

STRUCTURE AND ACTOR ANALYSIS IN DKI JAKARTA RICE SUPPLY CHAIN

Dadang Surjasa¹, Dedy Sugiarto¹, Nirdukita Ratnawati², Binti Solihah³

¹ Industrial Engineering Department, Faculty of Industrial Technology - Trisakti University

² Economics Department, Faculty of Economy - Trisakti University

³ Informatics Department, Faculty of Industrial Technology - Trisakti University
d_surjasa@yahoo.com, dadang@trisakti.ac.id

ABSTRACT

The objective of this research is to describe structure of DKI Jakarta rice supply chain and to describe uniqueness of some actors in creating value added from this supply chain. Research was done at sub-district of Cilamaya in Karawang, sub-district of Tukdana in Indramayu, sub-district of Jamblang in Cirebon and sub-district of Ciparay in Bandung. Data was collected by direct interview. The results showed that almost all DKI Jakarta rice supply chain networks through Cipinang Rice Wholesale Market (Pasar Induk Beras Cipinang/ PIBC). Some rice suppliers, supplying rice directly to the merchant or agent in DKI Jakarta and then market it to the end consumer. One of the final result from this research is that the owners of rice mills in Cirebon and Cilamaya, generally bring their own rice directly to PIBC, while in Bandung the owners generally bring their own rice in groups through cooperatives and then sell them to PIBC.

Keywords : *Cipinang Rice Wholesale Market, DKI Jakarta, rice supply chain*

1. INTRODUCTION

In general, the supply of rice consumed by DKI Jakarta society originated from rice farmers from different areas such as from Cirebon, Indramayu, Subang, Bandung, Karawang, Garut, Tasik, Sumedang, Tegal, Solo, Demak, Pati, Kediri, Lumajang, Surabaya, Lampung, Palembang and Makassar. In general, the supply of rice begins from farmers, collector, milling, large traders, small traders until to consumers. Rice supply coming into Jakarta mostly through rice trading center known as PIBC (Pasar Induk Beras Cipinang).

According to the Central Bureau of Statistics (2009), procurement of rice for Jakarta, both at distributors level and traders come from producers who were in other provinces. Most of the rice distribution at the distributor sold to wholesalers (49.48%), then to the agent (24.82%), to retail traders (17.19%), to sub-distributors (6.30%), to the supermarket (1.62%), to the end users (0.57%), and a small portion to the other business activities (0.02%).

Furthermore, based on results of Statistics survey (2009) on the distribution pattern of trade in the sixteen commodities in fifteen Province, the pattern of rice

distribution channels have some patterns, some have short chains or simple and some were having a fairly long chain or complex. Illustration of the supply chain can be seen in Figure 1. Supply of rice that goes to Jakarta via PIBC based on data PIBC (2009) mainly comes from areas such as Cirebon (37.2%), Karawang (31.85%), Central Java (16.45%) and Bandung (9.56 %). Supply of rice out of PIBC, were distributed to different regions to areas of Jakarta, Bogor, Tangerang, Bekasi, West Java, Central Java, East Java and inter-island. Based on PIBC data, for 2005, 65.98 % of rice was distributed to a number of markets in Jakarta, 16.21% distributed between islands, 14.91% of rice distributed towards Bogor, Depok, Tangerang and Bekasi, while the remaining 2,9% was distributed to West Java, Central Java and East Java.

The objective of this research is to describe structure of DKI Jakarta rice supply chain and to describe uniqueness of some actors in creating value added from this rice supply chain.

2. LITERATURE REVIEW

Several previous studies related to the supply chain of rice, has been done. Goel and Bhaskaran (2007) examined the marketing, market structure and corporate policies to coordinate the distribution of rice, Blengini and Busto (2009) discusses the study of the production system cycle began cultivating rice paddy to rice shipments to retail in Italy, Latif, et al. (2009), examined the results of the comparison between the method of rice cultivation BMP (Best Management Practice) with SRI (System of Rice Intensification), while Moustier, et al. (2010) examines the opportunities an organization of farmers who produce rice to enter the modern retail in Vietnam

3. RESEARCH METHODS

Methods of research conducted through descriptive method with the data and information obtained through interview techniques and secondary data. Research conducted in the province of DKI Jakarta focused in the PIBC, while for the Province of West Java, the study focused on several areas of the District which were the center of rice production and were a major supplier of rice to Jakarta. Those area are at sub-district of Cilamaya in Karawang, sub-district of Tukdana in Indramayu, sub-district of Jamblang in Cirebon and sub-district of Ciparay in Bandung.

4. RESULTS AND DISCUSSION : Structure and actor analysis of rice supply chain.

In general, rice farmers in West Java are tenant farmers like in the district Ciparay, Bandung district where nearly 90% of rice farms owned by the owners of capital who live in Bandung. Tenant farmers take advantage of farming based on the principle of sharing the turnover with 50:50 ratio with land owners. The cost of fertilizers, pesticides and additional labor are the responsibility of farmers. While the cost of land and building tax are the responsibility of the land owner. From the research, the structure of rice supply chain that enters

Jakarta area, on generally it can be identified that this structure begins from farmers, collector, milling, traders in PIBC, traditional retailers until the final consumer. In a simple way, illustration of this structure can be seen in Figure 2 (Surjasa, *et al.*, 2013). From Figure 2, it can be further identified that the rice supply chain structure through PIBC, also involving cooperatives, Bulog and supermarkets.

Rice farmers from Karawang region was represented by Cilamaya farmers who are members of the Cooperative Bagja. This cooperative has a Rice milling named CV. SDK Putra. The cooperative has a primary function as a provider of agricultural production inputs and savings and loans. Farming systems in Cilamaya still use the conventional way though organic farming system has previously been performed for 3 seasons. Organic farming systems can not survive in this region due to cultural factors farmers who are not familiar with the use of manure and manure supply difficulties although land productivity have reached 15 tons/ ha. Currently rice productivity with conventional systems only reach 5-6 tons/ ha with 2 (two) times a year planting.

Rice milling in Cilamaya consists of medium and large-scale milling with a milling capacity of more than 0.75 tons of rice per hour. Rice milling machine configuration consists of dryers, husker, separator and polisher. Rice milling owners in Cilamaya with SDK and SDK putra trademark is able to process the grain with a production capacity of 20 tons of grain per day and produce approximately 10 tons of rice per day. The drying process using an oven with a capacity of 10 tons and 20 tons of grain, grain leather splitting process using 2 husker machines, one machine is used to break up the repetition grain leather that has not been good result from the separator machine. Rice polishing using a machine polisher for two times. The second polishing use liquid aloe vera. The results of polishing then go into the rice separator machine which can produce the head rice.

Farmers who supply grain to the milling in the Cilamaya region comes from Cilamaya itself or come from other areas such as Indramayu, Cirebon, Demak and Banten. Rice milling buy paddy from farmers through intermediaries or local informants.

The process of drying, milling and rice grouping based on quality (grading) was performed in milling. The rice is then sold to wholesalers both in PIBC or in Johar Market Karawang for resale to retailers and ultimately to consumers.

Rice supply chain in Indramayu district starting from the farmers to the consumers with a supply chain involving multiple actors. Supply chain actors involved in the Indramayu district are farmers, collector, milling (Rice Milling Units / RMU), a wholesaler in Cipinang market, market Widasari and market Johar (local market) as well as retailers in Indramayu and retailers in Greater Jakarta (Jabodetabek). Besides this supply chain, in the district of Tukdana Indramayu, process of rice supply can involve Bulog agency. Supply of rice from milling to Bulog will then be distributed to the poor society (Raskin) or saved as a government rice reserve to be used if there was a shortage of rice supply or price fluctuations.

Rice supply chain in the district of Tukdana starting from grain sales by the collector who was also in charge of providing information to the rice mill. In the harvest season around February and March, grain easily obtained from the area surrounding districts of Tukdana and Indramayu, until Ujung Jaya Sumedang. However, if the dry season, around November to January, the purchase of grain by milling can come from outside of Indramayu, even down to Sragen, Central Java.

Rice type which was dominant in the area was IR64 with prices ranging between Rp 4000.00 per kilogram of dry harvest grain (GKP). GKP selling was usually done when the farmers do not want to be bothered with further drying process, as it requires faster cash for household use or pay cash input costs due to lack of infrastructure or adequate drying. However, if farmers dry them first before sold to the mill, the price of rice will be higher around Rp. 4500.00 per kilogram of milled rice (GKG). Grain at further stage will be processed in the mill. Milling (Rice Milling Units) will process the grain through the stages of cleanup of the leaves in the first molen and skin splitting in second molen. In milling actors, there were two different characteristics related to the

process of marketing channels. Milling with respondents in Cirebon, fully buy grain from farmers and further processed into rice which is ready to be sold to wholesalers in the Cipinang market or at a certain time to Bulog. One large-scale rice milling was CV. Fajar Niaga (capacity 50-60 tons of rice per day) in Widasari market, buying raw materials in the form of rice from the grinder (RMU 1) in Indramayu and also from outside (including Purwodadi). Low quality rice will be processed within second molen and polisher machine to obtain the final result in better quality rice. Further milling will sell it to the Cipinang market.

Farmers from Jamblang areas was usually sell this grain through brokers / informants who are considered as collectors. Aside from local farmers, mills in Jamblang area can procure grain from various regions, such as from Demak, Kudus, Sragen, Ngawi, Jepara, Madiun and Brebes. Rice which is produced by milling, distributed more to PIBC Jakarta rather than to the local market.

Rice supply chain from Ciparay Bandung to PIBC Jakarta has a fairly short route. Grain produced by farmers and then sold to milling. Before entering into the mill, usually the informant linking the farmers with the milling. Informants get a fee from this process. Furthermore, the rice produced by the mill was sold to the rice traders in PIBC and some have also sold to traders / local markets around Bandung. Milling in Bandung regency getting grain from some areas, such as from Soreang, Ciparay and Majalaya

5. CONCLUSION

1. Rice supply chain from various regions towards Jakarta has a fairly complex structure and complex. In general, they were starting from farmers and then milling rice, wholesalers who were concentrated in PIBC and continued to retailers until to consumers.
2. Rice farming system was divided into two parts, conventional farming and organic farming. Examples of conventional farming actors were farmers in Cilamaya Karawang and examples of organic farming actors were farmers in Ciparay Bandung.

3. Rice milling was generally divided into two scales, namely the medium and large scale as numerous in Cilamaya Karawang, Tukdana Indramayu and Jamblang Cirebon. While of small-scale rice mills are common in Ciparay-Soreang Bandung District.
4. In general, the rice supply chain in Indramayu, Karawang and Cirebon district, involve more supply chain actors than from Bandung district, both in terms of suppliers and distribution side.

6. ACKNOWLEDGMENT

This paper is a part of research that is funded by the Directorate General of Higher Education, Ministry of Education and Culture, in accordance with the Assignment Agreement Implementation Research Priorities for Fiscal Year 2013 No.175/A/LPT/USAKTI/IV/2013.

7. REFERENCES

- (a) Badan Pusat Statistik. 2009. Laporan Hasil Survei Pola Distribusi Perdagangan 16 Komoditi di 15 Provinsi.
- (b) Goel. V., S. Bhaskaran. 2007. Marketing Practices and Distribution System of Rice in Punjab, India. *Journal of International Food & Agribusiness Marketing*, Vol. 19 (1).
- (c) Latif, M.A., M.Y. Ali, M.R. Islam, M.A. Badshah, M.S. Hasan. 2009. Evaluation of Management Principles and Performance of The System of Rice Intensification (SRI) in Bangladesh. *Field Crops Research* 114. 255–262.
- (d) Moustier, P., P.T.G. Tam, D.T. Anh, V.T. Binh, N.T.T. Loc. 2010. The Role of Farmer Organizations in Supplying Supermarkets with Quality Food in Vietnam. *Food Policy*. Vol. 35 Issue 1, p. 69-78.
- (e) Surjasa, D., D. Sugiarto, N. Ratnawati, B. Sholihah. 2013. Laporan Akhir Penelitian Prioritas Nasional Masterplan Percepatan dan Perluasan Pembangunan Ekonomi Indonesia 2011 – 2025 (Penprinas MP3EI 2011 – 2025).

AUTHOR BIOGRAPHIES

Dadang Surjasa is a lecturer in Department of Industrial Engineering, Faculty of Industrial Technology, Trisakti University, Jakarta. He received his Master in Industrial Engineering from Indonesian University and and his Doctoral degree in Agroindustry Technology from Bogor Agricultural University. His research interests are in the area of Logistics, Supply Chain Management and Decision Support System. He is a member of the Modelling and Simulation System Laboratory. His email address is <d_surjasa@yahoo.com> and, dadang@trisakti.ac.id

Dedy Sugiarto is a lecturer in Department of Industrial Engineering, Faculty of Industrial Technology, Trisakti University, Jakarta. He received his Master in Management from Trisakti University and and his Doctoral degree in Agroindustry Technology from Bogor Agricultural University. His research interests are in the area of Quality Engineering, Decision Support System and Knowledge Management. He is a member of the Quality Engineering Laboratory. His email address is <d_giarto@yahoo.com> and , dedy@trisakti.ac.id

Binti Solihah is a lecturer in Department of Informatics Engineering, Faculty of Industrial Technology, Trisakti University, Jakarta. She received her Master in Informatics Engineering from University of Indonesia. Her research interest is in the area of Software Design. Her email address is binti76@yahoo.com

Nirdukita Ratnawati is a lecturer in Department of Economics, Faculty of Economics, Trisakti University, Jakarta. She received her Master in Economics from Indonesian University. Her research interest is in the area of development studies. Her email address is <nirdukita08@gmail.com>

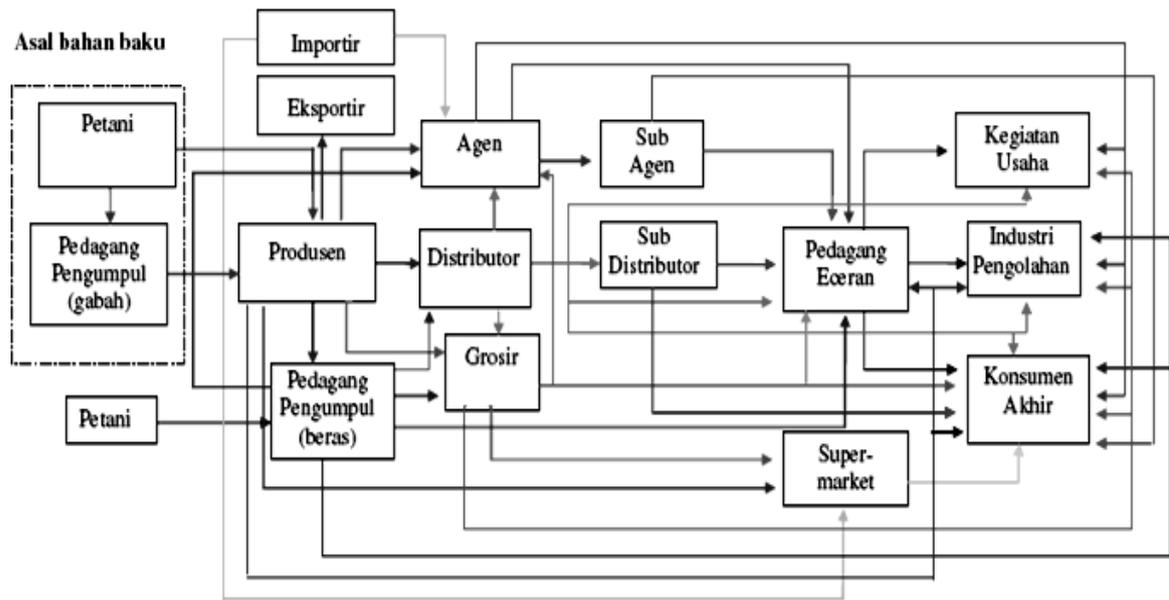


Figure 1. Rice Distribution Pattern in DKI Jakarta (Badan Pusat Statistik, 2009)

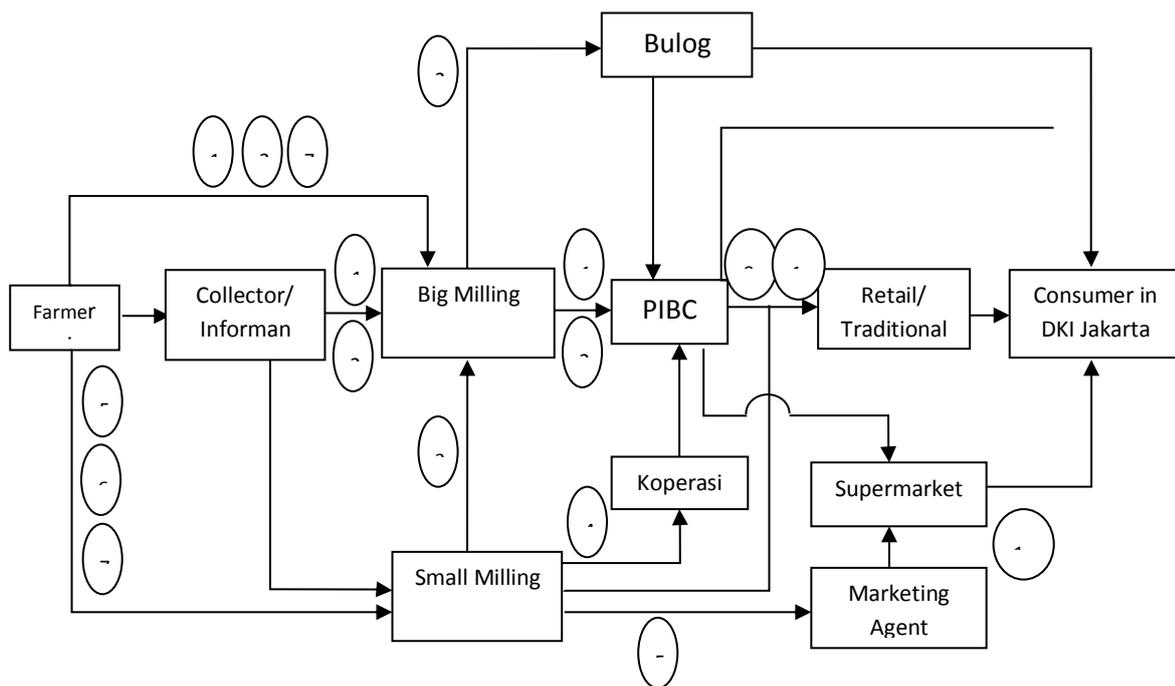


Figure 2. Rice Supply Chain Structure Towards to Consumer In DKI Jakarta

Additional Information

- | | |
|--|--|
| 1 : CV. SDK Putra, Cilamaya, Karawang | 6 : Sulaeman, Soreang, Bandung |
| 2 : CV. Idztie Geotani, Cilamaya, Cirebon | 7 : Gapoktan Tukdana, Indramayu |
| 3 : CV. Fajar Niaga, Indramayu, Karawang | 8 : CV. Mustika Asih, Soreang, Bandung |
| 4 : H. Asep, Ciparay, Bandung | 9 : CV. Tani Jaya |
| 5 : Gapoktan Sarinah Organik, Ciparay, Bandung | 10 : CV. Sari Bandung |
| | 11 : PT. Sarinah Mandiri |