



## Voices of Land from Southern Myanmar:

### Hein Ze – A Rural Village in Yebyu Township about Land Use Change and Wellbeing



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**Cover photo:** Different land uses in Hein Ze, Myanmar (composed by Lara M. Lundsgaard-Hansen; transect to community forest, by Lara M. Lundsgaard-Hansen; villager's house, by Lara M. Lundsgaard-Hansen; rubber tree scratching, by Katharina Nydegger; betel nut cut in half, by Katharina Nydegger)

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***Please note: This report is fully grounded on the villagers' perspective and one company only. It does not include the voices of other companies, civil society organisations, government representatives or other stakeholders. Also does it not necessarily represent the perspective of the authors and the project team.***

## Preface – The research project

The Swiss Programme for Research on Global Issues for Development (**r4d programme**) is a joint funding initiative by the Swiss Agency for Development and Cooperation (SDC) and the Swiss National Science Foundation (SNSF). The r4d programme supports research aimed at solving global problems with focus on least developed as well as low- and middle-income countries.

Within the r4d programme of SDC and SNSF, we run the six years project with the name “*Managing telecoupled landscapes for the sustainable provision of ecosystem services and poverty alleviation*”, in short “**Telecoupled Landscapes**”.

This project builds on research partnerships in Laos, Myanmar, and Madagascar. The overall goal is to come up with innovative strategies for people and regulations in order to secure ecosystems and the wellbeing of people. The research includes ecosystem services assessments, land governance analysis, land use mapping of the past and the present, landscape modelling of the future, and social learning among land stakeholders. The project officially started on January 1<sup>st</sup> 2015, and is expected to last for six years.

The overall project is coordinated by the Centre for Development and Environment (CDE) of the University of Bern, Switzerland, under the lead of Prof. Dr. Peter Messerli. The research team in Myanmar is coordinated by the Environmental and Economic Research Institute (EERi), represented by Dr. Win Myint.

Throughout the duration of the project, we will produce various publications and databases together with our partners. We will also upload stories, pictures and videos on our website and social media channels.

Website: [www.telecoupling.unibe.ch](http://www.telecoupling.unibe.ch)

Facebook: [www.facebook.com/R4DTelecoupling](https://www.facebook.com/R4DTelecoupling)

# 1. Aim of the research project and working papers

## 1.1. Aim of the research project “Telecoupled Landscapes”

The debate about Sustainable Development Goals following the United Nations “Rio+20” reveals the difficulty of simultaneously addressing social and economic development challenges and the degradation of Earth’s life support systems. Land systems in the humid tropics illustrate these challenges prominently. Local people’s land use strategies are facing competition from large-scale land acquisition, logging etc., but also biodiversity conservation. Remote decision-makers can reshape flows of ecosystem services to their benefit, whereas the consequences hardly reach them. Land change scientists have recently conceptualized this phenomenon under the term “telecoupling”. Our research project within the Swiss Programme for Research on Global Issues for Development (r4d programme) pursues the overall goal of devising and testing innovative strategies and institutional arrangements for securing ecosystem service flows and human well-being in and between telecoupled landscapes at study sites in Laos, Myanmar, and Madagascar.

### 1.1.1. Main research objectives of the international research project

The project is guided by the following four objectives:

- 1) Social-ecological systems (SES) at different stages of telecoupling are assessed and understood in terms of their capacity to provide ecosystem services for human well-being.
- 2) Recurrent processes of telecoupling are identified and generalized from case study research as a basis for predicting pathways of land use transitions and for strategy planning at different spatial and temporal scales.
- 3) Multiple stakeholders learn and adapt their land use decisions based on knowledge sharing, joint model development, and future scenarios.
- 4) Adaptations of actors’ decision-making on SES are systematically monitored, understood, and shared.

### 1.1.2. Specific research questions for this series about land in Myanmar

Within the international project *Telecoupled Landscapes*, one research package focuses on **land governance in Myanmar**. The case study area is located in Yebyu Township, Tanintharyi Region, Southern Myanmar. From various land uses and land use changes, we draw a network of included and excluded stakeholders in land use decision-making. We analyse these stakeholders based on their strategies, activities, and resources, and combine this information with the flows of money, products, information, and people between the organisational stakeholders, as well as the formal and informal institutions that they adhere to. For this research package, we collaborate with various stakeholders in land governance, what forms the basis for this series of working papers.

The overall **research question** for this specific research package is: *How can a transformation towards sustainable land governance in Dawei area, Southern Myanmar, be supported?*

When analysing the case study sites in Southern Myanmar, the research package is guided by these three research questions:

- 1) What near and distant actors are connected to the land governance in the case study area, and how are they interlinked in terms of flows and institutions?
- 2) What and who are the key forces in this land governance network?
- 3) What factors facilitate and hinder multi-stakeholder social learning processes for a transformation towards sustainable land governance?

Throughout the duration of the research, we speak to various stakeholders. Each of them is connected to land, land use, or land use changes and has its own perspective on land use and land governance.

## 1.2. Aim of the series and working papers

With the publication of this series, we pursue the objective of knowledge dissemination for the public. The results of our research project will also be published in academic journals. However, these journals are usually limited in accessibility for the public. Therefore, the project team decided to launch this informal series of working papers, which focus on the prevailing situations on the ground.

The **series** aims at capturing different voices and opinions about land issues, land governance, and land use changes, with a focus on Yebyu Township in Tanintharyi Region, Myanmar. It is therefore very likely that different working papers will present different or even contradicting information.

This **working paper** at hand describes the context of land use and human wellbeing in the village Hein Ze in Yebyu Township, Tanintharyi Region, told from the perspective of the villagers themselves and one company. It does not include the voices of further companies, civil society organisations, or government representatives. Also does it not necessarily represent the perspective of the authors and the project team.

## 2. Methodology

This working paper bases on participatory research encompassing a series of workshops and interviews with villagers of Hein Ze in 2016 and 2017.

After having received the research permission from the General Administration Department of Yebyu Township in early May 2016, we started to conduct interviews and workshops in Hein Ze village. In the first half of May 2016, we piloted a series of exploratory interviews and one workshop with different villagers. In this phase, we identified the most important land use changes over the past 20 years from the point of view of the residents. We also collected first information about the land use changes' implications on nature and people.

In March 2017, we returned to Hein Ze and continued the studies. In this phase, we elaborated more local knowledge about the major land use changes as well as the human wellbeing of villagers in Hein Ze. For this purpose, we held two workshop sessions:

- Three parallel focus group workshops to further analyse the previously (in 2016) identified most important land use changes over the past 20 years (see chapter 4). Topics of investigation were:
  - o Actors related to the land uses and land use change,
  - o Rules and regulations attached to the land uses and land use change,
  - o Flows of money, people, products, and information resulting directly or indirectly from the land uses,
  - o Impacts from the land use change on people,
  - o Impacts from the land use change on nature
  
- Two parallel focus group workshops with a men's and a women's group about the human wellbeing in the village (see chapter 5). There were two goals for the focus group workshops:
  - o To understand what constitutes wellbeing for the villagers and the needs to accomplish wellbeing,
  - o To find out how and why wellbeing has changed over time

After the workshops, we continued with several qualitative and standardised interviews with many different villagers. These interviews were held in March, May, and November 2017:

- For further investigating on land uses and land use changes, we conducted in total over 15 standardised surveys, mostly with farmers, but also with village leaders, community forest members, and others.
  
- To learn more about the human wellbeing, we conducted 16 semi-structured qualitative interviews, all of them with different lifestyles, livelihoods, ages, gender etc.
  
- On other informal occasions, we also we sat down and discussed with village elders, village leaders, and other knowledgeable residents of Hein Ze to receive more contextual information about the village and its history.



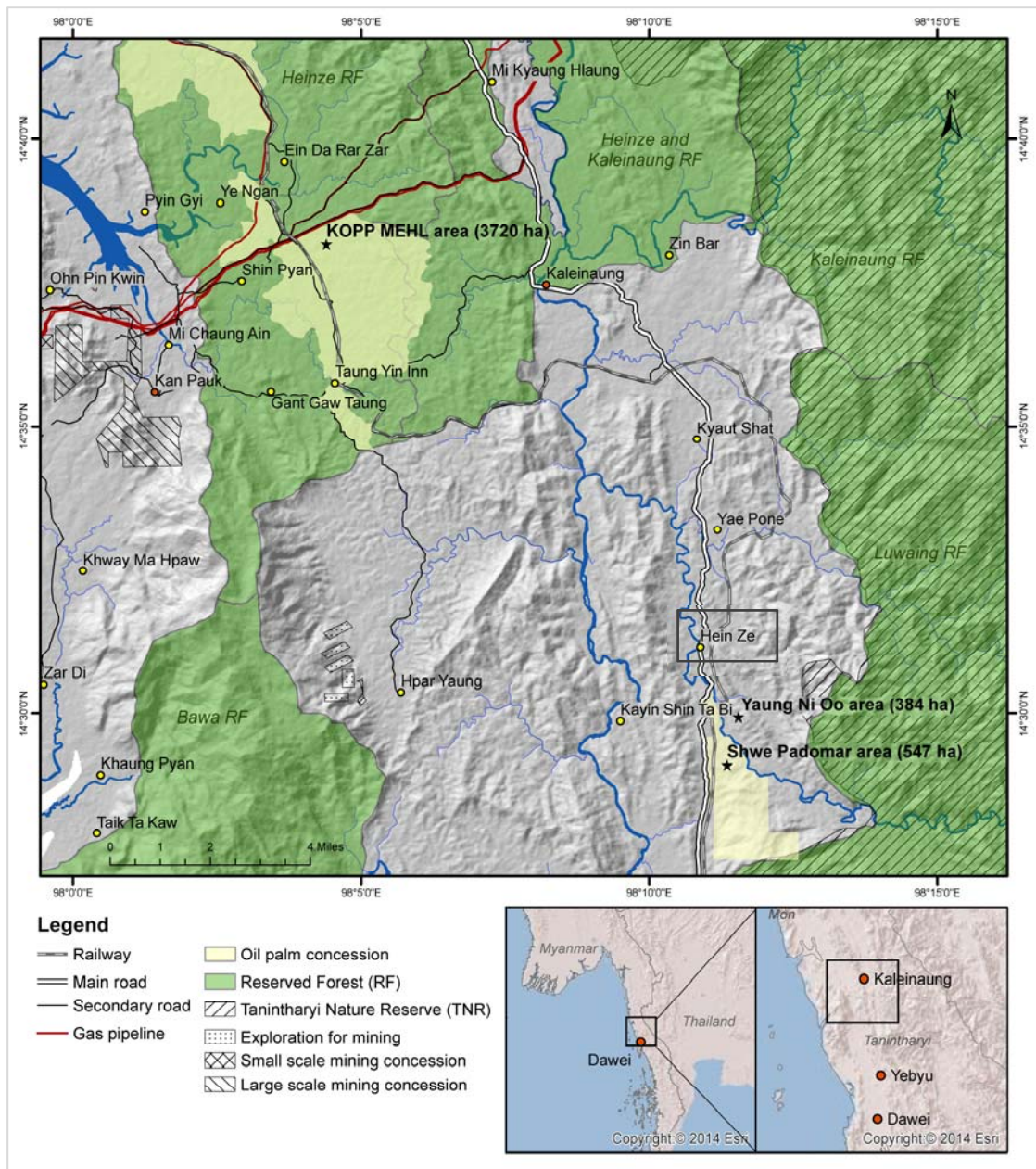
The main language of the workshops, interviews, and discussions was Myanmar (Burmese). During most workshops and interviews, we were able to record the discussions and take extended notes. Translation from Myanmar to English was usually provided simultaneously or in team discussions immediately after the data collection.

After preparing the first draft of this village report, the village leaders and all other interested villagers were invited to proofread this paper in Myanmar language. Their feedback was incorporated. In November 2017, we held an open voting in Hein Ze village, whether this working paper should be published or not. All villagers agreed that we publish and distribute this present working paper.

Further results from the interviews about the land use changes, the powerful drivers behind the changes, land use decision-making, human wellbeing, and ecosystem services will be published in other papers and academic articles. This working paper mostly builds on the results from the focus group workshops.

### 3. Background of Hein Ze village

Hein Ze is a mainly Buddhist village in Yebyu Township, Tanintharyi Region, Myanmar. The villagers' main source of income is agriculture. Hein Ze village belongs to the village tract of Kyaut Shat near Kaleinaung. Hein Ze is officially located in a zone of "Agricultural Land"<sup>1</sup> that is administrated by the Department of Agriculture (DoA) and its subordinated Department for Agricultural Land Management and Statistics (DALMS) of Kaleinaung Town and Yebyu Township. Kaleinaung, Yebyu, and Dawei are the most important market places for Hein Ze villagers.



Map 1: Overview of the case study area in Yebyu Township where Hein Ze is located.

<sup>1</sup> Not in the official "Forest Land" zone such as other villages in the area.

### 3.1. Names written in Myanmar and English language

Myanmar names written with the Roman alphabet are usually interpreted in different ways, as there is no official spelling rule in place yet. This challenge concerns most names of companies, villages, towns, persons etc. For our project, we agreed on adopting the spelling suggestions provided by the Myanmar Information Management Unit (MIMU) for those villages that are available, such as “Hein Ze”, “Kaleinaung” or “Kan Pauk”. However, other documents might spell the same villages differently.

### 3.2. Recent history of Hein Ze village

#### 3.2.1. Timeline of important events according to the villagers

Hein Ze is a rather quiet village in Yebyu Township, located on the North-South highway. Several major events have changed the village’s situation over the past 30 years:

Until 1978 or 1988 (depending on source): Hein Ze was a much *smaller village* than today. It was located more inside the forest on the foot of the hills towards Thailand.

1978 or 1988 (depending on source): Hein Ze was *relocated* to the main road by the Myanmar Army in order to improve the control over and the safety for the villagers.

2005: *Tanintharyi Nature Reserve Project* (TNRP) was launched. TNRP aims at protecting the highly biodiverse forest towards the Thai border, called Tanintharyi Nature Reserve (TNR), since 2005 a Protected Public Forest. As a consequence, extending agricultural plots into the forest, collecting non-timber forest products, hunting, fishing, and cutting timber inside the forest was henceforth illegal and closely controlled by TNRP staff.

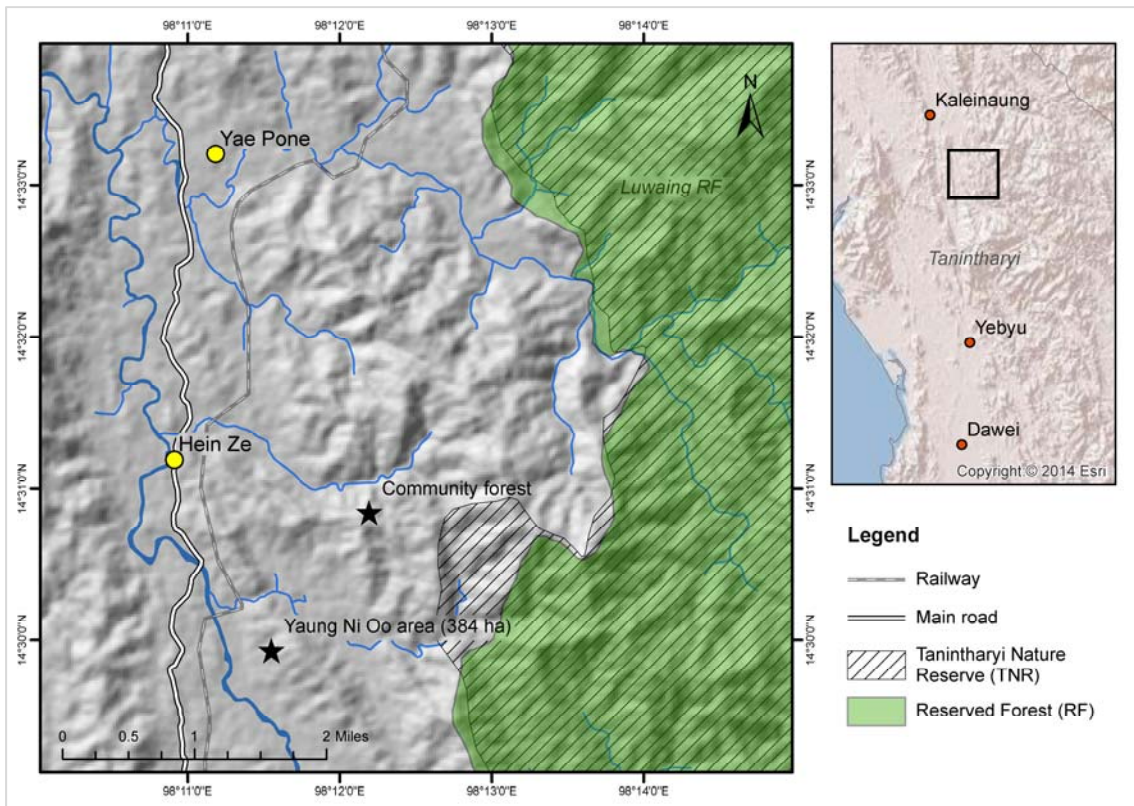
2012: The new *Farmland Law* was enforced. From 2012 on, villagers could apply at township level for land ownership certificate for their cultivated plots. DALMS is the department which measures the land and issues the certificates under the control of the Township General Administration Department (GAD) and the Administrative Body of the Farmland (according to the Farmland Law 2012).

#### 3.2.2. History told by the villagers

According to the stories of the villagers, Hein Ze was caught up between two fronts during the civil war. As Hein Ze was located in the so called “*mixed control area*” – controlled by the Myanmar Government as well as the Karen National Union (KNU) – almost all villagers were in some way unvoluntarily involved in the war. Many male villagers were used as porters by the Myanmar Army when troops passed the grounds of Hein Ze. The KNU Army also requested support from the villagers in form of land taxes, food, or porters. Travels on the road were very dangerous. Accordingly, Hein Ze became rather isolated and developed without direct control from either government representatives (neither KNU nor Myanmar government) and without easy access to market. Villagers, especially women, were also forced to support the railway construction during war time.

With the establishment of TNR (a Protected Public Forest) and TNRP, the so far usual slash and burn strategy for extending the plots into the forest became forbidden. Land turned into a scarce resource that many villagers as well as outsiders from nearby villages and towns but also distant places claimed.

Also the extraction of timber became illegal, which had previously been an important source of income for some villagers.



Map 2: Hein Ze is located on the highway and near Tanintharyi Nature Reserve (Protected Public Forest).

In 2012, the Farmland Law was implemented and enforced, also in Hein Ze. Most villagers stopped to practice shifting cultivation. Fallow land was immediately turned into cultivated crop land in order not to lose the land (see chapter 3.4.).

In 2015, the villagers experienced an *extreme heat*, which destroyed almost two thirds of the crop production. Especially the betel nut (areca nut) yield was drastically reduced. The villagers blame climate change for this extreme weather event.

### 3.3. Hein Ze in numbers

Hein Ze was established in 1955, comprised of six households, and in 1978 or 1988 (depending on source), they moved closer to the main road. In 1981, there was a flood, killing many of the villagers' cows and leaving many people homeless. After 1991, for the name's sake of Hein Ze stream, the village became Hein Ze village. [Yebyu GAD 2017]

Hein Ze has between 43 and 51 households (depending on source), 44 families, and 213 villagers in total. The village is predominantly Buddhist. There exists a railway track as well as a recently built highway passing Hein Ze from North to South. The primary school is composed of 3 teachers and 38 students, making the ratio of teacher to student, 1:13. There is a 100% school admission for 5-year old

children, but the village has only 23% of literacy rate. There is an independent library<sup>2</sup>, a monastery, and a healthcare services center in Hein Ze, but no clinic. [Yebyu GAD 2017]

Nowadays, many villagers serve as migrant workers in Thailand. Depending on the source of information, the number of migrant workers in Thailand from Hein Ze vary from approx. 50 to 150 young adults. [Villagers Hein Ze 2017]

### 3.4. Land tenure in Hein Ze

In the past, when somebody wanted to acquire land that had not yet been taken by others, they had to apply to the village head first. Also other land owners were consulted who had their land nearby of the desired land appropriation. If nobody was against this land extension, the applicant could proceed as planned. In the case of a land sale, both parties – the seller and the buyer – had to meet with the village head as well and commonly witness the handing over of the land. Many villagers practiced shifting cultivation on their land, often planting upland rice and other subsistence crops and fruits for their own consumption, as there was no market accessible at that time. They used the cleared material (bamboo, weeds, woods etc.) for housing, farming, fertilizing etc. (not for commercial reasons). The forest was also an important source of livelihood (with timber and non-timber products and animals).

For an increased land tenure security, some wealthy people went to a higher level Government representation in order to legally rent the land through paying taxes. But this was the exception in Hein Ze, not the normal case.

With the enforcement of the *Farmland Law in 2012*, villagers mostly stopped to practice shifting cultivation. As per law, farmers need to prove that they cultivate crops on their land in order to receive a land ownership certificate (Form 7)<sup>3</sup>. Accordingly, fallow land was immediately turned into cultivated crop land. Nowadays, *almost all villagers of Hein Ze hold a land ownership certificate (Form 7)* according to the Farmland Law of 2012. The village head and the village tract leader (Kyaut Shat) were encouraging the villagers repeatedly after 2012 to apply for these certificates. However, some villagers still have not yet applied for or not yet received the certificate for *all their plots*. Some plots, which are actually used by farmers, are still considered as fallow land according to the law.

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<sup>2</sup> However, there are almost no books.

<sup>3</sup> It is not a literal ownership. It is rather a user right without time limitation. For detailed information, please consult the Farmland Law 2012.



## 4. Main land uses and land use changes in Hein Ze over the past 20 years

### 4.1. Overview of land use changes

From a series of interviews in 2016, nine major land use changes (LUC) in and around Hein Ze over the past 20 years had been identified. In two workshop sessions<sup>4</sup>, we analysed these LUC more in detail (see chapter methodology). In a first step (in 2016), the nine LUC were prioritised by the villagers according to how positive or negative these changes were for them. In a second step, the research team merged the most rated LUC into three general LUC, with which a further assessment was conducted in the workshops in March 2017.

The workshops revealed the following results:

Land use changes in Hein Ze over the past 20 years	
<b>The nine major land use changes</b>	
1) Forest to rubber	6) Forest to various cash crops
2) Various cash crops to rubber	7) Various cash crops to betel nut
3) Oil palm to rubber	8) Rubber to betel nut
4) Forest to oil palm	9) Forest to protected TNR forest
5) Various cash crops to oil palm	
<b>The three (generalised) land use changes with the highest rating</b>	
1) From shifting cultivation on forested fallow land, forest, and various cash crops to <b>rubber</b> plantations	
2) From shifting cultivation on forested fallow land, forest, and various cash crops to <b>betel nut</b> plantations	
3) From forest to <b>oil palm</b> plantations	

Table 1: Land use changes in Hein Ze over the past 20 years

The following chapters describe the three most important LUC in and around Hein Ze village.

### 4.2. Land use change to rubber plantations

Before the land was cultivated with rubber plantations, land seemed to be a rather unlimited resource due to the small population number. The land which was turned into rubber plantations later, was mostly forest land, forested fallow land for shifting cultivation, or some minor other cash crop cultivations. Previously, the villagers used the forested fallow land for rotational shifting cultivation with upland rice for their own consumption. Some villagers also used the forest to go hunting for boars, deers and other animals, extracted timber for selling or their own construction needs, and collected other forest products. Although the land technically belonged to the Myanmar Government, the villagers acted like owners according to their customary rules and traditions in the village. Due to the



Picture 1: Collection and prioritisation of LUC in Hein Ze in May 2016; red for positive change, black for negative change (by Lara M. Lundsgaard-Hansen)

<sup>4</sup> First session in May 2016, second session in March 2017

prevailing mixed control of KNU and the Myanmar Government at the time, both powers exerted some control over the land, but it was never very dominant before the LUC.



Picture 2 (left): Rubber plantation in Hein Ze in 2016 owned by a villager (by Lara M. Lundsgaard-Hansen)

Picture 3 (right): Rubber tree in Hein Ze in 2016 owned by a villager (by Lara M. Lundsgaard-Hansen)

Around 2006 or 2007, according to the villagers, the Myanmar Government announced a new rule as a matter of planned rubber market expansion saying that all the land users would have to grow at least 5 rubber plants on their plots. Most of the villagers planted the rubber trees along the road or on another visible spot on their land in order to prove their obedience and not to lose the land. This rule apparently disappeared again around 2010 (estimated). However, as a *consequence of the market intensification, the rubber business expanded in Hein Ze village, too*. The villagers started cutting the forest and buying rubber seeds from Mon State. But not only *local residents* started to grow rubber in Hein Ze. Also *outside investors* were attracted due to the then almost unlimited availability of land. These outsiders were usually residents from nearby towns such as Kaleinaung, Yebyu or Dawei. Some of them were born in Hein Ze and moved away, others heard about the investment possibility through personal contacts. A handful of people in Hein Ze acted as land brokers and inofficially organised the acquisition of forest or fallow land for interested investors. This happened before the Farmland Law of 2012 came into place. Within only few years, the unlimited resource *land turned into a pricy and scarce resource*.

There is also a company, Yaung Ni Oo Company, which grows vast areas of rubber in the South of the village. Yaung Ni Oo started its agribusiness mostly with oil palm cultivation (see chapter 4.4 on oil palm), but gradually diversified its cultivation with rubber and other plants.

Today, *more than 75% of the land* in and around Hein Ze is covered by rubber cultivations. Most of them are monocultures. Only few land owners do mixed cropping together with e.g. fruit, betel or cashew nut trees. The local smallholders work on the land themselves and hire some local daily labour every now and then (usually other villagers). The outside small- to mediumholders usually don't work on the land themselves. These investors as well as Yaung Ni Oo Company use casual labour as permanent and seasonal staff (usually migrant workers and some local villagers).



Picture 4: An employee scratches a new rubber tree at Yaung Ni Oo rubber plantation (by Katharina Nydegger)



Picture 5: Rubber sheets drying in the air at Yaung Ni Oo compound (by Lara M. Lundsgaard-Hansen)



Picture 6: Young rubber trees in 2016 at Yound Ni Oo Company compound (by Lara M. Lundsgaard-Hansen)

Land use change to rubber plantations	
People with advantages	<ul style="list-style-type: none"> <li>villagers and outsiders who converted the land into rubber plantations,</li> <li>local plantation workers (villagers) who can earn an additional income as daily labour,</li> <li>immigrated plantation workers for clearing the ground on the plantations and scratching the trees,</li> <li>Yaung Ni Oo Company,</li> <li>A handful of land brokers who were active in the late 2000-ies</li> </ul>
People with disadvantages	<ul style="list-style-type: none"> <li>those villagers who do not have any rubber scratching skills (most of the villagers)</li> <li>those villagers whose livelihoods depend(ed) on forest products</li> </ul>
Conflicts	<ul style="list-style-type: none"> <li>With the rubber boom and the naturally increasing population in the village, land became scarcer and some people started fighting over the land.</li> <li>The rubber boom also led to an increased need for labour and herewith an increasing number of immigrants. Women and village heads complained about a deterioration of security / safety in the village as a consequence.</li> </ul>
Impacts on nature	<p>Because of the increased population number (natural growth plus immigration) as well as the land use intensification, pollution in general became worse. For example, the streams became dirtier, aquatic animals became scarcer, and the air became less healthy due to the increase in small businesses. Because rubber plantations are very prone to fire, there are now more forest and rubber plantation fires.</p>

Table 2: Impacts of the land use change to rubber plantations on people and nature (villagers' opinion)



#### 4.3. Land use change to betel nut plantations

Before betel nuts (areca nuts)<sup>5</sup> became popular, villagers relied on shifting cultivation with subsistence crops and on forest products such as wild plants, animals, woods, timber and medicinal plants. Some villagers also did cattle breeding with cows, buffalos, and goats on pasture or fallow land.



Picture 7: Old betel nut plantation in Hein Ze owned by a villager (by Florian von Fischer)



Picture 8: Betel nut nursery owned by a villager of Hein Ze (by Lara M. Lundsgaard-Hansen)



Picture 9: Betel nuts on the palm tree before they fall to the ground (by Katharina Nydegger)



Picture 10: Ripe betel nuts cut in half for drying in the sun (by Katharina Nydegger)

Although betel nut trees (areca palm) had been cultivated for many decades, it was *not until the 2000-ies that they were grown for commercial purpose*<sup>6</sup>. One of the reasons for its growing popularity has to do with how easily it can be grown together with other cash crops and fruits (*mixed cropping*). Additionally, fully grown betel nut palm trees provide shade for young saplings, lower fruit trees, and other cash crops. Another reason is that – unlike rubber – betel nut plants *do not absorb ground water* (only superficial water), *don't need a lot of investment*, and are also *not labour intensive*. Many villagers share the opinion that betel nut plantation is a more effective way of using the land compared to rubber cultivation. The market price also seems to be reasonable.



Picture 11: Bananas and other fruit trees are often cultivated together with betel nut trees (by Florian von Fischer)

<sup>5</sup> The betel leave, which is also consumed together with the betel nut (wrapped), does not originate from the same plant.

<sup>6</sup> The villagers did not mention a precise reason for this time stamp. We assume that it has to do with on the one hand the improved security situation and access to market and on the other hand the Farmland Law of 2012.

Also Yaung Ni Oo Company discovered the incentives of the betel nut market and cultivates betel nut trees along water ways on their compound.

Land use change to betel nut plantations	
People with advantages	<ul style="list-style-type: none"> <li>land owners who converted to betel nut plantations, and their associates, families, employees (casual labourers) etc.,</li> <li>buyers of betel nuts and transportation providers (middle(wo)men, traders, depots, consumers),</li> <li>Yaung Ni Oo Company</li> </ul>
People with disadvantages	<ul style="list-style-type: none"> <li>those villagers whose livelihoods depend(ed) on forest products such as wild animals, bamboo, firewood, timber, or traditional medicinal plants</li> </ul>
Conflicts	There were only some minor bilateral conflicts over land or forest resources. However, in overall, there were no severe conflicts for this land use change.
Impacts on nature	Forest degradation deteriorated. As a consequence, water come to be scarcer, soil fertility got reduced, and the weather became hotter.

Table 3: Impacts of the land use change to betel nut plantations on people and nature (villagers' opinion)

#### 4.4. Land use change to oil palm plantations

Before 1998, mainly forest and bamboo forest covered the land. Villagers used the forest for their livelihood and cut the bamboo and timber sometimes for selling but usually for housing. There were also few farmers who practiced shifting cultivation in this area.

Around 1998, the Myanmar Government decided to *turn Tanintharyi Region into an oil palm region* to reduce the country's dependency on palm oil imports. As a consequence, the Government granted concessions to companies to grow oil palm on a large-scale. In Hein Ze, the case was slightly different. It was a *private investor* (two men from Dawei and Yangon) who decided to apply at the Government to receive land for oil palm cultivation. Their company Yaung Ni Oo received "vacant land" in the South of Hein Ze and gradually extended the land. The company holds several Form 7<sup>7</sup> for its land. They started small. But today, they actively manage 950 acres (equivalent to 384 hectares) of land with various crops, not only oil palms. [Yaung Ni Oo 2017]



Picture 12: Old oil palm plantation of Yaung Ni Oo Company in the South of Hein Ze village (by Lara M. Lundsgaard-Hansen)

<sup>7</sup> Form 7 is a land usership certificate from the Myanmar Government. It is in accord with the Farmland Law of 2012.



First, in approx. 1998, five men from Hein Ze and another approx. 100 men from other villages in Yebyu Township were hired to do slash and burn to clear the land as a preparation for the company. Then, the owners of the company built houses for accommodation in the compound using timber from the cut forest. After that, over the years, several waves of labourers (men and women with their children) from nearby villages, but also from distant regions such as Magway Region, Ayeyarwaddy Division, and Bago Region came to the company and settled there. The number of workers depended on the needs of the company and the political situation (e.g. fewer workers during the civil war intensification or malaria outbreaks). Yaung Ni Oo Company first planted only oil palm trees, but continuously also changed to other crops as the palm oil industry was not very profitable. Their main crop today is rubber, but they are still growing oil palms and also betel nut trees and other cash crops. The labourers seem to be satisfied with their situation and usually stay there for several years.



Picture 13: Fresh fruit bunch from the oil palm (by Lara M. Lundsgaard-Hansen)



Picture 14: The little fruits from the bunches are used to produce the palm oil (by Lara M. Lundsgaard-Hansen)

Until today, there are *no major conflicts* between Yaung Ni Oo Company, the staff of the company, and the villagers. Everyone knows each other and doesn't interfere in each other's business.



Picture 15 (left): House of a labourer family at Yaung Ni Oo Company compound (by Katharina Nydegger)



Picture 16 (right): Labourers of Yaung Ni Oo Company have their own little community vegetable garden, where they grow food for their own consumption (by Katharina Nydegger)

Land use change to oil palm plantations	
People with advantages	<ul style="list-style-type: none"> <li>• Yaung Ni Oo Company with its owners and staff,</li> <li>• villagers from Hein Ze and other nearby places who get / got jobs,</li> <li>• migrant workers who could improve their livelihood due to Yaung Ni Oo Company,</li> <li>• business partners such as transportation providers, agro-chemical providers etc.</li> <li>• customers who buy the palm oil (usually Yangon Bayin Naung market)</li> </ul>
People with disadvantages	<ul style="list-style-type: none"> <li>• those villagers whose livelihoods depend(ed) on forest products such as wild animals, bamboo, firewood, timber, or traditional medicinal plants</li> <li>• a handful of land brokers who could not informally sell the “vacant” land anymore</li> </ul>
Conflicts	<p>When the company first came in, the KNU did not like it and was in conflict with the representatives of the company. The company was unsure how to deal with the KNU. At some point, the KNU destroyed some of the company’s cultivations etc. Currently, the relationship between the two seems to be quiet.</p> <p>There were no reports from Hein Ze about conflicts between the company and the villagers.</p>
Impacts on nature	<p>Due to forest degradation, there is now less water. The weather is hotter than before and the air became less fresh. However, the oil palm company does not harm animals in an extensive way because the owners ordered not to kill wild animals (except rodents that destroy the plants). There are still boars, deer, barking deer (also known as muntjac), goats, porcupines, and other native species.</p>

Table 4: Impacts of the land use change to oil palm plantations on people and nature (villagers’ opinion)

#### 4.5. Annotation: Protected Public Forest TNR and community forest

Even though the villagers did not prioritise or broadly discuss it in the workshops, the following land use changes also affect many villagers in Hein Ze as was clearly recognisable from interviews:

- **Tanintharyi Nature Reserve (TNR):** The forest between the North-South highway and the Myanmar-Thai border is under effective protection since 2005. The official name of this forest protection programme is “Tanintharyi Nature Reserve Programme” (TNRP). TNRP was founded as a result of a *compensation programme from the natural gas extraction project off the Myanmar shore* (Yadanar, providing mainly Thailand with natural gas for electricity production). Three international gas companies – TOTAL, PTTEP, PETRONAS – have sponsored the implementation and maintenance of the TNRP, since their *gas pipelines cross this forest*, home to a recognised biodiversity hotspot. Previously, this forest was under non-effective protection as a Reserved Forest. But with the implementation of TNRP, the protection became effective. Villagers are not anymore allowed to use this forest. There is a buffer zone between the TNR border and the highway, in which the villagers of Hein Ze already had some plantations and recently also applied for community forest (CF). The prohibited use of forest inside TNR after 2005 had a strong impact on many people’s livelihoods. Nevertheless, it seems as if the villagers of Hein Ze have now accepted this circumstance even though they still regret the prohibition of the use of forest products and plantation extension into the remaining forest. It is however noteworthy that there are still several villages located inside the TNR area that do not recognise the rules and regulations of the TNRP. These villages claim that their customary traditions are in harmony with nature as their main source of livelihood.

- As previously mentioned, Hein Ze applied for **community forest (CF)** in the buffer zone of TNR. The permission was granted in July 2017 by the Forest Department. This official recognition of the forest land as a CF will most likely improve the livelihoods of the CF members as a matter of *livelihood diversification* and *improved tenure security*.



Picture 17 (left): Traditional medicinal plant from the community forest of Hein Ze (by Katharina Nydegger)

Picture 18 (right): The community forest of Hein Ze is rather far away from the village settlement area and not easily accessible (by Lara M. Lundsgaard-Hansen)

## 5. Human wellbeing in Hein Ze

In one workshop session in March 2017 with two parallel focus group workshops, we tried to understand what human wellbeing means from the perspective of Hein Ze villagers (see chapter methodology). The following two sub-chapters explain the opinion of a women’s group and a men’s group.

### 5.1. The perspective of women on human wellbeing in the village

What is important to have a good life in Hein Ze village? In the human wellbeing workshop for women, the participants mentioned water, electricity, health, economy / job opportunities for women, good quality of food and nutritious food, land ownership, house ownership, no discrimination of religion, social ceremonies and affairs, peace in the village, women’s involvement in decision making processes, education, good transportation (especially good roads), family living together, and nature (especially having trees) as important for their wellbeing. After discussing all those aspects in more detail, the participants were given three red stickers to select the three most challenging wellbeing aspects to achieve in the village, and three green stickers for the most satisfying wellbeing aspects. In this report, we focus on the three most challenging ones. As wellbeing aspects, we understand what is needed to have a good live.

The three most challenging wellbeing aspects from the perspective of women			
Most challenging wellbeing aspects	What is necessary to accomplish them	Changes over past 20 years	Explanation of change
Water	Natural forest, financial investment (for more water pipes)	Situation improved for accessibility and quality, deteriorated for availability	Tanintharyi Friends Association (Takapaw) provided water infrastructure in 2011. However, the Government has not supported any water. Villagers can only get enough water during rainy season. They need money to buy water pipes to get the mountain water.
Economy / job opportunities	Willingness to do a business, education, money access (lenders), vocational training, land and labour for plantations, English classes.	Situation improved	There's no more war and Takapaw gives vocational training. However, because there's no money lender in the village, it's hard to start a business. Additionally, poorly educated people are less demanded by companies.
Electricity	Government support, financial contribution (by anyone) for infrastructure	Situation improved (very little)	Since 2015 the villagers have access to solar panels (to buy on their own). Only a few people could afford generators in 2014. However, there is still no electricity grid from the Government in Hein Ze and villagers cannot afford to pay for the installation on their own.

Table 5: Most challenging human wellbeing aspects from women’s perspective

Securing a sufficient amount of *water* is the most challenging aspect because the villagers can only get enough water during the rainy season. During the hot season, they have to deal with water scarcity.





Pictures 19 and 20: Water has become a scarce resource in Hein Ze. The water reservoir is almost empty – sometimes even completely empty – before rainy season (by Lara M. Lundsgaard-Hansen).

The *economic situation* may have improved, nevertheless, the economy and especially the *job opportunities for women* are still difficult. One of the main reasons for the challenging economic situation is that villagers don't have access to loans. There are no money lenders in the village from whom they could borrow in order to start a business. Another main reason is the still poor education level. In general, the lack of job opportunities for less educated people is a challenge since most permanent jobs in towns demand a degree and only very few villagers have one.

Access to *electricity* is also a challenge because the village lacks the infrastructure in the first place. The villagers were told to contribute 400,000 MMK per household in addition to the monthly electricity bills if they want to get electricity, which is an impossibly high sum of money for the villagers. However,



Picture 21: In this simple shelter, plantation workers and villagers can take a rest when they work on the cultivations (by Lara M. Lundsgaard-Hansen)

solar panels and generators could be purchased recently, thanks to an overall better economic situation. The solar panels are especially used for lighting in the evening for e.g. reading, cooking etc.

## 5.2. The perspective of men on human wellbeing in the village

When the men were asked what they perceive as important for their wellbeing, they listed water, clean air, electricity for business, house and land, good health / to have a long life, transportation, occupation / good business, good food and enough food, playground, good relationships, free speech / justice / human rights, security, education and religion. After discussing all those aspects in more detail, the participants were also given three red stickers to select the three most challenging wellbeing aspects to achieve in the village, and three green stickers for the most satisfying wellbeing aspects. In this report, we focus on the three most challenging ones.

The three most challenging wellbeing aspects from the perspective of men			
Most challenging wellbeing aspects	What is necessary to accomplish them	Changes over past 20 years	Explanation of change
Electricity	Infrastructure (power line, wood poles, transformer), Government support, money, human resource	Situation improved for solar energy but didn't change for outside support	Villagers now use solar energy because they can afford solar panels nowadays. But neither the government nor any companies have so far supported anything.
Playground	More land for recreational activities, any kind of donors (for financial support)	Situation didn't change	The village has never had and still doesn't have any available land for a playground.
Occupation / business	Technical support (for cultivation and harvest), money to buy materials for cultivation, justice for land ownership, enough land and water for cultivation, electricity	Situation improved for prices but also deteriorated for productivity	The business has improved due to higher price for the farmers' products. Nevertheless, the productivity has continuously decreased.

Table 6: Most challenging human wellbeing aspects from men's perspective

The main reason why there is an improvement in *electricity* is because nowadays villagers are able to afford solar panels. Some men still considered the situation to be challenging because the Government has so far not supported the village with electricity provision<sup>8</sup>. Thus, from their point of view, the situation has not considerably improved.



Picture 22: Many villagers in Hein Ze bought one of the smaller solar panels to get some electricity for their household, especially for lighting in the evening (picture: solar panels in a shop in Dawei; by Lara M. Lundsgaard-Hansen)

Being able to do sports was perceived as positive for having a good life. However, playing team sports has so far been impossible in Hein Ze. Not having a *recreational space for sports* is therefore considered as a challenging wellbeing aspect because the villagers have never had and still do not have any place to perform recreational activities such as playing football.

While some participants considered the *occupation / business* aspect as improved, others thought it deteriorated. The situation has improved due to higher prices for the farmers' products. However, the productivity has continuously decreased. For the latter reason, some concluded that the overall situation regarding occupation / business has changed for the worse. The participants assumed that the decrease in productivity is due to the climate change, which can be observed in increased heat and water scarcity. The focus group members also expressed their suspicion that the gas pipelines might have a negative impact on the productivity of their plants (for the gas pipelines, see chapter 4.5). The participants could not explain exactly how this is related. Still, they

<sup>8</sup> Hein Ze is not connected to the electricity grid despite the fact that the high-tension power line crosses the village.



observed that the productivity decrease of their plants has started more or less simultaneously as the construction of the pipelines.

### 5.3. Reflection on human wellbeing in Hein Ze

For Hein Ze overall, it can be concluded from the focus group discussions that **water**, **electricity**, and **economic development** are especially important aspects for having a good life. (i) For the *water availability*, it has been stated by both groups that – even though access to water has improved thanks to the waterpipes provided by the Daweian CSO Tanintharyi Friends Association (Takapaw) – water is still rather scarce, especially during hot season. The men also discussed the importance of forest and trees for water catchment areas. (ii) Access to *electricity* has slightly improved due to the affordability of small solar panels. However, the villagers perceive the overall electricity situation as a major challenge for their village development. (iii) For the *economic development*, both groups have discussed issues related to economy, occupation and good business. The women stated that for making a business not only money is needed but also the commitment to do so. On top of this, the female participants stressed the argument that job opportunities for women are still almost inexistent. The men pointed out aspects related to income from their plantation harvests and decreasing harvest amounts. Under a different topic, which was also rated as being important, the men elaborated on land prices, which have increased. From the perspective of land sellers and brokers, this is a favourable development, for land buyers however (incl. villagers who would like to expand their plantations), it is an undesired development.



Picture 23: The water pipes (supported by Takapaw) provide some households with fresh water from the Hein Ze water reservoir (by Katharina Nydegger)



Picture 24: The villagers appreciate the good quality of the road that passes through Hein Ze (by Katharina Nydegger)

Besides these major wellbeing topics, other interesting issues were raised. In the men's group, the participants further discussed the need for a *playground* for playing football. Additionally, the women's group pointed to the *non-discrimination of religion* in the village and that villagers give each other the freedom to practice religion. Furthermore, the women concluded that village *peace* has increased due to the absence of civil war, as well as due to better education in this regard and the improved communication between each other. It was mentioned, that people without work and money could also have a negative impact on peace in the village. Last but not least, both groups confirmed that *transportation* has become satisfying due to significant improvement of the road condition (highway).

## 6. Impacts of land use changes on human wellbeing

There are some connections between the land use changes (LUC) and the human wellbeing visible in Hein Ze. The three major LUCs described above are related to deforestation. This has a negative impact on the wellbeing of villagers in Hein Ze. They reported an increase in air temperature and decrease of water availability due to forest degradation and plantation intensification. Additionally, people are not able to use the forest anymore, be it with the collection of non-timber forest products (such as medicinal plants, bamboo, bamboo sprouts, mushrooms etc.) or the extraction of wood, due to the decreased area of forest as well as the restricted access to the TNR. Therefore, it is not surprising that the village applied for community forest (CF) in the buffer zone of TNRP. The CF comes with strict regulations, which the villagers are willing to take.

Several factors, such as the construction of the highway, the planned rubber and palm oil market intensification, as well as the announcement of the Special Economic Zone (SEZ) near Dawei some years ago, led to a rush for land in and around Hein Ze village. The selling and buying of land in consequence brought many LUC, most of them resulting in deforestation and rubber expansion. Those who could work as labourers on the rubber plantations or had the possibility to sell or buy land might have benefitted from this development. However, clearly not all villagers could improve their livelihood through the land speculation and rubber expansion.

Nevertheless, the cash crops boom led to a general increase in income, which had a positive impact on the wellbeing. But according to the villagers, this improvement is not as big as one might think due to the decreased productivity of the crops in line with the climate change.

## 7. Influential external stakeholders and their impacts

It seems that certain powerful and resourceful actors dominate the governance of land in Hein Ze. These are especially the Governmental Departments, wealthier persons who can afford to own more land than on average, and TNRP.

- The Government still officially owns the land. Accordingly, Governmental bodies such as the Department of Agricultural Land Management and Statistics or the Administrative Body of the Farmland (committee) possess a lot of power, as they can decide over land registration and use. In Hein Ze, most villagers “own” their land, since their applications for Form 7 got accepted. Accordingly, they are less vulnerable which improves their wellbeing.
- Wealthier persons from Hein Ze as well as from outside (Yebyu, Dawei, and nearby villages), including Yaung Ni Oo Company with its owners, dominate many parts of the landscape. These persons on average grow rubber on a medium scale. The impacts from these plantations are twofold: The job opportunities offer an improvement of livelihood, to both villagers and migrant workers. However, the deforestation and strongly limited availability of agricultural land for other smallholders lead to a deterioration of wellbeing as well.
- TNRP restricts the access to forest, which is perceived by the villagers as a challenge for their wellbeing, even though they appreciate the conservation of forest. The three gas companies as well as the Forest Department stand behind TNRP. Thus, these actors influence the wellbeing in Hein Ze to a certain extent, even though they are not physically present.

## References

Most information in this report bases on personal communication received from villagers (anonymous) in Hein Ze through interviews and focus group workshops [1 to 4].

- 1 Focus Groups Hein Ze. 2016. *Personal Communication Focus Group Workshops*. Participants anonymous. Hein Ze Village, Yebyu Township, Tanintharyi Region, Myanmar; in May 2016.
- 2 Villagers Hein Ze. 2016. *Personal Communication Interviews*. Interviewees anonymous. Hein Ze Village, Yebyu Township, Tanintharyi Region, Myanmar; in May 2016.
- 3 Focus Groups Hein Ze. 2017. *Personal Communication Focus Group Workshops*. Participants anonymous. Hein Ze Village, Yebyu Township, Tanintharyi Region, Myanmar; in March 2017.
- 4 Villagers Hein Ze. 2017. *Personal Communication Interviews*. Interviewees anonymous. Hein Ze Village, Yebyu Township, Tanintharyi Region, Myanmar; in March, May and November 2017.
- 5 Yebyu GAD. 2017. *Kyaut Shat village tract regional information*. Village Tract Administration Office, General Administration Department (GAD), Yebyu Township, Tanintharyi Region, Myanmar.
- 6 Yaung Ni Oo. 2017. *Personal Communication Interviews*. Interviews with the manager and the owner of Yaung Ni Oo. Hein Ze Village, Yebyu Township, and Dawei Town, Tanintharyi Region, Myanmar; in March, May and November 2017.

### References for the maps:

The maps were created in February 2018 by Lara M. Lundsgaard-Hansen (r4d) and Florian von Fischer (OneMap Myanmar Project), in Yangon, Myanmar. The sources of data include:

Dataset:	Source:
Villages	Myanmar Information Management Unit MIMU (2015), edited by OneMap Myanmar (2018)
Roads	OneMap Myanmar (2017), digitized based on aerial imagery
Railway	Myanmar Information Management Unit MIMU (2015)
Administrative boundaries	Myanmar Information Management Unit MIMU (2015)
Reserved Forest / Protected Public Forest	Wildlife Conservation Society Myanmar WCS (2015)
Mining concessions	No. 2 Mining Enterprise (ME2) Tanintharyi Region: Tanintharyi Tin and Tungsten Exploration and Production concession list 2016 (2017)
Oilpalm concessions	OneMap Myanmar (2017) source data: concession contracts, Forest Department Tanintharyi Region (2015)
Gas pipelines	OneMap Myanmar (2018), digitized based on aerial imagery
Rivers	OneMap Myanmar (2018)
Hillshade	Based on SRTM 30m NASA
World shaded relief	ESRI (2014)

## Your Notes

With the publication of this series, we pursue the objective of knowledge dissemination for the public about land-related situations on the ground in Southern Myanmar. The series aims at capturing different voices and opinions about land use, land use change, and land governance, with a focus on Yebyu Township in Tanintharyi Region, Myanmar. It is therefore likely that different working papers will present different or even opposing information.

***Please note that these working papers are grounded on the perspectives of the particular stakeholders only. They do not necessarily represent the perspective of the authors and the project team.***

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