

Utilization Of Laban Wood (*Vitex Pubescens* Vahl) As Raw Materials Traditional Charcoal By Communitis': A Case Study At Jembayan Village East Kalimantan

Setiawati

Abstract: This study aims to find out about the activities of society in decision-wood Laban as well as perceptions and participation concerning the preservation of raw material resources for sustaining livelihoods. The results showed Laban wood (*Vitex pubescens* Vahl) is one type that is widely used as a raw material in the manufacture of traditional charcoal and charcoal high-value results. The public aware of their dependence on forest land/labani, but people still do not realize when they changed the place of business of land allocation will be a negative impact on livelihoods. Public participation to the preservation of forest resources and sources of raw materials charcoal as a source of livelihood is quite high, although in public settings still choose no interference from other parties.

Keywords: Traditional Charcoal, Wood Laban, Forest Sustainability, Community.

Introduction

Utilization of laban wood (*Vitex pubescens* Vahl) by communities are as raw material maker of fishing boats, building a house, household appliances, even laban skin is extracted for natural preservative that can inhibit and stop the activity of fungi (Kurniawan, 2007), Laban is one of the pioneer wood plant species are long-lived, have properties that hard wood, and is one type that is easily found and dominated the secondary forest, especially shortly after the primary forest is opened (Bratawinata, 1987). This type is often found in the forest near the village of Jembayan In Loa Kulu District of Kutai regency. Laban wood by the village community is used as raw material for making charcoal, so that people in Jembayan made of laban wood charcoal as their livelihood. Notice of what was done to the source of raw material for charcoal is the livelihood of these communities, whether people understand that if they do not do the planting and the setting in of uptake the raw material resources will be exhausted, and that means that the source of income they have to be declining results. Therefore, to see if the people doing the planting timber after harvest and regulating the uptake, the study aims to find out about how community activities in berkegiatan timber extraction Laban and how perception and participation concerning the preservation of wood supplies Laban's for sustaining livelihoods.

Research Methods

This research was conducted in the village of Jembayan (Dusun Ukung, Dusun Margasari, and Tanjung Laun), Loa Kulu District, Kutai Kartanegara. By the time the study in June-August 2014, with details of activities: study of literature, in-depth interviews, and observation. Objects in this study is a community of farmers, charcoal makers in the sample villages, chosen by purposive sampling.

Chosen 2 key respondents and 15 respondents. Data processing is done in the form of tabulation and then analyzed descriptively to describe the perception and public participation. The public perception of forest resources and raw materials charcoal defined, in the form of:

- a. High perception: if they understand very well that the forest biological resources is critical in sustaining the necessities of life, either directly or indirectly, and expects that these resources are managed sustainably.
- b. Perception being: if the respondents are aware of forest biological resources essential to sustain life, but do not understand how to manage resources in order to be available on an ongoing basis.
- c. Low perception: if the respondent does not know the role of forest resources and is not willing to engage in forest conservation in the surrounding.

Community participation is known of what has been and will they do to the forest area laban they do, in succession maintaining the sustainability of the resource supply of raw material charcoal to keep it functioning as they should expect. Of the five topics of discussion were given to respondents, the responses were divided into three categories:

- (a) participate actively, when people consciously and actively and will make efforts or actions to sustain the availability of forest biological resources that are around Huta Protected;
- (b) passive, if they think that it should be efforts to sustain the availability of forest biological resources around Forest Preserve, but they never actively involved and hope that the government or other parties to do so;
- (c) negative, if they never thought to maintain the availability of forest biological resources, instead they always strive to gain the sebesarbesarnya of forest biological resources.

• Author is currently pursuing doctoral program in social forestry in University of Mulawarman, Indonesia, PH-+628125539138. E-mail: tia_setiawati@yahoo.ca

Results And Discussion

A. General Situation in Research Areas

Jembayan village with an area of 22,026 ha are included in the District of Loa Kulu, Kutai Regency, East Kalimantan Province. Geographically located between 117° 0'59,18"-117° 0'59,19" east longitude and 0°32'37,30"-0°32'37,31" south latitude. The research location can be reached by road and river channels. Landline can be reached by using the two-wheeled vehicle in less than 1 hour from the Samarinda city. While the path of the river can be reached by boat engine (motorized) within +/- 1.5 hours from Samarinda. Jembayan village has a humidity range of 61%-85% during the year and the air temperature average monthly reach 26°C- 27°C (Branch of the District Agriculture Office Loa Kulu Regency, 2014). Monthly rainfall fluctuates with rainfall averaging 185,5mm/month. Jembayan land in the village is a kind of alluvial soil which has a fertility rate is quite good, so that people in this village mostly do not use fertilizer to grow crops. Alluvial soil itself is a land formed of river mud that settles in the low-lying nature of the land has fertile and suitable for agriculture (Jembayan Village Profile, 2012).

B. Socio-economic community

Jembayan village has a population of 6512 inhabitants, is composed of men and women's 3,473 inhabitants 3,066 inhabitants. Most of the villagers Jembayan inhabited by indigenous ethnic tribes namely Kutai. Many migrants are living and settled in the village of Jembayan is Java, Banjar, Bugis, Bima and others, the majority (90%) are Muslims. Formally not obtained the data level of public education Jembayan complete village, only to the level of graduate elementary school and Junior High School that each - each 957 and 403 inhabitants. However, if viewed from a variety of sources of livelihood of the villagers Jembayan, a small portion has been educated High School or its equivalent and some even up to the college level. On the other hand for the average farmer groups - average still illiterate ie not until high school education only up to primary school level. At least this figure was obtained from the Office of Rural Employees Jembayan statement. For today's young generation level of education is already much better than their parents. It is not apart those who do not follow the footsteps of a better education, in addition to the availability of and access to education facilities also contributed to this trend, the public education. Main livelihood of the inhabitants are mostly farmers (492), the livelihoods of others are private, fishermen, merchants, military, civil servants, and others, and who do not have work / are still looking for a job some 1.019 people (Profile Village Jembayan, 2012). In addition to having the main livelihood as farmers generally, the public has a side business of making charcoal.

C. Utilization Laban for Raw Materials Charcoal

1. Laban timber benefits by community

Laban (*Vitex pubescens* Vahl) by Jembayan Village community for a variety of needs has started long ago, that since they do farming or farming activities in forest areas laban until finally settled and settled until today. Wood parts utilized by the community not only stems, almost all parts

used, in accordance with the purposes and knowledge of the community itself. Stem wood is used as raw material for charcoal, branches and twigs are still used by the community as firewood for cooking, other parts such as laban seeds are used as a remedy for fever, skin and leaves are used to treat wounds, pain and fever. Average of charcoal farming communities in the Village area this Jembayan already decades Laban utilizing wood as the main raw material charcoal. At first charcoal was made for personal consumption and is only used by people around the village, but as time goes by more and more enthusiasts' charcoal until venturing outside the village Jembayan. Many enthusiasts charcoal produced by Jembayan Village community is inseparable from the quality of the charcoal, the charcoal durable and easily ignited. The number of orders the production of wood charcoal village is progressively increasing, the villagers Jembayan then make it as the main livelihood which was originally used as a sideline only livelihood. It is very beneficial for the people because in addition to quickly get money (as cash income), make charcoal from wood species Laban does not require huge costs with raw materials readily available and still available near the settlement.

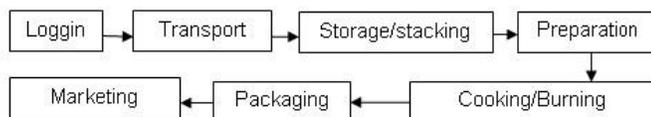
2. Laban timber extraction for raw materials charcoal

Making laban wood as a raw material made public in groups (2 to 4 persons), with the tools used in the cutting of trees laban is an axe, handsaw and /or chain saw. In logging between one groups of farmers' charcoal with charcoal farmers other group there was no agreement or regulation in the distribution of land, but so far there has been no recorded conflicts associated with land arrangements that accompany it. Wood harvested area generally starts from the area nearest the people, if the raw material in the nearby area has been exhausted, it will precede a new diareal adjacent to the previous land. This means an extension of the result of land clearing for harvesting raw materials can be seen with the naked eyes of society itself. Age laban plant which began felled for charcoal raw materials ranging ≥ 7 years and has a diameter ≥ 10 cm. At this lifetime laban plants already produce wood charcoal yield is quite high. Yields adjusted by the amount of wood charcoal orders from consumers. Society does not cut timber by as much beyond the limits of necessity, because people are always keeping stock of plants laban, for society when picking up as much as possible without exploited then not provide benefits for society itself, even according to them the wood will run out quickly. Enough people realize that it would be detrimental and make it difficult for the community itself, which allows raw materials later. Burning/processing charcoal harvesting is generally done around the site, and sometimes also done in homes, so the wood must be transported from the logging site to the house. Transport equipment used in the transport of raw material charcoal or transport of charcoal is a boat engine (motorized) if the location can be by passed/through the river, using the motor when the journey through the land. Laban timber transport to the site of accumulation of raw materials by means bear when processing/cooking charcoal made directly at the forest site laban. The time required to find wood Laban average 1-3 days, according to the number of orders. Generally bookings up to 250 sacks of charcoal (the content of 50 kg

of rice /sack). Wood needed every 100 bags is +/- 8m³ of timber Laban, and the raw material mixture (laban mixed with other types of wood / timber- local name is kampar) can reach +/- 10m³. Determination of the type of wood as a raw material is highly dependent on consumer demand. Although the quality of charcoal from wood species pure Laban best, but the price is more expensive than other wood species, so there are some consumers who request made charcoal from wood species in addition to Laban, in order to sell charcoal at a cheaper price.

3. Processing and Marketing Charcoal

Stages of processing wood charcoal from logging to marketing can be seen in the following schemes:



After harvesting and transporting timber and wood stacked / collected at the site of the storage / stacking up to the desired amount. The duration of storage depends on the logging process. If the raw materials are sufficient number of orders, then directly further processing. Basically the processing of wood charcoal is traditionally performed by villagers Jembayan almost the same. But there is little variation in the initial preparatory process of processing /cooking. For the Dusun community Ukung, before starting the cooking charcoal first makes a hole in the amount adjusted amount of raw materials to be cooked. While the people of Dusun Tanjung Laun and Hamlet Margasari, do not make the holes, but the ground floor of the burning charcoal in advance dtaburi former charcoal burning to the ground before. Furthermore, the raw material is cut along the 60-100 cm, then arranged to form a unidirectional vertical rectangular wooden piles, and once everything is ready, then carried burning for 3-5 days. During combustion is monitoring continued until the wood is burned is enough produce charcoal. After the cooking process is completed, then charcoal produced disassembled and allowed to cool, and after cold charcoal and charcoal pack into sacks ready to be marketed. Generally, consumers / buyers come directly to the processing of charcoal, and they are the traders of the city that was around the region (such as Samarinda, Tenggarong, Loa Janan, and some other areas). The selling price ranges where Rp.20.000-25,000/sack (1karung equal to 50 kg sack of rice, or about 15kg charcoal). Charcoal price is dependent on the composition of the raw materials used, the type of wood for charcoal Laban sold at the highest price. The charcoal of a mixture of types of wood, charcoal prices will be cheaper than wood charcoal from wood types Laban.

Conservation Efforts Charcoal Manufacture Raw Materials

1. Arranging and producing raw materials

As efforts to conserve raw materials of charcoal, the public should know how to maintain the stability of raw materials, for example by holding replanting plant species that have been cut down, and held the raw material retrieval settings

supported by regulations and sanctions for those who break them. But this is not / has not been made, either by the government or among the farmers in the village Jembayan charcoal makers. The settings in the manufacture of raw materials for charcoal is usually done by the farmers themselves, and science in this processing obtained by farmers from the teachings of his parents for generations. Since the beginning until now, people use a system of rotation / shift, which takes raw materials at a nearby location from where they lived before, if they are flat recently moved to the next location, and finally after a few years people will go back to its original location was overgrown trees harvested / cut down for charcoal used as raw materials. Currently, changes have occurred compared with about 10-15 years ago. Community forest tenure has started to happen. Society marks the boundary of the land recognized as property rights. So that some forest areas laban done already recognizes as the owner, so that in the uptake petaani charcoal should ask permission first to the owner of the forest land. It makes the community does not give special treatment to the land, as do the multiplication / planting laban timber so that the potential becomes higher. Communities also lack an understanding of how to preserve the forest. So between farmer groups charcoal never make a deal limiting the number of charcoal making, restrictions on the amount of timber extraction, and never made any rules or sanctions for violations in making raw materials. Public opinion, after logging a few years later certainly be a lot of growing trees by itself. While still large potential laban plants, the raw materials used purely of wood species Laban. But now the type of mahogany, Barau, kelampayan and bungur that is grown on land which they do even wood drifting in the river utilized by people as a raw material for making charcoal, although the quality of the type of wood is not as charcoal produced from wood Laban.

2. Perception and community participation

The results of discussions with the head of household respondents indicate that the public perception of forest biological resources in their environment is quite good (Table 1). All respondents are aware of his dependence on biological resources of forest /land they work on. However, when the discussion of the opportunities utilization of forest biological resources, most respondents wanted the collection of forest products as a raw material from a source of livelihood they do not need to be set on the grounds that the timber Laban will never run out. Opinions of respondents eventually split into 3 categories when invited to discuss the problem agree or not when the land they attempted converted to other uses, such as coal or oil palm. Two respondents disagreed (either perception), 6 person handed over to the government (the perception of being), and the remaining seven states agree (perception is not good). Generally agree are those who hope to benefit directly to such changes, such as an employee or get large settlements from the company, even though they know that companies such as coal or oil will eliminate biological resources (wood, animals, river/fish) in the forest surrounding their village and can pollute the environment, especially their livelihood as charcoal makers will be destroyed. The results showed that the private interests and momentary defeat most of the village community

awareness of the importance of sustaining the existence of forest biological resources/surrounding land and livelihoods.

Table 1 Public Perception of Raw Material Resources and place Sought

Nr	Discussion Topics	Category Perception (person)		
		high	moderate	low
1	Forests are a source of livelihood for communities	15		
2	The existence of the forest around the village is very important to the community	15		
3	The existence of the forest around the village as a source of raw material charcoal needs to be preserved	15		
4	Forest biological resources are renewable natural resources, however, utilization should be regulated, because if not some kind of natural resources, especially raw materials charcoal may be extinct and can not be revived	4	11	
5	Are you agree when the surrounding land into a land company changed its designation(such as coal or oil palm)	2	6	7
Number of answers		51	17	7

Community participation in the conservation of forest biological resources primarily to preserve the source of raw material still looks pretty great, although if the number of respondents who answered each category are summed it is noticeable that the number of answers that indicate negative participation is at most (Table 2). For a discussion topic number 4, there were 10 respondents gave answers that the community has participated actively, while 5 people were participating. The answer is because when people are expected to do the planting / reforestation around them by not having to pay for it, people can accept it. However, there are still concerns of the community will be the tenure if the land they occupy to strive planted by the government. In Table 2 above were also seen most of the respondents said they would leave if the people of other regions helped take the biological resources of the forest surrounding their village. Most people also do not consider it necessary to make the rules in making forest biological resources.

Table 2 The level of public participation in the efforts to maintain the sustainability of Biological Resources

Nr	Discussion Topics	Participation category (person)		
		Active	Passive	Negative
1	Actions to be taken when people from other areas come to take control of land and forest products in their territory	5	4	6
2	Strive for the creation of rules in the collection of biological resources of raw materials	3	6	6

3	Actions to be taken when a big company to change the land use	2	5	8
4	Actions to be taken if the Government provides plant seeds tree wood is useful and of high economic value such as wood Laban for raw materials, meranti, etc.	10	5	
5	Do ordinary planting trees and plants such as wood Laban in the land cultivated	3	5	7
Number of answers		23	25	27

From the discussion regarding planting / reforestation land community effort, all respondents said they would plant on land they do when the government provides a useful plant seeds tree (wood has economic value as Laban). If they really intend, many tillers laban available around the land that they do, and even laban is a type that does not require high treatment plants as well as in primary forests. As stated by Anonymous (1978), Lamprecht (1982) and Paradise (1985) in Bratawinata (1987), that kind of trees in secondary forests generally grow faster when always aided by wind and animals, it is necessary to be light, the intensity of light is needed most 75% in a full day. Ages of trees are generally short, often died at the age of 15 years and only a few are able to survive until the age of 30 years. Thus the type of laban course will also grow rapidly and is needed by the community. From this it seems to lack a sense of sacrifice to maintain the continuity of biological resources availability, even in his own land or dilahan that they can enjoy themselves later. They also tend to not want any regulation in ensuring the sustainability of biological resources and the availability of raw material resources for their livelihoods. Their reasoning is that the land is not the land of their own, no one owns or owned by the government. According to them there is a concern if the land has been planted and looks to be forested and good, then the land is then taken by the owner or by the Government, and they can not take advantage of it again. Thus, the results of this study indicate that in fact the public perception is not always in line with the participation. Good perception does not guarantee a positive participation, can actually reverse the negative. Many factors, especially the interest for personal gain instant, affecting public participation to do good. It may be that such a condition exists because people have started powerless in the face of environmental changes there. That picture of rural communities, especially communities Jembayan village which in general has a lot of influence from outside the resource utilization of biological information. Mazy information from the outside is what the chances are very influential in the way of thinking of society and must be the government realizes this and then do counseling related to the sustainability of forest resources and livelihoods.

Conclusions

The community utilizes Laban wood (*Vitex pubescens* Vahl) as raw material for charcoal, which is now its potential has been diminishing due to the growing number and extent of forest clearing laban, and people do not do plant propagation laban. To overcome the limitations of the raw material of wood Laban charcoal, charcoal farmers modify

the raw material by mixing several types of wood other than wood Laban, and utilize wood waste which drifted in the river as a raw material charcoal. Public perception of the sustainability of raw material charcoal, the public aware of their dependence on forest land / laban, but people still do not realize when they changed the place of business of land allocation will be a negative impact on their livelihood. Public participation to the preservation of forest resources and sources of raw materials charcoal as a source of livelihood is quite high, but people still can not accept the lack of regulation on the activities that they do. This arises from their concerns over the possible loss of business due to the source of a number of industrial enterprises of oil palm plantations and their excavation of coal mines. In order to ensure the availability of raw materials needed balance between growth charcoal laban (*Vitex pubescens* Vahl) with logging and utilization laban by society, especially farmers in the village Jembayan charcoal. Thus there should be a concern of the government to the public in determining land use (for example: the determination of land for coal mines and oil palm), which in this area is the growth area kind of Laban wood used by the public for the raw material wood charcoal as a livelihood major population in this village.

References

- [1] Abubakar, D.H. 2009. Protecting Customary Forests With Local Regulations. In *Forest For Future: Indigenous Forest Management in a Changing World*. Aman-DTE. p63-99.
- [2] Adams, R. Adams, M, & Willens, A. 1978. *Dry Lands: Man and Plants*. Architectural Press. London, 152 pp.
- [3] Agrawal, A. and G. Clark. 1999. Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development* 27(4):629-649.
- [4] Badan Pusat Statistik Kabupaten Kutai Kartanegara. 2014. Subdistrict Loa Kulu In Figures [Kecamatan Loa Kulu Dalam Angka]. Kutai Kartanegara.
- [5] Basyir, M.M.H. 2009. Maintaining Traditional Culture as a Way of Protecting the Environment. In *Forest For Future: Indigenous Forest Management in a Changing World*. Aman-DTE.p225-260.
- [6] Bratawinata, A.A. 1987. The introduction of tree species Natural Regeneration [Pengenalan Jenis-jenis Permudaan Alam]. Balai Latihan Kehutanan. Samarinda.
- [7] Brown, K. 2002. Innovations for Conservation and Development. *The Geographical Journal* 168 (1):6-17
- [8] Bryan, R.B.(ed). 1994. *Soil Erosion, Land Degradation and Social Transition: Geological Analysis of Semi-arid Tropical Region, Kenya*. Int. Dev. Centre, Canada.
- [9] Cabi. 2007. *Forest and Society: Sustainability and Life Cycles of Forest in Human Landscapes*. UK: Cromwell Press, Trowbridge.
- [10] Davis, L.S., and K.N. Johnson. 1987. *Forest Management*. Third Edition. McGraw-Hill Book Company, New York.
- [11] Dove, M.R. 1992. Foresters Beliefs about Farmers: A Priority for Social Science Research in Social Forestry. *Agroforestry Systems* 17:13-41.
- [12] Glover, E.K., 2012. Local Knowledge and Tree Species Preference for Land Rehabilitation in Kenya. *International Journal of Social Forestry*, 5(1):57-83.
- [13] Guthiga, P.M. 2008. Understanding Local Communities' Perception of Existing Forest Management Regimes of a Kenyan Rainforest. *International Journal of Social Forestry*, 1(2):145-166.
- [14] Hutton, J.M. and L. Nigel. 2003. Sustainable Use and Incentive-Driven Conservation: Realigning Human and Conservation Interests. *Oryx* 37(2): 215-226.
- [15] Juniawan, E, A.W. Santosa, and S. Jokosisworo. 2015. Wood Connection Strength Analysis Laban (*Vitex Pinnata* L.) In Ivory Construction of Traditional Boats [Analisa Kekuatan Sambungan Kayu Laban (*Vitex Pinnata* L.) Pada Konstruksi Gading Kapal Tradisional]. *Jurnal Teknik Perkapalan* 3(1):73-82
- [16] Kellert, S, M. Jay, E. Syma, and L. Laly. 2000. Community Natural Resources Natural Management: Promise, Rhetoric, and Reality. *Society and Natural Resources*. 13(8):705-715.
- [17] Kobbail, A.A.R. 2011. Natural Forest Reserves Management from Local Perspectives: A Challenge for Developing A Participatory Forest Management Model. *International Journal of Social Forestry*, 4(1):32-62.
- [18] Kurniawan, D. 2007. Utilization of Laban Skin Extract (*Vitex pubescens* Vahl) as Material Antifungal. [Pemanfaatan Ekstrak Kulit Laban (*Vitex pubescens* Vahl) Sebagai Bahan Anti Jamur]. Fakultas Kehutanan Universitas Mulawarman. Samarinda.
- [19] Lopez, C. and P. Shanley. 2005. *Wealth Asia Forest: Food, Spices, Crafts, and resin*. [Kekayaan Hutan Asia: Makanan, Rempah-rempah, Kerajinan Tangan, dan resin]. Gramedia Pustaka Utama. Jakarta.
- [20] Mapongmetsem, P.M., C. BayeNiwah, M. Froumsia, C.F. Kossebe, Y. Hamawa. 2011. Agroforests' Potentials for the Improvement of the Livelihoods and Food Security in 9+Guinean Highland Savannas. *International Journal of Social Forestry*, 4(2):180-196.
- [21] Ngakan, P.O, H. Kamarudin, A. Achmad, Wahyudi, A, Tako. 2006. Addiction, Perception and Public Participation on Forest Biological Resources Case

Studies in Pampli North Luwu, South Sulawesi [Ketergantungan, Persepsi dan Partisipasi Masyarakat terhadap Sumberdaya Hayati Hutan Studi Kasus di Dusun Pampli Kabupaten Luwu Utara, Sulawesi Selatan]. Center for International Forestry Research

- [22] Pari, G. 2007. Carbon Product Diversification [Diversifikasi Produk Karbon]. Pusat Penelitian dan Pengembangan Hutan. Bogor.
- [23] Pearce DW, Turner RK. 1990. Economics of Natural Resources and The Environment. BPPC Wheatons Ltd, Exeter.
- [24] Sapkota, I.P. and P.C. Oden. 2008. Household Characteristics and Dependency on Community Forests in Terai of Nepal.1(2):123-144.
- [25] Sardjono, MA. 2004. Mosaik Sosiologi Kehutanan: Masyarakat Lokal, Politik, dan Kelestarian Sumberdaya. Debut Press. Yogyakarta.
- [26] Rahmat, M, S.P. Warsito, W. Andayani, D.H. Darwanto, T. Fujiwara. 2012. The Economic Value of Forest Hydrological Services: A Case Study at Bukit Saligi Protected Forest, The Upper Part Of Siak Watershed, Riau. International Journal of Social Forestry, 5(1):84-98.