THE ANALYSIS OF MAGOSTEEN WEST JAVA FARMER MARKETING CHANNEL

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Abstract

Indonesian Mangosteen export value and volume trend has increasing and need to develop. The marketing channel that was chosen by the farmer, holds major contribution. The objective of this study was to analyze the factors that influencing the mangosteen farmer marketing channel in West Java that chosen by those farmers. The data analyzed by logistic regression. The data collected from 315 farmers by interviews and structured questionnaires in Bogor and Tasikmalaya district. The results of this study were: The sum of farmer who sold their mangosteen through direct marketing was 15.53 percent and 84.47 sold it to the indirect marketing. The major variables that influencing the choice of marketing channel were price and the good agriculture practice that they done. This study recommend that farmers can enhance their marketing capacity by the application of good agriculture practise (GAP) on their mangosteen farm to increase their quantity, quality and also price

Keywords: GAP, mangosteen, marketing channel

Introduction

The Agriculture ministry’s data from 2012 till May 2016 shows that mangosteen has increasing trend in both of volume and export value. The data show below:

Figure 1. Mangosteen export value and volume, year 2012-2016 (source: RI Agriculture Ministry)

The increasing of export value above indicate that Indonesia has big potention to develop mangosteen business. In southern Asia, commonly the mangosteen tree can grow in Indonesia,
Thailand and Malaysia. In Indonesia has harvest time from November till March, meanwhile in Thailand and Malaysia it is only on June till July every year. The Indonesia’s superiority of long harvest time make Indonesia must develop the mangosteen production. Based on USAID (2007), Indonesia’s mangosteen holds some potential for successful intervention if some reasonable mangosteen growing areas or organization can be identified.

In year 2003, the West Java planning institution (Bappeda) determined that mangosteen is a prime commodity. But based on result of Astuti, Marimin, Poerwanto, Machfud, & Arkeman (2010); the West Java mangosteen production activity was not efficient to international competition and needed to involving organization selection in order to rise the Bogor mangosteen competitiveness. Smallholders farmer’s participation in marketing channel choice is limited by low volume of produce, presence of middleman and perceived low prices in local market, lack of information (Kherallah & Kirsten, 2002).

Therefore main objective of this study was to analyze the influencing factors which the marketing channel that chosen by the farmer. The factors were analyzed in this study, relate with the farmer marketing capacity such as price, income, the cultivation behavior and degree of farmer’s communication and transportation application into marketing.

Materials and Methods

This research was carried out in Bogor and Tasikmalaya district in year 2016. Those areas was purposively determined because both of them are the mangosteen main area in West Java. In Bogor, the farmer samples collected from 8 villages such as Barengkok, Karacak, Karyasari, Pabangbon, Sukaraksa, Bunar, Pangradin and Jugala. In tasikmalaya district the research are covered 9 villages: Puspaahiang, Pusparahayu, Cimanggu, Luyubakti Mekarjaya, Linggaraja, Sirnajaya Sukarasa and Jahiang. Interviews and structured questionnaires were administrated to 315 farmers.

The factors that influencing the mangosteen marketing channel in West Java that chosen by farmers, analyzed by the logistic regression. The dependent variable was the marketing pattern that chosen by the farmer (direct marketing=1 and indirect marketing=0). Direct marketing means that farmer sold their mangosteen directly to the market by their self or to exporter. Meanwhile the indirect market means that farmer sold their mangosteen through middleman. In this study the predicted variables that influenced the type of marketing pattern were price (X1), farmer’s income (X2), Good agriculture practice that farmer applied in their field (GAP applied=1 and not-GAP applied=0)(X3), the farmer’s telecommunication technology (using handphone for marketing=1 and not-using handphone for marketing=0) (X4) and farmer’s transportation technology (vehicle using for marketing=1 and vehicle not-using for marketing=0)(X5). The logistic regression equation were :

\[
MP = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + u \\
\]

Where:

- $\beta_0$: The intercept term
- $\beta_1$ to $\beta_5$: The unknown parameters to be estimated
- $\mu$: Error term

Results and Discussion

The mangosteen marketing organization in Bogor and Tasikmalaya district commonly were same. The involving marketing organization were middleman and exporter. The middleman are two types traders; first is local trader and second is Ijon. Local trader is a trader that buy mangosteen from farmer in the harvest time base on daily price without any differ quality. Ijon is similar with local trader, but it has different purchasing method. Ijon will appraise farmer’s mangosteen tree and counted all stem for each tree, then multiply them with the sum of tree belongs to the farmer. The appraisal price differs for every farmer. It depended on ijon’s perspective. The farmers who sold to the ijon, generally has debt for living outside of harvest time. Because of their debt, farmer must take this
marketing method. In average ijon appraise the price of every tree in Rp.100.000 till Rp.250.000
depends on the sum of stem in every branch. The more of stem the higher price that taken by farmer.
The mangosteen average production was bought by middleman among 27.917 kilograms per year and
average price among Rp.3.507 per kilograms. Exporter is a big collector of mangosteen and sell it
abroad. The exporter buys mangosteen mixed quality from farmer and also middleman. In this reserch
the exporter’s total purchasing reached 270.000 kilograms per year with average price Rp.12.000 per
kilograms.

This reasearch caterorized the farmers into two groups of study. The farmer who sold their
mangosteen by their selfes or to the exportes identified as farmer choosed the direct market. The
farmer who sold their manggosteen through middleman, identified as farmer choosed the indirect
market.

Refer to the observation in the field, 84 percents of farmer sold their mangosteen through
indirect marketing and only 16 percents farmer choosed direct marketing. That circumstances showed
that most of the farmer choosed indirect marketing. It happened because through the indirect
marketing, farmer can get debt outside of their harvest time, the non-existing funding institution for
the farmer, and the ease of funding accessibility to fulfill the farmer daily living.

The farmer’s marketing channel decisions will influence their income. Each marketing channel
behaviour will establish the price that taken by the farmer. In relate with marketing channel, every
marketing channel has opportunistic behaviour. Davis and Newstrom (1995) declared that individual
behaviour is opportunistic and rational, but faced by bounded rationality to choose something. It is
caused by enviroment complexity and problem that make the high degree of uncertainty. The high
degree of uncertainty arise of information imperfect in marketing process. The individual bounded for
getting and processing information in uncertainty circumstances tends to opportunistic behavior for
each parties who involve in marketing. Those matter also happened in this study. Farmer assumed, has
opportunistic behaviour in lower degree compare to middleman and exporter. It caused by asymmetric
information about quality and price. The limmited farmer capability to access and to process the
information, can cause the rentseeking exploitation by marketing organization. It also declared by
Sporleder (1992) that opportunistic behavior has potention becaming of rentseeking exploitation (p.
1229). The rentseeking exploitation becomes worse when the farmer’s capital was low, the
transportation cost and mangosteen’s perishable was high, the non-existing funding institution for
the farmer. All of them will force farmer sell their mangosteen through the indirect marketing. The farmer
also realized that their mangosteen can not fulfill export’s quality.

The analysis of the factors which influencing the marketing channel that choosen by the farmer,
was analyzed by logic regression. The result showed as below:

Table 1. Parameter estimates of the logic regression model for the determinant of marketing type
chosen by the farmer.

<table>
<thead>
<tr>
<th>The mangosteen marketing type</th>
<th>Coefficient</th>
<th>Std.error</th>
<th>Significance level</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>1.871</td>
<td>0.743</td>
<td>0.012*</td>
<td>6.497</td>
</tr>
<tr>
<td>Farmer’s income</td>
<td>-0.62</td>
<td>0.089</td>
<td>0.485</td>
<td>0.940</td>
</tr>
<tr>
<td>GAP</td>
<td>2.458</td>
<td>0.423</td>
<td>0.000*</td>
<td>11.680</td>
</tr>
<tr>
<td>farmer’s telecomunication technology</td>
<td>-0.722</td>
<td>0.469</td>
<td>0.124</td>
<td>0.486</td>
</tr>
<tr>
<td>farmer’s transportation technology</td>
<td>-0.830</td>
<td>0.567</td>
<td>0.143</td>
<td>0.436</td>
</tr>
</tbody>
</table>

*5% significance level.

The price variable was signficance on 5 percent. Coefficent value was positif and indicated that
every 1 rupiah price increasing would rise odd ratio the probablity of direct marketing that choosen by
the farmer as 1.871. The value of Exp(B) showed that for 1 rupiah increasing of price, the farmer’s
chance to choose the direct marketing bigger 6.497 than indirect marketing cateris paribus. That
statement above was supported by Kustiari et al. (2012), that revealed the price played key roles in
addressing production continuity and modernization of mangosteen cultivation. For mangosteen
developing, the farmer and other mangosteen business parties, would make decision base on the price.
Many traditional farmers do not have the knowledge or skills to make informed decisions. They tend
to rely on intitution or simply copy of decisions that other farmers make. The decision-making process is often very basic and intuitive (Kahan, 2013).

The other variable that significance in 5 percent degree was the good agriculture practise (GAP) that farmer applied to their mangosteen farm. The Coefficient value was positif 2.46. It indicated that if farmer did GAP, would increase odd ratio the probability of direct marketing that chosen by the farmer as 2.46. The value of Exp(B) showed value as 11.68. It declared that if farmer did GAP, the farmer’s chance to chose the direct marketing bigger 11.68 than indirect marketing cateris paribus. In this study only 29.77 percents farmer who applied GAP to produce their mangosteen. Table 2 shows the farmer’s cultivation pattern from cost structure approach. The farmers that sell their mangosteen through direct marketing more intensive cultivation than other. The mangosteen cost structure show on table below:

**Table 2.** The mangosteen farming cost structure base on marketing channel.

<table>
<thead>
<tr>
<th>No.</th>
<th>Cost components</th>
<th>Farmers sell through</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Direct marketing</td>
<td>Indirect marketing</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Seed</td>
<td>3,069.297</td>
<td>610.029</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Farming tools</td>
<td>289.202</td>
<td>173.538</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Labor</td>
<td>804.401</td>
<td>344.782</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Organic fertilizer</td>
<td>696.174</td>
<td>400.560</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Chemical fertilizer</td>
<td>358.230</td>
<td>22.705</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Pesticide</td>
<td>72.586</td>
<td>67.204</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>ZPT</td>
<td>46.424</td>
<td>52.312</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Farm tax</td>
<td>3,096.212</td>
<td>833.415</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total cost</td>
<td>12,232.791</td>
<td>5,011.056</td>
<td></td>
</tr>
</tbody>
</table>

Cost structure analysis revealed, that farmers who choose direct marketing carry farming cost 59.03 percent higher than farmers who choose indirect marketing. In this study also revealed that farmers feel more convinience sell their mangosteen if they did GAP. Base on that, the mangosteen GAP application must spread among the farmers. GAP application on their farming will increase their mangosteen quality and quantity. FAO (2007) explains, that the basic concepts of Good Agricultural Practices (GAP) in order to: guide the production systems towards a sustainable agriculture and ecologically safe, obtain harmless products of higher quality, contribute to food security generating income through the access to markets and improve working conditions of producers and their families (p.1) By the observation in this reserch, the farmer who did GAP more confindence sold their mangosteen better than farmer who did not do GAP. Farmer who apply GAP on their farming, will get the better mangstooten. Better mangosteen will increase the quality and quantity and also the price. It means better income for the farmers. Farmers with better income can do promotion through communication and transportation technology. By communicaton, farmer can promote their product and bigger promotion will expand theirmarket.

**Conclusion**

The conclusion from this study was total 84 percent farmers choosed the indirect marketing and the variables that influence the mangosteen farmer marketing channel in West Java were price and good agriculture practice (GAP) that was applied by the farmer. This study recommends that farmer should increase their cultivation skill by GAP application into their farm. By GAP application, farmer will get better quality, quantity and also better price.

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