

THE STUDY OF LAND AND TREE TENURE RIGHTS ON AGROFORESTRY (*PARAK*) SYSTEM AT COMMUNAL LAND IN WEST SUMATERA, INDONESIA

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ABSTRACT

Forest and land rehabilitation programs in Indonesia tend to be sporadic and not sustainable; it is due to the lack of community participation in planting and maintaining of trees, especially in community lands. In West Sumatra, where the land is generally communal, the success of tree planting for the purpose above critical views of land and tree tenure. Incentive systems that are not clearly, directing people are reluctant to plant trees on communal lands and the state. Therefore this study aims to create incentive system based on tree tenure rights in communal lands and countries in West Sumatra. The findings here indicate on communal land, the rights existed at the tree basically vary according to local rules and objectives of tree planting. Individual rights basically high level but limited by the communal rights. Thus, for income purposes farmers prefer planting a non-timber producing trees. Therefore, for create incentive necessary need clarity between individual rights and communal interests where there is dominance of communal over individual interests. While at the state land, not clear defined of land and less benefits for individuals, but more benefits obtained indirectly as members of the communal.

Keywords: Agroforestry, communal land, incentives, land tenure, tree tenure

INTRODUCTION

High population growth raises a wide range of forest interests, including conversion into agricultural land, timber utilization, as well as other forest products. The high interest in forests causing widespread deforestation occurred in the large scale of the world. This policy encourages local community-based forest management which is currently much promoted by various institutions in Indonesia such as agroforestry (*parak*) in West Sumatra.

Generally agroforestry in the traditional form and does not develop, among the various causes of failure is in relation to land and tree tenure issues (Dorner, 1971, Diaz, 2003). The uncertain and unclear land and tree tenure systems and often conflicts that often occur in the utilization of land and its product. This situation shows no system of incentives that can encourage people to plant trees on their lands, included in the state land. Therefore the success of this program requires a clear arrangement of land and tree tenure. Arrangement of land tenure as a form of property rights according to Parsons (1956) determine the success of the

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development, due to the clarity of individual rights in the ownership, access and control at resource. Clarity of these rights shows the ability of individuals to benefit at the land or there are secure rights on the future dimensions of which as a basic incentive for investment in trees. This depends on the clarity of ownership of the person concerned (Unruh, 2004)

Property rights in Indonesia are often in overlap settings within the formal and informal rules. In the communal lands generally do not have the clarity of status; because the state recognizes the rights of ownership in accordance with UUPA 1960 also recognizes the existence of customary rights (ownership through customary institutions). Land tenure status produces much issues related to claims of community rights that can be uncertain and changeable.

Based to theory of property rights, the form of private property is the best of resources management (Nicita et al, 2005; FAO, 2002, Otsuka et al, 2001; Bruce, 1998). This is because the form of private property has a full right without any external intervention. The communal ownership is considered negative and not supporting investment into the land in the long term, such as planting trees (Bruce, 1988; Place et al, 2004), that is reflecting a pattern of western property (Benda-Beckman and Benda-Beckman, 2001). But in fact no single form of property right is really sustainable and does not occur in the long-term overuse. Despite clear private ownership does not guarantee sustainable management, at least support by a secure monitoring and strong institutions (Ruitenberg and Cartier, 1998).

The theory above express that the system incentive to plant tree is include to the land. The security of land rights is also considered to the tree. The fact land ownership is not necessarily describing the same ownership to the tree, especially in cases of communal land ownership prevailing local customary rules. Therefore, to build system incentives on the tree need to be describing separate from the land. Incentives for tree planting needs to view from the tree rights in the future use, or the prediction that the benefits will be obtained later. As long as there is no system incentive to tree's planting program on communal land or state land there will no guarantee to sustainability, even it can be a trigger of conflict. (Bachriadi dan Sardjono, 2005; CIFOR, 2003)

This paper reveals empirical experience in West Sumatra on tree tenure rights which form the basis for the formulation of the concept of incentives, especially on communal land and state land. Weaknesses of the concept of communal land are considered unsuitable for planting trees, and private property is considered best categories of rights. This paper became an approach to offer the forest resources management concept where the clarity of the concept of tree tenure to provides incentives for planting trees. If there is a clear system of incentives so the damage / degradation of land and forest resources will be reduced.

AREA STUDY AND METHODOLOGY

Area Study

The study was conducted in West Sumatra. The research was in wood land area (*parak*) which is the integration of trees and agricultural crops. Purposively selected areas, based to the categories of land use patterns or in terms of agroforestry systems in West Sumatra as a *parak* which is dominated by annual crops or trees in a landscape.

Based on the above categories are determined three village locations (*nagari*), namely: 1. Nagari Paru, located in District Sijunjung, Sijunjung. The main characteristics in Paru there are '*Rimbo larangan*' which is a conservation area on communal land villages (*ulayat nagari*) as a form of local initiatives. *Rimbo larangan* as a local initiative is considered as a successful model in managing natural resources (forests). While the *parak* is the agroforestry that is dominated by rubber and other crops in the vast expanse of surrounding villages (rubber-based agroforestry). 2. Nagari Koto Malintang, located in Tanjung Raya district, Agam. *Parak* located above of the village as a mixture of vegetation and dominated by cinnamon, durian, and other annual plants within a compact landscape (multi-purpose's tree-based agroforestry). The main characteristic *parak* here is the form of a local initiative which has existed since the past. 3. Nagari Paninggahan, located in District Junjung Sirih, Solok, West Sumatra. The main characteristic of *parak* here is dominated by the kinds of commercial crops, such as cloves, cocoa, avocados and other (commercial tree's based agroforestry). Activities management of agroforestry in Paninggahan is a local initiative with support from outside (government programs and non-governmental organizations).

Methodology

This research uses descriptive method aims to identify the forms of relationship between land tenure and tree tenure. Preview status of land and tree tenure will provide incentives for the development of agroforestry (*parak*), this is indicated by the level of the security of rights in the tree. In this study, using the strategy as following approach: First observation study to assess and describe patterns of tree tenure on the various land tenure on communal land. Second, evaluate the security of rights on tree tenure with the approach of the rights in the tree.

Observation done by assessing and describing the patterns of institutional tree tenure on communal land and the dynamics of the institutional variables that tree ownership, access or utilization, and management or control on the tree. This approach refers to 'Rapid appraisal for social forestry land and tree tenure' in determining the land and tree tenure (FAO, 2000).

Primary data obtained from interviews and questionnaires with respondent farmers, as well as in-depth interviews with key informants are village leader, chairmen customs leaders, and chairman of the organization, while secondary data as physical description of the local area taken from the relevant authorities. The data includes the performance tree tenure, land use practices in agroforestry, socio-economic and demographic characteristics of peasant households. Descriptive analysis to establish the performance and explanation of the dynamics of land ownership that includes ownership, use and control.

RESULTS AND DISCUSSION

*Tree Tenure In Customary Tribe's Land (*Ulayat Kaum*)*

Pattern of tree tenure varies depending on the species of trees and tree functions (Table 1). Trees with a communal function shows limitation of individual rights.

Table 1. Matrix of tree tenure on customary land (ulayat kaum) in the three villages

Village	Tree Species	Type of Rights
Paru	Rubber (<i>Havea brasiliensis</i>)	Latex is owned by growers, stems and twigs can also be members of the tribe, may be sold even in the form of gardens, tenure in indefinite of time.
	Cinnamon (<i>Cinnamomum burmanii</i>)	Bark is owned by the growers for the benefit revenue, stems and twigs can also be owned by members of tribe, tenure in indefinite of time.
	Durian (<i>Durio zibethinus</i>)	Fruit is owned by the member villages, while the wood by the land owners and members of tribe. Require permission to cut down all the <i>adat</i> leaders (<i>ninik mamak</i>). Tenure rights is unlimited of time
	Banio (<i>Shorea</i> sp) dan meranti (<i>Shorea</i> sp),	Wood essentially owned by the growers, and members of the tribe and the village can take advantage of with the permission of the landowner. Felling permit from the clan leaders.
Koto Malintang	Durian (<i>Durio zibethinus</i>)	Fruit is owned by landowners and members of the village in <i>balangge</i> system, while the wood is owned by landowners and members of the tribe. Felling permit from the tribe's leader (<i>mamak tunggana</i>) and village leader. Tenure rights is unlimited of time.
	Cinnamon (<i>Cinnamomum burmanii</i>)	Growers and members of the tribe entitled to the bark and stem, as a source of benefit. Length of tenure for the rest of plant.
	Surian (<i>Toona sureni</i>), meranti (<i>Shorea</i> sp) dan bayur (<i>Pterospermum javanicum</i>)	Right to wood for land holders and members of tribes, and so to twigs and branches. Cutting need permission from the house's leader (<i>mamak</i>) and village leader. Tenure rights are unlimited of time.
Paninggaan	Clove (<i>Eugenia aromatica</i>), durian (<i>Durio zibethinus</i>), avocados (<i>Persea americana</i>) and cocoa (<i>Theobroma cacao</i>)	The right to fruit and sell fruit to growers, goals for benefit revenue, but the stems branches and twigs can be owned also by members of the tribe. Tenure rights are unlimited of time as long as the land is managed.
	Mahogany (<i>Swietenia mahagoni</i>), Surian (<i>Toona sureni</i>), teak (<i>Tectona grandis</i>) and pine (<i>Pinus</i> sp)	Right to wood for land holders, but the inheritance tree also entitled to tribe members. Rights to sell to growers, twigs and branches can be owned by members of tribe. Tenure rights in unlimited of time

Characteristics of the tree rights in the three villages are: in Paru village, felling and selling trees in the communal land more freely and safely performed than Koto Malintang and Paninggahan village. This means that claims can be made and the tree is not prohibited or intervened by communal interests. But the restrictions of felling if the purpose to sell trees. Restrictions of this right begins from cutting down trees. Logging restrictions based on customary rules and villages. Restrictions on the harvest may see Table 2.

Table 2. Some rules of cutting trees in the customary tribe's land (*ulayat kaum*) in three villages

Village	Paru	Koto Malintang	Paninggahan
Criteria	<ul style="list-style-type: none"> Trees planted by self can be felled without permission by <i>mamak</i> Trees felled for sale must permit by <i>mamak</i> Permission is not required from <i>walinagari</i> There is no limit to the number of felled along their own needs Durian felled require special rules 	<ul style="list-style-type: none"> Trees felled shall permit by adat leaders (<i>Ninik Mamak</i>) and village leader (<i>walinagari</i>) Durian should not be felled Cutting rules depending on the type of tree, such as coconut and cinnamon Timber harvest can be sold but are limited in the number of felled 	<ul style="list-style-type: none"> Trees felled shall permit by <i>mamak</i> and <i>walinagari</i> Result harvest can be sold

Table 3. Average of the trees rights existing in three villages

No.	Type of Rights	Villages		
		Paru	Koto Malintang	Paninggahan
1.	Planting and planting again	✓	✓	✓
2.	Maintenance	✓	✓	✓
3.	Felling	✓	Γ	Γ
4.	Use tree	✓	Γ	✓
5.	Bequeath	✓	✓	✓
6.	Sell	Γ	Γ	Γ
	Average tree right	5,8	3,45	4,7

Legend: ✓ = can be done with notice

Γ = can be done with deliberation / specific conditions

The dominance of communal rights to limiting the use's trees by individuals express at the average the tree rights (Table 3) that impact on the low management of trees is by farmers (Table 4). Minimal creativity and activity to manage of land referring to the forms of the annual crop management. Types of long life perennial trees requires a relatively mild treatment compared with seasonal plants capable of producing in the short term.

Table 4. Management of *parak* in three villages

Type of activity	Paru	Koto Malintang	Paninggaan
Seeding	80% own nurseries, 20% buy seedlings.	70% own nurseries, 30% buy seedlings.	65% own nurseries and help from the government and NGOs, 35% buy seedlings.
Cultivation	Planting by self and family	planted by Parents and families	Planted alone, help from field-workers
Fertilization	90% without fertilizer, 10% with chemical fertilizer	40% without fertilizer, 50% with chemical fertilizer for cocoa, while the non-cocoa generally do not fertilize	50% with manures, 30% in addition to using animal manure with chemical fertilizer as well, the rest do not fertilize.
Blow	100% made an intensity 3-4 times a year	100% done with the intensity 3-4 times a year, for cocoa crops blow almost every month	90% done with the intensity 2-3 times a year.
Thinning	Thinning is not done	50% done thinning in non-cocoa crop	10% done thinning

The management of trees shows tree crops are generally managed in the traditional one. In commercial crops management more intensive compared with tree crops such as in Paru and Koto Malintang. So planting trees is the option of communal interests to minimize the inputs to the land. Change the types of trees to fast producing species as rubber, influence the amount of income from agroforestry land (Table 5). Farmers prefer planting with a secure of ownership, utilization and control trees (non-wood) is to ensure its revenues from agroforestry land (*parak*).

Table 5. Area of land and income of farmers in three villages

No.	Information	Paru	Koto Malintang	Paninggaan
1.	The average land area	1,3 Ha	1.425 Ha	0.8125 Ha
2.	Average income	Rp.1.328.605	Rp.1.588.300	Rp.1.411.500
3.	Revenue per hectare	Rp.1.022.000	Rp.833.200	Rp.587.840
4.	Percent of agroforestry garden	89,07 %	74,12 %	43.69%

Tree Tenure on Customary Village's Land (Ulayat Nagari)

Tree tenure in customary village's land shows the differentiation depends on the type and purpose of planting trees (Table 6).

Table 6. Matrix of tree tenure in customary village's land in the three villages

Village	Tree Species / Product	Type of Rights
Paru	Cinnamon, firewood, rattan	Right on cinnamon bark, take firewood and rattan can be taken by members of the villages in the not-limited of time.

	Rubber	Right on the latex on the former owner for the revenue that is not limited in time but with the permission of village
	Medicines and fodder	Animal feed and medicines can be taken by members of the village in an unlimited period
Koto Malintang	Durian (<i>Durio zibethinus</i>)	Rights to fruits to growers and members of the village at a certain time-specific. Right to wood to the growers, members of the tribe and village, to cut down should permit <i>mamak tungganai</i> , Village leader, and four clan leaders (<i>suku nan ampek</i>). Tenure as long as agreement with the village
	Cinnamon (<i>Cinnamomum burmanii</i>)	Rights to the bark, stems, twigs and branches on the planters and members of the tribe. Tenure on indefinitely of time as long as the agreement with the village
	Surian (<i>Toona sureni</i>), meranti (<i>Shorea sp</i>) and bayur (<i>Pterospermum javanicum</i>)	Right to wood to growers, members of the tribe and village, but the right to sell wood to growers. Twig and branch performance is taken also by members of the tribe. Logging permit from the <i>mamak</i> , villages leader and four clan leaders (<i>suku nan ampek</i>). Tenure on indefinitely of time as long as the agreement with the village during the contract
Paninggaan	Coffee (<i>Coffea sp</i>), surian (<i>Toona sureni</i>), pine (<i>Pinus sp</i>), mahogany (<i>Swietenia mahagoni</i>), durian (<i>Durio zibethinus</i>), cinnamon (<i>Cinnamomum burmanii</i>)	The right to the fruits (coffee and durian) on growers and can be sold, while the rights to stem to planters and villages. Felled must permit from <i>mamak</i> and village leader limited only for personal consumption. Rights to sell the timber are prohibited. Rights to the cinnamon bark to growers. Right on the twigs and branches can be owned by members of the tribe. Tenure not limited in time as long as permit from villages.
	Pulai (<i>Alstonia scholaris</i>), rasak (<i>Vatica spp</i>), bintungan (<i>Bischoffia javanica Bl.</i>) Kalimparik (<i>Terminalia sp</i>), and ingu (<i>Ruta angustifolia</i>)	Right to wood to land holder and villages. Twigs and branches to land holders and members of the village. Logging should permit by <i>mamak</i> and village leader only for their consumption and prohibited for sale. Plant grows naturally. Tenure not limited in time as long as permit from villages.

Tree tenure in customary land villages showed that more limited rights to personal on tree. From here we can see that access to land and product is determined by utilization of land. Basically in the village communal land used by the

member of community for agroforestry have different rights from the communal land tribe which is used on an individual basis by the holders of land. In the village communal land utilized for the collective interest (conservation), then the rights of individuals to be very limited (Paru).

Limitations of individual tree's rights in the customary village's land was also demonstrated by the rule of felled trees (Table 7). In this village communal land rights of individuals is very limited only to non-wood products. While for the tree products have strict rules as a form of common interest is more emphasis than the individual, although the land can be utilized in the long term.

This shows the authority of village on village communal land have broad rights to land and trees. Even this authority can direct the acreage allotment for the conservation area (Paru). Villages get a double incentive from the use of land named as source of revenue villages and environmental sustainability.

Table 7. Some felled rules are in the customary village's land in three villages

Village	Paru	Koto Malintang	Paninggaan
Criteria	<ul style="list-style-type: none"> • Timber harvest is prohibited • Utilization indirectly as a source of irrigation • Non-timber benefits can be done (latex, rattan, cinnamon) 	<ul style="list-style-type: none"> • Utilization in accordance with the interests of village • Logging should be permits by suku <i>nan ampek</i> and walinagari Villages get to benefit of the harvest. 	<ul style="list-style-type: none"> • Trees felled shall permit by <i>mamak</i> and walinagari • Felled govern by KAN villages leader

In Koto Malintang and Paninggaan indigenous land villages functioned as a given area of land use to village residents for the purpose as a source of income, so that access and control land use involved land holders and the villages as landowners.

DISCUSSION

From the matrix of tree tenure in Paru, rubber (*Havea brasiliensis*), cinnamon (*Cinnamomum burmanii*), banio (*Shorea* sp) and meranti (*Shorea* sp) at the communal tribe's land of Paru shows rights on trees and tree products generally can be held by land holders, which he as a planter. But members of the tribe are also entitled to a tree trunk which is a heritage tree crops. It is also a member of tribe have a right to retrieve the fallen twigs and branches. While the right to sell timber banio (*Shorea* sp) and meranti (*Shorea* sp) is owned by land holder only with permission of house's leaders (*mamak*). Different patterns on the rights of durian trees (*Durio zibethinus*), which is the trunk owned by land holder, but the fruits belong to all village members. The fruit is harvested only when fell to the ground. Similarly, the rights to felled durians should get permission from the entire *adat* leaders (*ninik – mamak*) 32 people in Paru village.

In the communal land of tribes in Koto Malintang, the rights to the durian trunk (*Durio zibethinus*) to land holders, but rights to the fruit has a wide dimension in which members of the village can take the fell fruit on specific time (the time after dawn until the rising of the sun, about two hours), the rest is owned by land holders and members of the tribe. Likewise with the right to trunk and felling require

permission from tribe's leader (*mamak tunggal*) and village leader. If durian in logging on communal land tribes belongs to the quarter section of land rights holders, a quarter again divided with the other heirs and half the remainder for lumberjacks.

While on the other tree species such as bayur (*Pterospermum javanicum*), Surian (*Toona sureni*), meranti (*Shorea* sp) and cinnamon (*Cinnamomum burmanii*) also have the right of members of the tribe of wood or barks. Even for cinnamon (*Cinnamomum burmanii*) famous 'cinnamon scent wafted up to the shoreline'. For wood products basically can be done by the land holder, but to felling need necessary permits from house leader (*mamak*) and village leader limited for personal consumption, but if the purpose of selling the timber will need permission from the tribe's leader (*mamak suku*).

The trees tenure on communal land tribe in Paninggahan basically can be distinguished on the fruit-producing tree species (non-wood), and trees for timber. The right to the fruits (of clove flower) and sell the fruit can be made by land holders, as well as in the indefinite time as the land in his/her possession. While for the timber-producing trees, the right to woods on the land holders, but members of tribes can ask the timber to its interests, particularly on heritage wood planted by the previous parent.

Based on the pattern of tree tenure rights on the customary tribe's land shows varying patterns of rights and the limitation of individual rights to use of trees. Farmers in general have an ownership on agricultural crops and trees planted on their own land, while in the tree that planting by parents can be held by other members of the tribe. This situation illustrates the communal ownership there are interest groups or members of the group that represents the interests of such networks (Meinzen-Dick and Esther Mwangi, 2008). So here the individual rights of land holders and communal rights can not be separated. Even the communal members can still ask the wood in the land to simply meet his needs, but for commercial purposes is prohibited. Variation of tenure rights due to different local rules between villages. The diversity of these rules describes the inconsistency rights of tree caused by the status of land. The same status of land can distinguish the status of the tree rights. This means that the tree rights is not always tied to the land, as in any theory of property, which describes the rights of the tree is determined by the rights over land (Otsuka et al, 2001).

Limitations on individual rights appear on the trees felled rules and index of security of tree tenure. In the standard 6 rights that are observed the average level of tree rights reach 3.45 to 5.8 (Table 3). The differences of average rights in the three villages prove that the rules of tree rights are different to each others. If observed on the above rights are generally non-free rights are the right to cut, use and sell the trees. But in some villages it is still allowed so long as permission from house leaders (*mamak*). In the system of trees tenure on communal land in West Sumatra-based custom shows basically a high security status, but strongly influenced by local communal interests. So that the utilization of individuals required to obtain approval of the customary leaders, and tend to limit the personal rights that do not fit with communal interests.

Limitation of individual rights by the communal that is the reason Otsuka et al, (2001) mentioned some form of communal land tenure (lineage land) showed a low security status, if this is compared with the rights on private forms. In West Sumatra,

this character is apparent from the low level of individual rights, where the land holder is not free to transfer land such as mortgage or sell land, but land can be freely passed through the matrilineal system. So here the rights of individuals on communal land tenure is guaranteed, because if the collateral value is measured only based on such transfer rights to mortgage and sell rights is prohibited in some villages, then according to FAO (2002) this assessment is not fair. This is more indicated the characteristics of communal tenure systems generally prevailing in West Sumatra.

It is clear that individual rights do not stand alone on communal land. But it's associated with communal rights as reflected in customary rules. As a result of customary rules may be different with other villages that produce the status of tree tenure security that can differ from one another as above. Tenure security level is higher in the Paru> Koto malintang> Paninggahan describe more number of rights exist that can be done by the land holder even with a permit. This indicates that an individual's decision easier, so that at the highest level of land may be transferred to another party. Transfer of land on communal land holders in the form of pawned or sold simply because of the very important and urgent.

On the right to use trees by individual can be done but there is a dichotomy and contradiction with the communal rights (Table 7). As known rights to use trees by individual is limited to their own needs, both in the amount of usage and usage purposes. The economic objective for sale woods would require a tight permit in three villages, whereas if the purpose for his own use essentially not inhibited. This is apparent where more revenue was found in rubber-based agroforestry in Paru village. This contradiction is understandable, because according to Ramli Zein (1995) the fundamental rights of ownership on communal rather than individual. Individual rights granted precisely because of the duties and functions of a person as a member of the communal. The main objective for communal is to maintain the sustainability resources to conservation efforts in agroforestry activities, whereas individuals are basically aimed at economically to meet the needs of life.

Tree tenure above shows that in the communal land, although rights are limited, but safe to do (enforceable). As a result the land status is not barriers to the land holder to invest into the land. While the tree rights are height is known, almost all of these rights exist, but the individual rights is limited by the communal rights. As a result farmers are not free to take benefit from the tree. Simple solution farmers would avoid planting tree for wood product.

This pattern caused by the existence of communal rights firmly on the tree in the institutional rules that limit individuals' rights to freely use the tree. Rules of felling and use tree barrier for individuals with communal interests into account in addition to their own interests. Limitation of individual rights to use trees on one side with the communal interests on the other side makes agroforestry in Koto Malintang remain sustainable. Here there is harmony between individual and communal interests resulting agroforestry maintained. According to Meinzen-Dick and Esther Mwangi (2008) property rights on common property resources such as a network of interests. Interests of a group or groups associated with the interests of others. So that this can be maintain sustainable revenue.

In the village communal land, as is well known land-based communal, not a legal classification in the theory of property rights, so the form is not conducive to sustainable development. The forms of the individual is an ultimate form which the

owner is entitled as free creation of the land without the interference of others or without the consent of anyone else including the transfer of land rights. Communal land tenure systems are often interpreted as a pattern that is not conducive to sustainable development caused by the totality of rights not owned (FAO, 2002, Place and Otsuka, 1997).

In West Sumatra land ownership is perpetuated, where changes land ownership is not allowed. Transfer of rights is only done through inheritance to the children in the female line (*matrilineal*). It is concluded that in the communal system, the status of land ownership by land holder remains strong despite the rights exist on an individual basis is lower than private ownership.

Rules in the communal system guaranteed tenure on the land. FAO (2002) states based on communal tenure still has a strong security even without the rights to mortgage or sell, this is not fair if the security is only judged by the ability to transfer such mortgaged and sold. Although this right is forbidden in some villages, but more important is how to recognition by communal. For in reality they still can manage the land in peace and get the food source away. This shows the characteristics of communal tenure systems generally prevailing in West Sumatra.

This figure differs from the meaning of Western land tenure, that the individuals rights on land is the main picture of land tenure security, while the rights to the trees follow the status of the land. According to Bruce (1988) strong security only if there are full rights on land and land can be inherited or sold. Unsafe even though the soil may be held for a lifetime but the two rights above do not exist. This very clearly shows more security assessed from individual rights. Strength of these rights requires that owners can use those rights freely without any restrictions or other requirements, because the legal concept of ownership is that the rights on resources is free to use and protected from interference by others (Cooter and Ulen, 1988). So ownership makes a privacy zone which the owner uses his or her rights without to answer objections from others (Nicita *et al*, 2005). Otsuka *et al* (2001) clearly states from research in four different locations in Sumatra that communal land ownership status (Lineage land) and joint ownership of a few families have the weak security status.

According to Place and Otsuka (1997) where if private ownership is uncertain and unclear, the incentives on land and trees will be hampered. It also security of tenure has positive effect on investments that spur more productive and more sustainable land use. This is quite different with in West Sumatra. Although the status of land ownership are communal, but access to land is different for all members of the communal. Access to land is given to members of communal who have been appointed to till the land, and right to communal members is limited. So this condition has implications for land management and not on ownership of land, consequently the individual's rights on the land that a prerequisite for investment into the land not necessarily need.

This illustrates the usefulness of wood is more incentive based on tree rights. According to Otsuka and Place (2001), where communal land tenure systems are often not conducive to the development of sustainable agriculture because ownership does not provide proper incentives for the management of wood and it's suitable only for low value products of non-wood. That's because just point out on the land rights. In villages communal land, which entitles incentives to village residents in the form of tree tenure security is not built on the basis of land rights, but

also on individual and communal interests in a tree. This means the existence of tree are still maintained and preserved under the arrangement of individual and communal rights. Individuals here are part of the communal system that also indirectly take benefit from tree. Opinion Place and Otsuka (1997) above is more appropriate in private ownership, rather than communal ownership as indigenous villages.

According to Lynch (2002), described the system of ownership on communal basis above is not exactly done in the case here. Western concept whereby the ownership, property and leasing system has been missed to describe the practice of community-based tenure concept. In West Sumatera communal land, in accordance with the concept developed by Har Teer (Syahyuti, 2006) that the legal relation between the people who opened the land to planting crop will stronger if the land is continually maintained and eventually can become the property of him. Although, the rights of indigenous communities still exist despite the weakening of law. Conversely, if the land is opened it is not maintained or abandoned, and then the land will go back into the community's customary law. The state land in three village as a conservation area and the conversion shows an incentive for individuals rights of trees or tree products is not clear. In Paru village, state land which is considered as indigenous villages, access to a tree in terms of logging and timber transport is prohibited under the laws of formal. But the member of villages can convert the land into agricultural land with the permission of indigenous village's leader. While in Koto Malintang and Paninggahan where state land is recognized as a conservation area, access to tree was forbidden, but people can still access the non-wood products, although there are no rules legally. It shows that the incentive system is not clear in for individuals, but the incentive for communal in ensuring the preservation of their environment.

CONCLUSIONS AND POLICY RECOMMENDATIONS

Conclusion

1. In the customary tribe's land, tree rights actually high portion, but limited by the communal rights as landowners. The dichotomy between individual rights and communal causes less incentive for individual.
2. Limitations on the individual trees rights in the customary tribe's land encourages farmers to select non-timber trees as a reliable source of income, such as rubber, cocoa and clove.
3. In the communal land village, communal rights dominated on tree as a formality of villages rights on the tree, so that individual incentives are not clear on the tree. But the existence of trees retained as communal interests.
4. On the communal land is not clear incentive system based on the utilization of trees. Utilization is generally indirect and based on communal. System of incentives also should be designed based to the communal system from an individual and communal interest, and the type of benefits that can be done.

Policy Recommendations

1. To the efforts of land and forest conservation, agroforestry program on communal land needs to be supported. This needs to pay attention to land and tree tenure systems in local systems. In West Sumatra with communal basis, then the system is important to be communal basis in regulating the rights of tenure, with an emphasis on setting benefits. This effort not to reduce the role of one of the communal or individual, because the dichotomy of individual and communal is the basis for the communal system.
2. Planting trees on public lands including state land can be done with more attention to the rights of tree tenure, do not always require security forces on land rights, although rights are often considered weak on the land

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