

# A brief study of economic value of sortimens candlenut wood (*Aleurites moluccana* sp.) in community forest, Maros, Indonesia

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## A brief study of economic value of sortimens candlenut wood (*Aleurites moluccana* sp.) in community forest, Maros, Indonesia

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**Abstract.** The difference in timber sorting is very influential on the level of farmer acceptance, especially in setting the basic price of sortimic wood which is not objective, causing the price of wood to be low so that the Income of farmers becomes low and results in investment that is less attractive for community forest development. This research is expected to be useful as a source of information for community forest managers in determining the form of sorting that can increase farmers' yields or Income optimally. The sample of this study used the quota sampling method, namely farmers harvesting candlenut wood (*Aleurites moluccana*, sp.). Data collection was carried out through field observations and interview techniques regarding the costs of timber harvesting activities in community forests and the selling price of timber. While secondary data obtained from various sources such as research results, institutions, agencies related to this research. The analytical method used is to calculate the costs and revenues from timber harvesting for various sizes of wood sorting. Data analysis includes net Income and revenue. Based on the calculation results, it is obtained that the size of of candlenut wood is 400 x 10 x 20 cm can benefit farmers as much as IDR 651,875 /m<sup>3</sup>. Community forest farmer's should pay more attention to the selling price standards of candlenut wood so that the income increases even more. As for the other things that must be considered more in terms of plant maintenance so that wood quality is higher and maintained, and facilities and infrastructure related to harvesting activities can be maintained and updated so that harvesting activities can run smoothly.

### 1. Introduction

In the current development of forest exploitation, the development of the wood processing industry is the main means of utilizing forest products aimed at obtaining additional value from the yield and increasing farmers' Income. The raw materials for these industries are still dependent entirely on the production of logs from natural forests and of course community forests. In this case there are several ways that can be done to increase production, including by maximizing all costs incurred.

Candlenut community forest in Maros was built independently by community members both by individual households also as a family group society since the colonial era of Netherlands. Non governmental establishing candlenut forests sustain because it is supported by social factors and economic factors [1]. Factor social that drives the community because the existence of mutual cooperation in opening up land and becoming local wisdom in the candlenut forest management system itself. Encouraging economic factors public self-supporting is the existence of hope of candlenut as a source Family income and mastery land as family capital and for passed down from generation to generation [2,3].



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Almost all parts of the candlenut tree, such as leaves, fruit, bark, stems, roots, sap and flowers, can be utilized. Its use is for traditional medicines, lighting, building materials, coloring agents, food ingredients, decorations and various other uses [4]. Particularly in Maros, candlenut trees that are not able to produce fruit properly are cut down separately and then used as wood for building materials and for sale. This is done by farmers in private forest areas (community forests) to increase daily Income.

The results of the study fifteen years ago, Sri Angriani (2005) stated, there were differences in the average Income between farmers selling community forest products such as Sengon (*Albizia falcataria, sp.*) [5]. In the form of wood, wooden pads, and boards having significant income differences. This indicates that for one type of wood, there is a difference in the level of farmer acceptance for various forms of sorting. Based on the research data, this study wants to compare with the level of Income of community forest farmers in Maros. It has 9.350 ha of community forest potential in which there are several types of plants such as Teak (*Tectona grandis, sp.*) and Candlenut (*Aleurites moluccana, sp.*) [6], which are harvested and sold. The different types of wood harvested have differences in the size of the wood sportsmen at the time of the log division and the making of wood sortimen. The level of farmers' acceptance of various types of wood with a certain sort of size is the underlying reason why this research was conducted. Candlenut wood can be used for inner veneers, toothpicks, eating chopsticks, crates, handicrafts (masks and puppets), and children's toys.

According to Soeharjo and Patong (1973), farmer's work income is obtained by calculating all receipts from sales that are consumed by the family and an increase in the value of inventory after that is reduced by all expenses both cash and calculated capital and labor interest [7].

## 2. Methods

Data collection and measurement of wood sortimen samples taken at each of the three wood processing sites including at the felling location. Measurements of sawn timber sorting are carried out by 10 pieces of each sample size at each point of sale of wood sortimens. To find out the amount (N) of sorting for each sawn timber meter (according to size), the following formula is used :

$$N = 1000,000 \text{ cm}^3 / \text{Volume of sortimens.}$$

Measurement of total costs (TC) is done by sum up all fixed cost components (FC) and variable costs (VC) incurred due to the sale and production of wood sortiments. The intended cost components are felling costs, skid costs and transportation cost, then calculate the net Income (NI) of farmers by subtracting the value of revenue obtained by the total Cost (TC).

## 3. Results

Candlenut wood classification for wood bearings in the harvesting of community forest wood in Maros generally is 400 x 10 x 20 cm, requires 13 logs per cubic meter. The Cost of harvesting community forests for candlenut wood species on the size of 400 x 10 x 20 cm wood specimens ie the felling fee is IDR 175,000/m<sup>3</sup>, skidding uses human labor which costs IDR 10,000 for one skid with a distance of 2 km and load one bar for one skid so if converted to cubic meters and the distance will be IDR 65,000/m<sup>3</sup>/km. While for transportation, it contains 100 logs for one transport to the sub-district city at the Cost of IDR 8,125/m<sup>3</sup>/km, whereas if the sale transaction is carried out at the felling location, all transportation costs are borne by the buyer. The selling price of candlenut wood size 400 x 10 x 20, which is marketed is very different. For the sale price IDR 900,000/m<sup>3</sup> is directly marketed to the company by the seller/entrepreneur and transportation costs are borne by the seller itself. As for the selling price IDR 500,000/m<sup>3</sup>. The buyer goes directly to the cutting location to determine the size of the sort he will use, but the transportation costs are borne by the buyer.

The value of the Income obtained is still relatively low. This is in line with the results of research by [8], the level of participation of hazelnut smallholder forest farmers is relatively low due to motivation and ability factors. This of course, has an impact on farmers' incomes, which are still relatively low.

Candlenut wood net income in various sales locations of wood sortimen in community forests, as shown in Table 1. Below

**Table 1.** Net Income of Candlenut Wood Specimens in Timber Bearing Form in Maros.

Size (cm)	Selling Price per m <sup>3</sup>	Total Cost per m <sup>3</sup>	Net Income per m <sup>3</sup>	Desc.
400 x 10 x 20	IDR 900,000	IDR 248,125	IDR 651,875	Marketed directly to companies or sawmills
400 x 10 x 20	IDR 500,000	IDR 240,000	IDR 260,000	Marketed at the felling location

Even though the transportation costs are borne by the entrepreneur themselves, the selling price of timber marketed directly to companies is far more profitable compared to the selling price used on wood marketed at the felling site. This is because the selling price of the wood is far higher compared to the transportation costs borne by the entrepreneur himself.

#### 4. Conclusion

The size of the candlenut wood which is marketed in Maros is only one size, that is 400 x 10 x 20 cm with the selling price and the Cost used varies depending on the purpose of the wood to be brought, is it marketed directly to sawmills and companies or marketed at the felling location. Sorting wood is more profitable if the wood is marketed directly to companies, with a selling price of IDR 900,000/m<sup>3</sup> at a cost of IDR 248,125/m<sup>3</sup> so as to generate Income of IDR 651,875/m<sup>3</sup>. Different selling prices are influenced by the sales system used so that it has an impact on the level of income of farmers. Factors causing timber harvesting can benefit farmers are determined by the distance of transportation, the distance of skidding wood both using human and horsepower, the type of quality of the wood produced or in terms of location and timber marketing system which if marketed to the industry will be more expensive than if it is marketed directly.

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**Appendix**



**Figure 1.** Candelnut community forest in Maros.



**Figure 2.** Sortimens of Candelnut wood.

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