# A Comparative Study on Land Use and Land Tenure Change in Myanmar:

## Three Regions where Land Tenure is of Critical Concern

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## Disclaimer

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# Executive Summary

The traditional and historic land-based economy in Myanmar is vital to the livelihood of the poorest segments of its society, the rural community. This economy is expected to hold strong even in the new era of democratic reform and political transition. Land tenure is an important part of the institutional structures that determine who can use which resources for how long, and under what conditions.

In South East Asia, issues relating to land tenure, reform, and governance are prominent and many smallholder farmers and forest dwellers face threats of losing their land and their livelihood. Issues of land displacement and reallocation are also pervasive. Decisions on how land will be used, by whom, and for what purposes could have far reaching consequences for the people of Myanmar, the majority of whom are smallholder farmers living in the countryside.

Land use change is necessary and essential for economic and social development. However, where development is ignorant to poverty and other contextual issues, there may be social and environmental consequences. Secure land use and land tenure for local people requires an effective legal framework to create rights and provide the foundation for institutions and processes.

Across the country, Myanmar is facing land conflicts originating from changes in land use. The consequences of land use changes, for example from agricultural to non-agricultural purposes or from one type of agricultural land to another, remains a major land issue of the country. Large scale land leases, land confiscation and land grabbing, flooding and erosion, and developmental processes such as agricultural expansion are common causes of land use changes in Myanmar. Although there is a National Land Use Policy as a guiding principle for decision making, there are still no rules or procedures in Myanmar to follow systematically.

This research intends to understand the correlation between land use and land tenure change in relation to inequality and poverty on the ground, and develop plausible recommendations for a new land law. This research empirically explores the argument from modern land use planning

**Land abandoned due mining conducted by Italian-thai Company in Deep Sea Port Project site, Yephyu Ts.**

that there must be a need for a change; there must be a political will and ability to change; and stakeholders must be convinced about the change by encouraging and assisting their participation with clear incentives to link with the fundamental concepts of efficiency, equity and sustainability. Methodologically, the research focuses on dialectic materialism and bringing about value-oriented political-social goals, action research assessing land related issues including magnitude, scope and severity will be carried out. The primary idea is both to describe and explain realist orientation of land use change and land tenure issues.

Land issues in three geographic areas will be investigated using mixed methods. Existing statistics, documents, observations and interviews will be used focusing on events and conditions in mixed historical periods and social settings. Key stakeholders in land issues can be categorized into: (1) governmental bodies, and (2) local communities.

The study is carried out in three regions under the OneMap Myanmar Project: Mon, Bago and Tanintharyi. Under the study regions the focus was on, (i) land use and land tenure change mainly from forest land to rubber plantation, (ii) involuntary movements, land grabbing and reallocation, and insecure and unrecognized land tenure issues and (iii) poor recognition of customary tenure while constituting R.F., land conflicts at Mineral Reserve Area and Deep Sea Port.

The results from our project will have both short and long-term impacts in academia, land conflict debates, and land use planning, and will contribute to building a better interface between science and policy in the field of land use and land tenure issues. Secondly, this research aims to narrow the gap between policy and reality, which will influence various stakeholder groups including politicians and local farmers. Finally, the research contributes to LCG's work on raising awareness of land issues and promoting policy reform to support land tenure security for smallholders and forest dependent people throughout Myanmar.

**Land abandoned due mining conducted by Italian-thai Company in Deep Sea Port Project site, Yephyu Ts.**

# 1. Introduction

## 1.1 Rationale

Land is one of three major assets of production in classical economics (along with labor and capital), a fact that is especially true for the rural communities of Myanmar. Land is also the foundation for a wide range of cultural and social identities, the traditional and historic land-based economy in Myanmar is vital to the livelihoods of the poorest segments of its society, the rural community. This economy is expected to hold strong even in the new era of democratic reform and political transition.

Land tenure is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land (FAO 2002). Land tenure is an important part of the institutional structures determining who can use what resources for how long, and under what conditions. Land tenure may also have both spatial and temporal dimensions and can be impacted by gender, ethnicity, class, and political affiliation (ARD, Inc. 2007). Rights may also be relatively poorly defined with ambiguities that are left open to exploitation (FAO 2002). In South East Asia, land issues over tenure, reform and governance are prominent (Borras et al., 2011) and many smallholders and forest dwellers face threats of losing land and secure livelihoods. Issues of land displacement and reallocation also remain pervasive (McCartan, 2013).

Myanmar is spread over 676,578 square kilometres of land area. It has a multi-ethnic, multi-cultural, and multi-religious population of about 53 million (CSO, 2014). As the country goes through a dramatic series of reforms, Myanmar has the potential to create a more inclusive society in which the benefits of economic development and greater integration into the regional and global economies are equitably shared among all citizens.

Natural resources such as land and forests are essential elements for development. Decisions on how land will be used, by whom and for what purposes could have far reaching consequences for the people of Myanmar, the majority of whom are smallholder farmers living in the countryside (Robert, 2012). Today, the country is facing land conflicts originating from changes in land use. The consequences of land use changes, for example from agricultural to non-agricultural purposes or from one type of agricultural land to another, remains a major land issue of the country. Large scale land leases, land confiscation and land grabbing, flooding and erosion, developmental processes such as agricultural expansion are common causes of land use changes in Myanmar. There are also many business-oriented projects increasing across the country, that come from one general point of view of what development means. This point of view is one that does not necessarily reflect or respond to the aspirations of all people in Myanmar (Franco et al., 2015). Land use change is necessary and essential for economic development and social progress (Wu 2008). However, where development is ignorant to poverty and other contextual issues, there may be social and environmental consequences.

Land and property rights include the rights to use, control, to dispose of, to exclude, to enjoy, to realize financial benefits, and to access services in association with land. Three dimensions are pertinent in each right: time, space, and assurance. These should not only be understood as an administrative or procedural issue, but also should be considered part of broader historical, economic, social, and cultural dimensions (Srinivas and Hlaing. 2015). These rights will also define how people interact with each other and with the land, including natural resources.

Secure land use and land tenure for local people requires an effective legal framework to create rights and provide the foundation for institutions and processes. Although there is a National Land Use Policy as a guiding principle for decision making, there are still no rules or procedures in Myanmar to follow systematically. This research intends to understand the correlation between land use and land tenure change in relation to inequality and poverty on the ground, and develop plausible recommendations for a new land law in Myanmar.

## 1.2 Problem Statement

Large scale plantation projects, followed by privatization, are forcibly undertaken in Myanmar without consulting local people. In addition, soil erosion, salinization, desertification, and other soil degradations associated with intensive agriculture and deforestation reduce the quality of land resources and future agricultural productivity (Lubowski et al. 2006). These unsustainable development projects have adverse impacts on customary land management systems of local communities.

The potential impacts on land tenure may not be always apparent in the initial phase. However, failure to consider land tenure implications from the start may result in unanticipated consequences. Land tenure and environmental conditions are closely related, and unsuitable rules (either formal or informal) for acquiring access to land and insecure land tenure can lead to forest ecology degradation (FAO 2002).

During the last two decades, there have been significant land reform and land distribution programs throughout Myanmar as the government attempts to realize financial benefits associated with land and natural resources. These reforms ultimately benefit a small group of the elite, and therefore deepen pre-existing inequalities. These inequalities arise as a result of factors including: the absence of a sustainable, national development strategic plan, confusion and conflict between customary rules and statutory laws, the absence of a systematic registration process for customary land use change. This highlights how access to the land is not sufficient for secure land tenure; local people require legal recognition to be able to effectively use their land. With stronger tenure security, people will have an incentive to invest in, and use land, and natural resources in a sustainable manner (ARD, Inc. 2007).

**Interview to Officer at Land Record Department, Taungoo Township**

**Interview to leader of Kyungone Village tract, Taungoo Ts. Bago Region**

## 1.3 Research Aim

The overall objective of the research is to comparatively explore the process of land use and land tenure change and its impacts in three regions of Myanmar where land tenure is of critical concern.

Specific objectives of the study are:

1. To link population growth, land use change, and involuntary movements with the security of land tenure in state, customary, and individual land tenure regimes;

2. To correlate poorly defined, insecure, unrecognized, or absent land tenure and forest ecology degradation in study areas; and,

3. To outline the underlying issues on land rights and tenure due to absence of a procedure in clear decision making, the abuse of due process, or the lack of recognition of customary rights.

## 1.4 Research Questions

1. What are the main drivers of land use and land tenure changes in the study areas?

2. What are the linkages between the population growth, land use change and involuntary movements and the security of land tenure?

3. Will land tenure security 'save' the forest ecology?

4. What is the status of the forest ecosystem before and after a major land use change in the study areas?

5. How does land use and/or land tenure change correlate with forest ecology degradation in reserved forests?

6. What are the strengths and weaknesses of existing regulations in decision making for land use in the study areas?

7. How do the decision-making processes influence the land issues of the study areas?

## 2. Literature Review

'Land use' is the way in which people make use of land and land resources (Joshi 2016). For example, land uses include shifting cultivation, grazing, agriculture, industrial plantations, commercial plantations, logging and mining, among many others. 'Land use change' involves either conversion of one type of land use to another, or modification of certain type of land use. Major driving forces for land use change are demography, urbanization, economy, technology, climate change, energy transition, change in ownership, and change in policy (Zondag & Borsboom 2009).

Land tenure is way of holding land and it shows the relationship between people and land resources (Joshi 2016). Land tenure acts as an institution and guideline for defining the access to land, use of the land, control over land and for transfer of the land in society. Thus, it also guides the rights, restrictions and responsibilities of the people in relation to the land (Palmer et al. 2009). The balance between the individual and communal interest in land tenure systems determines the sustainability of development (Eaton 2005). According to FAO (2002), land tenure constitutes a web of intersecting interests between the four categories: open access, communal (customary), state, and private.

Abrupt changes in land related policies to favor commercialization and open market economy affects land use patterns and, as a result, changes the land tenure. For example, the evolution from customary and open access land to private ownership, through overriding interests by the use of sovereign power. As distinguished by French anarchist philosopher, Proudhon (1840) in 'What is Property', 'possession' is with right and 'property' is without. While customary tenure has the right of owning through inheriting or allocation according to traditional practice, the rights are not documented and there is no certificate with which the local community can claim legal rights over their property. Therefore, instead of facilitating sustainable development and reducing inequality, the changes have led to the displacement of the poor and/or revoke of customary tenure from the land they traditionally operated, leading to increased conflicts.

## 3. Methodology and Data Collection

Theoretically, this research empirically explores claims from modern land use planning that there must be a need for a change, there must be a political will and ability to change, and stakeholders must be convinced about the change by encouraging and assisting their participation with clear incentives to link with the fundamental concepts of efficiency, equity, and sustainability (Verheye 1987).

Since the research emphasizes in dialectic materialism and bringing about value-oriented political-social goal, action research assessing land related issues including magnitude, scope and severity will be carried out. The primary idea is to both describe and explain realist orientation of land use change and land tenure issues. Land issues in three geographic areas will be investigated using mixed methods. Existing statistics, documents, observations and interviews will be used focusing on events and conditions in mixed historical periods and social settings. Key stakeholders in land issues can be categorized into: (1) governmental bodies, and (2) local communities.

## 3.1 Study Area

The study is carried out in Mon State, Bago Region, and Tanintharyi Region. The selection criteria for three villages in each region is based on non-probability, judgment sampling, meaning the choice of sample items depends exclusively on the researchers' knowledge and judgment. This approach emphasizes depth of understanding regarding land use and land tenure change issues, rather than attempting to be representative of the three regions. Selecting villages is a multi-stage, participatory process involving detailed discussion and interview with government officials.

Land use and land tenure change issues in Mon state is mainly from forest land to rubber plantation and the UFES research team selected three villages: Kamawet, Kanalo and Kyun with rubber plantations in the same Kyaikkamaw reserved forest (R.F.).

In Bago region, there are cases like involuntary movements, land grabbing and reallocation, and insecure and unrecognized land tenure issues. The team selected three villages: Htonebo – Nagamouk, Kokkobauk, Kyun Gone; each representing the distinctive land use and land tenure issue to seek in-depth understanding.

In Tanintharyi region, the selected three villages: Paungtawgyi, Kanpauk, and Mudu and Paradat demonstrate poor recognition of customary tenure, while constituting R.F., land conflicts at Mineral Reserve Area and Deep-Sea Port.

## 3.2 Key Informant Interviews

For grounded theory, Morse (1994) has suggested 30 - 50 interviews, while Creswell (1998, 2009) suggested only 20 - 30. In this study, it is justified that 20 key informant interviews per village is adequate since triangulation will be done using focus group discussions and resource mapping to verify the data. UFES research team conducted 15 interviews with Government Institutions and 190 interviews with the villagers from nine villages. The interviews lasted about 45 to 60 minutes and were conducted in Myanmar language, translated from English. The interview aimed to access the different components such as population pressure, land use change, customary land tenure, involuntary movements, etc.

**Interview with an Officer at the Fishery Department, Taungoo District**

## 3.3 Focus Group Discussion

A total of 20 Focus Group Discussions (FGD), a semi-structured group discussion, was carried out in nine villages to triangulate the data from key informant interviews. At least 2 FGDs per village was carried out with 5 participants in each FGD. About 15 topics relating to land use and land tenure issues were prepared to use at FGD. However, depending on the distinctive features of the village, the topics were adapted to suit the on-the-ground situation. Instead of asking questions, the UFES research team introduced topics for further discussion about their experiences with land use and land tenure issues.

## 3.4. Participatory Resource Mapping

Participatory resource mapping is used to gain better insight into land use and land tenure issues of the selected nine villages. Participatory resource mapping is linked with FGDs and differ from one place to another. At least one participatory mapping is carried out in each village.

## 3.5 Satellite Data

The line-intercept method for measuring the forest density and cover is irrelevant to present land use change, as a result the UFY research team chose remote sensing and GIS method to analyse land use and land cover changes. A set of Landsat imagery acquired from the Landsat archive from the United States Geological Survey (USGS: http://glovis.usgs.gov), Google images, topographic maps received from the Forest Department and maps drawn by local people were collectively used to investigate land use and land cover changes in selected study villages.

## 3.6 Archival research

Methodologically, this study utilizes qualitative methods such as key informant interviews, FGDs, and extended archival research (e.g. government reports, newspapers, policy briefs, feasibility studies) to answer the proposed questions. Therefore, the UFES research team also conducted archival research to validate, compare, and contextualize information gathered through key-informant interviews and FGDs. It focused on examining relevant government reports and policy documents relevant to land use and land tenure change.

Firstly, the cases were identified from the field survey. Then, related existing laws and regulations were examined deliberately to find out the strengths and weaknesses. Regarding strengths and weaknesses in existing regulations in decision making for land use, the following regulations and systems will be studied and discussed. In addition, the difficulties in practice relating to the decision making in land use issue will be discussed. The list of regulations and management systems to be studied in this research can be categorized into two periods (Table 1).

**Table 1: List of regulations used for this study**

| Time | Change in Function |
|---|---|
| **Before 2010** | |
| ~1700 – Customary law and traditional governance system | Customary systems have been maintained by communities that have been governing themselves based on strong traditional practices with clearly set rules about how land is used and how decisions are made about land use (Allaverdian et al 2017). |
| Late 1700 ~ 1948 – Private system of land ownership | In the 1800s, the British reformed the agricultural structure by assuming control of all land administration and management (Srinivas and Hlaing 2015). |
| 1879 – The Land and Revenue Act | The first major land law which governed the acquisition of land rights for private persons and procedures for assessing and collecting land taxes (Srinivas and Hlaing 2015). |
| 1948 – Constitution | "The State is the ultimate owner of all land" (Article 30.1). Land concentration and the system of landlord were abolished. |
| 1953 – The Land Nationalization Act | This Act resumes possession of all agricultural lands with the exception for agriculturalist family and the total land exemption of up to fifty acres for a family. |
| 1963/ 1965 – The Tenancy Law / The Tenancy Law Amending Law | It is the law of renting land for cultivation. |
| 1974 – Constitution | "The State is the ultimate owner of all natural resources above and below the ground, above and beneath the waters and in the atmosphere, and also of all the lands" (Article 18.a). By that, it nationalised the means of production within the land. |
| 1988 – Judiciary Law | The State Law and Order Restoration Council (SLORC) enacted the Judiciary Law to transform the aforesaid socialist judicial system. |
| 1991 – Procedures Conferring the Right to Cultivate Land/ Right to Utilize Land Duties and Rights of the Central Committee for the Management of Culturable Land, Fallow Land and Waste Land | With the formation of Central Committee for the Management of Culturable land , Fallow land and Waste, priority is shifted to large scale land investments in culturable land, fallow land and waste land for the purpose of carrying out agriculture, livestock breeding, aquaculture enterprises or other affiliated economic development enterprises (Article 2. a). |
| 1991 – The Freshwater Fisheries Law | No one is allowed to operate a fishery without a lease, license or permission in all waters which is of permanent or temporary nature within the inland boundary along the sea coast of Myanmar. |

| | |
|---|---|
| 2008 – Constitution | The Union of Myanmar is the ultimate owner of all lands and all natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union (Article 37.a). The Union shall permit citizens right of private property, right of inheritance, and right of private initiative and patent in accord with the law (Article 37.c). |
| **After 2010** | |
| 2011 – The Dawei Special Economic Zone Law | The objective is to implement the Dawei Special Economic Zone as the pivotal place for the trade and transportation of South East Asian Region by the supervision of the Central Body. |
| 2012 – The Farmland Law | "Right for farming" is defines the State as the original owner of all lands, giving permission for farming in conformity with this law and bylaw, rule and regulation of this law so that agricultural production capacity develop, excluding exploring gems, mines, petroleum, gas and natural resources below and above ground (Article 3.d). The Farmland Law gives farmers land tenure rights for cultivation through the delivery of Land Use Certificates. Individuals can buy, sell, and transfer land with these certificates, which are also referred to as Form 7 (Allaverdian et al 2017). |
| 2012 – The Vacant, Fallow and Virgin Lands Law | Vacant land, Fallow land means the land on which agriculture or livestock breeding business can be carried out and which was tenanted in the past and abandoned for various reasons and without any tenant cultivating on it and the lands, which are specifically reserved by the State (Article 2.e). The definition of "vacant" and "fallow" land in the VFV Management Law puts customary land, and particularly shifting cultivation land, at high risk of appropriation. Under the VFV Management Law, active fallow land under rotational cycle can be legally transferred to private ownership since fallow lands are regarded as "vacant" and unused. This law also causes problems for internally displaced peoples (IDPs) who may return to their land in the future to find it has been declared vacant and allocated to someone else (Allaverdian et al 2017). |
| 2013 – The Law of Protection of the Farmer Rights and Enhancement of their Benefits | It functions to protect the rights of farmers possessing small plot by providing suitable loans and assistance for investment, assisting to get reasonable price and market in selling agricultural produces, providing aids at the time of natural disaster. Thus, the law in general has not much relation with land tenure change. |
| 2013 – The Foreign Investment Rules<br><br>(Revised in 2017) | It allows the foreign investor to sub-lease or mortgage the lands and buildings approved for investment. |
| 2014 – The Myanmar Special Economic Zone Law (Burmese/English) | The name "Central Body" stated in the law and its highlighted functions and duties present the centralized nature of the law. Moreover, only the opinion of relevant governmental departments and governmental organizations are considered without mentioning any consensus of the local people. |
| 2015 – The Law Amending The Foreign Investment Law | The new version of foreign investment law which is more market friendly but still needing much room for improvement. |
| 2015 – The Ethnic Rights Protection Law | Although ten rights and privileges of ethnic groups are stated in the law, none of them mentioned about customary systems, traditional practices and land related issues. |

## 3.7 Materials

Various hardware was used for the study such as a laptop, GPS for ground truth collection, voice recorder for recording interviews, and a camera for taking photographs. Software and tools used were: ArcGIS for spatial processing and analysis of data, ENVI for digital image classification, and SPSS version 23 for quantitative and qualitative analysis.

## 4. Results and Discussion

Data collected from the field, archives and satellite were processed and analyzed to derive meaningful insights. This section highlights data analysis and results derived from the processed data to answer the research questions. The UFES research team recognizes and accepts that each case study area has distinctive feature and it is unrealistic to discover and resolve every research question in each case study. Therefore, the focus was on diversity, rather than seeking to simplify complexity in each case study. The complexity of the overall situation is revealed through analysis and integration of the research. Accordingly, the structure of the report has been categorized based on different cases in each region, rather than clustering three villages in each region under one category or exploring each village as one category.

As for land cover change analysis, data from the years 2000 and 2015 were considered in this study. The dominant land use and land cover classes were defined according to the study cases. The images of training fields in 2015 were selected for each land cover based on the collected GPS points, the Google Earth images and the knowledge from local interviews conducted during the fieldwork. The topographic maps of recent years with the scale of 1:63360 were used as ancillary information for selection of training data of 2000 images. Those training fields were then used to generate decision rules for classifying the images. A supervised classification using Gaussian Maximum Likelihood (GML) classifier was applied for the present classification of Mong and Bago Region. For land cover change analysis in Tanintharyi Region, the population data and satellite images were not available. Therefore, analysis of population trend and land cover change were not conducted in this report. However, the images downloaded from Google Earth Pro were applied to describe the important features of the changes in each case.

**Meeting with village head and members in Kanbauk Village, Yephyu Ts.**

**Interview to local people in Kokko-pauk village, Taungoo Ts. Bago Regio**

## 4.1 Mon State

### 4.1.1 Rubber Plantation Development and Land Tenure Change in Mon State

#### 4.1.1.1 Criteria for Site Selection

In Mon State, rubber is the second most common crop plantation found in the formerly forested mountainous areas. The empirical survey of UFES research team confirmed that almost all the Kyaikkamaw R.F. of 5974.69 ha in Kyaikmaraw Township has already been transformed to rubber plantation area. Subsequently, the team decided to put the selected three villages; Kamawet (MKa), Kanalo (MKb) and Kyun (MKc), all of which have rubber plantations inside Kyaikkamaw R.F under one category and make an in-depth study about the land use change in Kyaikkamaw R.F (Figure 1).

**Interview to leader of Nagar-mauk Village, Taungoo Ts. Bago Region**

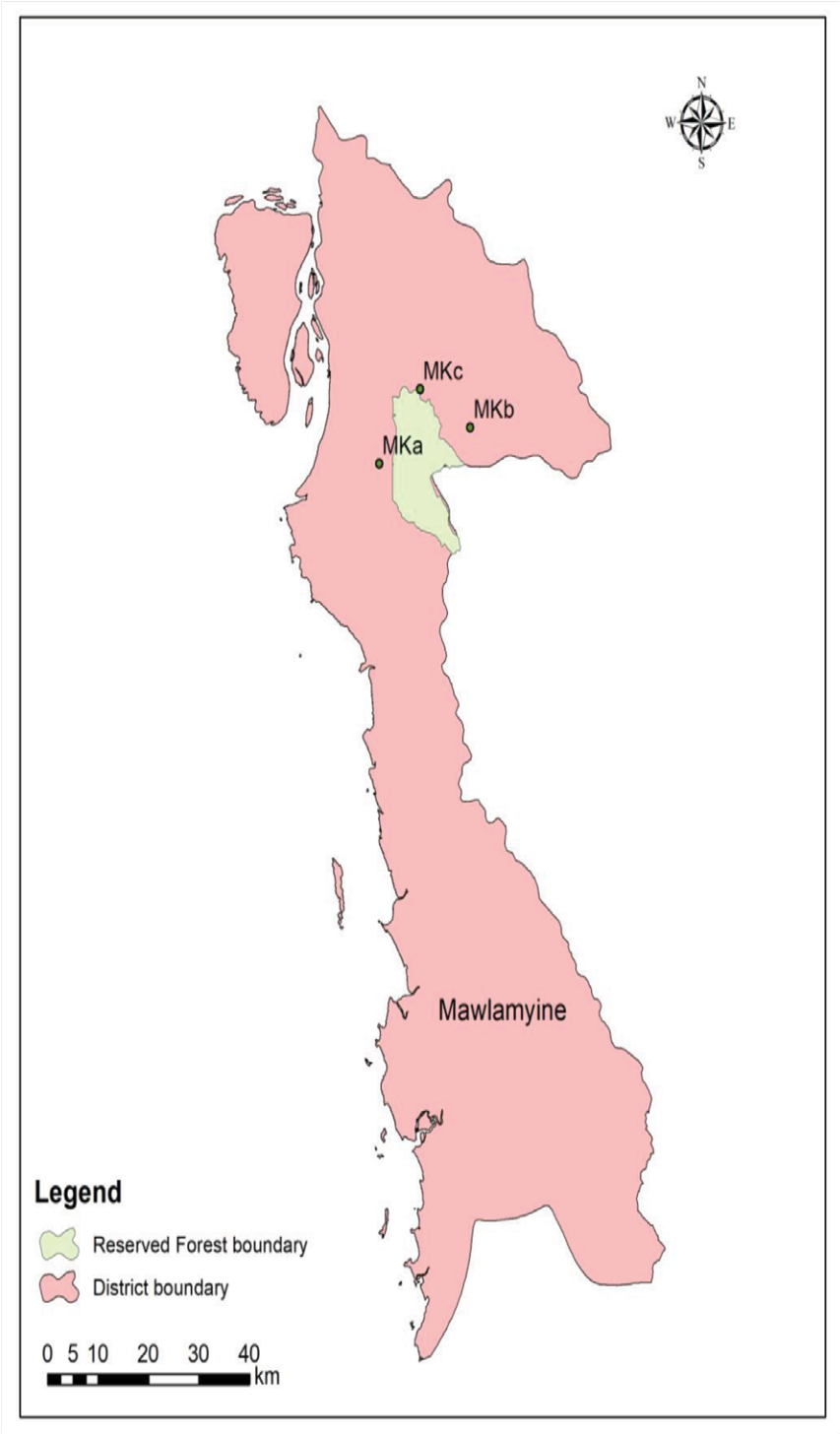



**Figure 1: Location of studied villages in Mon Region.**

#### 4.1.1.2 Population

The population of three villages is shown in Figure 3. In the study villages, almost households had sent at least one person to live and work in Thailand. Hence the population trend in almost all villages was only a slight increase. In 2013, the population was found to have increased as a result of

the return of many migrant workers to vote for country's election in 2015.

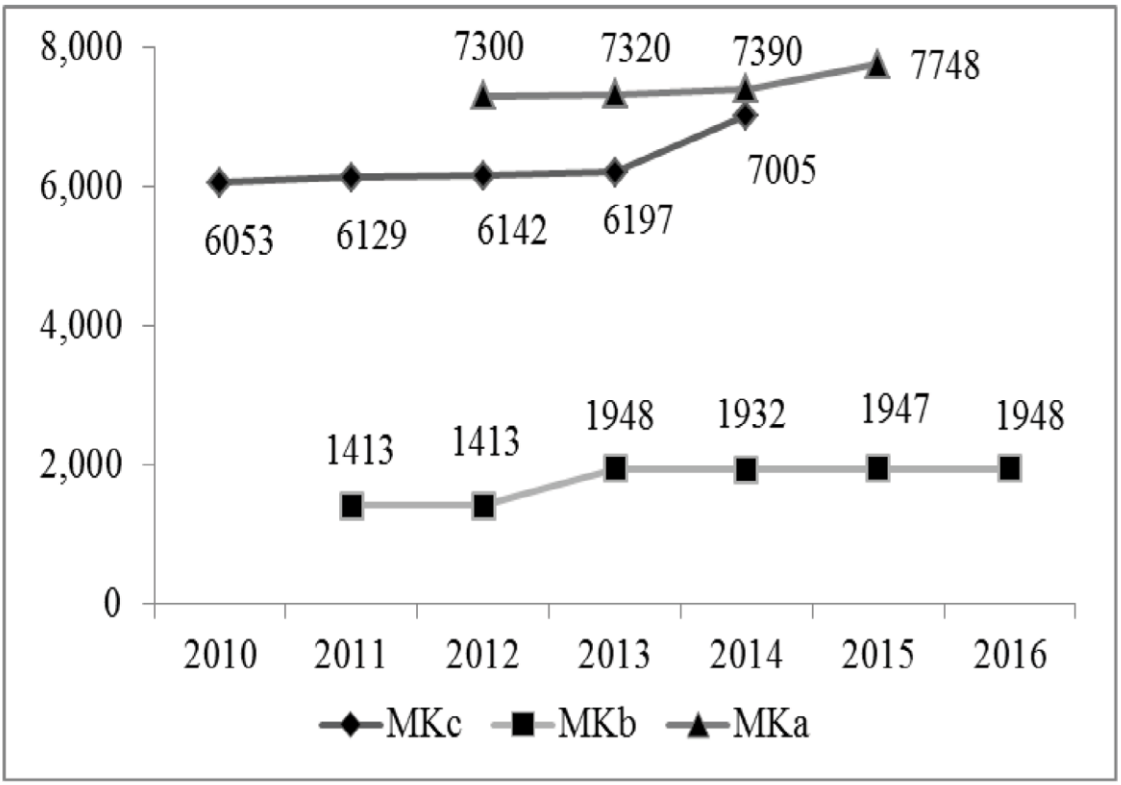


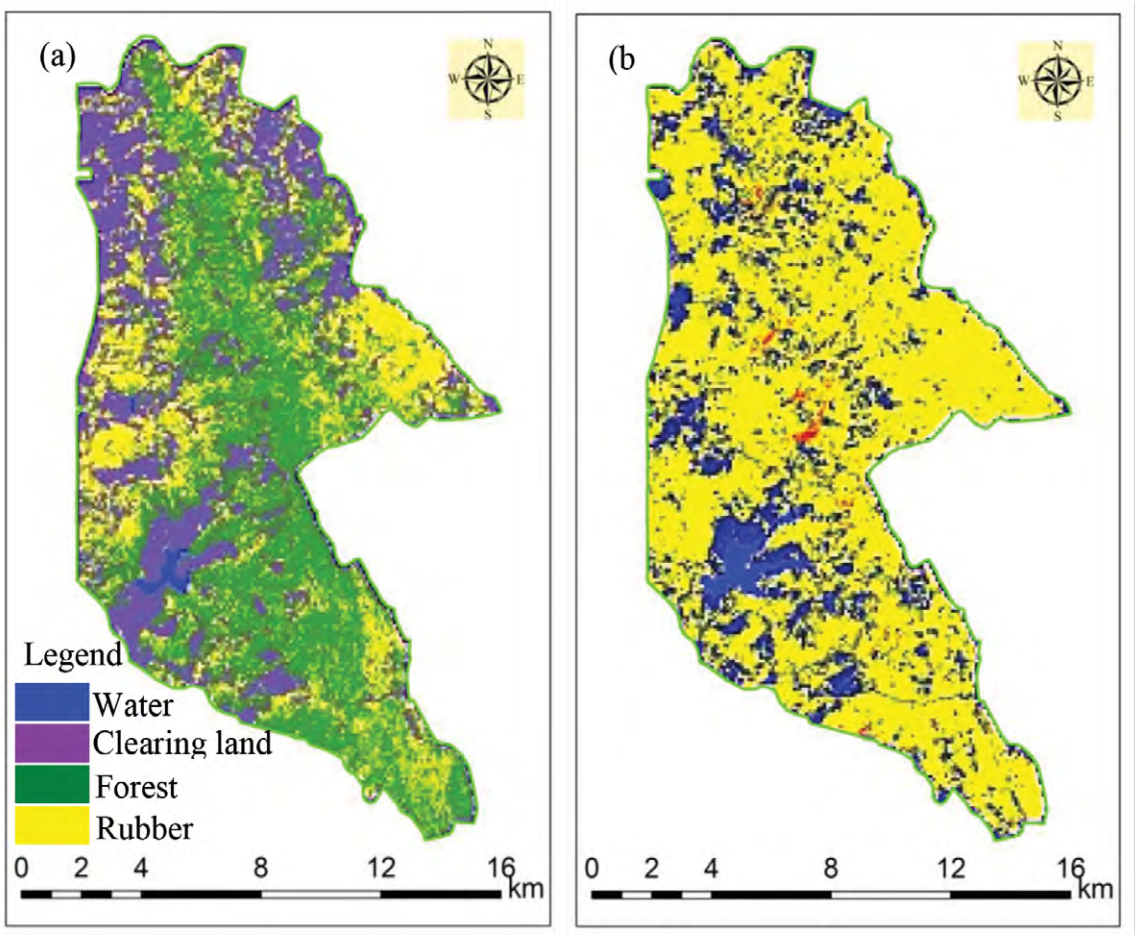

**Figure 2 Population trends of study villages in Mon village**

### 4.1.1.3 Land Use Change Detection

**Table 2: Land cover change in Kyaikkamaw R.F. over 2000~2016**

| | 2000 Dec | | 2016 Jan | | Change | |
|---|---|---|---|---|---|---|
| | Area ($km^2$) | % | Area ($km^2$) | % | Area ($km^2$) | % |
| Forest | 93.7 | 47.3 | 0.0 | 0.0 | -93.7 | -100.0 |
| Water | 0.8 | 0.4 | 1.9 | 1.0 | 1.1 | 137.5 |
| Clearing land | 59.6 | 30.1 | 49.9 | 25.0 | -9.7 | -16.3 |
| Rubber | 43.9 | 22.2 | 146.1 | 74.0 | 102.2 | 232.8 |

We analyzed the land cover change in Kyaikkamaw R.F. by using Landsat 5TM images acquired on 27th December, 2000; and Landsat 8 Operation Land Imager (OLI) on 5th January, 2016. It was found that the rubber plantation of 146.1 km2 covering 74% of the R.F was detected in 2016 (Table 2). The massive clearing of the land in R.F was detected in 2000. It is likely that the area was converted into a rubber plantation during the analyzed period. All of the remaining forest existing in 2000 had been converted into rubber plantation. The spatial change of land covers was shown in Figure 3.




3.

**Figure 3: Land cover change in Kyaikkamaw R.F. in 2000 (a) and in 2016 (b)**

#### 4.1.1.4 Analysis of Interview Data

### Rubber Plantation Development

The rubber tree (Hevea brasiliensis Müll. Arg.), originated as a wild plant in the Amazon Rainforest, Brazil. It belongs to the family Euphorbiaceae and the most economically important member of the genus Hevea. Its latex was discovered by an American scientist and later became of major economic importance (Balsiger et al., 2000). There are 21 varieties of rubber species used for plantation in Mon region. These can be identified by leaves. Although some rubber plantation owners continued to have traditional "wild" rubber plantations, the most widely used species in Mon region is BBM 24 (native to Indonesia) because of its tolerance to heavy rain and resistance to insect attack. The seedlings from the vegetative propagation method are mainly used for plantation in the region. The climate of the region is suitable for rubber plantations. According to participants from FGD and Mudon Staff Officer, insect attack is very rare, although some diseases occurred in the rainy season affecting the rubber yield. The tree can reach a height of over 30 m. There are roughly 200 rubber trees per acre. Once the trees reach the age of 7 to 8, tapping for latex can begin. From the physiological point of view, the tree must be 7 years old before it can be tapped. However, in some places, depending on the market and skilled labor, rubber farmers also tap the trees at a younger age. With skilled labor, rubber tapping can be done up to 30 to 40 years of age (Interview with Staff Officer, Mudon Agricultural Department). Tapping of rubber trees starts in the fifth to seventh year after planting and then continues for 25 to 30 years (Mead 2001). However, it may vary depending

on the species (Interview with Staff Officer, Mudon Agricultural Department). Tapping is carried out orthogonally to the latex vessels and the sap is collected in small buckets (Balsiger et al., 2000). Older trees yield more latex, but production decreases significantly from the age of about 25-30 years which further tapping of the trees uneconomic. Naturally, the old trees are replaced with new seedlings as the production decreases.

Rubber has become one of the major revenue-generating crops in Myanmar's national economy. Accordingly, rubber plantations have been expanded from around 130,000 acres (Dararath et al. 2011) in 2000, to 1.1 million acres in 2010 according to the Myanmar Agricultural Department. This may be the result of 'oral instructions' from Secretary 1, General Khin Nyunt in 2002 that 'Mon Region must be the land of white gold (i.e. rubber)'. At that time, the villagers can take the land anywhere they like, clear the forest and grow rubber for better economic situation of their households and rubber lives by its name 'white gold' (Interview with Staff Officer, Mudon Agricultural Department). 'Kanalo FGD participants also explain that between 1990 and 2000, anyone who come first can precede to clear the forest trees inside R.F. for rubber plantations. FD said nothing and does not take any action at that time. Up to early 2000, there are still vacant land inside R.F. and people are still encroaching', they said. The 2010 Myanmar Census of Agriculture indicates that 38% of the area under compact plantations nation-wide is in rubber, and the largest area of rubber is in Mon Region (Thawnghmung 2013). For Kyun village, rubber plantation establishment has been initiated since their ancestors and now it becomes the major source of income. At present, the maximum acres owned by Kyun villager is 60, while others from neighboring villages own up to 100 acres.

### Rubber Production and Livelihood Issues

The major difficulties for rubber farmers at present are the low rubber yield compounded by lower price of rubber and high wage for labor. While Thailand, Indonesia and Malaysia produce 550 kg of rubber per acre of latex per year (Khun 2006), Myanmar could produce only 300 kg. As of 2015-2016, 489,053 acres have been planted, 313,893 acres being productive with a total production of 114,673 tons. Local rubber consumption rate is just eight percent of the total production, the rest being exported, mainly to China. The rubber price is highest in 2006-2007 with a price of 1700 Kyats per pound. The average rubber price in 2015 was 530 Kyats and at present in 2016, it rises a little with a price of 600 to 700 Kyats per pound (Interview with Staff Officer, Mudon Agricultural Department). The statement is supported by IFPRI report of Filipski et al. (2017) in which the price is between 500 to 566 Kyats per pound in May-June 2015. The current rubber price at Kyun village is also around 600 Kyats per pound. According to FGD at Kanalo village, there were times that the rubber price went down between 300 to 400 Kyats per pound and Filipski et al. (2017) reported the lowest price as 350 Kyats per pound. 'There are times that one pound of thick rubber sheet could get 1500 Kyats. However, in about 2015 the price seemed to drop down to 400 Kyats per pound. At present, the price is between 600 to 700 Kyats per pound', said U Aung Myint, a rubber plantation owner from Kanalo village. The dealers prefer to buy thick sheet as they can make thin sheets and profit 300 to 400 Kyats (FGD, Kanalo).

Most villagers used fertilizer for better growth of rubber trees and better yield. The amount of fertilizer may vary with the age. Rubber shares nearly 60% of fertilizer, herbicide, pesticide, and other chemicals used in agricultural sector. Fertilizer is the largest input sharing 40 percent of rubber production costs followed by labor sharing 25 percent. However, fertilizer is the first input that had

been cut in the face of price breakdown. Latex yield depends mainly on potassium but because of the lack of knowledge, plantation owners mainly used Urea which green up the leaves. The need of fertilizer per acreage depends on age, it will need 23 to 32 bags for 7 years old rubber plantation (Interview with Staff Officer, Mudon Agricultural Department).

Rubber plantation owners from Kanalo and Kyun villages hire labors from Bago and Ayeyarwaddy regions for tapping and those of Kamawet work by themselves. When the price goes down, they have to face labor shortages. Although the plantation owner share 50:50 with the labor, the net income per day for the labor is 3,000 and no one wants to do the tapping. Also from the side of plantation owners, the benefit does not cover the cost (FGD, Kanalo). Thus, the use of untrained labor had been considered for tapping (FGD, Kyun). The use of herbicides without fully understanding the pros and cons are also increasing to solve labor shortage (Interview with Staff Officer, Mudon Agricultural Department). Although they accept the decline and even the extinct of wildlife population compared to year 2000, most of them think that rubber plantation does not deteriorate the soil despite the excessive usage of fertilizers, herbicides and chemicals (FGD, Kanalo). One of the participants from Kamawat FGD notice the change, saying "the mushroom we used to get inside rubber plantations gradually becomes scarce or not safe for eating anymore, I think it is because of the herbicides that we used. It is still doubtful whether the water from the well that we drink is still safe enough for us".

In some serious cases of market breakdown, some owners started selling out rubber trees considering replacing with Acacia mangium based on hearsay that it will worth 100,000 to 150,000 Kyats per tree. Others temporarily migrated to Thailand for better job opportunities. Extension are carried out to grow other species, like pineapple together with rubber crops. However, the villagers show not much interest as there is no market demand (Interview with Staff Officer, Mudon Agricultural Department; FGD, Kanalo). It is very clear at FGD, whenever raising a topic about agroforestry like planting pineapple or raising goats, they say 'Hmm … it is possible' but shows no real interest. One added up that although they tried to raise chicken, had to give up because of the remoteness, stealing by others, and the distinctive working hours for tapping and processing. Throughout the survey, the UFES research team found only one goat-farm with a number of 10-15. That owner from Kanalo told us that the 20 acre rubber plantation is also a pastureland for him. At present with a reasonable price of rubber latex, the workers even work for 40% ratio. There are cases that the rubber plantation owner gave a fixed price of 65,000 Kyats per month (FGD, Kanalo).

One of the participants from Kanalo FGD has to give 14 years old rubber plantation, with 800 trees (4 Acre) for 18,500,000 Kyats. Another shares his experience of buying 7 years old rubber plantation with 1,000 rubber trees (5 Acre) at the same year with 18,000,000 Kyats. They explained that the price could be variable depending on accessibility and the age of rubber plantation. 'The prices are very low compared to current ones around 2005, like 5 to 6 lakh per acre inside R.F. and 20 lakh if outside', they thought back and clarified. From the experience of Kyun village, there are times that one has to pay 13,300,000 Kyats for an acre. At present there is just market price and not much actual buying or selling take place.

## Land Use Change

Land use and land tenure change is the main focus of the research, as it is the significant component of forest ecology degradation in Kyaikmaraw Township. Establishment of rubber plantations in remote areas is not popular and there is not much rubber plantation inside Kyaikkamaw R.F. up

to 1990 due to civil disorder (FGD, Kanalo). According to Kyaikmaraw Forest Department (FD) (2016), rubber plantation in R.F. started in 1995 with the approval and encouragement of the then Mon State Government. Unless land is private or under customary tenure, anyone wishing to plant a rubber plantation can claim the land stating 'this is mine' without needing to worry which category that land actually fall. It is especially the case in Kyaikkamaw R.F. area of 14,763.8 acre in Kyaikmaraw Township.

Most of the rubber plantations are situated in Kyaikkamaw R.F. Kyun village with a total of 1,250 households was formally inside Kyaikkamaw R.F. 1,121 households were first excluded from Kyaikkamaw R.F. in 1996 (Interview with village head). Then, FD had to abrogate 52.2 acre of Kyaikkamaw R.F. for legal recognition of extended 129 households in 2013. Moreover, 14.3 acre of Kyaikkamaw R.F. is currently being used for religious purposes and long-term agricultural crops other than rubber. Based on Filipski, et al. (2017), the total number of residences increased up to 11 percent between 1995 and 2015. The reason that people from other areas migrated to this area is to work as rubber plantation laborers (FGD, Kanalo). The number of plots devoted to rubber increased to 85 percent, while the number of paddy field plots fell by 10 percent. The biggest decline in plot numbers was for vacant/virgin/forest land, which decreased by 91 percent. From this data, it can be clarified that the largest land conversion and land use change is from vacant/virgin/forest land to rubber plantations. Although rubber plantation uncontrollably expands inside R.F., it is not applicable to the poor. Because of high initial investment, they could not initiate their own plantations but have to work as wage labor in the rubber plantations (FGD, Kanalo).

Statistically, the rubber plantation area inside Kyaikkamaw R.F. that has been recognized by FD reaches up to 10,834.4 acres in 2011. The rest 3,863 acre of Kyaikkamaw R.F. encroached by rubber plantations do not fall under 'Recognized by FD' category because they either encroach forest plantation area (According to 2015 report of Kyaikmaraw FD, even the village supply fuelwood plantation of 360 acre was encroached by rubber planters.) or they are not yet existed at the time of rubber plantation survey in 2011 (Interview with Staff Officer, Kyaikmaraw FD). The establishment of rubber plantations inside Kyaikkamaw R.F., recognition by FD and 'long term' land lease document issued by FD is presented in Figure 4. Major employment of another village, Kanalo

**Interview to local people in Phaung-daw-gyi Village, Dawei Ts**

with 380 households, is also rubber plantations and mainly relies on Kyaikkamaw R.F. area. Another land use change is replacing arable agricultural land with rubber plantations. Even in Kanalo, 40 acres of paddy fields have been transformed to rubber plantations and with no intervention from Settlement and Land Records Department (SLRD) (FGD, Kanalo). It happens because as explained above, the price of rubber latex is very high in the past so is the price of rubber plantation.

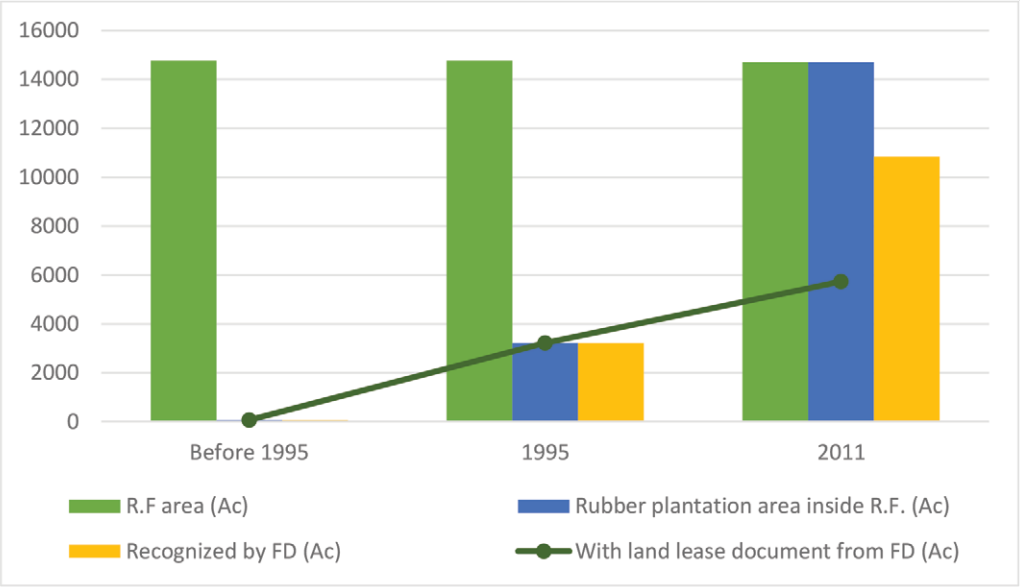



**Figure 4: The establishment of rubber plantation inside Kyaikkamaw R.F.**

## Land Tenure

Land use and land cover in Kyaikmaraw, including agricultural lands, are changing to rubber plantations. The rights are different for rubber plantations inside R.F. and outside of R.F. Some villagers have Form-7 for rubber plantations from SLRD and some have a land lease document inside R.F. from FD (FGD, Kamawat). When considering land tenure systems in Myanmar, getting Form 7, especially for rubber plantation, is not difficult. For example, the owners already have Form 7 for paddy field-turned-rubber plantations 40 acres at Kanalo village. It is unusual that they do not have any legal document, apart from a crop yield tax paper levied by the Agricultural Department at the time they are cultivating paddy. However, applying for a land lease document inside R.F. is more difficult. Almost all of the participants in FGDs from three villages did not have a land lease document until 2015, with only one exception. U Khaing Htoo, a Kamawat village elder who planted rubber inside R.F. in 1990, had already applied and received a land lease document in 1995-1996. Rubber plantation data was gathered in 2011 and again in 2015. The second time, not only FD, but alsoa parliament representative of Mon region, representatives of Myanmar Rubber Planters and Producers Association (MRPPA) participated in data gathering.

'With the full participation of the above-mentioned members and after raising awareness with transparency, we are able to build trust with the local rubber plantation owners' Kyaikmaraw FD Staff Officer stated. 'Listening to the voice of the people is key to the success of this documentation process', he continued. In 2016, the surveying process is much faster as CARE, which has a relation with MRPPA, supported the field process with the approval of District Forest Officer (Interview with Staff Officer, Kyaikmaraw FD). However, even the second time, there is a wait of almost one year to receive the land lease document, i.e. surveying in August 2015 and receiving the land lease document

in August 2016 (FGD, Kyun village). An interview with Staff Officer in Kyaikmaraw supported this timeline, where it was stated that 'at least 500 acres had been surveyed and 80 land lease documents were issued'. The land lease document stands as legal document leasing the R.F. land under rubber plantation for a period of 30 years.

Kyaikmaraw FD explains that it divided rubber plantations inside Kyaikkamaw R.F. into four groups: the first being recognized in the 2011 survey and already submitted a case file for land lease document, the second being recognized by 2011 survey and informally allowed to plant rubber but not yet submitted the case file, the third not being recognized by 2011 survey as they encroach after 2011, and the fourth being encroached inside forest plantation established by FD. The first priority of Kyaikmaraw FD is to issue land lease documents for rubber plantations already surveyed in 2011. Following this, they will consider those which not included in the 2011 survey list. Regarding to rubber plantations that encroach on the forest plantation, their hands are tied and only the decision makers from the Ministry can make instructions for next steps. For rubber plantations outside of R.F., rubber plantation owners have to work with SLRD. Both Kyun and Kanalo villages state that it costs around 30,000 Kyats to apply for a land lease document. It includes 5,000 Kyats fine with 1,000 Kyats per year starting from 2011 survey and 10,000 Kyats commercial crop tax with a basic of 1000 Kyats per year, as rubber trees are at least ten years old at the time of land lease plus 14,500 Kyats for general fees. Moreover, the Agricultural Department levies tax for rubber crops. In some places, SLRD mistakenly levies tax for rubber plantations inside R.F. (Interview with Staff Officer, Mudon Agricultural Department).

Staff Officer of Kyaikmaraw Forest Department explained that they need to submit 8 copies of at least 10 documents to apply for a land lease document. It is very difficult for the local villagers to gather and submit on their own. As a result, after explaining and gaining agreement from the parliament representative of Mon region, General Administration Department and representatives of MRPPA, they have to ask for 14,500 Kyats for the documentation process. The documents include photos, one-inch one-mile map, four inches one-mile map, one-inch one-mile drawing, acknowledgement regarding cardinal points, and an acknowledgement letter from village head, etc. The cost is not based on per acreage but on per area, i.e. if a person has 10 acres altogether in one area, he will only need to pay 14,500 Kyats. But if that 10 acres exist in two different places; the price will be doubled. It is confusing for plantation owners, and some state that 'it is expensive to apply land lease document


**Meeting with village head and members in Phaung-daw-gyi Village, Dawei Ts**

for me'.

However, another issue has arisen as in the case of U Thein Han who was one of the FGD participants from Kyun village. In his case, he did not know his rubber plantation was inside the R.F. as he had a 'Form 7' from the SLRD. He discovered this only when he was recommended by the FD to apply for a lease document for his plantation area, stating that it is in fact inside R.F. and 'Form 7' could not be used to claim as a legal document. Then again, the rubber plantation owner is required to follow all the steps instructed by FD to get another legal document, i.e. land lease document.

U Aung Myint from Kanalo village experienced another issue. He bought 10 acres of rubber plantation inside R.F. and another 10 acres outside of R.F. after 2011. He has a 'Form 7' issued by SLRD for rubber plantation outside of R.F. under his name. However, for the rubber plantation inside R.F., when the FD issued the land lease document in 2016, strangely for him, the document was under the previous owner's name. This is because, though he is the rightful owner at the time of 2015 survey, his name was not enlisted in the first, 2011 survey. As a result,, the document is still insecure when defining his land use right and ownership of rubber plantations. For that, he must rely solely on customary tradition and mutual trust between the seller and buyer. Since 64 percent of land acquisition is through purchase (Filipski, et al. 2017), it will still be unresolved problem for land lease document holders since the document does not allow any transfer except for inheritance. Thus, when the land use issue is risen up, they have to solve it in traditionally. In the case of Kanalo villagers, they seek for advice from a group of at least three to five elders and follow their decisions. However, these cases are very rare for Kamawet villagers because almost all Kamawet villagers, other than those from Mudon Township, have lived inside R.F., established rubber plantations by themselves, and done tapping by themselves.

Although some seem worried, almost all the participants from three villages trust that the land lease document issued by FD is secure. Kyun FGD group believed that there will be no more problem with land use after this time because there is now a cooperative solution by parliament representative of Mon region, FD and representatives of MRPPA. 'It is better to believe and accept the situation than being live with worries', they said. 'When we were told we must have Form 7, we applied for them. Then again, we need land lease document. Of course, we have to follow because we cannot afford to lose our assets', they continued. There are still some people in Kyun village who do not understand what is written on the land lease document, as they cannot read Myanmar language. However, most

**Rubber Plantation encroached to Bawar Reserve Forest, Yephyu Ts**

rubber plantation owners understand that there are some complications in selling or buying rubber plantations inside R.F. saying that 'with Form 7, we can easily sell the asset or borrow money from the bank by using it as collateral. In the case of land lease document, we cannot borrow money from the bank or sell the asset officially. It is legally impossible. Still, we could solve the problem in a customary way, based on mutual trust and with the presence of respected elders as witnesses'.

Another issue that UFES research team found was communication problems, occurring as a result of the difference in name usage between 'the Bamar name' in land lease document and what they actually called themselves, 'the Mon name'. It is understandable to issue the land lease document based on the name stated in National Registration Card, it will be much more feasible if FD and SLRD could include 'the Mon name' altogether.

### 4.1.2 Undermining issues on land rights and tenure

According to interviews in studied villages, participants did not realize that their rubber plantations were inside the R.F. Some villagers established their rubber plantations in protected public forests, with the land use certificates from SLRD. Most of the certificates were, according to certificates they received, issued 3~10 years ago. Since 2015, the Forest Department (FD) has been leasing the land to solve the land issue in the R.F. Prior to 2015, the FD did not issue land lease certificates. Therefore, there some misconduct was observed regarding the procedures on land management.

According to the Forest Law (1992) Article 9(c), the forest land must be managed within the provisions of the law by the FD. In addition, there is the prescription in Article 12(a) that whoever, within a forest land and forest covered at the disposal of the Government, is desirous of carrying out any development work or economic scheme shall obtain the prior approval of the Ministry of Forestry.

However, the establishment of rubber plantation was implemented in the R.F. with the approval of the Mon Regional Government in 1995. Prior to this, the villagers said that there were a few rubber plantations due to internal conflicts. The Regional Government policy regarding rubber might lead to misconduct the procedures on land management. At the year 2011, the rubber plantations increased in area up to 4384.51 ha in Kyaikkamaw R.F.

Possible underlying factors for these misconducts are: (1) the SLRD did not follow existing regulations, (2) local people did not recognize the rules and regulations regarding land use in forested land (especially for the land use right transfer), (3) the forest management was limited at the time of high rubber market prices, and (4) law enforcement in the area was weak.

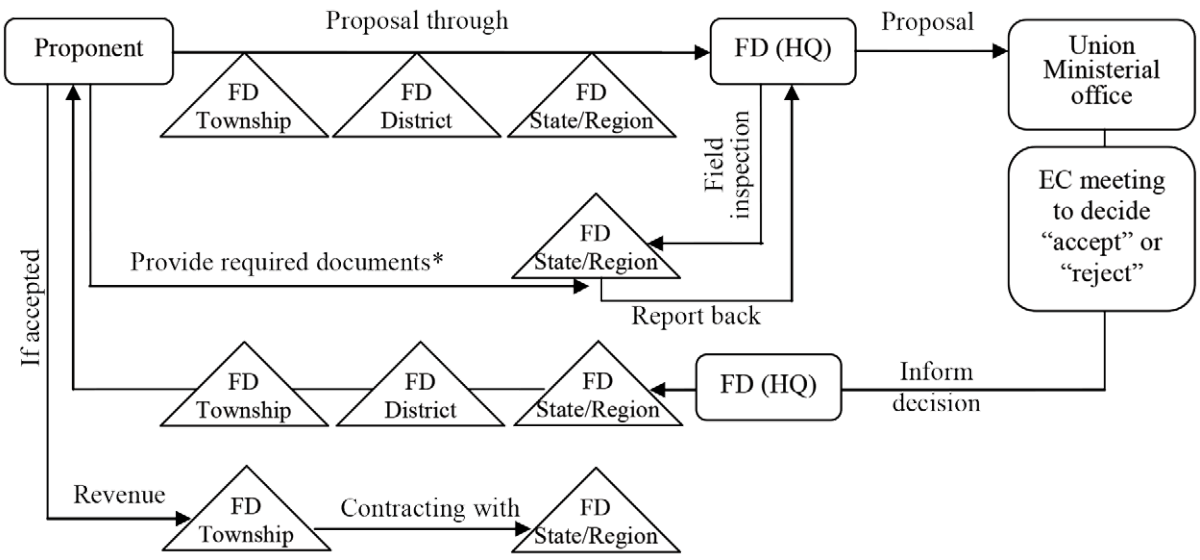
The FD has tried to solve such land issues by providing land leases for private rubber plantations and/or introducing agroforestry practices. The procedures for private rubber plantation establishment in reserved and/or protected public forests were published in 2015 (Figure 5). However, in the procedures described, cooperation with Regional SLRD was not included. Therefore, at the time of implementing the procedures, it would be better to cooperate with the Regional SLRD and Regional Government.

**House Compensated by Mining Company in Kanbauk Village, Yephyu Ts.**

In addition, difficulties in applying for the land lease were observed, especially for the initial cost (about 30,000 Kyats in average according to the interview). On the other hand, questions were raised as to why the SLRD issued the land certificate (Form 7) to those who transformed farmland to rubber plantation (according to the interview in Kanalo village).

Moreover, there should be clear boundary demarcation between the plantation and unleased R.F. area. Even though there issued the discipline, the penalty for the liability concern is to terminate the lease. Therefore, it is necessary to have strong penalties for those who fail to follow rules and regulations.

Regarding the agroforestry practices, there were some reported challenges. The Department of Agriculture introduced mixed crop patterns with Anthurium andraeanum in rubber plantations. However, it seems to only be possible within the first one or two years of planting the rubber. Therefore, it would be better to conduct research about the species combination in rubber plantation relating to agroforestry practice.




*There are two different sets of required documents. For those who newly apply for the private plantation, the documents (CVs, Form 10 (household registration certificate), Identification Card (copy), Bank Statement, Recommendation from township General Administration Department, and Operational Plan) are necessary. For those who already planted rubber and applied for approval, the above-mentioned documents together with recommendation from the respective State/Region Government will be necessary.

**Figure 5: Procedures for the private (rubber) plantation establishment in reserved and/or protected public forests**

In the Farmland Law (2012), Sections 28~30 state the process for the application to alter originally cultivated crops to others and mentions how to make decision and how to confiscate the land under certain situations.

**Visit to Land compensate site in Kanbauk Village, Yephyu Ts.**

## 4.2 Bago Region

### 4.2.1 Land Use Change, Involuntary Movements and Land Tenure Security in Bago Region

#### 4.2.1.1 Criteria for Site Selection

The UFES research team consulted with the local Forest Department officials to select appropriate sites case studies. However, as Taungoo is an area that is more prone to land issues, it is very difficult to select only one case study area to represent all the land use issues. Therefore, the research team decided to select three villages (Htonebo-Nagamauk village (BTa), Kokkobauk village (BTb), Kyun Gone village (BTc)) to represent different land use issues and provide distinctive case studies (Figure 6). The first village that has been chosen by the team is Htonebo – Nagamauk, where the name name itself reflects unsettled lands issues that need to be solved. According to FD official, Htonebo - Nagamauk in Taungoo township of Bago region demonstrates sophisticated land tenure issues involving involuntary movements, poorly defined, insecure, unrecognized land tenures affecting all the stakeholders; i.e. the local villagers, Hydropower Company and the Private Plantation Company.

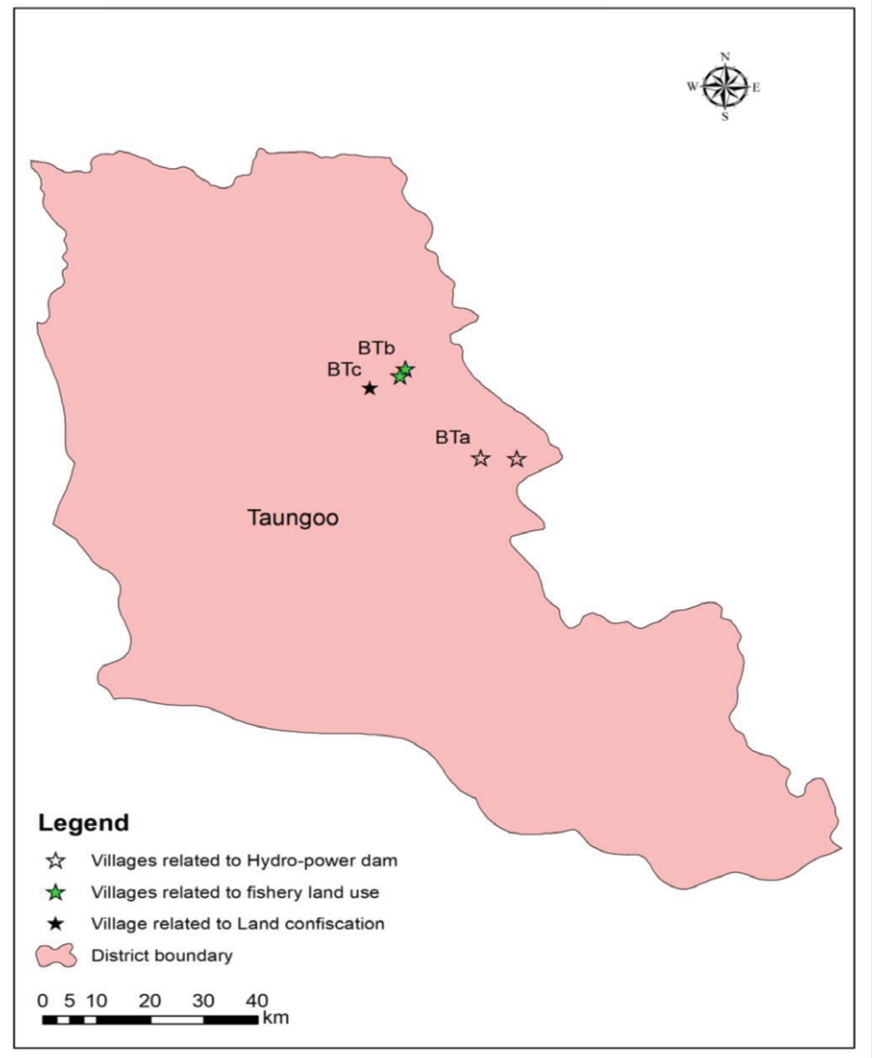



**Figure 6: Location of studied villages in Bago Region**

#### 4.2.1.2. Village history

When we conduct the FGD in each studied village, the following milestones of each village were observed (Table 3).

**Table 3: Milestones of each studied village in Bago Region**

| Year | Htonebo-Nagamauk (BTa) | Kokkobauk (BTb) | Kyun Gone (BTc) |
|---|---|---|---|
| **Before 1978** | | | **Shifting cultivation was practiced** |
| 1978-79 | | | Myitphyar Shae Pyae Cooperatives initiated sugarcane project in this region to produce sugarcane for Zeyawaddy Sugar Production Mill |
| 1991 | Hydropower Project was initiated | | |
| 1992 | | Policies that encourage to extend paddy fields lead to make landuse conversion from Inn to Le (Source: Fisheries Department) | |
| 1993 | | Starts growing paddy (Mayin paddy) in seasonal Inn land | |
| 2004-05 | | | Sugarcane project of 500 Ac for the demand of the Mill, in which some of land (242 Ac) were converted into agricultural land later |
| 2006 | KNU controlled the area (insecure) | | |
| 2012 | | | All forests were lost due to higher land price (100% of the land were converted into agricultural land) due to the issuance of Farmland Law (2012) and the establishment of Farmland Management Body |
| 2013 | Kaung Myanmar Co. Ltd. started private plantation in the village area by paying compensation fees | | |
| 2016 (Nov) | | | Establishment of Land |

#### 4.2.1.3. Population Dynamic

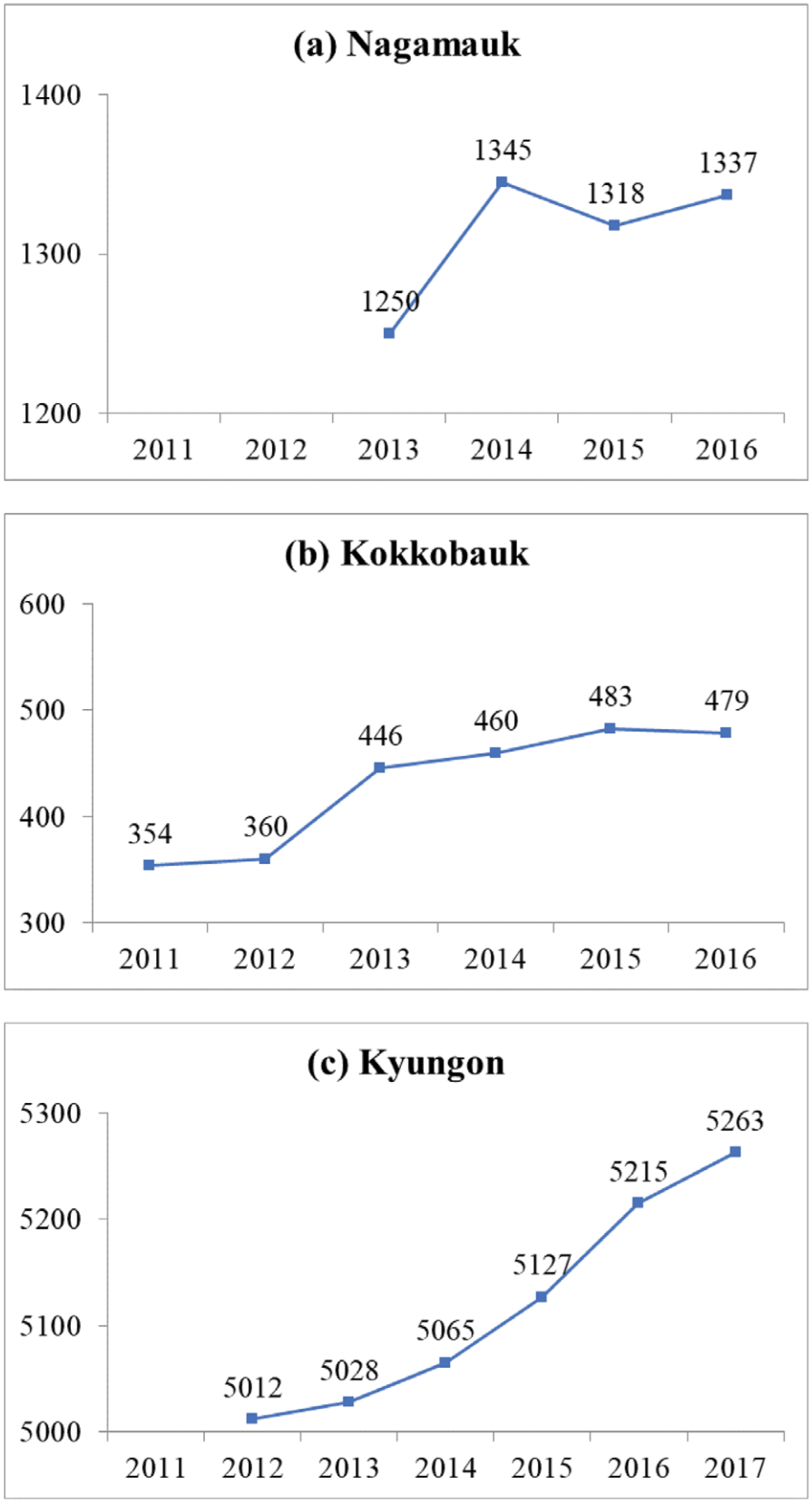



**Figure 7: Population status in three studied villages in Taungoo District**

Source: Rural Health Centre

The population of Htonebo – Nagamouk village has increased in 2014 due to relocation program for Htonebo village, which was located in a watershed area of the dam in 2006 (Figure 7(a)). The population in Htonebo – Nagamouk village was 1250 in 2013, and abruptly increased to 1345 in 2014 because of resettlement. Though, some were likely to be moved back to their old village in 2015, and the population decreased to 1318, the population still increased in the village in 2016, showing 1337.

In Kokkobauk village, the trend showed a clear increase from 354 in 2011 to 479 in 2016 (Figure 7 (b)).

A similar increasing trend was observed in Kyun Gone village (Figure 7 (c)), showing 5012 in 2012 to 5263 in 2017.

#### 4.2.1.4 Land Use Change Detection

Land use and land cover change analysis in Bago region was shown separately into three cases. Figure 8 showed the land cover changes in Htonebo-Nagamauk village over 2000~2015.

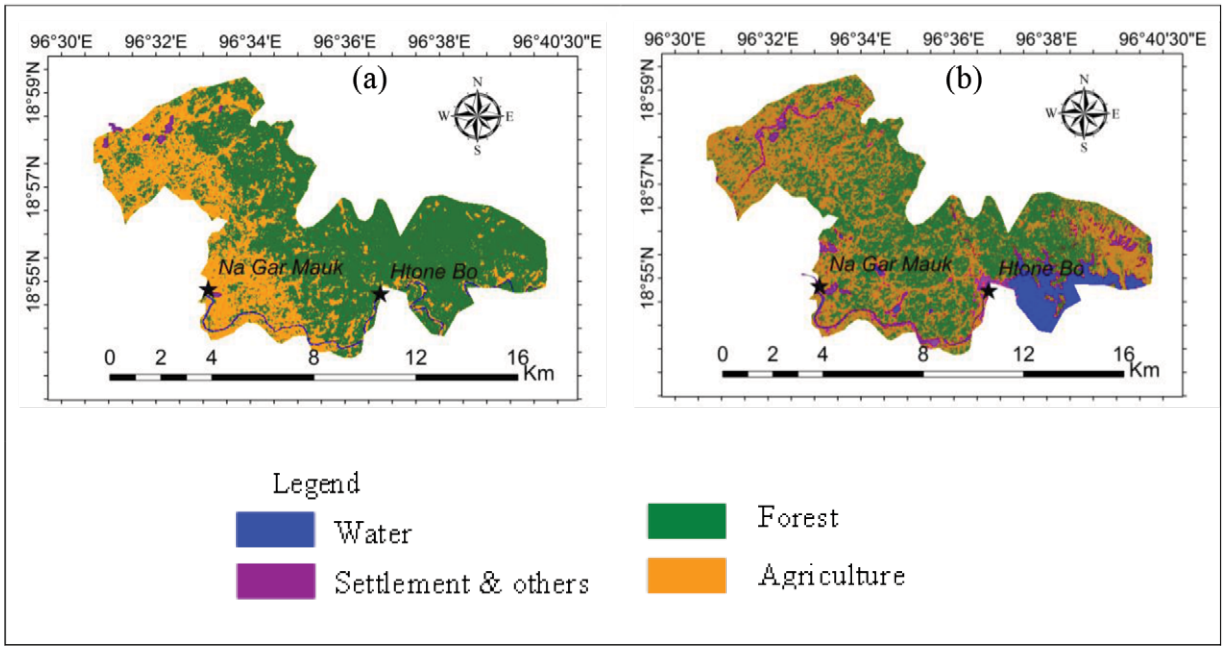



**Figure 8: Land cover map in Htonebo-Nagamauk village in 2000 (a) and in 2015 (b)**

A water reservoir was established during the studied period. It was found that the water area of 4.66 km2 covering 5.62 of the village tracts was detected in 2015 (Table 2). The reservoir made the resettlement for Htonebo village near Nagamauk village.

**Table 4: Land cover change in Nagamauk over 2000~2015**

| | 2000 Dec | | 2015Dec | | Change | |
|---|---|---|---|---|---|---|
| | Area (km2) | % | Area (km2) | % | Area (km2) | % |
| Forest | 52.99 | 63.86 | 36.19 | 43.62 | -16.70 | -31.52 |
| Agriculture | 28.56 | 34.42 | 36.27 | 43.71 | 7.61 | 26.63 |
| Water | 0.92 | 1.11 | 4.66 | 5.62 | 3.74 | 407.15 |
| Settlement & Others | 0.50 | 0.61 | 5.85 | 7.05 | 1.46 | 289.68 |

Regarding Kokkabauk village, the main land issue comes from Silaung Inn which is previously used for fisheries. Figure 9 showed the land cover change in Kokkobauk area over 2001~2016. According to the record by Fisheries Department, the total area of the Inn is 2501 ha. However, in 2001 the water represented only 60 ha. In 2016, it was estimated to be only 34.0 ha, based on image analysis. On the other hand, the paddy (locally called Mayin) significantly increased from 248.7 ha in 2001, to 512.2 ha in 2016 in the entire area while it converted 176.9 ha in 2001 to 307.3 ha in Silaung Inn (Table 5).

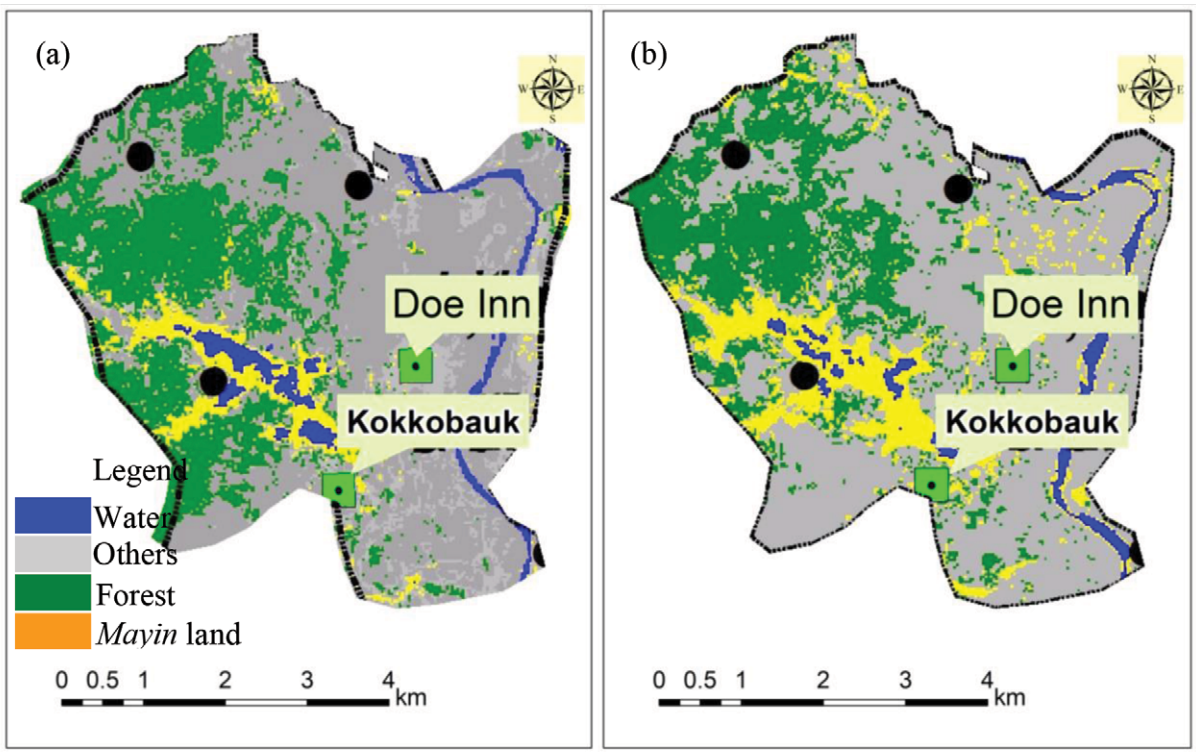



**Figure 9: Land cover map in Kokkobauk village in 2001 (a) and in 2016 (b)**

**Table 5: Land cover change in Kokkobauk over 2001~2016**

| | 2001 Feb | | 2016 Feb | | Change area (ha) | | Change (%) | |
|---|---|---|---|---|---|---|---|---|
| | Entire area (4589 ha) | Silaung Inn area (2501 ha) | Entire area (4589 ha) | Silaung Inn area (2501 ha) | | | | |
| Forest | 1118.0 | | 1036.4 | | -81.5 | | -7.3 | |
| Mayin land | 248.0 | 176.9 | 512.2 | 307.3 | 263.5 | 130.4 | 106.0 | 73.7 |
| Water | 134.2 | 59.9 | 126.6 | 34.0 | -7.6 | -25.9 | -5.6 | 43.2 |

Figure 10 demonstrates the land cover change in Kyun Gone village over 2000~2015. Table 6 described the extend of land cover change in each category in Kyun Gone village during the assessment period. The changes in each category were not remarkable, but the land tenure in this village has become a critical issue

**Table 6: Land cover change in Kyun Gone village over 2000~2015**

| | 2000 Dec | | 2015 Dec | | Change | |
|---|---|---|---|---|---|---|
| | Area (ha) | % | Area (ha) | % | Area (ha) | % |
| Forest | 588.6 | 22.7 | 590.1 | 22.8 | 1.53 | 0.3 |
| Water | 20.8 | 0.8 | 22.7 | 0.9 | 1.89 | 9.1 |
| Settlement | 929.8 | 35.9 | 1022.8 | 39.4 | 92.97 | 10.0 |
| Agriculture | 1053.9 | 40.6 | 957.5 | 36.9 | -96.39 | -9.1 |

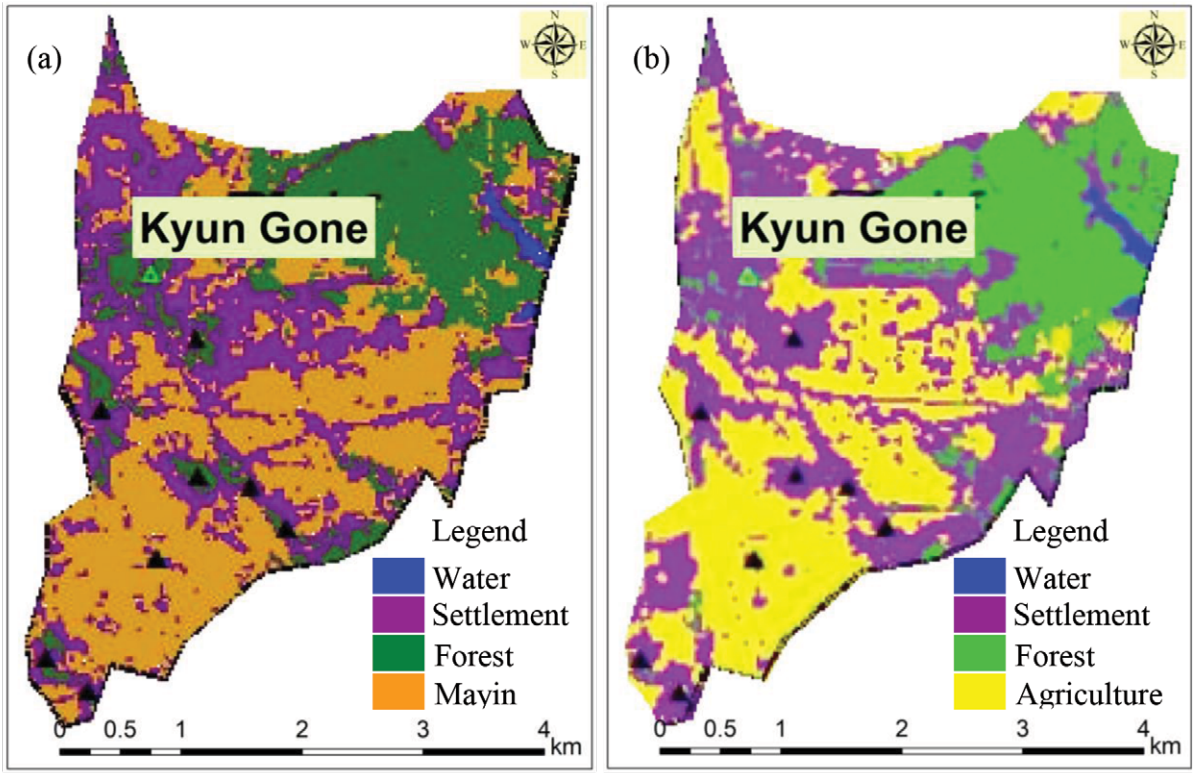



**Figure 10: Land cover map in Kyun Gone village in 2000 (a) and in 2015 (b)**

#### 4.2.1.5 Analysis of Interview Data

#### Involuntary Movements

The name of the Htonebo – Nagamauk village appeared in 2006 as a result of land resettlement for a hydropower project. Attempts to implement the hydropower project have been taking place since 1991, by Myanmar Electric Power Enterprise. However, it only took effect in 2006 under a project developed through the B.O.T contract with Shwe Swan In Company, a branch of Asia World Company. Htonebo was one of the 4 villages that had to be relocated as a result of the hydropower project. Htonebo village, an old area situated in the uphill region, was allocated next to Nagamauk village. Although Htonebo villagers got monetary compensation for their possession at the time of the land confiscations, it was not the case for the Nagamauk villagers who had to give up their land for the resettlement area. Even for Htonebo villagers who received a plausible amount of compensation, they were not happy to move from the old village. All the Htonebo villagers are ethnically Karen and their traditionally perform shifting cultivation on their land (FGD, Htonebo village). In the new allocated area, they have the money but they do not have the land to sustain their livelihood (Interview with Staff Officer, Taungoo Forest Department).

At the time of the survey, Htonebo villagers were separated into two groups – the first still living at the allocated area and the second returning to the former Htonebo village where they occupied land under customary tenure. Up until 2016, neither the government nor the company takes action with their movement. Those in the second group, the Karen, leave their new settlement area to return to their original settlement area to practice seasonal shifting cultivation. The distance is about 10 miles and they build and live in temporary settlements in the uphill areas throughout the cultivation phase. When they returned, there was nowhere to live as their land had been sold to the primary

owners from Nagamauk. Without any argument, the Karen returned to their former village and resettled. At present, Htonebo villagers are requesting to allow them to live at old village which is now inside the hydropower project area (Interview with Staff Officer, Taungoo Forest Department; FGD, Htonebo village).

### Land Acquisition Process

Although expropriating land with low market value is the common approach for land acquisition in developing countries, as stated by Ghimire (2011), it was not the case for Htonebo villagers. They receieved fair compensation for their customary holding of 1765 acres from the Shwe Swan In Company when it acquired a total of 2,940 acres for Thauk Ye Khat hydropower project (Interview with Staff Officer, Taungoo Forest Department). Still, there was a compulsory purchase i.e. officially enforced purchase of land for the benefit of the society rather than voluntary purchase at which the eligible owners have the right to sell by their own preference or refuse to if they so choose. Non-public participation was carried out during the process of expropriation. At the time of land confiscation, each family from Htonebo village received 2400 sq. ft. land to resettle as well as a monetary compensation of 3,000,000 Kyats (FGD, Htonebo village). As such, the land acquisition process went well, with very little conflict from Htonebo side. On the other hand, four of the Nagamauk villagers were required to give up 15 acres of their land for resettlement areas without any compensation. The villagers from Nagamauk did not protest strongly for several reasons, for example, they did not have the voice to speak for their rights at the time of land confiscation, only very few families were affected, and the land price at 2006 was very low. Most importantly, they believed from the customary aspect that they still owned the trees and land of 15 acres since no compensation was provided for this land, and they acted like they owned the land. In 2016, the villages around the project site were developing rapidly with access to electricity, road infrastructure, school, clean and enough water with the support of the project and no more flooding after the construction of dam (Interview with Buddhist Monk from Nagamauk). The land prices rise in response to the development and outsiders show interest in land market of Htonebo – Nagamauk. Under these circumstances, when the Htonebo villagers left their houses for shifting cultivation at their former uphill areas, some of the four primary owners seized the opportunity and sold out the land. Their reasoning is 'the bamboo houses were ruined and no one was living there. Thus, we simply reclaim the land'. According to population dynamic, these happened at 2015 (FGD, Nagamauk village).

Another land conflict found in Htonebo-Nagamouk was between a private plantation company and villagers. Kaung Myanmar Private Plantation Company (KM Company) had a land lease to establish a teak plantation of 2,400 acres, of which 500 acres are vacant and fallow lands. Nagamauk village claimed rights for these lands where they practiced customary land tenure for shifting cultivation and banana homesteads. Nagamauk villagers slashed and burned 200 acres every year for shifting cultivation within their customary holding of 1,000 acres (FGD, Nagamauk village). Initially, KM Company decided to compensate agricultural areas existing on vacant and fallow lands, based on a yearly plantation schedule. Before the arrival of KM Company, the land had no market value and no one sold or bought the land. In 2006, KM Company valued the land 50,000 Kyats per acre and provided compensation. Soon after, the compensation rate reached up to 100,000 Kyats per acre. In 2013, KM Company were required to pay 300,000 Kyats per acre without crops, up to 600,000 Kyats with crops, and 3,000,000 Kyats for an acre of two-or-three-year old rubber plantation (FGD, Nagamauk village). At this time, those who had already sold out their lands demanded to receive

equal price. Around 2015, KM Company had already planted teak in those areas and had to pay again to avoid conflict and protect their interests. Still, the villagers were demanding to receive about 30,000,000 Kyats for the 70 acres of their lands which fell within the teak plantation area. The calculation included up to two to three years income from crops that were abased due to prohibition of cultivation (Interview with Parliament Representative). As a result, KM Company were required to give up about 40 acres of already planted teak plantation areas as it could no longer afford to provide compensation for the land. KM Company stopped both processes of establishing teak plantations and providing compensation, stating that they would only pay at the time of teak plantation establishment in the rest of the areas (Interview with Parliament Representative; Interview with Staff Officer, Taungoo Forest Department).

## Land Tenure Issue

In this case study, two distinctive land confiscations, or issues, have been recorded at a single village, the first one is for hydropower project developed by Shwe Swan In Company and the second is private teak plantation project by KM Company.

Land tenure issues are always interconnected in each of the five key stages of hydropower development, i.e. political decision making, planning and detailed feasibility, project design, implementation, and operation (Oud 2002). As such, land tenure issues have a strong influence on the sustainability of hydropower projects and the overall sustainable development of the country. In the political decision-making phase, there was neither a national land use policy nor a national environmental policy to provide a check and balance electricity-starved Myanmar in site selection of hydropower project in political decision making stage. The interference of hydropower development in land use and land tenure cannot be avoided (GTZ 1998). To mitigate the impacts, the land allocation of hydropower development should be carried out through a detailed planning and feasibility phase, with the involvement of various stakeholders including affected local people, private companies (such as Shwe Swan In), and other relevant organizations like KNU and the Government as described by Ghimire (2011). Although a poorly defined consultation process was carried out by Shwe Swan In Company for developing a bilateral agreement with the Government, and also with KNU, the local people were not appropriately included. The consultation was only between influential stakeholders,

**Meeting with village head and members in Paradat Village, Yephyu Ts**

to provide a high perception of land tenure security from the side of company and support its profit from the investment. However, with the changing regime and the returning of Karen back to their original lands, these bilateral agreements might not support the sustainability of the hydropower project any longer. In the design phase when the environmental review is performed, land tenure issues should be considered early for effective governance and stakeholders' expectation (Ghimire 2011). However, at that time and at the time of the research, 'the State is the ultimate owner of all lands and all natural resources' and thus in the case of State driven hydropower project like Shwe Swan In, decision makers would naturally prioritize building infrastructure over detailed environmental review.

According to King et al. (2004), land acquisition is one of the processes carried out in implementation phase. In this case, expropriation of land with compulsory purchase, deriving from sovereign's power which is very common worldwide, was practiced. On the other hand, the Shwe Swan In treads very carefully with the KNU, as the hydropower project area was inside the gray zone. The Company was required to compensate the list of the households presented by the KNU, which was much larger than the actual list (Interview with Staff Officer, Taungoo Forest Department). All the compensation flowed was under the supervision of the KNU and the net amount reached to each Htonebo family may be less than 3,000,000 Kyats. However, the precise amount on how much a family received was not clear. With respect to local owners of agricultural land from Nagamauk where Htonebo villagers were reallocated, their customary lands were vulnerable to expropriation without any compensation as there was a lack of legal recognition of customary land tenure. During the research, they were undergoing the operational phase and mitigation measures regarding previous land issues were to be carried out (King et al. 2007) taking account on the stakeholders' satisfaction.

With regard to KM Company, two consecutive demonstrations took place against it in December 2015 and January 2016. Demonstrations include demanding KM Company not to operate on their customary land, to leave immediately from the land which it illegally trespassed and confiscated, and to solve land problems according to the law. KM Company attempted to resolve the issues via compensation but was unsuccessful. There are a lot of expectations across the community for land

**Meeting with village head and members in Paradat Village, Yephyu Ts.**

committees to monitor land disputes and oversee return of land to rightful owners, and to function effectively from village level up to national level. An interview with Parliament Representative revealed that, even though some land issues could be resolved with negotiation, where there are different underlying agendas it may be difficult to reach a mutual agreement.

### 4.2.2 Underlying Issues on Land Rights and Tenure in Bago Region

**(a) Htonebo-Nagamouk case**

In this case, there were two land issues: land confiscation due to hydropower dams, and land eviction due to private plantation.

The Farmland Law (2012), Section 26, states that: notwithstanding instructions contained in any existing law, the Central Administrative Body of the Farmland shall coordinate as may be necessary to provide compensation not to grieve absolutely for the matters carried out by the person who has the ownership right to use the farmland including the land confiscated for the interests of the State or the public interests and development by building on such land and managing by other means by the relevant.

Htonebo village was situated in dam construction area, and therefore the villagers had to be moved to the allocated area besides Nagamouk village in 2006. Even though the villagers from Htonebo were compensated for their land in dam construction area, the villagers from Nagamouk sharing land with the villagers in Htonebo were not.

In Taungoo Township, Htonebo-Nagamouk village was selected to study different types of land conflict between the companies and villagers. Old Htonebo village area which is situated at the uphill region was confiscated for the power plant and the villagers have been allocated besides Nagamouk village in 2006. Although villagers from Htonebo received monetary compensation for their plantations and land for their households, villagers from Nagamouk who had to give up about 15 acres recieved no compensation. At the time of land confiscation, there was very little conflict as Htonebo villagers received the monetary compensation of 30 lakhs for each household and 3 lakhs for an acre of agricultural land without crop, 6 lakhs for an acre with cultivated crop, and 30 lakhs for an acre of two- or three-year old rubber plantation. The villagers from Nagamouk also did not protest strongly because the land price is very low at the time of confiscation. Moreover,

**Meeting with Officers, Forest Department, Dawei Ts.**

**Land use around Mudu Village, Yephyu Township, Tanintharyi Region**

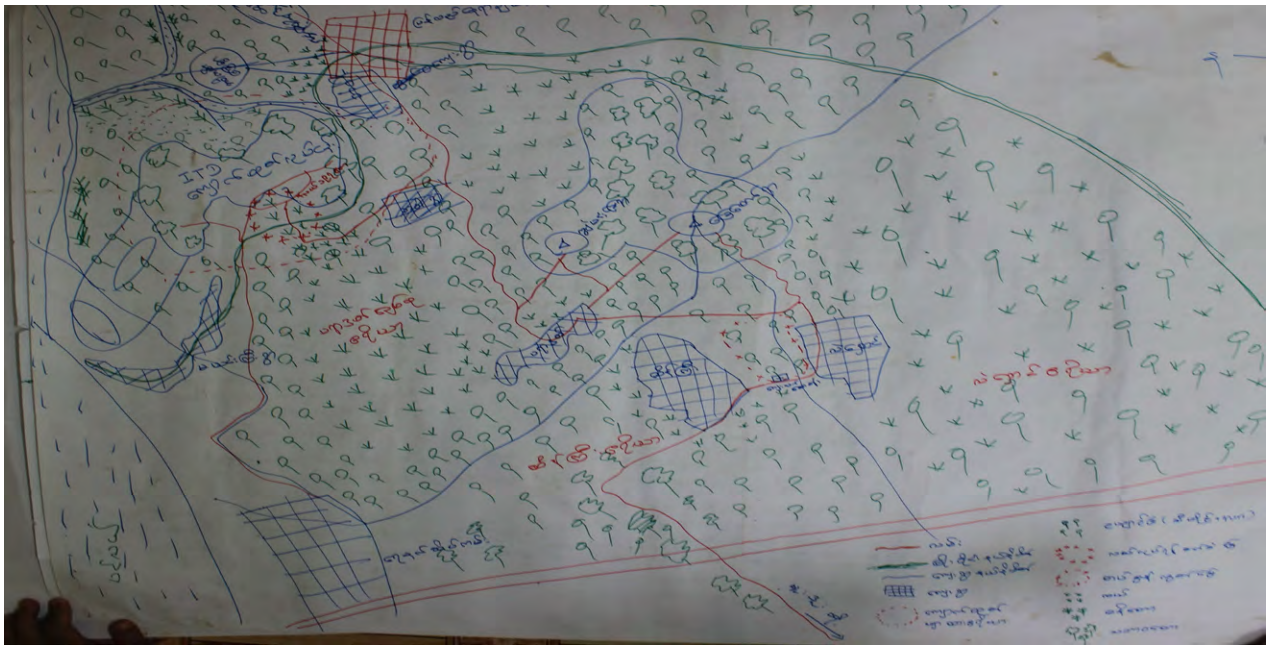
customarily they still owned the trees and land of 15 acres since no one has compensate them. At present, the land price rises with the development of power plant which provided road construction and electricity. Thus, when Htonebo villagers leave their houses to cultivate on upland areas, some of the original owners from Nagamouk sold out their land. When Htonebo villagers finished their seasonal cultivation and returned back, they have no place to live and they tried to resettle again at the old village. The next land conflict in Htonebo-Nagamouk is between private plantation company and villagers after the company got a land lease of 2400 acres in customarily cultivated area for teak plantation. The villagers received monetary compensation of 3 lakhs per acre with no crop and up to 6 lakhs with crop for their customary land of 500 acres in 2013. At present, the private company no longer affords to compensate the land.

**Meeting with Officers, Forest Department, Dawei Ts.**

**(b) Kyun Gone case**

Kyun Gone Village is situated along Yangon-Mandalay Old Highway Road. In 1978-1979 people living around Kyun Gone Village practiced shifting cultivation and tried to expand taungya. However, those people had to abandon their land due to soil fertility. Following this, "Myit Phyar Cooperatives" tried to confiscate those land in 1988, and also abandoned the area again. After that, with the direction of State Peace and Development Council, the military base at Taungoo tried to establish sugarcane plantations there. They announced that the local people can participate in establishing these sugarcane plantations. Local people living in and around Kyun Gone village took part in and prepared the land for sugarcane plantation. Those who practice shifting cultivation during 1978-1979 did not participate at that project. Again, some people no longer participate in sugarcane plantation projects for several reasons, including difficulties in land preparation, and soil infertility. These people are replaced by new ones. When the military abrogated the seized land, all those who have used the land before 1978-1979 and up till now tried to claim these lands as theirs.

The issue in Kyun Gone village is more concerned with farmland. According to the Farmland Law (2012) (The Pyidaungsu Hluttaw, 2012), farmland includes the low land (paddy land), upland (Ya), silty land (Kaing Kyun), hill-side cultivation land (Taungya), perennial crops land, nipa palm land (Dhani), garden land or horticultural land and alluvial land. Regarding the permission to use the farmland, it is stated that those with the right to use the farmland will be the one who is legally using thelLand, at present, in accordance with laws in force before the Farmland Law (2012) (Point 2 of Sub-Section A under Section 6 of the Law and Sub-section D under Section 3 of the Rules) (The Pyidaungsu Hluttaw, 2012; MoAI, 2012). In Kyun Gone village, the villagers who originally opened the land in 1978 were disputing their land at the time of land abrogation by the military, even though they had abandoned their lands for a long period and did not participate in the sugarcane project during that time. During that time, several practitioners (Myit Thar Tha Ma and sugarcane plantation practitioner) used their lands. This became a complicated land issue at the time of land abrogation by the military.



**Land use around Paradat Village, Yephyu Township, Tanintharyi Region**

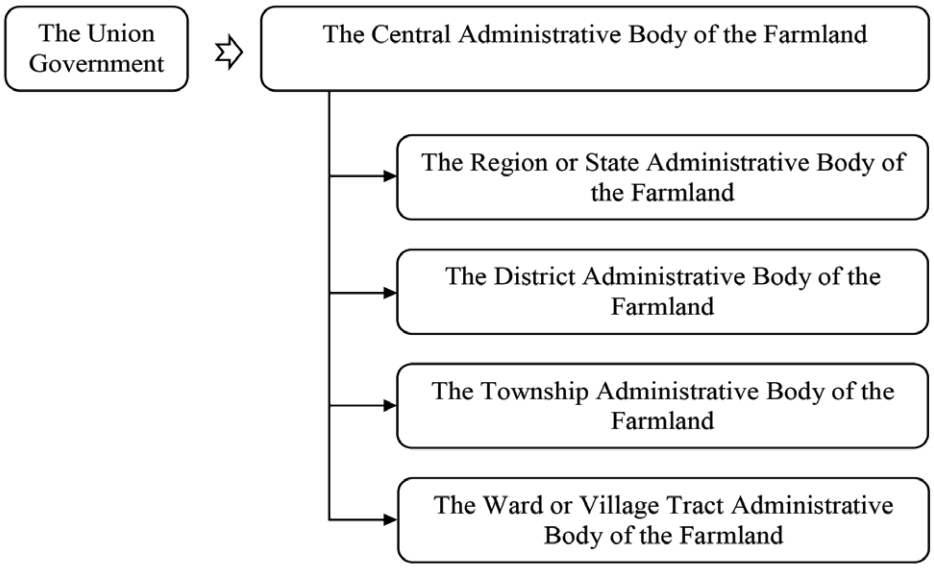



**Figure 11: Formation of the various levels of administrative body of the Farmland** -
Source: Section 15 and 16 of the Farmland Law (2012) (The Pyidaungsu Hluttaw, 2012)

Section 7 in the Farmland Law (The Pyidaungsu Hluttaw, 2012) and Section 16 of the Rules (MoAI, 2012) state that "Township Administrative Body of the Farmland shall… issue the certificate to use the farmland… relating to the farmland on which right to use is confiscated and… after enforcement of this law". Moreover, it is mentioned that if the disputes relating to the right to use the farmland arises after this Law has come into force, it shall have the right to settle legally only after registration in the Department (Section 13 under the Law). Also, the certificate for the permission to use the farmland shall be issued in accordance with the Rules, only after the land disputes had be legally settled according to the laws in force prior to the enforcement of the Farmland Law (Section 15 under the Rule). Even though the Farmland Law was enforced since 2012, the issue was not solved yet. It is in question why the land dispute continues without any reasonable solutions. It has been suggested to be a consequence of unclear decision making.On the other hand, due process needs to


**Land use around Kanbauk, Yephyu Township, Tanintharyi Region**

be taken into account. According to the Farmland Law (The Pyidaungsu Hluttaw, 2012), the process of settlement of dispute on the right to use the farmland and appeal is outlined in Figure 11 and Figure 12.

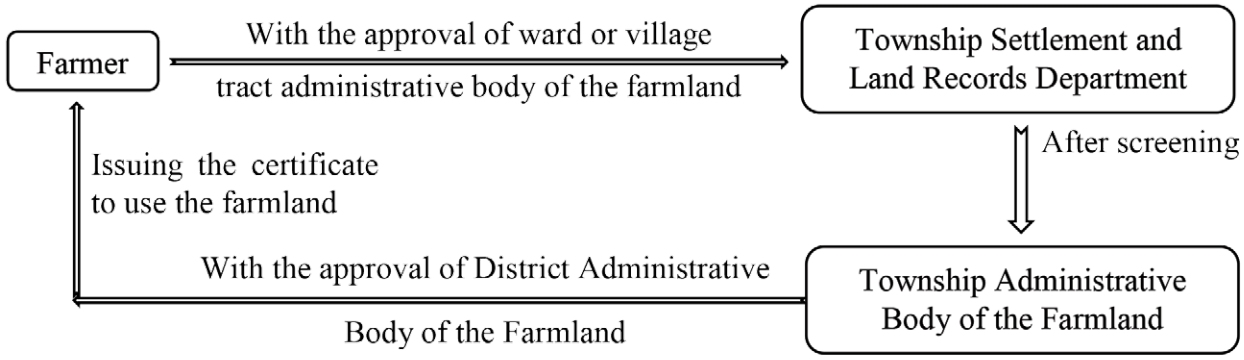
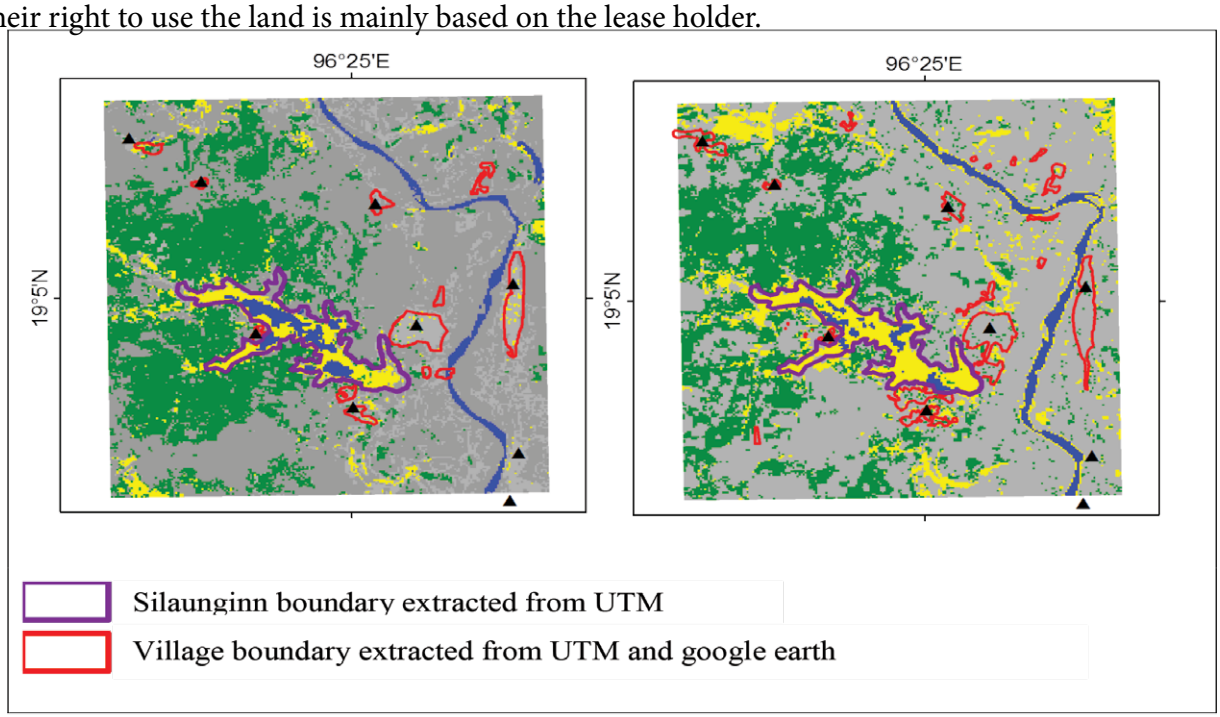



**Figure 12: Process showing how to apply for the permission to use farmland**

Source: Section 4~8 of the Farmland Law (2012) (The Pyidaungsu Hluttaw, 2012)

**(c) Kokkobauk case**

In case of Kokkobauk village, land use conflict occurred among the local farmers and the lease (license) holder for freshwater fisheries water. The fisheries water nearby Kokkobauk village is still designated as "a leasable fishery" under the 1991 Freshwater Fisheries Law (The SLORC, 1991). Due to climate change, some areas under leasable fishery may change to cultivable lands. However, the area has been granted with the lease in line with the Law (The SLORC, 1991). The lease holder was operating fisheries in granted fisheries water, whereas he allowed the local farmers to cultivate lands inside the granted fisheries water through payment. In the lease (documented by the District Fisheries Department), the area of the freshwater fisheries water is about 55 acres (22.27 ha). The total area of the water estimated from the UTM map in 2000 is about 552 acres (223.48 ha) shown in Figure 13. According to the interview, the local farmers do not have the tenure for land use, and their right to use the land is mainly based on the lease holder.



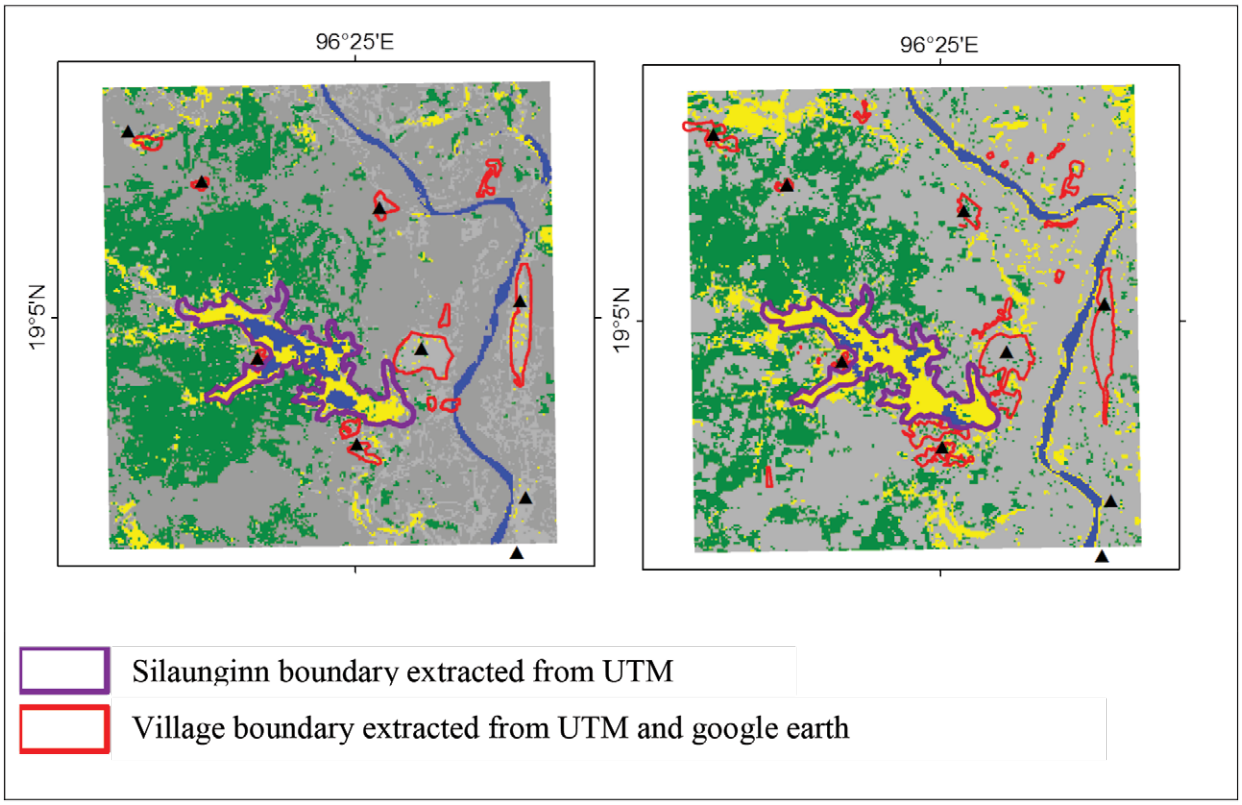



**Figure 13 Land cover maps in Kokkobauk village in 2001 (left) and in 2016 (right) with the village and fisheries water boundary extracted from topographic map and google earth**

**Visit to Land compensate site in Kanbauk Village, Yephyu Ts.**

According to the 1991 Law, even the lake of the temporary nature is still included in the freshwater fisheries waters (The SLORC, 1991; Ministry of Agriculture and Livestocks, 2015). In the bidding ordinance issued by District Office-in-Charge (Ministry of Agriculture and Livestocks, 2015; The Bago Region Government, 2013), several principles are mentioned to follow by the lease holder. Of these, three principles which are related to the above-mentioned conflict will be highlighted:

(i) At the time of auction, those who are willing to purchase the lease for the desirable fisheries water need to clarify the boundaries of the water and principles of the lease prior to the auction (Section 14).

(ii) Those who hold the lease according to the approval by District Officer-in-Charge are responsible for the impacts of all activities operating within or in part of the freshwater fisheries water by himself/herself or by others he/she allowed (Section 16).

(iii) Those who hold the lease must allow, in negotiation with, water from the granted freshwater fisheries water to be used for agriculture (Section 22).

Moreover, Section 39 in the 1991 Law states that no one shall cultivate agricultural crops within the boundary of a fishery creek.

This issue is much related to: (i) weakness in boundary designated for the lease, (ii) land right and tenure due to lack of recognition of customary rights of the local farmers, and (iii) weak awareness of legal regulations by both local farmers and lease holders.

## 4.3 Tanintharyi Region

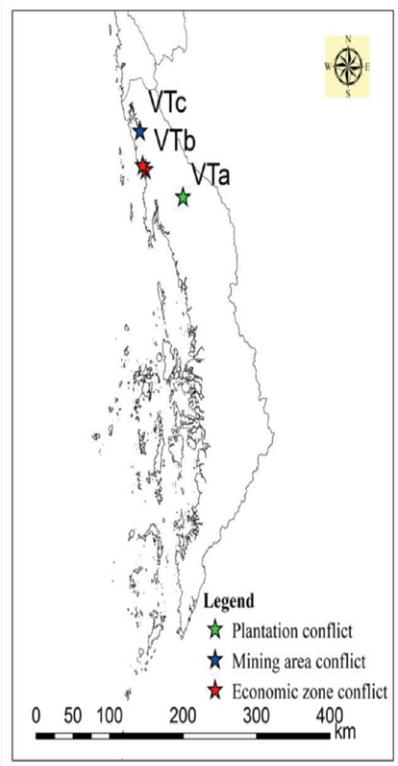



**Figure 14: Location of studied villages in Tanintharyi Region**

For the land cover analysis in Tanintharyi Region, images were not accessed. Therefore, the images from Google Earth Pro were applied to compare the land cover conditions in each of the case studies.

### 4.3.1 Case Study in Tanintharyi Region 1

In Paungdawgyi village, the red-colored highlighted polygon showed the land cover change in the images from Google Earth Pro. Hein-Dar Protected Public Forest was declared as Protected Public Forest in 2011. Though the plantation started in 2017, the land cover showed the land clearing since 2011 in this area (Figure 15).

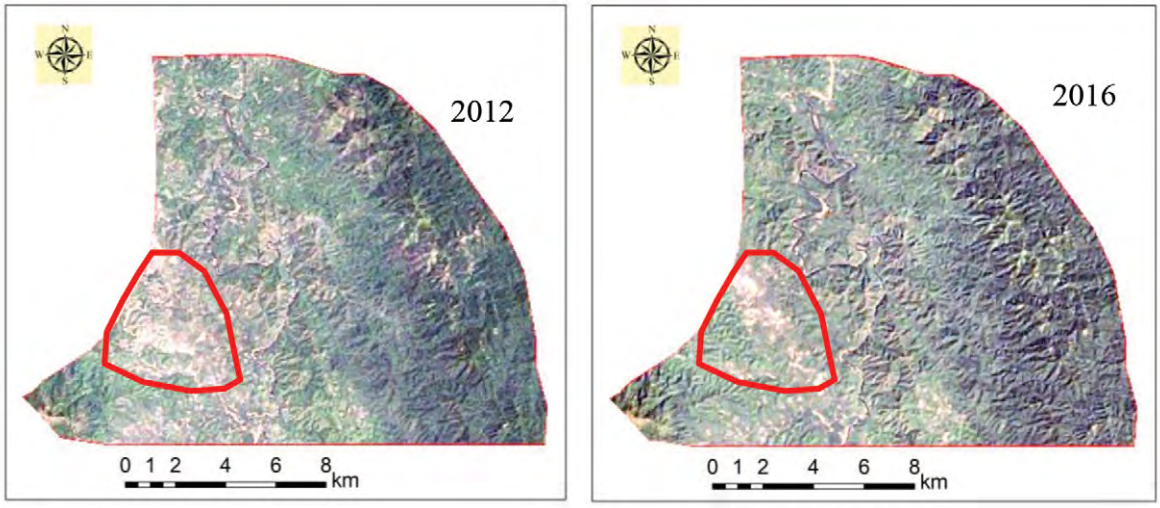



**Figure 15: Comparative land cover in Muu Duu village inside Special Economic Zone over 2012~2016** (Source: Google Earth Pro)

### 4.3.2 Case Study in Tanintharyi Region 2

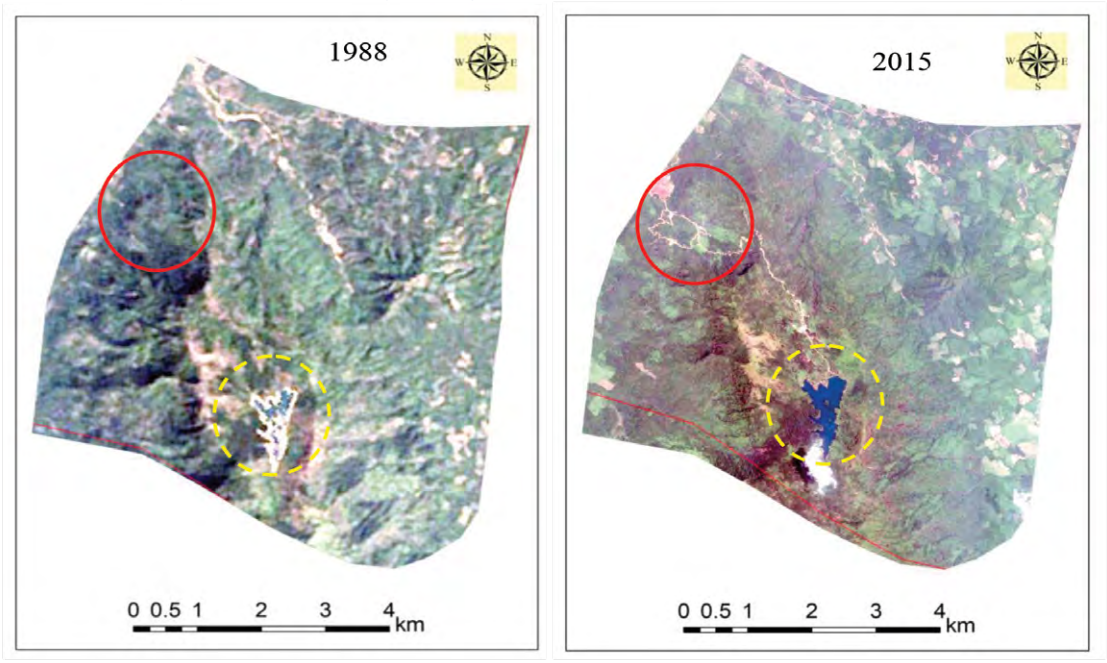



**Figure 16: Comparative land cover in Kanpauk mining area over 1988~2015** (Source: Google Earth Pro)

In Kanpauk mining reserve, the red polygon shows the establishment of the Kanpauk village (Figure 16). In addition, the yellow coloured polygon described the mining deposit pond (Figure 16).

### 4.3.3 Case Study in Tanintharyi Region 3

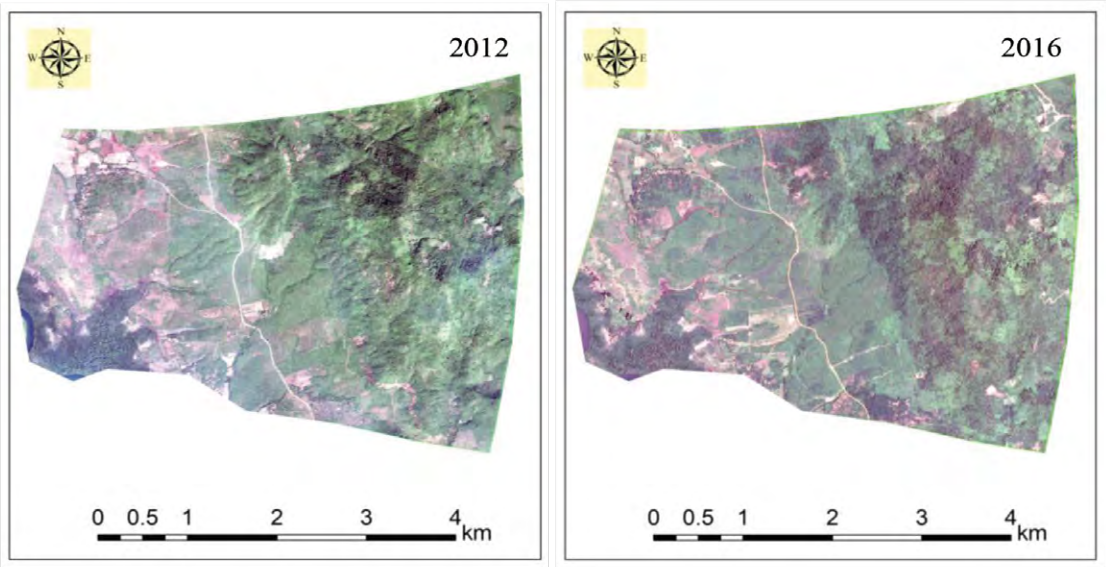



**Figure 17: Comparative land cover in Muu Duu village inside Special Economic Zone over 2012~2016**

(Source: Google Earth Pro)

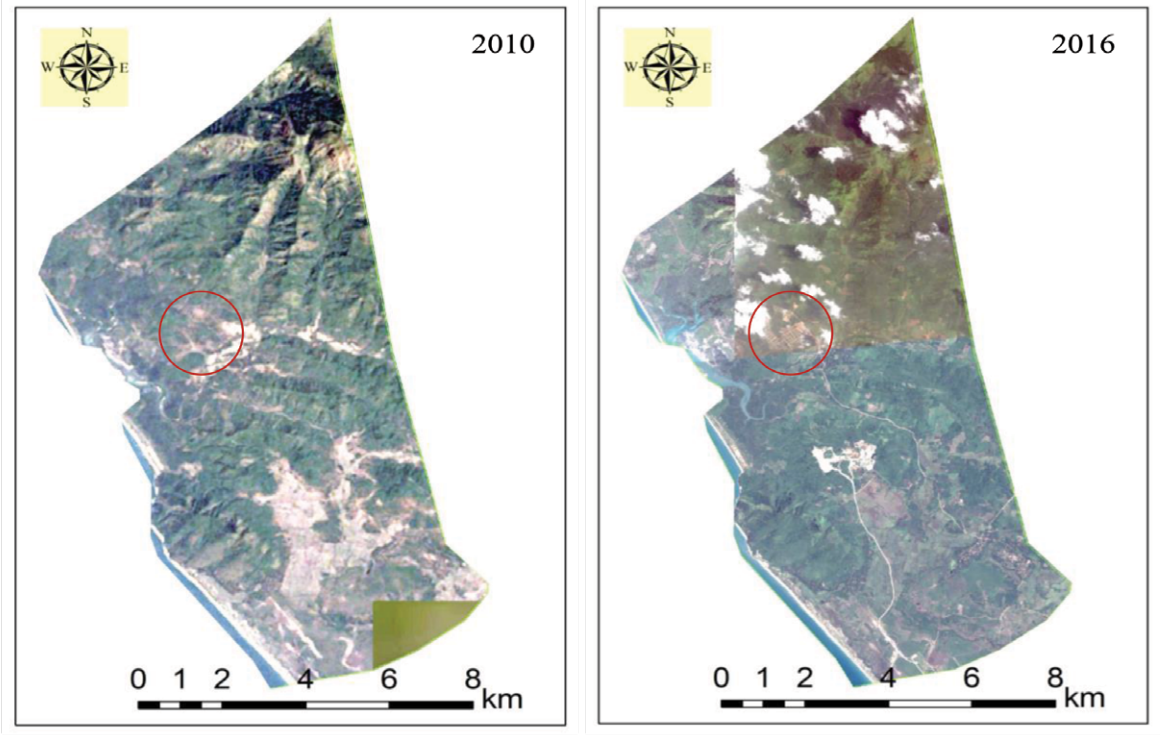



**Figure 18: Comparative land cover in Pa Ra Dat village inside Special Economic Zone over 2010~2016**

(Source: Google Earth Pro)

In Muu Duu and Pa Ra Dat villages in Special Economic Zone (Dawei Deep Sea Port), the resettlement area could not be observed not in Muu Duu village area (Figure 17), but in Pa Ra Dat village area as shown by red coloured polygon in Figure 18.

### 4.3.4 Underlying Issues on Land Rights and Tenure in Tanintharyi Region

**(a) Paungtawgyi case**

In the Paungtawgyi village, according to an interview survey, the information about the declaration of Hein-Dar Protected Public Forest in Yay Phyu Township, in 2011, did not reach the local communities due to security concerns. As a result there were conflicts in land use between the Township Forest Department and the local communities.

According to the Myanmar Forest Policy (1995), the Forest Department must implement the policy measure for 30 percent of the total land area as forest reservation (MOF, 1995). As such, the Forest Department has attempted to establish the reserved forests and constitute the protected public forests in accordance with the Forest Law (1992) (The SLORC, 1992).

According to the District Forest Department, the Hein-Dar Protected Public Forest in Yebyu Township was declared in 2011. At the time of the establishment of the Protected Public Forest, it seemed that Township Forest Department experienced difficulties to follow the procedures for security reasons. With limited on-the-ground information, it was proposed that a Protected Public Forest be established. When declaring the proposal to prescribe the land as protected public forest, the restricted activities need to be declared in a manner prescribed in Article 6(c) of Forest Law 1992, and by Section 3 and 5 of Forest Rules 1995.

On the other hand, most of the local villagers stated that they did not have access to the information about their affected rights. Also, according to an interview, they did not recognize Section 13 of Forest Rules 1995 that they have the right to appeal about the forest produce and land use to Director General within 90 days from the date of the proposal declaration.

The Forest Department planned to establish 1,000 acres of forest plantation in the Protected Public Forest for five years, with 200 acres per year, starting from 2017. The villagers from Paungtawgyi claimed that the targeted plantation areas were overlapped with their betel nut farming areas, which in turn fueled land conflicts between the Forest Department and local communities. In some parts of the planted areas, planted by the Forest Department, the villagers set fire to clear the land for their betel nut farming. However, in the Law 1992, there are no offences and penalties for those who commit any illegal acts for protected public forests, except in Section 105 Rules No 17(A) and 19 of Forest Rules 1995.

This case is derived from: (i) not following the procedures in Forest Law 1992 and Forest Rules 1995 to prescribe the protected public forest due to security reasons, (ii) limited information given to the public, and (iii) lack of offences and penalties for protected public forests in Forest Laws 1992 and Forest Rules 1995.

(b) **Kanpauk case**

Kanpauk village area is located inside the Mineral Reserve Area where mining has been conducted since 1911. According to Focus Group Discussions, this village was established 150 years ago. Since 1996, the Developers Entrepreneurs Liaison Construction Organizers Ltd. (DELCO) has started mining in collaboration with the Department of Mines under the Ministry of Mines (currently under the Ministry of Natural Resources and Environmental Conservation or MONREC).

The main issue observed in Kanpauk village is the land conflict between Delco Ltd and the villagers who have been living in the Mineral Reserve. Additionally, in May 2016, there was another issue

about sullying local creeks by dumping excavated soil by company and hoarding water from a nearby lake that villagers depended on for their daily use (Nang Mya Nadi, 2016). According to individual interview and the news report (Nang Mya Nadi, 2016), the embankment of a tailing pond operated by Delco Ltd in Kanpauk collapsed in 2016, causing a massive landslide that left one child dead and around 300 people displaced. For that, Delco Ltd. faced the residents' demands to respect the Mines Law regarding to environmental protection (Htwe, 2016). According to Htwe (2016), DELCO Ltd. had built 19 new houses and paid additional compensation.

In regard with the issues in Kanpauk, there are two points to be considered in the Myanmar Mines Law 1994, the Amending Law of Myanmar Mines Law 2015 and the Myanmar Mines Rules 1996: (1) village settlement in Mineral Reserve Area, and (2) duties of the holder of permit.

For the first point, any legal restrictions about the village settlement in Mineral Reserve Area are not found in the Myanmar Mines Law 1994, even in the Amending Law, or in the Myanmar Mines Rules 1996. However, the general descriptions can be seen in the Myanmar Mines Law 1994 and in the Amending Law 2015 as follows:

> *Article 33: Whoever trespasses the Mineral Reserve Area demarcated under this Law without permission shall on conviction be punished with imprisonment for a term which may extend to 6 months or with fine which may extend to Kyats 500000 or both.*
>
> *Article 33 (a): Whoever commit the Article 33 again on conviction be punished with imprisonment for a term which may extend to 6 months or with fine which may extend to Kyats 500000.*

Also, in the Myanmar Mines Rules, the safety and health of the mines workers are mainly described, except the inspections of accidents by inspection officer (Section 113 of the Myanmar Mines Rules 1996).

Regarding to the second point (duties of the holder of the permit), it is clearly stated in Chapter IV in the Myanmar Mines Law 1994 and in the Amending Law 2015 as follow:

Section 13 The holder of permit shall comply with the rules prescribed under this law in respect of (f) reporting of accidents, loss of life and bodily injury received due to such accidents in the mine.

Also, in the Myanmar Mines Rules 1996, only the procedures of how to implement the environmental conservation works that may have detrimental effects due to mining operation are mentioned (Chapter 21 of the Myanmar Mines Rules 1996). There were no rules about the compensation for the public.

**Background of Delco Ltd.1**

1910 Since as early as the 1910s, mining has been a traditional trade in the Dawei District of Tanintharyi Division, in southern Myanmar

1911 In 1911, under the leadership of British Colonel Radcliffe, Messrs Radcliffe Company began the first mining operations in the region

1918 The company built the Sinyat dam, which was completed in 1918

1926 In 1926 Kanpauk Mines Limited took over the operations

1954 At the end of the Second World War (around 1954), the operations were handed over to Tavoy Trading Limited

1968 Tavoy Trading Limited operated for about 14 years before passing the business onto Mineral Development Corporation in 1968

1971 With the introduction of the Socialist Economic System in 1971, the business was nationalized under Tin-Tungsten Corporation. The Ministry of Mines carried out operations with the endorsement of the No (2) Mining Corporation Act till 1996

1996 The Launch of Myanmar's "open door" economic policy in 1996 raised the opportunity for the business to operate on a production sharing basis

1998 From 1998 to 2007, Delco Ltd. had worked with the Ministry of Mines on a shared mining structure

2007 It was fully acquired and privatized by Mr. Ding Ying in 2007. Today, Delco Ltd is a 100% privately owned independent business

**(c) Mudu and Paradat case**

In this case, there cases are observed relating to: land conflicts due to Dawei Deep-Sea Port Project, resettlement program by the Project, and environmental issues regarding gravel and granite mining in their watershed.

### Land conflicts due to Dawei Deep-Sea Port Project

For the first case, land conflicts comprise of two issues: land trade issue and compensation issue. Regarding with the settlement of disputes (Chapter 11 of The Myanmar Special Economic Zone Law 2014 and Chapter 13 of The Myanmar Special Economic Zone Rules 2015), the Law and Rules address only disputes between Developers and Investors, or Developers and the relevant Management Committee, or Investors and the relevant Management Committee, or between Developers, or between Investors, but not between Developers, Investors, or the relevant Management Committee and the Public.

According to our interviews, there seemed to be a Land Allocation Committee formed with four members (including one farmer representative, the village head, one clerk from General Administration Department and one person who is respected by all of the villagers). It could be said that the National Land Use Policy 2016 is followed in order to solve the disputes, however, there is no clear mechanism in the Policy. Therefore, it is necessary to include the dispute resolution mechanism in the Special Economic Zone Law or Rules or somewhere in the Laws. Moreover, Section 40(c) stated that "When amending or newly enacting relevant laws, rules and procedures, they shall be inconformity with National Land Law and based on the following: Shall describe effective, consistent and fair valuation system when providing compensation and relocation for people affected by land acquisitions."

### Resettlement program by the Dawei Deep-Sea Port Project

Regarding to the second issue, the local people, according to the interview, do not want to live in the resettlement area and in built-houses for several reasons. One of the main reasons is that they were not involved in, or consulted on, the process of selecting the resettlement area. In the National Land Use Policy 2016, Section 32 (a) stated that "When conducting ESIA, if members of the public need to be relocated for a public purpose, which is unavoidable, then there shall be public consultation, negotiation and participatory decision making." Therefore, in the future national Land Law, it is necessary to take into account of the desire of the public at the time of consultation and decision-making processes.

### Environmental issues regarding gravel and granite mining in their watershed.

For the third issue, gravel and granite mining is observed in the watershed area of the villages. Due to gravel and granite mining for Special Economic Zone construction, some parts of the cultivation area received dumps of excavated masses of soil, and some water sources for irrigation disappeared, according to interview and field observation. In the National Land Use Policy 2016, "When granting or leasing of land … shall provide prior notice, secure feedback from stakeholder, and conduct an ESIA in accordance with law, in order to not affect the public negatively (Section 30)." Even in the Environmental Conservation Law 2012, Section 13(e) mentioned that "The Minister shall, under the guidance of the Committee, maintain a comprehensive monitoring system and implement by itself or in co-ordination with relevant Government departments and organizations in the following matters: Carrying out development and constructions." No clear development and constructions are mentioned in the law.

# Conclusion and Recommendation

This report focused on land use and land tenure change in Myanmar, specifically on three regions where land tenure is of critical concern: Mon State, Bago Region and Tanintharyi Region.

In Mon State, the conversion from the whole Reserved Forest (R.F) to rubber plantation was detected over 2000~2016. With increasing market demand and changes in policy, rubber plantations were established at an alarming rate. This led to the issues relating to land use and land tenure change in this region. At the time of the research, the Forest Department were resolving such issues by allowing rubber-based community forestry and private rubber plantation inside the R.Fs. On the other hand, it was observed that SLRD wrongly issued Form 7s in the R.F. This resulted in a complicated land issue which was difficult to resolve by granting rubber-based community forestry and private rubber plantation. According to our findings, the major underlying factors are likely to be: (1) misconducts of existing regulations by SLRD, (2) limitations in regulatory awareness by local people, (3) limited work force for forest management, and (4) weakness in law enforcement.

In case of Bago region, forest land was significantly reduced, except the case in Kyun Gone village where the land was seized and managed by military. The farmland areas in Kyun Gone village did not increase as the lands are abandoned during the control of military. Water areas were increased in all study village tracts, except Kokkobauk village where there is conversion of fisheries water areas for cultivating Mayin. Several other land issues were observed, including: involuntary movements, land grabbing and reallocation due to water reservoir construction for hydro-power generation, land eviction due to private plantation, expropriation of land with compulsory purchase, unsecured farmland tenure, undue process and nonpublic participation in decision-making and dispute in leasable fishery land. In each case, the diverse stories described different root causes, with varying ways to resolve them.

In case of Tanintharyi Region, land use change was likely a result of the establishment of governmental plantations, and resettlement in mineral reserves and in the area under Dawei Deep-Sea Port Project. Land issues arise as a result of relocation and compensation programs by the Project, land trade issues and environmental issue regarding gravel and granite mining in their watershed.

**Land use in Protected Republic Reserve the forest near Phaung-daw-gyi Village, Dawei Ts.**

While it is understandable that economic development is prioritized in Myanmar, it needs to pay attention to the environmental policy targets at national level while implementing economic development.

Therefore, we would like to recommend the following:

1. Regarding the existing regulations

- The Farmland Law needs to be revised by assessing the decision-making and due process (CABF and ABF at different levels).
- Regulations related to private plantation should be taken into account in the revised Forest Law.
- Procedures for land lease by FD should be not complicated and expensive.
- Cases where there are no clear land tenure right for both cases (e.g. those who were relocated vs. those who shared the land) should be solved.
- Clear compensation mechanisms should be established in each law.
- Customary rights of the local farmers should be recognized in all regulations.

2. Regarding mechanisms

- Difficulties to implement management activities in the areas with internal conflicts (for example where they cannot control the encroachment of rubber plantation in R.F.) were reported during field survey. Therefore, law enforcement should be strengthened.
- There needs to be greater awareness of rules and regulations among the public, and effective mechanisms to handle the misconducts must be established.
- It is necessary to take into account the desire of the public at the time of consultation and decision-making processes relating to land law and policy.
- It is necessary to include a dispute resolution mechanism in the Special Economic Zone Law or Rules.

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