

The Analysis of Management and Timber Trade System of Gelam (*Melaleuca cajuputi*) From Peat Swamp Forest in South Kalimantan

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ABSTRACT

Until now the raw material of wood especially Gelam (*Melaleuca cajuputi*) available for supporting the construction of housing and other infrastructures is increasingly large in Indonesia. On the Island of Borneo that partly consists of swamps needs Gelam very large and continuous, particularly for residential development. However, areas of peat swamp forest habitat of this plant from year to year are degradation and shrinkage. This situation is a very big influence on the population of Gelam, while the management and timber trade systems are not well regulated. This study aims to analyze the management and timber trade systems of Gelam particularly in South Kalimantan to provide input to the policy holder in the preservation of Gelam. The method was used a field survey and interviews with traders and policy holders related regulations. The results showed in South Kalimantan the potency of Gelam is only 2,9-7,1 m³/ha and decreasing yearly. Normally Gelam with a diameter <4 cm have been cut down, as well as > 30 cm. These dimensions should not be cut because of <4 cm too young and > 30 cm can be used as seed sources. Gelam derived from peat swamp forest, which mostly comes from the Batola District and some came from Kapuas District of Central Kalimantan. Distributions of Gelam were starting gatherers logging in the forest then sold to small gatherers, next to the large gatherers and distributed to all districts/cities in South Kalimantan, wood processing industries, and some of them were sent to Java. The silviculture system of Gelam was using selective cutting. Classification of wood sizes traded by the diameter divided into 3-4cm, 5-6cm, 7-8cm, 9-10cm, 11-12cm, 13-14cm, 15-19cm and > 20cm to 4m long. Its use consists of a small diameter (3-10cm) for foundry building and firewood, while the large diameter (10-20cm) for the construction of houses in swampy areas, and waste as well as the stems are bent and deformed used for firewood. Until now Gelam becomes into the business community and potential sources of local government revenue if managed properly. However, due to the rules of management and administration in South Kalimantan was not going well, thus threatening the sustainability especially with the growing extent of peat lands being converted into palm oil plantations.

Keywords: management, distribution, trading system, Gelam

INTRODUCTION

Gelam wood (*Melaleuca cajuputi*) is very important on wetland areas for supporting the construction of housing and other infrastructures in Indonesia. In Kalimantan where parts of the areas are swampy, the need

for gelam wood is very large and continuous. However, peat swamp forest is a habitat from year to year degraded and shrinkage. These conditions influence ecological state on the gelam population. On the other hand the system of management and trading has not been done as well, so in the future there will be a scarcity of this species.

Timber is one of the priorities in the manufacture Masterplan for acceleration and expansion of Indonesia's corridor 3 Kalimantan. Gelam as raw material needed for infrastructure development is certainly a

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very important concern for managed and regulated system, and optimized utilization.

The purpose of this research is to analyze the circulatory system and trading system in South Kalimantan Province. Expected results of this research provide benefits to policy holders in the preparation of the circulatory system and gelam trading system in South Kalimantan for the purpose of preservation.

METHODS

The research was conducted in the Batola District, Tanah Laut District, Tapin District, and Hulu Sungai Selatan District. Fourth districts were used as a study for a source of raw materials of gelam wood in South Kalimantan.

Research approach

This type of research at this stage is a survey which is research was conducted based on the data samples taken from the population, so it found events relative, distribution, and relationships between variables, and sociological. Survey research is the investigation which generally takes a generalization of observation.

The population is the seller of gelam (wantilan). The samples in the population defined by the researcher purposively adapted to the purpose of research, or that the sample only source that can provide relevant information. Respondents were sampled sometimes can show others that are relevant to obtain the data, so that data is getting bigger, so-called snowball sampling. To obtain specific data sample data is forwarded, so as to achieve the level of redundancy, which is using a new sample of other did not add significant new information. Data analysis was carried out since the start of the study until the study is completed.

Selection of respondents

Respondents in this study is the seller of gelam (wantilan). The selection of respondents based on the information from

the local community who know where the seller of gelam and forest service as well. Samples can be increased by using a snowball sampling method as mentioned previously. The number of samples will be limited to be reached saturation point.

Data Collection Technique

Data collection techniques used in this study by direct interview, which is a two-way interview conducted by researcher to gather relevant information. The collected data were made in the form of tabulation and descriptive analysis in accordance with the purpose of research.

RESULTS AND DISCUSSION

Description of management

Gelam (*Melaleuca cajuputi*) was found on the peat swamp forests pairs are influenced by tides. This species classified as pioneer species, which after a forest fire seed germination will increase, because the fire can clean up litter and dormant seeds (Mac Kinnon, et al., 1985).

The chemical composition of the wood consists of cellulose, lignin, pentosan, and little substance extractive, and has a specific gravity of 0.85 with durable class III and class II for strong. Durability of gelam would be higher if it is used on swamp areas, as well as when used as interior materials (Dephut, 2003).

Until now, the use of gelam is increasing not only for the development of construction of houses on stilts in swamp areas, but it is also used for the manufacture of boards or beams to the interior of the house, and pieces or wastes used as firewood. Most people use for firewood made by traders in the region Batola and Bati-Bati. Gelam sourced from seeds generally have a relatively straight of stem and have monopodial branching shape, so that the stems are widely used for materials / wood construction, which is derived by coppices tend sympodial branching shape, so it is often used for firewood. If the stem

diameter >20cm and length >4m used as carpentry (Lazuardi, 2000).

In management should gelam tree with diameters <4cm should not be cut because it was too young and diameter >30cm nor cut down and used as source of seeds, but in reality is still being done by the logging community. Generally gelam are still young of aged 3-5 years can be harvested, so that rotation can be shortly.

In the district of Batola as center of gelam producers in South Kalimantan has the potential between 2.9 to 7.1 m³ / ha. This district is bordered by Kapuas so the majority of raw materials for South Kalimantan region supported by Kapuas District.

Circulation and trading system

The source of raw materials of gelam in South Kalimantan derived from peat swamp forest in the Batola District, Tanah Laut

District, Tapin District, and Hulu Sungai Selatan District, and partly from Central Kalimantan, especially Dadahup in Kapuas District. Batola districts whose territory the peat swamp tidal influenced by tidal potential for growth, so that it becomes a central district for gelam production.

Gelam distributed ranging from logging sale to consumers as described in Figure 1. In general, a small gathering of about 25 people and the head of group as a collector permit holders. They cut gelam with a variety of sizes ranging from small diameter to large diameter 10-20cm, 3-5cm and >20cm. For small collector-gatherers sold to big collectors. Levies have only be done on a large collector current gelam be traded. Transportation documents round use SKSKB stamp "KR". From large collection sold in particular areas in Java, and wood processing as well (generally diameter >12 cm).

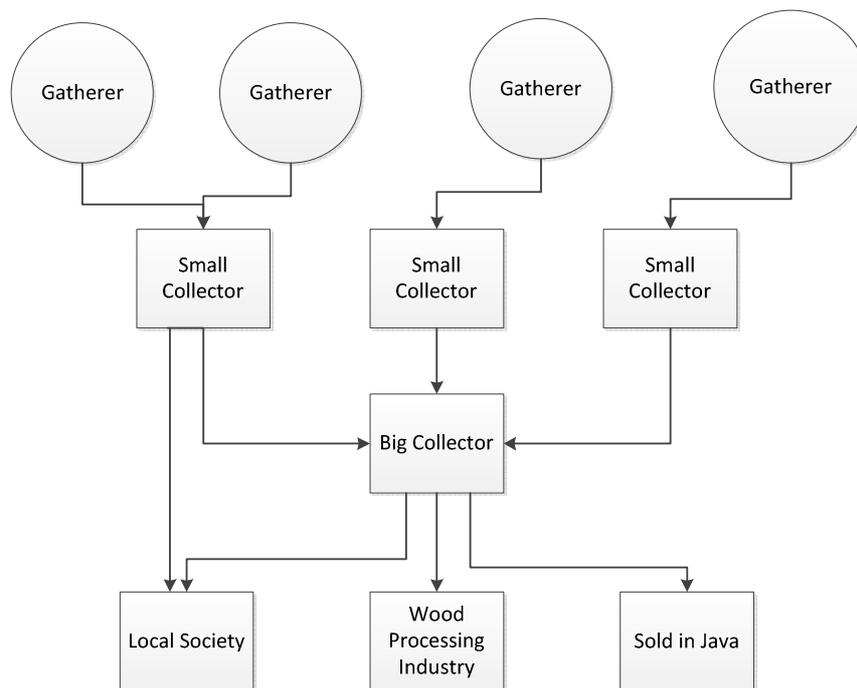


Figure 1. Schematic distribution of gelam from gatherer to consumer

Seller of gelam in Batola District and also in Tanah Laut District has been trading between 15-20 years were done for generations. They get gelam from collectors who are in Dadahup Kapuas, Batola District,

and Liang Anggang. Frequency of purchase gelam from collecting in one month ranged from 25-150 trucks. Buyers of gelam are generally local communities, wood processing industry, and from Java, such as; Surabaya,

Bali, and Cirebon. Constraints they face up to now are decreasing gelam stands available in the forest, so most sellers are not sent to Java.

Gelam price depends on the size (diameter and length), the quality of the stem (curved, straight, disabled), the condition of the stem is skinned or not. In detail gelam prices prevailing in society as in Table 1.

Table 1. Prices of gelam traded in South Kalimantan

District	Diameter (cm)	Length (m)	Price (Rp)
Batola	5	3,5	2,500-3,000
	5	4	4,000
	5	5	5,000
	10	3	7,500-8,000
	10	4	12,000
Tanah Laut	2-3	4	2,000
	5	3,5	2,500-3,000
	5	4	5,000
	6	4	5,500
	10	3,5	12,000
	10	3,5	14,000-15,000

From interviews known that gelam prices for diameter of 5cm with long of 3.5 m sold Rp. 2,500-3,000 per stem, length of 5m Rp. 4,000. Gelam small size are widely used for casting buildings, cattle pens, marker plant (2-3cm diameter). While gelam diameter of 10cm with length of 3m sold Rp. 7500-8000 / stem, length of 4m of Rp. 12,000 / stem, length 7,5m of. Rp.14,000-15,000 / stem. Diameter more than 10cm is widely used for the construction of houses on stilts which require pegs to the pole stage for soil erosion, and construction timber (beams and boards) to house and crate for packing.

Discussion

Gelams in South Kalimantan region are normally small diameter to large diameter of 3-5cm, 10-20cm and > 20cm, this condition threatens the sustainability of gelam. Under existing regulation in the Batola District that diameter of <4cm and >30cm should not be harvested for preservation purposes as mentioned before. This means that the

regulations enacted there is not going well, so monitoring and strict enforcement needs to be done.

In Hulu Sungai Selatan with partly a swamp forest and produce gelam by Decree No. Upper South River 500/04 / Ekobang January 5, 2009 clearly states that the moratorium / termination / temporary ban logging in the forests of both people and other forest areas. This situation shows that the gelam harvested in the district of Upper South River is illegal. However, in reality the field is still outstanding gelam obtained from this region.

Gelam logging originating from South Kalimantan region is only used for local needs in the province. Shortage of supply of gelam for South Kalimantan region mostly from South Kalimantan Kapuas.

CONCLUSION

Conclusions from the study can be summarized as follows:

1. Potential of gelam in South Kalimantan is relatively small between 2,9-7,1m³ / ha, in part derived from Province of Central Kalimantan especially Kapuas district.
2. Gelam produced from South Kalimantan region are mostly only for local needs, especially to fulfill the needs of the local community for house constructions, bridges, manufacture boards, and firewood.
3. Distribution of gelam trade at the start of the gatherers, small collectors, big collectors. From big collectors circulated to local communities, timber industry, and partly of Java Island.
4. Management of gelam in South Kalimantan in general is not in accordance with the regulations that threaten its sustainability.

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