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Level of Efficiency, Elasticity and Marketing Distribution Pattern of Mango (*Mangifera Indica* L.) on Critical Land in Plandaan District, Jombang Regency

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ABSTRACT
This study aims to analyze marketing distribution patterns, analyze the efficiency and elasticity of distribution of mangoes cultivated on critical land. The data collection method was purposive random sampling and descriptive qualitative and quantitative data analysis. The results showed that there were two levels of mango marketing channels from farmers to consumers, namely local and national marketing channels. The local level marketing channels include three institutions, namely producers, retailers, and consumers, while the national level marketing channels include four institutions, namely: producers, wholesalers, retailers, and consumers. The efficiency value (EP) of the two marketing channels is 0.5%, which means that both marketing channels are efficient marketing channels. The value of transmission elasticity (ET) for local distribution is 0.61 and 0.17 for national distribution, which is generally less than 1. This indicates that the rate of price change at the consumer level is greater than the rate of change in prices at the farm level.

Keywords:*Marketing Distribution; Marketing Efficiency; Transmission Elasticity; Mango; Critical Land.*

INTRODUCTION
Horticulture is a sub-sector that is able to provide a role as a supplier to the community's food needs and a contributor to the country's foreign exchange. One of the commodities that provide a second role is mango, besides the harvest being consumed by the Indonesian people, mangoes are also exported to foreign markets, this makes mangoes able to have a high economic value. (Awaliyah, 2018).

Mango plants include members of the kingdom Plantae, Division Tracheophyta, class Magnoliopsida, order Sapindales, and family Anacardiaceae. This plant comes from the genus Mangifera with the species name *Mangifera indica* L. The species name of the mango plant means "plant from India bearing mangoes". More than 1000 known varieties of mango are derived from two mango seed strains – monoembryonic (single embryo) and polyembryonic (multiple embryos). Monoembryonic seeds come from India, while polyembryonic seeds come from Indochina (Laila & Yuliana, 2020); (Roosenani et al, 2020). The characteristics of the mango plant are fruit trees with the habit of perennial trees with good adaptation to two seasons (Sarjono et al. 2005) so that they have a large enough potential to grow on critical lands.

The productivity of mangoes growing on critical land in Plandaan District, Jombang Regency is able to reach 85.00 (kg/tree) with a harvested area (trees) of 21,750, thus becoming one of the largest mango productions in Jombang district (BPS Jombang, 2015). The main constraint of mango productivity in this region is not supported by the level of marketing distribution. The potential for production and marketing of mangoes has not yet shown a marketing system that can be categorized as efficient. Marketing efficiency describes the marketing process from farmers' products to consumers at the lowest possible cost and is able to provide a relatively balanced profit sharing for all marketing agencies involved.

In general, mango farmers in Plandaan District, Jombang Regency do not sell directly to consumers or to the market, because of the limitations that farmers have, such as transportation, packing, and

harvesting related to the marketing of these commodities. In addition, there is a link between farmers and traders in capital for the purchase of seeds or seedlings, fertilizers, pesticides, and others which are quite large in number. This encourages farmers to sell their products to collectors (Nurhadi et al, 2020). Based on this background, this study aims to examine the efficiency and elasticity of marketing distribution of mangoes in Plandaan District, Jombang Regency from the farmer level to the consumer level.

METHOD

This research was carried out in Darurejo Village, Plandaan District, Jombang Regency from March 19, 2021, to March 25, 2021. In conducting this research, researchers used writing instruments such as notebooks, ballpoint pens, voice recorders, and cameras. The data analysis method in this study uses a qualitative and quantitative descriptive approach, which is to calculate and explain the marketing channels used by the researchers. Qualitative approach by identifying mango fruit marketing channel pattern and quantitative approach with farmer's share, efficiency, and elasticity of marketing transmission.

Calculating Margin Percentage (Farme'r Share).

Atakameng et al.,(2018) stated that the price share is the percentage of the price received by farmers and the price received by consumers. Share price received by farmers can be calculated by the formula.

$$Fs = \frac{Pf}{Pr} \times 100\%$$

Information:
Fs = Margin Percentage calculated in percent (%)
Pf = Price received by producers and traders (Rp/Kg)
Pr = Price paid by the final consumer (Rp/Kg)

Calculating Marketing Efficiency

Ratnasari and Agus (2014) state that marketing efficiency is the result of total marketing costs with total marketed production which can be calculated by the formula:

$$EP = \frac{TB}{TNP} \times 100\%$$

Information:
EP = Marketing efficiency (%)
TB = Total marketing costs (Rp)
TNP = Total product value (Rp)

Decision rules on marketing efficiency are:
a. 0 – 33% = Efficient
b. 34 – 67% = Less Efficient
c. 68 – 100% = Inefficient

Transmission Elasticity Analysis

Lily (2019) states that the use of the elasticity of transmission is to find out how much the price changes in the retail market, consumers due to a price change of one unit in the farmer/producer market.

To calculate the elasticity of transmission use the formula:

$$Et = \frac{\Delta Pr}{\Delta Pf} \times \frac{Pf}{Pr}$$

Where :
Et = Price Transmission Elasticity
Pr = Price Change at retailer level (ΔRp/ΔKg)
Pf = Price Change at farm level (ΔRp/ΔKg)
Pf = Farmer Level Price (ΔRp/ΔKg)
Pr = Retailer Level Price (ΔRp/ΔKg)

The measurement criteria used in the analysis of price transmission according to Hasyim: 1994 in (Restiana, 2010) are:

- Et = 1, means that the rate of change in prices at the consumer level is the same as the rate of change in prices at the farm level. This means that the market faced by all market participants is perfectly competitive, and the existing trading system is efficient.
- Et > 1, means that the rate of price change at the consumer level is smaller than the rate of price

change at the farm level. This means that the market faced by all market participants is not perfectly competitive, that is, there is monopoly or oligopoly power in the trading system so that the prevailing trading system is not yet efficient.

- Et < 1, means that the rate of price change at the consumer level is greater than the rate of price change at the farm level. This means that the market faced by all market participants is not perfectly competitive, that is, there is monopsony or oligopsony power in the trading system so that the prevailing trading system is not yet efficient.

RESULT AND DISCUSSION

Marketing Distribution

The results of the identification of mango marketing channels in Darurejo Village, Plandaan District, Jombang Regency, there are 2 types of marketing channels, namely local level marketing channels, and national level marketing channels so that their products can reach consumers quickly and accurately. At the local level marketing channels are in marketing distribution from farmers to the Jombang city market area, while the national level marketing channels include distribution channels from Jombang district, Sidoarjo district, and up to DKI Jakarta. The marketing channel must go through several institutions including producers (farmers) - wholesalers (distributors) - retailers (markets).

This mango is marketed in units of rupiah/kg. To expand and expedite the marketing of mangoes, the role of marketing agencies is needed to distribute mangoes from producers to consumers. With the existence of several marketing channels that are used, it will cause the level of margins, marketing costs with different profits, fair profit sharing between actors in marketing is largely determined by marketing efficiency. Mango farmers in the marketing of mangoes act as producers and are the first parties in the distribution of marketing of mangoes, wholesalers and retailers are intermediaries who sell mangoes to final consumers.

The distribution process of production results is an integral part of the post-production of goods by a company. The marketing channel used by the mango fruit business owner in Darurejo Village, Plandaan District, Jombang Regency is with local-level marketing channels and national-level marketing channels as shown in Figure 1.

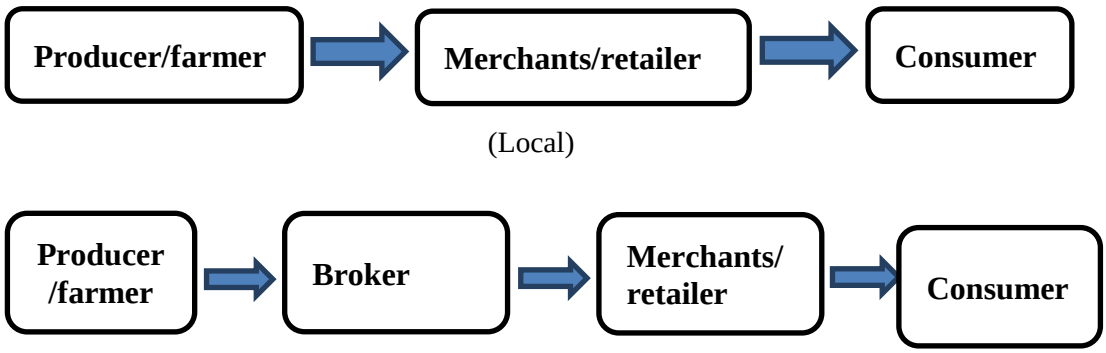

Figure 1. Mango Marketing Channels At Local And National Levels.

The following are the institutions involved in local and national level marketing channels:

- Gadung mango production – retailers or markets – end consumers. This form of channel is a form of the channel that involves producers and retailers in marketing their products so that they reach the end consumers. This form of marketing channel is carried out by retailers who come to the mango fruit shop to buy mangoes, with a purchase price of Rp. 8.000/Kg. Furthermore, retailers sell gadung mangoes directly to consumers. With a selling price of Rp. 13,000/Kg.
- Mango fruit production entrepreneur – wholesaler – retailer – Consumer, This form of channel is a form of the channel that uses the services of wholesalers and retailers in marketing their products so that they reach the end consumers. mango in large quantities, with a purchase price of Rp. 7,000/Kg. Next, the retailer buys mangoes from the wholesaler at a purchase price of Rp. 10,000/Kg. Furthermore, retailers sell mangoes directly to consumers, with a selling price of Rp. 15.000/Kg.

In general, mango marketing distribution has a simple form at the local level and complex at the national level. According to Rahmanta (2014), marketing channels can be in the form of simple and can also be very complex, depending on the type of commodity marketing institutions in the market. The

monopoly market system has relatively complex marketing channels compared to other market systems. Agricultural commodities that are faster in the hands of consumers and do not have high economic value usually have relatively simple marketing channels.

Marketing Margin Analysis

Marketing margin is usually used as an indicator of marketing efficiency. The amount of marketing margin for various marketing channels can be different because it depends on the number of marketing channels and activities that have been carried out, as well as the profits obtained by the marketing channel institutions involved in marketing.

Table 1. Analysis of The Marketing Margin Of Mangoes In Each Marketing Channel In Plandaan District, Jombang Regency.

No *	Description	Price Rp/Kg	Share margin (%)
1.	**Farmer/producer**		
	Total price	5.500	-
	Selling price	8.000	0,61
	Profit	2.500	0,16
	Retailer		
	Purchase price	8.000	-
	Selling price	13.000	-
	Total price	1.000	6,6
	Profit	4.000	40
	Margin	5.000	46,6
	Final Cunsomer purchase price	13.000	
	Total margin	5.000	46,6
2.	**Farmer/Producer**		
	Total price	5.500	-
	Selling price	7.000	0,46
	Profit	1.500	0,15
	Broker		
	Purchace price	7.000	-
	Selling price	10.000	-
	Total price	1.000	6,6
	Profit	2.000	13,3
	Margin	8.000	53,3
	Retailer		
	Purchace price	10.000	-
	Selling price	15.000	-
	Total price	1.000	6,6
	Profit	4.000	26,6
	Margin	5.000	33,3
	Consumer purchace price	15.000	
	Total margin	13.000	86,6

Processed data; 2021

Note: *)Marketing distribution at local (1), national (2) levels

The marketing efficiency of gadung mango in Darurejo Village, Plandaan District, Jombang Regency can be seen from the marketing margin, share/price received by producers/entrepreneurs, the share of entrepreneurs, and cost-benefit ratio. In Table 1 it can be seen that the margin of the first marketing channel is through three marketing channel institutions, which include producers/businesses, retailers, and final consumers. The first marketing channel shows that the selling price of producers to retailers is Rp. 8,000/kg with a share margin of 0.61%. This means that from the sale, the producer gets a profit of Rp. 2,500/kg with a profit margin share of 0.16%. Furthermore, retailers sell to final consumers at a price of Rp.13,000/Kg with a share margin of 46.6%. This means that from the sale, the retailer gets a profit of Rp. 4,000/Kg with a 40% share margin.

Furthermore, in the second marketing channel through four institutions, including producers/farmers, wholesalers, retailers, and consumers. The first channel agency shows that the selling price of producers to contractors is Rp. 7,000/kg, with a share margin of 0.46%, so that producers get a

profit of Rp. 1500/kg with a profit share of 0.15%. Furthermore, the contractor sells to retailers at a price of Rp. 10,000/kg with a share margin of 53.3%, so that the contractor gets a profit of Rp. 2,000/kg with a profit share of 13.3%. Furthermore, retailers sell to the last consumer at a price of Rp. 15,000/kg with a share margin of 53.3%. From the results of these sales, retailers get a profit of Rp. 4,000/Kg with a profit share of 26.6%.

Based on the results of the marketing channel analysis, it shows that the biggest profit is for retailers with the first (local) marketing channel, which is Rp.4000/Kg with a share margin of 26.6%. The smallest profit is found in producers with the second (national) marketing channel, which is Rp. 1.500/kg with a share margin of 0.15%. The longer the sales channel, the bigger the marketing margin. The marketing margin essentially consists of the costs of carrying out the marketing functions and the profits of the marketing agencies. If the marketing margin is large and the costs for carrying out marketing functions are also large so that the agricultural commodities produced are in accordance with the wishes of consumers, then the marketing profit will be small (Sudiyono, 2004).

Marketing agency efficiency

Marketing efficiency is a very important aspect of marketing channel distribution. If this aspect goes well enough, then all marketing channel institutions will benefit equally. Thus, a good marketing channel will have a positive impact on farmers/producers, traders, and consumers.

Table 2. The Efficiency Of Marketing Institutions in Pladaan District, Jombang Regency

No.	Description	Marketing price (EP)
1.	Marketing channel I	(6.500 : 13.000) x 100% 0,5 x 100% 0,5%
2.	Marketing channel II	(7.500 : 15.000) x 100% 0,5 x 100% 0,5%

Processed data; 2021

The results of the analysis show that the total marketing costs incurred in the first type of marketing channel are Rp. 6.500/kg which consists of the costs of producers, wholesalers, and retailers. While the total marketing costs incurred in the second marketing channel are Rp. 7,500/kg consisting of producer and retailer costs. Clearly determine the level of marketing efficiency of mangoes in the research area is shown in table 2.

From table 2 above, we can see that the efficiency value of the two marketing channels above is 0.5% where this result is less than 33%, which means that both marketing channels are efficient marketing channels. This means that both mango marketing channels are the most effective channels. The EP indicator explains that the smaller the EP value (%), the higher the level of efficiency, so the higher the price paid by the consumer, the more efficient the trading channel is. The higher the price paid by the consumer with the low cost of trading issued by each marketing agency, the more efficient the trading system will be.

Price Transmission Elasticity Analysis

According to Rahmi (2019) that the elasticity of transmission is a comparison of the relative change in prices at the retail level with changes in prices at the farm level. Based on the results of table 3 that the elasticity of price transmission in channel I is 0.61. Meanwhile, the elasticity of price transmission in channel II is 0.17. Both channels have elasticity < 1 or inelastic, which means that in the channel I, a 1% price change at the retail level will result in a 49% price change at the farmer level, channel II, a 1% price change at the retail level, will result in a 47% price change. farmer level. This result is also supported by research from Sutawi, (2002) in Rahmi,(2019). If Et < 1, it means that the rate of price change at the consumer level is greater than the rate of price change at the farm level.

Table 3. Calculation Of Price Transmission Elasticity Of Mango Marketing Channel

Elasticity	Marketing channel I	Marketing Channel II
Pf	8.000	7.000
Pr	13.000	15.000

Elasticity	Marketing channel I	Marketing Channel II
dPf	5.000	13.000
dPr	5.000	5.000
Et	0,61	0,17

Processed data; 2021

Note:

Et = Price Transmission Elasticity
dPr = Price Change at retailer level
dPf = Price Change at farm level
Pf = Farmer Level Price
Pr = Retailer Level Price

CONCLUSION

Based on the results of the discussion above it can be concluded that the marketing channel for mangoes cultivated on critical land in Plandaan District, Jombang Regency has two marketing channel patterns. The first pattern involves four marketing channel institutions, namely producers, wholesalers, retailers, and consumers. The second pattern is a marketing channel that involves three marketing channel institutions, namely producers, retailers, and final consumers. The distribution efficiency level of mango marketing channel pattern I and II is in the efficient category with a value of < 33% because it has an EP value of 0.5%. However, when viewed from the value of the elasticity of transmission, which is less than 1, it indicates that the marketing channel pattern is less efficient because the rate of price change at the consumer level is greater than the rate of price change at the farm level.

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