Differences in Perceptions of the Effectiveness of a Regulated Forest Certification Scheme between Stakeholders from Community Forestry and Industrial Forestry in Indonesia

Sadrah Devi
Bachelor of Forestry

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School of Geography, Planning and Environmental Management
Abstract
The Indonesia Timber Legality Assurance System (TLAS) was formed in response to concerns about ineffective forest management regulations in Indonesia, and requirements stemming from European timber import regulations, and as a means to curb illegal logging. The TLAS aims to improve forestry governance in Indonesia and provide a legal licensing system for timber exports. Established in 2009, the TLAS consists of two mandatory certification schemes that enforce various certification requirements on forest holders and timber processing companies in Indonesia. This thesis focuses on how the TLAS impacts on the more than 35 million ha of production forests in Indonesia, covering both industrial forests and community forests.

The rate of forest certification in tropical countries is far less than in temperate forest countries. Previous research has suggested this is because of the greater complexity involved in tropical forest management. Prior to the TLAS, less than ten percent of Indonesia forests were certified by voluntary certification schemes. Under the mandatory TLAS program, the number of certified forest has increased rapidly. Current data shows 267 forest management units around 20 million ha have been certified by the TLAS system. However, the effectiveness of the TLAS is still in doubt. Previous research has shown that the benefits of forest certification schemes usually extend more to larger-scale industrial forest companies, and less to smaller-scale community forest stakeholders. Therefore, this study aims to explore the effectiveness of TLAS from the perception of industrial forest companies and community forest holders.

This thesis examines the benefits and challenges of TLAS implementation and provides a comparison of results from forest companies and community forest holders. The research presented in the thesis is important because little has been published in the scientific literature about the TLAS or other similar mandatory certification instruments, particularly in tropical countries. This thesis applies a qualitative research approach involving semi structured interviews, to explore stakeholder perception and to show how different types of stakeholders have different perspectives on the TLAS.

The results indicate that stakeholders believe that the TLAS scheme has brought positive impacts on management, economic and social aspects of forest management in Indonesia. However, stakeholders identify certification cost and constraints on accessing eco-sensitive premium-priced timber markets, as the major challenge to further development. The results suggest that the main differences between the impacts that the TLAS had on industrial-scale forestry versus small-scale community forest holders are as follows: (1) community forest holders experience higher certification cost per unit forest area; (2) community forest holders fail to achieve a market price
premium for certified forest products as these markets require high quality products; (3) community forest holders need substantial technical and financial assistance to maintain TLAS standards.

This thesis suggests there are eight factors that influence the effectiveness of schemes like the TLAS. These include: legitimacy credibility, effective administration and procedures, market opportunities, changes in forestry practices, security over land tenure, accessibility and distribution of information, and fairness in law enforcement. Of these factors, timber market issues seem to be regarded by all stakeholders as the most important factor.
Declaration by author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

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Publications during candidature

No publication.

Publications included in this thesis

No publication included in the thesis

Contributions by others to the thesis

No contributions by others.

Statement of parts of the thesis submitted to qualify for the award of another degree

None.
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Indonesia, TLAS, industrial forestry, community forestry, legality verification, forest certification

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<th>Description</th>
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<tr>
<td>APHI</td>
<td>Asosiasi Pengusahaan Hutan Indonesia/ Indonesian Forest Concessionaire Association</td>
</tr>
<tr>
<td>CB</td>
<td>Certification Body</td>
</tr>
<tr>
<td>CSO</td>
<td>Civil Society Organization</td>
</tr>
<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FLEGT</td>
<td>Forest Law Enforcement Governance and Trade</td>
</tr>
<tr>
<td>FSC</td>
<td>Forest Stewardship Council</td>
</tr>
<tr>
<td>LEI</td>
<td>Lembaga Ekolabel Indonesia/ Indonesia Eco-label Institution</td>
</tr>
<tr>
<td>MoF</td>
<td>Ministry of Forestry</td>
</tr>
<tr>
<td>RKT</td>
<td>Rencana Kerja Tahunan/ Annual Working Plan</td>
</tr>
<tr>
<td>NAC</td>
<td>National Accreditation Committee</td>
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<tr>
<td>NGO</td>
<td>Non-Government Organization</td>
</tr>
<tr>
<td>SVLK</td>
<td>Sistem Verifikasi Legalitas Kayu/ Timber Legality Verification System</td>
</tr>
<tr>
<td>TLAS</td>
<td>Timber Legality Assurance System</td>
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<td>VPA</td>
<td>Voluntary Partnership Agreement</td>
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Chapter 1 - Introduction

1.1 Background

Indonesia is a developing country that has the third largest area of rainforest in the world. It has been facing issues of illegal logging and the high deforestation rates. The rate of deforestation reached a peak during the economic crisis of 1997–1998, when considerable forest areas were lost. This was driven by economic needs which result in land conversion and illegal logging, and was facilitated by law enforcement and governance issues (Casson and Obidzinski, 2002, McCarthy, 2002, Hansen and Treue, 2008). Illegal logging has emerged as a critical issue in Indonesia and the Government has been trying to combat illegal logging and its associated trade through regulation. These regulations are applied at the local, regional and national levels, and aimed to regulate all the timber production in order to trace back its origin and to confirm its legality. However, this effort has been less effective which is demonstrated by illegal timber still finding its way to the market (Dharmawan et al., 2012).

One study on illegal logging in Indonesia suggested main reason for unsuccessful government efforts in eliminating illegal logging is that illegal timber has provided more benefit to the people rather than the legal ones (Tacconi et al., 2004). Similar with other developing countries, high rates of illegal logging in Indonesia was also triggered by a complex forestry problem, weak law enforcement and poor forest governance (Guertin, 2003). Criticisms from environmental organizations have placed further pressure for Indonesia to enact a more effective regulatory framework.

In regards to illegal logging and unsustainable forestry practices done by industrial forest companies, the concept of global forest governance was introduced by non-governmental organization to Indonesian forestry. In the year 2000s forestry sector in Indonesia start to know forest certification scheme. There are two voluntary forest certification schemes that have been operated in Indonesia; Forest Stewardship council (FSC) and Lembaga Ekolabel Indonesia (LEI). Currently, these two schemes have certified around 3.6 million ha forest area (LEI, 2014, FSC, 2014), only around 10% of the total production area. Currently, the total number of forest area certified by the TLAS scheme is 17.396.858 ha, of which 40.523 ha is community forest (Sugiharto, 2014).
Unsuccessful voluntary certification in Indonesia has resulted in international market pressure, particularly from the EU countries. The EU has launched a program on Forest Law Governance and Trade requiring all timber exported to the EU countries must come from the legal sources (van Heeswijk and Turnhout, 2013). This program was underlying by the fact that more that 80% of timber imported by the EU countries are from tropical forest. Based on Voluntary Agreement between the EU and Indonesia, in 2009 the Government established a national timber legality verification scheme called the Timber Legality Assurance System/TLAS (Sistem Verifikasi Legalitas Kayu/SVLK). This scheme aimed to provide a legal assurance and verification system for Indonesian timber products. The scheme covers multiple forestry activities and includes industrial forest companies, community forests, and processing companies.

Given that the TLAS is likely to bring about considerable change, it is important to understand how the scheme will affect forestry activities, and what are the benefits and challenges from its implementation. This study provides important practical information for policy makers and is the first to compare the impacts of a mandatory certification scheme between industrial forests and community forestry stakeholders. Therefore, this study aims to contribute an analysis of the ongoing TLAS implementation and how it could be improved. I use a qualitative approach involving semi-structured interviews to explore and analyze perceptions of forest managers and community forest holders and provide a comparison between their perspectives. This approach is suited to the study aims and can provide detail and in depth analysis (Creswell et al., 2007)

1.2 Research problem and questions

Voluntary forest certification has proven to be successful in mostly temperate forest countries like in Europe and North America. Studies showed that only 13% of certified forests were located in tropical countries. The main cause of the unsuccessful forest certification in tropical countries is the complex nature of the forestry problems, involving legislation, social and economic factors (Durst et al., 2006). The timber legality verification is another global forest governance scheme which also aims to stop forest degradation. It provides a less complex concept of governance compare to sustainable forest certification. Legality verification is more focusing on the legal aspect of timber production and processing, therefore, some scientists perceived that this type of governance is more applicable in tropical countries where illegal logging are massive but lack of resource to gain certification (Dooley and Ozinga, 2011, Brown and Bird, 2007, Brack, 2005).

Legality verification has been widely discussed in the last ten years. This regime was initiated through programs such as EU FLEGT (Forest Law Enforcement Governance and Trade) and US
Lacey Act. Both programs aims to provide a legal assurance for timber exported to the EU and US (Overdevest and Zeitlin, 2013). As a response to legality verification regime, Indonesia signed a Voluntary Partnership Agreement (VPA) with the EU in regards to the implementation of EU-FLEGT. The TLAS was established as a license system that guarantee timber products come from legal sources. Unlike forest certification which is market based and voluntary scheme, the Government regulated TLAS as mandatory certification for all timber producers. This means that the Government actively enforce the implementation of certification. According to Rametsteiner (2002), Government role in certification is very important for successful adoption by ensuring the compatibility of certification mechanism with domestic law, and actively involved in relation to efficiency and fair play. In the case where certification is regulated and mandatory, the government has played a stronger role in establishing a national certification standard.

TLAS as a mandatory certification has taken interests of forestry stakeholder in Indonesia, especially the timber producers. All this time, the majority of wood raw material for local processing companies has been supplied by large-scale industrial forestry and small-scale community forestry. As the main timber producers, these two actors will most affected by the implementation of the TLAS. A studies argued that certification may not applicable for, and provide less benefit to community forest holders (Nurrochmat et al., 2014). In addition, some scholars questioned the practicality and benefits of certification to community forestry (Markopoulos, 2003, Rickenbach, 2002). Community forest holders are facing unclear benefit from forest certification mainly caused by the inability to access the preferred market. This failure also might resulted from lack of market knowledge and timber products competitiveness (Hinrichs and Prasetyo, 2006). Based on those arguments, the TLAS is very interesting to study further because of its mandatory feature which is not only make the effort become very expensive but the economic benefit is remain unclear. Therefore, the research problem of this thesis is:

<table>
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<th>Research Problem</th>
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<td>How can regulated forest certification systems contribute more effectively to improved forest management amongst both community forestry and industrial forestry sectors in Indonesia?</td>
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To investigate this problem, my study proposed three research questions as follow:

| RQ1 | How does the Timber Legality Assurance System influence the forest management activities of large-scale forest companies in Indonesia? |
### 1.3 Significance of the research

Research has been developed worldwide to assess forest certification and other similar mechanisms of international forest governance regime. However, as certification is mostly success in temperate forests countries, research focused on this topic in tropical countries is limited. In particular in Indonesia, lack of research on forest certification has provided inadequate information and knowledge of its development. The TLAS has been introduces as a new forest governance system in Indonesia. It has similar mechanism to voluntary sustainable forest certification that used a third party to do the assessment, and compliance was proven by a certificate. Voluntary certification is driven by the market interests, and aimed to access the eco-sensitive market, and thus the main motivation for forest owners to certify is to gain market benefits (Cashore et al., 2003). TLAS certification has become a growing concern for forestry actors because this would have significant impacts on forestry business and influence about 35 million ha of Indonesia production forest. This concern regards to the perceived high certification costs and uncertain benefits where local market oriented timber producers may have lack opportunity to get market incentives.

As large-scale industrial forest companies and community forestry are important actors in forestry business, a study of TLAS impacts would provide a new insight for policy makers and related forestry stakeholders as not much has been studied on this topic. In regards to their scales and market orientation, TLAS certification would have different effects among these forest operations. A study assessing voluntary certification suggested that large-scale producers were more advantaged than small-scale community forests (Cubbage et al., 2003)

Moreover, this study contributes to fill the gap of literature of forest certification in tropical developing countries and provides a new knowledge on regulated certification. This research also contributes to previous studies assessing forest certification in Indonesia see Maryudi (2005), Muhtaman and Prasetyo (2006), Harada and Wiyono (2013), Obidzinski et al. (2014), (Nurrochmat et al., 2014). The results that derive from this research are important for the future TLAS development in Indonesia.
1.4 Thesis organization

Chapter 1 outlines the background, research problems and rationale of this thesis project by describing the needs for reforming forest governance in Indonesia and how timber legality verification has emerged as a policy instrument for improving forest management as well as a timber market access tool. This chapter also provides research questions, and the significance of this study.

Chapter 2 provides an overview of global forest governance as a concept of the TLAS establishment. This overview aims to deliver an understanding on how the world forest governance has changed from state to international governance. The chapter explains two types of global forestry governance; sustainable forest certification and timber legality verification and emphasises the difference between those certification governance regimes.

Chapter 3 describes the forestry sectors in Indonesia. There are three main sections in this chapter; types of forest management in Indonesia, timber market structure, and a brief overview on forest policy in Indonesia associated to forest management and timber trade. This chapter aims to provide a context of this study.

Chapter 4 presents the methodology used for this research project. This chapter provides a justification for choosing a qualitative research approach and why specific methods were employed. The chapter emphasises the importance of stakeholder perceptions for the improvement of Indonesia TLAS.

Chapter 5 presents the results of the research project. This chapter provides an examination and discussion associated with research question 1 and 2. This chapter highlights the benefits and challenges of the TLAS adoption from the perception of actors from large-scale industrial forestry and community forest holders. This chapter also provide the important comparison between these two groups certified forests.

Chapter 6 provides the assessment, findings and discussion of research question three. First, the chapter identified the factors that can influence the effectiveness of TLAS. This chapter showed that based on the various stakeholder perceptions, timber market structure and supply chains are the main factor influencing the successful of TLAS. In this chapter I argue that even though certification is supported by the government and mandatory for all forest holders, effectiveness is still doubtful.
Chapter 7 explains the implementation of TLAS through the developing of system thinking models. The models were developed using the data from the interviews, field observation and document analysis. This chapter provides an understanding of how the forest holders adapt to the TLAS certification and how the TLAS stimulates better forest management.

Chapter 8 presents the summary of the main findings presented in chapter 5, 6 and 7. This chapter also provides limitation of this research and suggestion of possibilities for future research in relation to the results. This research has demonstrated that the new forest governance regime in Indonesia, through the implementation of TLAS, has demonstrated different benefits and challenges between large-scale industrial forestry and community forestry. The research also demonstrated important finding on factors that may influence the TLAS effectiveness.
Chapter 2 – Overview of international forest governance

2.1 Introduction

Changing forest governance today is a trending topic particularly in tropical developing countries. The transformation of forest governance has been characterized by centrally administered, top down regulatory policies but it shifting towards to voluntary non-state governance approaches. This approach was initiated through the establishment of sustainable forest certification in mid-1980s and has evolved rapidly. While progress is more likely to occur in temperate forest countries but has been less successful in most of the tropical developing countries. This has resulted in the development of hybrid approach known as timber legality verification. The initial aim of legality verification is to provide a simpler governance concept that is more applicable in tropical countries as it has more focus on the eradication of illegal logging which is a central issue in tropical countries. This chapter explores the concept of global forest governance to provide an understanding on how this influences forest policy in Indonesia.

2.2 Global forest governance

The failure of forest governance has led to increased global concern due to continued deforestation and illegal logging. The high rate of forest is also a threat to biodiversity, local environmental conditions, and economic and social aspects within forest development. Most attention has focused on tropical forest countries, as environmental, social and economic pressures further impact on these rich ecosystems. Therefore, forest governance failure is not only considered as environmental problem but also has wider impacts on forests and society. This also has resulted in criticism from environmental institutions and has driven non-state actors to lobby for the reform of forest governance (Brown, 2001). Werland (2009) defines global forest governance as a process involving participation of state and non-state actors to manage forest resources.

Forest certification has proven to be effective in certain types of forests with high degree management standard and secure ownership rights which are most likely the characteristics of forest in the temperate forest countries. The slow progress in tropical countries has driven many scholars to find an alternative type of forest governance (Cashore, 2002). However, legality verification was introduced to offer a simpler concept by focusing only on the legal requirements of timber production and trade. This governance type was featured by international agreements between importer and exporter countries to assure timber products within the trade and supply chains met the legal requirements. However, as tropical forest governance is strongly connected with rural development, there must also be a greater consideration of the impact on rural people (Kaimowitz,
The following section will explore the differences between forest certification and legality verification to understand how the TLAS has been developed as an instrument for Indonesian forest governance.

2.3 The concept of sustainable forest certification

Forest certification was first introduced in the mid-1980s as concern increased on deforestation occurring in most tropical forest (Cashore et al., 2003). Although the initial focus was on tropical forests, forest certification has shifted its scope for all forest types. However, forest certification in tropical developing countries was unsuccessful which has shown by the low rate of certified forest. Many studies have examined the causes of this slow uptake (Durst et al., 2006, Cashore et al., 2006b, Carrera et al., 2006). One of main barriers is the wide gaps between existing management and standard requirements. Tropical forests were most likely to have poor management caused by weak implementation of national forest regulation.

In general, forest certification has driven by many interests. Within industry and trade actors certification can be used as an instrument for environmental marketing. In general consumers put more trust on certified products rather than the uncertified ones as they have met particular standard requirements, however this was not always aligned with their willingness to pay higher price on certified products (Aguilar and Vlosky, 2007). In addition, certification also useful for buyers and consumers as it provides information about the impact of the purchased products. The main assumption for this is that there is asymmetric information about products quality; therefore, certification came as a tool to address this in the market (Dooley and Ozinga, 2011). Furthermore, certification is used by forest owners and managers as an instrument to gain competitive advantages and access premium price market (Atyi and Simula, 2002).

Certification is a continuous process of forest management that involved many actors such as forest owners, government, local community and non-government institution. Stakeholders participation is important because forest certification is not certifying the forest per se but certifying the way people manage the forest resources and responsible in taking care of it properly (Meidinger et al., 2003). As sustainable forest certification involve economic, social and environmental aspect, it has been promoted as a tool to improve forest management and further has been considered by many nations as a solution for an environmental issues related to forest resources (Vogt et al., 1999).

Forest certification has several objectives. Focusing on environmental, forest certification was aimed to promote sustainable forest management for the forests long term development (Auld et al., 2008). The final goal of forest certification is to preserve the forests for long term use. However,
countries with more complex problems of forestry sector perceived the economics of forest livelihood is more important, therefore forest certification was expected to be economically feasible (Atyi and Simula, 2002) by increase market confidence and improve image of tropical timber products (Durst et al., 2006). In such countries, economic benefit is important to increase the livelihood of forest-dependent people. Constructing forest certification in developing countries needs to strongly recognize the importance of forests in meeting basic human needs and make the forest resources available to support forest livelihood (Agrawal et al., 2008)

### 2.4 Forest certification benefits

In general, the motivation of obtaining forest certification is to gain economic benefits. Some factors have been identified to motivate forest holders such as market access, public image and opportunity for premium price (Atyi et al., 2013, Crow and Danks, 2010, Cashore et al., 2005). Other factor that might inspire forest is to increase the company reputation associated to environmental issue (Morris and Dunne, 2004). However these underlying motivation were sometime unrealized as forest holders found that forest certification did not bring significant benefits.

Some studies demonstrated that forest certification has resulted in various benefits. I grouped certification benefits into four categories; social, economic, technical and managerial skills, and environmental benefits. According to Table 1, social benefits involved forest workers and local community, such as improved work safety and training (Moore et al., 2012, Molnar et al., 2004); improved relationship between community and certified company (Cubbage et al., 2010); and improved local infrastructure and developed trust within stakeholders (Zhao et al., 2011). Forest certification has improved company awareness in relation to local community and the broad environmental impacts (Cubbage et al., 2010). Other benefits such as improved administration, improved staff morale, and enhanced best practice logging have also been identified by some studied as non-economic benefits from certification (Araujo et al., 2009, Damette and Delacote, 2011).

Forest certification development in community forest has been associated with social and environmental aspects outside of the business concerns. Harada and Wiyono (2013) studied a voluntary forest certification implemented in a community forests in Indonesia by examining how certification has changed local people perceptions on community forests. They reported that community had a strong interest on certification and perceived there was a promising economic benefit of certification. Before, a study by Humphries and Kainer (2006) suggested that community
forest holders had a good perception on certification and believed that the positive aspects outweighed the negative ones.

Economic benefits appeared when certification can provide access to the market that value certified timber products. A study on Finnish timber supplier reported that employees perceived certification tend to improve customer retention and satisfaction (Owari et al., 2006). Certification is also argued has enabled certified forest products to penetrate to some eco-sensitive market (Chen et al., 2010). These evidences also implied that companies use certification as an instrument to address trade and supply chain barriers. In general, there are three important benefits resulted by certification; potentially market access, improved public image and price premiums. Although forest certification has achieved major progress the price premium has proved difficult to realize (Chen et al., 2010)

2.5 Forest certification costs

Forest certification generated direct and indirect cost. Indirect cost is usually spent for preparing all the requirements for the first audit process (Gan, 2005) with most activities associated with implementing higher management standard. The activities include data collection, management plan preparation, monitoring and staff training. This stage is important as it determined the successful of certification assessment. To implement certification standard, dedicated staffs that responsible for assuring compliance and working with environmental management system were needed. Training for forest workers also provided to keep them update with certification standard.

The direct cost included assessment cost and surveillance cost (Chen et al., 2010). Forest management will be assessed based on a standard set of criteria for a certification system. The assessment conducted by a third party known as certification body. Certification body is an institution that has been pointed by the certification organization to assess forest management based on a set of standard. The total costs usually varies among different forest types, depends on the existing management, size of forest area, geographical location and certification system. Forests with poor management need more efforts to develop their management system and resources to meet the standard. Poorly managed forests are common case in tropical developing countries, and thus forest owners in the tropics are more burdened with certification costs (Atyi and Simula, 2002). It is estimated that forest owners will experience an increased in total costs between 5 to 25 % as a result of certification (Nussbaum and Simula, 2005) and certification cost per ha unit forest ranged between US$ 0.3 and US$32 (Cubbage et al., 2003, Durst et al., 2006).
<table>
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<tr>
<th>Social impacts</th>
<th>Economic impact</th>
<th>Technical and managerial impact</th>
<th>Environmental impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better community relations, trainings and facilities improvement for workers</td>
<td>Market recognition, (Cubbage et al., 2010)</td>
<td>Higher technical standard, improve forest management technique (Cubbage et al., 2010, Moore et al., 2012)</td>
<td>Improve environmental protection(Moore et al., 2012)</td>
</tr>
<tr>
<td>(Moore et al., 2012, Molnar et al., 2004)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>better worker safety and training</td>
<td>Better timber and product price, capture new market (Moore et al., 2012)</td>
<td></td>
<td>reduce annual allowable cut, minimize the damage caused by intense logging activities (Cerutti et al., 2011)</td>
</tr>
<tr>
<td>(Moore et al., 2012, Molnar et al., 2004)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve local infrastructure, develop trust with native inhabitants</td>
<td>Price premium, improved market access(Nebel et al., 2005)</td>
<td></td>
<td>Maintain diversity in forest composition and</td>
</tr>
<tr>
<td>(Zhao et al., 2011)</td>
<td></td>
<td></td>
<td>Structure (Zhao et al., 2011)</td>
</tr>
<tr>
<td>Improved health and safety practices, improved education and awareness of</td>
<td>Access to international markets, joint ventures</td>
<td>Strengthen farmer group institution</td>
<td>Conserved high value economic trees</td>
</tr>
<tr>
<td>forest and certification(Alemagi et al., 2012)</td>
<td>with foreign companies, price security for forest</td>
<td>(Harada and Wiyono, 2013, Humphries and Kainer, 2006)</td>
<td>(Alemagi et al., 2012)</td>
</tr>
<tr>
<td>products, the potential for increased profit(Alemagi et al., 2012)</td>
<td>products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved community relations with government and other</td>
<td>Certification allows for improved market share and/or access (Thornber and Markopoulos, 2000)</td>
<td>Improved management practices, (Humphries and Kainer, 2006, Lidestav and Berg Lejon, 2011, Thornber and Markopoulos, 2000)</td>
<td>Improved the awareness to reduce forest damage(Humphries and Kainer, 2006)</td>
</tr>
<tr>
<td>organizations (Thornber and Markopoulos, 2000)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Meanwhile, some studies suggested that certification cost is an important barrier of certification in community forests (Alemagi et al., 2012, de Pourcq et al., 2009, Humphries and Kainer, 2006). Compare to industrial forestry, it seems even more difficult for community forestry to adopt forest certification standard. The small size forest area and often poor managed has resulted community forest holders to experience higher certification costs as the total costs were divided in to smaller area. A study on forest certification in Cameroon also suggested community forestry experienced higher certification costs compare to industrial forestry (Simula et al., 2009).

2.6 Forest certification in developing countries

Forest certification in developing countries was facing many challenges as only 13 % of certified forests are within this region. Certification cost is one of the most important barrier of certification program in tropical developing countries (Auer, 2012, Durst et al., 2006). These barriers can come from the internal or external of forest management unit. From the internal, certification program was challenged by the relatively high certification costs and the capacity of the forest actors in implementing forest certification standard. As stated previously that forest certification costs consist of direct and indirect costs which depend mainly on the size and degree of current management level. Most of the forest management units in developing countries lack sufficient capacity in some regard. In this situation, certification process was done by giving the most efforts to develop current forest management to meet the standard requirements. Improved silviculture technique and enhanced forest management documentation are examples of changes from forest certification. Another key factor that needs to improve to gain certification is the capacity of forest employees, including their knowledge of certification standard and skills to maintain the standard implementation. To achieve this, training and other capacity building programs are important, especially for poor management forests.

There are large number of inhibitors for successful forest certification such as illegal logging, corruption, lack of enforcement capacity, and heavy emphasis on timber forest products (Cashore et al., 2006a). Illegal logging has become a major problem in tropical countries. The following information will discuss these factors in affecting forest certification development in developing countries.

Literature differs on the definition of illegal logging with illegal activities. Illegal logging was defined as harvesting timber against national law (Smith, 2002, CEPI, 2002), while illegal activities was defined in a broader context involved illegal timber transport, process and trade (Smith, 2002, Barack and Hayman, 2000). In this study, I use the definition based on Brack (2005) who said
illegal logging involved timber harvesting, transport and trade in violation of national laws. Examples of illegal logging on the ground such as over-harvesting, felling in non-permitted production areas and stealing from protected forest land. Illegal logging has cause negative impact to environmental, social and economic aspects.

Illegal logging is a complex problem as it involved a range of sectors and actors that have given a chance for illegal logging to happen. Literature identified poor forest governance and policy failure as the main causes of rampant illegal logging in the tropics (Casson and Obidzinski, 2002, McCarthy, 2002, Hansen and Treue, 2008). Weak supervision and controlling logging activities by the government has increased the probability for practicing illegal felling. Insufficient number and lack of capacity of government employees to supervise forestry activities from the forest level to industrial processing firm has caused poor forest governance (Ravenel and Granoff, 2004). Decentralization has also been mentioned as a driver of illegal logging. Decentralization aimed to allow locals to design their own policy and increased revenue from natural resources, but in pratices the corruption make the implementation was not effective (Barr et al., 2002). Decentralized forest governance appear to trigger illegal logging when companies attempt to satisfy local government in form of local tax (Casson and Obidzinski, 2002, Palmer, 2001). To achieve this, companies often harvest timber more than the allowable cut or outside the logging block.

In relation to forest certification program, illegal logging has brought negative impact on legal timber market. Legal producers have to bear the cost associated with legal requirements, thus legal products would normally have higher price than the illegal timber. Unfair competitiveness occurred when illegal timbers with a lower price are found in the market. This unfair competitiveness can cause decreased profit margin on legal timber products. The ongoing illegal logging activities has discourage forest owners to improve the quality of forest management and moreover can result in disincentive to sustainable forests (Guertin, 2003).

In summary, sustainable forest certification development in developing countries has been constraint by many challenges, from internal and external forest management units. Therefore greater focus will need to be placed on these following concern areas. First, it is important for strengthening capacity to build and implement national forest policies and legislation. Knowledge and skills on sustainable forest management for officials and forestry actors can lead to effective certification implementation. Second, focus on the efforts that improve the quality of forest management to reduce the gap between current management and the certification standard. Decreasing the gap can generated a lower certification cost, in particular the costs associated with certification preparation.
2.7 Legality verification

The limited uptake of forest certification in the tropical countries has left a big question on what form of governance that capable to ameliorate forest degradation and deforestation in the tropics. This section focuses on the emergence of timber legality verification as a new idea in global forest governance which is seen as an instrument designed to improve forest management practices on the ground. Timber legality verification uses a multi-level regulation in the arrangement of transnational timber supply chains while focus on compliance to the domestic laws (Cashore and Stone, 2012). Multi stakeholders are involved throughout the process of defining and creating legality verification system (Lesniewska and McDermott, 2014a, Brown and Bird, 2007).

The idea of legality verification was first initiated in 2001 in Bali Action Plan. Countries with global economic powers have committed to promote the rule of law for global forest governance. This idea was followed by the EU and the US with the EU-FLEGT (Forest Law Enforcement Governance and Trade) and the US-Lacey Act programs. The programs emphasise on the mechanism that can guarantee timber products exported to the EU and the US met the legal requirements and complied with the domestic law. Hence forward, the rest of this section will discuss about the EU-FLEGT programs as the root of the emergence of TLAS in Indonesia.

In 2002, the European commission initiated an option to help tropical countries to eradicate illegal logging. The initiation considered that the EU countries have been the major global importer of tropical timber products and these products have been indicated come from illegal activities (Brack, 2005). In 2003, the commission published an action plan on Forest Law Enforcement Governance and Trade (FLEGT). The action plans consists of main points as follows: (1) The EU will arrange Voluntary Partnership Agreement with the exporter countries; (2) the EU required exporter countries to build a licensing system that verify the legality aspect of timber products, those that unverified will be denied entry; (3) The EU will assist the exporter countries in setting up the licensing system and improve the enforcement (Brack, 2005). Formulating the licensing system required participation from forestry stakeholders as the system involved the entire timber supply chains.

There are two perceptions about legality verification developed among the scholars. Some scientists suggests that legality verification can be used as a stepping stone to sustainable forest management, while some others criticize the limited scope of legality verification as it focuses only on the legal aspect (Brown and Bird, 2007). The legality verification demands adherence to national regulations and used an independent assessment by accredited certifier, therefore this instrument convergent
with forest certification. Compare to sustainable forest certification, legality verification raise the issue on sovereignty, where the government is actively involved and decide in the building of legality verification system. However, both forest certification and legality verification have similar role in tracking along the timber supply chains (Cashore and Stone, 2012). The motivation of sustainable forest certification is incentives from the market, but in the case of legality verification is regulated by the government. The comparison between legality verification and sustainable forest certification is presented in Table 2.

Table 2 Comparison of key features of legality verification and sustainable forest certification

<table>
<thead>
<tr>
<th></th>
<th>Legality verification</th>
<th>Sustainable forest certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of the Government</td>
<td>Sovereign government decide rules</td>
<td>Sovereign governments do not require adherence to rules</td>
</tr>
<tr>
<td>Policy scope</td>
<td>Limited</td>
<td>Broad</td>
</tr>
<tr>
<td>Mechanism</td>
<td>Independent assessment by third party</td>
<td>Independent assessment by third party</td>
</tr>
<tr>
<td>Role of markets</td>
<td>Tracking along supply chains</td>
<td>Tracking along supply chains</td>
</tr>
<tr>
<td>Economic benefits</td>
<td>Weeding out supply increases prices</td>
<td>Demand from customer</td>
</tr>
</tbody>
</table>
Chapter 3 – The forest sector in Indonesia and the emergence of Indonesia
Timber Legality Assurance System

3.1 Introduction

Indonesia has about 137 million ha forest area which covers roughly about 60% of the total land cover (Indonesian Ministry of Forestry, 2011). The forest has contributed to local community life, providing not only food but also shelter and space to civilize. Approximately 48.8 million people living around the forest and about 10.2 million are under the poverty line (Ministry of Forestry 2010). Most of them are very depend on forest and other resources inside the forest such as timber, water and food. However, over the past two decades total forest area has been reduced, mainly due to illegal logging activities in almost all Indonesian forests. Increase in forest degradation means there are less space and resources to support their daily activities.

3.2 Large scale industrial forestry

In the period of 1966 to 1998, the Soeharto era, most of state forests were managed by large companies. The government provided permission that is named by forest utilization permits (Hak Pengusahaan Hutan/ HPH) to large companies to manage the state forests. Currently, there are 292 natural forest concessions and 249 plantation forest concessions and cover about 33 million ha of forest area. It was expected that forestry sector would generate a high income for the national development; as a consequence, forests were having a major exploitation. Previous studies strongly indicated that laws and regulations were not been forced and followed effectively with a great number of forest companies conducted unsustainable forest practices that resulted to forest degradation (Kartodihardjo and Supriono, 2000)

3.3 Community forestry

After the Soeharto era, Indonesia adopted decentralized government, where regional governments have the political authority to manage their own natural resources (Arnold, 2008) and allows local communities to participate in decision making. Decentralization helps to break down the formal boundary between communities and government and since then the Government started to support the development of community-based forests, which aimed to preserve the forest as well as increase the welfare of local people. Based on the Ministry of Forestry Regulation 23/2007 community-based forest management is a timber plantation established in degraded production forest areas by individuals, households, or village cooperatives to improve the productivity potential of the forest through enrichment planting and the application of appropriate silvicultural practices. Community-
based forests are expected to be one of the main sources for supplying timber needs. Community forest is a general term used by many scientist to describe a forest managed by the community. In Indonesia the community-based forestry can be categorized into six types based on their type of management and the land ownership right (see Rohadi et al, 2010). This study selected a farmer group of farm forestry (Hutan Rakyat) where trees are planted on farmer’s private land. This small-scale forestry type has been chosen due to its important role in supplying wood material but typical lack of power in achieving suitable timber sales prices (as per Fujiwara, 2011).

Community-based forests have been practised for a long time by the rural people. They traditionally planted trees on their privately owned land and some of the communities have been given the authority to manage state-owned forests. Timber production from community-based forests has been increasing over the years. Community-based forest has brought benefits for local people and the environment, such as increasing local people income and improving the quality of environment. Community-based forest in Gunung Kidul District, Jogjakarta Province, has improved local water condition and reduce the amount of critical land area (Fujiwara et al., 2011). Moreover, smallholder timber plantation development is currently receiving attention from forestry stakeholders for at least for two reasons: increasing the wood supply and as a pathway for alleviating poverty, particularly in rural areas.

3.4 Forest Law Enforcement, Governance and Trade (FLEGT) and its connection with TLAS

This part of my thesis reviews Forest Law Enforcement, Governance and Trade (FLEGT), as a program initiated by EU that concerning illegal logging in countries where they import the timber products. There is a connection between FLEGT and TLAS as a timber trade instrument. FLEGT delivers a pathway to prevent illegal timber harvesting in producing countries through a market based-approached (Lesniewska and McDermott, 2014b). Since the majority of timber-producing countries have suffered from illegal logging, FLEGT aims to prevent illegal timber trade through the establishment of a licencing system. The system involves verification of legal products and authorization of products which entering the European market (Brack, 2005).

Continuing the objective of FLEGT, Voluntary Partnership Agreement (VPA) was established between European Union and exporting countries as a base line of this commitment. The verification system was focused legal aspect and compliance towards the local laws. Having narrower aspects than sustainable forest certification, legality verification offers an alternative in combating illegal logging. As forest certification has had limited success in developing countries
such as in Asia and Africa; legality verification might be as a steppingstone to good forest governance. With focus more on the legality aspect, legality verification is more applicable for high risk countries, as discussed previously in literature review (Brown and Bird, 2007).

In its objectives, EU-FLEGT provides a foundation for sustainable forest management by promoting legal forest management. Once VPA has been arranged between a producing country and the EU, the producer nation commits to developing a credible verification system to assure the legality of its timber products. To meet this goal, the Indonesian government has established the Indonesian Timber Legality Assurance System as a regulatory framework to verify the timber chain. This regulatory framework involves forest operations and timber processing industries

3.5 Indonesian Timber Legality Assurance System (TLAS)

Before forest certification is being known by Indonesian forest owners, the Ministry of Forestry (MoF) has enacted a set of regulations which aimed to rule the distribution of timber and timber product to prevent illegal timber trading and also provide a controlling system for Indonesian timber. The regulation in this study focus on the regulation related to timber trade which has to accompanied by a document called SKAU or SKSHH. SKSHH is used for timber that comes from state forest while SKAU is used for timber from private land.) However, this effort has not been running effectively, which has been demonstrated by illegal timber still finding its way to the market (Dharmawan et al., 2012). And in facts, these rules has created a complicated of bureaucracy layers in local and central government which often cause a high economy procedures.

There were a number of projects which campaigning stop illegal logging but these were unsuccessful. The misconceive of illegal logging occurred when people define illegal logging as an activity of getting timber from the illegal sources or exceeding allowable cut. Talking about timber trade is closely related with its distribution and it is well known that each stop points has rules and requires particular documents. What has been taking place is they cannot conform to these documents, but they still pass the inspection through bribing the officials. Hence, the government and forestry stakeholder thought it is important to establish a system to verify and to validate the documents.

Meanwhile, the continuation of illegal logging mainly in tropical countries has attracted the attention of Environmental Non-Government Organization to speak out. Through their activities, these organizations put pressures and criticise governments to act soon to stop illegal activities. Not only causing a great amount of forest decline, but illegal logging has also caused distrust towards Indonesian wood products in the global market. Moreover, pressures from environmental NGOs,
the lack of market power of Indonesian timber products, and massive deforestation have driven Government to design a new forest governance system.

In 2009, the Government issued regulation on legal verification for timber products: no. P.38/menhut-II/2009. In 2011, after further negotiations, Indonesia and the EU signed a Joint Statement through a Voluntary Partnership Agreement (VPA) (Indonesian Ministry of Forestry, 2013). Through the VPA, certified timber products from Indonesia could enter the EU market and pass the due diligence test after being verified by a licensing system. This system required documentation of timber supply chains to trace back the source of timber products. Through this agreement, Indonesia intends to establish good forest governance and eliminate the illegal timber trade.

According to Ministry of Forestry, TLAS was formulated to provide a certification system which is efficient and fair to all forest holders. It also aimed to improve the administration of timber products chain and to avoid the timber owners from costly illegal inspections. No official government document that explicitly stated the purpose of TLAS , however according to Dharmawan et al. (2012) TLAS aims are as follow: 1) to achieve good forest governance; 2) to conduct administrative enforcement for timber trade; and 3) to promote Indonesian legal timber in the market. As a policy instrument, TLAS is a compulsory for all forestry business regardless their scales and government has set a deadline in achieving certification. As stated in Agro Indonesia (2014) that by December 2013 all timber producers must hold TLAS certificate, including community forest holders that operate on their private land.

To make the implementation of TLAS run successfully, commitment from all stakeholders is critical and an understanding the fundamental of TLAS is a definite necessary. Information about TLAS objectives, mechanism, benefit and consequences is necessary to assure the effectiveness of its implementation. Despite of technical preparation activities, most importantly forest owners and managers need to understand how their company will benefit (Bleaney, 2010). This understanding generates a commitment to invest in better forest management through certification. Since TLAS is a new paradigm in national forestry sector, this topic has become the main subject discussed in a number of national forestry meeting, however there is less study has been performed, and therefore conducting a research about TLAS would provide a new insight.

3.6 The TLAS mechanism

Market acceptance of a certified product is strongly dependent on the credibility of the certification process (Figure 1). The first group of factors are aimed at establishing compliance within the
certification participants. The criteria included the people and organizations involved, the methodology for collecting information, and the basis for deciding compliance. The capacity of actors involved in certification assessment is important as well as the mechanism of certification assessment as they influence the quality of assessment process. Credibility also determined by the process of accreditation, complaint procedures and transparency of the whole process. In general, there are two main stage in certification process: collecting evidences to assure that the requirements were applied by the management unit, and making a decision on certification (Nussbaum and Simula, 2005).

**Figure 1 The factors that determine the development and implementation of a credible certification scheme**

<table>
<thead>
<tr>
<th>Establishing compliance</th>
<th>Ensuring confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>- People and organizations involved</td>
<td>- Accreditation</td>
</tr>
<tr>
<td>- Methodology for collecting information</td>
<td>- Complaints procedure</td>
</tr>
<tr>
<td>- Basis for deciding compliance is achieved</td>
<td>- Transparency</td>
</tr>
</tbody>
</table>

Adopted from: (Nussbaum and Simula, 2005)

According to TLAS mechanism collected from the website of Ministry of Forestry (Figure 2), it has an independent assessment mechanism which is conducted by a Certification Body. This could be a state-owned or a private firm that has been accredited by National Accreditation Committee (NAC). This scheme also allows independent monitoring to actively observe the certification process. Independent monitoring is performed by non-government organizations (NGOs) and civil society organization (CSOs). Monitoring activities can be done within the assessment process and throughout the certification were granted. If the observer found an activity that contradicted with certification principles, the observer can demonstrate to the evaluator and request for certification reassessment. The mechanism of TLAS aimed to guarantee the transparency and the credibility of the certification process (Indonesian Ministry of Forestry, 2011).
Preparation stage including documentation, site preparation and all prerequisites, needs to be completed before applying to a certification body. In most cases, to meet all the requirement, companies or forest owners hire a consultant body for helping them to prepare certification requirements. As can be seen from figure 2 Timber Legality Certificate is applied for forest management units and timber processing companies. In forest management level, both industrial forestry actors and community-based forest management have to pass the legality verification. Primary industry that process round timber and secondary processing companies also have to be certified. TLAS certification assessment conducted by an independent certification body. At first, this body have to be accredited by the National Accreditation Committee. As the TLAS is mandatory certification, the assessment process is regulated by the Ministry of Forestry. Figure 2 showed that the mechanism of TLAS involves an independent monitoring body to assure the objectivity of the process.
Chapter 4 - Methodology

4.1 Introduction

The research project explores the perceptions of forestry stakeholders from community-based forestry and industrial forestry sector. The aim is to investigate the benefits and challenges of the TLAS adoption and identify factors that influence the effectiveness of the TLAS. This exploratory approach was taken because of the lack of information currently available on the impact of forest certification in Indonesia and also because the TLAS has just been implemented as a national mandatory certification for forest management and timber trade. Therefore, an exploratory approach with in-depth interviews was expected to provide rich information. This chapter outlines the rational for choosing a particular methodology approach and provides information about the participant recruitment strategy employed to gather various perspectives. This chapter also presents the methods during the fieldwork and data analysis and providing a rationale for the choices made.

4.2 Qualitative research

In general, the objectives of qualitative research is to understand a phenomenon by drawing out the contextualised nature of experience and action (Creswell, 2007, Denzin and Lincoln, 1994, Silverman, 2010, Yin, 2010). This means understanding things in their natural setting and interpreting the findings. Another objective of qualitative research is to include the desire to capture the perspectives of informants through exploring their beliefs on a situation (Creswell et al., 2007, Yin, 2010). The approach covers related conditions from social, environmental and institutional perspectives. Qualitative approach can identify and describe the important impact of TLAS that cannot be expressed in physical or monetary terms. TLAS has only recently implemented in 2010 and information about the impact of this instrument is limited, therefore exploratory study using qualitative inquiry may improve understanding of this system.

It is generally understood that a certain paradigm or worldview can influence the research process. These beliefs or assumptions give direction to the research process. Crotty (1998) presented four key foundations in research construction and process:

- Epistemology and Ontology – the theory of knowledge and the technique to view reality, underpin theoretical perspective and methodology.
- Theoretical perspectives - philosophical stance, informing the methodology and providing context for its logic and criteria
- Methodology - strategy, plan or design linking the choice of methods to the desired outcomes
- Methods - techniques or procedures

These theoretical assumptions affect this study in choosing the methodology, methods and research design. The ontology addresses the issue of the nature reality of the topic being studied (Crotty, 1998, Creswell, 2007). The nature of reality varies in relation to the perception of the researchers, the participants and intended audience (Creswell, 2007). Within this study, I take the voices and the experiences of participants then collates and interprets these into themes that present a range of perceptions on a the problem being studied (Creswell, 2007). Epistemology explains a different form of knowledge of those realities viewed through ontology considerations. It shows the nature of relationship between the inquirer and the inquired (Potter, 2013). Within this research process, I collected the perceptions of the participants from a neutral position not seeking to influence participant views. Unlike quantitative inquiry where researchers are more concerned about specific inferences that come from a test score, the qualitative investigator uses participant views as a lens to view the topic under investigation. To test the validity of information, qualitative researchers often return multiple data sources to confirm constructs and interpretation (Patton, 1990).

There are various qualitative research methodologies, for instance: case study, narrative inquiry, ethnomethodology, grounded theory, life history, participant-observer study, phenomenological study, and action research (Denzin and Lincoln, 2011). Moreover, Yin (2010) argued that doing qualitative research may use a more generalized form or without strict adherence to any particular traditional approach. A case study was conducted to develop an understanding of various topics about people, contexts, events and other social phenomenon (Yin, 2011). This methodology facilitates the investigator to derive insights from a complex situation by using a variety of sources.

According to Stenbacka (2001) the reliability of qualitative study can be judged by seeing its purpose in generating an understanding of the issue. Guba and Lincoln (1989) urged that credibility, neutrality, consistency and applicability are also to be important in qualitative research. Meanwhile Creswell and Miller (2000), using paradigm assumptions presented by Guba and Lincoln (1994), offered procedures to improve the validity of qualitative research (Table 3). Within this study, I employ triangulation approach by seeking for other sources of information to create themes to be used for further analysis. This was carried out by crossing the data sources, theories and methods.
4.3 Sampling method

The sampling technique carried out for this research is purposively random sampling based on Patton (1990). The participants were selected considering their experiences and knowledge on the TLAS certification. For the in-depth interviews, the sample size was determined by stopping when saturation was reached in stories, themes, issues, and topics (Boyce and Neale, 2006). Additionally, one of the characteristics of qualitative inquiry is the sample size is not an absolute. Qualitative research is more focused on the events, phenomena and experience rather than the number of participants (Miles and Huberman, 1994, Strauss and Corbin, 1997).

The thesis uses in-depth interviews and observation as the primary data collection method. The respondents were selected based on the observations and recommendations from key informants. The criteria in choosing the respondents is the age of certificate, accessibility to the respondents, and the willingness of respondents to speak freely with the interviewer. The company chosen has been certified under the TLAS for more than two years. A purposive sampling method was selected to ensure the quality of information rather than quantity.

Table 3 Validity procedure within qualitative lens and paradigm assumptions

<table>
<thead>
<tr>
<th>Paradigm assumption/lens</th>
<th>Postpositivism or Systematic paradigm</th>
<th>Constructivism paradigm</th>
<th>Critical paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lens of the researcher</td>
<td>triangulation</td>
<td>Disconfirming evidence</td>
<td>Researcher reflexivity</td>
</tr>
<tr>
<td>Lens of study participant</td>
<td>Member checking</td>
<td>Prolonged engagement on the field</td>
<td>Collaboration</td>
</tr>
<tr>
<td>Lens of people external to the study (reviewers, readers)</td>
<td>The audit trail</td>
<td>Thick rich description</td>
<td>Peer debriefing</td>
</tr>
</tbody>
</table>

Adopted from: Creswell and Miller (2000)

4.4 Data collection method

Data collection is an action of gathering various related information to answer research questions (Creswell, 2007). It is important to combine the research aim, allocated timeframe, budget, and human resources available in order to indicate the most suitable primary method of data collection (Robson, 2002). I use multiple data collection methods which include interviews, field observation, TLAS documents and reports from Indonesian Ministry of Forestry, legal and institutional framework of TLAS, and documents from the Certification Body such as assessment reports.
The main data of this research were collected through in-depth interviews. Interviews allow greater flexibility and provide opportunities to participants to bring out the issues that are not previously constructed by researcher. Thus, interviews may have richness and provide an understanding of the issue (Miles and Huberman, 1994). There are many forms of interviews including individual or group, face to face, mailed or telephone; structured, semi structured or unstructured. I carried out face-to-face semi-structured interview with a specified set of probing questions and the same questions were asked to all participants and interviews allow the opportunity to new themes emerged beyond protocol.

In-depth interviewing is a qualitative research method to explore the view of a small number of participants individually about a particular topic (Boyce and Neale, 2006) and it is a common approach used by qualitative investigator. As a result, the evidence often present in words, pictures, or some other narrative figure to keep the originality experiences of participants. There are some key features offered by in-depth interviews technique as the following: (1) it offers much more detail information that other technique; (2) while interviewing the atmosphere is more relaxed because the participant fell free to express their experience without a specific limitation; (3) because there is no limitation interview duration, this technique is very time intensive; (4) bias has high possibility to happen when interviewing participant with particular agenda; (5) due to the small sample size, investigator need to be cautious in generalizing the results (Boyce and Neale, 2006).

The in-depth interview process involves framing interviews questions, identification of potential participants, interview conduct and selection of analysis tools. The themes formed through literature reviews guided the interviews. Participants were free to express their experiences with the interviewer providing signposts based on study themes. Interviews then were recorded and transcribed, complemented by written notes and field observations. The information gathered was then translated into English and organized based on themes.

The questions for the interviews are designed to deliver information appropriate with research questions. The first group of data was collected through interviewing actors from forest companies such as the directors, managers and employees. Contacting companies to ask for participation in this research is often challenging because this demand a specific time for face-to-face interview. To gather enough data and participants, a strategy was conducted. A letter was sent to the Indonesian Forest Concessionaire Association (APHI) to ask recommendation for conducting this research. APHI recommended 9 certified forest companies which have been implemented TLAS certification standard. Nine certified forest companies were contacted and all of them agree to participate in this research. Interviews were conducted at the participants’ office and took time about 1 to 2 hours. To
complement the data from the interviews, I also conducted some field observation, however, due to limited time of the research fieldwork observation only can be done by visiting one of certified forest companies. During the four days of field observation I observed how the companies apply the certification standard and I also conducted informal discussion with the employees. The second stage of data collection was focused on TLAS implementation in community forest. To achieve this aim, I contacted the head of community forestry organization and explained about the research plan. Ten community forest holders were willing to participate in this research. Interviews were conducted in the office of community forest organization and each interview spent time about one to two hours. The list of respondent in this study can be seen in Table 4.

<table>
<thead>
<tr>
<th>Code</th>
<th>Occupation</th>
<th>Location of interview</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Director</td>
<td>Jakarta</td>
<td>Male</td>
</tr>
<tr>
<td>D2</td>
<td>Director</td>
<td>Jakarta</td>
<td>Male</td>
</tr>
<tr>
<td>D3</td>
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<td>D4</td>
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<td>Male</td>
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<tr>
<td>E2</td>
<td>Expert</td>
<td>Jakarta</td>
<td>Female</td>
</tr>
<tr>
<td>E3</td>
<td>Expert</td>
<td>Jakarta</td>
<td>Male</td>
</tr>
<tr>
<td>C1</td>
<td>Farmer</td>
<td>Jogjakarta</td>
<td>Male</td>
</tr>
<tr>
<td>C2</td>
<td>Farmer</td>
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<td>C3</td>
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<tr>
<td>C10</td>
<td>Farmer</td>
<td>Jogjakarta</td>
<td>Male</td>
</tr>
</tbody>
</table>
4.5 Research area

The nine selected certified forest companies are located in East Kalimantan province. These consist of natural logging concessions (HPH) and Timber Estates (HTI). East Kalimantan is the second largest province in Indonesia. It consists of 4 administrative cities, 10 districts, and 122 sub-districts (Indonesian Central Bureau of Statistics, 2010). This province has 14.6 million ha of forest area which includes 9.7 million ha of production forest and 4.9 ha of protected forest. East Kalimantan has, and continues to attract significant domestic and national investment due to the lucrative potential of its natural resources. In forestry sector, it has the largest number of commercial forest companies. According to Ministry of Forestry (2002), there are 75 units (8.3 million ha) of natural forest logging concessions and 22 units (1 million ha) of plantation forest logging concessions.

The second study area is Jogjakarta where a well-established community forest organization has implemented TLAS certification. Jogjakarta is located in Java Island where there are well-established community forest organizations. The community forest in the study area were categorized into farm forestry, where the forests stand on the farmer’s private land. There are 815 ha of certified community forest in the study area located in Gunung Kidul District. The forest farmers are associated into farmer cooperative named Koperasi Wana Manunggal Lestari (KWML). The cooperative consists of three group of farmers that come from three different villages; Dengok, Nglipar and Girisekar Moreover, the development of community-based forest in Jogjakarta is being intensified which is supported by the local government commitment to increase the total community forest area to 30% (Rudiana, 2013). Assessing TLAS certification in community-based forest is important since it will affect the community welfare, and this study provides a better understanding on TLAS impacts on community forests. Field observation was also conducted to strengthen the data from community forest holders’ interviews.

4.6 Data analysis

Qualitative data analysis consists of three main phases: preparation, organizing and reporting. According to Elo and Kyngäs (2008), there is no a specific rules for analysing qualitative data. I choose content analysis as it can capture specific information through analysing words or themes. Content analysis was perceived as a flexible method to analyse data. In general, the stage of the data analysis for this study as follows:

1. Initial analysis of each interview. At this stage, interviews were transcribe and divided into section that shows expression on each question. Then the responses were grouped into themes.
2. Mapping the categories. Organization of interview content generated in previous stage and linking different themes to a new concept.

3. Find the focus of interviews. At this stage, this study focus on interviews based on the research questions, and then the most interesting categories will be chosen to be discussed.

4. Content analysis: this stage aims to sharpen the analysis by searching the patterns between different responses from interviews, and to emphasize on the different and the similarities of the expressions.

Figure 3 Informal discussion with employees of a certified forest company.

Figure 4 Field observation in certified community forests.
In detail, the content analysis was conducted by following directed content analysis as explained by Graneheim and Lundman (2004). According to them, directed content analysis can be used by research that started with theory where codes are defined before and during the data analysis. At the end, this analysis generated themes or keywords that either derived from theory or relevant research finding.

4.7 Ethical considerations

The conduct of doing social research is very important for social inquirer (Blaxter, Hughes, & Tight, 2001, p.158). To be an ethical study, the researcher needs to ensure the safety and the rights of the participants. To address the ethical issues the following steps were considered: (1) study participant were informed that they can withdraw their participation in this study at any time; (2) the researcher keeps the confidentiality of information from participants; (3) the researcher ensures participants’ identities and interests of those involved were protected and that they were not put at any undue risk; (4) Informed consent was obtained from all those involved. Ethical approval was obtained from Ethics Committee of the University of Queensland School of Geography, Planning and Environmental Management on October 2013.
Chapter 5 - Benefits and challenges of the Indonesia Timber Legality Assurance System (TLAS): Comparing the perspectives of community forest holders and forest companies

Note: submitted to the journal Small Scale Forestry

Sadrah Devi, Paul Dargusch, Dona Whiley
School of Geography, Planning and Environmental Management, University of Queensland
Brisbane St Lucia, QLD 4072
Email: s.devi@uq.edu.au
Paul Dargusch
Email: p.dargusch@uq.edu.au
Dona Whiley
Email: d.whiley2@uq.edu.au

Abstract

The Indonesia Timber Legality Assurance System (TLAS), a regulatory framework in forestry and timber trading, has been of growing concern for forestry businesses since its emergence in 2009. Under this framework two mandatory certification programs – the Sustainable Forest Management (PHPL) certification and Timber Legality (LK) – were introduced for forest companies and community forests. Until now there has been little examination on the TLAS and its impacts on management, economic and social aspects. This study drew from the perception of forest managers and community forest owners to address these following questions: (1) How does the TLAS framework affect forest companies and community forests?; (2) How are the benefits and challenges distributed between the two groups of certified holders and what are the difference between them. Through an examination of the perspectives of actors from certification holders, the comparison would contributes an insight to policy makers and forestry stakeholders to make this instrument more effective. This study suggests TLAS certification does impact on management, economic and social aspects in a number of ways. Enhanced forest management, improved social relationships, and shortening some bureaucracy process within forest management are the main benefits resulted from the TLAS adoption. However, certification costs appear to be barrier to certification adoption for both community forest managers and forest companies. This research also highlighted that in comparison to forest companies, community forest holders experienced higher
certification costs per unit forest area. In general, TLAS certification has not generated significant market benefit.

**Keywords:** Indonesia, Timber Legality Assurance System, Community Forest, Forest Company.

### 5.1 Introduction

Within a relatively short space of time, forest certification has shown its capacity as a tool for overcoming forestry problems. The term forest certification was first introduced in the mid-1980s as concern increased around deforestation, mostly in tropical forests (Upton and Bass, 1995). The underlying rationale for forest certification was to promote environmentally, socially and economically sustainable forest management for forests’ long term development (Auld et al., 2008). As market-driven voluntary mechanisms, forest certification confronted traditional regulatory based forest governance and aimed to ensure market access for certified products (Viana, 1996, Upton and Bass, 1995, Elliott, 2000). In short, certification was argued to provide a mechanism where consumer preference is influenced by the credibility and quality of production.

In some developing countries, forest certification has been succeed in generating premium price and increased market access of certified timber products. For example, in Malaysia, certification raised the price of certified timber products (Kollert and Lagan, 2007). Bolivian certified timber also had a price 5-51 percent higher than non-certified products (Nebel et al., 2005). Similarly, Vietnam’s recent experience in forest certification for small forest holders shows this program has also resulted in improved forest management and market access (Auer, 2012).

The benefits of certification do not always flow evenly and research has found that certification benefits industrial forest producers over and above small-scale forest owners. As in many cases forest certification costs are fixed, thus forest companies with large forest area may have lower average cost per unit area compare to small-scale forestry and community-based forest. Fragile community institutions and lack of competitive advantages have also identified as main challenges for forest certification in community forest (Pagdee et al., 2006). As a result, few community forests have been certified compare to certified industrial forest companies (de Pourcq et al., 2009, Molnar and Trends, 2003). On the other hand, well-managed forests and experiences of forestry practices become the strong points for forest companies to be benefited from certification (Nebel et al., 2005).

Forest certification in developing countries has faced challenges in recent years. Only 13 percent of the world’s certified forests are located in developing countries (Durst et al., 2006). The low rate of
certification in developing countries is the result of a number of constraints such as wide gaps between the existing forest practices standard and certification requirements, and certification costs (Durst et al., 2006). The ability to cover certification costs may seem to determine the long-term certification. In addition, corruption and weak law enforcement have been detected as factors that influence the successful adoption of certification schemes in developing countries (Alemagi et al., 2012).

Indonesia provides an example of a developing country has been challenged by the uptake of forest certification. The majority of forestry problems in Indonesia such as dispute over forest land tenure, forest policy complexity, economic and social issues have inhibited the application of forest certification (Cashore et al., 2006a). Though forest certification mechanisms have been introduced in 1990s, such as LEI (Lembaga Ekolabel Indonesia) and FSC (Forest Stewardship Council), the total number of certified forests was low, less than ten percent. The small number of certified forest may indicate that only a few forest areas were managed in sustainable way and comply with the regulation. This low rate indicated that the forestry operation in most of Indonesian forests were unidentified. Nonetheless, high rate of deforestation and existing illegal logging within Indonesian forest have showed unsustainable forestry practices and thus push the needs of forest certification. In 2009, the Indonesian Government established a national regulatory framework for timber trade and forest management called Timber Legality Assurance System (TLAS). Despite the TLAS may affect 35 million hectares of Indonesian production forests including community forests and forest companies, there remains a lack of empirical information on the effects of the role-out of the TLAS. Community-based forestry and industrial forests have been contributing in supplying wood material for local and foreign market. However, as they are different in scale and type of management, they may have different perception on the effect of TLAS. This research attempted to provide an insight into the TLAS implementation and comparisons of benefits and challenges between community forests and forest companies. Building on previous studies that assessed the TLAS implementation in community forests (Obidzinski et al., 2014, Nurrochmat et al., 2014, Harada and Wiyono, 2013), this study provides an understanding of how the current TLAS implementation can be improved.

5.1.1 The emergence of the TLAS regulatory framework

The rate of deforestation reached a peak during the economic crisis of 1997–1998, when more than two million hectares forests were lost (Casson and Obidzinski, 2002). Deforestation at this time was driven by economic needs that led to illegal logging, and land conversion typically forest to agriculture. As reported in previous studies, illegal logging was facilitated by failed law enforcement and governance problems (Casson and Obidzinski, 2002, McCarthy, 2002, Hansen and
Treue, 2008). Since 1980s the Government has put in place regulation to control illegal logging and its related trade. The regulation was applied at the local, regional and national level and aim to trace the origins of timber and assure legal compliance. However, this effort was deemed ineffective since illegal timber still found its way to the market (Dharmawan et al., 2012). Local and global Environmental organizations have been highly criticized illegal logging in Indonesia and placed greater pressure on the Government to bring heavier regulation into effect. Another factor that has driven the Government to make an effective regulation was the timber trade agreement between Indonesian and European Union countries through FLEGT (Forest Law Enforcement, governance and trade) (Simula et al., 2009). In response to these pressures, the Indonesian government developed a national regulatory framework to verify the legality of timber products called Timber Legality Assurance System (TLAS).

Indonesia began the establishment of a timber trade regulatory framework in 2003 involved forestry stakeholders. In 2009 this initiative was enacted by the Ministry of Forestry through regulation no. 39/Menhut-II/2009 on standards and guidelines for performance evaluation and timber legality verification on permit holders and community forestry. The TLAS provides national certification scheme for Indonesian forests and timber industries. According to Durst et al. (2006), national certification schemes developed by local stakeholders had the potential to address specific forest problems and accommodate the socio-economic condition of the country. Multi-stakeholder based national certification can gain legitimacy much easier that foreign certification mechanisms (Cashore, 2002). This can be the strong point of the TLAS certification scheme to achieve effectiveness Young (2002).

The TLAS standardizes the procedures of timber production and chain of custody within forests management units and processing industries. There are two types of forest certification standards regulated under the TLAS framework. First is Sustainable Forest Management (PHPL) which applies to industrial forests and second is the Timber Legality (LK) standard which applies to non-industrial forestry includes community forests. PHLP is considered by forest stakeholders as a comprehensive assessment which consists of prerequisites around production, the environment, social and legal aspect, while LK focuses solely on legal aspects.

5.1.2 Study context

To understand the context of forest certification in Indonesian forests, the characteristic of forest companies and community forest were presented as follows. According to the Indonesian Law No.41 in 1999, Farm forest or Hutan Rakyat is defined as a forest that allocates land ownership rights. The Ministry of Forestry (MoF) defines it as forest owned by people with a minimum area of 0.25 ha, with more than 50% in
crown closures of wood plants and/or other plants, and/or a minimum of 500 trees per hectare at the year’s first planting (Forestry Minister Decision No.49, 1997). Farm forests are expected to be one of the main sources of Indonesian timber needs in the future. According to Rohadi et al. (2010) the main motivation for the community to improve forest plantations is long term investment or future income. Important factors to keep these motivations are the development of the market for community timber at reasonable prices and the existence of forest policy which support community forest development (Fujiwara et al., 2011). The community forests have vulnerability to maximize benefits due to lacked information on prices and market access. These factors also have limited their ability to engage in forest certification. There is no exact figure on the extent of community forest areas in Indonesia, although literature suggests the number has increased in recent years (Alexander et al., 2008, Rohadi et al., 2010).

According to the Ministry of Forestry decree no P.50/menhut-II/2010 there are two categories of forest company land-use types: IUPHHK-HA (Logging concession) or IUPHHK-HT (Timber estate). IUPHHK-HA is a business permit given by the Government to a company to use forest products within “natural” forests, while IUPHHK-HT is a permission of timber plantation given to use non-productive forest areas. These business permits are issued for 55-60 years and can be extended based on the regulation. Furthermore, data from the Ministry of Forestry seems to explain unsustainable forest management practices where the numbers of natural logging concession have been declining over the last ten years, from 362 in 2000 to 274 in 2013 (Ministry of Forestry, 2012). There is not many literature assessed certification in forest companies in Indonesia, this research will close the gap by contribute an insight into the preliminary impacts of the mandatory certification.

5.2 Research method

This research followed a qualitative approach, which is useful for capturing the perspectives of participants through exploring their beliefs on a situation (Creswell et al., 2007, Yin, 2010). The main data for this study was collected through in-depth interviews with supplementary data gathered through field observation and document analysis. Interview ranged in length between one and two hours, were conducted in Indonesian and took place at participants’ bases. The interviews were conducted between November 2013 and January 2014 in three different places, Jakarta, East Kalimantan and Jogjakarta. Expert interviews were conducted in Jakarta with selected experts from government, certification auditors and NGOs who were actively involved in TLAS arrangement aimed to explore information related to the establishment of TLAS. In total 34 in-depth interviews were conducted. The researcher set themes to guide the interviews and the steps of interviews were
adopted from Legard et al. (2003). Purposive sample technique is needed because TLAS is a new policy and other sampling methods would not necessarily yield good participants.

The participants in this study are forest concession holders that have gained PHPL (a scheme of TLAS for concessions owners) and farm forest owners who also has gained LK certificate (a scheme of TLAS for community forest). According to the Ministry of environment and forestry of Indonesia P.95/Menhut-II/2014 PHPL and LK are the schemes of TLAS. The differences between them are factors being assessed, where PHLP requires forest management unit to comply with the sustainable forestry standard, while LK is focused on legality aspects of the timber production.

The first group of participants were farmers who involved in a farmer cooperative, located in Jogjakarta province. The group gained LEI certification, a voluntary basis certification scheme, in 2008 and LK certification in 2011. This group of farmers is one of the pioneers of community certified forest in Indonesia. Farmers were associated under a cooperative, established in 2006, which has 635 members made up of local farmers who administer 815 ha of community forests.

The second group of participants were forest company directors, managers and workers. The certified forest companies were selected based on recommendations from the Indonesian Association for Forest Concession Holders (APHI). To gain access to certified forest companies, a letter was sent to APHI to ask for introduction and recommendation for conducting this research. APHI recommended nine (PHPL) certified forest companies located in East Kalimantan province that had held certification for more than two years. All nine recommended certified forest companies were contacted and participated in this research.

The interviews consist of general background question about the certified holders, products, and their experiences in gaining certification. Open ended questions on certification benefits and challenges were also addressed. Conducting interviews required direct personal contact with participants and depended on the willingness of the participant to give information, thus the sample was limited by the time and budget of this research. All data were coded and analysed by identifying each meaningful section of text. The codes then were categorized into sub-themes that later will be classified into themes. The themes emerged from the text were also connected to the probing question that have been early arranged to meet the objectives of this research. The data then was triangulated and supplemented with expert interviews and direct observation. This research adopt thematic analysis which refers to Braun and Clarke (2006). For data analysis and direct quote, interviews were coded using symbols and numbers as follows: community forest holders (C1,C2,…); directors of forest companies (D1,D2,…); forest managers (M1,M2,…); and forest workers (W1,W2,…).
5.3 Results

Findings from this study are categorized into five main themes (Table 5): (1) social benefits; (2) economic benefits; (3) changing in organization; (4) non-market incentives; and (5) challenges. Characteristics of the two types of forest holders in this study were analysed to understand how these characteristics may influence the impact of the TLAS regulatory framework. Community forest holders in the research area planted trees on their private land and also known as farm forest. Usually the land was inherited from a previous family member and managed traditionally. Based on interviews, the timber produced within farm forests is considered a long-term investment, however, during hard times or emergency needs, the farmer may sell the timber for immediate cash. Income for daily needs is much more likely to be met through income from agriculture activities or goods trading. Generally, the land dedicated to timber plantation in community forests is relatively small, with the average forest farmer growing timber on land between 0.5 and 5 hectares in size. Timber forests are mainly teak wood plantations and timber is generally sold to the local processing industries. The results suggest as community forests were managed by the rural people, the amount of capital available for managing their timber plantations depended on family income. Due to the traditional forestry practices applied and small size in terms of area, farm forest productions were limited in volume and vary in size. This has been perceived as the limitation of having a long-term contract with processing companies. However, timber production from farm in aggregate is considered as an important source of wood supply in the study area.

Table 5 Themes emerge from interviews

<table>
<thead>
<tr>
<th>Themes</th>
<th>Meanings</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social benefits</td>
<td>Benefits that felt by the workers, farmers and the communities.</td>
<td>Welfare, safety working environment, capacity building, the relationship between company and local people, local people participation, employment</td>
</tr>
<tr>
<td>Economic benefits</td>
<td>Benefits that financially felt by the participants.</td>
<td>Market access, market recognition, premium price, efficiency in production process, supply chain support</td>
</tr>
<tr>
<td>Managerial benefits</td>
<td>Benefits related to changing in terms of forest management.</td>
<td>Working culture, organization quality, documentation, forest management practices</td>
</tr>
<tr>
<td>Government incentives</td>
<td>Benefits that come from the government as an appreciation to certificate owners.</td>
<td>Incentives from the government and donor bodies, simplifying of bureaucracy process, improved infrastructures.</td>
</tr>
<tr>
<td>Challenges</td>
<td>Those can hinder the successful of TLAS.</td>
<td>Certification cost, interplay with other relevant policy, land tenure issue, law-enforcement</td>
</tr>
</tbody>
</table>

As expected, companies engaged in forestry had much larger areas devoted to timber production with area ranging in size from 50 000 to 150 000 hectares. All companies investigated in this
research were motivated to produce timber in order to maximise the commercial economic value of forests. The numbers of forest workers employed by companies range from 120 to 200 depending on the size of the forest area and the production activities of the company. Companies generally sold their logs to large-scale forest industries, which mostly produced plywood. Forest companies applied comprehensive silviculture system including techniques of planting, tree seedling nursery and harvesting to guarantee the quality of timber production. The characteristic comparison of community forests and forest companies is presented in Table 6.

Table 6 Forest characteristic comparison

<table>
<thead>
<tr>
<th>Land size</th>
<th>Community forest</th>
<th>Forest companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation for planting</td>
<td>Future income or investment</td>
<td>Profit</td>
</tr>
<tr>
<td>Management</td>
<td>Manage by the family members</td>
<td>Company organization</td>
</tr>
<tr>
<td>Market</td>
<td>Small-medium local industries</td>
<td>Large-scale wood industries</td>
</tr>
<tr>
<td>Capital</td>
<td>Small capital, inherited by family members</td>
<td>Capital intensive business</td>
</tr>
<tr>
<td>Timber harvesting</td>
<td>Limited in volume, specification and continuity of supply</td>
<td>Has competitive advantage in volume, species variety, specification and continuity.</td>
</tr>
</tbody>
</table>

Sources: interviews and document analysis

5.3.1 Certification preparation, audit, and maintenance costs

From the certified forest holder perceptions, the cost is one of the major inhibiting factors to gain and maintain certification. To adopt certification, forest holders have to precede these following stages: (1) preparation; (2) audit assessment; and (3) standard maintenance. Preparation stage was included all activities to meet the certification requirements such as complying the timber legality documents and implementing sustainable forest management standard. Within forest companies, upgrading camp facilities and improved workers knowledge as parts of preparation activities were perceived costly. New staffs were being recruited to specifically arrange and maintain certification. On the other hand, in the preparation, community forest holders were assisted by a consultant, funded by a donor body to help them to comply with the required standards. Community forest holders noted that this assistance was crucial because it gave farmers knowledge of the certification process where previously they had none.

“We are very thankful for the assistance in completing the certification requirements. Forest certification is a new system and we believe it is good for our forest. We also thank to the external institutions that provided an initial funding for certification, without this aid we could never afford certification” (C4)
The assessment processes were conducted by a certification body accredited by the National Accredited Committee (KAN). According to the results, the audits spent around 3,000 USD to certify 500 to 1000 hectares of community forest. This certification lasts for ten years and will be reassessed every two years. On the other hand, the audit cost for forest companies were much varied depended on the size of forest area, location and the quality of current forest management. According to the interviews, the audit cost of PHPL certification ranged from 0.5 to 1.00 USD per hectare forest area. From the perspectives of community forest holders, maintaining certification was hindered by costs and the limited knowledge on certified timber market. The funding for maintaining certification was taken from cooperative profit which is highly depended on the community timber sales. In addition, some participants were not aware of the full cost of maintaining certification.

From the managers’ perceptions, maintaining certification is more than just to cover the costs. Consistency to certification standard is critical because it is more likely to change the culture of the company which needs efforts from all employments.

“Certification is not always about how to suit forestry activities with the certification standard but most of all changing the whole organization culture. Therefore, it needs consistency and continuous efforts” (M1).

Field observation showed there is still some inconsistency among forest workers relating to compliance with certification, for example, some workers inconsistently use safety equipment when doing their job.

The comparison of forest holders’ perspectives on the TLAS regulatory framework are presented in Table 7. The table presents the research analysis based on five themes: certification cost; economic benefits; social benefits; incentives from the Government; and challenges. It clearly seen forest certification has brought different impacts to forest holders. The differences were mainly seen in the potential economic benefits and challenges.

5.3.2 The lack of economic benefits

This research found that those engaging in mandatory forest certification had high expectations the process would bring economic benefits because the schemes were established through multi stakeholder forums and legitimated by the government. Four of nine certified companies and the community forest organization have also been adopting voluntary certification scheme. It is also expected the adoption of mandatory certification scheme will give higher benefits to the certified holders than the voluntary certification.

Unlike the finding for certification in the developing countries (Kollert and Lagan, 2007, Nebel et al., 2005, Auer, 2012), mandatory certification has not resulted in economic benefits. The results
indicated after two years holding certification, there is no significant improvement in market access or timber price. To date, the community forests only supplies a small-scale processing company and has no access to the premium market. Due to its limitation in volume and continuity of yield, the community forest holders were challenged to compete with industrial forests. As a result, it is difficult for community forests to arrange long-term contracts with processing companies. In addition, the paperwork associated with the certification process reduced community farmers’ capacity to perform other income-generating activities. Thus, participants found a considerable gap between their expectations and the reality. Certification was expected to attract processing companies to create a sustainable market for certified community timber however the reality has been quite different.

Similar to the community forest holders, forest managers noticed current market mechanism and policies have limited market access. For example, the certified timber price was reliant on local markets which is unaffected by the premium priced market. Many processing companies are still willing to buy uncertified timber which offers low price. The opportunities to get premium price was also inhibited by most certified companies have only one or two local buyers which further weaken bargaining positions on price. Indeed, the results indicated that this price is lower than expected market price for the region. Information from the board of The APHI suggested that the low price of local timber did not compare with global premium price (Board member of APHI, pers.comm., January 15, 2014). This information was consistent with the data from the International Timber Trade Organization/ITTO (2014) that showed Indonesian log prices range between 195 to 220 USD per m³, while in other Asian countries such as Malaysia, the average log prices range between 250 to 260 USD per m³.

5.3.3 Government incentive

Government incentive has been identified as an important advantage from mandatory certification. This incentive can be seen from the shortening of bureaucratic process in some document approvals. Government has given authority to certified forest companies to legalize their annual work plan (RKT). Similarly, the Government allows certified community forest organization to issue timber legality documents. Prior to certification, these documents must be legitimated by the government officials through layers of bureaucratic process which is perceived as costly. Both groups of participants stated that this privilege has reduced costs related to non-operational activity. However, they perceive that this advantage is uncompareable to the total certification costs. The participant expected larger market access and price premium as financial source to cover the certification cost.
5.3.4 Improved forest management

Community forest holders identified that certification has improved farmers’ understanding of timber resource management. Following certification, timber stock and flow within the group of forest farmers such as standing trees inventory and timber trade and transport documents, have become well documented. According to participants, documentation has helped them to predict potential timber sources within the farmer groups and is used to set long term planning around timber production. The results highlighted certification programs have improved technical knowledge and skills of forest management have been improved. Training and workshops held by the Government and NGOs increased their knowledge on forest management.

Similar to farm forestry, the results confirmed that certification has improved forest management within certified companies. For example, new employees were recruited to improve and maintain the achieved standards. They were trained for managerial and technical skill in forest management. Furthermore, the results showed increased awareness of management and conservation protection among certified companies. Forestry practices such as reduced impact logging and High Conservation Value Forest (HCVF) have been implemented to achieve sustainable forest management.

5.3.5 Capacity building of forest workers and community forest holders

Improved knowledge and skills of certification and forestry, recognition from government and international, and farmer cooperative development have been identified by certified community forest holders as important social benefits of LK adoption. Results identified that the Government and international programs focused on certification of community forestry arrange education and capacity building programs for community forest holders. These programs aimed to prepare forest farmers to implement and maintain certification, and benefit from certification. Silviculture systems, seedling nurseries and timber measurements are examples of topics the programs. From the observation, certification also facilitated learning within the community forest holder about sustainable forest management.
<table>
<thead>
<tr>
<th>Theme</th>
<th>Forest companies</th>
<th>Community forests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Certification cost</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Preparation of certification requirement</td>
<td>3-4 USD per ha, depend on the current management system</td>
<td>N/A</td>
</tr>
<tr>
<td>- Audit cost</td>
<td>0.5-1 USD per ha</td>
<td>3-6 USD per ha</td>
</tr>
<tr>
<td>- Maintain cost – surveillance cost</td>
<td>1-1.5 USD per ha</td>
<td>2-3 USD per ha</td>
</tr>
<tr>
<td><strong>Economic benefits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Price premium</td>
<td>No price premium</td>
<td>No price premium</td>
</tr>
<tr>
<td>- Access to eco-sensitive market</td>
<td>Only supply local processing companies.</td>
<td>Serve local small-medium scale processing companies.</td>
</tr>
<tr>
<td><strong>Social benefit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Improved facilities of forest camps</td>
<td>Improved housing, health and sports facilities, and safety equipment</td>
<td>N/A</td>
</tr>
<tr>
<td>- Increase capacity and knowledge on forest management</td>
<td>Improved training to increase worker knowledge and skills</td>
<td>Increased skills and knowledge</td>
</tr>
<tr>
<td>- Social relationship</td>
<td>less conflict, recruitment from local community</td>
<td>Improved relationship between local community, government and NGOs through activities in forest community development.</td>
</tr>
<tr>
<td><strong>Managerial benefits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Organization structure and function</td>
<td>The position in company organization determined by skills and competency</td>
<td>Small-scale forest owners incorporated in farmer cooperative</td>
</tr>
<tr>
<td>- Documentation and legal compliance</td>
<td>Improved compliance to current regulations, well-documented of forest activities</td>
<td>Improved documentation in timber chain and inventory, and property rights</td>
</tr>
<tr>
<td><strong>Government incentive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The ability to legalized its own annual work plan</td>
<td>The ability to issue timber transport documents</td>
<td>Supports from government or donor through training programs and funding.</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Not all buyers require certification, high cost of certification and perceived low price of certified timber</td>
<td>Perceived high cost of certification while benefits did not meet the expectation</td>
<td></td>
</tr>
<tr>
<td>- Less competitive in terms of volume, quality and production continuity compare to large-scale forest</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7  The comparison of benefits and challenges between community forests and forest companies.
5.3.5 Capacity building of forest workers and community forest holders

Improved knowledge and skills of certification and forestry, recognition from government and international, and farmer cooperative development have been identified by certified community forest holders as important social benefits of LK adoption. Results identified that the Government and international programs focused on certification of community forestry arrange education and capacity building programs for community forest holders. These programs aimed to prepare forest farmers to implement and maintain certification, and benefit from certification. Silviculture systems, seedling nurseries and timber measurements are examples of topics the programs. From the observation, certification also facilitated learning within the community forest holder about sustainable forest management.

Interviews with farmers drew attention to improvement in quality of the community forest organization. The cooperative was established as the legal foundation of the farmer group as required by certification. The main capital for the operation and improvement of the cooperative business come from the members. The cooperative provides a soft loan which helped forest farmers to manage timber harvesting. As a result, farmers were discouraged from premature timber harvesting to meet the emergency needs. The needs for immediate cash have been the main constraint for sustainable community forests. In addition, the cooperative also facilitated learning for community forest holders about organization and forestry practices, and provided market information.

Interviews of actors from certified forest companies confirmed that certification has resulted in improved social outcomes for forestry workers and local communities. Certification has driven companies to improve facilities inside forest camps, such as housing and health facilities. The improved facilities have generated a favourable work place for the forest workers. The results suggest that forest workers and managers are satisfied that certification has improved workers’ welfare. In addition, improvements were also seen in the level of technical capacity relating to forest management and planning. Training and skills development were arranged to ensure workers can apply and maintain the criteria required under certification. Managers suggested that prior to certification workers did not have appropriate managerial and technical knowledge to manage forests in a sustainable way. This statement can be inferred from the following interview scripts:

“Since the company became certified, we became familiar with new technology in managing the forest. For example, now we can use GIS software for forest planning, and also more skilled-workers being recruited” (M1).
“If forest certification was well implemented, it will bring good value to the forest, community and the company itself. Forest management becomes more structured, timber production activities were documented properly and the organization has clear objectives”. (W2)

5.3.6 Improved relationships between stakeholders

Moreover, document analysis and field observation show certification improved the relationship between companies and local communities and it potentially improved local welfare. Based on documentary evidence from a company, following certification the company required a minimum of 40 percent employment for local people, which has not been stated in the documentation prior certification. The results also showed certified companies demonstrated Corporate Social Responsibility (CSR) where companies donated public facility building such as schools, cultural houses and worship places.

Interviews also mentioned that certification has improved the relationship between communities, local governments and external organizations. This relationship generated recognition to certified community forest organization for demonstrating a well-managed forest. Government and NGO rewarded certified community forest holders through trainings and education programs and improved infrastructure in villages.

5.3.7 Barriers to the TLAS adoption

Besides the benefits, participants also spoke about the constraints in achieving and maintaining certification. Certification costs were the first issue to appear from the interviews as both group certified forest holders objected to certification costs, especially when they found they could not maximize the return on investment through scale and access to premium market. Some participants complained the low price of round timber in the local market. They suggested inefficiency has been occurred in wood-processing industries because the wood raw material can be obtained easily and inexpensively.

“The local wood-processing industries need to be more efficient in using wood raw material. The best quality of logs can be processed into moulding or other high value products, thus this will increase the added value of the final products” (D2)

A major constraint faced by the community forest was the difficulty in attained a preferred buyer for their timber products. Mainly, community timber was sold to local small-medium enterprises that supply for local consumers. However, because uncertified timber is still easily found in the
market, certified timber, with its higher price, seems unattractive. Therefore, to keep the business going, certified timber was often sold at prices similar to non-certified timber. Some of the community forests and companies received support from the donors in gaining certification, but still certification would likely a problem as the donor support might not always remain. Moreover, the results showed community forests experienced higher certification cost per unit area compare to forest companies.

One major issue stated by the managers was the uncertainty of land ownership, which affects business certainty. The issue came up when the Government gave permission for non-forestry activities, such as non-timber plantation and general mining, to operate inside the forest areas. From the government document analysis, the forest land use changes were regulated under of borrow-to-use permits P.18/Menhut-II/2011.

“Uncertainty of land ownership has disrupted the long-term goals of sustainable forest management” (D7).

Another participant stated that uncertainty of land ownership was unavoidable due to complex political issue.

“Forest companies have a lack of power in securing their authorized forest area, not to mention where the forestry sector is not the priority development in the region” (D8).

This research did not discuss this issue further since it was not the main concern. However, interplay among forestry regulation has been an issue in achieving sustainable forest management.

5.4 Discussion and Conclusion

These in-depth interviews of actors from certified forest companies, certified community forests holders and experts involved in certification development in Indonesia assessed the benefits and challenges of mandatory certification schemes, PHPL and LK. Interviews with the actual foresters that implemented mandatory certification schemes provide an excellent on-the-ground opinion of its benefits and challenges. The expert interviews deliver additional information to more understand the context of certification in Indonesia.

The findings suggested that social outcomes and improved forest management are the main benefit of certification. The most important social benefits stated by community forest holders were improved forest farmers’ knowledge on forestry and certification, and improved community forest organization. On the other hand, improved social relationships between forest companies and local
communities, and increased forest workers welfare have been point out as the main social outcomes within forest companies. Both groups of participant said that forest management has significantly improved as certification required well documentation of forestry activities and efforts to practices sustainable timber production. Yet, economic benefits as the main motivation for getting certification did not reveal.

Certification was also designed to create access to premium market through increasing economic value of timber (Nebel et al., 2005). Given current condition in Indonesia, certified forest holders found mandatory certification has not resulted in real economic benefit. The results suggested lacked of opportunities to access premium market and lacked of recognition from local market to be barriers from getting economic benefits. Less power to premium market has been an inhibitor for effective certification in increasing the economic value of certified timber products (Ebeling and Yasuë, 2009). Additionally, certified forest holders often had weak bargaining positions of price when they only supply to one or two large processing companies.

Certification can be an important instrument in forestry governance for achieving sustainable forest management and assuring the legality of timber products. Developed community forest organization indicated that certification may result to self-managed forests and demonstrated ability to survive in the new forest governance system. This is seems a positive signed for the community forest development in Indonesia where certification can protect community access and certainty over land ownership rights by providing a measurement of good forest management (Molnar et al., 2004).

This study suggested that certification costs have been the main inhibitor to implement mandatory certification. As community forest holders lacked of capital, it may difficult to cover certification cost especially when economic benefits remain unreal. In comparison to forest companies, community forests experienced higher certification cost per unit area compare to forest companies. The community was also challenged by the inability to reach long-term contracts with processing companies due to limitation in terms of volume, quality and continuity of timber production; therefore, it is likely certified timber produced by community forests had a lack of competitive advantage compare to large-scale producers. If this continues, mandatory certification would likely generated unequal impact over timber producers. Certification should be benefited as an effective, efficient, equitable and credible forest policy instrument (Bass, 2001). Therefore, certification may be attractive for farm forest owners if it is affordable and brings financial benefit. The financial benefit can be achieved from premium price or a long-term supply contract with processing industry. As been stated that farm forest owners have lacked of bargaining position compare to industrial forestry, mandatory certification perceived might hamper the development of farm
forestry. Therefore, simplifying the verification process and a low-cost verification system might be more feasible and attractive for farm forestry.

Uncertainty over forestland was identified as an issue of certification in forest companies. The results showed that the policy of borrow-to-use forest area has led to dispute over forest land tenure and can hamper the effort to maintain sustainable forest management. Uncertainty in forest ownership has been argued as a key factor obstructing long-term forest management and common environmental issues in developing countries (Cubbage et al., 2007). Moreover, timber trade policy such as log export bans may have an adverse impact on certification goals (McGinley and Cubbage, 2011). In the case of Indonesia, a controlled market through log export bans can limit the certified market access that constrains certified timber producers from getting a price premium. On the other hand, in community forests where the forest is on private land, unrealized market benefits may result in conversion of community forest to other purposes such as farm land.

This research contributes new knowledge on assessing a national regulatory framework through the comparison of certification impacts on community forests and forest companies. This research provides evidence for policy makers to begin improving this national certification mechanism to make it more effective. This study has showed important information on how the forestry actors react to this new regulatory framework and provide an insight on how the TLAS can be improved. Certification perceived has brought a significant changes in forestry activities. Better forest management, increased managerial skill and capacity building are the main positive impact from having certification. TLAS might be attractive and effective, if it provides financial benefits Meanwhile, certification cost reveal as the main barrier for implementing certification. To make the TLAS more feasible, the Government might need to reassess the cost and improve market acceptance for certified timber. However, legitimated national certification schemes can be the strong point to effective certification implementation (Young, 2002). The TLAS regulatory framework has just been enacted as mandatory for all Indonesian forest holders and this study contributes an insight on its early adoption. An equally important finding from this research is that the interplay among policy or regulation is important in the effectiveness of the TLAS. As a national regulatory framework, the Government needs to guarantee related policies and regulation complements of the TLAS certification scheme.
Chapter 6 - Factors influencing the effectiveness of transnational forestry governance: The case of the Timber Legality Assurance System in Indonesia

Note: submitted to journal International Forestry review

S. Devi, P. Dargusch, D. Whiley
University of Queensland, School of Geography Planning and Environmental Management, St. Lucia. 4067, Australia
Email: s.devi@uq.edu.au, p.dargusch@uq.edu.au, d.whiley2@uq.edu.au

Abstract

The low rate of voluntary forest sustainability certification in tropical countries raises the alternative strategy of legal mandatory timber verification. This new direction has been pioneered by the Forest Law Enforcement Governance and Trade (FLEGT), through a Voluntary Partnership Agreement (VPA) between the EU and tropical exporter countries. However, limited studies on the implementation of VPA, means that there is a lack of understanding of the program’s effectiveness. This study looks at the Indonesia Timber Legality Assurance System (TLAS), a licensing system required by the VPA, to explore factors influencing this form of transnational forestry governance. As the establishment of TLAS has required significant national resources, understanding these factors may contributes to understanding how this governance regime could be improved to benefit forests and forestry business. Interviews with stakeholders representing government, non-government institutions, and actors from certified forest companies and community forests were conducted. The study suggests access to premium priced markets remains a critical factor in determining the effectiveness of the scheme. Though the TLAS is mandatory and supported by the state-authority; legitimacy and credibility, and problems associated with land tenure and law enforcement are also perceived as key factors that affect its effectiveness.

Keywords: Indonesia, verification, TLAS, VPA, FLEGT,

6.1 Introduction

In the last 30 years, world forestry regimes have gone through a transition from a conventional national regime based on domestic regulations and procedure, to a complex international forest regime that involves international rules and norms (Young, 2011). This transition was triggered by concern about deforestation worldwide, particularly in tropical forests. Since then, various forest governance schemes such as forest certification and legality verification have emerged in an attempt
to improve forest management and to address forest degradation. Forest certification for sustainability was introduced in the 1990s and has been considered by many nations as a possible solution for environmental issues related to forest resources (Vogt et al., 1999). However, within tropical and developing countries, forest certification has been largely unsuccessful and faces many challenges. Prompted by the low rate of forest certification adoption in tropical countries, legal verification of timber was initiated as an alternative, offering a less complex process than sustainable forest certification.

The number of discussions on forestry governance regime based on the concept of legality has risen significantly over the last 10 years driven by concerns at the high levels of forest destruction caused by illegal logging in tropical countries (Tacconi, 2007). Regimes are characterized by transnational forest governance agreements such as European Union (EU) Forest Law Enforcement Governance and Trade (FLEGT), and United State (US) Lacey Act. These transnational regimes require importers in the EU and US to guarantee the legality of timber within their supply chain (Bartley, 2010). The EU FLEGT has developed a Voluntary Partnership Agreement (VPA) between the EU countries and tropical producer countries. The VPA arrangement has two elements: excluding illegal timber and related products from entering the EU markets; and a due diligence system (van Heeswijk and Turnhout, 2013). The FLEGT VPA was mainly aimed at countries in Africa and South-East Asia, from where the EU imported most of their wood products.

Indonesia was selected as a research focus due to its importance in supplying tropical timber products and also demonstrating high rates of illegal logging and deforestation. As part of the FLEGT program, Indonesia and the EU have signed a VPA, which was followed by the establishment of the Timber Legality Assurance System (TLAS) for verifying exported timber products. The FLEGT program has two main objectives: to promote efforts to combat illegal logging and encourage good forest governance in VPA countries (Dooley and Ozinga, 2011). Based on these objectives, the VPA might result in positive impacts if implementation can be adapted to the complex nature of Indonesian forestry governance. Ideally, this initiative should not only broaden the access of Indonesian timber products to international market, but also bring positive impacts to the forests and society.

The negotiation of the VPA in Indonesia was started in March 2007 and signed in 2013. Since that time, forestry and timber trade regulation in Indonesia has been established under the VPA. The TLAS was established to show Indonesia’s commitment to developing a credible verification system to meet the FLEGT VPA requirements. The implementation of the TLAS has shown significant progress: as of December 2013, there were 267 units of forest management under the
scheme, covering around 20 million ha, and 629 timber companies have been certified (Sugiharto, 2014). Although the TLAS was established to support the agreement between Indonesia and the EU, the Indonesian Government extended the scope to cover the entire national timber production activities, including timber harvested and traded locally. Therefore, producers who served only local market were forced to bear the cost of this system without any market incentives due to a lower local market price (Nurochmat et al., 2014, Obidzinski et al., 2014).

Indonesia was not the first country to sign the VPA. Five other countries had signed earlier: Cameroon, Central African Republic, Ghana, Liberia, and Republic of Congo (Institute, 2014). A recent study suggested that the VPA program in Cameroon was successful in eliminating illegal players and reducing corruption and poverty. However, this study also found a mismatch between the objectives of the VPA and the private sector, which may result in stakeholder demotivation (Carodenuto and Cerutti, 2014). Within these countries, the private sector bears the cost of timber verification, but with uncertainty about future benefits. If this situation continues, lack of congruence between the VPA program and stakeholder objectives, and the increased cost of forest management, could have a negative impact on forests and forestry and provide incentives for forest conversion.

The VPA arrangement between Indonesia and the EU shifted Indonesian forestry from conventional national regimes, based solely on government rules and procedures, to an international regime. This regime provided principles, norms, rules and programs to govern the interactions between actors and forest resources (Rayner et al., 2010). In Indonesia, the TLAS was established as a regulatory framework and compliance system to assure the legality of timber and related products exported to the EU. In regards to TLAS scheme that applied as mandatory basis, this scheme will affect 35 million ha of Indonesia production forests.

Very little research has addressed the effects of legality verification in exporter countries (Carodenuto and Ramcilovic-Suominen, 2014, Carodenuto and Cerutti, 2014, van Heeswijk and Turnhout, 2013, Ochieng et al., 2013), this means that there is little understanding about how the FLEGT VPA is being implemented. As this governance regime has just launched, it is also somewhat early to quantify the effectiveness of the TLAS as a form of transitional forest governance. Identifying and understanding the factors that can influence effectiveness is important prior to evaluation. This study aims to provide an insight into the TLAS implementation through interviews with stakeholders about their experiences. An analysis of previous studies and government documentation related to TLAS will also help to identify the factors that may result in a successful forestry governance regime.
6.2 Theoretical framework

To assess the effectiveness of governance instruments, such as certification or legal verification, the purpose of this governance instrument needs to be defined at the very beginning. According to the literature, the most significant difference between legal verification and forest certification is enforcement. Forest certification was widely promoted by non-government institutions, often called non-state governance (Gulbrandsen, 2005, Cashore et al., 2004), with the main objective of improving forest management. Certification has been considered by many nations as a solution for an environmental issues related to forest resources (Vogt et al., 1999). Conversely, legality verification is developed based on transnational governance, with emphasis on the legality of timber traded. Legality verification was aimed to provide a less complex concept of sustainability to adapt particularly to tropical forests (Brown and Bird, 2007) and to meet international timber trade requirements. Legality verification was initiated to tackle forest degradation associated with illegal logging and illegal timber trade. However, there are divergent views about legal verification. Due to its focus on legal aspects, legality verification was considered to provide a stepping stone towards long-term sustainability by preventing forest loss in connection with illegal logging (Brown and Bird, 2007). The advantage of legality verification is the high participation of stakeholders in developed and developing countries, including the Governments, environmental institution, and forest industry associations. In contrast, it is also believed that its narrow focus on legality was not enough to ameliorate environmental, social, and economic problems related to forest resource (Cashore and Stone, 2012, Brack, 2005).

According to a study that looked at the connection between effectiveness and influence, global governance has four pathways to influence domestic policy: international law; international norms and discourses; the market; and direct access to the domestic policy-making process (Bernstein and Cashore, 2012). From the perspective of timber-producing countries, transnational government initiatives, such as the FLEGT and the Lacey Act, can be categorized as a mixed pathway, where influence can come from international law and from the market (Bernstein and Cashore, 2012). These influences were complex as TLAS was aimed to fulfill international rules on timber trade as well as provide opportunity to benefit from the market. Therefore, the effectiveness of TLAS will depend on which influence stakeholders perceived more important.

The literature offers several frameworks to assess the effectiveness of governance regimes. Young (1994) suggested six aspects of effectiveness as a baseline for regime evaluation: problem solving; goal attainment; behavioral change; process effectiveness, constitutive effectiveness, and evaluative effectiveness. Gulbrandsen (2005) applied five criteria in evaluating certification: changes in forest
practices; broadening forest owners’ participation; increasing supply chain support; reducing conflict in forestry sector; and interplay with other relevant policies. Effectiveness can also be measured more broadly by analyzing the relationship between certification and deforestation, using deforestation data over time in countries with certified forests (Marx and Cuypers, 2010). Other scholars linked political and economic variables to examine their influence on forest certification adoption (Ebeling and Yasué, 2009). This approach is particularly suitable for evaluating certification in developing countries, where these two aspects were problematic. The above definitions and aspects of effectiveness have led this study to explore perceptions associated to factors influencing the effectiveness of TLAS.

To better understand the implementation of the TLAS, it is important to know the types of governance related to certification. Studies differed between voluntary certification mechanism and state-based governance. The key difference between these two types governance is the source of authority (McDermott et al., 2008), where compliance in voluntary mechanisms depends on the market acceptance and the need to gain certification; while state-based governance use state authority to enforce compliance. In the context of the TLAS, standard and assessment process was regulated by the government which means that this governance regime is largely shaped by state-based regulatory norms. A significant cost has spent to develop and implement such a governance system. Therefore, there has been a growing concern of whether benefits exceed the cost and how it may be implemented more effectively (Cashore and Stone, 2012).

6.3 Data collection and methods

The purpose of this study was to identify factors that influence effectiveness of TLAS and to understand how they affect stakeholders. Since the focus of this research is exploratory in nature, qualitative approach was used. The TLAS has only recently been enacted and there is a lack of publicly available information on certified forests, so a sampling technique developed by Patton (1990) was used to gather rich information from relevant stakeholders involved within the regime. Field observations were also used to help confirm participant claims and verify key variables.

The participants were selected based on their experience and knowledge of TLAS implementation, including government officials, individuals from environmental organizations who were actively involved in the establishment of the TLAS, and companies and community forest holders who have adopted the TLAS standard for more than 2 years. Between November 2013 and January 2014, 34 semi-structured interviews were conducted, with key stakeholders from: government (n=4), non-
government institutions (n=4), certification auditors (n=5), forest company employees (n=11) and community forest holders (n=10).

The primary data collection was conducted using semi-structured interviews. The interview technique emphasized the participants’ experiences and interpretation of the world (Creswell et al., 2007). This approach aims to understand a phenomenon by drawing on the contextualized nature of the experience and action (Creswell, 2007, Denzin and Lincoln, 1994, Silverman, 2010, Yin, 2010). The interviews sought to determine the participants’ awareness and understanding of the TLAS and FLEGT VPA, and then allowed them to share their thoughts on factors that influenced their adoption of TLAS. An introductory statement and consent form were developed to explain the purpose of the interview and the participants’ rights in relation to his or her participation in this study. Interviews were recorded and transcribed, but participant’s personal details were not identified. To minimize bias, contradictory evidence and repetition, the individual interviews were triangulated (Creswell and Miller, 2000) with those provided by other participants, field observations and other related documents such as audit reports.

Qualitative research approach is an iterative process where data collection and data analysis should be done simultaneously (Miles and Huberman, 1994). The interviews were transcribed and coded, then, the data were analyzed using thematic content analysis (Burnard, 1991). This involved identifying themes in the interviews transcripts, and verifying, confirming and qualifying them through a review of the data and repeating the steps until no new themes emerged.

6.4 Results

The results are presented in two parts. First, responses on factors influencing the adoption of the TLAS were analyzed based on stakeholder groups. Stakeholders were grouped into three categories – non-affiliated stakeholders (government officials, NGO, and auditors), forest companies and community forest holders – to see if there was a pattern in the data to be used for further analysis. Second, data were analyzed descriptively to understand how these factors influenced the effectiveness of the TLAS; direct quotes and observations were used to support the analysis.

This study adopt theoretical thematic analysis where the researcher focus on certain data and exclude other (Yin, 2003). The result showed three main themes that have been refined from several themes in the theoretical framework. These selected themes are related to constitutive effectiveness; behavioral effectiveness, and goal attainment effectiveness (Figure 5). Constitutive effectiveness involved the commitment to certification or to a governance regime. In this context, constitutive effectiveness can be shown by the degree of acceptance of a regime by stakeholders which can be
measured from public awareness of TLAS and its effects. There are three sub-themes or factors within constitutive effectiveness: accessibility and distribution of information; credibility; and legitimacy. The second aspect of effectiveness is goal attainment. The goal might be stated or non-stated and may differ for government, environmental activists and industries. There were four sub-themes or factors relating to goal attainment effectiveness: the characteristics of the timber market; effective administration and procedures; the quality of forest law enforcement; and security over land tenure. The third aspect is behavioral effectiveness, which involved changes both in forestry practices and consumer behavior. The emerging sub-themes and their meaning can be found in Table 8.

Table 8 Themes and sub-themes revealed from data analysis and their meanings.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub themes</th>
<th>Meaning of theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>The characteristic of timber market and timber supply chain</td>
<td>Local market, export market, middle man, supply chain.</td>
<td>Characteristic of timber market influence the acceptance of certified timber in domestic and foreign market. Supply chain influenced the effectiveness of TLAS when longer supply chain was perceived</td>
</tr>
<tr>
<td>Effective administration and procedure</td>
<td>Improved legal documentation and compliance of certification standard</td>
<td>Improved compliances in documentation related to forest management and timber trade.</td>
</tr>
<tr>
<td>Accessibility and distribution of information</td>
<td>Quality of information distribution, transparency of information, and accessibility</td>
<td>The accessibility and quality of information distributed to forestry actors.</td>
</tr>
<tr>
<td>Credibility</td>
<td>Trust, reliability, convincing, objectivity</td>
<td>Credibility of the TLAS as national and mandatory certification scheme.</td>
</tr>
<tr>
<td>Behavioural change</td>
<td>Awareness in forest management and legal timber trade. Improved capacity of knowledge and skill. Improved facilities.</td>
<td>Changing in forest people behaviour in valuing the forest and timber as natural resource that have to be managed in a sustainable way.</td>
</tr>
<tr>
<td>Quality of forest law enforcement</td>
<td>Interplay among regulation, reward, punishment, government officials.</td>
<td>The quality of forest law enforcement linked closely to the official and interplay among regulation.</td>
</tr>
<tr>
<td>Legitimacy</td>
<td>acceptance, authority, mandatory, system, influence</td>
<td>Degree of acceptance of a governance instrument</td>
</tr>
<tr>
<td>Security over land tenure</td>
<td>Protection, uncertainty, rights, ownership</td>
<td>Certainty of forest area border, clarity of ownership.</td>
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</table>
6.4.1 The structure of timber market and supply chain support

As can be seen from Figure 6, the most cited factor influencing the effectiveness of Indonesian timber legality system is the characteristic of timber market, mentioned by 19 participants who were mostly affiliated with forest companies. These participants perceived that the timber market is crucial in shaping market access and a potential price premium. The primary markets for Indonesian timber are domestic, because the government has banned log exports. Although current official data on the timber products market are not available, around 20% of total Indonesian timber products were exported to foreign markets, of which around 10–15% was sold to the EU countries. However, the majority of Indonesian timber exports were to Asian countries such as Japan and China, which do not require certification. The proportion of exports to Japan and China were higher than to the EU, at 41% and 21%, respectively (Ministry of Forestry, 2012).

Figure 5 Aspects and factors affecting TLAS effectiveness, as indicated by participants.

Some participants stated that the existing policy restricting log exports has constrained timber producers from gaining access to eco-sensitive markets, the market that value, in financial terms, the certified timber and is willing to pay a premium price for certified products. In contrast, other participants suggested that this policy is still relevant and aimed at protecting the small-scale industries and
meet the local timber requirements. It is considered that if timber export markets were opened, the potential loss could be greater, as suggested by the following quote:

“Forest companies expect the Government to reopen the log export market, but I do not agree, because first we have so many small-medium wood enterprises, if export log is opened, this industry will collapse due to difficulties in finding raw material. Second, there will be timber supply scarcity in local market, and if this continues, we might have to import the timber…” (Interview 5, non-government institution)

However, the absence of official data relating to the number of timber industry companies and their capacity makes it difficult to calculate the exact volume of timber required to meet local needs to predict the potential benefit from exported timber products.

**Figure 6. Factors influencing the effectiveness of the TLAS**

In addition, the Indonesian timber industry has a unique structure that shapes the nature of competitive interaction. Figure 7 illustrates the timber supply chains of large-scale and small-scale producers. It indicates that the timber produced by large-scale producers has a shorter supply chain compared with small-scale actors. Some certified forest companies were vertically integrated, where forest and processing company are under the same ownership. Timber produced by forest companies is mainly processed into pulp and plywood, which makes no differentiation between
high-value and low-value timber. Participants therefore suggested that the structure of Indonesian timber industry need to be reassessed. High-quality logs might given higher benefit if being processed into high-value-added products, as illustrated by the following quote:

“… in my opinion, the timber industry need to be adjusted. Currently, timber from natural forest was mostly processed into veneer or plywood as we know that there are many high quality of timber which can bring a higher value if processed into molding or furniture or other products closer to end user. This industry behavior has reduced opportunities to gain higher benefits from high value timber.” (Interview 21, forest companies)

Alternatively, small-scale producers sold their timber to local traders and often lacked a bargaining position. Thus, certified small-scale producers have difficulty gaining access to eco-sensitive markets.

Figure 7 The timber supply chain of forest companies and small-scale producers

6.4.2 Effective administration and procedures

Effective administration and procedures is factors that can influence the goal attainment effectiveness which stated by 18 participants, mainly actors representing forest companies and
community forests. Based on interviews, cost efficiency is one of stakeholders’ goals from implementing TLAS. Effective administration and procedures on forest management and timber trade is perceived important to shape cost efficiency. However, some forest holders stated that the adoption of the TLAS does not reduce the administration and procedures in forest management activities, as well as officials monitoring and inspection. For example, a participant representing Farmers stated that inefficiency exists because existing procedure of harvesting and transporting timber is still applied. This has resulted in duplication of document checking by both officials and certification auditors. Inefficiency also occurred in standard adoption, where producers who have obtained a voluntary certification on sustainable forest management are still obliged to acquire TLAS certification.

6.4.3 Accessibility and distribution of information about the TLAS system

Seventeen of 34 participants stated that accessibility and distribution of information is important for the success of the TLAS program. This factor was most important to community forest holders and forest companies, who believe that inadequate information, can lead to misinterpretations of the benefits of TLAS implementation. There were differences in the beneficiaries’ perceptions on the goals of the TLAS regime. Some participants considered certification would automatically increase the market value of certified products, and the price premium was their main goal. Others argued that certification is a policy to improve forestry management in areas where it is mandated. They also inferred that a price premium is expected, but access to eco-sensitive markets was a higher priority.

The quality of data determines the transparency and accuracy of information for timber producers and consumers. To provide information about TLAS certification, the Indonesian Ministry of Forestry has developed an information system about timber legality named SILK (Sistem Informasi Legalitas Kayu) under the Directorate General of Forest Utilization. It includes a list of certified holders and certificate numbers, accredited certification bodies, a standard and certification process, and also a mechanism for handling complaints. A participant from the central government stated:

“...Government has developed a working unit that largely responsible to manage a public website http://silk.dephut.go.id known as Timber Legality Information System (SILK) online. This website is particularly designed in order to provide convenience and transparent information about V-legal document publishing, as well as to provide data and information related to timber legality verification process...”
Publishing information in an official website is one of government effort to accelerate the information distribution. However, most of the farmers live in remote area that have limited access to internet connection, this means that online information about TLAS may not always be accessible for the stakeholders. In this situation the role of local officials is important in distributing TLAS information.

6.4.4 Credibility

Credibility is affected by who sets the certification standard and the audit procedure. In the case of the TLAS, the standard was established by the Indonesian Government with the involvement of forestry stakeholders (Indonesia Ministry of Forestry, 2009). The involvement of civil society was perceived important as a form of public participation and contribution to credibility of the process. This mechanism also provides a channel for objections in regards to the audit process. In addition, to ensure the transparency of the audit process, the government has developed an online database to provide information on companies and individuals related to their position in certification process. Documentation and compliance reports are also available for public review. Some participants were concerned about the credibility of the TLAS audit process, because of the number of enterprises that have been be certified in such a relatively short time.

6.4.4 Behavioral change

Seventeen participants felt that behavioral change in forestry practices and documentation can influence the effectiveness the TLAS. Behavioral change improves effectiveness via positive changes in forestry practices. Based on observations of a certified company, the changes in forest management can be significant. For example, the introduction of reduced impact logging and High Conservation Value Forest (HCVF) has improved the environmental value. Better training for forest workers has resulted in improved knowledge and skills for implementing the TLAS. At the community forest level, behavioral changes were particularly seen in documentation of land ownership, timber inventory and legal documentation. The participants believe these positive changes can shape a sustainable forestry industry.

6.4.5 Quality of forest law enforcement, legitimacy and security over land tenure.

The result found eight factors that may influence the successful of TLAS implementation. We highlight five main factors which have been mentioned by more than a half of participants. However, quality of forest law enforcement, legitimacy and security over land tenure are necessary to be considered further.
The implementation of the TLAS was influenced by the quality of law enforcement. Thirteen participants perceived that there is lack of effectiveness in forest law enforcement in Indonesia, especially related to forest management and timber trade. For example, the enforcement of regulation on timber trade chain has proven weak as illegal timber can easily entry the market. The TLAS is implemented and the current regulation are still applied. The existing regulation provides a clear legal foundation for timber production and forest management for forest companies and community forests that requires legal documentation such as a forest product legality certificate (Surat keterangan Sahnya Hasil Hutan/SKSHH) or timber certificate of origin (Surat Keterangan Asal Usul Kayu/SKAU). According to participants, this ineffective procedure is caused by weak forest law enforcement particularly within regions where forestry was not the primary sector for income. This can be seen from the following quote:

“....certification would be effective if related regulation is also implemented effectively. The fact is, the regulation has not been forced equally among regions. A region that has limited official might have a weak law enforcement which cause illegal activities still occure and illegal timber still entering the market...” (Interview 4- Non Government Organization)

Districts often have a limited number of officials who are responsible for checking legal documents and are responsible for large and remote areas. There are also concerns that some officials can be bribed, thus provides incentive for irresponsible actors to transport illegal timber.

Legitimacy is closely related to the degree of acceptance of a governance system (Mickwitz, 2003) and the degree of trust and confidence in the system. Results inferred that their participation in TLAS certification was strongly driven by the government. Participants perceived that if they adopt the TLAS standard, the government would provide incentive for forest utilization activities, such as extending logging permits and reducing bureaucracy. The interviews demonstrated varying levels of confidence in the TLAS system. Some participants believed the TLAS can improve the quality of Indonesian forests and provide opportunities for greater market access and higher prices, but most participants were uncertain about the benefits of the TLAS, based on their past experience with voluntary certification, which provided little economic benefit.

Most participants from forest companies were concerned about uncertainty of forest tenure, which is not an uncommon problem in the Indonesian forestry sector. Forest companies have a 20 year concession period, which provides security over land tenure and gives forest managers some certainty when setting long-term plans for forest management. One of the main causes of this problem is the lack of information and transparency in the land use permit procedure. Conflict over forest tenure is almost inevitable and this may generate significant losses due to mediation
expenses. This conflict might occur when local communities have access to the permit issuance procedure, which may lead them to ignore the legal documentation. Private sectors and local community may have disputes due to unclear legal documentation. Moreover, police and security forces often have to intervene to resolve conflicts. This conflict over tenure inhibits the sustainable use of forest resources, and thus official determination of forest tenure can accelerate the effectiveness of the TLAS system.

Some participants complained about changes in forest use within the concessions. Specifically, political interest in natural resources may influence the central or local government when making decisions about forest land use. A study showed that a low number of forest areas have an official clear boundary: only 14.24 million ha out of 36 million ha, of Indonesian forests (Safitri et al., 2011). As forest tenure is closely associated with sustainable forest management, this factor can affect efforts at maintaining sustainable certification.

6.5 Discussion

The results highlighted eight factors influencing the effectiveness of the TLAS in Indonesia. These factors reflect constitutive effectiveness, goal attainment and behavioral effectiveness as defined by Young (1994). The results suggested that the most important factor influencing TLAS effectiveness is the characteristic of the timber market and supply chain. In general, stakeholders perceived economic goal of the TLAS is to improve the image of Indonesian timber and create greater market access. Participants stated that the existing characteristics of the Indonesian timber market can be a factor that constrains the achievement of this objective. Large processing companies were dominated by those producing primary processed wood, including sawn wood, veneer and plywood. These primary wood products were characterized by relatively temporary relationships between producers and buyers: transactions often depend on price, delivery times, and are subject to heavy competition (Gereffi et al., 2005). These temporary relationships can mean that buyers are ignorant of the timber sources and focus solely on cheap prices. Because of the scale, producers with larger volumes and continuity in supply tend to win the business.

Only a few Indonesian timber products are exported to Europe, while the majority were exported to China, which is by far the world’s leading exporter of wooden furniture (ITTO, 2012). As China and other Asian countries do not demand certification, this aspect of the timber market seems less beneficial for most actors. The results also imply that the majority of timber products are consumed locally where the local consumers see no value in certified timber. In such conditions, producers are less able to justify certification costs and may discourage efforts to maintain certification.
In addition, timber supply chain also appears as an important factor in gaining economic benefit from certification. This study emphasizes timber supply chains within community certified timber which often have longer supply chains that generates high transaction costs (Hobbs, 1996). Therefore, small-scale community forestry has fewer opportunities to gain economic benefit compared with large-scale operators. This finding is consistent with a study assessing legality initiatives in Brazil, which argued that legal verification provides greater opportunities for large-scale producers than for small-scale producers to benefit from the market (McDermott et al., 2014).

The second factor most cited by participants was effective documentation and procedures, with interviewees citing ineffectiveness. This perception might appear because as a national certification scheme certification standard has included national laws, and thus other documentation and procedure outside the TLAS assessment perceived less important and can be costly and time consuming. Within voluntary certifications, the role of the government is highly important to create consistent forest policy and laws that can support the scheme (Rametsteiner, 2002). In contrast, as a state-based certification TLAS was expected to remove unnecessary document and procedure checking by officials. This study adds to the existing literature which found that though the TLAS is already implemented as mandatory scheme, pre-existing administrative procedures on forest management and timber trade within community forestry were still applied, and thus causes cost inefficiency (Nurrochmat et al., 2014).

Moreover, this study suggested that some stakeholders perceived that forest law enforcement and security over land tenure were important factors for successful TLAS, as these are also most likely key issues within Indonesia forestry development. Forest law enforcement and secure land tenure has been pointed out as inhibitors in the adoption of sustainable forest certification within tropical developing countries (Durst et al., 2006). This indicates that though legality verification is nationally arranged and established, its implementation faces challenges similar to voluntary sustainable forest certification. It is clear that certification is only effective for forests that applied high degree of standardization and have secure ownership rights (Brown and Bird, 2007).

Legitimacy is considered as the strength of the TLAS because the Government uses the state authority to enforce compliance and participation. But still legitimacy for TLAS scheme is also depends on foreign market acceptance. Unlike non-state voluntary certification which legitimacy only can be obtain by manipulating the global market preference (Cashore, 2002). Legitimacy here can also have a broader meaning not only counting the number of participants adopted the scheme but also reflecting the stakeholders’ acceptance of a regime. This means, though the Government enforces the TLAS on all forestry actors, the effectiveness of this instrument is highly dependent on
the degree of actors’ acceptance. To gain high acceptance, this scheme needs to accommodate and address specific forest and socio-economic issues within Indonesia forestry (Durst et al., 2006). For example in the case of Indonesia, most of community forests have limited documentation related to forestry activities, so standards for community forests certification need to be adjusted to make its implementation more feasible in relation to what documentation may be required.

Furthermore, the findings highlight credibility as an important factor influencing the effectiveness of governance. The establishment of the TLAS as a license system to facilitate timber trade between the EU and Indonesia reflects the national government’s full engagement in certification. Although the degree of government intervention is high, further work is needed to assure the credibility of certification assessment, to gain trust from both local and international actors. Moreover, in Indonesia, where the political, economic and social structure is very complex, successful forestry governance depends not only on the forestry sector, but involves many other sectors too. Therefore, the distribution of information on the TLAS system across multiple sectors is also important to ensure that all stakeholders are conversant with the TLAS objectives.

The establishment of the TLAS as a national scheme has shown that the Government uses state authority to enforce compliance. Reinforcing the TLAS to all forest holders can result in effective implementation, however, it may also be a risk if the stakeholders perceived the TLAS is not economically feasible. Another risk for enacting the TLAS as a single certification scheme is it can reduce the competition which leads to inefficiency (Rametsteiner, 2002). Thus, the reliability of TLAS assessment is important and the Government has to guarantee that good governance principles when implementing the TLAS mechanism. Low quality assessment and lack of transparency of the process may have negative effects on the TLAS reputation. Even though the TLAS has resulted in a high participation rate and potentially creating positive effects for forests and forestry, possible adverse effects from making this mandatory, also need to be understood.

6.6 Conclusion

This study has drawn on a case study of Indonesia to assess factors that influence a transnational governance regime which featured by the implementation of TLAS, with a particular focus on forest holders, including large-scale forest companies and small-scale community forestry. Unlike the voluntary nature of forest certification which is driven by the market, TLAS is mandatory for Indonesian forest holders. Around 35 million ha of production forest will be affected by this new governance regime, and this may generate a problem because local-oriented timber producers have to bear the TLAS costs with uncertain benefits.
In general, this study highlights that timber market structure and supply chain as the most important factor for effective TLAS implementation. It is clear that the current timber market provides limited opportunity to gain benefits from foreign eco-sensitive markets, with less than 20% of Indonesian timber being exported. Certified timber markets have also been affected by the regulation of log export ban that has caused the all log production to be consumed locally; therefore, potential benefits depend on local processing companies valuing certified timber. Meanwhile, community forest holders are further disadvantaged by long supply chains. Partnerships between community forest holders and processing companies may assist to shorten the supply chains and to support the community forest development.

In regards to standard compliance, the TLAS was promoted through the state authority and thus achieved high compliance rates. Arguably, as a state-based certification the TLAS at least accommodates the local producers and adapts to the condition of forestry sector in Indonesia. However, this study suggests that existing regulation may hinder certified timber to access eco-sensitive market. As a national program, efforts have been given to develop and implement this new governance regime, therefore it is critical for TLAS to provide a pathway for good forestry governance as well as economic benefit.

The effectiveness of forest governance regime interests many stakeholders. Indonesia is one of six tropical timber producers that have signed the VPA and are a pioneer in the timber legality verification system; therefore, this study is relevant and important to other similar efforts in tropical countries particularly the VPA members. Given the nature of exploratory approach, this study contributes to an understanding of the early stage of TLAS implementation by exploring various stakeholders experience to identify factors influencing its effectiveness. Further study using rigorous quantitative and qualitative assessment is needed to test TLAS effectiveness on the ground.
Chapter 7 - The application of soft system methodology to learn TLAS certification in industrial forestry sector and community forestry

7.1 Introduction

At the beginning of this study, I purposed a soft system method to understand the complex system of forest management in forest companies and community forest. Chapter 5 and Chapter 6 provide important information about the implementation of TLAS on the ground by exploring the stakeholders perception that can be used in the development of a system thinking diagram. Putting this information into a causal loop diagram and analyse the relationship between the variables provides an understanding of a problem or issue in a bigger picture. This system thinking model also aimed to understand how the forest holders adapt to the TLAS certification and how the TLAS stimulates better forest management. This chapter presents the mental model of actors associated with forest companies and community forestry by modelling the participant responses into a causal loop diagram. Two causal loop diagrams were generated from interviews analysis, field observation and related documents. Without distinguishing levels (integrations or stocks) from rates (flows or activity), a soft system thinking model is viewed as a problem structuring tool rather than a problem solving tool (Checkland, 1999). Soft system thinking approach is a learning process designed to determine what needs to be done in an ill-defined problem situation.

7.2 Methods

Because the complex nature of forest management both in industrial forestry and in community forest, soft system thinking is an approach that may address their complexity. However, the system might be very broad and it is important to determine the research boundary. The researcher can focus on only few variables that have significant influence on the TLAS certification development. To formulate a soft system thinking model, I therefore adopted the coding process introduced by Kim and Andersen (2012), the steps were summarized in Table 9.

Choosing the type of modelling approach is dependent on the purpose of the model; the data available; and the model users (Kelly et al., 2013). According to the purposes, there are five primary goals of modelling: predicting, forecasting, management and decision making under uncertainty, social learning, and developing system understanding. The availability of data also influences the model chosen. Both quantitative and qualitative data can be used to construct a model. The purpose, availability of data, and the limited time frame directed this study to apply soft system thinking to identify the factors which may influence the successful of TLAS framework implementation. The
limitation of this method is it only provides a basic understanding of the system and cannot be used as a step for corrective action.

7.2.1 Discovering themes in the data

Themes will emerge throughout the coding process. The coding process can be seen in this following example, where the researcher put a memo to be used for further coding process: “In general there still no economic advantages from having certification. Log harvested would be transported to a particular plywood company, so there is no market competitiveness for certified log. We were very excited at the beginning of certification process, because we believe there will be recognition for certified products in the market (Market recognition), but we are no longer having the enthusiasm to recertify (The willingness to certify). Difficulties of changing work culture and lack of economic incentive (Economic incentive) is a big challenge to maintain certification. In the future, we expect that we can get more incentives from having certification” (D4) (Note: the participants believe that incentives from the market will motivate them to maintain certification standard)

Table 9 Steps in coding process

<table>
<thead>
<tr>
<th>Description of the process</th>
<th>Main tools</th>
<th>Input</th>
<th>Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Discovering themes in text interviews</td>
<td>Open coding</td>
<td>Raw text data</td>
<td>Definition of problems and system boundary</td>
<td>Individual data used</td>
</tr>
<tr>
<td>2. Identifying variables and their causal relationship</td>
<td>Open coding</td>
<td>Data segments</td>
<td>Coding charts</td>
<td>Coding charts are compiled by themes within each group</td>
</tr>
<tr>
<td>3. Transforming text into words-and-arrow diagrams</td>
<td>Causal links</td>
<td>Coding charts</td>
<td>Simple word-and-arrow diagrams</td>
<td>Word-and-arrow diagrams were generated per coding chart</td>
</tr>
<tr>
<td>4. Generalizing structural representation</td>
<td>Axial coding</td>
<td>Simple word-and-arrow diagrams</td>
<td>Final causal maps</td>
<td>Causal map generated from the data</td>
</tr>
<tr>
<td>5. Linking maps to the data source</td>
<td>Map/data</td>
<td>Coding charts and final causal map</td>
<td>Data source reference table</td>
<td>Ended here</td>
</tr>
</tbody>
</table>

Source: adopted from Kim and Andersen (2012)
Some codes use original terms from the text and others are borrowed from literature. As the codes emerged, the similar codes were grouped and categorized. For example ‘improved housing for the workers’ and ‘sports and health facilities’ are categorized as ‘facilities in workplace’. Taking notes is commonly used during the coding process. Notes are a tool that provides direction for analytical process (Strauss and Corbin, 1997). As the coding process continues, the codes can reassessed and regrouped to make a compact pattern of themes. The next process is breaking down the data to identify dominant themes which aims to narrow down the issues to be addressed in the system model. The boundary of the system in this study is limited to the main actors (forest companies and community forests) and focused on economic and social aspects. Collective perceptions from the participants related to the issue can be identified along the coding process. These perceptions were valuable to generate causal relationship to support the system model.

7.2.2 Identifying variables and their causal relationship

The unit analysis is a single argument that comes from a participant and reflects the system behaviour. This argument is usually supported by a rational judgement from the participant’s mental model. For example, the participant urged that ‘there is no economic incentive from certification’ and this argument is supported by the rationale that ‘no increase in market access and price’. This supporting rationale provides information on the expected behaviour of these variables. The arguments and rationale come from the text and were then organized in coding charts. This aims to identify the mental model of the system. Table 10 shows an example of coding chart.

Table 10 Coding chart example

<table>
<thead>
<tr>
<th>Participant ID: D6</th>
<th>Arguments: certification cost, certified timber price, company’s profit, social relationship, knowledge and technical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causal structure</td>
<td>Cause variable: Certification cost, Certified timber price, Company’s profit, Quality of social relationship, Knowledge and technical capacity</td>
</tr>
<tr>
<td>Effect variable</td>
<td>The ability to certify, Willingness to recertify, Forest reinvestment, Social cost, Quality of forest management</td>
</tr>
<tr>
<td>Relationship type</td>
<td>Negative, Positive, Positive, Negative, Positive</td>
</tr>
<tr>
<td>Variable behaviour</td>
<td>Cause variable: Increase certification cost, Increased price, Increased profit, Improved social relationship, Improved knowledge and skills</td>
</tr>
<tr>
<td>Effect variable</td>
<td>Lower the ability to certify, More willing to recertify, More budget to reinvestment, Lower social cost, Improved forest management quality</td>
</tr>
</tbody>
</table>

Information source: argument heard from a forest company director.
Note: (variables) identified: (1) certification cost; (2) certified timber price; (3) profit; (4) social relationship; (5) knowledge and technical capacity of forest workers.
7.2.3 Transforming text into words-and-arrow diagrams

After the step 2 was completed, a rough chart of causal loop diagrams were created. Each causal loop diagram presents the mental model of partipants involved in TLAS framework based on the forest management. The diagram was expanded as new variables arose and links were identified along the diagram created and similar variable and feedback loops were overlaid. To complete this stage, a software named Vensim was used for developing causal loop diagrams. Table 11 provides an example in developing word-and-arrows diagrams.

7.2.4 Generalizing the structural representation and retaining links between the causal map and the data source

Interviews may express different variables names, and one causal diagram may also be stated in many different ways. Therefore, it is necessary to generalize the causal diagrams to make an integrated causal maps (Kim and Andersen, 2012). In this step, diagrams with same variables were identified and merged to form a composite causal map and then the causal map was reassessed by linking the map with the data source. This was done to verify that the map is not disconnected with the original data. As stated previously, participant arguments were given identification numbers which could be used trace back the variables in the causal map.

Table 11 Words and arrow diagrams of causal arguments

<table>
<thead>
<tr>
<th>Cause</th>
<th>Effect</th>
<th>+/-</th>
<th>Words-and-arrow diagrams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of forest practices</td>
<td>Community timber production</td>
<td>+</td>
<td>Quality of forest practices $\rightarrow$ (+) Community timber production</td>
</tr>
<tr>
<td>Timber sales (Revenue)</td>
<td>Cooperative capital growth</td>
<td>+</td>
<td>Timber sales $\rightarrow$ (+) Revenue $\rightarrow$ + Cooperative capital growth</td>
</tr>
<tr>
<td>Certification cost</td>
<td>Cooperative capital growth</td>
<td>-</td>
<td>Certification cost $\rightarrow$ (-) Cooperative capital growth</td>
</tr>
<tr>
<td>Government incentives</td>
<td>Cooperative capital growth</td>
<td>+</td>
<td>Government incentives $\rightarrow$ (+) Cooperative capital growth</td>
</tr>
<tr>
<td>Cooperative capital growth (dividend)</td>
<td>Farmer income</td>
<td>+</td>
<td>Cooperative capital growth $\rightarrow$ (+) Dividend $\rightarrow$ (+) farmer income</td>
</tr>
</tbody>
</table>
7.3 Results and discussion

Data and information from interviews used as the basis for causal diagrams building. The figure 8 presents the causal loop of large scale forest companies and farm forestry in the implementation of TLAS. The loop diagrams show only major causal relationship and describe the interaction between variables involved. These relationships are important to give understanding of the entire system of the TLAS implementation.

7.3.1 System model of TLAS implementation in industrial forest companies

TLAS implementation in industrial companies and community forestry are presented by the following causal loop diagrams (Figure 8). The model describes a system in certified forest companies. Every link in this causal loop diagram represents causal relationship between the variables. The model diagram of certified forest companies consists of 10 feedback loops; 8 reinforcing loop (R) and 2 balancing loop (B).

In this study, the development of causal loop diagrams aims to provide an understanding interaction between variables in relation to certification implementation. The variables appear from the data analysis. The method used in developing the variables was adopted from Yearworth and White (2013), who use qualitative data as the source for making causal loop diagram where the variables came up during the coding process. Extensive interviews can be used to provide predictive and explanatory description and to be used in decision making, and causal loop diagram is a tool that support the decision making process. Causal loop diagram were derived to provide an understanding the interaction of variables and can be used as preliminary step for further dynamic system analysis.

There are three reinforcing loops found related to the company’s profit. Understandably, forest owners are willing to certify their forest and maintaining the standard if they perceive certification will increase the economic value of their timber. This financial benefit is important as some share of the profit can be allocated for maintaining certification standard. This financial benefit can be realized if the companies can increase the profit margin from higher timber price or increase market share. The profit may increase as a result from increased timber price, greater market access or reduced costs.

The model showed that the increased profit would affect timber production (R1), forest management quality (R2) and the capacity building (R3). Reinforcing loop R1 links variables of sustainable yield, log production and profit. This is a simple reinforcing loop that explains increased
profit and log production positively influence the sustainable yield. The second reinforcing feedback loop (R2) links profit, forest reinvestment, quality of forest management and sustainable yield. This loop suggested that the increased resources allocated for sustainable forestry activities may improve the standard application. This means that reinvestment as an important variable to maintain forest certification.

Loop R3 and R4 links the variables in related to social welfare of employee. From Loop R3 and R4, it can be inferred that capacity building of employee and increased camp facilities will also positively influence the quality of forest management. The profit earned was used to enhance training for the workers and to improve facilities to meet standard requirements. An adequate knowledge and skills would enhance the implementation of sustainable forest management and furthermore the improved forest management would be expected to increase timber production.

On the other hand, the model found some factors that can influence the profit; certification cost (B1) and the social cost (B2). These variables create balance loops that can ‘limit to success (growth)’ which means limit the performance of other variables such as timber production, forest management quality and capacity building. Without the existence of increased profit, the implementation of TLAS certification would likely to constrain the effort of maintaining the standard.

Incentives form the government (R5) has a positive influence on the willingness to recertify. The incentive might be an economic or non-economic incentive. For example, the government has allowed certified companies to legalize their annual work plan that usually requires government approval. This may have a positive feedback for successful certification because bureaucracy process is often perceived costly and time consuming. Other possible incentives that can stimulate certification are financial support, enforced forestry law and land tenure security (Ebeling and Yasué, 2009).

Social relationships (B2) may hinder successful certification where there is conflict. The data from the interviews suggested that conflict is likely to occur in forest areas which have good access to markets rather than those in extreme remote areas. Conflict might occur when different perceptions appear between local people and companies such as a dispute in land boundary. To minimize conflict, efforts such as improved communication, increased local people participation in forest management, and also benefit-sharing have improved outcomes. Other important variables that can give a positive influence to the TLAS implementation are the quality of public information (R7) and the public participation (R8). The availability and the access to information related to certification.
and increased participation would enhance the TLAS credibility and build trust among forestry stakeholders.

7.3.2 System model of TLAS implementation in community forests

There are seven reinforcing feedback loops and two balancing feedback loop in the system model for certified community forests. Compared to the system model of TLAS implementation in forest companies that seems to focus on many aspects such as economic, social and governmental; the system model for community forest management is likely to concentrate on the farmer organization. Community forest organization through the establishment of a farmer cooperative has played an important role in forest community development. The reinforcing loop R1 means that increased cooperative capital growth can enlarge opportunities and expand timber plantation. As an outcome, strengthening farmer cooperatives can positively influence the adoption of TLAS in community forests.

The systems model highlights that the development of farmer cooperative depends on several variables in different loops such as farmer income (R1), market demand for community timber (R2), partnership with processing companies (R5), government incentives (R7) and certification cost (B1). The farmer cooperative development is an important loop as this loop might increase the dividend distributed to the farmers. The dividend has improved the farmer income as well as reduced early timber harvesting. This has a positive impact on the community forestry development.

The model also showed that the implementation of TLAS certification within community forests was positively influenced by the government incentive (R7). The government support might include financial aid or soft loans that can be used to expand the community timber business. Similar to the system model found for forest companies, certification cost (B1) was perceived as the most important variable that may hinder certification. These costs negatively influence the cooperative capital growth as well as farmer income. The loop R3 explained that decreased farmer income influences the community timber production. When the farmer lacked of income and need cash immediately, they usually cut the trees to meet their needs. Therefore, farmers welfare is important for the community forest development.
Figure 8 The system model of TLAS implementation in forest companies and community forests

System model of TLAS implementation in industrial forest companies

System model of TLAS implementation in community forests
7.3.3 Comparison between system model of TLAS implementation in community forestry and industrial forest companies

The findings suggest that a system model of actors from community forestry and forest companies are quite different due to characteristics stated in Chapter 5. The differences also occur as a result of different experiences and values owned by these two group participants. The system model of community forestry development highlighted the importance of forest farmer cooperative in determining the continuity of community forest certification. The greatest economic advantage of certification is the dividend. Community forest holders that participate in the TLAS certification program are organized through the cooperative, and they have the right to receive dividends earned from the business. The business is mainly profits through the sale of certified community timber, and thus market demand for certified timber and timber price are critical for the long-term success of the organization. As self-organization has been identified as an important variable for the success of community forest management (Pagdee et al., 2006), in this context, the growth of the cooperative is the key factor of community forest development.

The model also suggests that to improve the community forestry, the farmers need to expand their business and have a positive capital growth. Knowledge and skills in forest management and timber trade are also important to promote community forestry development. The Government and the donor body may help through the provision of training and capacity building programs associated with standard implementation and community forest development. However, the role of the government for the successful forest certification in community forests is even broader include law enforcement, financial support and incentives (Pagdee et al., 2006).

Finally, the two models highlighted that certification cost is the main inhibitor for implementing TLAS certification standard. Certification cost tend to reduce the ability to maintain certification standard, especially when it comes with no additional economic benefits. Legality verification uses national sovereignty to formulate and build a verification system, therefore in this situation, the government might need to adjust certification costs to be more affordable for timber producers. Moreover, other incentives from the Government such as financial support, enforcement of forest law and fiscal incentives might help to enhance the TLAS uptake, in fact this incentive has been successful in motivating timber producers to gain certification in Guatemala (McGinley and Cubbage, 2011).
7.4 The validity of the model

One of the aims of this chapter is to understand the system model of TLAS implementation in industrial forest companies and community forests. However, while it appears to demonstrate factors in community forests, it seems unable to describe the real system in forest companies. This is perhaps because the variables within industrial forest management are more complex, and the methods used in the study were unable to capture all variables in the system. For example, the market for certified timber products is influenced by the government policy on timber trade and other variables might connect with law enforcement and existing timber administration. However, systems modelling can help the researcher to explain the dynamic of the variables and identify the variable behaviour, and moreover, the causal loop diagram can be used in policy analysis (Homer and Oliva, 2001). The causal loop diagram in the study may assist the policy maker to understand the interconnected nature of the problems and the many possible effects of TLAS implementation.
Chapter 8 - Conclusion

8.1 Introduction

This chapter summarizes the research findings and integrates them into a final discussion to highlight the important contributions made by this research. The main goal of this thesis was to provide and insight on how to improve the forest management within community forestry and industrial forestry sector through regulated forest certification. At the beginning of this study, three research questions were defined to guide the research, and the answers of these questions have been presented in Chapter 5 and 6 using qualitative approach, in-depth interviews and field observations. This chapter also provides limitations of the research and recommendation for future research.

8.2 Summary of research findings

Chapter 5 of this thesis addresses research questions 1 and 2 and has resulted in important findings for TLAS development and potential improvement. By comparing the perceptions of stakeholder from community forestry and industrial forest companies on the perceived impact of TLAS certification, this thesis showed differences in perceptions. Five themes emerged from the data analysis; social benefits, economic benefits, changing in organization, non-financial benefits, government incentives, and challenges.

Community forests experienced higher certification costs per unit area compared to forest company forests. This occurred particularly on the direct cost which include audit and surveillance cost. It is argued that certification cost mainly depends on the certified forest area and the degree level of current management standard. Therefore community forest holders with relatively small area and poor management are most likely experienced higher certification costs.

Analysis also revealed that a price premium and access to the eco-sensitive market had not been achieved - as was hope and expected - by most certified forest holders that participated in the study. As the TLAS certification is mandatory for timber producers, the stakeholder’s perceived economic benefits are critical because certification is costly.

Social outcomes and improved forest management are the main positive impacts of TLAS certification perceived by the majority of stakeholders. Certification has changed the forest holder’s behavior in managing their forest land. Within the certified companies, high degree level of forest management has been practices such as reduced impact logging and high conservation value forest. Increased knowledge and skills of forest employees also perceived as an important progress in
forest management activities. In regards to social relationship, certification has resulted in less conflict between companies and local community by enhance community participation. In addition, within the community forestry, certification has increased the farmer’s knowledge and skills associated with forest management, documentation, timber production, and trade.

I argue that community forest holders were more challenged in maintaining TLAS certification due to s: (1) community forest stakeholders have less opportunities to gain market benefit because timber were sold to the small-scale local industry that may not value certified timber; and (2) community forest stakeholders have to bear higher certification costs compare to forest company.

Chapter 6 provides findings and answers to research question 3 by exploring the factors that influence the effectiveness of TLAS implementation. In this chapter I analyze the effectiveness of TLAS certification based on a theory on global forest governance presented by Young (1999). I used stakeholder perception to identify factors that can influence TLAS effectiveness. This chapter emphasized timber market structure and supply chains as the main influencing factor for TLAS implementation. This finding may associated with finding in previous chapter that stated economic benefits form the market is unlikely to reveal. Therefore, stakeholder perceived market structure and supply chain is important to realize market incentives. This chapter concluded that as a national mandatory certification TLAS experienced similar challenges with voluntary forest certification, where effectiveness is still an important issue.

8.3 Implication of the research

The legality verification is a new forest governance system which aimed to reduce forest degradation and deforestation in tropical forest countries through eradicating illegal logging and illegal timber trade by creasing a licensing verification system to guarantee the legal aspects of timber products. Indonesia is one of the major timber exporter countries, and has assigned VPA with the EU in associate with the building of Indonesia TLAS as a licensing system for Indonesia timber products. The TLAS is in the growing phase as it just has been established in 2009, and the mandatory application has just started in 2013. Therefore not much has been written and it is important for the policy maker to understand the early impacts and the implication of this new forestry governance regime.

This study provides a preliminary research of the TLAS implementation. As the TLAS influence forest management in industrial forestry and small-scale community forest, this study analyses the implementation of TLAS in the two different groups of timber producers and provide comparison between them. The chapter 5 and 6 reveals the benefits and challenges of TLAS as perceived by the
stakeholders and investigate the factors that can influence the likelihood TLAS effectiveness. This study provides an important insight by exploring the experiences of stakeholders in association with the legality verification governance regime in Indonesia, and furthermore this finding may be useful for other VPA-member countries that also apply legality verification for their timber products.

8.4 Limitation of the study and suggestion for future research

This study has provided an important insight of a new regulated forest certification in Indonesia. Limited study on this topic and the limited secondary data availability has been an underlying cause for conducting qualitative approach as the main methodology. Given this thesis forms the better part of an MPhil degree and as such data and analysis may be limited by the research time frame and resources. However this study is an exploratory study and readers should be careful in generalizing the results beyond the specific group from which data was collected. A more comprehensive analysis of TLAS may be done by adding secondary data such as data of timber trade both for local and international market and survey of certification holders to analyze the impact of TLAS on the ground.
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Appendices

Appendix 1: Research participant information sheet

Research title: Understanding Indonesia Timber Legality Assurance System as a forest policy instrument
Organisation: University of Queensland, Australia

Dear Participant,

Timber Legality Assurance System (TLAS) is a forest policy instrument which applies to all forestry sectors includes timber production and timber processing companies. This policy aims to control illegal logging and trade that can result in higher deforestation. This policy was established as a trade agreement between Indonesia and EU. TLAS is a tool to guarantee that timber or wood-based products are come from legal resources. This policy are regulated based on regulation number P.38/menhut-II/2009 concerning standard and guidelines on assessment of performance of sustainable production forest management and verification of timber legality. Since this policy has been launched, there are more than 12% of production forest has been certified by TLAS scheme. However, the outcome of TLAS has not been evaluated yet. This research aims to give a deeper understanding about the implementation and the outcomes of TLAS in Forest companies and community-based forest. Understanding the TLAS would help the policy maker and landholders know whether TLAS adoption has been running effectively.

This study has three important outcomes. First, it provides descriptive evidence about the adoption process of TLAS by landholders. Second, it helps the government and landholders improve the effectiveness of TLAS policy. Finally, findings of the study will have wider implications for timber certification in other developing countries.

You are asked to join this research because you are the owner/manager of a forest company, a member of community forest organization, a consultant, a staff from related NGO, or a public servant with knowledge related to timber legality verification policy. If you agree to take part in this activity, you will be asked to discussing the above issues with me. I will use some questions to guide our discussion which will take between 45 minutes and an hour. They will cover the TLAS policy adoption process.

Neither you nor your position will be identified to any person and you are free to withdraw at any stage from this activity. Your valuable time to participate into the research would be appreciated.
This study adheres to the Guidelines of the ethical review process of The University of Queensland, Australia. Whilst you are free to discuss your participation in this study with me, or my supervisor Dr. Paul Dargusch and Dr Dona Whiley; if you would like to speak to an officer of the University not involved in the study, you may contact Dr Annie Ross, the School Ethics Officer on +61 3365 1450; or +61 3365 6084; or annie.ross@uq.edu.au.

We hope you enjoy this conversation,

Sadrah Devi Dr. Paul Dargusch Dr. Dona Whiley
Main investigator Supervisor Supervisor
Mobile: 08128332848 (in Indonesia); p.dargusch@uq.edu.au d.whiley2@uq.edu.au
+61410822182 (in Australia)
s.devi@uq.edu.au
Appendix 2: Research participant consent form

Research title: Understanding Indonesia Timber Legality Assurance System as a forest policy instrument
Organisation: University of Queensland
Main investigator: Sadrah Devi

Dear Participant,

As a participant in this research, this form is required as confirmation of your informed consent to participating in this research. You agree to participate in this activity and understand that you may withdraw at any time without penalty.

You and your position will not be identified in the project or to any other person. All responses will be coded and will contribute to the pooled data of the research team, so no individual responses will be made available to any person.

I __________________________________________ hereby agree to be involved in the above research project as a participant. The researcher has explained to me in language I can understand and I have read and/or understood the information is the “Research Participant Information Sheet” and I understand the nature of the research and my role in it.

Signature of Participant __________________________ Date __________

Sadrah Devi Dr. Paul Dargusch Dr. Dona Whiley
Main investigator Supervisor Supervisor
Mobile: 08128332848 (in Indonesia); p.dargusch@uq.edu.au d.whiley2@uq.edu.au
+61410822182 (in Australia)
s.devi@uq.edu.au
Appendix 3: Running sheet for interview

Participant information:
Sex : 
Age : 
Institution : 
Education : 

Government official and key informants (NGO, Auditors and consultant)
1. What do you know about timber legality policy? (background and objectives)
2. What is your opinion about the implementation of this policy?
3. What would be the challenges in promote this policy to forestry actors? Especially for forest concession and community forest farmers?
4. What do you think the main factors that influence the successful of this policy?

Forest concession managers and community forest members

Interview protocols
1. What do you know about TLAS certification?
2. Please tell me the objectives of TLAS, especially from social and economic aspect?
3. How do you think that TLAS would achieve its objectives?
4. What have to be prepared to get TLAS certificate? And who help you to meet all the requirements?
5. What is your expectation after getting TLAS certificate?

RQ1
1. What are the economic benefits of timber legality verification system? (prompts: costs, market access, premium price, incentives, industrial efficiency)
2. What is the social benefit of TLAS? (prompts: infrastructure development, local people participation, capacity building, employment, work safety)
3. Could you provide me with detail about your experience about TLAS implementation?

RQ2
1. In your opinion what are the factors that influence the successful of TLAS adoption?
2. What do you think about the current forest regulation? Do you think that TLAS is supported by existing regulations? Please explain in detail
3. Please explain the current timber administration services? Does TLAS improve the timber administration? Please explain
RQ3.

1. In your opinion please tell me about the effectiveness of TLAS? (prompts: Changing in forest practices, supply chain support, reducing conflict in forestry sector, interplay with relevant with other policy instruments)

2. Do you think the TLAS has been running effectively? Please explain

3. Do you think TLAS would increase the social and economic welfare? Please explain

4. Do you have an experience of other forest certification? If yes, what is your view about TLAS compare to others?