained that he does not mind due to the fact that the palms in the valley that then gets more fertilizer is also his palms (Nr. 3_nm_fg).

Can certifications reduce risk with regards to constructed forces?

Independent smallholders named increasing management costs on the one hand and the decreasing price of FFB on the other hand, as current constructed forces. Within this field case study, results show that independent smallholders wish to get more support in terms of a fixed standard price for FFB and more subsidies for fertilizer by the government. Also, they argued that it is normal that management costs rise in terms of inflation and they mentioned that oil palm smallholders need to be rich to manage their plantations properly. Two examples which could be identified were independent smallholders adapted to their situation. First, smallholders started to produce their own organic fertilizer by buying goats or cattle. A lot of farmers were interested in a programme that supports farmers who wish to start a cattle farm on the plantation.

Another example is that smallholders try to improve their livelihood by selling plantations with old palms or palms that may be of bad quality and then buy new plantations with certified seeds (cf. chapter 4.1.2). The problem seems to be the traceability of the seed. Thus, by planting a plantation on their own, they can reduce uncertainties. Another point regarding the seed is that many different species exist. Some are considered to be of better quality but their FFB weight is less and this is what affects the price (Nr. 18_m_fg). Smallholders mentioned that they are afraid that companies will reject certain oil palm species or even the palm species in the future, which happened in the past with coconut (cf. 4.2.3). One smallholder sold his plantation and bought plasma land, then opened a shop for daily need. For his plasma plantation, he employed people to manage it and said that the farmer cooperation is more organized than the farmers group and he can concentrate on his other business, while other people manage his plantation (Nr. 8_nm_fg).

These statements show that independent smallholders do not perceive any possibility to improve their situation through certification schemes. Case study results show that some smallholders found other income sources, apart from oil palm, to be less vulnerable to the palm oil business, which can also be seen as adaption strategies. Findings of the case study showed that in addition, a lot of smallholders had plans of having another business in the future, while some want to buy another plantation. Although experts, as well as literature, claim that RSPO shall bring a price premium, in reality this is seen to be critical by independent smallholders (GD_05.09).

Are certifications perceived as reactive or/and proactive instruments?

Initially, certification schemes were enrolled to manage urgent problems, such as deforestation or social inequity (Partzsch 2011). Hence, to internalize public goods and current exploration, this is a rather reactive attempt (cf. chapter 2.1). As described above, in turns out that current perceived challenges are rarely addressed by the RSPO standards and criteria, neither is RSPO perceived to be a solution to reduce these challenges. Therefore, focusing on the reactive approach of certification schemes it is difficult to find a "common language" of the ISPO and RPSO constructor and independent smallholders.

The case study demonstrates that theory needs to distinguish between risk that is currently recognized and external forces that may be existential in the future, according to smallholders' opinion. As noticed in the results in figure 16, independent smallholders are more worried about external forces regarding the global trade market, than natural forces such as another drought. Within the group discussion, nearly all smallholders agreed that a rising number of standards and requirements, as well as the decreasing price of FFB, are the main challenges in the future. Interestingly, these external forces were not directly mentioned within current challenges they recognize. Furthermore, this is the key motivation of

independent smallholders to join RSPO. They hope that with the certificate, their palm oil is going to be recognized by the world (cf. chapter 4.3, GD_05.09). Hence, these findings assume that the main motivation to join the RSPO by independent smallholders is because they want to be prepared for the future. In other words, certification schemes are seen as a form of adaption strategy to reduce uncertainties by independent smallholders, which supports the call of Zilberman et al. (2012). In this paper it was suggested that research about adaption shall focus not only on the option to adopt, however, also on how individuals deal with information and uncertainties.

Another example that can be associated with proactive adaption is the fact that all independent smallholders accepted the fact that they need a land certificate. Although not every independent smallholder had an official land certificate, they were all within the application process. For the RSPO, this is a necessary requirement to join the process. Another requirement is to be a member of a farmers group. This, however, is not the main reasons for farmers to join the group. They see advantages in terms of fertilizer distribution, more traceable trade with the company, extension services and a supportive group of people to help increase bargaining power (E_08.09)(cf. chapter 4.1.1). Thus, both actions can be connected to proactive adaption in case of joining the certification process, as well as to put themselves in a better position to reduce external forces. However, this example shows the importance of stakeholders such as small NGOs. In this case, the foundation of a farmers group was initiated by an NGO and the national government that took care of the land certification management. Thus, without this stakeholder, certification implementation by RSPO would not be possible.

It remains difficult to say whether recognized adaption strategies of independent smallholder institutions can be compared with those of institutions on other scales. Especially in the case of certification, full adaption would mean that independent smallholders adopt every practice the RSPO framework asks for. Previous research has indicated that the approach to certify smallholders is difficult, if not impossible (Rametsteinera, Simula 2003). This case study, as well as other recent studies, disagrees with this (Rist et al. 2010; Seegräf et al. 2010). In fact, the purpose of certification is constructed differently within the micro scale and therefore, adaption strategy follows other rules.

Finally, another distinction is required, referring to aggregate adoption vs. individual adoption. In terms of aggregate adoption, where the number of people count that pick up a new innovation, it can be said that the certification approach is used as an adaption strategy to prepare for external forces in the future. In terms of individual adoption, where the extent of adoption counts, it remains unsure if it is possible to judge. The range of smallholders' management practices is big. Some smallholders are aware of every

detail and try to implement these practices. Some are aware but do not change their behaviour and some are in the certification process but are not aware of it at all. In terms of individuals adoption, some examples do adopt to new practices but in most cases it would be hard to measure the extent of adoption (Feder et al 1985 cited by Zilberman et al. 2012). Therefore, more research would be required.

6 Discussion II: Legitimacy of certification schemes

Since this thesis argues from a micro scale perspective the findings need to be evaluated within this context and, therefore, embedded in a wider framework. This is considered important as it provides an insight into the adaption strategies of independent smallholders, and raises questions regarding the term "sustainable palm oil certification" from an ethical perspective. This thesis focuses on processes, therefore, it is important to use the knowledge gained while evaluating the process of independent smallholders gaining certificates to reflect on the whole system.

Where are we on the process towards sustainable transformation?

It will be discussed whether the use of certification schemes as instruments for global governance is legitimate by distinguishing between input legitimacy and output legitimacy. This is followed by a critical assessment of the question whether oil palm certification has the right to claim to be sustainable yet.

Within the literature legitimacy is understood as "shared expectation among actors in an arrangement of asymmetric power" (Schmitter 2001:4 cited in Partzsch 2011). This includes the voluntary acceptance of those who rule, which means legitimacy creates a right to obligate rules (Partzsch 2011). When discussing the legitimacy of MBIs and, consequently, certification schemes, recent literature distinguishes between input and output legitimacy. While input legitimacy ask questions about the appropriation of certification schemes for global governance and its acceptability, output legitimacy outlines the effectiveness of certification schemes (Vatn 2015).

Point 1: Input legitimacy

Due to the liberalization of the world, it is often private governance that has decision-making power. This could either be businesses, NGOs, or both. The world trade system has become a coordinating mechanism, not only to cause environmental conflicts, but to solve them as explained in chapter 2.1 (Pesqueira, Glasbergen 2013). This, however, turned out to be a problem in terms of input legitimacy

since private governance stakeholders are not liable to any democratic control. Most of the time they are selected by authorities rather than elected by a representative stakeholder group. Therefore, when analyzing private governance another proof of legitimacy is required (Majone 1998; Cutler 2007). According to Nanz and Steffek (2005) two kinds of legitimacy are used in practice. First, a process of inclusion of all stakeholders, as it is argued that the participation of all stakeholders leads to the best solution within the decision making process. Second, launch control and an accountability mechanism, as this will lead to traceability and trustworthiness. Both ways shall represent democratic norms which are seen as fundamental to legitimate global governance (Cutler 2007; Partzsch 2011). Nonetheless, the approach to simulate input legitimacy cannot be fully reached. It might be enough to accept certification schemes, but it is important that these certification schemes stay voluntary. Especially because researchers have found that certification schemes, in general, lack in full participation and strengthen retail power, while increasing smallholder discrimination and marginalization (Bingen, Busch 2006; Partzsch 2011).

In terms of RSPO this means room for improvement exists. Interviewed experts, as well as recent research findings, agree that RSPOs lack in participation in the global south (E_16.09) (Partzsch 2011). Although chapter 2.3.3 shows that RSPO is a multi-stakeholder-approach throughout the vertical dimension of the palm oil supply chain, the micro scale and, therefore, stakeholders that grow oil palms are underrepresented. This supports the findings of Oosterveer (2014), who claimed that the horizontal dynamic is often ignored by private policy makers. He argued that, due to their lack in power, stakeholders on the micro scale, which includes smallholders as well as small NGOs, do not take the state of national and local governments, and also research findings, into consideration when implementing sustainable policies. RSPO tried to close this gap by implementing a fund in support of smallholder group certification in 2012, and realized the importance of NGOs such as Setara (cf. E_14.09). However, the system is still lacking in input legitimacy. It would require starting a new policy-making process, rather than attempting to make the standard and criteria approach suitable. The current system does not allow for smallholders to be active within the policy circle. To recap, the case study results indicated that this leads to inefficient implementation. In addition, it can be assumed that it caused experts to blame the smallholders "mindset" (E_08.09, E_16.09).

Hence, the case study shows that this top down approach requires improvement as it does not suit reality. Moreover, the case study shows that smallholders do not have the necessary resources to fulfill RSPO requirements, such as using bulldozers to clean the plantation, or pay for compensation. In addition, they often do not know that their plantation is on protected land, or land that got changed from forest after

2005, which would exclude them from the certification process. Other results show that they cannot fertilize after a schedule such as required by RSPO, due to natural circumstances or high management cost (cf. chapter 4.2.2). Therefore, RSPO is not appropriate for oil palm smallholders as required for input legitimacy, and needs to be changed to find a best solution for every stakeholder.

When looking at accountability and control of RSPO, according Partzsch (2011), the existence of a grievance panel provides partial fulfillment. However, the case study showed that this panel lacks in power when compared to huge palm oil companies. According to expert opinion, and previous research, there is no enforcement of punishment within the RSPO framework for companies in reality (E_16.09/cf. chapter 4.1.1_companies) (Obidzinski et al. 2012).

The idea of input legitimacy, including actions of the RSPO panel, have to be accepted voluntarily in practice, which turns out to be non realistic due to several reasons. While it is not yet clear how the role of private actors influence traditional agricultural policies, it is certain that companies who are working within the global agricultural sector are affected by consumers' safety and quality worries and, therefore, implement more and more private standards and affect public food regulations by lobbying (McCluskey, Winfree 2010; Swinnen 2015). While agreements like the GATT or the WTO initially lead to trade without borders, and were initiated to empower developing countries, the fast development of non-tariff measures (NTMs) are seen as new protection strategies by some scientists. They are concerned that this can lead to the marginalization of smallholders in developing countries (Beghin et al. 2015). In fact, results from the group discussion show that independent smallholders fear stricter rules and more standards enforced by companies and government (see figure 16). They fear that their FFB are not going to be accepted in the future, which implies that they perceive pressure towards certification, rather than a voluntary motivation to join due to positive incentives such as price premiums or less management costs due to better practice (cf. chapter 4.3.1) (Partzsch 2011). Moreover, case study results indicate that independent smallholders do not feel directly influenced by the RSPO or ISPO (cf. figure). In addition, when asking one expert about the promotion of NGO in Europe to save wild animals in Sumatra, he argued that for his organization the Orang Utah is not important, they care about the people that are discriminated by oil palm companies, which brings up the point, again, that it is hard to talk about input legitimacy due to the asymmetries of interest of stakeholders (E_16.09).

Comparing input legitimacy between ISPO and RSPO, the ISPO certificate has some advantages, due to the fact that it is created by national actors. Therefore, they have the right to make it mandatory , which they did. The ISPO certificate, however, can be seen as a confession by the Indonesian government for

failing to enforce the law. According to expert opinion, the ISPO only contains standards that need to be obeyed by oil palm producers when accepting the national law (E_16.09). However, another advantage of ISPO is the decision to implement certification systems as legal instruments. This implies that the government does not need to implement economic incentives. However, case study results show, that in regard with the ISPO certificate, individual and/or company cost-benefit-assessments do not fear punishment by the government, and consequently do not follow requirements. Following Tylers (1990) argument, this means they do not accept the law. This can be seen as proof of a lack in communication and participation of the Indonesian government on the one hand, and, on the other hand, similar processes can be found within the early stages of other countries environmental politics. Hence the "cure" for environmental politics is acceptance, which will rise with public awareness. This requires interest from the media in regards to environmental topics and, therefore, societies interest (Jänicke et al. 2003). This shows that creating a certification from a top down approach is hard to implement, especially within a country where independent smallholders have other problems than reducing air pollution, which is the main purpose of ISPO (Suharto et al. 2015). Although the ISPO certification should be obligatory for all growers, in 2015 a new guideline excluded smallholders from this law. Within this case study, with one smallholder being an exception, nobody has ever heard about the ISPO certification (cf. chapter 4.3.3) (Suharto,R.,HuseinK.,Sartono,KusumadewiD.,DarussaminA.,Nedyasari,D.RiksantoD.,Hariyadi,Rahman A.,Uno,TomoyukiU.,GillespieP.,AriantoC.,PrasodjoR.É(Aurora et al. 2015:61).

Another point that needs to be discussed within the context of input legitimacy is the point that working with certification schemes implies pricing nature, and or social, issues and transferring them into something tradable, this is criticized by some researchers due to ethical reasons. Another argument is that through certification schemes public goods, such as nature or safety, can be seen as services for consumers. Hence, by putting a value on public goods protection it is no longer the certification scheme that tries to protect the issue, the issue becomes an instrument in itself. Additionally, when giving each consumer the choice to consume certified products, the environment is no longer a common good that needs to be protected in general, but an individual decision of individual rights. Another argument is that by pricing public goods it can be combined with economic growth which is a critical statement in the science literature, too (Vatn 2015, Escobar 2006).

It becomes even more complex when broadening this discussion to the global frame because asymmetries in power exist in terms of information, knowledge, and income. When looking at the problem from a legal instrument perspective it is not clear whether political processes are a better choice to promote social safety and environmental protection, because in times of global trade political stakeholders have different

opinions about what is worth being protected. Especially when the public do not accept the law as already discussed (Cashore 2006). Thus, it is no longer possible to split stakeholders that are involved within the market from each other. Traders, farmers, and political actors are influencing each other. According to Vatn (2015) trading, per se, is "to a large extent […] politically framed, even created (Vatn 2015)". But when there are too many stakeholders who are politically active it is hard to reach traceability. As seen in the case study, the RSPO certification seems to be a perfect example where traceability for independent smallholders is not given. This process is direct, since independent smallholders don't feel influenced by stakeholders of the global frame (cf. figure 12-14), and the government or RSPO stakeholders have trouble to reach traceability and acceptance on the micro scale. However, progress can be recognized as all experts refer to traceability within the market as one of the most important things (E_27.06, E_08.09, E_14.09, E_16.09).

Certification schemes may lead to a balanced trade system in a more sustainable sense but in reality using global governance is often seen as an approach to legalize the current system rather than an approach of sustainability transition which do not fit with the current system (Rametsteinera, Simula 2003). When looking at the certification scheme the imbalance became obvious. As already discussed, the RSPO is created using the top down approach. Producers, and especially smallholders, have less power and their exploitation is not directly solved by the imposition of social and environmental values (Klooster 2005). Since the outlined arguments claim that input legitimacy is not given, other scientists found that certification schemes can be seen as an opportunity to reach environmental goals which link input and output legitimacy.

Point 3: Output legitimacy

From a governing perspective globalization gives the opportunity to bring knowledge and innovation regarding environmental and social issues into countries with weak protection levels. For example, it is proven that companies in India, Indonesia, and Thailand adopt environmental standards as fast as pioneer states of environmental policies (Jänicke et al. 2003). In addition, results of the case study show that smallholders are interested in the certification, and claim being interested in joining extensions (cf. chapter 4.3.4). Therefore, certification schemes can be seen as a multi-stakeholder approach to reach communication. In addition, it changes consumer behavior, and raises public awareness. In regards to the global impacts of certification on procedural and contextual equity, forest certification has been credited with fostering widespread adoption of multi-stakeholder participation in forestry decision-making (Cash-ore et al., 2006; Kanowski et al., 2011, Auld et al., 2008).

Analyzing the effectiveness of certification, in general, is a huge challenge because of its complexity. What can be done is outlining what conceptual requirements exist to increase the chance of positive output. Although, as seen in the argumentation of input legitimacy, a positive output of a certification scheme implementation, on its own, should not be the only proof of legitimacy (Scharpf 2001; Partzsch 2011). According to Vatn (2015), the instrument of certification is based on environmental concerns. Moreover, it needs stakeholders with profit interests, and consumers who are willing to pay extra for labeled products. Within this framework there are some obstacles to face. First, a tradable product is needed. The idea of a certificate reaches its limitations when protection on biodiversity, or water bodies, requires a reduction of the production itself, which could lead to a conflict of interest. Second, is the amount of money consumers should pay extra for a certified product. The willingness to pay is often driven by local norms or individual attitudes, and not by the amount that is needed to reach the producers interest (Vatn 2015). Therefore, the instrument effectiveness is still limited by the low willingness to pay by consumers, especially in countries of the global south (Pirard, Lapeyre 2014).

However, many case studies prove that certifications improve livelihoods and support better access to the market. Especially the price premium is considered to be an important incentive (E_08.09). This, however, is seen critical in the long term perspective by (Rametsteinera, Simula 2003) due to the fact that a lack in knowledge exists regarding the price premium if supply and demand of certified palm oil is the same. Although, according to expert opinion it is possible for independent smallholders to get a price premium, smallholders are rather critical about this issue (E_08.09, chapter 4.1.2_price standard). Therefore, trying to promote certification by promising a price premium might be difficult due to the fact that independent smallholders do not trust companies, and the government when it comes to price policy. Rather, they wish to get a standard price instead of a price premium. In addition, promising a price premium which cannot be held can harm within the adaption process (cf. chapter 4).

By looking at the legitimacy of certification schemes it became clear that most of the arguments fit to all MBIs. In general, scientists discuss whether environmental regulation instruments have different disadvantages or advantages. It is rather unclear whether certification is effective in ensuring conservation and sustainable use of biological resources. It is argued that the decision to implement regulation instruments is already questionable because it follows the picture that a political system can control its outcome by choosing the right instrument. In reality, scientists found that the outcome of a political system is greater influenced by the chosen strategy, the power, the expertise of the stakeholders, the circumstances in general, and the problem character itself than the chosen instrument (Jänicke et al. 2003; Rametsteinera, Simula 2003).

In addition, the results of the case study question how output is to be measured in general. After the RSPO guideline third party audits take place to ensure control, which requires smallholders to meet all standards and criteria of the RSPO catalog. During the case study it turned out that the independent smallholders that were within the process of getting certified did not know about these standards and criteria, nor did they know much about RSPO in general (cf. chapter 4.3.3). While experts argue that it is not important for smallholders to know about the standards because it is more important that they know what they should change in practice, it is assumed difficult to argue how participation and, therefore, legitimacy should work when the stakeholder of interests feels not actively involved in any process nor identifies themselves with an organization that wants to reach acceptance as authority (E_16.09, E_08.09, cf. chapter 4.3.3). The translation of customary rights and local management practices into a catalog of principles and criteria to claim evidence is also criticized by Silva-Castañeda (2012), who said that collecting evidence refers, most of the time, on proofs that rely on a neo-liberal logic which automatically disqualifies circumstances that do not suit within this logic. As a large substantial body of literature blames industrial countries, and the private sector, for using standards and criteria as barrier to trade and possibility to demonstrate power rather supporting sustainable transformation (Rametsteinera, Simula 2003; Gómez Tovar et al. 2005; Partzsch 2011; Klooster 2005) it would be a first step towards the micro scale to think about alternatives to measure sustainable transformation.

Still, when referring to chapter 2.1, public goods need to be implemented to support the output of common welfare. Although it is claimed that it would be far more efficient to include the micro scale within the policy making process, the implementation of public goods in general does legitimize political and private governance decisions (Dobner 2007). It remains unknown how this could work if stakeholders on different scales perceive different problems and, therefore, measure another output as “common welfare”. Such as the European Union with its biofuel supply (cf. chapter 2.3.3), retailers with their rising demand of high quality palm oil, consumers with their desire to consume healthy and environmentally friendly products (chapter 2.3.1), human rights organizations to improve labor rights and conditions (E_16.09), environmental rights origination to safe the Orang Utah population, village authorities to support the village society and provide as much plantation as possible (VA_26.08), independent smallholders goal to improve their livelihood and desire to pay for children education fees (cg. Chapter 4.1.3). Thus, it can be asked, what the ISPO and RSPO refer to by aiming sustainability.

Point 3: Right to claim sustainability

As outlined above, the idea to establish a sustainable palm oil production is complex. As each of the defined terms within this thesis can be questioned in the ethical, as well as in the practical, way within this context, it is crucial to think of sustainability together with the term transformation. Its importance is highlighted in this thesis because the topic issues global trade within the agricultural sector, hence, targets natural capital out of business purpose. This context is considered as highly sensible, and since the Club of Rome published "The Limits to Growth" in 1972 there is a broad discussion about whether the term may be used within the topic of global trade at all (Meadows 1974; Hauff, Claus 2012). Some researchers who follow the weak term of sustainability claim that natural capital of a state can be substituted by any other form of capital, for example real money or projects. That means, natural capital can be priced by cost-benefit analysis and, therefore, compensated. However, researchers that represent the strong term of sustainability argue that it is impossible to price the value of the ecosystems and that natural capital cannot be substituted (Hauff, Claus 2012). Those brief statements are just an example about the complexity of the topic. That is why trade can be discussed in a more neoclassical or more ecological-economical way, to judge the topic of global trade in general. Hence, the term sustainability in this context is to be seen together with the word transformation, to emphasize that a process, to be more precise the implementation of a regulation instrument and in particular its uptake, can be seen as worse or better for the economic, social and ecological circumstances of the world societies in the long-term-perspective. That means, it is not possible to judge whether sustainability can be reached with regulatory instruments within this thesis, but it can be claimed that certification schemes support the approach of sustainable transformation by providing a basis that allows communication among stakeholders (E_27.06).

Within the context of oil palm smallholding it was the government of Indonesia within the 1970^{s} and 1980^{s} that started a transformation by providing income possibilities in remote areas. While in this approach the importance of natural resources was ignored, a new approach was required to gain a common welfare rather than "island welfare". Therefore, certification schemes can be seen as an attempt to close this gap, and trigger environmental awareness, which it does as is shown within the case study (cf. chapter 4.3.4). Although, papers argue that the knowledge about ecosystems and sustainable practice is limited (cf. chapter 2.3.2), the case study results show that a lot of independent smallholders do worry about the ecosystem. In addition, trainings served by small NGOs do have an impact on independent smallholders. As explained in chapter 4.2.2, in a lot of cases their motivation is affected by natural circumstances, such as rainy or dry seasons, which prevent them from applying sustainable management practices. Thus, it is claimed, that sustainable transformation took place. It can be seen as indirect effect

due to trainings rather than a direct effect of a certification process, due to the fact that independent smallholders are motivated to improve their output in terms of yield. They understand that water supply and a good soil quality in necessary for that and, therefore, the proper use of fertilizer (see chapter 4.2.2).

Hence, approaches to create a sustainable palm oil market are not only the task of the private sector, since the development of oil palm smallholding has never been a private movement, and bureaucracy obstacles cannot be ignored by private stakeholders. Neither can the fact that cultural obstacles exist between private stakeholders that are based in other countries and local producer in Indonesia. Leff (1998 cited by Escobar 2006) claims that next to ecological conditions, cultural meanings are important to focus on since they determine values and norms. Thus, they form institutions and shape how nature is appropriated (Escobar 2006). In fact, the results of the case study provide proof that cultural obstacle within the village community, as well as on different scales, exist. Within the village community smallholders tend to distinguish between migrants and non-migrants. According to their statements for non-migrants it is hard to integrate within a neoliberal trade system and, therefore, within a certification scheme. Thus, ignoring cultural meanings within sustainable transformation lead to exclusion of certain groups. In addition, conversations with village authorities show that forests are not seen as ecological treasures, but as leftovers that can be used to build plantations on. Hence, if village authorities promote this attitude it will be hard for stakeholder such as RSPO to promote another (VA_26.08). In addition, results show that certification schemes such as RSPO or ISPO need to focus not only on environmental topics, but on social and cultural issues such as labor rights (E_16.09).

To summarise this chapter, the topic of legitimacy may not be ignored, nor may it stop any activity that tries to improve sustainable transformation. This chapter should emphasize that lessons need to be learned not only by stakeholder on the micro scale, as claimed by recent research findings, but by stakeholder that want to rule. This refers to both actors, whether governments or private actors. Therefore, by referring to the question asked in the beginning of this chapter, not only smallholders' journey towards certification schemes is important, but global governance journey towards legitimacy of certification schemes.

7 Conclusion

This case study attempted to gain a better insight into independent smallholders' institutions, with regard to their oil palm businesses. This led to an enhanced understanding of how certification schemes are constructed from the bottom and allowed a comparison of this reality with the initial idea of the RSPO certificate. It turned out that neither RSPO nor ISPO organisations are institutionalized as important stakeholders, by independent smallholders.

Stakeholders that influence smallholders' decisions are solely part of the vertical supply chain, which induces doubt as to whether independent smallholders perceive themselves to be integrated in any type of vertical supply chain. Chapter 5 emphasised that each stakeholder in the vertical palm oil supply chain might also have another certification construction and therefore, another motivation. All these motivations are satisfied by a standard and criteria catalogue that was found not to fit within the institutional logic of independent smallholders. This might be one reason why certification schemes for smallholders are hard to bring to the ground. Another reason could be the fact that certifications are not linked to the responsible stakeholders. Social network analysis of independent smallholders showed that the influence of those stakeholders with many interactions was weighted higher than stakeholders with fewer interactions. Thus, the fact that RPSO is not perceived as a stakeholder can explain some obstacles that have occurred.

Nonetheless, this master thesis claims that certification schemes are perceived as an adaption strategy for independent smallholders and therefore, are considered important. Firstly, the approach of certification schemes, which are to be primarily reactive, is not directly perceived by most independent smallholders. However, the foundation of the famers group, that provides training and supports smallholders who wish to join the certification process, indirectly perceives this and would continue to exist even without the establishment of RSPO. Additionally, chapter 4.3.4 demonstrated that independent smallholders care about the environment and have a profound knowledge about related topics, which can be assumed to be a result of training. Secondly, the motivation of independent smallholders to adapt with certification schemes is provided by a proactive risk reduction approach. Case study results discovered that independent smallholders suffer from uncertainties regarding future actions of the markets, as well as pressure from the government or directly from companies. Therefore, they associated a certificate as a means to decrease uncertainties.

As mentioned before, there is an approach towards certification schemes and this approach can be improved by all stakeholders. One way to do this is by focusing on becoming visual as a stakeholder

within the institutional context of smallholders and promoting information based instruments. In addition, stakeholders within the vertical supply chain need to work on their legitimacy, as outlined in chapter 6. Currently, independent smallholders are not part of the policy circle, which would require a fundamental revision of the standard to suit smallholders' institutional logic (Oosterveer 2014; Collier, Dercon 2014; Fikru 2014).

Although there is a large amount of research that assumes certification to be an instrument to legalize resource exploitation (Rametsteinera, Simula 2003; Klooster 2005; Partzsch 2011; Silva-Castañeda 2012), other authors promote certifications and recommend putting more effort into smallholders' development instead of promoting large companies (Rist et al. 2010; Seegräf et al. 2010). In fact, the rising number of standards and regulations that target environmental and safety topics are internalized together within the trade system and no country that wishes to be a part of the trading system can afford to ignore this process. This is not focusing just on the North and South dimensions but on each member of the world trading system (Jänicke et al. 2003; Vatn 2015).

This thesis demonstrates that the approach to use certification in order to reach sustainable transformation is a huge task. Findings of the case study prove those certifications are not the magic box, claimed per theory. This view is supported by one expert who said "We still have fire and peat fire in Indonesia. We still have deforestation [...]. I hope it will disappear, but it will never disappear completely despite certification" (E_27.06). This statement refers to another problem that is discovered within the case study. Enforcement of rules is a problem, not only of the smallholders with regard to fully adopting a new practice, but also by companies, the RSPO and the Indonesian government.

Within this context, certification schemes are an instrument implemented through global governance and therefore, a compromise that fits stakeholders' interests and not independent smallholders. This turned out to be a problem since independent smallholders need to adapt certifications to make them work on all scales (Smit, Skinner 2002). Nonetheless, institutional logics are dynamic (Martin et al. 2015). The foundation of the farmers group and the knowledge gained from training prove that institution can change through participation and collected activities. Moreover, the fact that governmental action, such as the approach to manage land certification, is needed by RSPO stakeholders and the fact that the government influences smallholders' decision making processes more than RSPO stakeholders, shows that it might be recommended to join the certification approach of RSPO and ISPO to make it more efficient.

When looking at adaption strategies of independent smallholders, results of the case study showed that not every chosen strategy is considered to support sustainable transformation in the common sense. This includes the use of pesticides due to lack of time or clearing of forest to plant seeds that have a certificate. In addition to this, not every challenge that is perceived by independent smallholders is perceived as an adaptable force, such as the vicious circle described in chapter 5.3. In fact, some obstacles prevent independent smallholders from implementing sustainable practices, such as fertilizing regularly, due to natural forces of weather instability and constructed forces such as seed supply.

Explanatory notes

The conceptual frame questions the way global governance works on the micro scale and promotes the bottom-up approach, in order to see how impacts of climate change and the growing internalization works. While reading this thesis, it must be considered that it is written from an outsider's perspective and most of the recent studies about smallholder certification were conducted by Western researchers. Therefore, it is important that those concepts regarding adaption strategies, which also try to give a deeper understanding about peoples' lives, are constructed lenses from people who do not belong to the same cultural background as the people of interest.

By choosing adaption strategies to gain a deeper look into the institutional context and decision making process, some points need to be considered. In the literature about adoption strategies, most of the focus lies on one conservation practice. For example a special method that prevents soil erosion (Prager, Posthumus 2010). Certification schemes call for a whole catalogue of best practices. When trying to find an answer as to whether all practices that a certification scheme asks for are going to be adopted by smallholders, it requires a lot more time in the field. This case study can only analyze what kind of forces there are that start an adaption process and what kind of methods smallholders adopt to solve these forces, as well as whether the RSPO certificate touches those decision making processes.

To visualize the conceptual frame of this thesis, some simplifications were made. In reality, each independent smallholder has its own institutional background that is considered to be similar to that of other smallholders, but is not alike. Additionally, when talking about adaption, some facts other than occupation and place of living are important, for example, the age and the level of education of the smallholder, which was not taken into account (Zilberman et al. 2012).

Last but not least, it must be emphasized again, that: *"Despite research over several decades, we are still only beginning to understand the ways individuals' values and preferences, constraints, and other factors shape environmentally significant behaviour" (Moran 2010:135).*

Further research

During the case study, a few fields came up that require further research: Firstly, this thesis gives a brief insight into the institutional background of smallholders' relationships and dependencies on other stakeholders. Future research might attempt to clarify these relationships in more detail. It would be of interest how or if relationships towards stakeholders shift during time. More specifically, it would be interesting to know whether spill over effects exist to other smallholders that are not in the process of getting certified. In addition to this, a more detailed analysis is required to assess required flows of information and commands, as well as their meaning for a decision making process. These findings will probably show how independent smallholders can be integrated within the certification approach. The topic of trade as a method of force to adapt on the one hand and a chance to reduce risk on the other hand is seen to be critical by recent literature findings. Before promoting this idea in general, more research is needed to identify whether global governance harms or helps at the local scale (Smit, Skinner 2002).

Experts, as well as smallholders, tend to distinguish between non-migrants and migrants and link this to productivity as well as the ability to adapt to market based instruments, such as certification. According to interviewed smallholders, non-migrants will work on plantations of migrants in the future because all plantations will be owned by migrants. However, within the farmers group some of the main actors were non-migrants. Additional ethnographical research is necessary to fully understand whether differences between non-migrants and migrants really exist, to further prevent ongoing exclusion processes.

To conclude, case study results show that smallholders tend to have increasingly more land and are dependent on labour. Both these findings are interesting to look at. In terms of plantations, it would be interesting to know what this would do to the village community and also to the environment. While a huge amount of studies about smallholders exist, oil palm labour is barely discussed in literature. Experts also named the problem that if smallholders attend training for better management practises, it will not help because those who do the work are the employed labourers.

Appendix

Table: *Key attributes of interviewed smallholders*

Smallholder	Independent	Migrant	Occupation	Land history	Member of the gapoktan
1	X		Rubber and oil palm farmer	Started in 1990 (turned rubber into oil palm), he has 7,5 ha oil palm in 4 different areas 3ha + 2ha + 1,5 ha +1 ha, and 5 ha rubber and another 2 ha which is not managed	yes (RSPO)
2	X	X (since 2009)	Teacher soymilk production sawit farmer	Since 2015 he own 1 ha and then he bought another 1,5 ha	yes (RSPO)
3	X	X	Teacher and sawit farmer	first ha in the end of 2010, another 2 ha in 2013 because he saw that the trend is going up and another 2 ha in 2015 (3 different areas)	yes (RSPO)
4	X	X (since 1998)	Sport teacher in Merlung since 2000 and sawit farmer	He got 4 ha from his father when he passed away and in 2012 he bought 3 ha with 6 year old oil palm on it (7 ha in total)	yes
5	X		Teacher, was kades "on time", sawit, fishery, chilly	He has 6,5 ha. In 2007 he bought 3 ha and managed 2 ha and in 2011 the 1ha.In 2016 he build another 3,5 ha.	yes
6	X	X (since 2010)	Teacher and farmer	In 2011 he bought 1 ha with1,5 year old palm on it	no
7	X		Oil palm farmer, farmer group leader	He started in 2010 because before that he had no money, he also got offer from the transmigrant program in 1990, but by that time he did not believe in oil palm (like most people) no he own 3 ha	yes(RSPO)
8	X	X (since 1993)	Farmer and shop owner	He had first 0, 8 ha and then he bought 3, 5 ha in 2 different areas. In 2014 he bought 4 ha plasma (he had 6 ha in Merlung but the quality was not good) therefore he sold it and bought 4 ha plasma and a shop	yes

9			Rubber and oil palm farmer	Had 2ha than parents got ill and they move back to Merlung, Got 50% of the plantation and sold it because the management fee was too high and they did not earn with it. Moved to SP4 in 1990 and could harvest in 1996 the first time	no
10	X	X (since 2002)	He works for Indo sawit as caretaker	Bought his first plantation in 2010, now he has got 3 ha	yes
11	X	X (in 1982)	Teacher and oil palm farmer	In 1995 they bought 2 ha, he bought it from trasmigrants who were not comfortable and wanted to move. And in 2003 he bought another plantation. Now he has 6 ha on 3 different areas.	yes
12	X	X (since 2011)	Teacher and Farmer	He has 3,5 ha he bought the land from transmigrant family, 1,75 ha in 1999 and in 2006 another 1,75 ha and 0,8 ha ole land (no KUD because of conflict	no
13	X	X	Farmer	She sold the plasma 2 ha and bought 2 ha in Merlung	no
14	X	since (2009)	Teacher and farmer	In 2004 he bought 9 ha, some of it had already oil palm on it.	no
15	X	since (1989)	Teacher and farmer	1996 he bought first 2 ha, In 2006 another 2 ha both with 6 year old trees on it, 2011 he bought empty land (2,5 ha), in 2013 he sold the first plantation and bought 3 ha forest. The 2006 area he sold and bought 2015 2 ha empty land	yes
16	X		Rubber and oil palm farmer and sell household stuff at the market	Bought their first plantation in 2000, 2ha and in 2003 1 ha and in 2013 1 ha. He has 4 ha and there was still forest on it.	yes
17	X			Got first plantation in 2007, he sold it because the seed was not good and he needed money because the daughter entered university. He bought 2015 2 ha empty land and plant it and another 0,8 ha which is not planted yet	no

18	X	X (since 1998)	car repairing shop and sawit farmer	In 2003 he bought 2 ha from transmigrant area, in 2004 he bought another 2 ha from the transmigrant area and in 2007 another 2 ha. In 2007 he sold the 2 ha he bought in 2004 and got forest land 6 ha where he planted palm in 2008. He added 4 ha forest and in 2011 another 15 ha forest land. In 2014 he bought a plantation where he can already harvest (6 year old oil palm)	yes
19	X	X since 1996 (wife is local)	works for PT WKS	He bought forest in 2007 5 ha and in 2016 another 2 ha (he became more selective about the seed)	yes
20	X	X (in 1993)	Motorcycling-Repairmen and farmer	In 2008 he bought 5 ha now he own 15 ha. He planted 5 ha in 2011 and 5 in 2014.	yes (RSPO)
21	X	X (since 2009)	Teacher, oil palm farmer	In 2011 he bought land with 2,5 year old oil palm on it. In 2014 he bought 1,6 ha ole land	no
22	X	X moved to SP2 to teach	Farmer and fertilizer supplier	He bought ha in SP, in 2003 he bought 15 ha forest , sometimes he buy if people need money but most of the time he bought empty land, he has now 20 ha	no
23	X	X	Oil palm and teacher	In 2004 they bought ole land , in 2012 they bought empty land 4,75 ha and plant it, in 2014 they bought 1,5 ha with palm on it	no
24	X	X	Oil palm farmer, works at a company, Ibu is teaching	In 2001 he bought a plasma plantation and sold it in 2005 and now they have some plantation that they do not manage at all	no
25	X	X (moved to SP2 in 2000 and to Merlung village in 2007)	Harvest employee and farmer	Bought forest in 2003. He has now 5 ha. In 2008 he bought 1 ha with 13 year old trees on it and a rubber plantation. In 2015 he bought 3 ha rubber and changed it.	no

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Declaration of originality and certificate of ownership

I, Katrin Martens, hereby declare that I am the sole author of this thesis entitled „ Adaption strategies of oil palm smallholders towards certification schemes A micro scale approach from Jambi, Sumatra" All references and data sources that were used in the thesis have been appropriately acknowledged. I furthermore declare that this work has not been submitted for a higher degree to any other University or Institution.

18th May, 2017 Göttingen