



Analysis of Rice Distribution in South Sumatera, Indonesia

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ABSTRACT

This research investigates and determine the distribution of commodity rice in South Sumatera. Data are obtained from the primary data in 2016. The analysis method used is descriptive statistics, and participatory rural appraisal to determine the pattern of distribution of commodities of rice. The result in this research are, first, marketing distribution channels of rice in South Sumatera are still passed the long stage, first start from manufacturers sold to distributor in the village, and then sold to Merchant Districts, then sold to Merchant District, then sold large distributor, next sold to retailers, and finally sold to the consumer. Second, nominal terms, traders rice farmer is higher than distributor. But the ratio of rice trade margin (MPP) showed that MPP farmers was higher than MPP distributor. In general, these findings can be categorized efficiently.

Keywords: Distribution Marketing, Rice, Marketing Margin

JEL Classifications: D3, L11, Q52

1. INTRODUCTION

Distribution marketing is one very important aspect in linking producers with consumers. In addition, it can provide great added value in the economy. Food distribution involving the storage, processing, transport, packaging and marketing of food (Food and Agriculture Organization [FAO, 1997]). Supply chain infrastructure and storage technology food can also can affect the amount of food that is lost during distribution (Godfray et al., 2010). In addition, according Godfray et al. (2010); Tweeten (1999) transport infrastructure is inadequate can lead the increase in prices to the global market. The world food production per capita has exceeded consumption per capita, but in many places they found food insecurity due to the distribution of foodstuffs has become a major barrier in achieving food security.

In context of marketing, according to Kotler and Keller (2006); Stanton (1991) definition of marketing is something that covers the whole system associated with the objective for planning and determining the price until promoting and distribute goods and services that can satisfy the needs of actual and potential buyers. In this case, Supriatna (2002); Taufiq (2001) explains that the

food distribution system from manufacturer to consumer can be composed of several chain business administration (marketing channels) each of which market participants provide different services. Major advantages each player is depend on market structure at every level, bargaining, and business efficiency of each offender.

According to the (FAO, 1997) the distribution of food is a marketing activity that seeks expedite and facilitate the delivery of goods and services from producers to consumers. A person or a company is a distributor of intermediaries who distribute the product from the manufacturer (manufacturer) to retailers (retailers). In general, the distribution process was made after a product produced by the factory, then the product is sent to a distributor. Then distributor sells the product to retailers or customers.

According Azwardi et al. (2016); Gregory et al. (2005); Taufiq (2001), the availability of staple food commodities of which rice is associated with many factors. These factors among others aspects of production, distribution and consumption. Although aspects of the production of food commodities can be produced in rice production areas but it would be less useful if the distribution

aspects of an obstacle. In the area of rice production centers will be fulfilled and the low price level, but in other places is not adequate rice supply and the price level will be high. In addition, according to Taufiq (2001) the distribution aspects are closely related to the availability of adequate transportation infrastructure to ensure the mobilization of goods and people absolutely have to get the attention of all parties, especially the government.

Taufiq (2001) also says that the rice commodity marketing chain will be seen from the flow or movement of rice from the hands producer to the consumer, there are many activities that work together. People or institutions that are directly involved in the flow of goods from producers to consumers called approved agencies, among others such as the collector (local assemblers), traders recipient and disseminator (wholesaler), retailers (retailers), brokers are middlemen who can connect the buyer to the seller, the commissioner of middlemen who were given the confidence to buy and sell goods and of the efforts that they get a commission (Comision or factorage), and other marketing agencies.

By knowing the information concerning the distribution chain marketing, it can be an ingredient in a policy of commodity rice in South Sumatera, so expect the pattern of distribution of rice in South Sumatera, both from the aspect of availability and affordability (prices) can be achieved. Several studies have revealed that the rice commodity distribution channels in several regions in Indonesia is quite long, so the impact on the retail rice price received by consumers. For example, the results Bhinadi (2012) for the case in Yogyakarta; Rosmawati (2009) for the case in East OKU; Mardianto et al. (2005) for the case in Indonesia; Syahza (2003) for the case in Indonesia; and Supriatna (2002) for North Sumatera.

This study has contributed. First, it can be material for the improvement of the national rice marketing distribution system in finding the rice commodity marketing distribution channels, especially in South Sumatera. Second, for a theoretical aspects related to the development of the rice market concentration, the formation of rice prices at the producer level and consumer level.

The next session will present the literature. The third session will present the research methodology. Then the fourth session will present the empirical results and discussion of the findings in the field. The last session in this study is the conclusion.

2. LITERATURE REVIEW

Food availability associated with the food supply through production, distribution, and trade (Gregory et al., 2005). Food production is determined by a variety factors, including land ownership and using; type and soil management; the selection, breeding, and management of agricultural crops; livestock breeding and management; and harvesting (FAO, 1997). The production of agricultural crops can be affected by changes in temperature and precipitation (Gregory et al., 2005). Use of land, water, and energy to grow food often competing with other needs (Godfray et al., 2010). Use of land for agriculture can be turned into residential or lost due to desertification, salinization and

soil erosion due to unsustainable agricultural practices (Godfray et al., 2010).

In the process flow or movement of goods from the hands of producers to consumer there are many activities that work together. There are activities that buy and collect agricultural products, there are transporting the results to the consumer area, someone has to do and some are just looking for sources of supply and sources of demand. So it can be interpreted that people, companies or institutions that are directly involved in the flow of goods from producers to consumers called approved agencies, among others such as traders, retailers, brokers, freight forwarders and warehouse company (Taufiq, 2004).

According Syahza (2003) the high disparity between grain and rice prices is a result of a long chain of distribution of agricultural commodities. This situation will cause large marketing margin distribution costs are high, so there are parts that must be removed as a trader profits. Although in general the farmer is not involved in the marketing chain of products, so that the value-added processing and trading of agricultural products only enjoyed by merchants. This tends to reduce the share of the farmers and increase the fees to be paid by consumers.

In the study Mardianto et al. (2005) perpetrators of the marketing of rice in most areas able to increase profit margins in the event of price increases in the consumer market in a manner acceptable to suspend price increases on the price to be paid to farmers. Instead perpetrators also able to maintain the same profit margin even though consumer prices were down by accelerating the reduction in the purchase price to the farmers, so that the risk of market charged entirely to the farmers. Such behavior indicates the strength of monopsonistic because they have accessibility and quick information to the consumer market. With the market share of the perpetrators of the trade system can forward the risk of fluctuations in the market at deeper levels and finally to the farmer as the recipient of the risks without being able to refuse or avoid.

3. METHODOLOGY

This research was conducted in 2016 in South Sumatera, next Banyuasin, Ogan Ogan Ilir Ogan Komering Ilir (OKI), and Ogan Ogan Ulu Timur (OKUT) was selected as a research area for 3 areas that generate the largest rice production in South Sumatera. Data are obtained from the primary data with interviews and observation methods to samples. Analysis of the distribution system is a method to study the market linkages and studied in detail the components of marketing costs and margins along the market chain.

This research uses descriptive statistical approach, and also the method of participatory rural appraisal (Chambers, 1996). Samples determined by snow ball sampling approach where farmers as a starting point (starting point). Sample of respondents who are interviewed consisted of 112 farmers, 21 trader, 12 rice mills, and 10 konsomen end. Furthermore, secondary data collected comes from the Central Statistics Agency (BPS) and other relevant agencies.

Furthermore, to analyze marketing margins rice, this calculation is intended to see the difference in prices received by farmers and the prices paid by consumers. To analyze the marketing margin in this study, the price data used is the price at the farm gate and the price at the agency level marketing, so marketing margin used in the calculation formula as follows:

$$MP_i = Pr_i - Pf_i \tag{1}$$

Where is: MP_i is a marketing margin at farm level; Pr_i is the price at the institutional level marketing objectives of the farmer; and Pf_i is the price at the farm level.

The margin at each level marketing agencies can be calculated by calculating the difference between the selling price and the purchase price on each level marketing agencies. In mathematical form, it can simply be formulated:

$$MP_i = Ps_i - Pb_i \tag{2}$$

Where is: MP_i is a marketing margin on each level marketing institutions; Ps_i is the selling price at each level marketing institutions; and Pb_i is the purchase price on each level marketing agencies.

In this case, since the marketing margin has two components, namely component costs and the profit component of the marketing agency, then:

$$MP = c + \pi \tag{3}$$

$$Pr - Pf = c + \pi \tag{4}$$

$$Pf = Pr - c - \pi \tag{5}$$

Where: C is the cost of marketing; and π is profit marketing agency (net marketing margin).

4. RESULTS AND DISCUSSION

4.1. Production of Rice

Rice production in South Sumatera showed improvement quite volatile, which is a growing concern is the production of rice fields are not quite satisfactory, this can be seen in Figure 1. The development of rice production is strongly influenced by weather climate, in addition to the land, and the land can be planted with rice, the current development of the production is also determined by the planted seeds and fertilizers are in use by farmers. On the other hand the price of grain and rice are also quite affecting. Indonesia is currently experiencing a food crisis for rice, it is evident that the Indonesian government is to import current deficit, the consumption of rice.

South Sumatera became one of the six largest rice producers in Indonesia, and the second largest on the island of Sumatera after North Sumatera. But this time the government should be more attention because of the development of production are now getting decreasing, this is caused by the conversion of agricultural land

into plantations such as rubber and oil palm. Due to this the current agricultural land has been less and less.

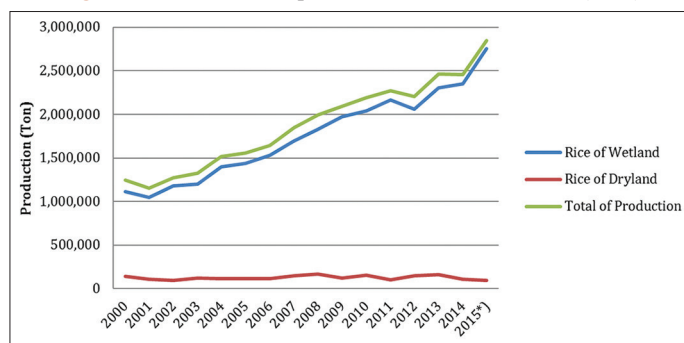
Figure 2 shows the development of the harvested area of wetland and dryland paddies, but for harvested area of dryland paddies showed a substantial decline that had been in 1990 amounted to 101.262 hectares, down to the size of 65.307 hectares in 2014. Although it was no increase in 1998 is equal 186.037 hectares. In production, the production of dryland paddy produce less than the production of wetland paddy.

According to Yoshida (1975) other factors that cause productivity of dryland paddy lower than that of paddy is characteristic of the growth of dryland paddy less favorable than paddy rice which plants are shorter, the number of productive tillers less, leaf area is smaller, refurbishing slower, the percentage higher grain hollow, dry matter less, and the index lower yields of wetland paddy.

Coverage of the survey area in South Sumatera Province earmarked as the sample distribution of rice commodity trading include Banyuasin, OKUT, OKI, and Palembang. Based on the survey results, the rice producers in South Sumatera Province acquired the whole grain rice from the Province of South Sumatera. Rice milling results are then sold entirely to meet the demand for rice in the Province of South Sumatera.

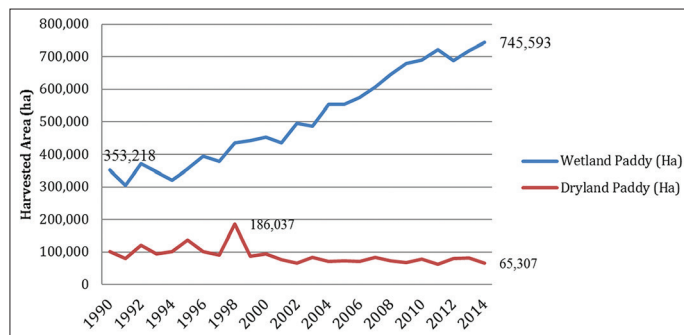
Growth in rice production in Figure 3, shows a positive trend varied, if seen from the average production showed a positive value, although OKI shows the average smaller than other districts.

Figure 1: Trends of rice production in South Sumatera (Tons)



Source: South Sumatera in figures 2016 (BPS, 2016)

Figure 2: Land area production of wetland and dryland paddy in South Sumatera (Hectares)



Source: South Sumatera in figures 2016 (data processed)

The average value of production grew by 2.34% OKI regency, East OKU with an average growth of 6.44%, while the average Banyuasin district grew by 8.58%.

Production observation period during year 2005-2015, however what catch the eye is OKI regency that shows decreasing rice production, can be seen during 2011-2013 period. One of the possible cause is land conversion from farming to plantation.

Rice production growth in three regencies such as OKI, OKUT, and Banyuasin Regency can influence rice production in province level, because all three regencies have quite big contribution in South Sumatera Province, with average contribution of 65.22% out of total production in province level.

4.2. Rice Production Contribution

Regional contribution like from OKI, East OKU, and Banyuasin in rice production in province level shows fairly big growth, that the regencies provide quite big amount of rice demand in South Sumatera. Despite all three regencies showing fluctuative growth. Out of three regencies mentioned, one that give quite big contribution is Banyuasin Regency, which contribute with average growth as big as 26.24% (Table 1).

The next region is East OKU which in average contribute 20.85%, while OKI in average contribute around 18.14% to total production in South Sumatera Province. It certainly can't be separated from the farmer who had work hard to produce rising production.

There are some other factors that could spur farming production such as weather, soil structure, fertilizier and drugs in terminating pest which can disturb production in rice paddies and fields. Rice production growth become one of government's aim to deal with food insecurity in the region.

4.3. Marketing Distribution

Rice marketing distribution in this research focused on research object in three regencies which is OKI, Banyuasin and East Ogan Komerling Ulu Regencies. This study includes rice distribution map, distribution pattern and rice trading margin from farmer to end consumer. From the survey it was found that rice producer in South Sumatera Province get all their grain rice from South Sumatera Province itself. The rice milling result then proceed to be sold entirely to fulfill the rice demand in South Sumatera Province. At the merchant level it was known that the origin of rice supply in South Sumatera Province is mainly from South Sumatera itself while a fraction of it is from Lampung.

95.35% of the rice supply then proceed to be sold in South Sumatera Province while the rest is sold to Jambi, Lampung, and DKI Jakarta. Rice marketing distribution chain in South Sumatera still quite long. The role of wholesalers and grinders (big factory) still dominate rice marketing. Rice mill in this survey act as rice producer, selling most of its production by agent, as much as 64.80%.

Besides sold through agent, rice mill result also sold to wholesaler, merchant wholesalers, retailres, or directly to household. From merchant level can be known that rice trading patter in South

Sumatera Province involves distributor of business functions, agent, subagent, wholesaler, supermarket and retailer before making its way to end consumer.

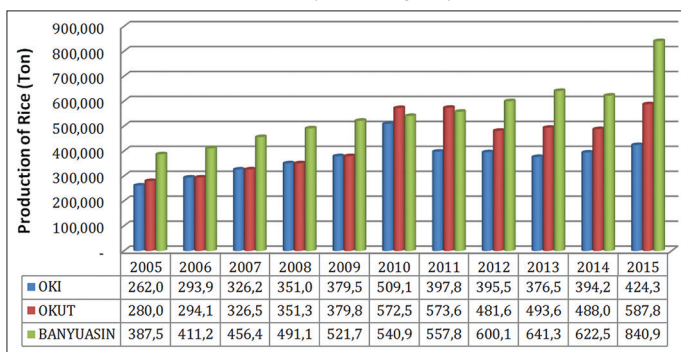
4.4. Rice Distribution Map

Most of rice production in South Sumatera is distributed to fulfill consumer's demand inside the province. While fraction of it is distributed to another Province such as Jambi, Lampung and Jakarta. Rice distribution map can be seen at Figure 4 and (Table 2).

From the survey, rice producer (farmer) in South Sumatera Province get their grain rice as seeds from its own province. One of the superior rice seed breeding centers is at Rambutan District in Banyuasin regency, and each regency have its own rice breeding centers. The following is rice percentage distribution in South Sumatera.

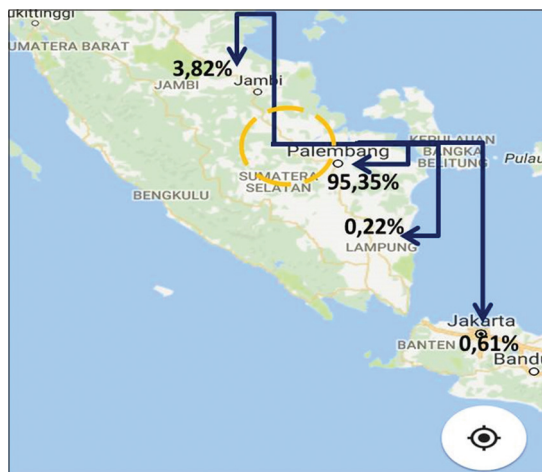
South Sumatera bought seeds from its own region while the rest is farmer conducting its own nursery. Rice produce in South Sumatera is used to fulfil the province's demand. Based on the flow rice produce are mainly sold to fulfill the province's need are 95.35% of production, then the small fraction of rice produce is distributed outside the Province to Jambi Province 3.82%, Lampung Province 0.22%, and outside the island which is to DKI Jakarta 0.61%.

Figure 3: Rice production trend in Ogan Komerling Ilir, Ogan Ogan Ulu Timur, and Banyuasin regency, 2005-2015



Source: South Sumatera in Figures 2016 (BPS, 2016)

Figure 4: Rice distribution map in South Sumatera



4.5. Rice Distribution Pattern

This research was started from the first rice producer, which is farmer. Farmer as rice producer give all of its produce to rice mill who act as rice producer (also can be called village merchant). Marketing distribution starts from rice mill to merchant whether on district level or regency level, sales of production of rice milling is around 64.80%. Next the distribution chain enters the market via big party (distributor) that will distribute the rice to retailer whether in traditional market or supermarket (Figure 5).

Rice sale is known to involve business function with terraced levels. Rice sale pattern doesn't leave it to just one sub sector. Rice sales patterns not only submit to one sub-sector alone. Rice mill as second producer can sell rice to district level merchant, or directly to regency level merchant. Sale pattern in regency is still traditional, where the function of society network and fund donor involvement still greatly affects sales. Professional sales activity will happen in regency level to agent or distributor in big city. Biggest distributor in South Sumatera Province came from Palembang City, with 65.22% average sales while the rest is sold inside the home regency or it's surrounding.

Table 1: Contribution of 3 regions with largest rice production to rice production in South Sumatera

Year	Contribution of rice production region			Total
	OKI	OKUT	Banyuasin	
2005	17.94	19.17	26.53	63.65
2006	18.95	18.96	26.51	64.42
2007	18.95	18.96	26.51	64.42
2008	18.95	18.96	26.51	64.42
2009	18.95	18.96	26.05	63.96
2010	24.62	27.69	26.16	78.47
2011	18.11	26.11	25.39	69.61
2012	18.90	23.01	28.68	70.59
2013	16.11	21.13	27.45	64.69
2014	16.54	20.47	26.11	63.11
2015	11.48	15.91	22.76	50.14
Average	18.14	20.85	26.24	65.22

Source: South Sumatera in Figures 2016 (BPS, 2016)

Table 2: Rice sale percentage in South Sumatera Province 2014

Province	Purchase (%)	Sale (%)
South Sumatera Province	99.74	95.35
Lampung Province	-	0.22
Jambi Province	-	3.82
DKI Jakarta Province	-	0.61

Source: BPS, 2015 (processed data)

Table 3: Sales margin (SM) of rice in South Sumatera Province

Analysis	Pr (Traders)	Pf (farmers)	Pr-Pf
Average sales (IDR)	11.593.656.250	46.277.760	11.546.378.490
Average purchase value (IDR)	11.042.005.078	39.573.402	11.002.431.676
Average transportation cost (IDR)	46.890.000	0	46.890.000
Average TTM (IDR)	550.651.172	6.704.358	543.946.814
Average TTM (%)	5.00	14.00	5.00
Average SM (IDR)	503.761.172	6.704.358	497.056.814
SM Ratio (%)	4.00	14.00	4.00

Source: Field survey, 2016 (processed data), TTM: Trading and transportation margin

4.6. Rice Sale Margin

Sale margin is achieved from the difference of purchase price to sale price. That result can be subtracted if we include rice transporting expense or transportation cost. Sales margin analysis is done in three regencies that represent South Sumatera Province. In its execution, there is a difference in sales margin but it's insignificant so this study use average data to determine the amount of margin. (Table 3)

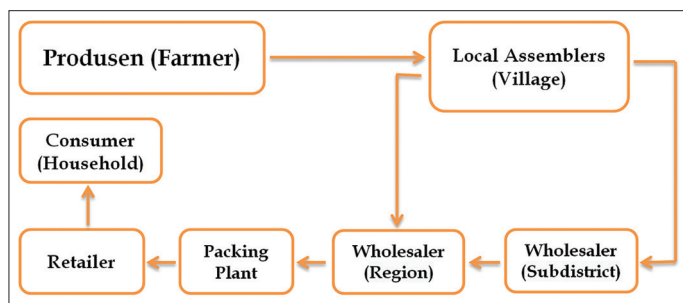
Rice volume and sales value by merchant is bigger compared to farmer. However, generally, farmer's average sales margin ratio is higher compared to merchant's sales margin, which is 14.00-5.00%. Farmer didn't spend transportation cost because most of the local assemblers give transport facility to farmers, while local assemblers must shoulder the transportation cost to wholesales for packaging, so as to give effect to the rice sale price. This finding is indicated by sales margin that went down from 5.00% to 4.00%.

The finding is consistent with BPS' report (2015) which shows that average sales margin for wholesalers is 15.19%, and if subtracted by transportation cost become 13.86%. Retailer category (distributor, agent, and supermarket) achieve 26.87% sales margin, and if subtracted by transportation cost become 24.02%. Generally, these findings can be categorized as efficient.

5. CONCLUSIONS

Rice production growth in South Sumatera is experiencing a quite significant increase. Rice production centers in Banyuasin, OKI, and OKUT regency. Findings showed that total rice produce in South Sumatera mostly distributed to its own region as much as 95% out of total production. While the rest 5% is distributed to other region, such as Jakarta, Jambi, and Lampung.

Figure 5: Sale pattern of rice production in South Sumatera Province



Source: Survey and observation result (processed)

Long distribution chain still become a problem in rice marketing in South Sumatera. Distribution channel from farmer (producer) → traders (local assemblers) → district level merchant (wholesaler subdistrict) → regency/city level merchant (wholesaler region) → recipients traders and spreaders (packing plant) → retailer → consumer (consumer). This fairly long chain of distribution will have effect to high price of rice in South Sumatera region.

This research also found that from trading and transportation margin (TTM) shows that farmer's TTM percentage is higher than merchant's TTM, even though the nominal transaction value of rice trading by merchant is higher than farmer's.

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