LOCAL WISDOM: LOCAL RICE BREEDING APPROACH TO SUPPLY CHAIN AND VALUE ADDED IN THE INDRAMAYU DISTRICT, WEST JAVA

LILIS IMAMAH ICHDAYATI, RIZKI ADI PUSPITA SARI

Abstract: Build self-reliance of farmers in rice breeding, seen from the re-emergence of local seed rice varieties. While the advantages of local rice seeds attract the surrounding farmers to plant local rice in paddy fields wider. This activity is the economic impact on farmers breeders and farmers around the common. Although not certified, but the creativity of farmers receive legal protection through MOJ Decision No. 99 / PUU-X / 2012, so that the seed and grain farmer breeders creative product can be marketed to its own community. Rice supply chain in Indramayu district involving nine marketing agency that farmers, wholesalers, millers, middlemen, middlemen grinder, grinding mill, Bulog partners, Bulog, retailers, and consumer markets outside the district. The shortest Marketing channel is from farmer breeders to consumers. The highest marketing margin is the middleman milling and rice mill factory respectively by 27.49% and 22.7%. This is because the rice milling process contained yield of 60% - 75% of paddy to rice. The percentage share of farmers amounted to 46.86% with gains of 4.03%. Lastly, the added value of grain/ rice in Indramayu district is not occur due to processing, but the values formed by the treatment of labor inputs and activities to form a new, higher price. Total value added from upstream to downstream of the largest occurred in the shortest supply chain breeder farmers to consumers, with the added value of Rp. 9.252- per kg, with the ratio of value added 67.7% which is high value added.

Keywords: Farmer Rice Seed Breeders, Supply Chain, Value-Added, Local Wisdom

I. INTRODUCTION

Rice production in Indonesia is marked by: (1) the area of rice farming land tenure is relatively narrow with an average area of 0.3 ha per farmer, (2) about 70 percent of rice farmers belonged to the poor or low-income, (3) approximately 60 percent of net consumer of rice farmers of rice, and (4) the average farm household income from rice farming only about 30 percent of total household income (Suryana et al., 2001). Indramayu district is known as the granary in the province of West Java, Indonesia. Indramayu high rice production is due to the vast increase in wetland and paddy planting area. As an icon of West Java’s rice farming, it is fitting Indramayu able to develop a ‘brand’ itself. Since the program rolled out to empower farmers through ‘Participatory Plant Breeding Field School’ (SLPTP) in 2002 up to 2010 in Indramayu district, breeders have produced up to 400 different varieties of rice. Local rice seed distribution is done by means of seed exchange among farmers. This way is considered more secure and does not violate government regulations. This activity is the economic impact on farmers breeders and farmers around the common. Therefore, it is necessary to study further how the rice trade system at the local level. Meanwhile, the floor price is not denounced by the Government, making it very vulnerable to price game in the field. This trading system issues can be traced through the supply chain approach and value chains. The purpose of this research is:

1. Analyze the distribution supply chain of rice and local rice produced by Farmer (breeder) to end consumer.
2. Analyze the added value derived from rice farming and local rice based on the local wisdom.

There are a few major players who are companies that have the same interests, such as suppliers, manufacturer, distribution, retail outlets, and customers, forming a chain of marketing (Indrajit and Djokopranoto, 2002:6). According to Kaplinsky and Morris in the Australian Center for International Agricultural Research (2012: 12), there are four aspects of the analysis of the value chain in the agricultural sector is important. First, at the most basic level, an analysis of the value chain systematically map the actors who participated in the production, distribution, marketing, and sales of a product (or product variety) specific. This mapping analyze the characteristics of various actors, profit and loss structure, the flow of goods along the chain, employment characteristics, as well as the purpose and volume of domestic and foreign sales.

II. DETAILS EXPERIMENTAL

The research location is the local rice production centers in Indramayu district, West Java. Data retrieval research carried out for 2 months (July-August 2016). Sampling was done by sampling nonprobability technique, rather purposive sampling, that farmers in Indramayu were revitalized in 13 districts and 31 villages. Beside farmers, the data collected from rice traders, wholesalers, exporters and
informants associated with this research. Search farmer breeders derived from Winarto (2011) research results, which further developed in the field until the number of samples sufficient for research. While the sample middlemen get to the last level business administration paddy / rice is obtained based on the previous level. The samples used in this study amounted to 60 people. The data used in this study are primary data. The primary data obtained from interviews with the questionnaire guide. The data used include the characteristics of the sample, the production and the factors of production and the financial condition of farmers.

The starting point of the supply chain of grain / rice produced by farmers breeders done through information gathered from the book "BisaDewek" (Winarto, 2011). The formula for calculating the value added of Hayami method that has been simplified by Suryana (1990):

\[ NT = NP - (NBB + NBP) \]

Information:
- NT = Value Added (Rp/kg)
- NP = Value Processed Products (Rp/kg)
- Raw materials NBB = Value (Rp/kg)
- Supporting Materials NBP = Value (Rp/kg)

### III. RESULTS AND DISCUSSION

#### 3.1 Supply Chain Analysis of Rice in Indramayu District

Rice farming in Indramayu mostly using superior seed nationally, as Ciherang, IR 42 and Mekongga. The seeds were obtained by farmers by buying from the farm shop with an average price of Rp. 5,000, - per Kg. In addition to the certified seeds, some farmers use local seed breeding farmers. Respondents who use certified seeds in this study were 17 people (58%) and those using local seed breeding work of farmers as many as 14 people (42%). Most small farmers in Indramayu district has been able to produce their own seeds are used to try to rice farming. The success of farmers produce new cultivars showed that farmers were able to adopt the methods of seed selection and seed set of cross-linking process plant breeders developed by scientists.

The main reason farmers use seed breeders is to reduce dependence on the seed generated tersertifikat seed company so as to minimize production costs. Seed breeders are known as "seed dream" is not sold commercially and are not available in the farm shop. Therefore, farmers who did not do his own breeding generally get dream seeds by way of exchange of seeds or buy it directly to breeders at a price to be mutually agreed. Typically, the agreed price of seeds which did not differ significantly with government seed price. When the study was conducted, the average price of seeds produced by farmers breeders agreed Rp. 5,000, - per Kg according to the average price of government seed.

The average cost of production per unit on farmer breeders who use the seed "dream" is Rp. 2,208, - per Kg, meanwhile the average cost of production per unit if they use government seed reached Rp 2,825, - / kg. However, if the wetland leased the production cost per unit of rice farming on average be Rp.3,854, - / kg. The difference in selling price of Milled rice production cost per unit using the farmers' seed breeders is big enough. This suggests that farmer breeders can provide added value to the product.

Rice supply chain in Indramayu involves six (6) major actors, namely:
1) Farmers are the main suppliers of grain, as the starting point of the supply chain. Grain produced from a series of processes in paddy rice cultivation through land preparation activities - planting - maintenance - harvest. There are three treatment against the grain farmer: (1) dry grain harvest (GKP) that is sold entirely completed grain harvesting by farmers. (2) dry grain store (GKS) grain farmers that have been dried and stored in a warehouse that is simple, (3) of milled rice (GKG), the grain is dried until the water content of 14%, it is feasible milled grain. Prices received by farmers USD 4000 - 4300 / kg grain, farmers specialized breeders selling price of grain was higher at Rp 7,000 / kg grain and sell rice at Rp 12000-20000 per kg rice.
2) Traders collectors are middlemen who buy grain from farmers and sell it without any treatment, just move the grain to middlemen grinder.
3) Tengkulak (middlemen)grinders are grinding mill owners with simple technology. The functions performed by these middlemen already resembles the functions performed by rice milling plant. But the quality of whole rice produced is still rough due to the use of the machine is still modest. The business activities of the rice mill run only during the harvest season and the month after that, depending on the size of the crop in the region around the rice mill located. The price of rice at the middleman grinder Rp. 5700 - 7250 / kg rice
4) Plant Grinding mill is a large capacity with a wide range of suppliers of grain to Central Java and East Java so that it can operate throughout the year. Large capacity with advanced technologies capable of producing interesting rice with plastic bags branded packaging. Sales of rice by labeled packing able to reach the market in Karawang and Jakarta. The price range in the level of rice mill Rp 7200-10000 / kg rice
5) Retailers are traders who sell rice in small volumes for domestic (retail). Rice sales facilities in the form of rice store. There are two types of stores, namely stores owned Yag grinders as outlet stores of rice and rice are in Indramayu that serves consumer markets such as the city of the civil / private, educators, nonresidents of other farmers. The price of rice at the retail level between Rp 7,500 to Rp 9,500 / kg
6) Bulog is a government-owned enterprise (SOE), which served to absorb the rice harvest in the form of grain or rice. 8 warehousing capacity owned able to
accommodate 80,500 tons. Bulog in collaboration with partners or PIU (work unit) which buys paddy / rice directly from farmers or grinder. Bulog existence of a guarantee for farmers market, although the price set is always lower than the market price. Bulog price determined in accordance the government purchase price of Rp 7300 / kg rice.

The supply chain structured in Indramayu with the intermediary level, are:

1. Farmer - Farmer Collectors - Factory Grinder - Bulog partners - Bulog (4 levels)
2. Farmer - Farmer Collectors - Factory Grinder - Bulog (3 levels)
3. Farmer - Farmer Grinder - Grinding Plant - Retailers (3 levels)
4. Farmers - Tengkulak grinder - Grinding Plant - Markets outside the District (3 levels)
5. Farmers - Tengkulak grinder - Grinding Plant - Bulog Partners - Bulog (4 levels)
6. Farmers - Factory Grinder - Market outside the District (2 levels)
7. Farmers - Factory Grinder - Bulog (2 levels)
8. Farmers - Factory Grinder - Retailers (2 levels)
9. Farmer / Grinder - Consumer (level 0)

Each of these marketing agencies are connected through the flow of goods, information flow and cash flow. The flow of grain / rice flows from upstream to downstream of the main suppliers of grain farmers through the cultivation of rice, then distributed by the collectors to the mills that transform into a rice paddy, then by the retailer / Bulog / markets, rice up to the consumer. The flow of money flowing from downstream to upstream and the flow of information occurred during a meeting between agencies involved in the rice supply chain.

3.2 The Added Value Analysis

Farmer is a leading producer in producing grain rice as raw material management. With a maximum work farmers can assist government programs that achieve rice self-sufficiency target, with an active role in agriculture and food security. However, the current problem, especially farmers who have no paddy fields (farm laborers) and the wetland has a narrow, well-being is still low. The low welfare of farmers is due to the low value-added products that are enjoyed by farmers. Farmers sell crops for granted.

The process of harvesting rice held by the farmers themselves with spending a large workforce. While such post-harvest drying process, the grinding process, the process of packaging and sales process to final consumers are often carried out by other parties. The high added value is in the post-harvest processing and sales process, while the risk of failure of farming more are in the process of rice cultivation in paddy fields. So, farmers get little added value because it takes a long time starting from land preparation to harvest time plus run the risk of crop failure due to various reasons, so it is difficult to expect farmers get adequate welfare. In fact, in some areas, limitations in the field of capital forced the farmers depend on other parties in the provision of agricultural inputs such as fertilizer and Pesticides which will be paid to the yields.

Based on the calculation of the value-added method is known Hayami, total amount of added value from upstream to downstream. The added value obtained in the shortest chain of the supply chain from breeder farmers directly to consumers without intermediaries, greater than the value added in the pattern of other supply chain. Farmer breeders and organic farmers in this marketing channel (supply chain 9th) was able to produce rice that can be directly marketed to the domestic consumers. The resulting rice productivity by an average of 65.7 kw / ha in need of seed as much as 20 kg / ha. Thus 1 kg of seed will produce 3.28 kw/ha. This is an added value for farmer breeders.

The value of organic rice produced by farmers and breeders / average organic is worth Rp. 13,667, - per kg, while the value of raw materials and auxiliary materials Rp. 4415, - per Kg. Therefore, the added value obtained in the total rice supply chain farmers to consumers in the ninth pattern of supply chain is Rp. 9252, - per Kg. According to Sudiyono (2004) that the added value is high when the ratio of the added value of more than 50% and vice-versa. The Value-added grain / rice in Indramayu district not occur due to processing, but the values formed by the treatment of labor inputs and activities to form a new, higher price. Total value added from upstream to downstream of the largest occurred in the shortest supply chain breeder farmers to consumers, amounting to Rp. 9.252- per kg, with the ratio of value added 67.7% which is relatively high added value.

CONCLUSIONS

Research on local wisdom with the approach of the supply chain and value-added in Indramayu provide the following conclusions:

1. Rice supply chain in Indramayu involving nine marketing agency that farmers, wholesalers, middlemen grinder, grinding mill, Bulog partners, Bulog, retailers, and consumer markets outside the district. Each of these marketing agencies are connected through the flow of goods, information flow and cash flow. The flow of grain / rice flows from upstream to downstream of the main suppliers of grain farmers through the cultivation of rice, then distributed by the collectors to the mills that transform into a rice paddy, then by the retailer / Bulog / markets, rice up to the consumer. The flow of money flowing from downstream to upstream and the flow of information occurred during a meeting between agencies involved in the rice supply chain.
2. The added value of grain / rice in Kab. Indramayu not occur due to processing, but the value formed by the treatment of labor inputs and activities to form a new, higher price. Total value added from upstream to downstream of the largest occurred in the shortest supply chain breeder farmers to consumers, amounting to USD 9.252- per kg, with the ratio of value added 67.7% which is relatively high added value.

ACKNOWLEDGMENT

This research uses respondent farmer breeders by tracing back the farmers breeders figures based on the anthropological research conducted Winarto (2011), which is able to identify the presence of the breeder farmers spread across 11 sub districts from 16 sub district in Indramayu district. Farmers breeders who raised his case by Winarto (2011) of 33 people scattered in 16 districts. Farmer breeders who successfully traced back there are 18 people (50%) and are willing to become respondents only 10 people, subsequently obtained information on the flow of products, information and money in order to get an overview of supply chain rice in Indramayu. The limitation of the study is to use a simple analysis in determining the income of farmers breeders through the analysis of farm income. Margin trading system arising from the process of buying and selling grain rice varieties created by farmer breeders (dream seed) through the agencies involved will determine the profitability of each level business administration. The final analysis is to see the value added generated during the course of sale and purchase transactions of grain and its conversion into rice at every level of business administration. Overall, therefore, it can be seen profits at the level of the producer (farmer breeders) and subsequent trading system level reaches the consumer.

REFERENCE