Teak Wood Marketing Mix and It's Contribution to Communities Around the Forest Area at Perum Perhutani KPH Tasikmalaya

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Abstract

Perum Perhutani's revenue is dominated by the sale of teak and rosin. Sales of teak wood from Perum Perhutani KPH Tasikmalaya has been decreasing during the Covid-19 pandemic, due to some marketing constraints. The objectives of this study were: (1) to analyze the marketing efficiency of teak wood at Perum Perhutani KPH Tasikmalaya, (2) to analyze the marketing mix strategy of teak wood at Perum Perhutani KPH Tasikmalaya, and (3) to analyze the contribution of the utilization of teak by Perum Perhutani to the total household income of the community. around the forest in KPH Tasikmalaya. The marketing efficiency of teak wood is analyzed using three indicators, namely marketing margin, farmer's share, and the ratio of profit to the marketing cost. Marketing mix strategy analysis and contribution analysis were conducted by in-depth interviews with respondents and observation techniques. This study indicates that the marketing of teak wood is relatively efficient and profitable for producers because it has a large farmer's share value and P/C ratio (profits to marketing costs), namely 100% and 19.60, respectively. In addition, the marketing margin on the marketing of teak produces a very low value of IDR0. The implementation of the marketing mix strategy is well implemented by Perum Perhutani KPH Tasikmalaya. However, it is necessary to pay attention to the promotion aspect, namely the expansion of the marketing system through the internet, and the production aspect, namely the policy on teak wood product guarantees. The utilization of teak wood in Perum Perhutani KPH Tasikmalaya contributes to the total household income by 32%. The contribution of teak wood utilization in CBFM activities is only as additional income because overall the income from non-CBFM activities is greater than the income from CBFM activities.

Keywords: Analysis, community income, marketing mix, Perum Perhutani, teak wood.

1. Introduction

Forests have real benefits for human life because they have three functions, namely ecological, socio-cultural and economic. The ecological function of the forest has a role in maintaining the balance of the ecosystem, the socio-cultural function of the forest becomes a point of growth for the life of the community around the forest to achieve prosperity and the economic function of the forest has the potential to generate substantial foreign exchange for the national economy.

Perum Perhutani is one of the state-owned enterprises (BUMN) engaged in the Indonesian forestry industry. This company has a working area, including state forest areas in Central Java Province, East Java Province, and West Java and Banten Provinces with a total area of 2,426,206 hectares (Sukmawan 2010). Perum Perhutani as a BUMN in the form of a public company is required to play three functions at once, namely economic, social, and ecological functions. This company as a government asset is expected to be able to make a significant contribution to the state's income. Perum Perhutani must also pay attention to its ecological function, namely the responsibility of Perum Perhutani to maintain the balance of the ecosystem in the area it manages. This is following one of the missions of Perum Perhutani towards Sustainable Forest Management (SFM). On the other hand, companies are also required to support the development of people's businesses, especially for communities around the forest.

Perum Perhutani is mandated to manage state forests and is required to pay great attention to the socio-economic problems of the community, especially rural communities, which mostly live around forests. Communities and forests have an inseparable interaction. Thus, the approach taken in forest management must pay attention to the sustainability of forest ecosystems and care for the people around the forest. In line with this, Perum Perhutani

perfected the forest resource management system with the implementation of the Community Based Forest Management (CBFM) system. The Community Based Forest Management System (CBFMS) launched by Perum Perhutani in 2001 opened up opportunities for forest village communities to be actively involved in forest management. This CBFM system is carried out by an empowerment process for forest village communities which aims to achieve sustainable forest resource management and improve the welfare of forest village communities (Awang 2008).

Forest resource management in Perum Perhutani is broadly divided into two classes of companies (CC), namely CC Teak and CC Rimba. Generally managed forest is dominated by CC Teak 1,240,558 hectares (50.73 percent) and CC Pine 859,300 hectares (35.14 percent). Perum Perhutani optimizes forestry business with the main commodity of teak (Tectona Grandis). Teak wood (Tectona grandis) is a plant that has a high selling price and its marketing prospects are quite bright. This can be shown by the presence of special properties of teak compared to other woods, namely air-dry density of 0.86, which belongs to the strong class II and durable class I, easy to process, has a distinctive fiber and color. Teak wood has a special value and traditional meaning for Indonesians, so it can provide a level of social status, especially to the owner of goods made of teak wood. This can attract consumers or furniture entrepreneurs and small wood lathe industries so that Perum Perhutani carries out teak wood harvesting activities to meet the needs of these consumers.

Perum Perhutani KPH Tasikmalaya has great potential in doing teak wood business. Perum Perhutani KPH Tasikmalaya has a forest area of 43,974.61 ha covering forest areas in Tasikmalaya Regency and Tasikmalaya City. The forest area in Perum Perhutani KPH Tasikmalaya is dominated by teak, mahogany, and pine trees. The administrator of Perum Perhutani KPH Tasikmalaya Beny Suko Triatmoko said that teak sales at Perum Perhutani KPH Tasikmalaya experienced a decline during the Covid-19 pandemic. This is due to marketing constraints during this pandemic. Therefore, a good marketing strategy is needed to overcome these problems and to maximize the profit of teak wood sales revenue and its contribution to the income of the community around the forest. The marketing mix is one component in the marketing strategy which consists of a series of marketing variables. The marketing mix can be controlled by the company to achieve its marketing goals and target market. Thus, research on the analysis of the marketing mix strategy carried out by Perum Perhutani KPH Tasikmalaya and the contribution of the utilization of teak wood by Perum Perhutani KPH Tasikmalaya to the community around the forest is very necessary.

2. Materials and Methods

2.1. Materials

Tools and materials used in this research are questionnaire forms such as interview materials, stationery, word and number processing software, digital cameras, and voice recording devices. The materials used are data and information obtained from data collection in the field as well as secondary data from Perum Perhutani KPH Tasikmalaya.

2.2. Methods

The types of data used are primary and secondary data. Primary data was obtained through in-depth interviews with respondents and observation techniques; namely data collected by conducting direct observations of the object under study. Secondary data was obtained from Perum Perhutani KPH Tasikmalaya related to the management of the teak wood business under study, namely the general condition of the research location which includes area, geographical location, specifications of teak wood products, teak wood sales income, and community social as well as journals, academic reports, notes, photos, or articles that support this research. Respondents were selected purposively, namely the surrounding community involved in the local Forest Village Community Institution (FVCI), totaling 10 people.

2.2.1. Marketing Channel Analysis

Marketing channels are analyzed by observing the length of the marketing channel which can be determined by the number of intermediary levels through which goods and services pass. According to Kotler and Armstrong (2008), the marketing channels are as follows:
1) Non-level channels (zero level channels) are referred to as direct marketing channels, where producers sell their products directly to consumers.
2) The one-level channel is a marketing channel that uses one intermediary.
3) The two-level channels are marketing channels that use or involve two intermediaries.
4) The three-level channels are a marketing channel that involves three intermediaries.

2.2.2. Benefit Cost Ratio (BCR)

The market structure was analyzed qualitatively and quantitatively. Qualitative analysis was conducted to determine the level of product differentiation and the number of sellers/buyers using the characteristics of the market structure created by Hammod and Dahl (1997). While quantitative analysis was used to determine the degree of market concentration. According to Baladina (2012), market structure analysis can also be done with a market concentration approach using the Herfindahl index. This index measures the level of market concentration by taking into account the sum of the results of the square of the market share of each trader. The following is the formula for the Herfindahl Index.

$$H = \sum_{i=i}^{n} (Xi/T)^2$$

where:

H = Herfindahl index; if H is close to one (H ≥ 0.5), then the market is concentrated; if H = 1 means monopoly market; and if H is close to zero (H < 0.5), then the market is getting more competitive (less concentrated)

Xi = Sales volume controlled by the merchant to-i (m^3) (i = 1,2,…,n), where n is the number of traders

T = Merchant's total sales volume (m^3).

2.2.3. Marketing Efficiency Analysis

Marketing efficiency analysis is based on three indicators, namely marketing margin analysis, P/C ratio (profits to marketing costs), and farmer's share analysis. Marketing margin is calculated based on subtracting the selling price from the purchase price at each level of the marketing agency. According to Kohls and Uhls (2002), the amount of marketing margin is formulated as follows:

$$MM = P_r - P_f$$

where:

MM = Teak wood marketing margin (IDR/m^3)

P_r= The price of teak wood at the trader or retailer level (IDR/m^3)

P_f= The price of teak wood at the farmer level (IDR/m^3)

Another indicator to measure the level of marketing efficiency is by calculating the P/C ratio (profits to marketing costs). The P/C ratio (profits to marketing costs) can be formulated:

$$Ratio = \frac{Profit}{Cost} = \frac{\pi_i}{C_i}$$

where:

π_i : Profit of marketing agency to – i (IDR/m^3)

C_i : Cost of marketing agency to – i (IDR/m^3)

The results of the size of the P/C ratio (profits to marketing costs) may not necessarily describe marketing efficiency, so the comparison between the share of the price received by farmers and the price at the final consumer level (farmer's share), which is formulated:

$$Farmer's\ share = \frac{Prices\ at\ farm\ level}{Prices\ at\ the\ end\ consumer\ level} X\ 100\ \%$$

The advantages of a marketing according to Soekartawi (2002) can be known by the following formula:

$$ö = MM - TC$$

where:

ö: Profit (IDR/m^3)

MM: Marketing Margin (IDR/m^3)

TC: Total Marketing Cost (IDR/m^3)

2.2.4. Business Income Analysis

Revenue from teak wood sales at Perum Perhutani KPH Tasikmalaya according to Bahrudin et al. (2015), can be calculated by the following formula:

$$I = TR - TC$$

where:

I: Income

TR: Total Reception

TC: Total Cost

$$TC = FC + VC$$

where:
FC: Fixed Cost
VC: Variable Cost

2.2.5. Contribution Analysis

According to Diniyati and Achmad (2015) the contribution of income from teak sales to household income is calculated by the formula

$$RV (\%) = \frac{P_{tw}}{P_{hh}} \times 100\%$$

where:
RV: Revenue contribution from teak sales (%)
P_{tw} : Profit from teak wood sales (IDR/year)
P_{hh} : Total household profit (IDR/year)
  a.   Community income from teak wood sales

$$P_{tw} = \Sigma \text{Community income from teak wood sales}$$

where:
P_{tw} : Profit from teak wood sales (IDR/year)

  b.   Community income from non selling teak wood

$$P_{nkj} = \Sigma \text{ Community income from non selling teak wood}$$

where:
P_{nkj}: Profit from non teak wood sales (IDR/year)

  c.   Total household profit of the community

$$P_{hh} = P_{tw} + P_{ntw}$$

where:
P_{hh}: Total household profit (IDR/year)
P_{tw}: Profit from teak wood sales (IDR/year)
P_{ntw}: Profit from non teak wood sales (IDR/year)

3. Results and Discussion

3.1. General Condition Overview

The Division of Forest Areas in the Tasikmalaya Forest Management Unit with an area of 43,974.61 ha includes forest areas located in Tasikmalaya Regency and Tasikmalaya City. Perum Perhutani KPH Tasikmalaya according to its function is divided into Limited Production Forest (LPF) covering an area of 7627.19 ha (<15%) and 14,995.40 ha (>15%), Production Forest (PF) covering an area of 5281.13 ha (11%), and Protected Forest (PF) covering an area of 16,070.89 ha (37%). Perum Perhutani KPH Tasikmalaya is divided into five BKPH and 18 Forest Pemangkuan Resorts (FPR) (Perhutani 2017).

The forest area of the Tasikmalaya KPH is divided into three Company Classes (CC), namely teak, mahogany, and pine with climate types A, B, C, D, E, F, G, H. The company class (CC) of teak is at an altitude of 0-600 m asl are ideal conditions for teak to grow. Teak and mahogany topography is wavy, mountainous, and hilly from gentle to steep slopes. Utilization of teak forest products is managed with the Forest Village Community Institution (FVCI) in the Forest Management Program with the Community (FMPC).

3.2. Teak Wood Marketing Line

Teak marketing activities at Perum Perhutani KPH Tasikmalaya have one marketing channel and one supply chain. The teak wood marketing channel at Perum Perhutani KPH Tasikmalaya is included in the non-level channel (zero level channel) or marketing channel without going through intermediaries. Non-level channels (zero level channels) or referred to as direct marketing channels. Supply chain activities start from consumer demand and end when customers or consumers are satisfied (Chopra and Meindl, 2004). The wood processing company in Karanganyar Regency is the sole consumer in the teak wood supply chain at Perum Perhutani KPH Tasikmalaya. The consumer buys teak wood with a special contract mechanism. The location of the TPK on the purchase of a contract by a wood processing company in Karanganyar Regency, Central Java Province is TPK Urug plot 5F Perum Perhutani Tasikmalaya. Thus, there are two teak marketing actors in teak marketing activities at Perum Perhutani KPH

Tasikmalaya, namely Perum Perhutani KPH Tasikmalaya and a wood processing company in Karanganyar Regency, Central Java Province.

In the teak marketing line at Perum Perhutani KPH Tasikmalaya, there are three marketing functions for teak, namely the exchange function, physical function, and facility function. The exchange function carried out by Perum Perhutani KPH Tasikmalaya includes buying and selling activities, namely activities to facilitate the transfer of ownership rights to goods and services from Perum Perhutani KPH Tasikmalaya to teak wood processing companies (direct purchase). Physical functions performed by Perum Perhutani KPH Tasikmalaya include transportation activities. The functions of the facilities carried out by Perum Perhutani KPH Tasikmalaya include sorting, grading, financing functions, and risk management.

3.3. Teak Wood Marketing Market Structure

The market structure based on quantitative analysis with a market concentration approach using the Herfindahl index yields a value of 1 indicating that the market structure is as if the market structure is a monopoly. The state of this monopoly market leads to a less competitive and concentrated state. Overall, judging from the characteristics of buyers and differentiated products with certain types and characteristics, it can be assumed that the market structure of Perum Perhutani's teak wood is monopolistic competition. The structure of a monopolistic market is different from a monopoly because in fact there are many sellers of similar products (in addition to teak, Perum Perhutani also sells people's teak) and there are many buyers, but each segmented buyer only buys products with certain characteristics (quality and price) that are different from those of the other segment. products that other buyers are interested in (differentiated products).

3.4. Business Revenue Analysis of Teak Wood Marketing Actors

The operating income of Perum Perhutani KPH Tasikmalaya in plot 5f is presented in Table 1.

Table 1. Revenue from Perum Perhutani KPH Tasikmalaya Plot 5f

Wooden Shapes for Sale	Gross Income (IDR)	Cost (IDR)	Net Income (IDR)	Net Income Percentage (%)
Round Wood	1,972,860,129	95,748,420	1,877,111,709	95

In the teak sales business conducted by Perum Perhutani KPH Tasikmalaya, the R/C ratio was 1.99. The business of selling teak wood carried out by Perum Perhutani KPH Tasikmalaya is profitable to run because it produces an R/C ratio > 1 and the business is quite efficient because the R/C ratio is quite large.

3.5. Teak Wood Marketing Efficiency Analysis

Marketing efficiency can be farmer share, sales volume, marketing margin, and the ratio of profits to marketing costs. Margin and marketing efficiency of teak wood at Perum Perhutani KPH Tasikmalaya can be seen in Table 2.

Table 2. Margin and Marketing Efficiency of Teak Wood

Description	IDR/m^3	%
Cost (C)	132,241	4.85
Profit (P)	2,592,542	95.15
Farmer share	2,724,783	100
Margin	0	0
Selling price	2,724,783	100
C/P	19.60	
Total Cost (C)	132,241	4.85
Total Profit (P)	2,592,542	95.15
Total (Margin + *Farmer Share*)	2,742,783	100

Marketing of teak wood in Plot 5f Perum Perhutani KPH Tasikmalaya is relatively efficient and profitable for producers because it has a farmer's share value and a large P/C ratio (profit to marketing costs) of 100% and 19.60, respectively. In addition, the marketing margin on the marketing of teak produces a very low value of IDR 0.

3.6. Teak Wood Marketing Mix

1. Product Mix

Most of the teak log products in plot 5f of Perum Perhutani KPH Tasikmalaya are of the third grade (T) and fourth grade (M) with diameters of AI, AII, and AIII with teak wood length of 1 m; 1.3 m; 2 m; 2.3 m; 2.6 m; and 2.9 m. Teak wood in Perum Perhutani KPH Tasikmalaya in plot 5f is teak wood with local timber status. All products originating from plot 5f of Perum Perhutani KPH Tasikmalaya must first be measured, tested, and plotted using the bucking policy method in accordance with the Indonesian National Standard (SNI) and the applicable division. The maximum teak forest product plot is 6 m^3.

Market segmentation for teak wood products at Perum Perhutani KPH Tasikmalaya plot 5f is a behavioral segmentation based on customer loyalty to the brand. This is reflected in the purchase products of 724,043 m^3 by customers continuously 17 times in a period of 5 (five) months. This market segmentation is divided into three groups, namely traders (individuals and business entities), craftsmen and wood stalls throughout Indonesia, and direct processors/end users/manufacturers. The target market for teak wood at Perum Perhutani KPH Tasikmalaya is direct processors/end users/manufacturers, most of whom are located in Jepara Regency, Surakarta City, Karanganyar Regency, and other areas in Central Java Province. The market positioning carried out by Perum Perhutani KPH Tasikmalaya is teak wood products that are certified for Sustainable Production Forest Management (SPFM) and are legal.

Perum Perhutani KPH Tasikmalaya provides after-sales service to consumers who buy teak wood products for seven working days since the complaint was filed because the quality or size of the wood is not in accordance with the Indonesian National Standard (INS), namely in the form of a refund after the BAP for 30 working days. However, Perum Perhutani does not provide any product guarantees.

2. Price mix

The price of domestic teak logs is determined by the Board of Directors of Perum Perhutani through a Decree (SK) which is sent to all regions of the Regional Division I, Regional Division II, and Regional Division III. The determination of the price of teak logs is determined by the Board of Directors using the Basic Selling Price (HJD) method and the price cannot be changed without the approval of the Board of Directors. The Basic Selling Price (BSP) on the purchase of teak by a wood processing company in Karanganyar Regency is Type E of BSP.

3. Place mix

The distribution process that has been carried out by Perum Perhutani KPH Tasikmalaya is going well because it is supported by the strategic location of the TPK and transportation facilities in the marketing process of good wood. Information on the availability of teak wood products is good because the sales system is integrated in a special website owned by Perum Perhutani so that consumers can get the teak wood products they need and want. The following are the marketing channels for teak wood at Perum Perhutani KPH Tasikmalaya.

4. Promotion mix

Sales promotion is one of the most important factors in the marketing mix. Companies that are in a monopolistic competition market must actively promote their products while maintaining their corporate image (Widyasari and Manzilati 2013). Promotional activities carried out by Perum Perhutani KPH Tasikmalaya, namely:

a)   Ads through Exhibitions, Posters, Banners, Leaflets

b)   Ads and marketing through Internet

c)   Word of Mouth Promotion

3.7. Contribution of Utilization of Teak Wood by Perum Perhutani KPH Tasikmalaya to Communities Around the Forest

3.7.1. Characteristics of Respondent Age

The largest percentage of respondents age is in the age of 41 to 50 years by 60%.

Table 3. Respondent's Age

Age Interval (Years)	Total of people	Percentage (%)
21-30	0	0
31-40	0	0
41-50	6	60
51-60	2	20
61-70	2	20
Total	10	100

3.7.2. Characteristics of Respondents Education Level

Most of the respondents' education is elementary school graduates with a percentage of 70%.

Table 4. Respondent's Education Level

Education Level	Total of people	Percentage (%)
Elementary School	7	70
Junior High School	2	20
Senior High School	1	10
Bachelor degrees	0	0
Total	10	100

3.7.3. Characteristics of Respondents' Type of Work

The work that is mostly done by respondents is as forest farm laborer on land owned by Perum Perhutani KPH Tasikmalaya. 80% of the respondents whose main job is as a farm laborer.

Table 5. Respondent's Type of Work

Main Job	Side Job	Total of people	Percentage (%)
Farm workers	-	8	80
Entrepreneur	Farm workers	2	20
Total		10	

3.7.4. Characteristics of Respondents' Income

The income obtained from CBFM activities with the largest value is IDR 4,412,306/year and the income with the smallest value is IDR 4,212,306/year.

Table 6. Respondent's Income

Description	Income (IDR/year)	
	CBFM	Non CBFM
Maximum	4,412,306	36,000,000
Minimum	4,212,306	4,800,000

3.8. Contribution Analysis

Perum Perhutani KPH Tasikmalaya provides a 10% share in the share of teak wood. Meanwhile, the use of teak wood in CBFM activities contributed 32% to the total income of respondents, while respondents' income from non-CBFM activities contributed more, namely 68%. This shows that the contribution of the use of teak in the CBFM program to the community around the forest has a very important role because it provides an income of 32% of the total income of the respondents. However, the income from CBFM activities is only as additional income because overall the income from non-CBFM activities is greater than the income from CBFM activities.

4. Conclussion

There is one marketing channel for teak in plot 5f of Perum Perhutani KPH Tasikmalaya (Teak wood from Perum Perhutani KPH Tasikmalaya is sold to a wood processing company in Karanganyar Regency) because the purchasing mechanism made by consumers is a special contract mechanism. The market structure tends to be monopolistic competition and leads to a concentrated and uncompetitive market. Marketing of teak wood in Plot 5f Perum Perhutani KPH Tasikmalaya is relatively efficient and profitable for producers because it has a farmer's share value and a large P/C ratio (profit to marketing costs) of 100% and 19.60, respectively. In addition, the marketing margin on the marketing of teak produces a very low value of IDR0. Perum Perhutani KPH Tasikmalaya as a whole has implemented the marketing mix aspect well, but improvements are still needed in the expansion of the promotion

aspect, namely developing a marketing system through the internet and paying attention to after-sales service policies in the form of teak wood product guarantees. The utilization of teak wood in Perum Perhutani KPH Tasikmalaya contributes to the total household income by 32%. The contribution of teak wood utilization in CBFM activities is only as additional income because overall income from non-CBFMactivities is greater when compared to income from CBFM activities.

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