

## How tenure insecurity formulates land market institutions in the limited production forest area in Tanjung Jabung Barat district, Jambi province, Indonesia

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### Abstract

This research focuses on the impact of property rights' insecurity that drives tenure insecurity as well deforestation and forest degradation in the limited production forest (*hutan produksi terbatas/HPT*) in Tanjung Jabung Barat district, Jambi Province, Indonesia. Deforestation is considered as a risk management strategy; tenure insecurity reduces the present value of forest and fosters forest conversion into agricultural lands—in this case conversion into oil palm and rubber monoculture and rubber agroforest plantation. Moreover, deforestation is the consequence of strategic interactions between the local community (which has a claim over land and forest) with the migrant community (which is hungry for land to gain capital increment). This strategic interaction has driven the formulation of an informal land market institution and effected the local tenure arrangement that has significantly contributed to deforestation over the study site area. The current situation of forest land encroachment is the result of the lack of forest governance at the site level in which the state forest zone is considered more as an open access area or no-man's land. The research tried to get a better understanding on how the informal land market institution had been formulated at the study site area.

**Keywords:** tenure insecurity, local community, migrant, land market, deforestation.

### 1 Introduction

There are 9,103 villages in and around forest areas based on the identification of villages by the Ministry of Forestry in 2009, (Ministry of Forestry, 2009). From the data, the level of dependence of communities on environmental products and services from forest can be estimated. Community needs for land also eventually make people inevitably move into the State forest area to meet the needs of everyday life. Communities with a variety of levels of status and social institutions will claim forest land, which leads to the conversion of the area to be used as farm/plantation.

The rampant conversion of forest to other uses adds to Indonesia being in the world spotlight associated with a weak forest governance-level footprint that ultimately results in the forests in many countries being considered as "no-man's land" or an "open access area". There is a high level of interest by

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many people, including local communities who view the oil palm plantations as a threat to the forest cover and land in areas that are considered as open access areas. In addition, the perceptions of people living in and around forests to those forests also encourage people to flock to claim the forest land in order to obtain the same opportunities for personal utilization of the forest area.

The oil palm cultivation boom started in the early 1990s. At first, oil palm plantations were built only by large enterprises and were generally integrated with the transmigration program to get the workforce. Transmigration program participants are generally dominated by Javanese ethnics who come to a transmigration area with tenure arrangements that are relatively different to the pattern adopted by the local community. In line with the expansion of oil palm plantations, the lifestyle of the transmigration participants is changing to be more sustainable compared to the local community. With a relatively more sustainable life, there arises a desire to increase capital ownership (land capital). However, to get new land is not easy for them because they are immigrants who do not have other land claims except the land which was specifically allocated to transmigration participants amounting to less than 2 hectares per family.

To meet the demand for new arable land, the migrants eventually buy forest land claimed to be owned by local communities and these recurring events have significantly contributed to the deforestation rate in the study sites. Informal land markets not only occur among migrants with local communities, but also between local communities and spontaneous migrant communities who have migrated independently and are not part of the transmigration program.

Therefore this research sought to determine how the form of migrant communities' tenure arrangement (spontaneous migrants and transmigration participants) interacts with the local community tenure arrangement that formulates the informal land market institution. In addition, this research also tried to determine what has caused the slow process of HTR development in Tanjung Jabung Barat district, Jambi province.

## 2 Method and theoretical framework

The research was conducted in an area of limited production forest (*Hutan Produksi Terbatas* - HPT) of approximately 41,000 hectares in Tanjung Jabung Barat district, Jambi Province. To obtain qualitative data, this study was also conducted in four villages that served as sample villages, namely, Lubuk Kambing and Lampisi villages that are part of the Renah Mendaluh sub-district as well as the villages of Lubuk Bernai and Suban that are part of the Batang Asam sub-district.

The data and information collected in this study include primary data/information obtained directly from the field and secondary data. Primary data were obtained through focus group discussions (FGD) and interviews with key informants—the traditional leaders, village officials, farmers, youth leaders, officials of the District Forestry Office and District Development Planning Agency—as well as by observation in the field related to the topic of the research. Secondary data were obtained through library searches or literature, documents and data/spatial information.

Arnot et al. (2011) stated that the security of property rights, or tenure, is central to the economics of development and is recognized as important for the adoption and implementation of sustainable forest

management. Further, Arnot et al. (2011) in his research tried to develop the definition of tenure security based on previous studies as presented in the following table:

**Table 1.** Definitions of Tenure Security Used in Previous Literature

Authors	Definition of tenure security
Feder and Onchan (1987)	Legal title to land
Feder, Onchan and Chalamwong (1992)	Uncertainty over changes in government policy
Holden and Yohannes (2002)	Perceived probability of losing ownership of a part or the whole of one's land
Otsuka et.al. (2001)	Probability of retaining rights
Owubah (2001)	Confidence in rights
Place and Otsuka (2000, 2001, 2002)	Probability of losing land rights
Robinson (2005)	Uncertainty of land rights
Sjaastad and Bromley (1997)	Perception of likelihood of losing a specific right
Sjaastad and Bromley (2000)	Risk of losing rights and perception of that risk
Smith (2004)	Assurance of rights

**Source:** Arnot *et al.*, 2011 (modified)

From the various definitions above, many instruments have been used to measure the level of security or insecurity of a right. Among them are: (1) whether there is certainty over rights (land) in the form of a certificate (legal title to land), (2) whether there is likely to be an expulsion/eviction from the land and (3) forms of tenure applied by the community and so forth.

Arnot et al. (2011) stated that security of tenure is certain to be different in every place and under different conditions. For example, tenure is likely to be the most secure when a person holds a certificate of ownership of the land (legal title to land). But other places may not necessarily have legal recognition of ownership of the land through a certificate or other definite measures to ensure the security of tenure. Deacon (1994; 1997) in Arnot et al. (2011) states that the certainty of legal rights is not always positively correlated with security of tenure. Even though there is certainty of legal rights, through formal means recognized by the State, if there is instability within a State, it is not impossible that in the end the right of ownership may be unsafe.

There are many who argue that the activities of transmigration are a government program and spontaneous migration contributes to deforestation of a forest area. The first question that must be answered in this case is how the migrants can actually get access to forest land through land purchase (Koczberski et. al., 2009).

Several studies in Indonesia have also documented that the process of buying and selling land/forest to the migrant farmers is for the benefit of establishing plantation commodities such as cocoa in Sulawesi and oil palm plantations in Sumatra (Ruff and Yoddang, 1999; Elmhirst, 2001; Li, 2002 ; Potter and Badcock, 2004 in Koczbersky et. al. 2009). Furthermore, Li (2001) in Koczbersky et. al. (2009) explains that the process of buying and selling communal land is an indirect result of the uncertain legal status of customary

land which has enabled village headmen with authority in land matters to effectively dispossess customary landowners.

### 3 Results

#### 3.1 Deforestation and land-use change dynamic in limited production forest

Based on data released by the District Forestry office of Tanjung Jabung Barat, the total forest area in the district amounted to 246,601.70 ha, or 49.2% of the total area of the administrative district (500,982 ha). From the above table, it can be seen that the area of limited production forest that serves as the focus of this research is an area of 41,995 ha which is the forest area in Tanjung Jabung Barat established by the Ministry of Forestry and Plantations decree No. 421/Kpts-II/1999 regarding the determination of the forest and water area in Jambi province. This area historically was the forest concession area of PT. Hatma Hutani.

The current conditions in the limited production forest area are very worrying. More than a third of its area has been converted into smallholder cropping. Limited production forest based on the "no man's land" perspective has resulted in most of the territory being converted into rubber and oil palm plantations. Most of the conversion that has occurred in the northern and southern area of the limited production forest zone is mostly in the administrative area of the villages of Lubuk Kambing and Suban.

Based on spatial analysis (Agung, 2012), the total forest area in 1990, 2000 and 2009, respectively, was 37,576 ha, 35,382 ha and 30,994 ha. The loss of forest cover in the period 1990–2000 amounted to 2,194 ha, while in the period 2000–2009 it amounted to 4,388 ha indicating that the deforestation that occurred in the period 2000–2009 (487.6 ha per year ) was greater than that which had occurred during 1990–2000 (219.4 ha per year).

Deforestation increased in the period 2000–2009 due to the increase in conversion to plantations such as oil palm and rubber. Deforestation that occurred in the period 1990–2000 increased due to the high levels of migration to villages nearby the limited production forest zone. With the high rate of migration, the need for land is definitely going to increase as well.

The land-use change dynamics involve predominantly a change from forest to rubber monoculture, rubber agroforestry and oil palm plantations. Accordance to Agung (2012) stated in the period 1990–2000, there was a change from forest to oil palm plantations covering an area of 986 ha, from forest into monoculture rubber plantations of 203 ha and from forest to rubber agroforestry of about 894 ha. The total conversion into plantation during this period amounted to 2,083 ha or 95% of the total deforestation that occurred in the same period.

In the period 2000–2009, the forest conversion into oil palm plantations amounted to 1,408 ha; from forest to rubber monoculture amounted to 2,019 ha and from forest to rubber agroforestry amounted to 1,262 ha. The total conversion into plantations during this period amounted to 4,689 ha or 84% of the total deforestation that occurred in the same period.

Conversions from forest into small scale plantation areas in the period 2000–2009 nearly doubled when compared with the change from forest to small scale plantation in the period 1990–2000, namely, up from 2,083 ha to 4,689 ha. It was caused by the high rate of deforestation that occurred in the period 1990–

2000, where many primary forests that were already degraded were converted by the local community to oil palm and rubber plantations.

### 3.2 Land tenure arrangement

#### Local community

At first, the villagers of Lubuk Kambing, Lubuk Bernai and Suban acquired land by way of a claim to the land and forest. The interviews showed that land/forest claims were undertaken because at that time there was ample land available around the village. Claims were very closely related to the area of the village and the population density at that time. Accordance to Demsetz (1967) and Feeny (1993) in Ostrom (2000), where the population density is extremely low, land is abundant, and land generates a rich diversity of plant and animal products without much husbandry.

The different ways used to obtain the land for the local community people of the three villages were usually initiated by shifting cultivation activities. Shifting cultivation at that time was the ultimate way to make a claim and get the recognition of land/forest. Claimed land/forest was distributed and recognized by "*Pesirah or Rio*" as head of the village. Angelsen (1999) reporting on the results of research done in the district of Siberida Riau found that the activities of traditional shifting cultivation allow farmers to obtain land from the forest for the use of the individual, and tenure was then earned in accordance with customary law.

At that time there were rules governing land/forest claim areas that were used for shifting cultivation. People who managed shifting cultivation always managed their land. The regulation stipulated that a person will lose the right to manage and have control over the land if it has not been cultivated/managed for a period of more than three years. This rule can be found in the villages of Lubuk Kambing and Lubuk Bernai, but this rule is not longer applicable because there is no shifting cultivation undertaken by the villagers now and also all the land is now fully owned either individually or communally. This rule is often referred in the local community in terms of "*hutan gilir*".

To state a claim against an expanse of land that is already owned and managed, local communities especially in Lubuk Kambing and Lubuk Bernai do so by planting cash crops such as rubber. With rubber planting, a land claim will be strong and will be recognized by other people. With this pattern over time, the local people began to abandon shifting cultivation.

Another way to make a claim over land is to open up plantations around the concession area. The concession area which is equipped with facilities and access roads was used by local communities to obtain a new claim to the land/forest. Logging activities and deforestation are closely linked to road access. Logging can facilitate deforestation with the influx of people to the area due to the logging road also used to open up general access to the forests (Kaimowitz et al., 1998, in Kanninen et al., 2007).

Initially before opening the plantations, the local communities cut down the existing commercial trees within their claimed land and sold them to the wood skipper—an activity known by the villagers of Lubuk Kambing, Lubuk Bernai and Suban as "*bekayu*" or "*bebalok*". Once the timber had been sold, they cleared the land and started planting.

According to the people of Lubuk Kambing, Lubuk Bernai and Suban, in the past everyone was free to make a claim over land/forest and to then convert the land into crops/plantations. All that was required was to seek approval from “*Pesirah*”/“*Rio*” as the customary or village leader at that time. In the early 1990s, the people in these three villages started to plant rubber on their claimed land. In some places in Indonesia, rubber is a champion plant chosen by farmers if they want to change their cultivation pattern. Angelsen (1995) conducted research in Riau and found that the traditional community way of farming at that time was by shifting cultivation and gathering forest products, but in the last century this has been replaced by planting rubber and combining it with their shifting cultivation practice.

According to the villagers of Lubuk Kambing, the widespread rubber planting in ancient times can be proved by an old rubber plantation that is still easily found surrounding the village area. This land is now granted to the children and grandchildren of Lubuk Kambing, Lubuk Bernai and Suban villagers. Some of these lands have legal title but some areas cannot be legalized due to its land status being within the state-owned forest area.

### Spontaneous migrants

Rubber and oil palm plantations in the villages of Lubuk Kambing, Lubuk Bernai and Suban are not only cultivated by local communities. Spontaneous migrants who come to these villages have a primary goal to purchase land/forest from the local communities and to plant it with rubber or oil palm. For example, in the village of Lubuk Kambing, migrant communities have come from several ethnic groups such as the Javanese, Batak, Palembang and Aceh, and these migrants plant rubber more extensively than oil palm. Contrary to Lubuk Kambing, the spontaneous migrants in Lubuk Bernai and Suban villages plant more oil palm than rubber. In Lubuk Bernai village, most of the spontaneous migrants are of Javanese ethnicity whereas Batak ethnics constitute the majority of migrants in Suban village.

To obtain land, these spontaneous migrants must buy from the local people who want to sell their land or plantation. Some of the land purchased from the local community already has a legal title and some if it is a part of state-owned forest does not and this is sold by the local community as well. The price of land/plantation that has a legal title is far more expensive than the price of forest land.

### Transmigration

From interviews with the Lampisi villagers, it is known that the distribution from the resettlement program provided them with land equal to 2 ha for oil palm plantations and 0.25 ha for a house and its yards. The land distributed to these transmigration participants is covered by a legal process with a legal land title provided for each household. Along with the development of oil palm plantations with the nucleus estate scheme with the large scale companies, the migrants’ living standards continue to rise. With the rising standard of living, the migrants desire to raise capital in the form of land for increased oil palm plantations. Lampisi villagers, as well as immigrants from other villages, buy land from the local communities as described above.

There is a facility used by the Lampisi villagers to increase the area of cultivated land compared to

other migrant groups. The Lampisi villagers could hypothecate their land titles (which are obtained from the transmigration program) to the bank to obtain fresh funds in order to buy new arable land.

Based on the results of the FGD, the Lampisi villagers determine which land/forest they would buy from the local community based on the proximity of the land/forest offered to their village. The form of the land was also a consideration of migrant peoples when buying —whether the land was in the form of plantation, shrubs or was still forest. However, based on interviews with key informants, the form of the land was not a great consideration, because it is only related to the price of land/forest. Forested land would be cheaper compared to land covered only in shrubs and bushes and would definitely be cheaper compared to land that had been cultivated (plantation).

Another way to get land/forest from the local community was through land sharing—in the local language it is called “*mawah*”—which was introduced by the Javanese ethnics. Local communities give some parcels of land to spontaneous migrants to manage, plant the land with oil palm, fertilize the land and undertake all other plantation management and all of the associated cost should be covered by the migrants (either spontaneous migrants or transmigrants). After five years, the land is then divided into two parcels, with one parcel belonging to the local people that hired the migrants to manage their land and the other parcel going to the migrants.

### 3.3 Tenure insecurity occurs in the area of limited production forest

In the process of selling land-forest occurs the risk sharing between the seller, buyer and witness on the activities that are considered illegal by the State. It can be seen from the land-forest market process that relies solely on a piece of receipts as the only trade document of a parcel of land-forest. Frequent land market process in fact detrimental to the buyer in this case is the migrant communities. Based on interviews with key informants, in order to obtain land-forest, migrant communities have to pay as much as three times to different local claimant as they have the same claim over the same parcel of land-forest. Basley et al. (1995) in Arnot (2011) stated that the uncertainty of tenure is a condition where there is the possibility (probability) the deprivation of land rights. This can be seen clearly in the study sites.

Migrant community perception of tenure insecurity over land-forest especially for Lampisi villagers when they buy land-forest that is counted as state owned forest there will be problem and risk of expulsion that could culminate to make them lose the rights to their land. Facing fears will lapse at a later time Lampisi villagers said that even if land-forest they purchase must be returned to the state, at least the land is already able to produce a minimum of one cycle of oil palm plantations. For local community who sell the state owned land-forest it is also found unsafe for them to manage the land by them self so that it will be better to them to sell it. This happens because the area is state owned forest which someday can cause legal problem related to the acquisition and utilization.

In addition, from interviews with key informants can also be concluded that with the process of land market provide economic benefits to local communities which made selling and purchasing of land-forest as a livelihood option for some people (village elite). This has led to land market increasingly prevalent and easy to do; besides there was indeed the demand for land in the presence of migrant communities.

### 3.4 Migration and formalization of informal land market institution

Tanjung Jabung Barat is one of the districts in Jambi province that is the target location for transmigration. Transmigration programs are generally integrated with the nucleus estate program (PIR) of a large scale oil palm plantation. Migration waves began to come to Tanjung Jabung Barat district in 1990 and successive waves continued in the following years.

In addition to the transmigration patterns, there were also spontaneous migration patterns by ethnic Javanese, Batak, Palembang, Aceh, Bugis and Banjar. Most of the people who migrated spontaneously were motivated by the desire to seek a better life than they had in their original home town by opening up a new plantation. Koczbersky et al. (2009), reported there was a lot of documentation by researchers of the phenomenon of buying and selling land/forests to communities of migrants for conversion into plantation.

The general desire to improve living standards and raise capital in the form of arable land (land capital) indirectly affected the pressure on the land/forest. Migrant communities were forced to buy land/forest due to their migrant status which made it impossible to make a traditional claim for forest/land. Trading land/forest is a right claimed by individuals/groups of local communities. Research conducted by Li (2002), explained that the privatization of land/forests by local communities became the foundation on which land/forest was developed into a commodity that could then be traded with the immigrant community.

The formation of informal market institutions of land/forest is a series of processes of interaction between local communities who have land/forest claims with immigrant communities. Transmigration communities that started to come in the early 1990s in fact were far more financially secure when compared with the local community, for if the immigrant's economy was more secure, then this created a motive to acquire new arable land.

The high demand for land did not necessarily just happen. The increasing need for land was affected by various factors such as the presence of the transmigration program which introduced the impact of certain agricultural commodities and technology. The transmigration program introduced new farming/agricultural systems and created new land market processes (Koczberski et al., 2009), where the migrants bought land from local communities. It is found in the village of Suban that the dominant commodity had shifted from rubber to oil palm plantations. The FGD results showed that a lot of rubber plantations had already been converted into oil palm plantations.

The land market institution is a series of processes of interaction between the land tenure arrangements of local communities with the land tenure arrangement brought in by immigrants. For example, in the villages of Lubuk Kambing and Lubuk Bernai, the *mawah* system is prevalent. The *mawah* system itself is a pattern of land tenure introduced by the Javanese and Bugis ethnics. To obtain new arable land in the villages of Lubuk Kambing and Lubuk Bernai, migrant communities (the majority ethnic Javanese) joined in the land sharing scheme when oil palm production began.

Furthermore, the "*hutan gilir*" pattern applied in the villages of Lubuk Kambing and Lubuk Bernai also has implications for the rampant land market. *Hutan gilir* basically determines the rules that govern the land use where the person will lose the right to manage and control a parcel of land/forest if it not managed for more three years. The right to manage and control will be passed to those who manage and control the remaining land. Furthermore, it also becomes the right of the next claimant to sell land that is generally



covered by shrubs or planted with horticultural crops. After the land has been sold to migrants, the money then belongs to the new claimant and is sometimes shared with those who previously managed and controlled the land.

The sale and purchase of land/forest through a series of processes involves several parties that have their own respective roles. Parties associated with the process of buying and selling land/forest that can be encountered in the field include the buyer, seller, broker, trading witnesses (people who have a plantation that is directly adjacent to the garden which was sold, hamlet head and the village officer) as well as the village head.

### 3.5 Informal land market institution and its contribution to deforestation in the area of limited production forest

As already mentioned above the proliferation land market processes has resulted in a decrease of forest cover due to conversion of forest to oil palm and rubber plantations and contribute significantly to the high rate of deforestation. Rampant conversion of land-forest to oil palm, rubber monoculture and rubber agroforestry cannot be separated from the high economic value of the commodity. Widayati et al. (2011) stated that the high profitability of land use changes from forest to oil palm, rubber monoculture and rubber agroforestry is an important factor triggering the loss of forest cover.

Sofiyuddin et. al. (2011) in Widayati et. al. (2011) stated that of the three dominant land-use changes occurs in limited production forest, changes from forest in to oil palm plantations has highest value for the level of profitability of small farmers amounted \$ 7.012 per ha. While the profitability rubber monoculture plantations amounted \$ 2,417 per ha and rubber agroforest amounted \$ 1.580 / Ha.

## 4 Conclusion

Informal land market formed by the high demand of land-forest by the migrant communities to increase their land capital meet with the supply from the local communities claim over land-forest that makes land-forest commoditization, where both migrant and local communities fully understand that their claim over traded land-forest is definitely insecure in term of tenure. Beside, with the passage of time, the land-forest trade through formalization of informal land market has become a livelihood option for local communities, especially village elite who exploit the lack of forest governance which makes state owned forest as if a no-man's land. The high profit of oil palm cultivation that felt by small farmers is also a trigger of formularization informal land market where this process significantly impact on the rate of deforestation.

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