Studying the correlation between customary tenures and indigenous people's poverty in Indonesian land administration system

(Case studies in Dayak community, Indonesia and Sami people, Finland)

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by

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Abstract

Keywords: Indigenous people, Customary rights, Adat, Poverty, Social tenure, Participatory

Reality shows that within the Indonesian land administration system, the existence of indigenous people and their customary tenures have not been recognised yet. And, whether it has correlation with the fact that they still live in poverty needs to be investigated in order to achieve the national sustainable development purpose. This thesis was carried out to study the correlation between the recognition of customary tenures and indigenous people's poverty and then to suggest an alternative land administration system as a solution tool.

Empirical data had been gathered through the fieldwork phase and working experiences and also supported by secondary data in the two case studies. These empirical data show characteristics and description of two countries with different development levels, in sharing some similarities about the importance of customary tenures for the indigenous people. For the first case study, the Dayak community, characteristics of utilising their properties were to balance their livelihood requirements for food and other basic needs satisfaction. In the other case study, the Sami people expected their customary tenure to be acknowledged into formal land administration system for cultural identity preservation.

The findings in this thesis are not radical conclusions but have a broader sense of an alternative land administration as a pro-poor land management system to alleviate the indigenous people's poverty. It seems that in developing countries such as Indonesia, the recognition of customary tenures has a strong correlation with the programme of poverty alleviation and sustainable development. However, in well-developed countries such as Finland, where the indigenous people have already enjoyed the socio-economic benefits from land registration results, the importance of customary tenure recognition is shifted to self-actualisation purposes and cultural preservation. Therefore, to provide land administration as a means of land policy for sustainable development and pro-poor land management system, it requires different strategies for recognising and delivering tenure security to the indigenous people and must reflect the problems that indigenous people face.

Appropriately designed and locally adjusted land management systems combined with tenure security tools are needed for the poor indigenous people. These informal and customary arrangements do not fit precisely into private titling strategies only. It requires alternative solution tools, more flexible than a private title, and more comprehensive land management system designs to support a wider and more complex range of tenures. To realize these alternative solution tools, Indonesian land administration system can implement the STDM in modelling people to land relationship, which are supported by participatory approaches in strengthening customary rights. Their communal resource management and their access to land and other natural resources can be modelled using the STDM in the SocialTenureRelation class. Then, participatory mapping can be used to develop community awareness of local situations and to strengthen the community institutions through promoting indigenous people's empowerment. But these alternative solution tools must be supported by the government issuing a legal umbrella that guarantees the application and impact this alternative land administration instrument.

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List of abbreviations

BAL	Basic Agrarian Law
BPN	*Badan Pertanahan Nasional*, the Indonesian National Land Agency
CCDM	Core Cadastral Domain Model
CIFOR	Centre of International Forestry Research
Dephut	*Departemen Kehutanan*, Ministry of Forestry
FIG	International Federation of Surveyors
IDP	Internally Displaced Person
ILO	International Labour Organisation
ISO	International Organisation for Standard
LADM	Land Administration Domain Model
NGO	Non-governmental Organisation
P-mapping	Participatory mapping
RRR	Right Restriction Responsibility
STDM	Social Tenure Domain Model
TGHK	a forest consensus map issued by the Indonesian Ministry of Forestry
UU	*Undang-undang*, Law
YKSPK	Yayasan Karya Sosial Pancur Kasih, a Dayak people's NGO

1.   Introduction

Reality showed that within the Indonesian land administration system, the existence of indigenous people and their customary tenures have not been recognised yet. And whether it has correlation with the fact that they still live in poverty needs to be investigated in order to achieve the national sustainable development purposes. Their existence has been a long time before the introduction of Hinduism and also the arrival of the first Western trading expeditions at 15th century. Indonesia has more than 200 ethnics and sub-ethnics spread across to all Indonesian islands. These Indonesian indigenous people are living, occupying and managing their own territory called *Adat* lands which are very rich with natural resources. However, on the other hand they still live in poverty and it might be caused by fear to lose their access to their lands and other natural resources. Therefore this thesis was carried out to study the correlation between the recognition of customary tenures and indigenous people's poverty and then to suggest an alternative land administration system as a solution tool.

The first formal land administration in Indonesia was introduced by the Dutch colonial government at 1620. The Dutch colonial government implemented a cadastral system to register private European land holdings. After the first implementation of a colonial land law in Indonesia, there was a dualism between western system and the customary law- *adat* law. This dualism was also including in land laws which exist in the diverse cultural groups mentioned before. After the independence of Indonesia, the new government enacted the Basic Agrarian Law (BAL) in 1960, the highest level of legal framework regulates about land administration. This national land law provided general principles that accommodate the recognition of *adat* laws and also provided the system for the registration of individual rights in order to end legal dualism. On the contrary, within daily practice, there are still no implementing rules related to customary tenures in the Indonesian land administration systems. As a consequent, *adat* lands have not been registered yet as *adat* land rights themselves.

Land administration system is a means of delivering land policy goals. An effective and efficient land administration system puts economic growth, sustainable development and poverty alleviation as essential policy goals (Deininger 2003). Land administration is also used to address poverty reduction and social stability issues (Dalrymple 2005). Definitions of poverty are highlighted by the World Bank by a multidimensional phenomenon of hunger, lack of shelter, being sick and not being able to see a doctor, not having access to school and not knowing how to read, not having a job, fear for the future and living one day at a time, losing a child to illness brought about by unclean water, powerlessness and lack of representation and freedom (World Bank 2009). Using this definition, to study poverty therefore requires multidisciplinary studies, including the study of people to land relationships. For that reason, this research is focused on the relationship of indigenous people and their lands, and their welfare to investigate the correlation of customary tenures and indigenous people's poverty.

Land is the primary means for generating a livelihood and key element of household wealth. Furthermore, access to and use of land and other resources is critical for the poor (Deininger 2003). As mentioned before, most of the Indonesian indigenous people are still living in the forest area and working on agricultural sector. In the agrarian community, land is not only as the main source to meet

the needs of life which can be inherited, but also on a certain level of capital goods used to improve welfare of the community members. Furthermore, the welfare of agrarian community is highly dependent on the level of productivity of the land that they own or cultivate. Consequently, *adat* community takes into their consideration about natural resource support and eternality to utilise their land. In addition, a traditional system of land management can minimise level of land disputes. They have a local policy to solve the problem of land sovereignty which takes into consideration not only economic values but also social and religious values (Setiady 2008). For that reason, based on observations, land disputes which are usually conflicts of ownership and rights to control on land mostly are triggered by the condition of the indigenous people's poverty.

Some national newspapers raised issues about land disputes involving indigenous people and outsiders as investors or the state. Local indigenous people claimed that they owned those lands but the legal statutory evidences show differently. Most of the Indonesian indigenous people still live at the forest area. However, these forests are claimed belong to the state based on the Forestry Law (UU No. 5/1967 then revised to UU No. 41/1999). The importance of recognising customary rights is clear stated from the recent World Bank publication "Land Policies for Growth and Poverty Reduction" (Deininger 2003). Therefore, policy maker, especially in the land administration system, should consider this condition to establish legitimate policies and decisions. Then, a question on how government should guarantee the rights of the indigenous people, including their tenure security is arisen. Studies are needed on whether Indonesian land administration system needs to implement bottom-up or top-down approaches of policy making to improve accountability and transparency and also as a long term resolution for that type of land disputes. In order to answer those questions, this research analysed the possibility of implementation of Social Tenure Domain Model (STDM) and participatory approaches in policy making process as pro-poor land administration tools.

As customary lands in Indonesia have not been registered yet as customary land right themselves, it has led the status of informal lands. How to model the relationships between people and land as a basis for land administration is not easy task. Modelling should be done in both a computerised and paper based environment, and for formal rights as well as for social/informal land tenure systems (Augustinus, Lemmen et al. 2006). The STDM is a pro-poor land administration tool addressed to cover land administration in a broad sense, including administrative and spatial components. It offers an option to relate a personal identifier to a particular land used by that person via social tenure relation (Lemmen, Zevenbergen et al. 2009). One of the advantageous from the STDM is can be expandable considering the local conditions; it can vary with the type of social tenure relationship and other rights.

Defining the relationship between the state and community and their respective roles has become a core issue in development theories. Moreover, participation, accountability, local institutions, local practices, indigenous knowledge, policy, gender equity, tenure and fair and equitable decision making processes became key focuses in those theories (Mohamed-Katerere 2004). In the context of recognising customary lands into the national land administration system, the question arose in respect of how the indigenous people can participate in decision making about their lands and how the indigenous people's spatial knowledge can be accommodated in the national land information system. These are not simple since it involves two very different systems of law; customary law which is facilitation focused and flexible and national statutory law which is based on rules and legal precedent. So the community's preferences to rely on customary frameworks should be honoured by the

government as a question of local democratic choice. A method should be established in which indigenous knowledge can be incorporated into a GIS, particularly databases regarding individual and communal land ownership and disputed boundaries (Badurek and Chacon 2004).

Indigenous people issues are not only belong to Indonesia government. These are more globally concern since indigenous peoples represent about 4 per cent of the world's population. Moreover, indigenous peoples make up one third of the world's 900 million extremely poor rural people. Any effort to alleviate poverty must therefore address the special needs of these minority ethnic groups. The most effective way to overcome poverty is to support their efforts to shape and direct their own destinies (IFAD 2009). One of indigenous people left in Europe is the Sami. They live in Nordic area such as Finland, Sweden, Norway and the Kola Peninsula of Russia. A joint Nordic expert group proposed, as a significant effort concerning of Sami to overcome poverty, that the indigenous Sami people of Finland, Norway, and Sweden should have rights to land and water areas that have been traditionally used by them. However, Finnish governmental representatives found it was difficult to accept some parts of the proposal, including those on land rights and reindeer herding (GALDU 2005).

Statistics show population in poverty in Finland is zero per cent (Beta Phrase Base 2009). On the other hand, there are growing concerns among the Sami people in Finland that their traditional way of life as an indigenous people is under threat, although their existence is recognised in the Finnish Constitution. They have an elected parliament that handles their affairs, and have the right to receive services in their own language. But there is still another dilemma that the Sami have no secure land rights in Finland (Atarah and GALDU 2008). Large areas of land in the north where many Sami live are state-owned. Moreover, the land usage right of the Sami people is complicated by the fact that Finland has not ratified International Labour Organisation (ILO) Convention 169 on land rights for indigenous and tribal peoples. The Convention was adopted in 1989 and came into effect in 1991. Article 14 of the Convention says: "Governments shall take steps as necessary to identify the lands which the peoples concerned traditionally occupy, and to guarantee effective protection of their rights of ownership and possession. (ILO 1989)" Based on this, Finland government should have to start demarcation of land that belongs to the Sami either through ownership or through protected usage rights. (Atarah and GALDU 2008)

Based on the description previously, this thesis was carried out to study the existence of indigenous people community with their customary tenures and the correlation with the reality that the indigenous people still live in the poverty. In term of theoretical relationship, literature reviews were given to analyse the correlation between customary tenures and indigenous people's poverty. Then, to support theories said that tenure arrangements influence indigenous people's poverty, this thesis presented case studies as an empirical evidence to investigate relationships between the indigenous people and their land. In the case of the Dayak community, the absence of implementing laws related to customary tenure had led to the status of informal land onto *adat* lands. As a consequent, *adat* lands have not been registered yet as *adat* land rights themselves. And a fieldwork to the Sami area was held to collect primary data. Then similarities and differences between customary tenure arrangements in Indonesian and Finland land administration systems are analysed. This thesis also investigated on how to overcome the raised problem in order to recognise customary tenure into national statutory land administration systems, so introduction of STDM and participatory approaches may be able to be good solutions. Analysis on enabling factors and challenges for implementing STDM and participatory methods were presented to answer the objective of this thesis.

1.1. Background of Research Case Studies

1.1.1. The Dayak Community

The Dayak are the indigenous peoples in Kalimantan, one of Indonesian islands. The population of the Dayak is about 4 million. Inside the Dayak communities, there are sub-ethnic groups, such are: the Bakumpai and Dayak Bukit at South Kalimantan; the Ngajus, Baritos, Benuas at East Kalimantan; the Kayan and Kenyah at Central Kalimantan; the Ibans, Maloh, Kayan, Kenyah, Penan, Kelabit, Lun Bawang and Taman in the Kapuas and Sarawak regions; and other populations include the Ahe, Jagoi, Selakau, Bidayuh and Kutais.

Dayak people are living mostly from agricultural sectors, such as: wet-land farming, dry-land farming, and forestry. Agricultural practices they implement are significantly as an effort continuing to maintain the preservation of nature. This is indicated through the selection of land for farming practised carefully considering that land is important food source for the continuity of the community. Even though the Dayak community is the major ethnic specifically in West Kalimantan, up to now they have many restricted accesses for specifically agricultural information and technology innovation (Kifli 2007). This situation has potentially led the conflict between the Dayak as the indigenous people and either the state or outsiders. Then this conflict can lead to the land conflicts related to neither a right to use land nor poverty issue as indigenous people. The conflict between the state and the Dayak natives will still continue as long as the national statutory law on land tenure is used against local customary law.

The main principle of land use, in local customary law, is that cultivated land is owned and held in right by the native owners. This understanding of *adat* is based on the idea that land is used and held under native domain. *Adat* right can be defined as community right over land within their territory. In general, *adat* right has characteristics such as below (Setiady, 2008):

1. The *adat* community and its member reserve the right to use the land, and cultivate it,
2. Individual right covered by community right,
3. The community's leader may define and declare the use of a particular land as common use. Individual right over common land is not allowed,
4. The outsiders who want to crop from *adat* land should have permit from community leader and pay some charge or give a gratuity in tribute,
5. The *adat* community takes responsibility to whatever transpires over *adat* land, and;
6. Both the community and its member can not make an absolute decision causing the community absolutely loosing control over *adat* land.

Within the Dayak community, especially in the sub-ethnic Malaris, land ownership is set based on the controlling area of each offspring or ancestor. So, type of land ownership is based on family system with the boundary between each family can be a river, or can be also top of the hill (*munjal*) rooted in the history of their ancestor for this area. These ownerships can be communal, hereditary, transferring or land ownerships for immigrants (Abdurrahim 2007). The most significant feature of Dayak social organisation is the practice of 'Longhouse' dwelling. This is a structure supported by hardwood posts that can be hundreds of meters long, usually located along a terraced river bank. At one side is a long communal platform, from which the individual households can be reached. The Iban of the Kapuas

and Sarawak have organised their Longhouse settlements in response to their migratory patterns. Iban Longhouses vary in size, from those slightly over 100 meters in length to large settlements over 500 meters in length. Longhouses have a door and apartment for every family living in the longhouse. For example, a Longhouse of 200 doors is equivalent to a settlement of 200 families. These practices of ownerships and societies in the Dayak community shape the diversity of customary tenure inside their cultural practices.

1.1.2. The Sami People

The Sami people are the indigenous people of northern Europe inhabiting Sápmi area, which today encompasses parts of northern Sweden, Norway, Finland and the Kola Peninsula of Russia but also in the border area between south and middle Sweden (Niskanen 2002). Their ancestral lands span an area the size of Sweden in the Nordic countries. Sápmi area is traditionally divided into:
1. Eastern Sápmi (Kola peninsula, eastern Norway and Finland Sami regions)
2. Northern Sápmi (most of northern parts of Norway, Sweden and Finland)
3. Luleå Sápmi (Luleå river valley area)
4. Southern Sápmi (southern Sweden and Norway Sami area)

The Sami people have inhabited the northern regions of Fenno-Scandinavia and Russia for at least 2500 years. Traditionally, the Sami have plied a variety of livelihoods, including coastal fishing, fur trapping, and sheep herding. However, the best known Sami livelihood is semi-nomadic reindeer herding - which about 10% of the Sami population: 500 full-time reindeer herders (owners) and approximately the same number of part-time reindeer herders (Myrvoll 2003). In Finland, in 1987-1988, the amount of reindeer belonging to Sami husbandry was 81000 animals. The Sami pasturelands are located within the Sami Home Area. Beside of that, Sami people are also living from fishing and timber. Their cultural practices and values in agriculture and reindeer husbandry affect also in their customary land tenure. Their land use patterns of different family-groups and districts, family land-use history; migration and movement through lands and over waters; management of lands and waters, management or resources; sacred life - places, spirits, healing, items; seasons and migration's pattern; social structures; all these customary rules, values and practices are influencing in term of land tenure type (UNEP/CBD 2005).

Historically, when the population number increased new families of Ancient Nordic opened areas in the forest and formed village structure then. There were many village tenure variations and community members enjoyed the resources through use-rights. Then, through individualisation of large forest, it encouraged a pattern where a landless family might be allowed to clear forest for subsistence farming and housing in exchange for providing agricultural labour for the landholder. This became peasant tenure, which created a new social class. The practice from this tenure was closer to a customary type of secondary right (Torhonen 2004).

Considering those two backgrounds, it seems they have quite similar land tenure cases. Can the Dayak community land tenure and the Sami people land tenure be compared? Or can one learn from the other? Therefore, based on description above, these areas are used as the location of research.

1.2.   Research Justification and Problem

1.2.1.   Research Justification

Kabar Indonesia, Indonesian newspaper, dated 27th Sep 2008, highlighted news about *Suku Anak Dalam* - indigenous tribe in Bengkulu province claiming over 20.000 Ha of lands in their territory which have been converted to palm oil plantations. This indigenous community perceives that they own this land for ages and demands their lands to be returned. As the opposite, the palm oil company has received a legal right from the Indonesian government to own and cultivate this piece of lands. Ironically, this tribe can not achieve prosperity from the lands in which they have been living for ages and on the other hand the company received benefits from the same lands (Kabar Indonesia 2008).

Koran Tempo, another Indonesian national newspaper, dated 7th Jan 2004, told the story about land dispute between *Kajang adat* community as the indigenous people and London Sumatra Indonesia Rubber Plantation Company. Based on this newspaper, *Kajang adat* community feels entitled to own and use the land which has been inhabited since the hereditary. They were forced to give their land to the state for development purpose in this region. On the other side, the plantation company has a legal document which can prove that they have right over that land. The presence of the company in that region is expected to bring in the opportunity of employment for the indigenous community, but in the reality brought fears to the *adat* communities to be evicted from their own lands (Koran Tempo 2004).

Sinar Harapan, other Indonesian national newspaper, dated 11th March 2002, issued the news about the community that are still in poverty despite the large-scale palm oil plantation has invested their capital to develop this region. The news told that the application of the plantation model in West Kalimantan is the only part of the process of community impoverishment. The model is that the indigenous people who own the land have to give their lands, along with the obligation to return land instalment credit periodically over 2.5 Ha of their own lands (Sinar Harapan 2002).

Ippmassi, dated 26 Dec 2008, also highlighted the same issue about the adat community which is still living in the poverty while their lands are converted into palm oil plantation. Based on the experience of farmer in the area of oil palm plantations, palm oil brings prosperity for the investors, but on the other hand creates economic and social problems for indigenous peoples and farmers (IPPMASSI 2008)

Based on some news above, there are empirical evidences to investigate about the correlation between customary land tenure system and the indigenous people's poverty.

1.2.2.   Research Problem

The BAL has already mentioned the existence of *adat* community and communal *adat* land rights since the enactment of this law at 1960. But in the fact, there is still no implementation level of regulations that specifically regulate *adat* lands despite in these lands living Indonesian indigenous people for centuries. This situation has not affected the status of *adat* land, even led to the feeling of losing their control over their own lands (Moniaga 2008). Furthermore, the rights of indigenous people are weakened with the enactment of the Forestry Law (UU No. 5/1967 then revised to UU No. 41/1999). Using this law, the state continues to claim forest area despite the indigenous people mostly living here and depending from the crops of it. This brings about land disputes between *adat*

communities and the state. Jacqueline (Vel 2008) noted that of more than 1100 cases involving the indigenous people only 2 were successful up to now in getting their *adat* land rights officially registered.

The problem that I am going to investigate is the fact showing that most of the indigenous people are still living in poverty. Indeed there are a big number of land disputes involving the indigenous people due to the absence of implementing laws that specifically regulate customary tenure. Therefore, this thesis focussed on the condition of the indigenous people's poverty and its correlation with the existence of customary tenures.

1.3.　　Hypothesis

There is a correlation between the recognition of customary tenures and indigenous people's poverty and it requires an alternative land administration system as a solution tool.

1.4.　　Research Objectives

The main objective of the research is to investigate the correlation between the recognition of customary land tenure system and the indigenous people's poverty. If there is a correlation between customary land tenure system and the indigenous people's poverty, it will benefit the policy makers to improve the existing land administration system. Therefore land administration system can be a pro-poor land management tool as a means of economic growth, poverty reduction, governance and sustainable development.

Besides the main objective mentioned above, there are some sub objectives:
1. To asses the impact of bringing customary lands into individual statutory rights.
2. To asses the advantageous and disadvantageous of having customary land tenure in the formal statutory law.
3. To introduce the Social Tenure Domain Model in modelling customary lands into Indonesian land administration system.
4. To introduce participatory approaches in policy and decision making processes, especially related to land administration system.

1.5.　　Research Questions

Based on the research problems and the objectives, the research questions can be formulated as follow:

General question:
- Does there any correlation between customary tenures and indigenous people's poverty?
- How should land administration deal this correlation to alleviate poverty for the indigenous people?

Sub objective 1:
- Q1.　Does the existence of customary lands be recognised by the formal statutory law?
- Q2.　If it is recognised by the formal systems, customary lands are registered in what type of rights (communal or individual rights)?

Q3. When customary lands are brought into individual statutory rights, does the customary community still live in poverty?

Sub objective 2:

Q4. What advantageous can be achieved in term of economic growth from the registration of customary lands?

Q5. What are land-related factors taking role in customary community poverty and its characteristic changes?

Sub objective 3:

Q6. What STDM concepts are possible to be implemented in Indonesian land administration system?

Q7. What are the challenges to implement STDM in Indonesia?

Sub objective 4:

Q8. What participatory methods are possible to be implemented in the policy and decision making processes, especially related to Indonesian land administration system?

Q9. What are enabling and disabling factors to implement participatory approaches into Indonesian land administration system?

1.6. Methodology

1.6.1. Proposal Phase

In this phase, related literatures are collected and reviewed to achieve supporting evidence and arguments in defining research problems, research objectives and research questions. Literature study has been carried out related to customary tenure arrangements, indigenous people's poverty, land policies and administration system in Indonesia and Finland, etc.

1.6.2. Fieldwork Phase

Data collection during field work phase is mainly divided by primary data collection and secondary data collection. Primary data collection is carried out mainly as interviews and field observations. These have been carried out between 19 September and 2 October 2009 at Finland. Data collected for this thesis are qualitative data and primary data only for the Sami people.

1. Interviews are addressed for the Sami community,
   - to document efforts that are already taken concerning recognition of Sami land rights.
   - to document types, levels and periods of Sami tenure arrangements for both community tenures and individual tenures.
   - to document efforts on participatory methods that already taken concerning recognition of Sami land rights, e.g. self-demarcation, participatory-mapping, etc.
   - to record Sami people's level of income and comparing with EU limit of poverty which is 5,800 euro for annual income.

2. Field observation is addressed
   - to observe and verify Sami people life way and condition of poverty.
   - to observe Sami people homeland at Finland.
   - to visit Sami people parliament.

One of the challenges from primary data collection is language barrier and to overcome this, role of contact person is very expected.

Secondary data are collected through searching statistic reports and scientific researches that have been carried out related to this subject. These are carried out through internet and email to contact persons in either Indonesia for Dayak community or Finland for Sami people since proposal's phase. Secondary data, for Dayak community and Sami people, consist of types, levels and periods of tenure arrangements for both community and individual tenures; and level income of the indigenous people.

1.6.3. Comparison and Analysis Phase

Data which are collected during field work phase are analysed using qualitative analysis methods. Scientific literature reviews are used to support the analysis. From the analysis results then continued with withdrawing of what lessons can be learnt between two case studies. These will be presented more detail in chapter 3.
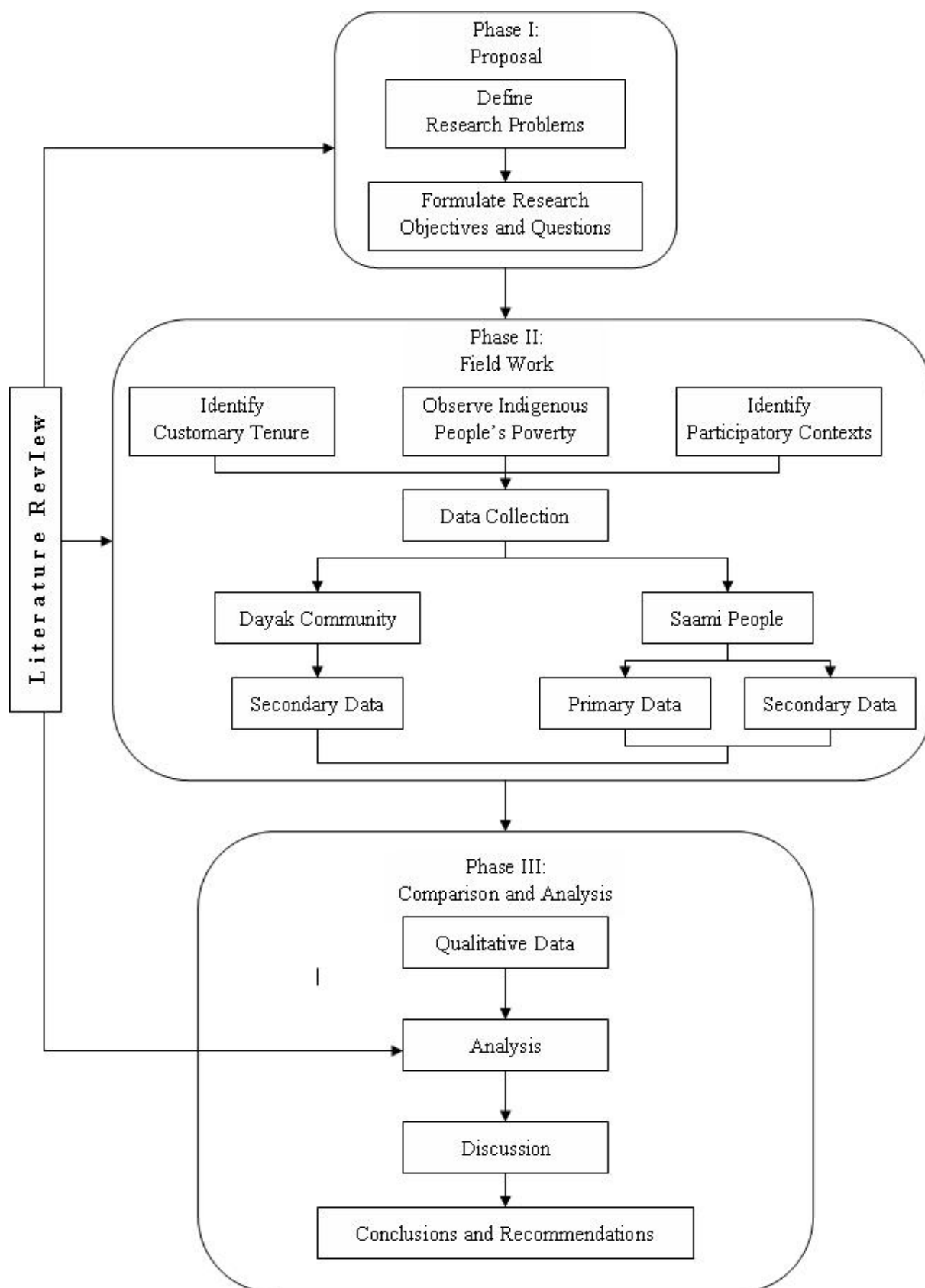
Figure 1.1 Research approach
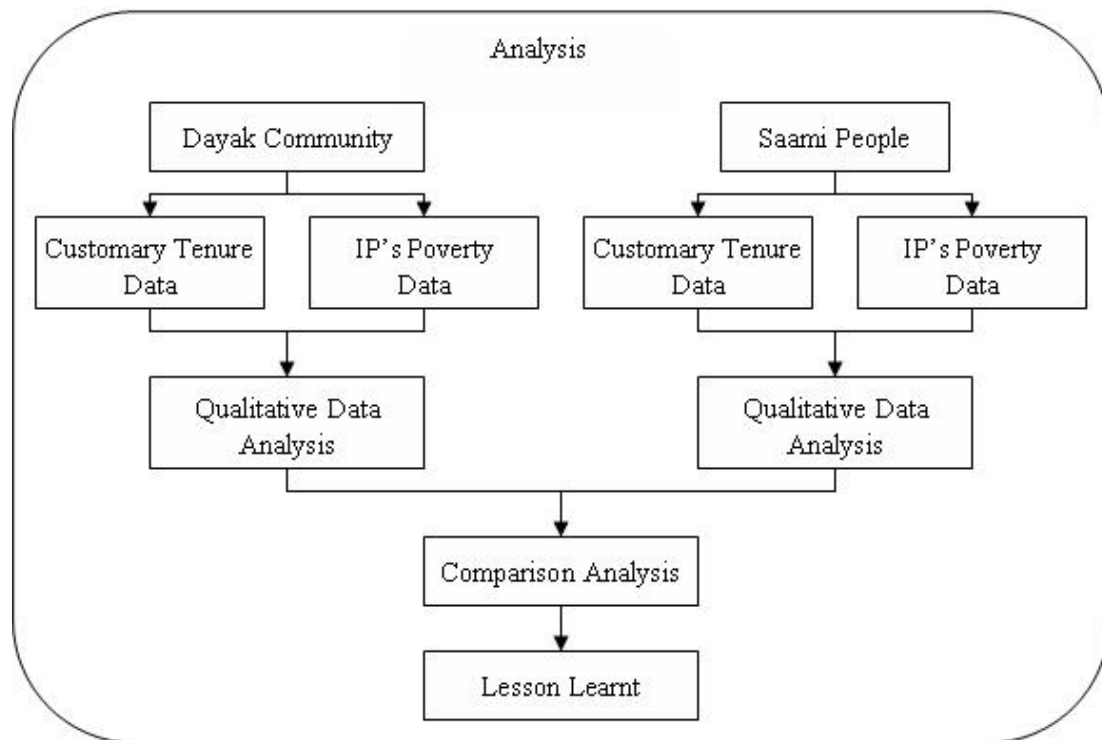
Figure 1.2 Analysis process

1.7. Thesis Structure

Chapter 1: Introduction

This chapter includes introduction, a general background about the case studies, research justification and identification of research problems. It also includes the hypothesis, the main research objective, sub objectives, research questions developed based on sub objectives and methodology of the research.

Chapter 2: Literature Reviews on Land Administration

This chapter presents related literature reviews about the keys theories and concepts of land administration that develop the Indonesian land administration system.

Chapter 3: Customary Tenures and Indigenous People's Poverty

This chapter comprises of two sections, discussion of the existing conditions of the Indonesian land administration system related to the customary tenures and the indigenous people's poverty and analysis the correlation between them based on the results of data collection, comparison and analysis of the case studies data using statistical method.

Chapter 4: Social Tenure Domain Model

This chapter discusses the possibility to implement the Social Tenure Domain Model in the Indonesian land administration system based on the finding of the analysis of the chapter before and the challenges to implement it as a solution tool for modelling.

Chapter 5: Participatory Approaches in Land Administration System

This chapter presents discussions of the participatory methods that are possible to be implemented in the Indonesian land administration system and identifies the enabling and disabling factors to implement it.

Chapter 6: Findings and Discussions

This chapter presents general findings from each chapter before and brought in one summary with the discussions of the analysis based on land administration concepts or theories.

Chapter 7: Conclusions and Recommendations

This chapter consists of three sections; first to draw conclusions in line with the sub objectives of the research, second to draw general conclusions and third to design several recommendations for the further studies.

2. Literature Reviews on Land Administration Theories

2.1. Land Administration

Land administration is the process of determining, recording and disseminating information about the tenure, value and use of land when implementing land management policies." (UNECE 1996). More, Dale and McLaughlin defined land administration as the processes of regulating land and property development and the use and conservation of the land, the gathering of revenues from the land through sales, leasing and taxation, and the resolving of conflicts concerning the ownership and use of land (Dale and McLaughlin 1999). Land administration has a function to enhance legality and provide information about land. In this context, the term land management is often encountered. Torhonen stated that land management implements land policy by means of land administration. Further, land management without proper land administration means operating without any connection to reality (Torhonen 2004).

Looking up that definition, Dale and McLaughlin, more, defined three key attributes of land that should be managed by each country land administration system; those are (Dale and McLaughlin 1999):
- Land tenure that regulates the allocation and security of rights in land; requires legal surveys to determine the parcel boundaries; enables the transfer of property or use from one party to another through sale or lease; and is concerned with the management and adjudication of doubts and disputes regarding rights and parcel boundaries.
- Land value that assesses the value of land and properties; provides valuation for gathering revenue through taxation of land; and the management and adjudication of land valuation and taxation disputes.
- Land use that controls land use through planning policies, regulations and enforcement; implements planning through granting permits to use and develop land according to the controls; and manages and adjudicates on land use conflicts.

2.1.1. Land Administration as a Means of Land Policy for Development

In the national development plans of a country, the highest level in a land hierarchy is land policy (Dale and McLaughlin 1999). Land policy is used as a government's instrument that states the strategy and objectives for the social, economic and environmental use of the land and natural resources of a country. One means of land policy instrument is land administration (Torhonen 2004). Therefore, land administration should be placed in the context of national development plans of a country also. This framework is illustrated in the Dale and McLaughlin (1999) diagram below (Figure 2.1).
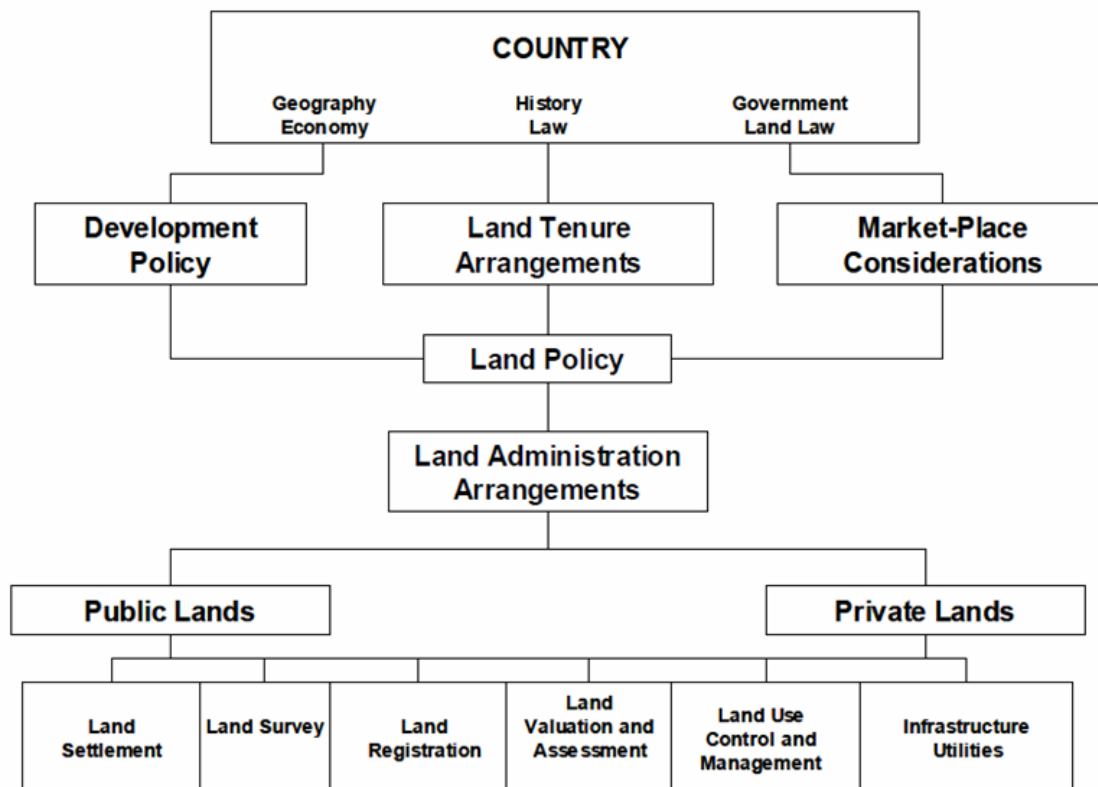
Figure 2.1 Land Administration as a means of land policy

Considering the importance of establishing a sound land policy that reflects national development and sustainability goals and the facts that land policy issues are complex, country-specific, of a long-term nature, and often embrace political controversy (Deininger 2003), therefore policy frameworks should be broad-based and aimed at harmonising sector interests relating to land through an agreed and coordinated strategy driven by strategies promoting economic development and poverty reduction. Land policies are actualised through an arrangement of land administration mechanisms and processes, such as laws and regulations, registration of land interests, land title registration and classification options, and market arrangements (Dalrymple 2005).

At the international level, efforts to put land administration as means of land policy for sustainable development have been done. Significant statements, declarations and guidelines have been created from high level land administration, rural development and poverty reduction initiatives. In these efforts, the International Federation of Surveyors (FIG), as a leading international land agencies and organisation, plays an important role by addressing sustainability principles within their activity base, and organising collaborative events with development organisations. Activities done in this international level have contributed in important findings and contributions towards land policy and implementation for development scenarios. These contributions include (Dalrymple 2005):
- United Nations Economic Commission for Europe (UNECE) Land Administration Guidelines, Meeting of Officials on Land Administration (MOLA), now the Working Party on Land Administration (WPLA), 1996;
- The UN-FIG Bogor Declaration on Cadastral Reform, United Nations Interregional Meeting of Experts on the Cadastre, Bogor, 1996;

- The UN-FIG Bathurst Declaration on Land Administration for Sustainable Development, UN-FIG Conference, Melbourne, 1999;
- The Potsdam Statement on Rural Development, Rural 21, Potsdam 2000;
- The Bonn Statement on Access to Land, Bonn 2001;
- The World Bank Regional Workshops on Land Issues in Asia, Europe, Latin America, and Africa 2002 culminating in the publication of The World Bank land policy review book, *Land Policies for Growth and Poverty Reduction*, 2003; and
- UN Habitat and UN-FIG Expert Meeting on Secure Tenures – new legal frameworks and tools, Nairobi 2004.

These initiatives emphasised the use of land administration as a key strategy in national development and poverty alleviation. Building or re-establishing land administration systems in a country presented a holistic development approach in support of sustainable development. Economic growth and poverty reduction effects from land administration activities were realised through securing property rights (Dalrymple 2005).

2.1.2. Land Administration as Pro-poor Land Management System

Land is a key asset for the poor. Land provides a foundation for economic activity and the functioning of market (for example, credit) and nonmarket institutions (for instance, local governments and social networks) in many developing countries. Under the economic growth and poverty reduction themes, the World Bank's new agenda strongly supports policies that address: (a) property rights to land, tenure security and its impacts; (b) the scope for accessing land, and the functioning and impact of market and non-market channels; and (c) the broader regulatory framework governing land and related sectors (Deininger 2003).

The selection of land policy in a country is suited to the local context and range of land related issues. Often unavoidably these selections are driven by political interests rather than pro-poor or sustainable development objectives. This is where policy dialogue becomes very important not only among different groups and hierarchies within a country, but also across national borders for regional land related discussions. Policy dialogue encourages the sharing of experiences but also introduces more accountability of a government's actions within the region.

Policy consideration for secure property rights must explicitly recognise the rights of vulnerable groups, such as women and other groups traditionally neglected or disadvantaged. Action to support these rights is critical for smoothing the progress towards a democratic society, however activities must be realised within the cultural context to avoid conflicting attitudes and behaviours among citizens. This is why the process of land policy making must reflect the country's historical evolution (Deininger 2003).

"If land administration systems do not respond and expand to meet the challenges of society's increasingly complex relationship with land, sustainable development will not move beyond rhetoric." (Williamson, Ting et al. 2000).

2.2.   Land Tenure

2.2.1.   Overview of Land Tenure

"Records and recognition of people to land relationships are at the basis of land tenure security and are interdependent with the social, cultural and economic conditions of the respective groups" (Burns, Grant et al. 2006). Land tenure is generally defined as 'the mode by which land is held or owned or the set of relationships among people concerning land or its product' in the land administration literatures (Bruce 1998a). Land tenures also define the rights of use, access, control and transferability of land and property, as well as restrictions and responsibilities. Furthermore, land tenures may be well defined and enforceable in formal law courts, or defined through normative and customary structures of a community (Dalrymple 2005).

Conventional land tenure types describe rights to land through property regimes that have defined sets of rules and laws, referring to immovable property and real estate (Dalrymple 2005). Then tenure typology is classified based on use, value and control among groups, individuals, and the state by rights-based societies. These societies defined that land is synonymous with property, with a person or group having enforceable claims reflecting ownership.

Dale and McLaughlin gave an analogy of land tenure with a 'bundle of sticks' (Dale and McLaughlin 1999). People hold sticks of different lengths and thicknesses illustrating the different strengths and weaknesses of people's rights over land. This 'bundle of rights' is typically defined through laws and are not necessarily exclusive. They constitute a web of intersecting interests among owners and users (FAO 2002) and are categorised as: overriding (held by a higher authority); overlapping (several parties allocated different sets of rights over the same parcel); complementary (sharing interests in the same areas); or competing (different parties contesting similar interests of the same resource) (GTZ 1998).

Formal land tenure systems recognise all types of tenure in a national and/or local system of law (Bruce 1998b). Formal land tenure systems have been designed and introduced by western countries since the colonisation period. These systems recognise legal rights, restrictions and responsibilities between an identified piece of land and the owner. Yet, these systems are also recognised as incapable of providing all people with security of tenure (Dalrymple 2005). The poor need land administration systems that response to a range of formal, informal and customary tenures, overlapping and overriding tenures, and individual and group people to land relationships. Then the effectiveness of related land administration system is tested by the ability of its legal, technical and institutional arrangements to respond to tenure arrangements that happened in the reality of the community.

2.2.1.1. Elements of land tenure

First, in the society, types of land tenure can be differed through the method of acquisition and the evidence of acquisition (Dalrymple 2005). The method of acquisition means how the person or group came to occupy, use or possess the land. This method can be inheritance or gift; by physical use or occupation; or by way of formal contract from a sale, lease or rental transfer agreement. Then, the evidence of acquisition can be formal evidence or less formal evidence. The formal evidence of acquisition may be recorded and represented by a title or deed certificate that is legally defining the set of rights and restrictions attached to the land. In other hand, less formal evidence of acquisition may

prove ownership, such as bills or receipts recognising the interests of a person/s to an area of land or resource (Augustinus 2003).

Second, descriptive elements of tenure can be differed through ownership and relationship. Ownership involves how the land is held among people in society. As mentioned before, the Western countries have designed and introduced definition of ownership through formal or legal tenure systems. There are four categories of ownership, then called by property regimes, that Western property systems recognise, private, public, common and open access. These are explained furthermore in the section of property regimes. Then, a 'relationship' between people and land can be measured in terms of economic, social and environmental factors. The moral or ethical value of land to its owner separates from the fiscal value depending on the society in which the tenure system evolves. Capitalist societies are preoccupied with private individual rights of ownership, while African customary societies are more accustomed to communal arrangements (Dalrymple 2005).

The arrangements of land tenure can also be described through its use, duration of tenure, value and transfer. Use rights give the right the occupier to some or all of the profits that arise from using the land. An example of this is sharecropping, a popular land distribution technique in India and other parts of South and Southeast Asia (Dale and McLaughlin 1999). Duration of property rights is an important component of tenure as it tends to match investment duration (van Asperen and Zevenbergen 2007). It may also be set by a sovereign authority. The duration may be defined: for the life of the owner or tenant (life estate), for an agreed period by contract or agreement according to seasons; by lineal descent (fee tail); or unlimited inheritance (fee simple). Some customary tenures have no time limitation as land is continually passed between generations. The value element depends on the economic, environmental or social terms or a combination in the society in which the tenure system evolves. The capitalist driver and fiscal value placed on land often overshadow environmental and social interests as market based systems require land to deliver products. In a poor society, social values of land have a strong influence because of the livelihood security it provides, either through shelter or subsistence food crops (Dalrymple 2005). Transfer of rights and interests is a condition determined by the people to land 'relationship' and the type of 'evidence' that is required. Common examples of transfer methods are ceremonies, hand shakes, documented transfers, witnesses, a legally or non-legally binding act. If there are costs involved in the process of transfers, so it may influence its land values. Duration factors may prohibit or limit transfers and also ownership rights may affect or even limit how and to whom land may be transferred. In formalised systems, transfer rights determine the sale, mortgage and transfer of land to others (FAO 2002). Typically all the rights, restrictions and responsibilities of land are reallocated from the previous owner to the next in a transfer.

2.2.1.2. Land perceptions

Land is perceived in a number of different ways, such as: territory; a resource; inheritance; having spiritual qualities; environment; and as capital (Dalrymple 2005). These affect the definition of people to land relationships and show the dynamic and complex characteristics of tenure. By considering of different perceptions, it helps to explain the evolution of tenure systems and tenure security approaches in the societies (Dalrymple 2005):

- Territoriality among indigenous and nomadic groups is an expression of power or belonging across a geographic region or a natural ecological space. Individuals within this area may have special rights and responsibilities that control their behaviour.

- Land as a resource is associated with extractable products from the earth's surface, including mineral deposits, forests, water, fish, sunlight, rainfall and temperature changes.
- For many communities, land is held among the group and associated with lines of inheritance and ceremonially bequeathed during marriage, birth or death. It is a gift of cultural and survival significance shared between generations.
- Spiritual qualities of land are even more culturally infused with ancestral spirits and deity.
- Land is equally an asset for economic and social development, and particularly supporting land markets. Treating land as capital assumes it is a durable "free gift of nature" that has potential for value adding and can be used to raise finance by using land as collateral.
- Land as property and created through an abstract of rights or claims, has been become an idea of the capitalist groups. Land can generate wealth, attract investment and be a capital for the development (Williamson, Ting et al. 2000).

The importance of understanding different perceptions of land expanded when indigenous, tribal and minority groups were empowered through the adoption of the ILO Convention No.169. Raising issues of socio-economic disadvantages experienced by indigenous peoples was long overdue on the international agenda, particularly through the dispossession of indigenous peoples from their land and the exclusion for economic activity (UN-Habitat and OHCHR 2005). As the results, the differences between people to land relationships are influenced by the organisation of society, power, commoditisation and markets, resource dependence or independence, institutional arrangements, legal frameworks, religious and cultural beliefs, and spatial and environmental awareness (Dalrymple 2005).

2.2.2. Property Regimes

'Land as property' relationship can be institutionalised in legal, social and economic contexts. Land as property is the foundation of formal property regimes in which typologies of tenure describe predictable rights and restrictions of interested parties. A high value is placed on credible property systems within market economies. These predictable and secure tenure relationships provide information for land administration functions of taxation, compensation, administration of transactions, land use planning, natural resource management, risk assessment, and valuation (Dalrymple 2005).

Four classic tenure types evolved in Western systems known as: private (individual), state (public), communal and open access (Dale and McLaughlin 1999). Principle characteristics of tenure classification originate with the type of stakeholder/owner, whether their interests are for an individual or private person, a designated group, or on behalf of the government. Secondly, tenure is arranged by the degree of control of ownership rights. Private and public tenures rely on a formal rights-based approach and require functioning legal and administrative systems. These tenure types mostly populate cadastral layers within a land administration system, relating land with high economic value.

2.2.2.1. Private property

Private property rights are the most effective bundle of legal rights and opportunities granted to individuals, households, corporations and partners, to exercise full and exclusive control over the use and management of land or resource for an unlimited duration. It is transferable, divisible, inheritable and useable as collateral (Dalrymple 2005).

2.2.2.2. Public property

Public property is land held by the state and through various levels of government. It is often intransferable with highly restricted use rights. The responsibility of management of the property is at the government's discretion (GTZ 1998). Tenure interests may also be divided between private state property and public state property, however not all governments will separate these. Private state property is managed privately by the state or a trustee on behalf of the state i.e. a lessee or state-owned enterprise and may be used for various activities with agencies exercising exclusive rights under the mandate of the state, in which case, the public does not have direct access. On the other hand, public state property is managed by the State, and made available for the use and enjoyment of the general public. Land may be deliberately set aside by the State for public use with control and management allocated to a state body, or to an agency acting on behalf of the public. Typically roadways, national parks, water reserves, and public libraries are of this tenure.

2.2.2.3. Common property

Common property is the earliest known land arrangement and concerns multiple users in communal ownership and regulated control of land and resources (GTZ 1998). Common property was historically held within the tribe, clan or family. There are two major types of common property: nomadic, in which pastoralists migrate seasonally within territory that is traditionally theirs; and villages, in which settled agriculturalists hold land in common (Dalrymple 2005). And to avoid ambiguities in terminology between common property and communal ownership, (Otsuka and Place 2001) makes the distinction between them. Communal ownership has the capacity to deliver exclusive individual user rights within a communally owned and controlled area. Under formal regimes, a governing group or body determines members and non-member interests in terms of access, exclusion and user rights in communal ownership. Under common property individuals have rights and obligations in common with all other users. Often members will have additional restrictions and responsibilities for protection of the resource and in the long-term interest of its members (Bromley and Cernea 1989).

Hardin (1968), with the theory of 'Tragedy of the Commons', argued that common use would cause anarchy, overuse and degrade a resource because of the human desire to extract the greatest self benefit when in competition with other users of a resource (Hardin 1968). The effects from this theory were the private rights movement during the 70s. However, international research on land management and communal ownership later suggested that sustainable resource management practice depended more on the nature of user control and responsibility. Common property resource management is now considered a sustainable tenure option where there are clear incentives for people to act sustainably to secure regeneration for the next generation (GTZ 1998). It is the combination of collective action and secure communal property rights that leads to efficient and sustainable natural resource use and management rather than exploitation and degradation (Meinzen-Dick and Di Gregorio 2004). Common property also provides a greater sense of secure access to resources.

The organisation of customary societies is highly correlated to common property tenure characteristics. Customary practices have a primary interest in almost all the elements of natural resources as common property, such as wood, forest bi-products, and water. There are often more levels of interest than the resource alone: spiritual connections and experiences; the formation of kinship; and gender and marriage, to name a few. Customary tenure is often informal and rarely

documented, however the practices are firmly grounded and shared among members of the interest group (Dalrymple 2005).

2.2.2.4. Open access

The final classification is debatably a tenure type, as it refers to areas of resources that have unrestricted access and use. No rights, restrictions or responsibilities pertain to open access, thus leaving resources open to exploitation (Bromley and Cernea 1989). There are no prescribed purposes or stakeholders' rights or duties to these areas and any person or group can appropriate benefits from the resources.

2.2.3. Informal Tenure

Informal tenures are relationship of tenure that are practised and protected outside statutory laws because of lack official recognition and protection. Sometimes these are illegal, held in direct violation of the law. Informal property rights may also be extra-legal, which are not held against the law, but neither are they recognised by the law. Informal property rights may be secure in their own context, often occurring among poor and indigenous groups where they lack or disassociate from formal means to secure tenure, or have evolved according to local customs and traditions (FAO 2002).

An essential differentiation between informal and formal tenure is the degree of security and certainty of claims. The formal interests in the formal tenure are explicitly acknowledged and protected by the law, and the owner/tenant/group has a low risk of their rights being taken away or violated, without some form of compensation (Dale and McLaughlin 1999). On the other hand, informal tenure is often synonymous with insecure tenure because of the lack of formal enforcement and regulation of interests and property rights. Informal tenure systems often derive physical and social mechanisms to defend land and resources interests.

2.2.4. Customary Tenure

Long term practices transcending generations shape traditional tenures. Customary tenures have similarly inherited tenure practices; they are moulded in a history of cultural or religious beliefs identifiable to particular groups, tribes, or clans (Brazenor, Ogleby et al. 1999). Land may be a common denominator among tenure systems but customary tenure is deeply rooted in traditional practices and very distinct from formal tenures such as private property. Communal tenure in a customary system acknowledges informal management arrangements of individual and group rights within a common area. The relationship between people and land may be based on tradition, spiritual connections, resource availability or kinship. Acquisition of rights to land or resources among the group is prescribed by permission and invitations, self-restraints and implications, rather than through prescribed and formalised rights bounded by legal principles and institutional arrangements. However, these tenures are not easily translated into formal tenure systems.

Indigenous knowledge and traditions are acknowledged as important in achieving sustainable development, and identified specifically in Principle 22 of the Rio Declaration on the Environment and Development (UN 1992):

> "Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional

practices. State should recognise and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development".

In an analysis of the Earth Summit goals, (Dalrymple 2005) provided the following recommendations for governments to implement:
- Recognition of the special values, cultural practices, and knowledge of indigenous peoples.
- Integration of traditional knowledge and practices of indigenous peoples into contemporary management systems.
- Involvement of indigenous peoples in decisions about their environment and development.
- Targeting of specific initiatives relevant to indigenous peoples, such as dealing with land tenure issues.
- Capacity building amongst governments dealing with indigenous issues, especially through the training of government staff.

However implementation of these recommendations is difficult. The huge diversity of 'indigenous peoples', their self-governance, and locally autonomous systems of land administration prevent generalist approaches to land tenure characteristics. Evaluation of the sustainability of informal indigenous tenures with conservationist ideals against formal tenure systems which have a typically strong economic underlying principle is difficult. Achieving security for these societies is at the heart of customary land issues – in terms of access to land and resources, institutional recognition and self-sufficiency – before considering increased access to markets and trade (Colchester 1992).

2.2.5. Land Tenure Issue for the Poor

Tenure is the most important aspect of a land administration system for poverty alleviation and especially among the livelihood of the rural poor (Dalrymple 2005). One major factor that contributes to poverty is informal and insecure tenure as a result of unsustainable land use, poor allocation of services, limited access to shelter, and poor investment and access to credit (Feder and Nishio 1998). Improvement in tenure security is a key driver in development strategies, especially through providing long-term certainty of poor people's most valuable asset. Tenure security exists when people can successfully defend their interest in land, when challenged. For the poor, tenure security includes protection against risks particularly eviction and not living in fear or threat of having their claims denied or unjustly compensated (Augustinus 2003).

Methods of delivering tenure security may be different, depend on the urban, rural or peri-urban context (Dalrymple 2005). (Deininger 2003) underlined elements which are needed to provide tenure security in land administration as the duration of rights, boundary identification, subject of rights, properties of enforcement institutions, and the rights and awareness to circumstances changing, especially economic, political and resource valuation. Then, identification, classification and securitisation of rights under a private tenure system are common land administration solutions to formalise access to land. However land administration alone cannot deliver tenure security, especially for combating poverty. To get the desired results, some fundamental conditions need to be simultaneously met, such as:
- well-designed certainty and security of the law and human rights;
- public participation in the politics of land issues;
- credit systems that accept secured tenure for collateral;

- efficient and accountable institutions and authority;
- improved employment and business investment opportunities; and
- a functioning land market and economy (de Soto 2000).

Tenure security can be a means to aid poverty reduction and sustainable development strategies when the design of the instruments is sensitive to social issues and the side effects of formalisation (Dalrymple 2005). Social and environmental issues among the poor that affect the design of land administration are acknowledged here as communal resource management, access to land and resource, and food security.

2.2.5.1. Communal natural resource management

As mentioned before, the design of tenure security depends on the urban, rural or peri-urban context. For the rural poor, secure access to land and fair employment practices in agriculture provide the most realistic opportunities to improve their livelihoods and develop assets that can reduce vulnerability. Secure access to land and control over its management provide the most powerful incentive for the sustainable management of natural resources (Bruce, Giovarelli et al. 2006).

Tenure derived from people's rights to use and access natural resources are important among rural societies. Natural resource tenure has achieved much greater status in discussions of international development of tenure security, especially come from the increasing appreciation of social and environmental values in support of sustainable development (Deininger 2003).

Natural resource tenure is usually recognised informally through local regimes. Natural resource tenure was derived from the French meaning of the term land tenure, 'foncier'. Here includes cropland and all natural resources related with it (Bruce 1998a). Resource tenure recognises a degree of rights in forest products, trees, pastures, water resources, and sacred sites. The arrangements of natural resource tenures are often localised, and managed without formal systems of documentation within a society (Dalrymple 2005).

Further, natural resource tenure has also the same context of the economic and livelihood value like in land tenure. This tenure is recognised through traditional practices of use, verbal agreements, heredity, acquisition and occupancy. Some examples of natural resource tenure can be seen in the traditional practices of tapping resin from rubber trees or extracting sugar and oils from palm trees. Rights to natural resources, either they are connected or not to the land, may be referred to as "partial interests". Partial interests are defined as dividable claims from the full land or resource claim, particularly those which may overlap or override other rights.

2.2.5.2. Access to land and natural resource

Securing access to land and natural resources is fundamental means in combating of hunger and poverty, resulting in greater productivity, increased incomes, and sustainable land use (Tedder, Mitchel et al. 2002). Furthermore, one of the greatest environmental vulnerabilities caused by poverty is a high dependence on natural resources for survival, particularly in rural areas. The poorer the household, the greater the share of income from natural resources (UNDP, UNEP et al. 2004).

Access rights for forest dwellers and agricultural communities whom livelihood depend on forest products are just as important as land ownership. As examples, the poor use regularly forest products

to construct houses and other equipment, and provide food and medicinal products. Rights of access to these areas are complex and usually informal however provide a significant means of livelihood security (Dalrymple 2005). Therefore, these tenure arrangements require similar security of tenure as land ownership.

2.2.5.3. Food security

In agrarian communities, rural land tenure security is similar to livelihood security and basically depends on the right of access to and use of land and natural resources (Deininger 2003). The relationship between land tenure and rural issue, as well as food security and access to land and secure arrangements has recognised as a solution to poverty alleviation and providing the most powerful incentive for the sustainable management of natural resources (Moore 2002). Food security is a function balanced by food availability, access and utilisation. Scopes of food security as a conceptual linkage between land tenure and food security had been highlighted by (Maxwell and Wiebe 1998) as sufficiency, sustainability, and vulnerability. Food insecurity is suffered by communities when the possibility for sustainable access to sufficient food is absent for a particular period of time as well as variable consumption and seasonal production levels (Maxwell and Wiebe 1998).

The linkage between tenure and food security also suggests that food security is more than a direct result of production. Integration of access and tenure of resources has causal effects on production and in the end to income as well. Severe food insecurity means boosting on the disposal of assets. Local circumstances will decide the strategies to avoid poverty, ranging from adjusting consumption and crops, finding alternative employment, migration, and, at last, alienation of land (Birungi 2007).

Commercialisation of agriculture product, crop diversification and land markets also play important roles in food insecurity alleviation. These strategies are supported by the introduction and promotion of private property rights. Private property rights may strengthen selected food-secure groups, support with tenure security to increase credit, allow greater economies of scale in agricultural investment, and reverse fragmentation of holdings (Deininger 2003). However, the effects felt by lower-income groups are mainly negative as these strategies are failed to deliver growth and equity of those outside the private commercial sector.

Land, food, and agricultural trade policies are required to deal with the causal linkages between tenure security and food security. Here, the theory that the highest productive output requires private tenure security should be challenged. Natural resource management and access, customary and informal tenure upgrading, and availability to credit must also be considered.

2.3.   Land Registration

2.3.1.   Overview of Land Registration

Land tenure arrangements can be reflected in land and property registration systems (Torhonen 2004). Generally, there are legal and fiscal land registers. The legal land registers consists of deeds registration, where documents in the register are the evidence of title; and title registration, where mostly the register itself serves as the primary evidence. In the deeds system, a registered deed takes priority over an unregistered or a subsequent deed, and in some systems unregistered deeds are not accepted as proof of title. Legal protection covers a landholder only when the holdings have been

registered. However, as a theory, the registration of a deed does not affect its legal status, it is just stored. Adjudication is repeated for every conveyance through the entire conveyance chain.

Title registration was introduced to overcome the problems associated with deeds registration (Torhonen 2004). Its purpose was to simplify and secure conveyancing, avoid repetition and increase efficiency. Title registration is based on a state guarantee of title. Finality is thus ensured and repeated adjudication unnecessary. An absolute guarantee of title is problematic in a developing world context. Theoretically, since only an entry to the register can convey title, a title register needs always to be updated, which in developing countries is often likely to remain in the realms of theory. In the reality, sometimes land register contained data un-updated yet although those lands already have been subdivided. Therefore, a title system should not be introduced if there is a fear that it will not be implemented fully.

The required professional steps in both deed and title registration systems have made cost in conveyance increase. Along with the get higher of informal fees, it makes registration fees unfeasible for most citizens of developing countries. Registration is too expensive for the majority of the poor. As a result from this condition, the number of registered land in developing countries is low. Then, if an official land administration system fails, people start to find from the informal systems (Torhonen 2004).

A fiscal register records data in cadastres for taxation purposes (Dale and McLaughlin 1999). In developing countries, a fear of taxation may result in outdated cadastres. As an example, in Cambodia, transactions are often not registered in order to avoid transfer tax (Torhonen 2004). Looking up to that conditions, Bogaerts and Zevenbergen (2001) tried to find which type of cadastral system, fiscal or legal, is more advantageous to a country, but the conclusion is not so much the type as the quality that matters, and fiscal cadastres have provided a good basis for legal cadastres (Bogaerts and Zevenbergen 2001).

2.3.2.   Land Title Registration to Provide Tenure Security

Tenure security as a key poverty alleviation tool in most circumstances relies on the formalisation of tenure to 'protect' people's land and resource interests within a formal system (Dale and McLaughlin 1999). Tenure security provides status and entry into land and credit market activities. Tenure formalisation moves land interests and claims from an informal system to a legally recognised system. Formalisation approaches should be sensitive to local land issues and reflect a country's history, culture and attitude, economics, environment, governance and social stability. As examples are the characteristics of urban slums in South Asia, overnight land settlement invasions in Latin America, reconstruction of post war states of Central and Eastern Europe, customary land rights of indigenous Pacific Islanders, and rural land and natural resource management in Africa. All these characteristics must be considered in order to perform formalisation.

The most common approach of formalisation in land administration is land title registration. Land title registration should deliver fast, simple and unambiguous registration of private tenure for securing land right and raising the land value as a capital. Experts encourage the potential wealth of land by land title registration (de Soto 2000). Assumption used for this theory is that a formal property system of recording land arrangements is an indispensable tool for providing tenure security, a functioning

and formal market economy, and the sustainable management of land resources (UNECE 1996). Then land administration system is required to coordinate and implement the functions and services. As a result, land becomes sufficiently secure to support opportunities for obtaining credit, conducting effective land transactions, providing certainty of investment, and the moderation of land disputes.

2.3.3. Socio-Economic Benefit from Land Title Registration

De Soto and many other followers are convinced that a formal property system is the key to capitalist success (de Soto 2000). The theory focuses on the representation of information in the form of inscription rather than consensus: land tenure represented by certificate of title; personal identity by a passport; or a person's credit rating via a credit card. This ability to represent information helps in understanding the complexity yet endless functionality of property system (Wallace and Williamson 2004). This system depends on a number of conditions, a complex and functioning legal system, standardisation, participation, and the ability to leverage from representation (de Soto 2000).

A land title or deed as the representation of tenure is considered essential in a formal property system. The title allows more effective and secure means for communicating information, especially applicable when engaging in the formal land and credit markets. Furthermore, the title is able to provide evidence not only the physical nature of the property, i.e. size, location, and use, but also the implied rights, restrictions and responsibilities attached to the land. As the results, it is not only for securing one's land interest but also effect on the value of land itself (Feder 1999). Figure 2.2 illustrates how a land title can improve investment opportunities which not only lead to increased land productivity and therefore income, but also an increase in land value. Ownership registration and parcel identification are seen as indispensable tools in a market economy and become common projects in agricultural countries such as Thailand, Indonesia, Cambodia, and even Vietnam and China to improve its productivity by using the certificate as collaterals.
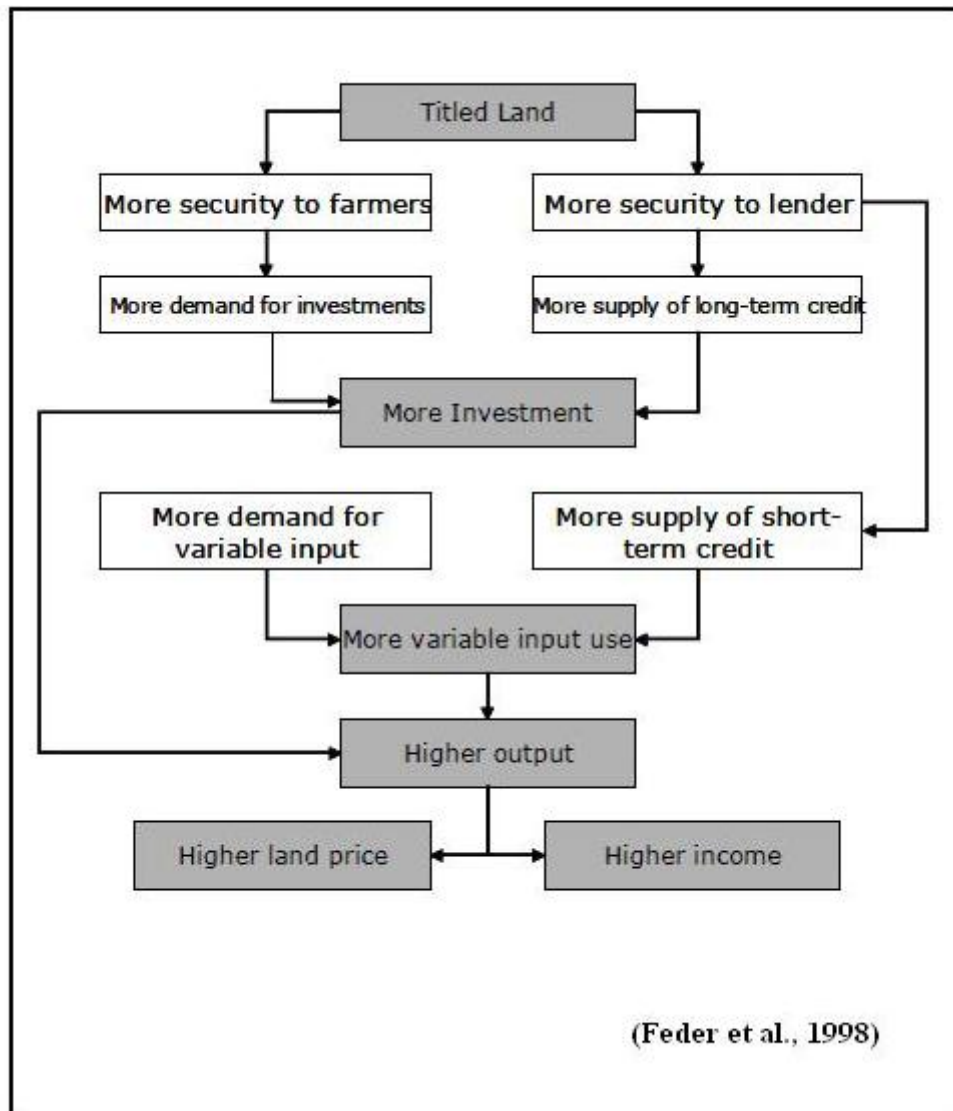
Figure 2.2 Economic drivers for land administration

2.3.4. Socio-Environmental Issue of Land Title Registration

Following the researches that have been done in the socio-economic impacts of land title registration, the issues of people to land relationship must consider as well the socio-environmental aspects. The United Nations Environment Program (UNEP) regularly unveils State of Environment statistics that reveal environmental decline from the impact of human activities. Considering this impact, land administration systems must also address environmental factors of people to land relationships.

Recommendations from the Bathurst Workshop 1999 concerning global environmental and socio-economic issues are resulted to strengthen a country's land policies, institutions and infrastructures within a desirable land administration system. These key recommendations were for:
- Providing effective legal security of tenure and access to property for all men and women, including indigenous peoples, those living in poverty and other disadvantaged groups;
- Promoting the land administration reforms essential for sustainable development and facilitating full and equal access for men and women to land-related economic opportunities, such as credit and natural resources;

- Investing in the necessary land administration infrastructure and in the dissemination of land information required to achieve these reforms;
- Reducing into a half of the number of people around the world who do not have effective access to secure property rights in land by the Year 2010. (UN-FIG 1999)

2.4. Land Administration for Indigenous People's Poverty Alleviation

As mentioned above, land is not only crucial to survival of indigenous peoples; it also has a deep spiritual significance for many of them. Many indigenous peoples' value systems are based on a close relationship with their surroundings, which gives them a special role to play as stewards of natural resources and biodiversity (IFAD 2009). To understand how local people use and manage their lands which are mostly in the forest forms, it is important to first consider the importance of such landscapes to local livelihoods. Forest is the basis for livelihood systems that depend primarily on hunting and gathering or on rotational agriculture systems that require fallow periods to refresh land productivity (Arnold 1998). Even when people do not live near forests or depend directly upon primary products of forest mentioned above, forests and trees continue to be the sources of a variety of foods that supplement and complement what is obtained from agriculture, of fuels with which to cook food and carry out artisanal activities, and of a wide range of medicines and other products that contribute to health and hygiene (Byron and Arnold 1999). The majority of rural households in developing countries depend on plant products from forested landscapes to meet some part of their nutritional, cooking and/or health needs (Nabanoga 2005).

According to the World Development Indicators (World Bank 2009), 90 percent of the world's 1.2 billion extremely poor (living in developing countries; living on one USD $ a day) depend on forests for products for their livelihoods. On the other hand, forest product users are faced with a decline in the availability or quality of forest resources. The decrease in forest resources is related to land clearance for agricultural purposes, timber harvesting that damages other components of the forest, increasing state control over forest land, and other measures that result in de facto privatisation by wealthier and more powerful user groups (Nabanoga 2005).

Looking up the relation between indigenous peoples and lands, land access and wise management and control of land is one factor that can protect forests and also enhance the productivity of the land itself as well as reduce poverty. In agricultural countries, access to land constitutes a major input to increased production. Access of the poor to productive assets such as land means improving of household welfare (Birungi 2007). By facilitating access to these assets, the poor can have improvement in their productivity through having credit. As one means to improve the productivity of the poor as well to reduce poverty itself is by securing their access rights to land (AusAID 2000).

Land tenure security can influence land management. It affects farmer's incentives or ability to invest in land improvement. In agricultural economy countries, tenure security is important for a number of reasons. First, it is argued that more secure land rights enhance investment to protect soil fertility by increasing the probability to rent out or sell the land. Second, land with secure property rights can serve as collateral for formal credit. Third, tenure security with rights of transfer and well functioning markets are important to enhance agricultural productivity and household welfare by shifting land towards its most productive use, either through sales or rentals (Birungi 2007). Then, how to securing

their access rights, especially for indigenous peoples to their ancestral territories and the natural resources they lived, is an urgent priority. In this context, legal instruments are needed to prevent the over-extraction of timber, minerals and plants, land degradation and to protect the intellectual property rights of indigenous peoples (IFAD 2009).

Currently, the concerned issue in land policy has been shifted from an economic focus only to a balance of social, environmental and economic priorities and starts to be recognised across all institutions dealing with national development (Dalrymple 2005). In terms of land tenure and a commitment to social justice, the land policy increasingly recognises indigenous issues by incorporating communal and traditional tenure arrangements and investigating their weaknesses. Extensions of the new policy forum can be seen in the recently drafted European Union Land Policy Guidelines (ILC 2004). Concentrating primarily on rural scenarios, these policy guidelines give significant recognition to indigenous and minority groups, and include options for communal ownership allowing wider cultural inclusion and traditional resource management opportunities.

As mentioned in the section of land administration as a means of land policy for development, some initiatives had been initiated in the national, regional or even international levels. Here, the function of land administration as a key strategy in national development and poverty alleviation is emphasised. Specific for the indigenous people issues, ground-breaking initiatives have given glimmer of hope for their existence recognition as well as poverty reduction. For example, In Kerala, India, when the Tropical Botanical Garden and Research Institute developed a drug from the plant Trichopus zelanictus with help from the local Zani tribe, a licensing agreement was struck that assured 50 per cent of all royalties would be put in the hands of the community (IFAD 2009).

Yet, legalisation of customary systems is not easy or even desirable in some countries. A number of African and Latin American countries are slowly legitimising customary ownership. A fashion of legal duality operates in African countries where countries such as Niger, Mozambique, Tanzania and Benin legally recognise customary rights (Deininger 2003). In Brazil, Columbia, Peru and other Latin American, pilot projects assisted in establishing legality for indigenous property rights (Deininger 2003). Documentation of indigenous issues in Asia has received significantly less momentum than other regions. The Philippines recognised the importance of indigenous rights in their constitution. However on-ground recognition and true implementation of securing rights for indigenous communities remains a debatable point across the globe because of inconsistency between customary practices, legal systems imposed during colonial rule and the difficulty of integrating customary law into national law (Dalrymple 2005).

Land policy debates between registering customary lands and continuing the existing systems to be locked in a polarised debate between proponents of alienable individual tenure (equivalent to 'freehold'), such as (de Soto 2000), and their opponents, seeking to reinforce 'African' forms of collective ownership of land (Cousins, Cousins et al. 2005) which is 'inalienable' or outside the market. However, both poles of this debate come into sight disconnected from empirical evidence. On the one hand, land title registration programmes that seek to empower the poor by converting customary rights to 'freehold' titles are often predicated on fully-functioning markets for land and financial services. As proponents of land title registration argue and where the main avenue through which the poor can realise the capital value of land is to sell or rent out to more successful land users (Baland, Gaspart et al. 1999).

On the other hand, however, the existence of customary lands such does not necessarily imply a need for a land title registration programme to create 'freehold' tenure, since all occupants of land in communal areas are already individually 'registered' by local customary authorities for tax purposes (Chimhowu and Woodhouse 2008). In some countries practices, the legislation does not provide a specific mechanism for dealing with the communal structure of family land but will address the situation using the same individualisation procedure. As the results, the mechanisms of land title registration in trusts-for-sale and 'heirs of the deceased' were used for expediency and not necessarily as a means of preserving the communal tenure institution (Charles and Opadeyi 2009). Therefore, the recognition process of the existence of customary lands advocates that policies held to protect the poor require looking beyond the communitarian discourse (Chimhowu and Woodhouse 2008).

2.5. Related Literatures

2.5.1. 'Hierarchy of Needs' Effect on the Poverty

2.5.1.1. Overview of 'Hierarchy of Needs' theory

Theory of hierarchy of needs was introduced by Psychologist Abraham Maslow in his 1943 paper "A Theory of Human Motivation" and his subsequent book, "Motivation and Personality". This hierarchy suggests that people are motivated to fulfil basic needs before moving on to other needs (Wagner 2009). Maslow's hierarchy of needs can be drawn as a pyramid, which the lowest levels of the pyramid are made up of the most basic needs and the more complex needs are located at the top of the pyramid. Needs at the bottom of the pyramid are basic physical needs including the need for food, water, sleep and warmth. Once these lower-level needs have been met, people can move on to the next level of needs, which are for safety and security. Then, as people progress up the pyramid, needs become increasingly psychological and social. As the consequence, the need for love, friendship and intimacy become important. Further up the pyramid, the need for personal esteem and feelings of accomplishment take priority. In this level, Maslow emphasised the importance of self-actualisation, which is a process of growing and developing as a person to achieve individual potential. This Maslow's hierarchy of needs can be shown below:
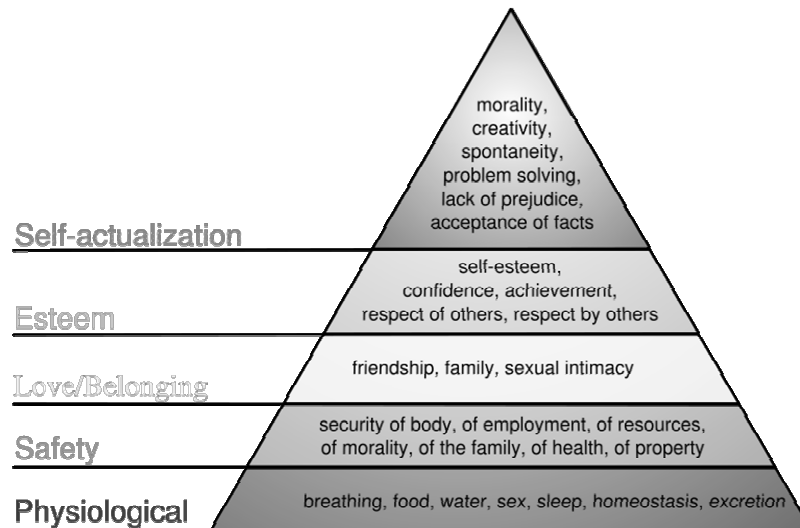
Figure 2.3 Maslow's hierarchy of needs

2.5.1.2. Types of needs

There are five different levels in Maslow's hierarchy of needs:

1. Physiological Needs; include the most basic needs that are vital to survival, such as the need for water, air, food and sleep. All needs become secondary until these physiological needs are met.

2. Security Needs; include needs for safety and security. Security needs are important for survival, but they are not as demanding as the physiological needs. Examples of security needs include a desire for steady employment, health insurance, safe neighborhoods and shelter from the environment.

3. Social Needs; include needs for belonging, love and affection. Maslow considered these needs to be less basic than physiological and security needs. Relationships such as friendships, romantic attachments and families help fulfill this need for friendship and acceptance, as does involvement in social, community or religious groups.

4. Esteem Needs; include the need for things that reflect on self-esteem, personal worth, social recognition and accomplishment. These needs become increasingly important after the first three needs have been satisfied.

Self-actualising Needs; is the highest level of Maslow's hierarchy of needs, means self-aware of the people, concerned with personal growth, less concerned with the opinions of others and interested fulfilling their potential.

2.5.1.3. Links between the theory of hierarchy of needs with poverty

World bank defined poverty as lack of well-being, earning less than $1 per day, excluded from minimum acceptable way of life (EU), and, based on Maslov's Hierarchy of needs, everyone who still stay in the level of basis needs for survival (World Bank 2004). Then traditionally, poverty has been assessed in economic terms based on the standard income or expenditure based indices. Over the years, then poverty has evolved into a multidimensional concept to deal with some of the inadequacy of simply money based indicators and to enrich the information set so that a plurality of well-being dimensions are considered. Recently, poverty is associated with deprivation. Deprivation can be thought of in terms of constraints on people's choices to access certain material goods, assets, capabilities, freedoms and opportunities. Furthermore, the poverty alleviation is associated with

satisfying the fundamental or 'basic needs' of individuals at some minimum level, as in the Maslow's hierarchy of needs it stays in the lowest level. He believed that individuals do not seek the satisfaction of a need at one level until the previous 'level of need' is met (Pachauri, Mueller et al. 2004).

2.5.1.4. Links between the theory of hierarchy of needs with sustainable development

Poverty and quality of life are the two issues central to all sustainable environment issues. The definition of quality of life may vary remembering all human beings have a hierarchy of needs they seek to fulfill. It means different things to different people and in different contexts. At the most basic level, this might include regular access to safe drinking water and nutritious food, access to basic sanitation and health services, a safe and secure living environment.

For the poor, it can be argued that the generation of a sustainable income is the only way to actually meet their needs. Here, the threat, such as environmental degradation issues, to long-term needs is considered secondary, since those who starve today will not see tomorrow. It's well known that many communities and governments, for various reasons, choose to clear cut down their forests, despite knowing it will have destructive consequences in the future. This is why an understanding on the environmental issues must be much more than inform people about the environment and environmental values. It must also show that by maintaining environmental assets, communities can produce a stream of income both now and for the future, to meet continuing needs as well as to combat the poverty in the communities itself (LLEE 2005).

3. Customary Tenures and Indigenous People's Poverty

3.1. Indonesian Case Study

3.1.1. Legal Framework

As mentioned in the introduction chapter, basically there are two legal regimes that exist regarding to land tenure systems in Indonesia. First is the statutory law that regulates the formal national land tenure system, includes the Basic Agrarian Law. The second is *adat* law that varies in all over diverse Indonesian ethnics.

The Decision of People Consultative Assembly (2000) stated the hierarchies of legislation in Indonesia as:

1. Indonesian Constitution 1945 (Undang – Undang Dasar 1945)
2. Decision of People Consultative Assembly (Ketetapan Majelis Permusyawaratan Rakyat)
3. Law (Undang – Undang)
4. Government Regulation Substituting Law (Peraturan Pemerintah Pengganti Undang - Undang)
5. Government Regulation (Peraturan Pemerintah)
6. Presidential Decree (Keputusan Presiden)
7. Regional Regulation (Peraturan Daerah)

Indonesian Constitution 1945 recognises the existence of the traditional political unit derived from cultural system of various indigenous peoples in Indonesia. This is not only within the extent of their indigenous institutions but also their structural aspects of organisations, mechanisms, laws and rights and obligations within the institutional system of the indigenous peoples. Considering this aspect, the state should implicitly recognise the autonomy values of the territories. Nevertheless, an 'outside' regulation will be irrelevant to be implemented to the indigenous peoples, who have specified specifically their institutions, rights, obligations. When an exterior regulation will be implemented, it should be negotiated to the community from the specified territories. These arguments have actually been realised by the founding fathers of Indonesia that Indonesia is a pluralistic nation and consists of hundreds of indigenous peoples entire the country. It is understandably that the slogan of the nation is *Bhinneka Tunggal Ika* or unity in diversity (Masiun 2000).

Concerning on the legal framework of land administration, the land administration system in Indonesia follows the legal framework as below.

3.1.1.1. Statutory laws

Law number 5/1960 known as Basic Agrarian Law was enacted to implement article 33 of the 1945 Constitution. The substance of article 33 provides a basic principle about right control by the State to land, water and space. The right to administer means giving authority to the state to:

1. Govern and operate allocation, use, supply and maintenance of land water and space.

2. Define and govern legal relationship between people with land, water and space
3. Define and govern legal relationship between people and legal actions about land, water and space.

Basic Agrarian Law (BAL) has the main purposes to:
1. Put the foundation of arrangement the national agrarian law which will be a tool to bring wealth, happiness and justice
2. Put the foundation to unify and simplify land law.
3. Put the foundation to give tenure security to all citizens

In order to provide tenure security to all citizens, BAL provided also general principles in accommodating the recognition of *adat* laws and *ulayat* land rights. *Ulayat* land right are highlighted in BAL, which is can be shown in article 3. This article specified that to carry out of *ulayat* land rights (and other customary rights in *adat* right communities), as long as it still exists, should be in such a way that it is in conformance to the national and state interest, based on national unity and not in conflict to other higher levels of law.

Referring to article 4 and article 16 of BAL, there are 8 land right types:
1. *Hak Milik* - right of ownership,
2. *Hak Guna Usaha* - right to cultivate land,
3. *Hak Guna Bangunan* - right to construct building,
4. *Hak Pakai* - right to use,
5. *Hak Sewa* - right of lease,
6. *Hak Membuka Tanah* - right to open up land,
7. *Hak Memungut Hasil Hutan* - right to harvest forest product, and
8. other rights as mentioned in article 53; those are:
   - *Hak Gadai* - right to pledge,
   - *Hak Usaha Bagi Hasil* - right of crop sharing,
   - *Hak Menumpang* - right of lodging, and
   - *Hak Sewa Tanah Pertanian* - right to lease of agricultural land.

Here, *Hak Milik* is the highest and nearest to freehold tenure. And, even though BAL specifies 8 land right types, only 5 of them are implemented currently. *Hak Membuka Tanah*, *Hak Memungut Hasil Hutan*, *Hak Gadai*, *Hak Usaha Bagi Hasil*, *Hak Menumpang*, and *Hak Sewa Tanah Pertanian* are not implemented yet, mainly since they are exists in customary tenure system.

As the basic law, BAL needs implementing legislations. Some implementing legislations that support the implementation of BAL such are:
1. Government Regulation number 28/1977, this regulation introduced another type of land tenure that is *waqf* right. According to this regulation, waqf is a legal action of a person or legal body to separate a part of their land and eternally institutionalise it for religious purpose or other purpose according to Islam.
2. Law number 16/1985, this Law known as Apartment Law stated that an apartment unit is subject of immovable registration. The apartment can only be constructed above a right of ownership, right of building, right of use over state land, or state land. Then, Government Regulation number 04/1988 was enacted to provide detailed implementation rules of the

apartment law. This legislation becomes the foundation for registering building units (apartments).

3. Government Regulation number 40/1996, this regulation specially regulates detailed about *Hak Guna Usaha*, *Hak Guna Bangunan* and *Hak Pakai*. It includes the subject of rights, the duration of rights, the original rights, and the transfer of rights. As an addition, this regulation also introduces a new type of land tenure that is *Hak Pengelolaan* - right of state agencies to manage state lands on behalf of the central government.

4. Law number 4/1996, this Law was introducing *Hak Tanggungan* - right of mortgage as a special right under the BAL.

Beside of the BAL and its supporting regulations, there are also two other basic laws which convey influences to the implementation of land administration in Indonesia, especially to the recognition of the indigenous people's rights. These basic laws can be described below:

a. Basic Forestry Law No. 5/1967, then revised to Law No 41/1999
The first year of New Order under Soeharto administration, he issued Basic Forestry Law No. 5/1967. Article 2 stated that state forest is the area of forest and the forest over the non-owned lands. This law has given to the state a right to claim toward all forest forms inside the Indonesian territory and given an implication to the recognition of indigenous people who are mostly still staying and living from the forest. Furthermore, the adat forests are categorised as state forests.

As the result of this policy, the conflicts between indigenous peoples and logging companies started to explode. As an example, in West Kalimantan conflicts between the Dayaks and logging companies started in 1970s. The Dayaks have to fight against the forest concessionaires and government in particular, the Department of Forestry that gives forests cutting-licensing to forest concessionaires. Forest concessions are introduced by Soeharto administration and aimed to generate economic growth in Indonesia.

There was hope for change after Suharto's regime fall, during the *reformasi* period. A new Forestry Law No. 41/1999 delegated the authority governments and District Parliaments, and turned recognition of customary communities and their land rights from a human right into a political decision. Contrary with the spirit of the *reformasi*, the new law explicitly validated and continue the status of forest areas as they were designated before, thus confirming the Ministry of Forestry's control (Moniaga 2008).

b. Mining Law No. 11/1967
Beside of the Basic Forestry Law, 'new order' government of Soeharto had also issued a mining law to regulate the exploitation of mines. The Mining Law No. 11/1967 has also given to the state the eminent domain or right of control toward all natural resources that can be mined inside the Indonesian territory. As the result, the existence of the indigenous people that their livelihoods mostly depend on surrounding natural resources has indirectly been ignored.

3.1.1.2. Adat laws

Adat Laws regulates various aspects of human life such as private law, family law, marriage law, marriage property law, inheritance law, land law, debit and credit law, criminal law and governmental law (Setiady 2008). This law has been existed long time before the colonial period. With the

enactment or the BAL, adat law was tried to be accommodated inside. But in the implementation, so far there is no specific regulation that manages adat law and ulayat land rights specifically.

The existence of ulayat land right can not be separated with the existence of Indonesian indigenous people or *suku* (tribe). Ulayat land of a *suku* is occupied and managed by the *suku* hereditary and controlled by the *suku* leader. Ulayat land means a communal land belonging to the adat community. Within a communal land, individual rights are still reserved. Individual rights over ulayat land are:

1. Right of "occupation", the holder has full control over the land – so it works almost like right of ownership. According to the conversion terms in the BAL (article 2), this land tenure type can be converted into *Hak Milik* automatically.

2. Right of cultivation/harvest, the holder may utilise the land or harvest the crops. Right of cultivation/harvest is always given on top of the right of occupation.

3. Right to transfer, including right to sell, right to grant, right to bequeath, and right to give away. Right to transfer is applicable for the right of "occupation" only. In opposite, there is also right to buy which can be given to families, other community members, or adjacent land owners.

4. Right of priority, is applicable if there are some parties have interest in a particular land, interest to occupy, to buy, or to cultivate the land. Right of priority can be given to a person who cultivated a land at last. It is common in adat community if there is a particular land that has not been utilised anymore, the land right will be back to adat community. But a person who cultivates that land at last is given a right of priority.

3.1.1.3. Adat Law in the Statutory Law Perspective

The BAL, as the basic land statutory law, has explicitly acknowledged in Article 5 about ulayat land rights and customary tenure systems. While the main land tenure types (*Hak Milik*, *Hak Guna Usaha*, *Hak Guna Bangunan*, *Hak Pakai*, *Hak Sewa*) which are stipulated in the BAL are guaranteed in its tenure security, on the contrary most of the existing implementing legislation of the BAL failed to elaborate the adat principles. The recognition of ulayat land rights in the BAL is ignored through the concept of 'eminent domain' or right of control by the State. Eminent domain is the innate power of the state to seize a citizen's private property or expropriate property with appropriate monetary compensation, but without the owner's authority (http://en.wikipedia.org/wiki/Eminent_domain 2009). The property is taken either for government use or by delegation to third parties who will devote it to public or civil use or, in some cases, economic development. The most common uses of property taken by eminent domain are for public facilities.

The eminent domain or right of control by the State has led to the perception that ulayat land should be categorised as state-free-land and controlled by the State as the organisation of all Indonesian people (Moniaga 2008). This right of control by the stated is confirmed by the Mining Law 11/1967. For example in 1992, the Head of the Provincial Land Board in Central Sulawesi promulgated an Instruction that all lands in Central Sulawesi are state lands, except land which has been granted certificate of rights.

Furthermore, lack of clear definition about the concept 'national and state interest' (the BAL, Article 3) has caused the government to interpret it as all development activities. In the Presidential Decree number 55/1993 uses a narrow approach to define 'public interest'. This decree does not provide alternative forms of compensation for adat communities.

Since the existence of adat communities in Indonesia can not be hidden away, it is important to include the adat land tenure system into formal legal system. Arguments used to include adat land into the formal system are (Sucaya 2009):

1. To provide better security tenure on adat lands
2. To empower indigenous people and acknowledge their participation on national development
3. To ensure sustainability in development as most of the indigenous people live in the forest area and most of them defend the forest as religious place.

Determination of adat land and followed by the registration process will provide legal certainty of the existence of adat rights. Further, in the name of national and state interest will not become a threat to adat land tenure security anymore.

3.1.2. The Dayak Community

3.1.2.1. The Dayak historical context

As mentioned in the introduction chapter, the Dayak are the indigenous peoples in Kalimantan, one of Indonesian islands. The population of the Dayak is about 4 million. Inside the Dayak communities, there are sub-ethnic groups, such are: the Bakumpai and Dayak Bukit at South Kalimantan; the Ngajus, Baritos, Benuas at East Kalimantan; the Kayan and Kenyah at Central Kalimantan; the Ibans, Maloh, Kayan, Kenyah, Penan, Kelabit, Lun Bawang and Taman in the Kapuas and Sarawak regions; and other populations include the Ahe, Jagoi, Selakau, Bidayuh and Kutais.
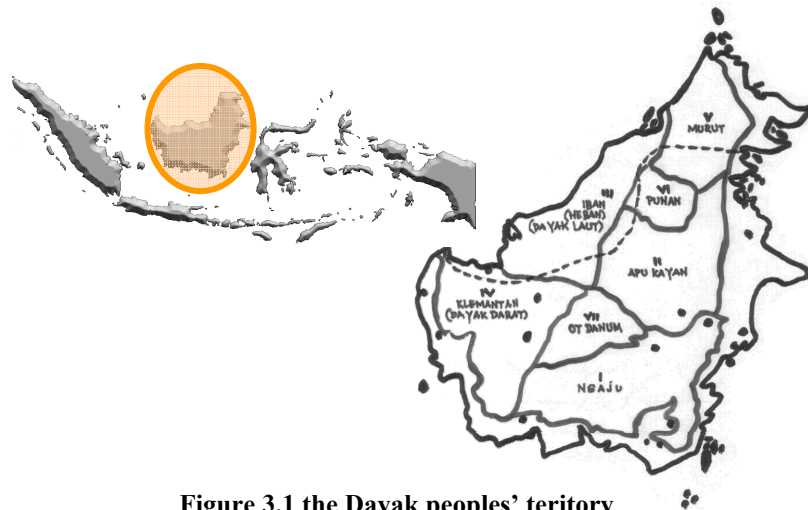
Figure 3.1 the Dayak peoples' teritory

The Dayak people governed themselves for thousands of years prior to the colonialism period. They developed sophisticated systems of sylvan culture, and land use adapted to the tropical forests and rivers in their environment. They formed unique crop varieties and complex oral literatures. They also have a long tradition of participating in remote trade networks while, at the same time, defending their territories against intruders. Through oil palm and timber concessions and industrial timber plantations to achieve the national development goal, the government has directly pressed the Dayak territories which give an impact indirectly as denying the existence and legitimacy of Dayak self-governance and culture. In 1979, the central Indonesian government compulsory appointed formal leaders to replace traditional (adat) leaders. These appointed adat leaders represent the lowest level of central

government administration. The current governance crisis in Indonesia offers new opportunities for decentralisation by re-empowering Dayak self-governance.

Dayak Adat Governance Institutions

The customary institutions in Dayak in Kalimantan vary in names. In some aspects, they have similarity in terms of authorities. Some examples of Dayak adat governance in West Kalimantan are explained below:

1. Mayau Dayak

Mayau Dayak adat governance is a group of Dayak living in a small territory in Bonti, Sanggau district. They have been in this area since the 18th century, moved from Sungkung, an up-land in Sambas district. The first village built at that time was named *Tamputn Romun*. Now, the Mayau consists of seven villages: Kadak, Kolompu, Upe, Lanong, Entiop, Enkayuk and Kotip (Masiun 2000). Before 1979, the highest rank of adat governance was called *Temenggung*. Temenggung had authority to entire the Mayau territory. Mayau Dayak territory consists of seven villages. The second rank was called *domong*. Under *domong* was *kebayan*. The fourth1 rank is *pengurus*. Pengurus exists until now.

2. Jawan Dayak

The second is *Jawan Dayak adat* governance who lives along the Menterap river, the Sekadau Hulu subdistrict of Sanggau district. Population of the Jawan Dayak is about 4,000 people. It consists of 14 villages. For the *Jawan Dayak*, adat governance consists of *Temenggung* as the highest rank, the second is *Damong* and lowest is *kepala adat*.

3. Iban Dayak

Then *Iban Dayak adat* governance, *Iban Dayak* is the origin community of the Northern part of Kapuas Hulu district. The highest rank *adat* institution is *Temeggung*. A *temenggung* has authority for at least two villages in some places authorises for two to seven villages. After *temenggung*, the second rank is *pateh*. The *pateh* is the assistant of
temenggung. The last rank of Iban adat governance is *Tuai Rumah*. *A Tuai Rumah* is responsible for a long house. Most Iban Dayaks are living in long houses.

4. Kanayatn Dayak

The hierarchy int Kanayatn Dayak adat institution can be shown in the diagram below (Figure 3.2):
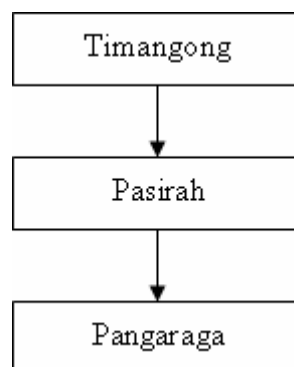
Figure 3.2 the Kanayatn Dayak' governance hierarchy

The highest rank of Kanayatn adat institution is *Timangong*. A *timangong* has an authority for a binua, an adat territory consisting of five to seven villages. The second rank under *timangong* is *Pasirah* who has an authority for a village level. While the lowest rank of the hierarchy is *Pangaraga* who has an authority for a sub-village consisting of thirty or forty households.

3.1.2.2. Data collection

Firstly before data collection phase started, the phase is literature reviews. To have entry points to the research, some empirical evidences have been presented from the real cases about the indigenous people in term of land administration subjects. These ranged from land conflict between indigenous people and the state or private development investor to the poverty of the indigenous community amid the large scale palm oil plantation development in their territory. Using this empirical entry point, this research is carried out to investigate the relation between the process of recognition of customary tenure into formal land administration system and the poverty.

Data used for this research were collected using qualitative data methods. For the Dayak community case study, data are entirely collected from secondary sources. Different sources are used to guarantee the objectiveness of the data themselves, such as: socio-economic reports held by private company for a palm oil plantation company, socio-economic reports held by NGO, local governments' reports, scientific paper both in Indonesian or English, and case reports' from national newspapers. Also, field observation and open question interviews were carried out by a BPN's surveyor at the request of the author.

Qualitative data research are used in this research since qualitative measurements of poverty trends are recognised as being far more effective than more statistical or quantitative efforts (ADB 2002). Qualitative research deals with social phenomena where principles are not true all the time and in all conditions, to explain how and why things actually happen in a complex world.

3.1.2.3. Analysis and results

Socio-economic of the Dayak

As mentioned before, there are many of the Dayak's sub-tribes; one of them is a community who stay in Busang sub-district, East Kutai. Based on 2004's statistic reports, the population in Busang is 3961 with an average density is 1.06 family per km^2. From that population number, the Kenyah Dayak is dominantly which can be shown in the table below (Figure 3.3):

(HPM, Ltd. 2008)
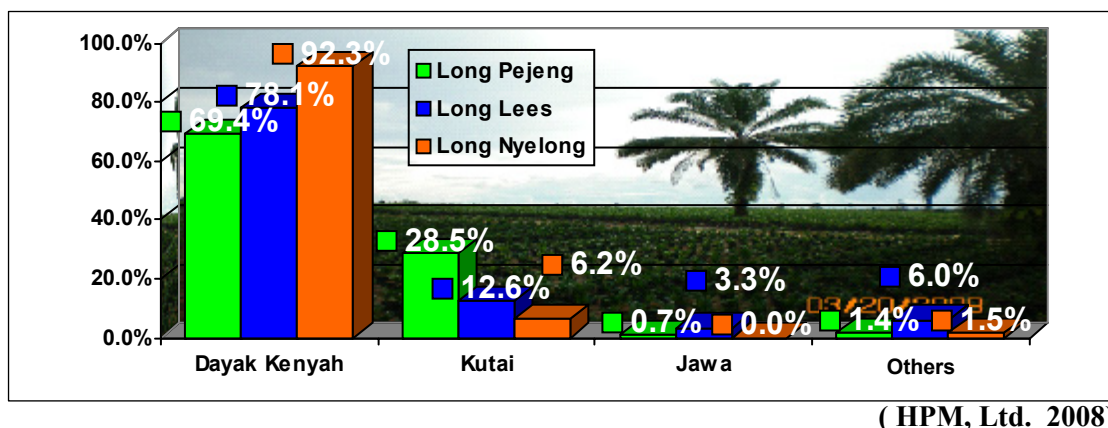
Figure 3.3 Ethnic composition of Busang sub-district

Even though there are many ethnics who stay there with different characteristics, e.g. the Kenyah Dayak has Christianity as their religion while the Kutai is Moslem, but with customary values living in the society, they can live peacefully.

The dominant livelihood from this society is farming, both wet and dry land farming, especially for the Kenyah Dayak and some of the Kutai have trading as their livelihood as they have limited land parcels. Farming methods that live in the society is pastoral system and based on familial system. This familial system can be seen from the pattern of their house. The Kenyah Dayak stay in longhouse with the kitchen is in separated place. Some traditional buildings that represent the social value inside the Kenyak Dayak is Lamin, formerly it is used as dwelling house for tribe's members, but nowadays it is used for social meetings.

Figure 3.4 the Kenyah Dayak's Lamin house

Related to public facilities, Busang sub-district is still lack of high school facility. Schools have been there are only for kindergarten and primary school level for each village, some villages already have junior high school facilities. But to continue to higher level, only the residents with high level income can afford for it because they have to send their children to other sub-districts. Therefore, the Kenyah Dayak are considered to live in poverty here since most of the children of the Kenyah Dayak can not have access to continue to higher level of educations.

In order to carry out the economic activities, some of the Kenyah Dayak still has barter methods as their payments. They use their agricultural products as a payment for barter. This method is considered easier since they do not have a formal market in the Busang sub-district. Beside of that, most of the Kenyah Dayaks do not have other livelihoods but agriculture which can not generate high income for them. In other hand, the Kenyah Dayak has potential natural resources that can be empowered to increase their prosperity. Potential natural resources in Busang sub-district can be shown in table 3.1 below:

Farming	Plantation / Field	Forestry
- Rice	- Cacao - Rubber - Coconut - Banana - Coffee	Timber (ulin, teak, etc.)

Table 3.1 Natural resources potency in Busang sub-district

As other example is the Benua Dayak. The Benua Dayak is living in Muara Tokong village, Damai sub-district, Kutai Barat, East Kalimantan. Most of the Benua Dayak have the same livelihoods as the Kenyah Dayak mentioned before, they live from the agriculture products. These agricultural way of livelihoods are practiced hereditary by wisely utilise what the forest provide for them. As a general depiction, based on a field observation held by BPN's surveyor, the Benua Dayak lives in down-to-

earth way, if can not be said in poverty, adapting to their environment. It can be seen from the portrait below:

(Surveyed by: BPN's surveyor)

Figure 3.5 Benua Dayak housing

Understanding the poverty inside the community

To understand the definition of welfare and poverty from the community perspective is the first step to alleviate poverty, especially for the indigenous people. Some definitions about poverty have been presented in previous chapters. For the Kenyah Dayak, poverty means 'access to have job or livelihood' (18%), 'safety in social relationship' (17%), 'access to education' (16%), 'food security' (12%), 'health security' (10%), 'access to housing' (9%) (HPM Ltd. 2008). From this report, it can show that poverty for the Kenyah Dayak has strong relation with the satisfaction of basic needs plus safety social relationships with others. From the same report as well, a table of income level of the Kenyah Dayak in Busang sub-district can be illustrated as below:
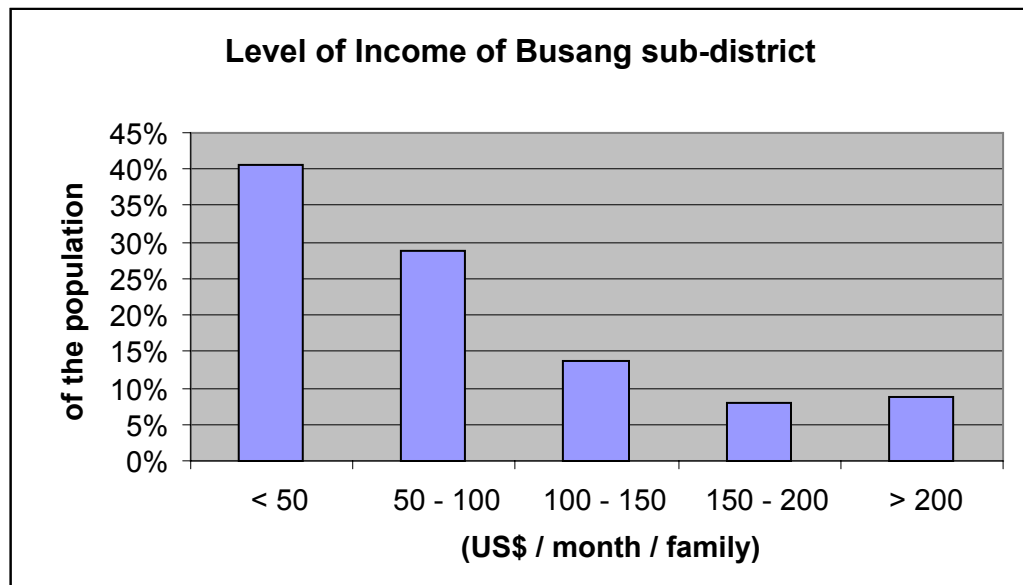
(HPM, Ltd. 2008)

Figure 3.6 Population distribution based on incomes

Level of Consumption of Busang sub-
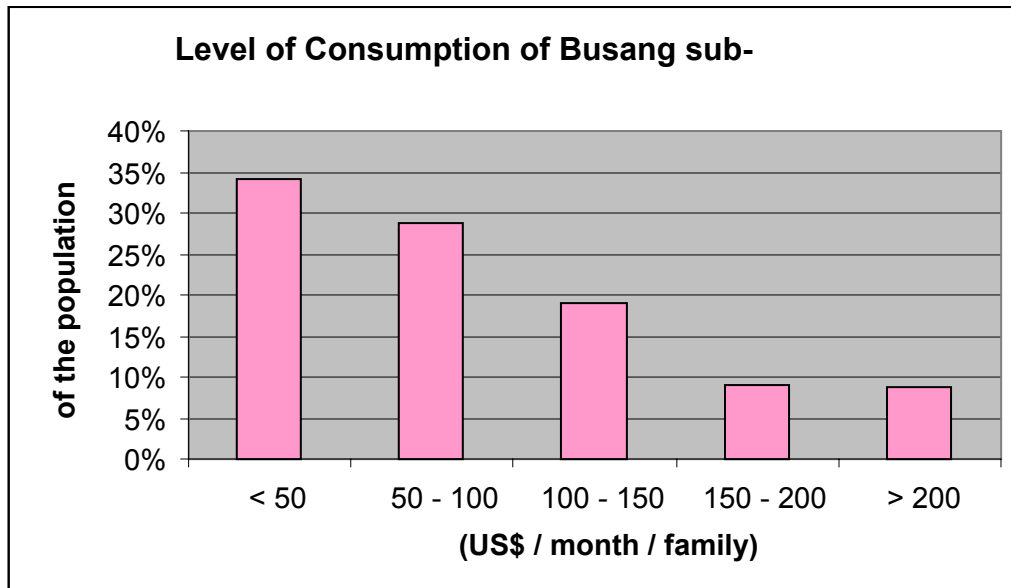
(BPS 2008)

Figure 3.7 Population distribution based on consumption

Using the definition of poverty by World Bank that poverty is living with the income below of US$ 1 per day, so it can be said that most of the population in Busang sub-district are living in poverty. Based on BPS's definition of the poverty that uses level of consumption or expenditure, it gives almost same results. The lower the expenditures, the poorer the family.

Then, also used the indicator of community's opinion itself on how their feeling about their own condition. Even though families belong to the poverty's level based on the World Bank or BPS, however they may feel not living in poverty after they can satisfy all their basic needs. Here, subjectivity and the hierarchy of needs give influences to the number of poverty population. Based on their own opinion, poverty in Busang sub-district can be shown in the table below:

Poverty based on their own opinion
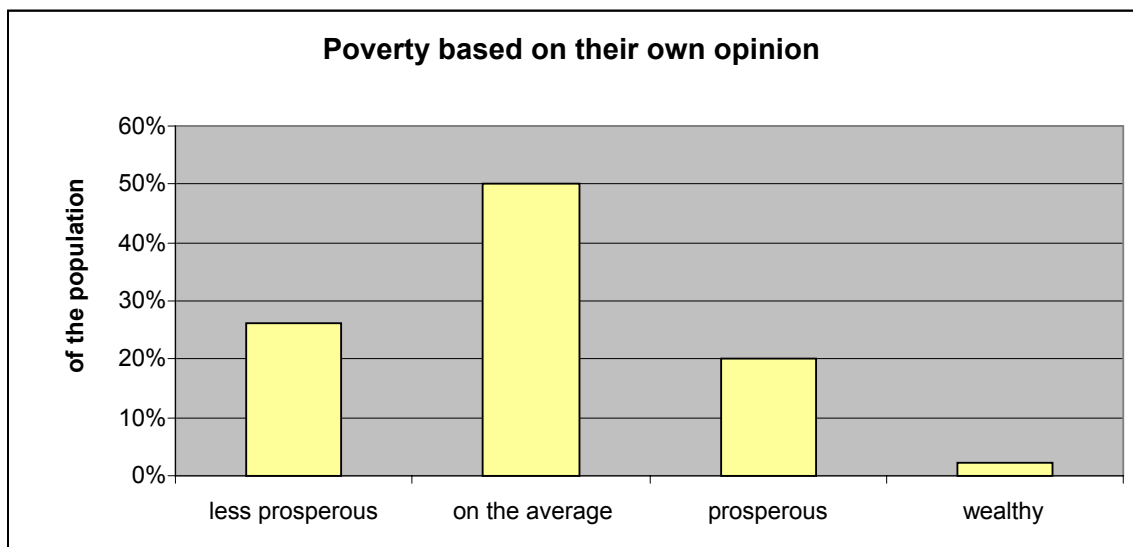
(HPM, Ltd. 2008)

Figure 3.8 Poverty distribution based on society's opinion

The reasons behind why the community feels on the average or even more prosperous because basic needs for each family are different and their economic activities are not based on monetary or market only, they may depend to the productivity of the nature to fulfil their needs on food and shelters. On the other hand, a consumptive culture is not popular yet among the community's members.

Land and natural resource tenures in the Dayak community

The Dayak system of managing natural resources occurs for thousands years in Kalimantan. It has been long before the Malay Sultanates, Dutch and Japan colonial regimes and, even, Indonesian government. These systems play an important role in the sustainable environment management. These practices still exist up to now. It shows the values living inside the community are suitable and supporting the conservation of the nature. The practice of the natural resource management inside the Dayak community has strong correlation with tenure arrangements existing in the community. Then access to land and/or other natural resources becomes an important issue in their daily life to support their livelihoods. Tenure arrangements for each Dayak community may be different for each sub-tribe and others. Here is given some examples of tenure arrangements based on the Dayak sub-tribes:

Iban Dayak

Iban Dayak calls their territory as *Bengkah Pemansang Manua*. Within the bengkah pemansang manua, they allocate the areas for:

1. *Rumah panjai*, the resident areas of the Iban community
2. *Taba'*, the specified area for building of a longhouse for the Iban Dayak
3. *Temawai*, the previous Iban longhouse and used for farming yard now. It is dominated by fruit trees surrounding the house itself.
4. *Damun*, the ex of *ladang* (dried rice field) which is grouped into five:
    a. *pengerang tuai*, the ex of *ladang* after 15-20 years
    b. *pengerang*, the ex of *ladang* after 10 – 15 years
    c. *temuda'*, the of *ladang* after 3 – 5 years
    d. *Dijab*, the ex of *ladang* after 2 years
    e. *Kerukoh*, the ex of *ladang* after 1 year
5. *Tanah mali*, is sacred places. Any tree is not allowed to cut. This is the place for adat rituals called by *Pase' Manua.*
6. *Pendam*, a cemetery
7. *Rarong*, a cemetery for Iban elders or any respected people within the Iban community
8. *Pendam anak*, a cemetery for children
9. *Pulau*, an individual forest reserve
10. *Rimak manua*, a village-owned forest, for hunting area, medicine, timbering, etc.
11. *Redas*, a field for vegetables
12. *Tapang manyi*, trees for honey
13. *Tanah kerapa*, a swamp area for wet rice field
14. *Tanah endor nampok*, the area for hermit
15. *Umai, ladang*, dried rice fields

Kayaan Mendalaam Dayak

For the Kayaan Mendalaam Dayak, tenure arrangements that exist in the community can be shown below:

1. *Talun*, the ex of *ladang* areas for after 5 – 10 years. For more than 10 years it is called by *talun aya'*. It is usually in a secondary forest form.
2. *Lapu'un,* an area for fruit trees. Also called *temawai* (Iban), it is usually the ex of the Kayaan Mendalaam resident areas.
3. *Liaang,* a cemetery area for the Kayaan Mendalaam. For those who died outside the village, as a replacement, their bodies were changed by statues, clothes and their area is called *pawa'*.
4. *Busaang,* the forest owned by Mendalam community.
5. *Tanaa'umaa',* areas of the Kayaan Mendalaam residence.
6. *Kebun karep*, rubber plant areas.
7. *Ba'ee,* ex of ladang for short after term.
8. *Ba'ee lako*, ex of ladang for after a year.
9. *Ba'ee sepitang*, the ex of ladang from 2-5 years before *talun*.
10. *Tanaa' luma'*, specified for rice field.
11. *Tuaan avaang*, tengkawang trees area.
12. *Tuaan lung*, reserved forest.
13. *Tuaan rebok*, a resin forest.
14. *Tuan buaa'*, forests that are specified for fruit trees.
15. *Tanaa' luma' peka'*, swamp areas for wet rice fields.
16. *Tuaan usaang kaka*, communal forest for hunting, housing materials, medicine and daily needs.
17. *Hunge pujun*, rivers for manual fishery. It is not allowed to use any net and chemical materials for fishing.
18. *Bawaang*, lakes for fishery.
19. *Tanaa' pulu*, sacred place, it is not allowed for rice fields nor cutting the threes.
20. *Tanaa' jakah,* areas which can be used for any purposes.
21. *Tuaan nanga'*, swamp areas for sago.
22. Hunge tapha, areas of rivers usually for 'tapah' fish.
23. *Hunge pejawan*, special parts of rivers for 'biawan' fish.
24. *Levho' belida'*, deep parts of rivers for habitats of 'belida' fish.

Benua Dayak

The Benua (or Benoa) Dayak occupy land in Kutai Barat, East Kalimantan. Inside the community, beside of communal tenures, they preserve individual rights on lands. Even though it has individual or private rights, when they are working on this field they still help each other. This social value can be seen in the planting and harvest seasons. Their tenure arrangements can be shown with a sketch below:
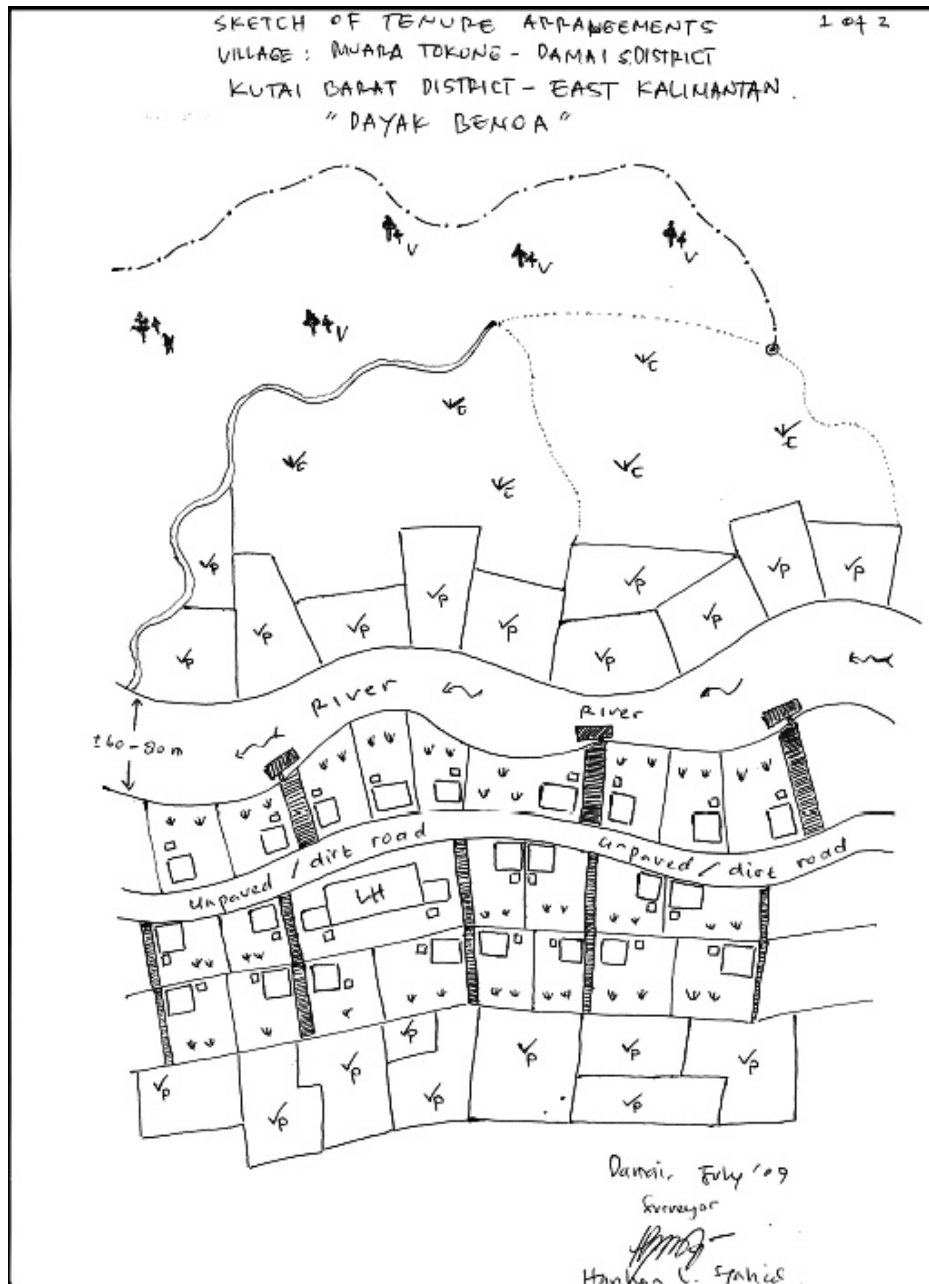
Figure 3.9a Benua Dayak tenure arrangements
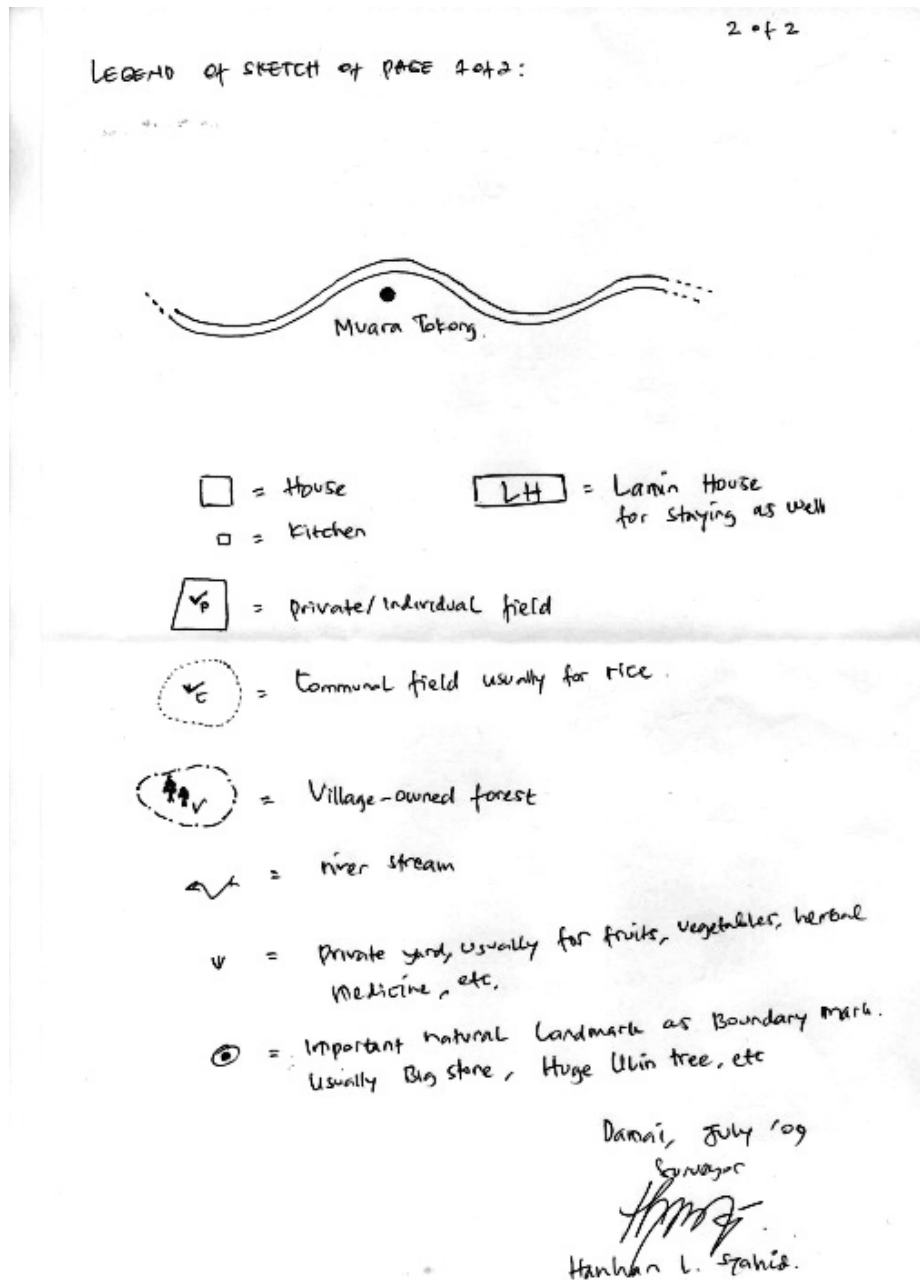
Figure 3.9b Benua Dayak tenure arrangements

Kenyah Dayak

As mentioned before, the Kenyah Dayak live in Busang sub-district. Some of them occupy lands in Long Pejeng, Long Nyelong and Long Lees villages. Spatial arrangement inside the village is quite simple and organised, where the houses are generally along the road at the left and right of road and consists of one to two layer rows per road. For the Kenyah Dayak, residential and agricultural location arrangements are separated which usually field is placed across the river and the residential is on the other side of river. To show this tenure arrangement, it can be shown in a sketch below:
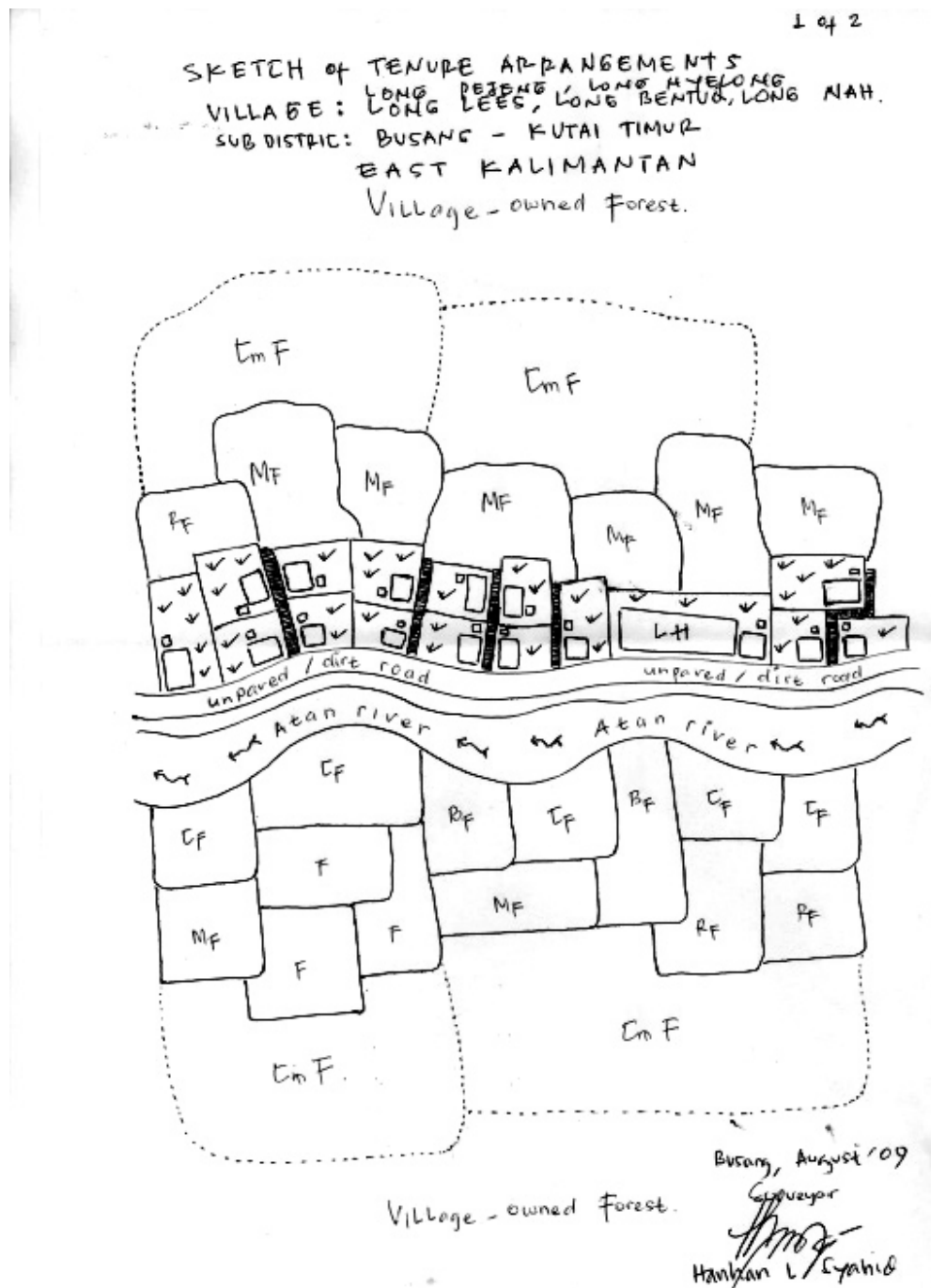
Figure 3.10a Kenyah Dayak tenure arrangements
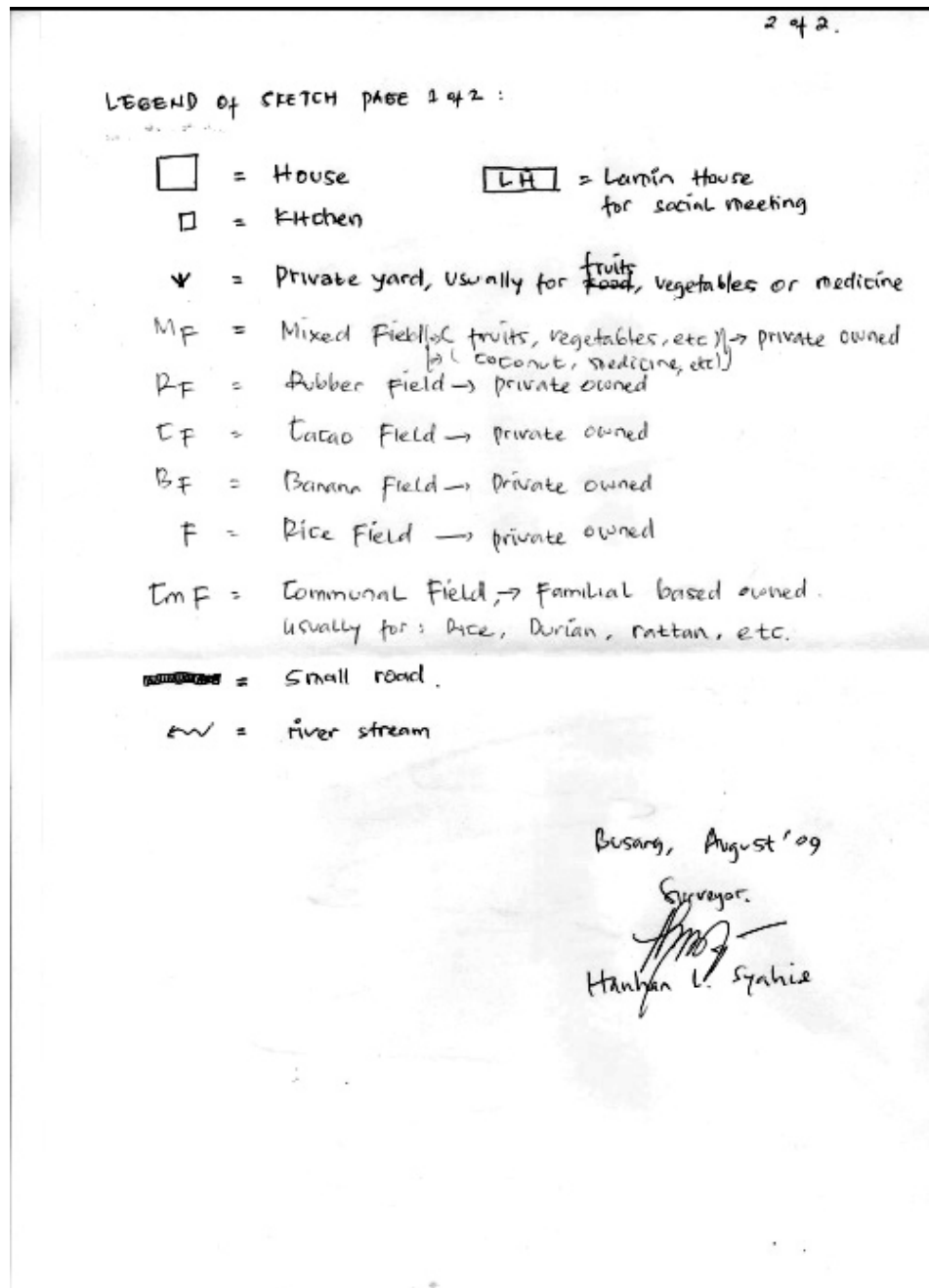
Figure 3.10b Kenyah Dayak tenure arrangements

Two examples mentioned firstly have reflected the systems practiced by the Dayak of West Kalimantan on natural resources management and the second lasts are by the Dayak of East Kalimantan. There are some variations yet depend on the local specified ecosystem. The examples above refer to the whole practice of a group of a Dayak community in managing resources. Inside the community, they manage every single part of the territory to avoid unused and mismanaged lands.

Role of Adat Laws in Natural Resources Management
Each sub tribe inside the Dayak has their own adat laws and structures. Natural resource management systems are regulated by these laws which are enforced by the elders. The violations of this natural resources management and land use will be fined based on what mentioned in the adat laws.

As examples, for Kanayatn Dayak, the *pangaragas*, *pasirahs* and *timangongs* are those who are responsible to decide the fines against the people who violate the rules. In the Kanayatn Dayak, when to start farming, burning, planting are under authority of *tuha tahun*, a leader of farming tradition. Including here are the rituals should be conducted by the community members before they start planting season. His role is to keep the farming tradition; all rituals of farming should be conducted properly. In the Kanayatn Dayak believe, if this ritual is not conducted properly, the crops will be not as much as expected by the community or even can be failed to harvest. Further, they also have rules for crop season.

In order to protect natural resources, community members established a conservation agreement besides of the adat law. The agreement will attach to all members of the community to obey. The violation against this rule is considered as *salah basa* and must be fined according to the agreement. This agreement has been adopted in Tapang Sambas, a Dayak traditional village of Sanggau district. Further, this agreement is fully aimed to protect natural resources from any destructive action, either from inside the community or outside one since everyone is subjected to this agreement. The same agreement also made in Kotup, the Mayau Dayak of Sanggau district, and many other villages that are facilitated by Yayasan Karya Sosial Pancur Kasih (YKSPK), a Dayak people's NGO (Masiun 2000).

Examples mentioned above show that inside the adat laws, land and other natural resources have special places for the traditional indigenous people. Not only as a means to support of livelihood but also should it be protected its sustainability when the community's members use it. Then question can be raised as the challenge on how the formal land administration system adopted the values and practices that already live and exist among this community.

De facto and de jure control of forest territory
The practice of livelihoods of the Dayak which is fully considering the natural resource sustainability has been existed for centuries. And as said previously also, the Dayak's territories mostly are still in forest form. These de facto rights have been possessed by the Dayak and continue to be embedded in the communities' livelihood practices based on their perception on the people to land relationships. As an example, the Dayak has communal or village-owned forest beside of the other tenure arrangements. The community members can enjoy the right of timbering for domestic needs satisfaction and/or taking rattan for appliances making. The longhouse or any other Dayak's housing types are made of wood and the materials for it are taken from its surrounding literally forest.

At present, if asked to define a forest, most of people will straightway think of trees. However in reality some areas in Indonesia that are classified as forests are not only in literally forest forms but also villages, irrigated rice fields, dry land fields, fishponds or grazing lands. This reality raised a question why these agricultural areas are claimed as the state forest. The formal legal answer is that according to the Forestry Law No. 41/1999, 'forest area' means a certain area which is designated or stipulated by the government to be retained as permanent forest, and 'state forest' means a forest located on lands bearing no ownership rights. Therefore de jure of the Dayak's territories are mostly claimed as the forest areas. Not only their literally communal forests but also some areas of their villages and other areas that they used it as their livelihoods are owned by the state based on this Forestry Law. As illustrations the Centre of International Forestry Reseach (CIFOR) estimated that in 2004 about forty nine million people lived on areas classified as state forest in Indonesia, includes here is the Dayak. To compare the Dayak territory map mentioned before and the reality of claimed areas as

the state forest is shown below a forest consensus map (TGHK) of the Kalimantan Island. Figure 3.8 shows that almost all Kalimantan island areas are claimed to forestry areas, only the areas in white colour those are free to use by the community.
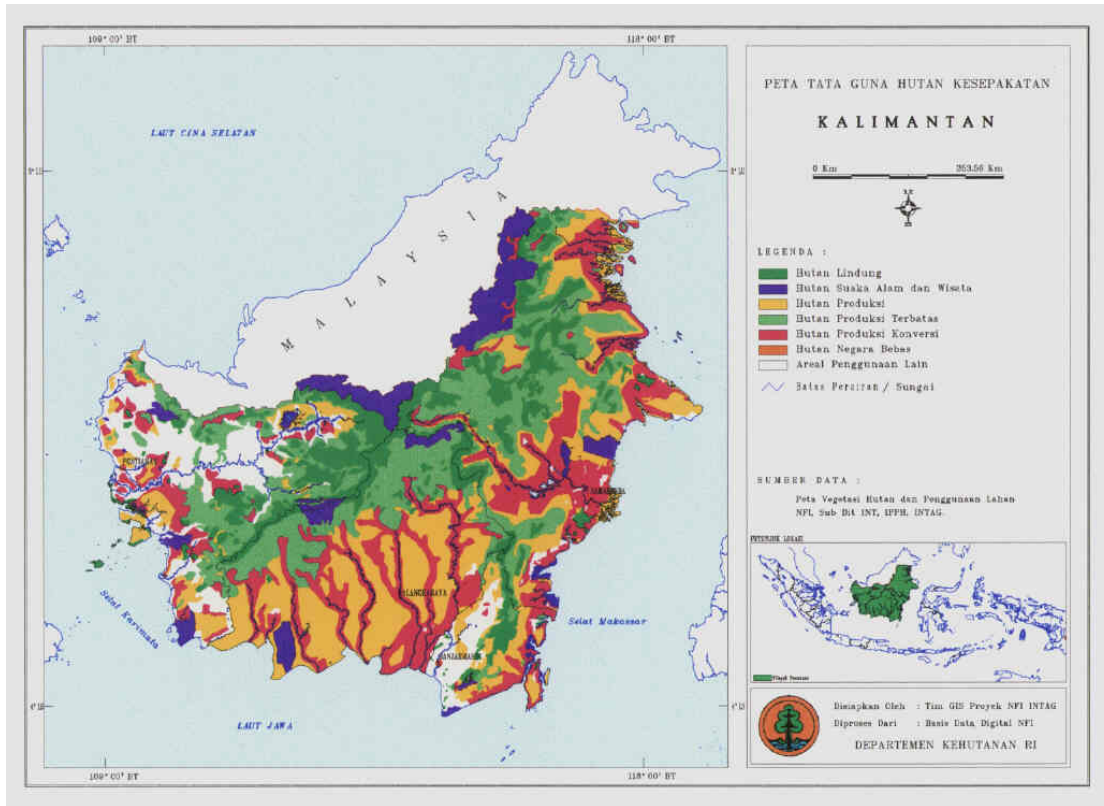
(source: www.dephut.go.id)

Figure 3.11 Forest consensus map (TGHK) of the Kalimantan Island

Efforts on the recognition process of the adat rights

A noted effort to recognise the existence of adat community and their rights was a national conference on the management of natural resources held in Bogor, 3-4 March 2000. This national conference was held by the Indonesian Ministry of Environment and followed by representatives from all stakeholders related to the natural resource issues, such as: government, academics, NGOs and private sectors which working on the subject. From this conference, it was achieved an agreement to carry out a totally reform at the sectors below (ICRAF and JAPHAMA 2000):

1. Politic and society: by empowering the society, redefining the government's role on the management of the subject, and erasing the directly military's role on the management of natural resources.

2. Economic and business: by empowering the society through economic populist paradigm.

3. Culture and education: by applying different methods for each culture and decentralisation of policy for education.

4. Legal and policy of natural resource management: by performing legal framework reforms in all levels, restructuring the related organisations, and enhancing the community law awareness. Specific to the existence of adat communities, there would be a national campaign to ratify ILO Convention No 169.

In particular to the land right issue, most the Dayak communities still can not benefit from the formal land registrations (Meilantina 2006). As mentioned previously, despite historically and de facto shows

they inhabited there for centuries earlier than the establishment of the systems but de jure of their territories included in the forestry areas. Based on the forest consensus map, only lands which are located in forest-free areas can be registered. As examples, all land parcels in villages such as Muara Tokong, Muara Bomboy, and Lumpat Dahuq, Damai sub-district within theBenua Dayak's areas have not been registered yet and only about 200 land parcels in Damai sub-district that can be registered.

3.1.2.4. Lesson learned

Since centuries ago the Dayak has already inhabited the areas that are now claimed belong to the state. Even after the Indonesian independence and the *reformasi* period, their advocacy and legal arguments to obtain their land rights recognised have not succeeded yet. A basic reason for this is that laws concerning this issue, even in the basic law's level, are still inconsistent, unclear and incomplete yet.

The Dayak in specific and adat communities in general need supports to enhance their livelihoods by recognise their land rights. The natural resources need to be managed properly by all related parties. These efforts require a critical review of all relevant laws and regulations related to the issues of adat communities' existences, natural resources management and also poverty alleviation. Land administration can have an important role as a tool box to empower the adat communities to enhance their welfare as well as to keep the national natural resource sustainability. One of these efforts that can be done is by recognising the indigenous people rights toward their lands and other natural resources. In their hands, for the agricultural poor society, sustainable development means secure access to lands and other natural resources (Moore 2002).

Considering the meaning of lands and other natural resources for the adat communities, the security of their rights to access and use lands and natural resources indicates security of their means of livelihood as well. The basic reasons from this are principally since most of this indigenous people live in agricultural-based sectors and depend from the product of their land and other natural resources to satisfy their needs. If their adat rights are acknowledged by the formal system, they can benefit the productivity of their lands through having credits using their property evidences as collaterals. In parallel with the productivity enhancement, other aims that can be achieved from the recognition of the indigenous people rights are food and other basic needs security as well as poverty alleviation.

In order to pursue those purposes, the government, both central and regional, and the community should agree on a common vision for the basis of strengthening of land administration legislations. State law reform is not the only solution. The adat needs to be transformed as well, and the adat communities should be able to receive legal education and services at any time (Moniaga 2008). In line with this legislative reform and community empowerment process, a new legal culture, role and infrastructures within the state and society need to be developed in line with the common vision mentioned before.

3.2.   The Sami Case Study

3.2.1.   Legal Framework Related to the Sami as Indigenous People

Similar with Indonesian experiences, there are also considerable problems in combining Sami customary rights and claims into the known legal statutory laws in a Finnish legal context, even though this country is categorised into developed country and Indonesia is in the opposite into

developing one. Despite a lack of statutory recognition (Allard 2006), one could question whether certain customary rights still exist, such as Sami hunting and fishing rights outside of the reindeer herding right.

Some efforts to overcome this issue have been done both at national level, within the Finnish government, and multinational levels, at the Nordic countries' level. As examples, there was agreement achieved during the Sami conference (joint conference for the Sami organisations in four countries) in 1978 on a list of Sami sources of livelihood, basic sources of income that use natural recourses according to the Sami ecological tradition and support the Sami culture. Reindeer herding is one of the named Sami sources of livelihood and thus an expression of the Sami culture. That is why the position of Sami people's reindeer herding is ensured with many national and international conventions, laws and statutes in addition to the Finnish law on reindeer husbandry (848/1990) (www.inarinpaliskunnat.org 2009).

Beside of what mentioned above, in 2005, an expert group presented a common draft Nordic Sami Convention for Norway, Sweden and Finland. The recommendation consists of 51 articles divided into seven chapters associated with general Sami rights (e.g. self-determination), government (e.g. the Sami parliaments and the national parliaments), language and culture, land and water and livelihoods. The Convention has been subjected to a consultation process in all three countries. In a meeting between the ministers in the three countries in October 2006, it was agreed that the work would be continued.

Hereafter, this sub-chapter discusses the circumstances happened inside the Sami community as the indigenous people in the Finland especially related to their customary land right fights and whether their well-beings have influences on their fights. It is started by laws and other regulations within the Finnish governance that affect the Sami people's rights on land and other natural resources using. Then followed by fieldwork's analysis and result, and what lessons can be learned regarding their fights of customary land rights and its backgrounds.

3.2.1.1. The law of Reindeer Herding 848/1990

As mentioned previously, reindeer herding is one of the named Sami sources of livelihood and thus an expression of the Sami culture. Compared to other livelihoods' types, the Sami reindeer herding has special place in the Finnish legal framework. The position of the Sami's customary rights in the national formal legal law is based on the law of reindeer herding, includes here rights to use and access their natural resources. Although at present, there are not only the Sami who has reindeer herding as their main means of livelihoods but the basis for the majority of Finnish herding legislation is the Finnish Reindeer Act of 1948. The original Reindeer Herding Act which although several times amended and 53 years old, still has legislative power. The most recent legislation is the Reindeer Herding Law of 1990, which isn't all that different from the older laws it was intended to replace. Finland has been very slow to deal with the problems in the herding industry in the eyes of many. Some articles that have strong correlation to the Sami people's rights are:

2 §   Reindeer herding area is the area specially reserved for reindeer herding. This article was also stated that the state-owned land cannot be used so that the use causes remarkable damage for reindeer herding.

3 §   The right to practice reindeer husbandry can be practised in the reindeer herding area which is independent of land ownership and governance rights.

6 §   Reindeer herding co-operative can be a legal actor in local reindeer herding issues and get rights and make commitments to fulfil its tasks set by this law.

53 §   Negotiation responsibility; when planning operations in relation to state lands, that would considerably have an effect on reindeer herding, state officials should negotiate with representatives of the local herding co-operatives.

3.2.1.2. Article 27 of the UN's International Covenant of 1966 on Civil and Political Rights

Article 27 of the UN's International Covenant of 1966 on Civil and Political Rights states:

"In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practise their own religion, or to use their own language."

Based on this article, traditional Sami livelihoods must be protected against interventions in nature that may make using this part of the culture impossible.

3.2.1.3. ILO Convention No. 169

Part of the ILO Convention No. 169 concerning Indigenous and Tribal Peoples in Independent Countries that specifically regulates land rights for indigenous peoples is Part II, especially in Articles 14 and 15. Article 14 confirms the rights of ownership and possession of indigenous peoples over the lands which they traditionally occupy, and the right to use lands not exclusively occupied by them. Particular attention shall be paid to the situation of nomadic peoples. The Article also instructs the authorities to identify land areas traditionally settled by indigenous peoples. Article 15 protects the rights of the indigenous peoples to the natural resources relating to their lands. These rights include the right of these peoples to participate in the use, management and conservation of these resources.

In addition, Article 6 establishes the obligation of national authorities to discuss with their indigenous peoples concerning new legislative or administrative measures, as well as indigenous people's right to participate in decisions to the same extent as other parties of the population. And also Article 8 stated that, in applying national laws and regulations to the indigenous peoples concerned, due regard shall be had to their customs or customary laws.

ILO Convention No. 169 concerning Indigenous and Tribal Peoples in Independent Countries:

Article 6:

1. In applying the provisions of this Convention, Governments shall:
   (a) Consult the peoples concerned, through appropriate procedures and in particular through their representative institutions, whenever consideration is being given to legislative or administrative measures which may affect them directly;
   (b) Establish means by which these peoples can freely participate, to at least the same extent as other sectors of the population, at all levels of decision-making in elective institutions and administrative and other bodies responsible for policies and programmes which concern them;

Article 8:

1. In applying national laws and regulations to the peoples concerned, due regard shall be had to their customs or customary laws.

Article 14:

1. The rights of ownership and possession of the peoples concerned over the lands which they traditionally occupy shall be recognised. In addition, measures shall be taken in appropriate cases to safeguard the right of the peoples concerned to use lands not exclusively occupied by them, but to which they have traditionally had access for their subsistence and traditional activities. Particular attention shall be paid to the situation of nomadic peoples and shifting cultivators in this respect.

Article 15:

1. The rights of the peoples concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these peoples to participate in the use, management and conservation of these resources.

2. In cases in which the State retains the ownership of mineral or sub-surface resources or rights to other resources pertaining to lands, governments shall establish or maintain procedures through which they shall consult these peoples, with a view to ascertaining whether and to what degree their interests would be prejudiced, before undertaking or permitting any programmes for the exploration or exploitation of such resources pertaining to their lands. The peoples concerned shall wherever possible participate in the benefits of such activities, and shall receive fair compensation for any damages which they may sustain as a result of such activities.

3.2.1.4. Finnish National Forest Certificating System (FFCS)

The Finnish National Forest Certifying System (FFCS) has been accredited as a part of the Pan European Forest Certification-certifying system 24.5.2000. The certifying criteria 36 and 37 address the possibilities for reindeer herding and the fitting together of forest economy and reindeer husbandry. Their implication is controlled at the level of a district forest owners association.

36. In the Sami homelands the management, use and protection of natural resources administered by the Finnish state forestry enterprise, Metsähallitus, is harmonised in cooperation with Sámi representatives such that the conditions for the practising of traditional livelihoods and the Sámi culture are maintained.

37. In the State's forest areas forestry measures and reindeer farming are harmonised by recourse to local co-operation.

3.2.1.5. Statute on the state forestry enterprise Metsähallitus No. 1525/1993

In the Article 11 § of statute mentioned above, it stated in relation to guaranteeing the status of the Sámi culture:

In the Sámi homeland area defined in the law about using the Sámi language with official instances (516/91), the management, use and protection of natural resources under control of Metsähallitus are arranged so that the preconditions of traditional means of living and the Sami culture are secured.

3.2.2. Customary Rights from the Sami People's Perspective

3.2.2.1. Traditional livelihoods of the the Sami

The Sami Reindeer Herding

The most famous livelihood until now for the Sami is reindeer herders. Reindeer pastures cover more than 1/3 of the total territory of Finland. The Sami inhabited the northern part of the country which

less covered with forests. Thus, reindeer husbandry becomes more nomadic due to larger distances between different pasturelands. For the Sami, reindeer husbandry is not only an income for the family, it is also a culture and a tradition – it is a way of life (Myrvoll 2003). Sami reindeer herders claim that reindeer husbandry is the material and spiritual basis for the Sami culture and the Sami language. Therefore, it is of crucial value to the Sami people of Finland.

At present, every part of the reindeer husbandry industry is thoroughly regulated by public laws. Reindeer husbandry is regulated through the Reindeer Herding Law. The reindeer herding area is divided into 56 reindeer herding co-operatives or districts. All co-operatives have the use-right to a specific geographical area and specific pasturelands, as shown in figure 3.9. In each area, the government has decided how many reindeer that can be kept during the winter. A co-operative is a body of reindeer owners who keep their reindeer in a common geographical area.

Home area of Sami people
Particular area for reindeer herding
(source: www.paliskunnat.fi)
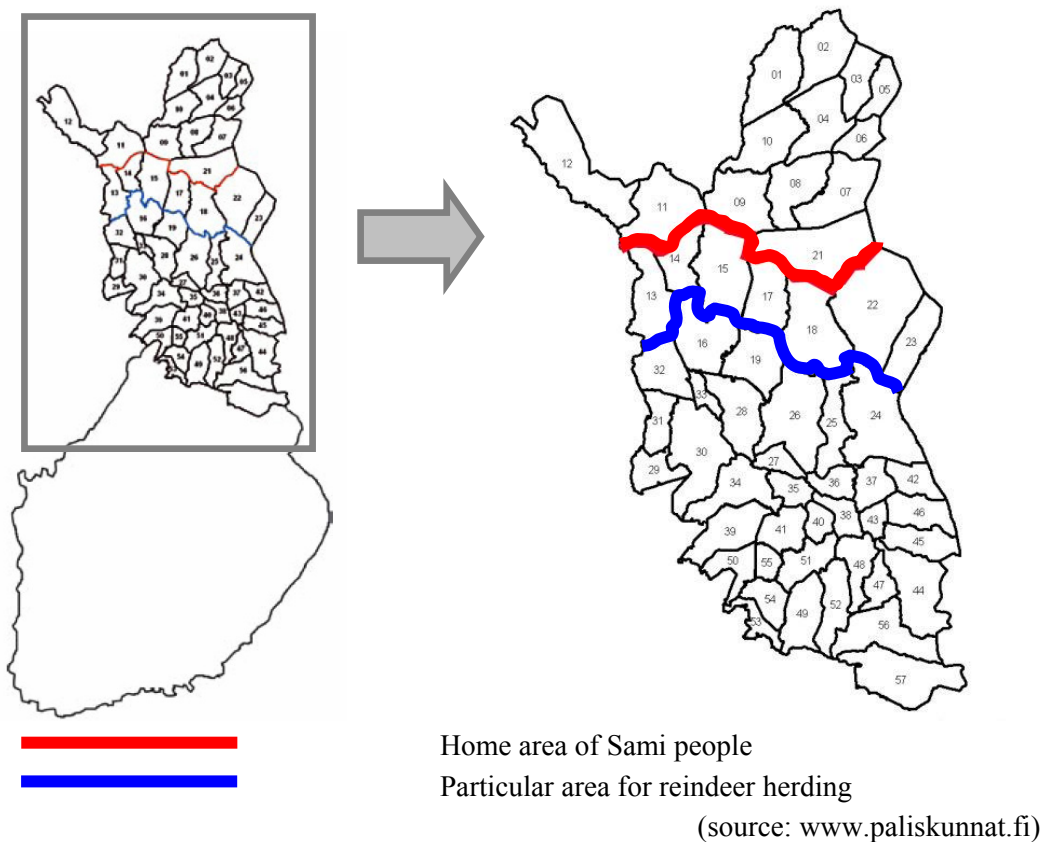
Figure 3.12 Areas of reindeer husbandry in Finland

All of the 56 herding co-operatives, both the Sami and Finns, are members of a central body; the Association of Reindeer Herding Co-operatives (Paliskuntain yhdistys). The association is a branch of the Ministry of Agriculture and Forestry, and it is funded by the government. The Sami parliament has the right to appoint a Sami representative to the executive board of the association. Then specific for the Sami, there is also The Saami Reindeer Herders Association of Finland (Suoma Boazosámit). It was established in 1993 and its goals are to monitor, secure and promote the Saami reindeer herders' rights. Suoma Boazosámit, as well as Paliskuntain yhdistys, works together with The Sami Reindeer Herders' Association of Norway, The National Union of the Swedish Sami People in Sweden and The Association of World Reindeer Herders.

The Fishing Sami

As mentioned before, the Sami people traditionally practised a nomadic lifestyle. As their main livelihoods in the past they were having hunting, capturing, fishing, and gathering. Gradually, the Sami people picked up new forms of livelihood, altering their way of life. Some Sami communities settled in the coastal areas in present-day Norway, and lived primarily on fish and other resources captured from the marine environment such as seal and whales stranded on the seashore. Then they are called by "Fishing," "Coastal," or "Sea Sami".

The Fishing Sami communities primarily fished the shores along the big rivers and lakes. Some Sami communities adopted agriculture as their main livelihood too. It was also common to combine hunting, fishing, farming, and reindeer husbandry. Sami communities that were primarily reindeer herders or sea fishermen often complemented their main livelihoods with other forms of livelihood. For example, for many Fishing Sami communities, reindeer husbandry constituted an important complementary livelihood during the 17th and 18th centuries, and reindeer herders also fished the sea.

At present, in the Finnish government's proposal 309/1993 comments of the parliamentary committee for constitutional law 44/1996 vp (Government's proposal 229/1996 vp.), memorandum of the parliamentary committee for constitutional law 17/1994 vp, Government's proposal 248/1994 vp, it stated that traditional sources of livelihood such as reindeer herding, hunting and fishing are a part of the Sami culture (Ahren 2004).

3.2.2.2. Data collection

Similar with the Dayak case study, this research also used the same method for the Sami people's case study that is qualitative data methods. The population ratio of the Sami in Finland, about 9000 of 5million, is one of reasons for using this method beside of as mentioned previously, qualitative data research are being far more effective than more statistical or quantitative efforts to deal with social phenomena. To have objective data, open interview were carried out to uncover the social condition inside the Sami community. This approach was held by finding out valuable information about the existences of Sami customary rights inside the community from key informants. Full exploitation of insights from key informants perhaps the most important diagnostic feature of good qualitative methods (Moris and Copestake 1993). As additions, triangulation of key information was carried out by asking opinion from scientist who has field work in the subject of Sami people and searching related literatures of researches.

Fieldwork phase was carried out to collect this information as well as doing field observation about the factual condition of the Sami well-being. UNDP (2009), in Human Development Report 2009, stated that percentage of human poverty index in Finland is 7.9% and placed in very high human development (UNDP 2009). More, Finland topped in the 2009 Legatum Prosperity Index which means placed in the best place based on wealth, economic growth, personal wellbeing, and quality of life of UN-member countries in the world (http://en.wikipedia.org/wiki/Legatum_Prosperity_Index 2009). By doing field observation, this report can be confirmed and also testing the research's hypothesis. Furthermore, since this research is aimed to study the correlation between recognition of customary tenures and poverty, and literatures stated that the Sami are still having a fighting for the acknowledgment of their customary land rights into Finnish legal systems, therefore it is important to test whether their quality of life backgrounds these fights.

The fieldwork was carried out in Inari, a Sami community village in northern part of Finland, Lapland, where being a famous tourist destination for cultural tourism as well. Although, it has been a tourist spot and mixing process between the Sami and the Finnish or other population has been well-existed, however customary values still live inside the community. These can be seen from their traditional livelihoods; reindeer herding and fishing which are still exist. The most noted tenure type in Inari is the national park. All land parcels at Inari have already registered by formal land registration systems, and this national park is fenced to protect the property. However, the traditional reindeer herding husbandry can have access to pass and herd their reindeer inside. This special rights has been enjoyed by reindeer herding Sami, but not for the fishing Sami. Therefore, during fieldwork phase, all the Samish said the importance of acknowledgement from the government about their territory and their rights as indigenous people.

3.2.2.3. Analysis and results

Understanding the poverty and quality of life inside the Sami

Generally ones will say indigenous peoples are more likely to have lower quality of life indicators than the dominant populations in a country, either due to unequal rights, poverty patterns, or incompatible lifestyles (Wang 2007). The Sami are not like other indigenous groups in this point of views, as well as their comparable economic life. As an example from observations at Inari village, province of Lapland, northern part of Finland, the Sami communities have already possessed motorised vehicles that for other indigenous people in developing countries are still as luxurious belongings. Further, Nyyssonen (2007) stated that the Sami intended to secure the basis of their existence while maintaining their way of life, although have they already many sources of income at present days (Nyyssonen 2007).

Figure 3.13 Inari Sami village   **Figure 3.14 the Sami People's Homeland**

At present, the Sami have also the benefit of many-sources income like as other Finnish. What was once a vital and self-sufficient livelihood is now a livelihood dependent upon capital accumulation, wages from paid employment, and income from social security and other government sources (Dixon

and Scheurell 1995). As examples, a Samish reindeer herder can have an income up to two thousands euro per month as a reindeer herder and a journalist, and a Samish lady can earn up to one thousand and five hundreds euro per month to provide tourist guide and as an artist, while the European Union decided that the poverty limit is 'only' five thousand eight hundreds euro for annual incomes (Myrvoll 2003). These two examples show that the Sami are already economically secure. However, the Sami are still in struggle to preserve their cultural identity, includes toward their rights on their own territory.

Beside of enjoying many-sources income, the Sami take also advantageous from the government-provided public services. The road networks are already permanently developed even linked to Norway's road network at the upper part. Also for public transportation and market services, government has provided these services up to village level. For formal education and hospital services, these services are placed at the municipal capital, e.g. at Rovaniemi city. However, in order to preserve their culture, an initiative had been made to establish the Samish professional school at Inari as a learning centre for Sami's culture.

Hence currently the Sami are in a position of working towards cultural survival amid all the modernity and services provided by government. However land rights, usufruct rights, livelihood diversification rights, and rights to self-determination have all been impacted by this cultural-preservation fight. At some level, a perceptive strategy is used to strengthen the legitimacy of Sami land rights claims. As an example, text from the Sápmi website is shown below (Wang 2007):

> "...as the Sami are originally a primitive people, the Sami culture traditionally also has a
> spiritual link to the surrounding countryside...The Sami culture is therefore entirely
> dependent for its survival on continued access to traditional livelihoods...As hunting and
> fishing constitute such central elements of the Sami culture, the Sami are considered to
> have a greater right to hunting and fishing in the Sami areas than other people who live
> in those areas today."

Land and natural resources tenures inside the Sami communities

As general view, there has never been a unified system of customary laws valid for the entire Sami inhabited countries (Ahren 2004). Customary law varies between regions depends on the different livelihoods, and even communities with the same livelihoods have developed different customs and traditions depends on the environment in the area they inhabit. For example, local variations in the topography have resulted in variations in reindeer husbandry in different parts of Sami areas.

In any case of livelihood, the natural environment has always had a vital part of the Sami identity. The Sami people's way of life has continually adjusted to changes of the environment. Furthermore the Sami people had already established their own societal structures fefore the nation states is established. The most fundamental building block in the Sami society was the siida, a village assembly that traditionally played an important role in distribution of land, waters, and natural resources within the Sami society.

Reindeer herding society

In the reindeer herding areas, each siida normally consisted of a couple of households where husband, wife, children, and some close relatives formed a household. Each household must have a full workers

and all the knowledge necessary for the continuation and survival of its members. If required, the household had to complement the family with hired workers. Within the household, each member normally is responsible for, his or her reindeer, even though the household could support individual members. Siida served to accommodate a rational reindeer herding system by coordinating the work of co-operatives for the members and by constituting a workers resource base for the households. In this way, Sami culture and language are maintained, creating solidarity among people.

Related to tenure arrangements of land and other natural resources, as examples, each reindeer herding siida had designated winter and summer reindeer pasture areas, designated migration paths between the pasture areas, and designated places to rest the reindeer when travelling between the different areas. These customary laws changed as a response to how various grazing areas were located each other, as well as to what time each siida reached each particular grazing area. If a siida have to cross another siida's designated land, customary laws regulated in what way it could be done, as well as what should be done if the reindeer of the siidas mix up.

There were also customary laws about how pasture areas, migration paths, and resting places for the reindeer could be inherited, as well as to how to resolve disputes as to ownership of reindeer (Ahren 2004). Both men and women could inherit grazing areas. Grazing areas could also be transferred between different siidas due to marriage. If such changes in family structure resulted in excessive pressure on certain grazing areas and unutilised pasture in others, there were also customary laws for dealing with such situations.

The distribution of grazing areas within the Sami community has always been determined by a perceptive that the reindeer are free, mobile and independent. Reindeer husbandry is not governed by a hierarchical system. Rather, it can be described as a group of individuals adapting to the surrounding environment and the social structures. The reindeer herder must adjust to the animal behaviour. The migration path of the reindeer is determined principally by climate and ecological factors. The reindeer will travel following the easiest access to pasture. Then the reindeer become familiar to their regular grazing areas and get used to find the migration paths between the various grazing lands, even though hundreds of kilometres away from each other.

A siida could exchange a grazing area traditionally belong to another siida, but it is usually difficult to be done since within the reindeer herding siida, individual members had decision-making rights over their respective reindeer. The siida could decide land issues within the siida, such as distribution of grazing areas within the siida; and between siidas, such as acting as one entity to represent its member resolve the issue arose about the grazing areas. The siida also decided who could become a member of the siida.

What explained before shows that beside of the community values, the concept of individuality is important within the society, especially inside the modern reindeer herding systems. At present, the reindeer law reflects this individuality, as they hold the shareholder (owner) as the legal unit in reindeer husbandry. Even though the reindeer are owned individually, a reindeer owner cannot manage without co-operating with others. And "others" has always been, and still is, family members, members of the extended family and the local reindeer husbandry community (Myrvoll 2003).

Fishing Sami's society

In the Sami coastal areas, customary law has evolved centuries ago based on which siida was entitled to access to the sea for coastal fishing. Mountain Sami were not allowed to fish in the sea without the permission of the local Sea Sami (or Fishing Sami) siida. Further, Fishing Sami communities developed comprehensive customary laws regarding which community had the right to own whale stranded on the seashore, as well as how a stranded or captured whale should be divided within the community. Sea birds' eggs belonged communally to the local siida, and detailed customary rules governed which siida could hunt seals in a certain area.

Similarly, the siidas along the shores of the big rivers in the northern part of Sápmi had an exclusive right to fish those waters. They could, however, agree to fish the rivers with Sami communities from other areas. As with sea and river fishing, lake fishing was primarily the right of the local siida (Ahren 2004). Over the entire Sápmi, well-developed customary rules governed the right to inland hunting and capture.
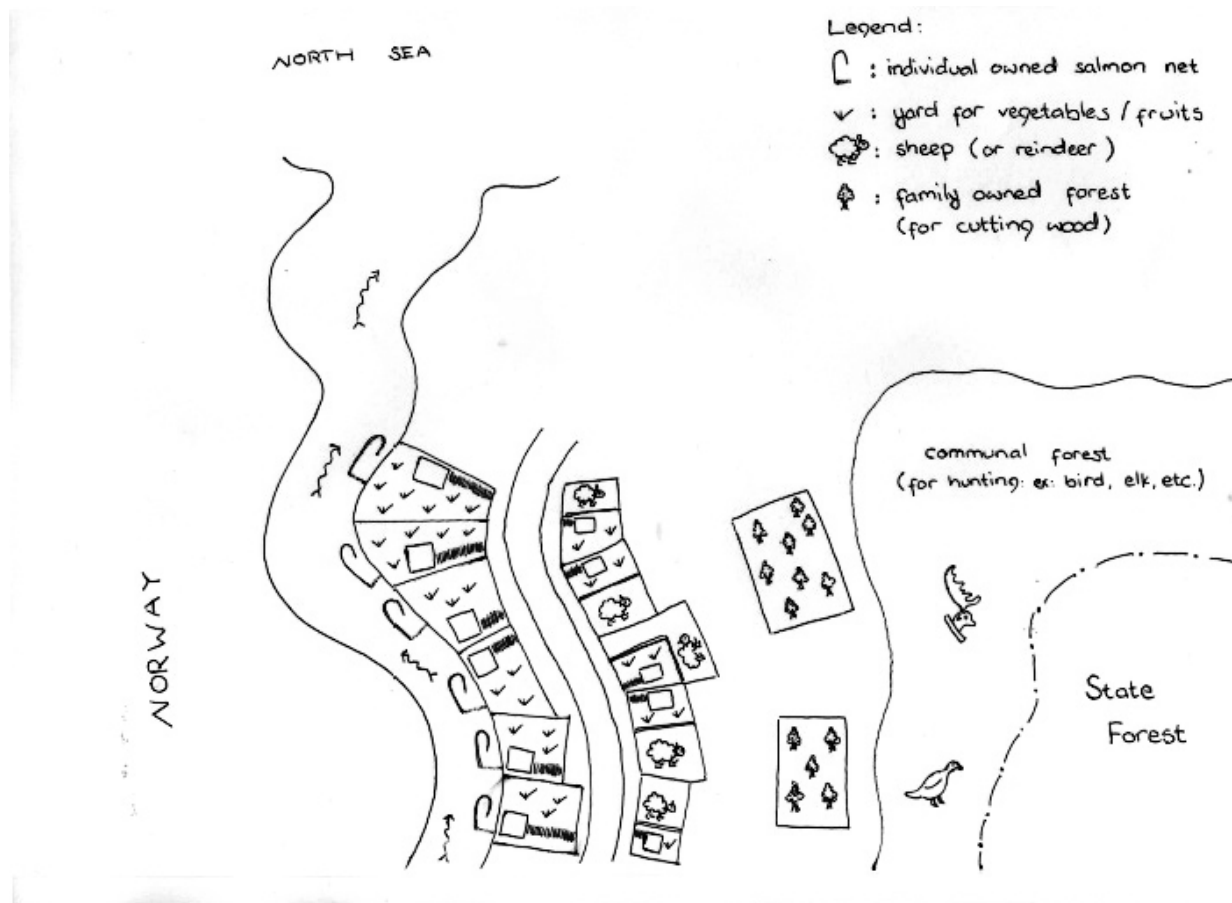
Figure 3.15 Tenure arrangements inside the Inari Sami community

Within the siida, each family group had its specific designated grazing, fishing, and hunting areas, which in case could be divided among the family members. The borders between these different areas, however, were not always very clear well-defined. Also, similar within reindeer herding Sami, this fishing Sami customary law recognises individual usufructory rights, but stays on the perception that land, water, and other natural resources are vested in the collective. The fact that a siida, a household, or an individual has recognised exclusive usage rights to certain land or water is not the same meaning as saying that the siida or individual is considered as owner of the particular area. The Sami people

have never understood land as constituting a form of bartered goods. The value of land is not based on this concept. Rather, the value of land is based on the fact that the individual and his or her family and descendants could live off the land for generations (Ahren 2004).

Related to land conflicts, the parties would normally try to reach a negotiated solution before invoking legal norms based on reasons. Usually, relevant customary law would be the basis for such negotiations. If no negotiated solution was possible, disputes appear to have been solved predominantly through discussions in a form of a collegial council, or *norraz*. Each siida seems to have had a norraz. Even though the norraz was a collegial council, it was probably commonly dominated by one of its members, who could under such circumstances be described as the siida's "wise man." In such cases, the wise man would be the person that settled disputes within the siida. In case of a conflict between two neighbouring siidas, the wise men from the two siidas would meet in order to try to solve the conflict in line with the customary law relevant to the area.

Like customary law in general, regional variations also existed as to the manner in which disputes were resolved inside the Sami communities. In some parts of the Finnish Sami areas, there are records of collegial bodies that were slightly different from the other-Sami norraz. These bodies are called sobbar (or norrös) and kärreg. The sobbar and kärreg were made up of the family elders, led by a community elder, and were the highest decision-making body in the parts of Sami areas. The sobbar and kärreg had both legal and political functions. It was not possible to appeal their decisions. The norraz, sobbar, and kärreg most important task was to settle disputes over distribution of hunting, fishing, and reindeer herding areas within the siida.

The customary law exemplified above shows that the Sami legal system seems to have worked very well for both economic and sustainable with environment aspects. It provided for efficient utilisation of the resources within Sami areas and was suitable to deal with surrounding environment and social structures changes. However, they still face problems and difficulties that few other populations have to endure. One of the most significant examples up to now is that non-indigenous societies' failure to acknowledge these customary legal systems.

3.2.2.4. Lesson learned

The issue of land rights of the Finnish Sami is one of those problematic issues and strongly correlated to the reindeer herding industry, both in Sami politics and national Finnish politics(Munves 2008). In 1990 the Finnish government failed to ratify the 1989 ILO Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries because they did not acknowledge "the rights of ownership and possession over the lands which they traditionally occupy." If the Finnish government ratify this convention it means that the Sámi's claim on their homeland would have been formally recognised. The reason these ownership rights cannot be acknowledged is that the Finnish government argues ownership of almost the entire Sami homeland (*Sámiid ruovttuguovlu*) accompanied with no solid legal evidences. Then finding a balance between land management concerns and Sami cultural and economic concerns continues to be a very delicate matter, and not always easily resolved without outside arbitration.

One effort that the Sami have begun to use, beside of establishing the Sami parliament to represent the Sami voices for both inside and outside bureaucracy of the Finnish government in recent years, is by appealing international human rights organisations like the Human Rights Committee. For example,

in October of 1994, some Samish reindeer herders were upset by a Central Forestry Board (Metsähallitus) decision to give a contract to a mining company in Lapland submitted a communication claiming a violation of article 27 of the UN's International Covenant of 1966 on Civil and Political Rights by the Government of Finland. The herdsmen argued that the mines would disturb their herding activities as an important part of their cultural identity, and that the mountain itself should not be mined because it contained several sites as sacred place by the Sami. Article 27 of the ICCPR protects the cultural rights of minorities by giving them an international forum to discuss their concerns. On the other hand, the Finnish government countered that the Sami had not yet lost all opportunities to receive compensations of their grievances. As a result, human rights have become a battleground, been shifted not only from economic reasons as the base.

The government has responsibility to stimulate the national economy, but in the other hand, caused by a need to improve the national incomes, the logging of the state forests has a potential to wipe out the Sami herding economy and its traditional rights. Based on Finnish law, no land use policies will be undertaken in Sápmi without considering the traditional culture and livelihoods of the Sami. But the reality shows that the two parties often get involved in direct conflict and dispute resolution. Thus advocacy becomes important parts of the Sami effort to control their own economic and cultural destiny. In one hand, the existence of the national park benefits the Sami reindeer herders since they have special rights to access and use this land, but in the other hand it creates inequity to other Sami, e.g. Fishing Sami; and not acknowledges the existence of their traditional territory.

All land parcels in Finland territory have been registered through legal formal land registration systems (www.eulis.eu/countries/profile/finland/ 2009). The Sami people have also the socio-economic benefits from this land registration results. The Sami can use their properties that already been registered as collateral to access credit to improve their incomes. However, the Sami purpose was not to integrate, but merely to secure the basis of their subsistence while maintaining their way of life, based on many sources of income. As a consequent, landownership or other types of tenures then become an influencing factor not only in ethno-politics but also in everyday life and subsistence (Nyyssonen 2007).

The Sami identity explained in this study shows as the indigenous people as agents of sustainable development practising a close relationship with environment and their traditional way of life, however having a battle for this identity to be acknowledged in the formal legal systems. In the other hand, related to citizenship and access to Finnish institutes and welfare measures makes the Finnish policy not one of marginalisation. Therefore, the Sami people fights for their customary rights to be recognised into formal systems can not be directly associated to economic reasons only. In particular of customary landownership, the function of land administration should be shifted in term of understanding people-land relationship.

3.3. Summary

Empirical data gathered through working experiences and fieldwork phase, and also supported by secondary data in the two case studies enabled characteristics and description of two different nations with two different development levels to be uncovered in term of customary tenure research. Although one is located in a developed country while the other one is in a developing country, however they

share similarities of the importance of customary tenures for the indigenous people. For the Dayak community, all the mentioned customary communities showed characteristics of utilising their properties to balance their livelihood requirements for food and other basic needs' satisfying security. In the other case study, the Sami expected their customary tenure security in the name of cultural identity preservation. Therefore, land and natural resource use and its management issues, governance issues, and inadequate land administration infrastructures capacities to acknowledge customary tenure arrangements have been behind the similar problems but it has different aims.

Through detailed insight into poor indigenous people's land and other natural resource tenure arrangements in the Dayak community, it is highlighted the urgent needs to recognise their rights for poverty alleviation and sustainable development purposes. The Dayak people access and utilise their land and other natural resources to secure their subsistence. Activities such as land titling without recognising the characteristics of the local tenure arrangements provides no necessarily benefits, such as credit access, to the new title holder, indeed endangers the existences of indigenous people when they can not afford to payback the credit. Moreover, claiming of their lands using Basic Forestry Law exacerbated the condition of the indigenous people existences. It provides no tenure security and makes the indigenous people become informal settler in their own lands where in the other hand they much depend to their lands as means of livelihoods.

Inside the Sami, although from their tenure arrangements it showed they depend to their lands and other natural resources to secure their subsistence as well, however the government plays big roles, especially in providing well social security, hence background behind the needs to recognise the Sami's customary tenures can not be related directly to economic reasons only. The Sami already received social security and other citizenships' rights same with other Finnish which place them not below poverty line anymore. However, the fights of the Sami to have recognised customary rights, includes land rights issues, have become essential to be solved. At this point, the role of land administration is shifted not only provide tenure security with economic offered-benefits only, but also have sociological, environmental and anthropological aspects in understanding people to land relationships.

As mentioned before, people to land relationships are influenced by numerous social, economic, environmental and anthropological factors. These factors and their influence on the relationship vary between villages, districts, province, or even, nations. Therefore it is essential that the factors mentioned before and also issues at both the macro and micro scale are addressed appropriately using land administration and associated service solutions. Different strategies for recognising and delivering tenure security to the indigenous people must reflect the problems they face: vulnerability, de facto dissimilarity, third party access rights, loss of traditional practices and tenure, historic and sacred values, product and labour market and somewhat low economically land value of the indigenous people's lands.

4. Social Tenure Domain Model

Chapters 1 and 2 have discussed the importance of land administration systems to alleviate poverty and achieve sustainable development of a nation, especially related with the existences of customary tenure arrangements. However not all societies have capacities to respond the presence of this formal system, such as land registrations of private titling which can not fully be implemented inside customary communities. The Dayak case study has revealed the realities of informal indigenous people to land relationships through presenting its de facto and de jure of their land's status. In the chapter 3 was also presented the Sami case study which revealed that although they take already socio-economic advantages from the formal land registration systems, however they are still fighting for their land right recognition into the formal land administration systems. Lesson learnt from those two case studies have also presented in previous chapter. Not to compare each other, but more to what can be learnt from one to each and a summary has been discussed previously.

This chapter discusses Social Tenure Domain Model (STDM) as a solution tool that might be proposed to overcome problems caused by informal status of customary lands in Indonesian land administration systems. The analysis is based on the case studies and analysis on what lesson can be learnt from both of them. Then a measuring process using background theories to general concepts of the customary tenures from both case studies is presented in section 4.1. Also efforts that have already been taken to recognise customary lands are presented in section 4.2. Section 4.3 presents possible improvement using STDM to develop from earlier models with a stronger focus on delivering poverty alleviation and sustainable development in customary societies.

4.1. Needs for Alternative Land Administration Tools in Recognising Adat Lands

The importance of lands and other natural resources for the customary communities means security of their rights to access and use lands and natural resources. Most of these indigenous people live in agricultural-based sectors and depend from the product of their land and other natural resources to satisfy their needs. As a consequent, the sustainability of land and natural resource access and management for them means a key ingredient to poverty alleviation as well. Then sustainability of land and other resources use and management must be associated with secure tenure, both formal and informal. Moreover secure tenures for sustainable land and other resources management for poverty alleviation means not just ownership of resources only but also has to consider access to and utilisation of natural resources (Moore 2002). Therefore alternative land administration tools, especially to improve access to and utilisation of natural resources, play an important role in supporting the poor livelihoods.

A ground reason for this important role is that access to natural resources provides immediate food security which at least directly addresses malnutrition and poor health. For community staying in the psychological level of the Maslow's theory, the satisfaction of basic needs is very important in combating poverty. By guaranteeing the availability of materials for shelter building, resources for

important food products for primary and secondary needs satisfaction, natural fuels and raw material for making goods, government can press the number of population live below the poverty. Then sustainable use and management of resources are important rather than short term and exploitive opportunities. Therefore strong linkages between secure indigenous people to land relationships and sustainability of resource use and management provide opportunities in poverty alleviation if formal systems acknowledge these properly.

Looking to what presented in the chapter 3, the practices of customary laws have become real in Indonesian land administration system, however these practices are still being placed in the informal regime. The evidences of their ownership towards their territory have not been registered into formal land administration system yet. This condition has weaken them as indigenous people when a development program come inside to their area and the system needs legal evidences for compensation. More, these conditions have been aggravated by the presence of the Basic Forestry Law. In one side the BAL which becomes the basic law for the implementation of land administration systems in Indonesia has not succeeded yet in recognising customary law but in the other side territory of these customary communities have been claimed to be the state forest using the Basic Forestry Law. It can be seen by comparing the map of the Dayak's territory and the forest consensus map of the Kalimantan presented in the previous chapter. So, the presence of alternative land administration tools is needed here.

Traditional land tenure inside the Dayak community is being ignored by mentioned above forestry law and have not been mapped into formal national development planning and laws. As a consequent, conflicts between indigenous people and outsiders, both the government and private investors, have increased in number (Meilantina 2006). Based on the Badan Pertanahan Nasional's (BPN, the Indonesian National Land Agency) data, the number of land conflicts reaches 7491 cases on 2007. About 85% of the cases identified as forgery and the rest is land grabbing. To reduce the number of land conflicts, especially related to the customary community, one solution is by mapping interest and requirement for all stakeholders and then being formally acknowledged into the national systems.

The need to acknowledge traditional land tenures into the national systems becomes an important issue to guarantee that the indigenous people are not marginalised within their own territory when development programme entered. If their customary rights are acknowledged by the formal system, one benefit that can be achieved is that the customary communities can take advantages from the productivity of their lands through having credits using their property evidences as collaterals. Beside of that, the indigenous people can enjoy a proper compensation if a development program enters into their territory. In parallel with the productivity enhancement, other purposes from the sustainable development and poverty alleviation programme can be achieved. Required first step is by modelling the indigenous people to land relationships to have detailed cadastral information that supports policy decision making. As an alternative land administration tool, Land Administration Domain Model (LADM) is one of the well-known domain models to map people to land relationships. Then, there is Social Tenure Domain Model (STDM). STDM is a pro-poor land administration tool that is based as such on LADM. From the former research carried out by Sucaya, the Indonesian land administration system has been tested and validated whether its application fits to LADM (Sucaya 2009). Related to the existences of customary lands, Sucaya concluded that a wide range of user requirements in Indonesia is accommodated by LADM, however a modification or extension of code list indeed is needed to adapt LADM with the localities (Sucaya 2009).

4.2.   Recognition of Customary Land in LADM

Each country in the world operates different cadastral system with different purposes. They might be used for fiscal or legal purposes. However, there is a common concept about people to land relation. This common concept led to the idea of standardisation in cadastral domain. A standardised cadastral domain is targeted to achieve two important goals (Lemmen, Molen et al. 2004):

1. Avoid duplication effort by providing extensible basis for efficient and effective cadastral system development based on model driven architecture.
2. Enable involved parties, both within one country and between different countries, to communicate based on the shared ontology implied by the model.

An early effort on designing of an international data reference model has been started since the FIG Congress in 2002 when van Oosterom and Lemmen (Oosterom and Lemmen 2002) proposed Core Cadastral Domain Model (CCDM). In this model, indirect relationship between the Person class and the RegisterObject class is used through RRR (Right, Restriction, and Responsibility) class (Lemmen and Oosterom 2006). Nowadays this model has been submitted to International Organisation for Standard (ISO) as new work item proposal (ISO/TC 211 Geographic Information/Geomatics, 2008) and given a new name as Land Administration Domain Model (LADM) since the term cadastral was not considered to cover both the legal/administrative side and the geometric side. The developed model should represent both legal/administrative part and cadastral objects, can be implemented as a distributed set of geo-information systems, implemented and maintained by several organisations e.g. municipality, land agency, mapping agency, etc (Lemmen and Oosterom 2006).

The LADM covers all basic information-related components of Land Administration, including those over water as well as land, and elements above and below the surface (3Dimensional cadastre) (Zevenbergen, Uitermark et al. 2009). The LADM provides:

- an abstract, conceptual schema with five basic packages related to (1) parties (people and organisations); (2) spatial units (parcels); (3) rights, responsibilities, and restrictions (property rights); (4) spatial sources (surveying); and (5) spatial representations (geometry and topology)
- a terminology for land administration, based on various national and international systems, that is as simple as possible in order to be useful in practice
- the terminology allows a shared description of different formal or informal practices and procedures in various jurisdictions, and
- a basis for national and regional profiles.

The core classes of LADM are based on four classes below:

1. Class LA_Party. Instances of this class are parties (persons or organisations), or group parties (groups of persons or organisations).
2. Class LA_RRR. Instances of subclasses of LA_RRR are rights, restrictions or responsibilities.
3. Class LA_LAUnit. Instances of this class contain administrative information concerning spatial units with equal rights, restrictions or responsibilities.
4. Class LA_SpatialUnit. Instances of this class are spatial units, parcels, subparcels, buildings or networks.
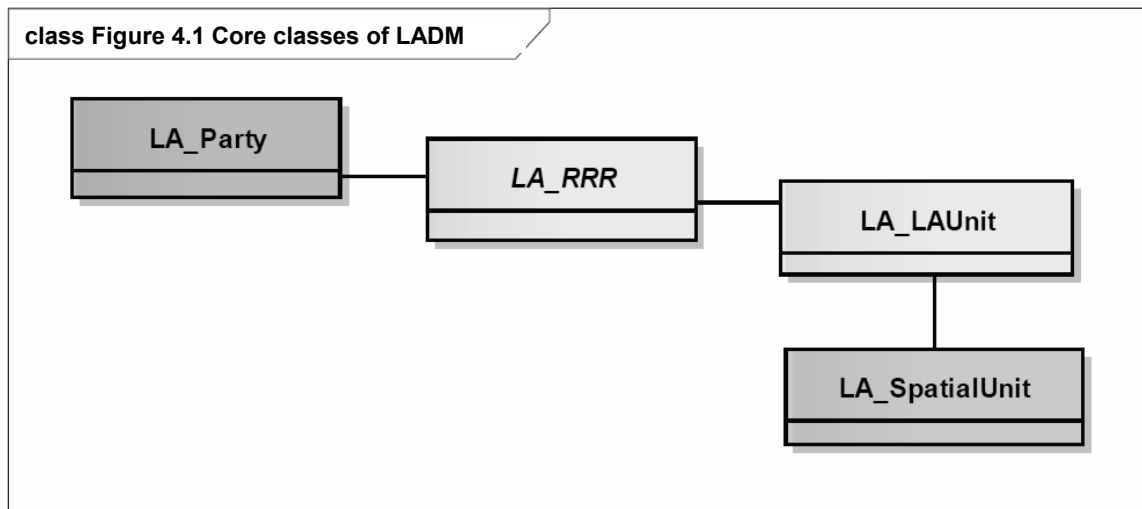
(ISO TC 211 2009)

Figure 4.1 the core LADM as an UML 2.1 class diagram

As mentioned above, the developed model should to be implemented as a distributed set of geo-information systems, implemented and maintained by several organisation e.g. municipality, land agency, mapping agency, etc. LADM contains five packages. This helps the maintenance of different data sets by different organisations. The complete model may be therefore implemented through a distributed set of geo-information systems, each supporting data maintenance activities and the provision of elements of the model (Zevenbergen, Uitermark et al. 2009).

(ISO TC 211 2009)

Figure 4.2 the overview of LADM

Sucaya (2009) had carried out a research to find out the applicability of LADM in Indonesian land administration systems based on user requirements' analysis. He categorised the requirements of both external and internal users of land administration service held by BPN into (Sucaya 2009):

- Basic land information satisfaction, this information can be provided by LADM.
- Providing tenure security, LADM is a conceptual model that can be transformed into spatial database and provides LegalDocument class to keep ownership evidences and SurveyDocument to keep cadastral field measurements.
- Supporting mortgage security, LADM provides all land information that is required to define mortgage value.
- Easy land information access for citizen, since LADM is in a digital environment, land information access can be made easier.
- Supporting affordable fee, implementation of LADM may able to reduce informal fee, especially if the contact between citizens or notaries and BPN employee can be reduced.

- Recognition of customary land, basically LADM supports customary right. In fact, the basic concept of a relation between person – parcel is still valid for customary right. From LADM perspective, the only thing that is needed to accommodate customary right is add the type of customary right into the code list table RightType. The holder of this right, usually a tribe, can be put either in groupperson or person.

- Improving land administration service, LADM can be integrated with Workflow Management System (WfMS) and eventually expected to improve efficiency, business process control, data management as well as process management.

- Supporting daily works, LADM provides generic attributes only because it is an international standard and expected to be valid in whole countries in the world.

- Affordable in development and maintenance process, with standardised data model, development of core software can be done effectively and using open source software may also save national budget for system development.

- Reliable and easy to use, in order to support daily works and information system, LADM should be converted into spatial database.

- Accommodating two coordinate systems, SurveyPoint class provides the possibility to accommodate two coordinate systems because it stores the information about transformation used, from origin location to transformed coordinates.

- Can manage existing manual field document, SurveyDocument class heir electrSignature attribute from SourceDocument class. This attribute can be used to keep scanned manual field document.

- Support data sharing, with standardised model and digital environment, LADM supports data sharing of geo-information without loosing any data among organisations.

- Support spatial planning, spatial planning will be successful if the cadastral map coverage is complete. LADM supports this by keeping land value information RegisterParcel class.

- Integrated with raster data, SurveyDocument class can be used to integrate satellite imagery data or aerial photograph with field survey data. Both satellite imagery and aerial photograph is periodically updated, therefore they need versioned object. By this, LADM can be used also for monitoring of land use change.

- Avoid cadastral data duplication. This can be avoided by the completion of cadastral map coverage with a good database structure, and LADM supports both legal and fiscal cadastre.

- Support of land reform, LADM supports land reform in providing better data management. Land reform is aimed to provide equity in land access.

- Up to date, the WfMS can be a linkage to the spatial database to perform updating data and informal system must be avoided to provide security tenure.

To provide better description of the Indonesian LADM, it can be shown in the figure Indonesian country profile below:
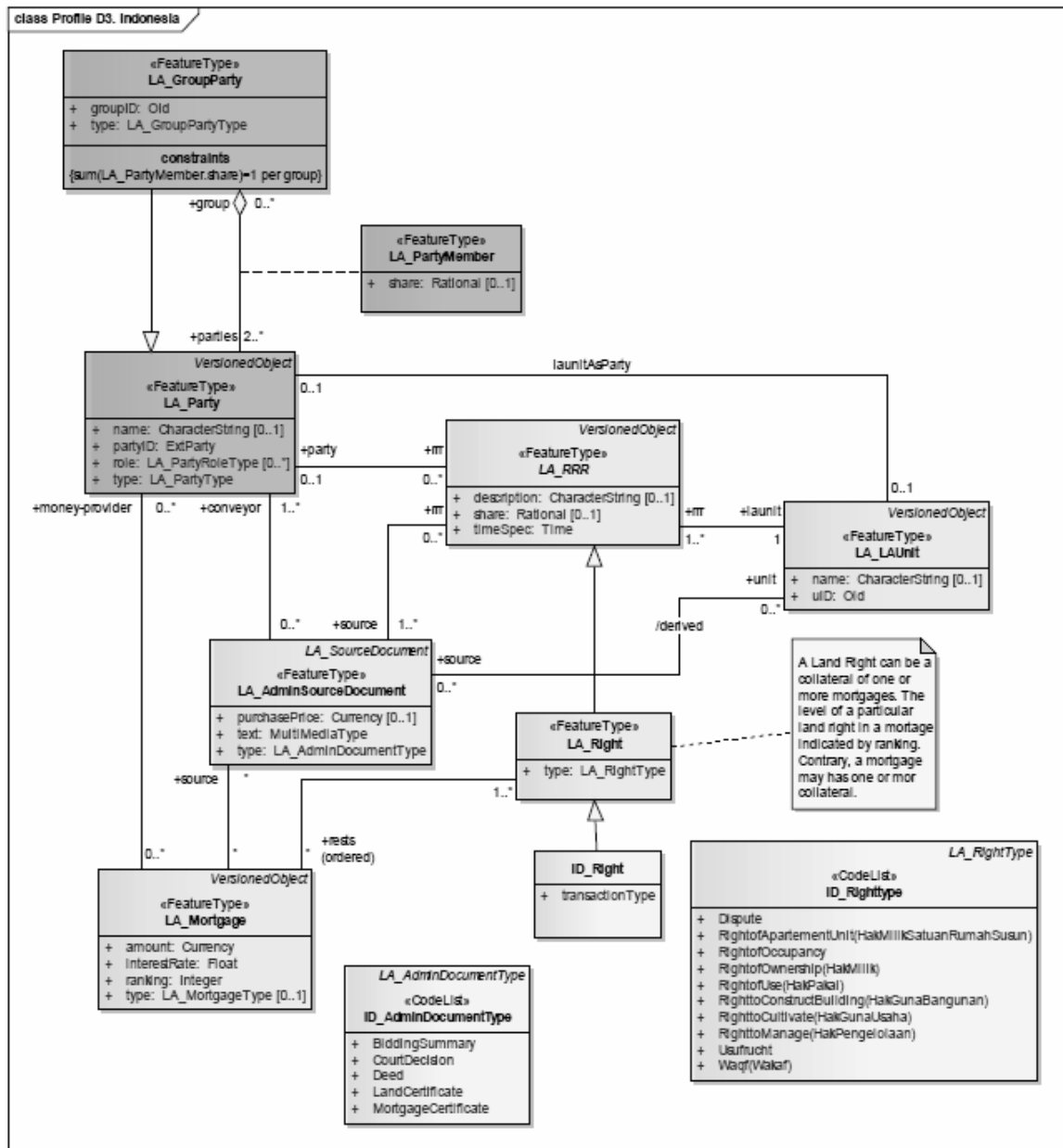
(ISO TC 211 2009)

Figure 4.3 Country profile of Indonesia

Specific related to the recognition of customary lands, the land administration system should carefully identify characteristics of each customary law within the country. The recognition can not be done just by registering into private ownership systems since these customary lands mostly have community based ownership. Further, free-transfer system should be avoided to preserve the characteristics of customary lands. The mortgage system on customary land should be arranged in such way to avoid the creditor failed to pay the interest and then the land transferred to improper party (Sucaya 2009).

As mentioned before, basically LADM supports customary right. However, the challenge to recognise customary law goes beyond the technical part. The main problem is whether customary right will be converted to statutory right or just recorded as it is (Sucaya 2009). Learning from the Sami case study, even though all land parcels, including the Samish lands, have been formally registered, but they are still having a fight for being acknowledged in the name of culture self determination. As recommended

by Sucaya (2009), using Bali as the case study, a better solution might be through registering customary land as *Hak Milik* (ownership right) with *Desa Adat* (customary village as one unit) as the owner, and within this ownership, there might be individual rights for the customary village's members which are locally regulated by the chief or priest of the village. This method gives customary community a full control to their customary lands and also supported by LADM, because the RegisteredObject – RRR is a one-to-many relationship. It means that one registered object can have more than one right (Sucaya 2009).

For this scenario, government needs to revise Government Regulation number 38/1963 to allow a customary village as one communal entity to hold ownership right. Then, a conversion from customary right to individual statutory right may advantage from simplicity of the formalisation method. However, as one disadvantageous for this conversion method, the characteristic of customary right may change or even lose. For example, if customary law is converted to individual statutory law, it can be used as collateral to access bank loan. In case of failed to pay the interest, the land can be handed over to other parties outside the tribes. On the other hand, recording customary right as it is helps to preserve the characteristic of customary land, but it has difficulty since it requires more complex system application. To overcome that problem, Sucaya (2009) stated that decentralisation of Land Administration System might be suitable to cope with this complexity (Sucaya 2009).

The scenario for registering customary land as ownership right with customary village as one unit as the owner is also suitable to be applied for the Dayak case study as long as there is a willing from the government to register these customary lands of the Dayak communities. To implement that, as mentioned before, the Indonesian government has to revise related regulations so thereby the Dayak as a community tribe can hold an ownership right. Related regulations mentioned before include the Basic Forestry Law, the Mining Law, Government Regulation No. 38/1963, and other regulations in the land administration environments. Therefore, firstly the existence of the Dayak, and any other Indonesian indigenous tribes, will be recognised and then can be followed by acknowledging their tenure arrangements. As long as the BPN, as the Indonesian government body which has responsibility to implement land administration systems, has not registered yet customary lands, all of these customary lands will be staying under the informal regime. Therefore, another alternative solution is needed to overcome the problems caused by the informal status of customary lands, especially related to combating the indigenous people poverty.

4.3.   What can be improved using STDM

Many people think that the way to solve the problems of insecurity of tenure, homelessness and the development of slums is through large scale land titling (Augustinus, Lemmen et al. 2006). So many attempts have been tried to accelerate the growth of total number of registered land parcels. But in the other hand, the reality shows that less than 30 percent of the land in developing countries is titled. Including Indonesia, total number of registered lands is about 30 percent. There are many reasons for this, such as the fact that customary tenure has a very strong influence. It requires the development of innovative approaches to security of tenure that are not based on land titling alone.

To deliver security of tenure toward the citizens, land administration system is very important. Land administration is not an end in itself, but serves society (Molen 2003). Modelling the relationships

between people and land as a basis for land administration and/or land management is of a complex nature. It should and can be done in both a computerised and paper based environment, and for formal rights as well as for social land tenure systems (customary, informal) (Augustinus, Lemmen et al. 2006).

The Social Tenure Domain Model (STDM) is an initiative of UN-HABITAT to support pro-poor land administration. STDM is designed purposely for developing countries, countries with very little cadastral coverage, post conflict areas, areas with large scale informal settlements, or large scale customary areas. The STDM focuses on the people to land relationships, independently from the level of formalisation, or legality of those relationships (ISO TC 211 2009). The purpose is searching a flexible model that support all forms of land rights, social tenure relations, and overlapping claims to land (Augustinus, Lemmen et al. 2006). A flexible standard is that can be extendable and adaptable to local circumstances and support both cadastral and non-cadastral approaches. Non cadastral approaches include a move to land management, e.g. for slum upgrading, to manage conflicts or to allocate land to Internally Displaced Persons (IDPs) and refugees. This means that some level of (non parcel based) object identification has to be supported (Augustinus, Lemmen et al. 2006).

STDM has at least two important goals like as in the CCDM (Augustinus, Lemmen et al. 2006):
- Avoid reinventing and re-implementing the same functionality over and over again, while at the same time providing an extendable and adaptable basis for efficient and effective cadastral system development, and
- Enable involved parties to communicate, based on the shared ontology implied by the model.

Further, the functionality of STDM should be observed as same as LADM, but under different terminology. Formal terminology used in LADM may not always be applicable because of the existence of informal environment. In this condition, STDM can be used. Further, STDM has the same classes as in LADM, but sometimes under different terminology: e.g. class RRR is named class SocialTenureRelationship (see Table 4.1).

LADM class name	*STDM alias*
AdminSourceDocument	SocialTenureInventory
Building	*similar name*
BuildingUnit	Unit
Face	*similar name*
FaceString	*similar name*
GroupParty	*similar name*
LAUnit	*similar name*
Level	*similar name*
Mortgage	Collateral
Network	UtilityNetwork
Parcel	*similar name*
Party	*similar name*
PartyMember	*similar name*
Responsibility	*similar name*
Restriction	*similar name*
RequiredRelationship	*similar name*

Right	STDM_Relationship
RRR	SocialTenureRelationship
SourceDocument	*similar name*
SourcePoint	SurveyPoint
SpatialSourceDocument	SpatialUnitInventory
SpatialUnit	*similar name*
SpatialUnitSet	AdminSpatialUnit
SubParcel	*similar name*
VersionedObject	*similar name*

Table 4.1 LADM class names with their aliases in STDM

As mentioned before, STDM builds a core model of the relation between Objects - Subjects - Social Tenure. It can be describe bellows (Enemark 2009):

- Objects ("where"), not only an identified (measured) parcel, but also a range of objects such as land parcels, buildings, etc and identified in various ways such as one point, street axes, photos, etc.
- Subjects ("who"), not only a (legal) person, but a range of subjects such as person, couple, groups of people, unidentified groups, authority, etc.
- Social tenure ("what"), not only ownership and formal legal rights, but also a range of informal, indigenous and customary rights as well financial issue such group loans and micro credit.
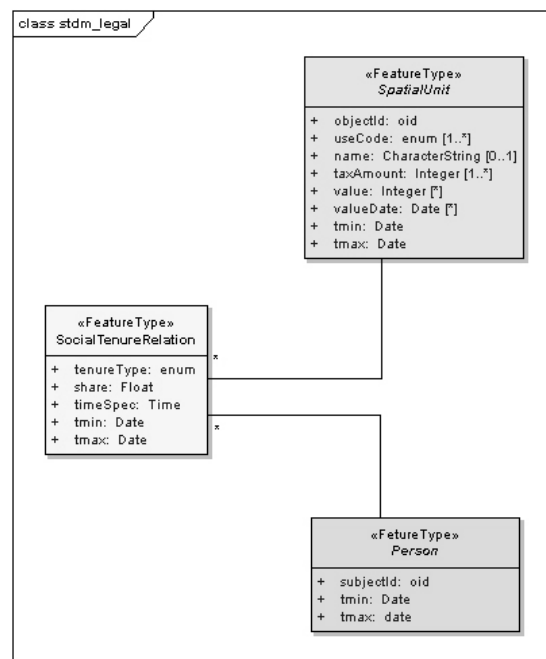
(Lemmen, Augustinus et al. 2007)

Figure 4.4 the class core of STDM

Analysis of user requirements in the first draft model of STDM has been carried out by (Lemmen, Augustinus et al. 2007) based on the requirements which are derived from the paper 'Social Tenure Domain Model - Requirements from the perspective of Pro Poor Land Management', FIG Regional

Conference, Accra, Ghana, March 2006 (Lemmen, Augustinus et al. 2007). From the requirement analysis carried out by Lemmen et all (2007), it shows bellow:

- The developed model should be possible to merge formal and informal tenure systems in one modelling environment (system). STDM supports by providing the representation of different types of SpatialUnits, SocialTenureRelations and Persons.
- STDM is able to represent spatial data in several reference systems.
- Spatial data in land administration systems should be linkable with other systems containing spatial data. STDM could be implemented as a distributed set of geo-information systems that each set supports the maintenance activities and the information supply of parts of the dataset. But from the design of first draft model, supporting a wide range of Spatial Unit identifiers has been not yet supported and requires further research.
- As a standardised land administration system, STDM is applicable in a decentralised and distributed environment.
- By the class 'Incomplete Spatial Unit', STDM may be possible to manage spatial data with different accuracies and from different sources".
- During the software development, STDM considers the requirement of a user friendly interface.
- STDM is not in conflict with a participatory approach. It has to be investigated as to whether the inclusion of a class 'local committee' (with decision making power) or a class 'regional committee' is sufficient to support the participatory approach.
- STDM supports representation of a broad range of spatial units, such as: single points, geo-codes (sometimes known as dots on plots), lines and polygons; polygons can have accurate, less accurate or fuzzy boundaries.
- STDM is also able to represent overlapping tenure systems. It may be useful for conflict managements using the class OverlappingSpatialUnit.
- STDM has also modelled gender.
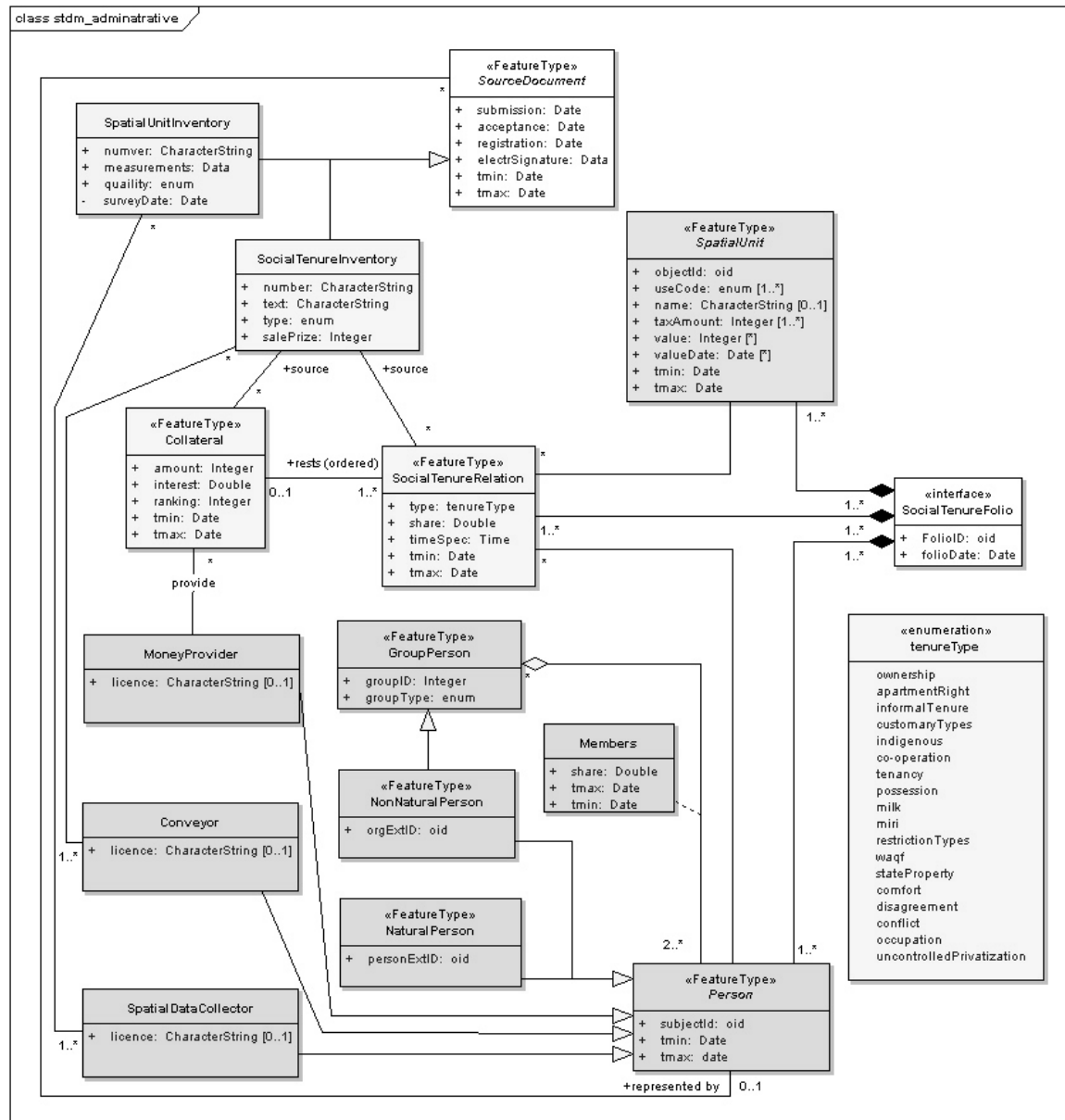
(Lemmen, Augustinus et al. 2007)

Figure 4.5 Social Tenure Relationships and Persons

(Lemmen, Augustinus et al. 2007)

Figure 4.6 Spatial Units of STDM
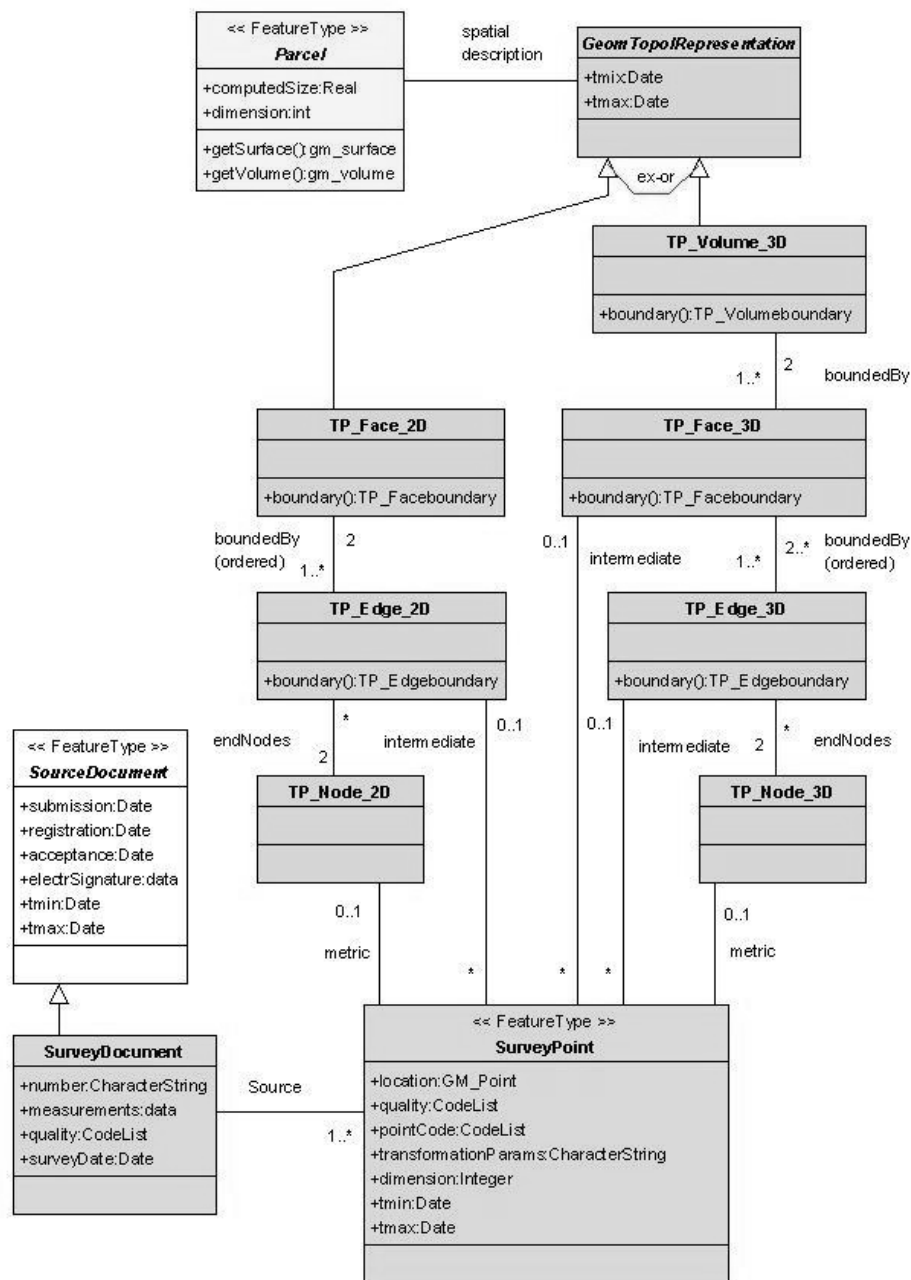
(Lemmen, Augustinus et al. 2007)

Figure 4.7 the Geometry, Topology of STDM

Based on the user requirement analysis held by Lemmen et all (2007) and the case study analysis, it seems that STDM is suitable to be proposed as an alternative standardised model to represent people to land relationships, including for Indonesian indigenous tribes. Since the informal and customary systems have a strong influence to the daily practise of land administration in Indonesia, so the introduction of land recording may be able to solve the lack of cadastral information and reduce the negative impact from the existence of informal system. Considering the wide range of social tenure characteristics, the further development of STDM in Indonesian land administration systems has to consider aspects from the perspective of social scientists, anthropologists and computer scientists in understanding the localities circumstances, and also STDM should be developed in the decentralisation environment.

In modelling people to land relationships for providing sustainable development policy and combating poverty in Indonesia, the most challenge is to obtain complete cadastral data through all over Indonesian territory. To obtain cadastral information, BPN uses formal land registration systems based on Government Regulation No. 24 / 1997 and Minister of Agrarian Regulation No. 3 / 1997 that regulates its implementation. Using these regulations, BPN performs land registration through all over Indonesian territory. Based on these regulations, BPN held also land registration acceleration projects. However, up to now the total number of registered lands is still about 30 percent. Therefore, BPN needs more than land registration systems to overcome the lack of cadastral data.

Land recording seems to be able to overcome the lack of cadastral data. Since STDM deals with decentralised and distributed environment, possible to manage spatial data with different accuracies and from different sources, even possible to manage data that have accurate, less accurate or fuzzy boundaries, as one of benefits, STDM can be used to accelerate the process of cadastral data collection by utilising satellite imagery technology. Implementation of satellite imagery technology is aimed to avoid land grabbing by improper parties caused by too-long times needed for data collection. Further, in order to collect a comprehensive cadastral data, the empowerment of Indonesian citizens, including indigenous people, can be supported by the development of STDM through participatory approaches. Also, STDM can be an alternative land conflict management. Through the development of STDM as a land administration tool, the position of the Indonesian indigenous tribes that has been weakened by the existing formal land laws can be improved.

Using the case study of the Dayak, STDM can be used to model the Dayak's customary lands which are still being under informal status and even conflicts with the outsiders. The Dayak's customary lands are claimed become the state forest based on the Basic Forestry Law and some are given to investors who want to establish plantation there. Although there are directives for compensation procedures, but since these lands are un-acknowledged yet in the formal system and caused no formal evidences for these, it caused the position of the Dayak is weak inside their own territory. Therefore, the Dayak needs tenure security to improve their livelihoods as well as aid poverty reduction. Their communal resource management and their access to land and other natural resources can be modelled using the STDM in the SocialTenureRelation class.

For this scenario, the government needs to issue an umbrella regulation so thereby the product of land recording can be applicable also like the products of land registration to receive socio-economic advantages from it. For example, the adat member can have more proper compensation for each development plan that needs their lands and also more easy access to get credit from bank after their lands have been recorded by BPN. Therefore, it is expected from the development of STDM, even though nowadays is still in the concept form, land administration can be used as an alternative pro-poor land management tool to achieve the sustainable development and alleviate the poverty.

4.4.   Challenges

The advantageous of when Indonesia implements LADM or STDM have been presented in previous sub-chapters. However there are still challenges for the Indonesian government to implement either

LADM or STDM. At least from the case studies analysis, the Indonesian government should learn from the Finnish government that although finished with the first registration of all land parcels, the Finnish government is still facing problems on the issue of indigenous people. Here, the role of land administration is shifted not only provide tenure security with economic offered-benefits only, but also have sociological, environmental and anthropological aspects in understanding people to land relationships. Therefore, to implement whether LADM or STDM, the Indonesian government should consider not economic and technical aspects only, but also from the aspects of policy, social and environment to pursue the national sustainable development as well as combating poverty purposes.

When the Indonesian government want to implement LADM or STDM in order to achieve the national purposes mentioned above, the ground challenges faced are the existing land administration regulations. The regulations that potentially can hamper the implementation of LADM or STDM are explained below:

1. Basic Forestry Law No. 5/1967 (then revised to Law No 41/1999) and Mining Law No. 11/1967
   Within the Indonesian land administration legal frameworks, these laws have the same level with the Basic Agrarian Law. These laws have given to the state a right to claim toward forest and mine-form natural resources inside the Indonesian territory. No doubt, every nation's government has responsibility to stimulate the national economy, but in the other hand, government should consider the existence of the indigenous people who already live inside the territory that is claimed. Using these laws, the existence of the Indonesian indigenous tribes has been weakened since they do not have formal legal evidences of their lands. This condition has caused adat lands are stayed in an informal status. To overcome problems caused by this status, it should be designed one grand design of a basic land administration law which combines the existing BAL with these special characteristics.

   As long as these laws have not been revised yet, land registration process can not be done toward customary lands and it creates never-ending land conflicts between the customary community and the outsiders (Moniaga 2008). These caused the completion of cadastral information for all Indonesian territory is very difficult to be reached. Therefore, the implementation of STDM may be very useful since STDM purposely designed for post conflict areas and areas with large scale informal and/or customary land status.

2. Government Regulation No 38 / 1963
   This regulation determines legal bodies that can hold right of ownership (*Hak Milik*) and defines the maximum area of land that can be owned by each body, those are:
   1. State owned banks.
   2. Association of agriculture cooperative (economic enterprise).
   3. Religious body appointed by the minister of agriculture/agrarian based on the minister of religion's proposal.
   4. Social body appointed by the minister of agriculture/agrarian based on the minister of social welfare's proposal.

   Based on this regulation, the customary village can not be the subject of ownerships. This is one of the obstacles to recognise customary land. As long as this regulation has not been revised yet, the customary village can not own their own lands. As the consequent is that the customary land can not be registered and caused the chain effect that these lands stay in the informal status and cadastral information within Indonesian territory can not be completed. When land registration can

not be used as the only solution tool for solving the problems of insecurity of tenure and the development of informal settlements, land recording can be one of the solutions. All land parcels within Indonesian territory can be recorded as what its status is to complete the cadastral information. To overcome this problem, STDM can be used since STDM focuses on the people to land relationships, independently from the level of formalisation, or legality of those relationships.

3. Government Regulation No. 24/1997 and Regulation of the Minister of Agriculture No. 3 / 1997
   Government Regulation No. 24/1997 is purposely designed to regulate the administration of formal land registration within Indonesian territory, and the following regulation is the technical directive for the implementation of former regulation. These laws determine the basic requirements that should be fulfilled when registering land parcels within Indonesian territory, including the steps and accuracy of the products of land registration process. Basically, these laws are designed to create a standardised product of land registration process. However, at the same time, these regulations create an obstacle since the accuracy of boundaries can not be treated as same between urban and rural areas. Therefore STDM may be proposed to overcome the lackness of cadastral information since STDM is possible to manage spatial data with different accuracies and from different sources

4.5.   Summary

Not all societies have capacities to respond formal land administration system. As an example, land registrations of private titling which can not fully be implemented inside customary communities. For the members of customary community, tenure security means not just ownership of resources only but also has to consider access to and utilisation of natural resources. Since most of these indigenous people live in agricultural-based sectors and depend from the product of their land and other natural resources, tenure security can be a means for sustainable development and poverty alleviation for them. However, the position of the indigenous people has sometimes been weakened by the presence of formal system. Therefore alternative land administration tools are needed and play an important role in supporting the poor livelihoods, especially through improving access to and utilisation of natural resources.

Land Administration Domain Model (LADM) is one of the well-known domain models to map people to land relationships. The LADM covers all basic information-related components of Land Administration, including those over water as well as land, and elements above and below the surface (3Dimensional cadastre). LADM models the people to land relationships using indirect association between the Person class and the RegisterObject class, by RRR (Right, Restriction, and Responsibility) class.

Sucaya stated that LADM supports customary right. The challenge to recognise customary law goes beyond the technical part. The main problem is whether customary right will be converted to statutory right or just recorded as it is. However, formal terminology used in LADM may not always be applicable because of the existence of informal environment. As long as the BPN, as the Indonesian government body which has responsibility to implement land administration systems, has not registered yet adat lands, all of these adat lands will be staying at the informal regime. And the implementation of LADM to provide a complete land administration model within Indonesian territory can not be completed.

An alternative strategies for recognising and delivering tenure security to the indigenous people is needed and must reflect the problems that the adat communities face, such as: vulnerability, de facto dissimilarity, third party access rights, loss of traditional practices and tenure, historic and sacred values, product and labour market and somewhat low economically land value of the indigenous people's lands. The Social Tenure Domain Model (STDM) is an initiative of UN-HABITAT to support pro-poor land administration. STDM is designed purposely for developing countries, countries with very little cadastral coverage, post conflict areas, areas with large scale informal settlements, or large scale customary areas to build a core model of the relation between Objects - Subjects - Social Tenure.

The same challenge in modelling people to land relationships for providing sustainable development policy and combating poverty in Indonesia as in LADM is to obtain complete cadastral data through all over Indonesian territory. The total number of registered lands in Indonesia is still about 30 percent. There are many reasons for this. One of those is the fact that customary tenure has a very strong influence. Therefore, BPN needs more than land registration systems to overcome the lack of cadastral data and land recording seems to be able to overcome the lack of cadastral data. But the most important to think for this scenario is that the government should issue an umbrella regulation so thereby the product of land recording can be applicable also like the products of land registration to receive socio-economic advantages from it.

5. Participatory Approaches in Land Administration System

In the chapter 4 had been discussed a proposed alternative land administration tool for recognising and delivering tenure security to the customary communities. The developed tools must reflect the problems that the customary communities face, such as: vulnerability, de facto dissimilarity, third party access rights, loss of traditional practices and tenure, historic and sacred values, product and labour market and somewhat low economically land value of the indigenous people's lands. Then, a such land policy can be a means to aid poverty reduction and sustainable development strategies when the design of the instruments is sensitive to social issues (Dalrymple 2005).

Defining the relationship between the state and civil communities and their respective roles has become an important issue in sustainable development theories - participation, accountability, local institutions, local practices, indigenous knowledge, policy, gender equity, tenure and fair and equitable decision making processes then became key focuses (Mohamed-Katerere 2004). Participation in spatial planning is clearly related to legitimacy as a governance criterion, but a strong participatory approach also supports other governance responsibilities of equity and respect for people's rights (McCall 2004). Further, the role of community participation becomes the key string in collecting cadastral information (Haroen, Achmad et al. 2006).

In the process of policy making, rights of customary communities should be taken into consideration by the government. Local communities know what they need and ground issues inside their environment. This is to ensure that development policies and plans are more applicable and relevant for local communities. With the involvement of the local communities, the legitimacy of the policies can be achieved. Thus people have a feeling of ownership and no resistance for the government's policies. This chapter proposed participatory approaches as another alternative land administration solution tool to overcome the problems faced by the customary communities in line with national sustainable development programme and also poverty reduction inside the community.

5.1. Participatory Approaches and Security of Customary Tenures

Customary rules, values and practices have strong influences in term of land tenure type (UNEP/CBD 2005). Land use patterns inside the customary communities are affected by social structures, family land-use history; migration and movement through lands and over waters; management of natural resources; sacred life and/or places, spirits, healing, items; seasons and migration's pattern. These customary value systems are practiced based on a close relationship between people and their surroundings (Setiady 2008). Then, the question is how formal land administration system should adopt the values and practices that already live and exist inside this community to achieve the national sustainable development purposes.

Generally, customary community's members are aware about the importance of tenure security, but in the reality they still live in fears of losing their lands (Moniaga 2008). Customary communities need supports to enhance their livelihood by strengthening their rights over their lands. As mentioned before as one of the advantageous, STDM supports the empowerment of customary communities through participatory approaches Participatory can be used in acknowledging their relationships to their own lands. However, formal recognition into the legal land administration laws should be mapped and legalised. This must be done to ensure that the public interest in utilising the resources of nature are not excluded, but it can be integrated with regional development plans. Thus, the development process can be run with a balanced, fair and for the interests of the society, especially the local community. Therefore the recognition of customary lands into the national statutory law should be started by a promulgation of regulations which specifically regulate customary land tenure system.

The relationship between people and resources is not static and it should be considered in order to recognise customary tenures into formal system. The evolution of social relationships between communities has a strong impact on the changing nature and application of technology over time, and that changing socioeconomic regimes (Ross and Pickering 2002). This social relationship among the community members has also influenced their land use pattern and been mirrored in their environmental-focused tenure arrangement patterns.

Within customary communities' tenure arrangements, there are many commonalities in the underlying customary values or principles of diverse customary communities. Common values include respect for nature or Mother Earth; free/open sharing of resources; reciprocity or equal exchange of resources; and solidarity, e.g. helping those in need and serving the common good. Such principles could provide the basis for developing mechanisms for local people's participation in composing spatial planning regulations to achieve sustainable development purposes at local, regional and national level (Swiderska 2006).

Sustainable spatial planning can be achieved as long as government acknowledges customary tenure arrangements within the society. Customary laws consist of rules and norms to control access to natural resources and ensure sustainable and equitable use, and codes of ethics for the proper use and transmission of traditional values (Swiderska 2006). Therefore, if the government acknowledge values within the customary communities, the produced spatial plans can reflects the sustainable with the environment, be accepted by the local communities and the legitimacy of the regulation can be improved. Moreover, recognition of customary lands provides complete cadastral information which can lay a solid foundation for the comprehensive spatial planning and long-term economic development (Haroen, Achmad et al. 2006). It is expected that through improving the customary community's participation, community would actively participate in organising the spatial planning regulation within their territory.

A number of efforts to recognise the rights of indigenous and local communities to their traditional territories, resources, customary laws and self-determination have been done. At the international level, as described before, the International Labour Organisation (ILO) Convention 169 recognises the rights of indigenous and tribal peoples to their natural resources and territories and calls on governments to protect their social, economic and cultural rights, customs and institutions; to respect their customary laws and ensure their participation in decisions that affect them. Although the Indonesian government has not ratified this instrument yet, however it provides an important basis for

the development of holistic and human rights based mechanisms for the protection of indigenous people and their traditional knowledge. Especially, learnt from the Sami case study, the Indonesian government should fully considered to recognise the customary rights and implement bottom-up approaches in the process of policy making for the sustainable development and poverty alleviation.

5.2. Local Knowledge in LAS

5.2.1. Definition of Local Knowledge

There is no universally accepted definition of traditional ecological knowledge, hereafter called by local knowledge, in the literature. Nevertheless, local knowledge is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Further, local knowledge is an attribute of societies with historical continuity in resource use practices; by and large, these are non-industrial or less technologically advanced societies, many of them indigenous or tribal (Berkes 1993).

To differentiate the definition of local knowledge and the scientist's science (western science), it can be shown in the table below:

Local Knowledge	Western Science
• Oral tradition • Learned through observation and hands-on experience • Holistic approach • Intuitive mode of thinking • Mainly qualitative • Data generated by resource users (inclusive) • Diachronic data (long time-series on one location) • Environment as part of social and spiritual relations • Based on cumulative, collective experience	• Written tradition • Taught and learned abstracted from the applied context • Reductionist • Analytic and abstract reasoning • Mainly quantitative • Data collected by specialists and experts (exclusive) • Synchronic data (short time-series over a large area) • Hierarchical and compartmentalised organisation • Based on general laws and theories

(Brodnig and Mayer-Schonberger 2000)

Table 5.1 the Difference between local knowledge and Western science

5.2.2. Roles of Local Knowledge

In the context of customary tenure security, involvement of the tribe's leader, elders and priests as well as women are important in participatory approach. Tribe's leader, elders and priests are ones who be acquainted with the local knowledge which is passed down through generations and expressed usually by stories, song, folklore, etc. Women are one of the vulnerable groups in Indonesia, but in some customary practices, customary laws follow matrilineal systems (e.g. Padang, West Sumatra). All these stakeholders can be key persons who can give boundary information and other customary practices related tenure security for such customary community since customary law is practiced differently in each customary community.

Customary land usually means a communal land belonging to the customary community. Since the boundary of each customary community is fuzzy and its practices are different in each customary community, at least local knowledge is needed to determine the territory of each community because local knowledge can recognise all these diversities better. Then a consensus is needed in participatory approaches to determine the boundary among the customary communities' territory. The physical presence of a map can be neither as an evidence of their existences nor conflict sources among customary communities. Therefore consensus building, both inside the community and among customary communities, is important. All those stakeholders are involved in public awareness raising process, consensus building, data collection process and cross-checking data resulted from participatory mapping (p-mapping).

Traditional knowledge can provide important information for scientists, and collaboration between scientists and local communities can also extend the local knowledge base upon which many land management decisions are made (Ross and Pickering 2002). In the process of land management decision making, one method that can be used to support the completeness of data is p-mapping. P-mapping is a process that involves the participation of the community in each and every step. It is based on the principle that the community has the closest knowledge of the place where they live in, thus make them the most credible source of information regarding their land (Abeto, Calilung et al. 2004). Here, local spatial knowledge's role of the community is used since the data collection until the validation of the results. Local spatial knowledge can be used in p-mapping for:

- Construct a database to store information relating to each household;
- Identify and quantify the constraints on development options imposed by the physical environment e.g., slope, aspect, and land use;
- Compile baseline information as to the conditions present at the start of the project. The results of any development initiative or intervention can be assessed against this situation; and
- Test various scenarios such as the impact of setting up riparian forest buffers, and to model what would happen to the remaining forest if no action is taken. These scenarios provided valuable information that stimulated discussion and helped farmers to focus attention on issues, problems, and possible solutions.

(Bujang 2004)

Figure 5.1 Role of local knowledge as a comprehensive information source

5.3. Decentralisation Issue

The absence of grand design land administration law in Indonesia has influenced land use conflicts within the design of national spatial planning. Although the Indonesian House of Representative had promulgated Law number 32/2004 that stated land administration shall be carried out by local government. However the implementation was postponed until now, waiting for the implementing regulation that regulates transferring equipment, human resources, and archives. It seems that the implementation of decentralisation on land administration system still long way to be passed by. It caused there are still overlapping of interest among BAL, BFL and Mining Law and the reality of local land occupation by the communities. All these conditions should be managed to avoid land conflicts in the future and also social cost incurred.

Spatial planning in Indonesia is regulated based on Law number 26/2007. According to section 5 of Article 1 of mentioned law, spatial planning is a system of spatial planning processes, space utilisation, and control of space utilisation. Article 5 stated that the main functions of the areas are protected and cultivation areas. And regarded to the administrative units, spatial planning consists of the National, Provincial and Regency / Municipality Levels. Meanwhile, on the basis of spatial aspects of activity functions of the area includes rural and urban areas.

Spatial planning regulation with the power to regularise the utilisation of lands can provide local governments a powerful tool to harmonise the development activities effectively within their territory (Meilantina 2006). Spatial Plan in district level is the basis for the formulation of provincial and national Spatial Plan. However, the formulation of District Spatial Plan should consider and in accordance with the potentialities of land use of the local communities. This is to ensure that patterns and development plans can be more applicable and relevant local constituencies. A failure of spatial plan is an obstacle to the purposed development activities, and the continuity of project implementation of development in provinces and districts levels, or even it can give a national impact.

Here, the failure of spatial plan is due to a lack of serious consideration of the traditional land use patterns that exist in the community in the making process. The produced spatial plans by government tend not to reflect conditions and needs of local communities, so the implementation brings conflicts with the reality in the field up to now. This can be a barrier for the national development programme due to the interest conflicts between communities and government (Meilantina 2006).

The importance of community involvement was recognised also by Law No. 26/2007. Right of the communities in spatial planning in Law No. 26/2007, Article 65 are detailed below:
- Participate in the process of spatial planning, space utilisation, and control of space utilisation
- Knowing openly spatial plans, regional spatial plans, detailed plan area spatial
- Enjoy the benefits of space and or the value of space as a result of spatial planning
- Getting a proper compensation for the conditions experienced as a result
  implementation of development activities in accordance with the spatial plan.

5.4.   Participatory Practice

5.4.1.   General Overview of Participatory Mapping

A meaningful participation is not only involving the right of indigenous people in decision making process, but also the right to have one's values and priorities reflected in the management system, including land administration system. The recognition of customary laws may partly address this. This is not simple as it involves two very different systems of law; customary law rules are facilitation focused and flexible, where as national statutory law is based on rules and legal precedent. Incorporation of custom into statutes may rob them of their flexibility (Mohamed-Katerere 2004). Therefore the community preferences to rely on the frameworks of customary structures should be honoured by the government as a question of local democratic choice. Then mechanisms and system of participation need to be creatively thought by all stakeholders, especially the government as public administer.

As one good example of participatory mapping in Indonesia is the implementation of community-driven adjudication in the project of reconstruction of Aceh land administration system. Tsunami and earthquake in 26th December 2004 in Aceh, the northern part of Sumatra Island, have significantly given valuable lessons for all kind of human living; include the relationship between land and people, which is the domain of cadastral services. The contribution of cadastral reconstruction to the redevelopment of the affected areas post disaster is evident at all levels and sectors. And, the main important resource is the information flow provided by people to be integrated into the available data and remaining documents. Therefore, the community participation is very crucial in the process of cadastral information collection (Haroen, Achmad et al. 2006).

In the context of recognising customary lands into the national land administration system, the question arises as to how the indigenous people can participate in the construction of modern information and decision making about their lands and communal ownership, how the indigenous people's spatial knowledge can be accommodated in the national land information system. A method needs to be established in which indigenous spatial information can be included into a GIS, particularly databases regarding individual and communal land ownership and disputed boundaries.

As mentioned before, the physical presence of a map can be as neither an evidence of their existences nor conflict sources among customary communities. Therefore consensus building, both inside the community and among customary communities, is important in order to establish p-mapping. Here, structures of each local community should be taken as consideration since each tribe has different structure. For example, in Bali province, the community's structure followed the religious of Hinduism's structure. Then, in Central Borneo, the eldest of the tribe is the chief of the tribe of Dayak. By knowing the governance structure, the research can go deeper into the community life and identify better primary and secondary stakeholders to guarantee the completeness of data next.

To achieve full-participation from the community, sensitisations workshops are important to be held after have permission from the leader in order to raise people's awareness. Social meetings such as at the village's hall, temples, etc can be used as the way of publication. Since the boundary of each customary community is fuzzy and practiced differently in each customary community, this process can be used also for consensus building. Having resources maps in digital and visual form are so

useful to help this consensus building process. It is expected from this research that data are collected by community themselves with some technical assistance from experts. Then the process of self-demarcation for their lands becomes the basis for securing territorial rights (McCall 2004).

The self-demarcation of customary lands is a basis for securing territorial rights as well as developing strategies for sustainable land administration system. Participatory GIS approach with procedures known and acceptable to local communities and in accordance with traditional decision-making that can be applied in the process of self-demarcation is participatory mapping using a method called 'ethnocartography". This method is based on gathering information through meeting and field visits with indigenous leaders about their lands, which is later transcribed onto geo-referenced maps (Badurek and Chacon 2004). The geo-information tools used in this process include traditional sketch maps, aerial photos, remote sensing images, mobile GPS and P-GIS analyses and representations. P-GIS is applied to develop community awareness of local situations, and to strengthening community institutions as an element in promoting people's empowerment and also to obtaining a complete data about themselves. And, p-mapping here is used for territory's boundary mapping of the customary communities and to map all-related land marks to show the customary community existences. By recognising their existences, it is expected that this result can be included in the process of formal policy making. Of course before the final results, the map should be cross-check first among the members of community and neighbours.

5.4.2. P-mapping Experiences Inside the Dayak

As mentioned before, participatory mapping is a form of public participation in the preparation of spatial plans or the adjudication process to collect comprehensive cadastral information. Ideally, the mapping process of land tenures should be done from the smallest economic unit that is from each household in the village (Meilantina 2006). Furthermore, land tenure map of households in the village or village map was adjusted (overlay) to the neighbouring village map to compose sub-district map. The same process for other sub-districts would bring the land tenure map of the community, and then later became district map.

P-mapping, as opposed to government mapping projects, gives importance to the participation of the community. The community defines their own issues and goals and they are the ones who direct the process of mapping within their land. They control the utilisation of maps, determine the present land-use plan and direct the future of their lands. Other entities such as non-government organisations and the government may give assistance but it is still the community who should take the major role (Abeto, Calilung et al. 2004).

P-mapping is not really a new experience within the customary communities in Dayak territories. In mid 1990s the first exercise of p-mapping took place in West Kalimantan in order to protect Dayak lands from land-grabbing industrial activities. An indigenous non-government organisation (NGO) of the Dayak that is firstly based in Pontianak, West Kalimantan, Pancur Kasih, is the center of this effort. Dayak peoples in West Kalimantan even see this organisation as "a symbol of Dayak cultural reappearance and economic emancipation". Pancur Kasih was founded in 1981 by a group of formally educated Dayak with the aim of improving the lives of Dayak people "in the middle of a strong flow of individualism and consumerism". Pancur Kasih's main principles were education, self-reliance and solidarity (Purnomo, Natalia et al. 2005).

The main objective of p-mapping in the Dayak's areas is to delineate and document the native customary land boundary and thus helping preserving their traditional knowledge to their customary lands. Clarity of the boundary is needed as a basis for rural development planning and cooperation or negotiation with other parties. But in the process, these activities potentially also trigger conflicts between villages and/or the intruders. Therefore, the second objective is to apply this p-map as a tool for negotiation and resolving those disputes themselves. Then, the third objective is to apply it as a tool for community-based resource management. Up to now, the community have used their village map to plan for their community socio-economic projects and utilisation of the land and resources (Bujang 2004).

P-mapping held by Pancur Kasih as the assistance of the Dayak communities follows a process explained below (Pancur Kasih 2009):

1. Introduce the idea of community mapping; explaining the process, problems and threats and the purpose of the p-mapping to the entire community in a meeting.
2. Communicate mental maps; learning process by delineating their mental map based on different age to show their understanding towards their lands, it also bridges the gender gap.
3. Discuss the idea with neighbours; an important phase needs to be carried out with care, goodwill and openness, in order to avoid conflict over boundaries in the future.
4. Map the lands; everyone (old and young, male and female) is involved. The facilitators introduce and explain all the different tools that will be used in the community mapping process. Using technical tools such as the compass and GPS (Global Positioning System), they revisit their mental maps physically.
5. Develop the maps accurately; finalising the map in a workshop unit.
6. Clarify the results; when the maps are completed, they are taken back to the community to be presented and checked the accuracy of the map.
7. Sign the maps; when the maps have finally been completed, a meeting is held to sign them and deliver them into the hands of the community.
8. Use the maps to resist encroachment; after the process of p-mapping is completed, the community is better prepared to deal with outside forces encroaching on their lands, they know exactly where their boundaries should be.
9. Use the maps to plan ecological and economic improvements; using the maps, the community can readily identify which areas can still be improved to produce more resource, and which areas need more active protection, conservation, or rehabilitation.

Related to the people to land relationship in STDM, p-mapping can be used since the STDM makes it possible to put rights into a system which are not registered rights, nor registerable, and are claims, and/or need to be adjudicated both in terms of the 'who', the 'where' and the 'what type'. As mentioned before, the focus of STDM is on recorded rights (or social tenure relationships) and not on registered rights; this means customary lands which are still placed in the informal system and not on real rights can be recorded its people to land relationships (Lemmen, Augustinus et al. 2007). Therefore, p-mapping is a suitable tool to complete cadastral information as well as to improve adat rights in the formal system's perspective.

5.5. Enabling and Disabling Factors from the Implementation of P-mapping

5.5.1. Enabling Factors

In order to recognise customary tenure into national statutory laws in Indonesia, p-mapping using GIS approach can be proposed as a solution tool. Using p-mapping, it is expected that local knowledge can be elicited, captured and translated into geo-referenced mapable outputs. Also, it is expected formal scientific system can trust to this local spatial knowledge, especially to provide tenure security for the customary communities. Traditionally the land tenure system in customary community is strongly related to its social community structure, even though it is practiced vary among each others across Indonesian territory, but it has similarity in communal and democratic spirit. These can be one of enabling factors to implement p-mapping. Detailed enabling factors to implement this approach can be described below:

a. Availability of technologies

    (McCall 2004) stated that projects of GIS and remote sensing have mainly been technology-driven from 'outside' as 'hardware & software solutions looking for a problem' rather then 'demand-driven'. However these geo-information technologies are so helpful in order to capture local spatial knowledge into more scientific systems. The presence of aerial photos, satellite imagery, GPS, mobile GIS etc. can be an answer for this demand. Related to the existence of customary lands which mostly are in the forest areas, the presence of geo-information, especially satellite imagery and GPS can helpful to record their information. Therefore, these can be the most enabling factor to implement p-mapping using GIS.

b. Visualisation tools

    (McCall 2004) raised issues of presentation and visualisation, and interpretation of outputs in the utilisation of GIS in p-mapping. Can the hardware and software of GIS used in p-mapping reflect the real spatial interpretations and interests of local communities; or conversely, do the colourful products of p-mapping using GIS create biased interpretations and a false confidence. It is difficult to overestimate the visual impact of GIS output, maps, or RS images. However these methods benefit all the stakeholders in policy making process to achieve more accurate and grounded information as inputs. As since most of the customary communities' member are illiterate or have just basic level education, these presentation and visualisation tools can effectively deliver the message of the p-mapping purpose.

c. Democratic environment

    Customary community takes into their consideration about natural resources supports and eternality to utilise their land. This traditional system of land management has a communal and democratic spirit among the members of community. They have a local policy to solve any problem occurred and they take into consideration not only economic values but also social and religious values of their lands. This condition creates democratic environment to support the implementation of participatory from inside of the community.

    From the outside perspective, implementation of p-mapping has an enabling factor since the political reform in 1998. After the fall of new order regime under president Soeharto, decentralisation issues abound to empower local authorities. Even though the implementation of this issue still low, but it, however, gives opportunities to apply bottom-up policy making process mirroring democratic spirit in Indonesian government. It can be an enabling factor also to empower local / indigenous people using participatory approaches.

d. Capacity of human resources

The very first challenge to implement participatory approach using GIS is disbelief from some experts whether indigenous people can operate its new technology or not. Some pessimistic parties have doubt on the ability of local people to absorb new technologies. Nevertheless, (Dunn 2007) mentioned that innovative approaches for these new ICT technologies do not necessarily demand a highly IT-literate user-base. Furthermore, some success projects of PGIS approaches show that local communities can learn without much difficulty to use mobile GIS to make inventories of their natural resources (Verplanke 2004). It can be shown on Fig. 5.2 that shows a Dayak one can operate mobile GPS to delineate their village border in order to determine the enclave area from one large scale plantation company. (Verplanke 2004) also stated that the technological developments indicate that portable computers in the near future could enable people with limited formal education to record and quantify the indigenous knowledge of their natural resources. So, the capacity of human resources of the indigenous people, plus adequate assistance from experts, should be an enabling factor to implement p-mapping using GIS and empower the indigenous people to achieve their tenure security.

Figure 5.2 Utilisation of mobile GPS by indigenous people

e. Skilled facilitator

The presence of an indigenous people's NGO such as Pancur Kasih can support with technical assistance and training in response to the implementation of p-mapping. Mapping units from the Pancur Kasih can be facilitators for the mapping execution to document the Dayak land and natural resource use based on indigenous knowledge and wisdom (Pancur Kasih 2009).

f. Past experiences

One thing that always be promoted by the government, both Provincial and District, is how to invite in investors to invest and develop a particular area in Indonesian territory. Generally those investors are mostly engaged in the exploitation of natural resources, such as large-scale plantation companies, contract mining, permit and other exploitation of timber. Those investments, indeed, bring an opportunity of employment for the indigenous community, but actually can not response their day-to-day needs. Income from working in the plantations or mining is much smaller than if they manage their own land independently. These investment approaches are in fact become the main cause of poverty, especially indigenous people (Basrin 2008).

Customary communities thought that they can hold sovereignty onto a particular land based on the customary law and what is in the reality that they have been living in this area for ages (perceived tenure security). But in the other hand, the state persist that base of rights for property rights has to come from national statutory laws (de jure tenure security). Consequently, this policy leads land disputes between indigenous people and the state and needs a lot of resources to solve it. So, learning from these past experiences, it is the right time to apply participatory approaches rather than top-down policy which can get resistance from the people.

5.5.2. Disabling Factors

However, in the implementation of p-mapping, there are several problems that may occur and can be categorised in 3 problems, technical, social and problems during development stages (McConchie and McKinnon 2002). These problems can be categorised as below:

-   First, technical problems: the availability of supporting maps, such as topographic and land use maps were made available to the rural areas where customary communities are living usually at a scale of 1:25,000 or even lower.
-   Second, social problems: so many people do not trust that villagers with little or no formal education could not recognise their environment on plan views. Nevertheless, they could locate themselves and subsequently their various resources accurately.
-   Third, problems during development stages: difficulties to achieve community's consensus and community's acceptance for the project's results. To achieve the consensus, then corrections, adjustments, and clarifications should be made on-screen until the entire village are happy with the information. Hence having resource maps in digital and visual form were a compulsory requirement.

Beside of those, there is still a big obstacle to recognise customary lands into the national statutory laws through the implementation of p-mapping. The existing legal framework in Indonesia is the most disabling factor for implementing p-mapping especially as a resource to collect cadastral information which is used in the formal land administration system. Based on the post-tsunami experiences of p-mapping project, the result of community based mapping can not be used as the basis to register or record their lands. Furthermore, using the Basic Forestry Law and Mining Law, the rights of customary community to participate in spatial planning making are weakened as long as their lands are claimed to the state lands. Therefore, Indonesian land administration system is still need a legal umbrella that accommodates those problems, especially using participatory as its approaches.

5.6.   Summary

Participatory approaches can be used in acknowledging indigenous people to land relationships through the process of cadastral information collection. Then a sustainable spatial planning can be achieved as long as government acknowledges these customary tenure arrangements within the society. Complete cadastral information which acknowledges customary lands can lay a solid foundation for the comprehensive spatial planning and long-term economic development. A number of efforts to recognise the rights of indigenous and local communities to their traditional territories, resources, customary laws and self-determination have been done. As an example, the International Labour Organisation (ILO) Convention 169 recognises the rights of indigenous and tribal peoples to

their natural resources and territories and calls on governments to protect their social, economic and cultural rights, customs and institutions; to respect their customary laws and ensure their participation in decisions that affect them.

An important issue in participatory approaches is a local knowledge. Local knowledge is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Local knowledge can provide important information for scientists, and collaboration between scientists and customary communities can also extend the local knowledge base upon which many land management decisions are made.

In the process of land management decision making, one method that can be used to support the completeness of data is p-mapping. P-mapping is a process that involves the participation of the community in each and every step (Abeto, Calilung et al. 2004). P-mapping can be used since the STDM makes it possible to put rights into a system which are not registered rights, nor registerable, and are claims, and/or need to be adjudicated both in terms of the 'who', the 'where' and the 'what type'. As mentioned before, the focus of STDM is on recorded rights (or social tenure relationships) and not on registered rights; this means customary lands which are still placed under the informal system and not on real rights can be recorded its people to land relationships (Lemmen, Augustinus et al. 2007).

The main objective of p-mapping is to delineate and document the native customary land boundary and thus helping preserving their traditional knowledge to their customary lands. Clarity of the boundary is needed as a basis for rural development planning and cooperation or negotiation with other parties. However, the physical presence of a map can be neither as an evidence of their existences or as conflict sources among customary communities. A consensus building, both inside the community and among customary communities, is important in order to establish p-mapping. The community defines their own issues and goals and they are the ones who direct the process of mapping within their land. They control the utilisation of maps, determine the present land-use plan and direct the future of their lands.

There are some identified enabling factors to implement participatory approach, such as: the availability of technologies, visualisation tools, democratic environment, capacity of human resources, skilled facilitator, past experiences. Also, there are several problems that may occur. It can be categorised in 3 problems, technical, social and problems. But, the existing legal framework in Indonesia is the most disabling factor for implementing p-mapping especially as a solution tool to recognise customary laws into the formal legal laws. Therefore, Indonesian land administration system is still need a legal umbrella for the application of land recordation, especially using participatory as its approaches.

6.   Findings and Discussions

This chapter summarises the analysed results based on the objectives and research questions. A discussion on land administration concepts or theories which support the results is given to develop the same perspective in term of this thesis purposes. The study intended to investigate the correlation between the recognition of customary land tenure system and the indigenous people's poverty. Section 6.1 describes the correlation between customary tenures and the indigenous people's poverty including discussions on the impact of individualisation method for formalisation of customary lands and the impact of having customary tenures within the formal land administration systems. Section 6.2 describes the initial assessment when Indonesian land administration system implements the Social Tenure Domain Model. Section 6.3 describes the impact of the implementation for participatory approaches in land policy making. Then this chapter is ended with section 6.4 by presenting the limitations of the research findings.

6.1.   Correlation between Customary Tenures and the Indigenous People's Poverty

Land and natural resource use and its management issues, governance issues, and inadequate land administration infrastructures capacities to acknowledge customary tenure arrangements have been back-grounding similar problems in term of indigenous people issues within two very different counties, one is well developed country and the other is still-on-going developing country. Empirical data had been gathered through working experiences and fieldwork phase and also supported by secondary data in the two case studies enabled characteristics and description of two different nations with two different development levels to share similarities of the importance of customary tenures for the indigenous people.

For the Dayak community, all the mentioned customary communities showed characteristics of utilising their properties to balance their livelihood requirements for food and other basic needs' satisfying security. In the other case study, the Sami expected their customary tenure security in the name of cultural identity preservation. The findings in this thesis are not radical conclusions but have a broader sense of an alternative land administration as solution tools in term of alleviating the indigenous people's poverty. It seems that in developing countries such as Indonesia, recognition of customary tenures has a strong correlation with the programme of poverty alleviation and sustainable development. However, in well-developed countries such as Finland, where the indigenous people have already enjoyed the benefits of the development also like other nationals, the importance of customary tenure recognition is shifted for self-actualisation purposes and cultural preservation.

These findings are in line with the Theory of hierarchy of needs introduced by Psychologist Abraham Maslow. The hierarchy suggests that people are motivated to fulfil basic needs before moving on to other needs (Wagner 2009). Poverty alleviation is associated with satisfying the fundamental or 'basic needs' of individuals at some minimum level, people do not seek the satisfaction of a need at one level until the previous 'level of need' is met (Pachauri, Mueller et al. 2004). As in the case study of Dayak,

poverty means 'access to have job or livelihood' (18%), 'safety in social relationship' (17%), 'access to education' (16%), 'food security' (12%), 'health security' (10%), 'access to housing' (9%) (HPM Ltd. 2008). It showed that poverty for the Dayak has strong correlation with the satisfaction of basic needs plus safety social relationships with others. Since the Dayak people access and utilise their land and other natural resources to secure their subsistence, therefore the urgent needs to recognise their rights should be done in term of communal resource management, access to land and resource, and food security (Dalrymple 2005).

However, the mentioned above correlation does not firmly exist in a well-developed country such as Finland where the poverty level is very low. The role of land administration here is shifted not only provide tenure security with economic offered-benefits only, but also have sociological, environmental and anthropological aspects in understanding people to land relationships. Although the Sami depend to their lands and other natural resources to secure their subsistence as well, but the government plays a big role, especially in providing well social security, hence background behind the needs to recognise the Sami's customary tenures can not be related directly to economic reasons only. The Sami already received social security and other citizenships' rights same with other Finnish which place them not below poverty line anymore. This finding is in accordance with the Maslow's theory of hierarchy of needs that placed them in the self-actualisation needs and cultural preservation, including as their background to defend their customary rights to be acknowledged into formal systems.

6.1.1. The Impact of Bringing Customary Lands into Individual Statutory Rights

Government has responsibility to stimulate the national economy, but in the other hand, caused by a need to improve the national incomes, it has a potential to wipe out the indigenous people economy and its traditional rights. As examples, the logging of the state forests has ignored the Sami herding economy and traditional rights, and claiming of the Dayak lands using Basic Forestry Law exacerbated the condition of the indigenous people existences. Activities such as land titling without recognising the characteristics of the local tenure arrangements provides no necessarily benefits, such as credit access, to the new title holder, indeed endangers the existences of indigenous people when they can not afford to payback the credit.

Not all societies have capacities to respond formal land administration system. As an example, land registrations of private titling which can not fully be implemented inside customary communities. For the members of customary community, tenure security means not just ownership of resources only but also has to consider access to and utilisation of natural resources. Since most of these indigenous people live in agricultural-based sectors and depend from the product of their land and other natural resources, tenure security can be a means for sustainable development and poverty alleviation for them. However, the position of the indigenous people has sometimes been weakened by the presence of formal system. Therefore alternative land administration tools are needed and play an important role in supporting the poor livelihoods, especially through improving access to and utilisation of natural resources.

The mentioned above finding is confirmed with the fieldwork observation results. All land parcels in Finland territory have been registered through legal formal land registration systems (www.eulis.eu/countries/profile/finland/ 2009). The Sami people have also the socio-economic benefits from this land registration results, including use their properties that already been registered as

collateral to access credit to improve their incomes. However, the Sami purpose was not to integrate, but merely to secure the basis of their subsistence while maintaining their way of life, based on many sources of income. As a consequent, they keep to defend their customary rights to be acknowledged into the Finish formal system.

Learning from the Sami experiences, it shows that people to land relationships are influenced by numerous social, economic, environmental and anthropological factors. These factors and their influence on the relationship and also issues at both the macro and micro scale should be addressed appropriately using land administration and associated service solutions. Then, different strategies for recognising and delivering tenure security to the indigenous people must reflect the problems they face: vulnerability, de facto dissimilarity, third party access rights, loss of traditional practices and tenure, historic and sacred values, product and labour market and somewhat low economically land value of the indigenous people's lands.

6.1.2. The Advantageous and Disadvantageous of Having Customary Land Tenure in the Formal Statutory Law

As mentioned before, land registrations of private titling may not fully be implemented inside customary communities. In well-developed countries where the private titling has succeeded, the implicit assumptions are largely met; landholders' rights are secure, credit is readily available based on the land title as collateral, and the land market is active and effective. However, often the existing legal and administrative systems are not suitable for recording the appropriate rights, especially dealing with customary lands. Therefore, efforts to formalise land should be based on traditional norms. (AusAID 2000). Specifically, the poor need land administration systems that response to a range of formal, informal and customary tenures, overlapping and overriding tenures, and individual and group people to land relationships.

In agricultural countries, access to land constitutes a major input to increased production. Access of the poor to productive assets such as land means improving of household welfare (Birungi 2007). By facilitating access to these assets, the poor can have improvement in their productivity through having credit. As one means to improve the productivity of the poor as well to reduce poverty itself, is by securing their access rights to land (AusAID 2000). Yet, legalisation of customary systems is not easy or even desirable in some countries. In some countries practices, the legislation does not provide a specific mechanism for dealing with the communal structure of family land but will address the situation using the same individualisation procedure. As the results, the mechanisms of land title registration in trusts-for-sale and 'heirs of the deceased' were used for expediency and not necessarily as a means of preserving the communal tenure institution (Charles and Opadeyi 2009). Therefore, the recognition process of the existence of customary lands advocates that policies held to protect the poor require looking beyond the communitarian discussion (Chimhowu and Woodhouse 2008).

One of the advantageous of having customary land title is access to better/more credit in the formal sector, because:
- the bank/formal sector is willing to lend (particularly to small rural landholders)
- there is more money available for lending to the increased numbers who have titles
- the land has value, that it can be foreclosed on, that there are other 'willing' buyers
- the title does give security to the indigenous people as the title holder.

For agricultural-based landholders, more/better credit allows the owners to purchase more farm inputs which raises productivity and household income. As a consequent, this enables the land holder to practice sustainable land use in the interests of long term productivity (AusAID 2000).

However, this is not simple as it involves two very different systems of law; customary law rules are facilitation focused and flexible, where as national statutory law is based on rules and legal precedent. Incorporation of custom into statutes may rob them of their flexibility (Mohamed-Katerere 2004). By recording customary right as it is helps to preserve the characteristic of customary land, but it has difficulty from the complexity of the system. The Indonesian government should consider not economic and technical aspects only, but also from the aspects of policy, social and environment to recognising customary tenures. To overcome that problem, Sucaya (2009) stated that decentralisation of Land Administration System might be suitable to cope with this complexity (Sucaya 2009). Besides of that, it should be issued an umbrella regulation since the most challenges to recognise customary tenures when the Indonesian government want to implement this policy are the existing land administration regulations.

6.2.   Initial Assessment in Introducing the STDM for Modelling Customary Lands into Indonesian Land Administration System

Sucaya stated that LADM that models people to land relationships using indirect association between the Person class and the RegisterObject class, by RRR (Right, Restriction, and Responsibility) class, also supports for the process of customary right recognition. However, the challenge to recognise customary law goes beyond the technical part. The main problem is whether customary right will be converted to statutory right or just recorded as it is. At a moment, formal terminology used in LADM may not always be applicable because of the existence of informal environment. As long as the BPN, as the Indonesian government body which has responsibility to implement land administration systems, has not registered yet customary lands, all of these customary lands will be staying at the informal regime. And the implementation of LADM to provide a complete land administration model within Indonesian territory can not be completed.

An alternative strategy for recognising and delivering tenure security to the indigenous people is needed. The Social Tenure Domain Model (STDM) as an initiative of UN-HABITAT to support pro-poor land administration is designed purposely for developing countries, countries with very little cadastral coverage, post conflict areas, areas with large scale informal settlements, or large scale customary areas to build a core model of the relation between Objects - Subjects - Social Tenure.

The same challenge in modelling people to land relationships for providing sustainable development policy and combating poverty in Indonesia as in LADM is to obtain complete cadastral data through all over Indonesian territory. The total number of registered lands in Indonesia is still about 30 percent. There are many reasons for this, one of those is the fact that customary tenure has a very strong influence Therefore, BPN needs more than land registration systems to overcome the lack of cadastral data and land recording seems to be able to overcome this.

Land recording seems to be able to overcome the lack of cadastral data. Since STDM deals with decentralised and distributed environment, possible to manage spatial data with different accuracies and from different sources, even possible to manage data that have accurate, less accurate or fuzzy

boundaries, STDM can be used to accelerate the process of cadastral data collection by utilising satellite imagery technology. Implementation of satellite imagery technology is aimed to avoid land grabbing by improper parties caused by too-long-times needed for data collection. Further, in order to collect a comprehensive cadastral data, the empowerment of Indonesian citizens, including indigenous people, can be supported by the development of STDM through participatory approaches.

Using the case study of the Dayak, STDM can be used to model the Dayak's customary lands which are still being in informal status and even conflicts with the outsiders. Therefore, the Dayak needs tenure security to improve their livelihoods as well as aid poverty reduction. Their communal resource management and their access to land and other natural resources can be modelled using the STDM in the SocialTenureRelation class. However, the most important to think for this scenario is that the government should issue an umbrella regulation so thereby the product of land recording can be applicable also like the products of land registration to receive socio-economic advantages from it.

To support these findings of the introduction of STDM, a SWOT analysis is presented. All strengths, weaknesses, opportunities and threats faced by BPN when the Indonesian government implements STDM are analysed to provide strategies needed to overcome the challenges. Table 6.1 shows the analysis matrix of estimated strengths, weaknesses, opportunities and threats faced by BPN when the Indonesian government implements STDM.

Strengths	1. Capacity of human resources in BPN.
	2. Standardised environment from the implementation of LADM before.
Weaknesses	1. The existing land administration regulations.
	2. Resistance for changing/power sharing.
Opportunities	1. The existence of the informal system, including adat laws.
	2. GI technology enables to support land recording process.
	3. Decentralisation environment.
	4. Empowerment of citizens through participatory approaches.
Threats	The lack of public awareness for the new STDM and land recording concepts.

Table 6.1 SWOT matrix of STDM implementation

Internal Factors / External Factors	STRENGTHS	WEAKNESSES (W)
	1. Capacity of human resources in BPN 2. Standardised environment from the implementation of LADM before	1. The existing land administration regulations 2. Resistance for changing/power sharing
OPPORTUNITIES (O)	**SO Strategies:**	**WO Strategies:**
1. The existence of the informal system, including adat laws 2. GI technology enables to support land recording process 3. Decentralisation environment 4. Empowerment of citizens through participatory approaches	S1&O1 The existence of informal system can be treated as opportunities by introducing of land recording as what it is through social tenure relationships. S1&O2 The extent use of GI technology, such as satellite image and GPS to accelerate land recording process. S1&O3 - The empowerment of bottom-up policy making. - Equitable distribution of experts within district land offices S1&O4 Provision of skilled technical assistance in the community S2&O1 Adoption of the standard in implementing land recording. S2&O2 Provision of satellite image as base maps throughout Indonesian territory. S2&O3 Adoption of the standard to all district land offices in performing land recording. S2&O4 The extent use of p-mapping to complete cadastral information.	W1&O1 - Provision of grand regulation as a legal umbrella of land administration system. - Revision of the implementation regulations to acknowledge adat laws W1&O2 Revision of the implementation regulations that possible to manage spatial data with different accuracies and from different sources, even possible to manage data that have accurate, less accurate or fuzzy boundaries. W1&O3 Decentralisation of land policies and improving information sharing between departments. W1&O4 Promoting participatory approaches in land policy making and adopted it into the land administration regulations. W2&O1 Holding some studies, workshops and discussions to introduce the benefits of the new land recording system. W2&O2 Holding some studies, workshops and discussions to promote the extent use of GI technology. W2&O3 Reengineering the existing organisation's management and promulgating the new structure's legal umbrella. W2&O4 Holding some studies, workshops and discussions to promote the benefits of participatory approaches and bottom-up policy making.

THREATS (T)	ST Strategies:	WT Strategies:
1. The lack of public awareness for the new STDM and land recording concepts	S1&T1 Using skilled personnel to educate the society about the existence and the benefit of land recording and having social tenure relationship in modelling people to land relationships. S1&T2 Building public trust to the organisation in order to gain better understanding about the importance of land recording	W1&T1 - Make information available for public inspection to ensure system transparency and increase public awareness. - Improving land information services based on customer's requirements to build a public trust W1&T2 Convincing all related stake holders to re-organise the existing organisation into an effective structure to overcome a bureaucratic and time consuming service process

Table 6.2 SWOT strategy analysis matrix of STDM implementation

6.3. Initial Assessment in Introducing Participatory Approaches in Land Administration System's Policy and Decision Making Processes

Participatory approaches can be used in acknowledging indigenous people to land relationships through the process of cadastral information collection. Then a sustainable spatial planning can be achieved as long as government acknowledges these customary tenure arrangements within the society. Complete cadastral information which acknowledges customary lands can lay a solid foundation for the comprehensive spatial planning and long-term economic development. An important issue in participatory approaches is a local knowledge. Local knowledge is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Local knowledge can provide important information for scientists, and collaboration between scientists and customary communities can also extend the local knowledge base upon which many land management decisions are made.

In the process of land management decision making, one method of participatory approaches that can be used to support the completeness of data is p-mapping. P-mapping is a process that involves the participation of the community in each and every step (Abeto, Calilung et al. 2004). Implementation of p-mapping is in line with the mentioned before solution tool in land administration system, the STDM. P-mapping can be used since the STDM makes it possible to put rights into a system which are not registered rights, nor registerable, and are claims, and/or need to be adjudicated both in terms of the 'who', the 'where' and the 'what type'. The focus of STDM is on recorded rights (or social tenure relationships) and not on registered rights; this means customary lands which are still placed in the informal system and not on real rights can be recorded its people to land relationships (Lemmen, Augustinus et al. 2007).

There are some identified enabling factors to implement participatory approach, such as: the availability of technologies, visualisation tools, democratic environment, capacity of human resources, skilled facilitator, past experiences. Also, there are several problems that may occur. It can be categorised in 3 problems, technical, social and problems. But, the existing legal framework in Indonesia is the most disabling factor for implementing p-mapping especially as a solution tool to recognise customary laws into the formal legal laws. Therefore, Indonesian land administration system is still need a legal umbrella for the application of land recordation, especially using participatory as its approaches.

Since participatory approaches are proposed in line with the STDM in this thesis, therefore to support these analysis and findings, a SWOT analysis is presented for the proposed participatory approaches that are integrated with the SWOT analysis for the STDM mentioned above in table 6.1.

6.4. Limitation of Research Findings

This thesis is aimed to study the correlation between the recognition of customary land tenure system and the indigenous people's poverty. However the findings in this thesis are not radical conclusions but have a broader sense of an alternative land administration as solution tools in term of alleviating the indigenous people's poverty. Some limitations during fieldwork phase, analysis until findings

interpretation have been found. All these are also presented to give objectivity on this research and can be used as a caution input for further researches. The limitation on the research findings can be described below:

1. Limited number of respondents.

   During fieldwork phase of this research, primary data were collected. However, the number of respondents was limited. It might be caused by the number of the Sami as minority is small itself, about 9000 of 5million. Besides of that, the process of mixing and adaptation between the Sami and other nationals creates them difficult to identify. In the Dayak case study, this limitation also happens since the author did not have an access to go to the field and the connection of the communication technologies also very limited there. All these caused dependence on secondary data.

2. Limited related English-text literatures.

   Socio-economic reports are very high demanded for studying the correlation between customary tenures and indigenous people's poverty. To support these literatures are needed academic papers and books, and an analysis were performed using qualitative data method. However, for the Sami case study, the availability of English-text literatures is limited. On the other hand, for the Dayak case study, literatures' language is not a barrier anymore. To overcome these limitations, some recommendation would be given in the section of recommendation for further researches in the next chapter.

7.   Conclusions and Recommendations

The following chapter summarises the thesis conclusions based on the objectives and research questions mentioned before. This thesis is aimed to study the correlation between customary tenures and indigenous people's poverty, and it has been accomplished through case studies analysis in the Dayak community and the Sami people. Revisiting each sub-objective and research questions is presented to draw conclusions in section 7.1. Section 7.2 is the overall conclusions based on the general objectives and research questions of this thesis. Then some recommendations are given in section 7.3 including recommendation applicable for further researches, for policy makers and land administration project designers in term of management the issue of indigenous people's poverty.

7.1.   Conclusions

The conclusions are discussed sequentially as per research sub-objectives and research questions.

7.1.1.   Sub-objective 1: To Asses the Impact of Bringing Customary Lands into Individual Statutory Rights

Some countries have indigenous tribes such as Finland with the Sami people that have also the socio-economic benefits from land registration results, including to use their properties that already been registered as collateral to access credit to improve their incomes. However, not all societies have capacities to respond formal land administration system. As a case example, the Sami keep to defend their customary rights to be acknowledged into the Finish formal system. Therefore, different strategies for recognising and delivering tenure security to the indigenous people are needed and must reflect the problems that indigenous people face, such as: vulnerability, de facto dissimilarity, third party access rights, loss of traditional practices and tenure, historic and sacred values, product and labour market and somewhat low economically land value of the indigenous people's lands.

Q1.   Does the existence of customary lands be recognised by the formal statutory law?
In both case studies, the existences of customary lands have not been recognised by the formal statutory laws. The Sami still keep in defending their customary rights to be acknowledged in the name of self-actualisation purposes and cultural preservation while the Dayak are expecting their customary laws are recognised to secure their access to their lands to balance their livelihood requirements for food and other basic needs' satisfying security.

Q2.   If it is recognised by the formal systems, customary lands are registered in what type of rights (communal or individual rights)?
In both case studies, customary tenures have not been acknowledged yet into formal system as traditional rights themselves. Indeed, up to now, the existing land administration system has a potential to wipe out the indigenous people economy and its traditional rights. As showed in the findings, the logging of the state forests has ignored the Sami herding economy and traditional rights, and claiming of the Dayak lands using Basic Forestry Law exacerbated the condition of

the indigenous people existences. Activities such as land titling are performed to bring customary lands into individual statutory right type. This has a potential to lose characteristics of the local tenure arrangements, disadvantageous such as credit access, indeed endangers the existences of indigenous people when they can not afford to payback the credit.

Q3. When customary lands are brought into individual statutory rights, does the customary community still live in poverty?

Based on what described before, there are many causes related to the indigenous poverty. Within the Sami communities, although government does not registered the Sami traditional lands as themselves, but there is no poverty. Further, the Sami people have also the socio-economic benefits from this land registration results, but they keep defending their customary rights to be acknowledged into the Finish formal system.

On the contrary, in the Dayak case study, it can be seen that formal land administration system has not recognised yet customary lands, customary village or tribe can not own lands, significant number of populations still live in poverty, individual statutory right system creates inequity among parties who have formal evidences and the disadvantaged local people, and then efforts on empowerment and improvement of the local people's life have risen within all related stakeholders.

Therefore, it can be concluded that when customary lands are brought into individual statutory rights, it does not mean automatically makes the customary people live in poverty. Nevertheless, to combating poverty, government should consider the management of customary right issue.

7.1.2. Sub-objective 2: To Asses the Advantageous and Disadvantageous of Having Customary Land Tenure in the Formal Statutory Law

Huge diversity of indigenous peoples, their self-governance, and locally autonomous systems of land administration prevent generalist approaches to land tenure characteristics. Further, they create difficulties from the complexity of the system when formal system wants to register it as it is. However, in order to achieve the sustainable development and poverty alleviation purposes, government has to consider all the localities circumstances and also decentralisation environment.

Q4. What advantageous can be achieved in term of economic growth from the registration of customary lands?

In agricultural countries, access to land constitutes a major input to increased production. By having customary land title, they can access to better/more credit in the formal sector. More/better credit allows the owners to purchase more farm inputs which raise productivity and household income. Even though this is not simple as it involves two very different systems of law; nevertheless there are still many reasons to take customary rights as consideration in policy making such as:
- empowerment and improvement of the indigenous people's life quality,
- pursuing sustainable development purposes,
- combating the poverty, as in developing countries where customary communities live and depend from agricultural based livelihoods, and
- preserving the natural characteristics and/or cultural identity in more developed countries such as Finland.

Q5. What are land-related factors taking role in customary community poverty and its characteristic changes?

Efforts in overcoming poverty, especially for indigenous people, have become important issues within the land policy maker. In agricultural countries where most the indigenous population live, access to land constitutes a major input to increased production. Access of the poor to productive assets such as land means improving of household welfare. Therefore, urgent needs to recognise their rights should be done in term of communal resource management, access to land and resource, and food security. Besides of that, the role of land administration has to be shifted not only provide tenure security with economic offered-benefits only, but also have sociological, environmental and anthropological aspects in understanding people to land relationships.

7.1.3. Sub-objective 3: To Introduce the Social Tenure Domain Model in Modelling Customary Lands into Indonesian Land Administration System

The Social Tenure Domain Model (STDM) is a pro-poor land administration initiative and designed purposely for developing countries, countries with very little cadastral coverage, post conflict areas, areas with large scale informal settlements, or large scale customary areas. The STDM seems suitable to be introduced into Indonesian land administration system to recognise the existence of customary lands.

Q6. What STDM concepts are possible to be implemented in Indonesian land administration system?

STDM can be used to model customary lands which stay in informal status, even in conflicts with the outsiders. Their communal resource management and their access to land and other natural resources can be modelled using the STDM in the SocialTenureRelation class. STDM has potential advantageous in managing informal status of customary lands as well as empowering the customary communities.

Q7. What are the challenges to implement STDM in Indonesia?

The challenge to recognise customary law as well as to implement STDM in Indonesia goes beyond the technical part. First challenge is the existing land administration regulations. Second is resistance for changing/power sharing from top-down to bottom-up policy making, from centralised to decentralised environment, etc. Third is the lack of public awareness for the new STDM and land recording concepts.

7.1.4. Sub-objective 4: To Introduce Participatory Approaches in Policy and Decision Making Processes, especially Related to Land Administration System

Participatory approaches can be used in recognising indigenous people to land relationships. An important issue that should be considered in participatory approaches is a local knowledge that can provide important information for scientists. Collaboration between scientists and customary communities can also extend the local knowledge base upon which many land management decisions are made. Besides of that, this method has potential advantageous in improving good governance in

land policy making, especially through improving of transparency, bottom-up approach, public-trust, etc.

Q8. What participatory methods are possible to be implemented in the policy and decision making processes, especially related to Indonesian land administration system?

One participatory approach with procedures known and acceptable to local communities and in accordance with traditional decision-making is participatory mapping using a method called 'ethnocartography". P-mapping is applied to develop community awareness of local situations, and to strengthening community institutions as an element in promoting people's empowerment and also to obtaining a complete data about themselves through territory's boundary mapping of the customary communities and all-related land marks to show the customary community existences.

Q9. What are enabling and disabling factors to implement participatory approaches into Indonesian land administration system?

There are some identified enabling factors to implement participatory approach, such as: the availability of technologies, visualisation tools, democratic environment, capacity of human resources, skilled facilitator, past experiences. Also, there are several problems that may occur in implementing p-mapping. It can be categorised in 3 problems, technical, social and problems. But, the existing legal framework in Indonesia is the most disabling factor for applying this initiative.

7.2. Overall Conclusions of the Research

The findings of this research showed that there is a correlation between customary tenures and indigenous people's poverty when they live in developing country with agricultural-based as their livelihoods, or no when they live in well developed country with very low of even zero percent of poverty level. However, to provide land administration as a means of land policy for sustainable development and pro-poor land management system, the government has to acknowledge the existence of customary tenures.

Appropriately designed and locally adjusted land management systems combined with tenure security tools are needed for the indigenous people poor. These informal and customary arrangements do not fit precisely into private titling strategies only. It requires alternative solution tools, more flexible than a private title, and more comprehensive land management system designs to support a wider and more complex range of tenures. To realize these alternative solution tools, Indonesian land administration system can implement the STDM in modelling people to land relationship, and supported by participatory approaches in strengthening customary rights. But these alternative solution tools must be supported by the government issuing a legal umbrella that guarantees the application and impact of this alternative land administration instrument.

7.3. Recommendations

The study was conducted and found that there can be a correlation between customary tenures and indigenous people's poverty as in developing country, or not as in well-developed country. It is

recommended to developing countries that have indigenous population and agricultural sectors as their livelihoods, such as Indonesia, for recognising customary rights in order to pursue the national sustainable development and poverty alleviation programme. The study has also provided an initial assessment when Indonesian government implements the STDM concept and participatory approaches to acknowledge the existence of customary communities as well as to improve their rights within the formal land administration system.

There is a need for further research to study how to build a standard conceptual and physical model within very diverse customary tenure arrangements. User requirement surveys among customary community members, BPN (or any other related government bodies, such as Ministry of Home Affairs, Forestry, Mining, etc.) and NGO are needed to gain a comprehensive data about customary tenure arrangements considering Indonesia consists of more than 200 ethnics with different traditional practices. To overcome the limitation of related English-text literatures, it is recommended to hold cooperation researches about indigenous people with local universities.

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