

SUPPLY CHAIN ANALYSIS OF RICE SEEDS: SUPPLIER RELATIONSHIP MANAGEMENT PERSPECTIVE AT MALANG REGENCY, EAST JAVA, INDONESIA

Rini Dwiastuti, Riyanti Isaskar , Tri Wahyu N. , Anisa Aprilia, Putri Budi S.

Agriculture Faculty, Brawijaya University, Malang, Indonesia

Email: rinidwi.fp@ub.ac.id

Abstract

The aim of this research is to analyze supplier relationship management by two schemes of cooperation in rice seeds production, Farmer to Partner Farmers I (PF I) and Partner Farmers I to Partner Farmers II (PF II). Determination sampling methods are by multistage sampling and snowball sampling. Meanwhile, statistic descriptive by depth interview is used in this research to analyze the importance level of indicators in considering relations to rice seed suppliers. Condition in supply chain management among UD ABC, PF I, and PF II has been running well. They all agree that quality supplier selection, supplier integration, and effective procurement process are crucial indicators. Moreover, Seed Overseeing and Certification Agency (BPSB) should give accompaniment between rice seed firms and their supplier related to fulfilment of rice seed needs.

Keywords: *supply chain, supplier relationship management, rice seed*

1. INTRODUCTION

Supplier relationship management are required to organize differently and expand the supply foundation in order to continuously repair its performance, and important issue in supplier-buyer relationship management that has attracted much research attention appropriate to knowledge sharing and innovation for value creation. Then supplier relationship management ability involve institution processes and routines oriented at initiation, development, and the ending of supplier relationships (Forkmann, Henneberg, Naudé, & Mitrega, 2016; Su & Yang, 2017). Meanwhile, the seed industry of agricultural has expanded the mixed system that more effectively harmonize newly introduced hybrids variety (Burer, Jones, & Lowe, 2008).

Successful relationships which have high levels of innovation must necessarily have contracts with at least medium levels of contractual obligation detail, as well as the highest levels of trust (van der Valk, Sumo, Dul, & Schroeder, 2016). To acknowledge residual supply-management mechanisms such as the demands from farm cooperatives and agricultural marketing is vital for maintaining agricultural sustainability while to operate

supply management in an era of interrelated global agricultural trade will be very complex and challenging (Graddy-Lovelace & Diamond, 2017).

For companies that follow a sustainability strategy, the majority of stakeholders need to be taken into account in the context of a stakeholder group. Supply chain management orientation is also required before a chain can perform to a triple-bottom line. Then, the commitment to merge the members of the supply chain such as make joint decisions, share knowledge or ability to access knowledge, integrate technology and logistics, seeking partner development, etc. It may be considered a precondition for fulfilling a commitment to viability (Beske, Land, & Seuring, 2014).

Thus, it is imperative that suppliers along the supply chain find a better way for the suitability of supply and demand to reach the optimal level of cost, quality and customer service and will allow it to compete with other supply chains (Wisner, Joel D. Tan, Keah-Choon, & Leong, 2012), while uncertainty handling in agricultural supply chain management has absorbed great attention (Borodin, Bourtembourg, Hnaien, & Labadie, 2016).

Rice seeding activities as part of food crop seeding program is a chain of activities that must be implemented continuously and integrated starting from seed breeder (BS / Breeder Seed), basic seed (FS / Foundation Seed), seed stock (SS) until the seed spread (ES / Extension Seed). If a link is disconnected or not properly implemented, then its impact will affect subsequent propagation activities in producing superior quality seeds that will result in stunted production activities, patterns of development and dissemination and availability of seeds as expected. Therefore, in every development of grain, especially rice, must be done through the effort of supervision and security of production intensively and integrated by involving various related elements including stakeholder or actors engaged in seed (BPPP, 2004).

Maintaining a good cooperation with partners (in this case partner farmers) is one of the important things that should be considered by rice seed producers considering the success in the cooperation relationship cannot be achieved just like that. The success of a cooperation will be achieved through improving the performance of the company based on the conditions of good relationships with both partners (Ahda, 2009). To maintain a cooperative relationship between the company and partner farmers requires a supplier relationship management strategy.

Meanwhile, according to data sources from Technical Implementation Unit of Agricultural Seed Inspection and Certification Centre East Java, Malang Regency is one of the areas included in the top five producers participating in the largest rice seed production system in East Java.

According to data from the Seed Overseeing and Certification Agency (BPSB, 2015), UD. ABC is a pure private rice producer with the largest production amount and the most extensive marketing area in Malang Regency. Therefore, research needs to be done to analyse the supply chain of rice seed in UD. ABC in Malang Regency, from supplier relationship management perspective as an illustration to see the condition of supply chain of rice seed in East Java.

Thus, the objectives in this research include analysing supplier relationship management in terms of qualified supplier selection, supplier integration, and effective procurement process indicators with 2 schemes of cooperation in rice seeds production, Farmer to Partner Farmers I

(PF I) and Partner Farmers I to Partner Farmers II (PF II).

2. RESEARCH METHOD

This research was conducted on UD. ABC as producer of rice seed in Malang Regency, East Java. Sampling determination in this research using multistage and snowball sampling. Multistage sampling was used according to the information from BPSB (Seed Overseeing and Certification Agency) which have criteria the biggest rice seed producer and its marketing area is the largest one. Involve Partner farmers I, Partner farmers II and UD. Its result is UD. ABC and it plays as key informant. The next step is to determine partner farmers using snowball sampling. Partner farmers I (6 farmers) are farmers who cooperate directly with UD. ABC in producing rice seed. Partner farmers II (19 farmers) are farmers who cooperate directly with partner farmers I in producing rice seeds which will then deliver the seeds of rice to the UD. ABC.

Data analysis in this research is statistic descriptive with depth interview which evaluated from indicators of qualified supplier selection, supplier integration, and purchasing process effectiveness. Indicators of the concept of qualified supplier selection include supplier performance, supplier selection process, and green supplier. Indicators of supplier integration concepts include coordination with suppliers, information integration, organizational relationships, and the use of technology and information. While the indicators of the concept of the effectiveness of the purchase process include the effectiveness of communication regarding the production and effectiveness of contract administration.

3. RESULTS AND DISCUSSION

Supply relationship management (SRM) is one of perspectives in analysing supply chain. SRM is an approach to manage firm's interaction with their suppliers (Mettler and Rohner, 2009). It is an improvement of customer relationship management (CRM) as a strategy to develop relationship between firms and their suppliers.

Pasutham (2012) measures SRM performance in 3 levels of decision making. Those are strategic, tactical, and operational which have different impact in terms of time frame impact. Strategic levels have long term impact, tactical levels are usually medium term,

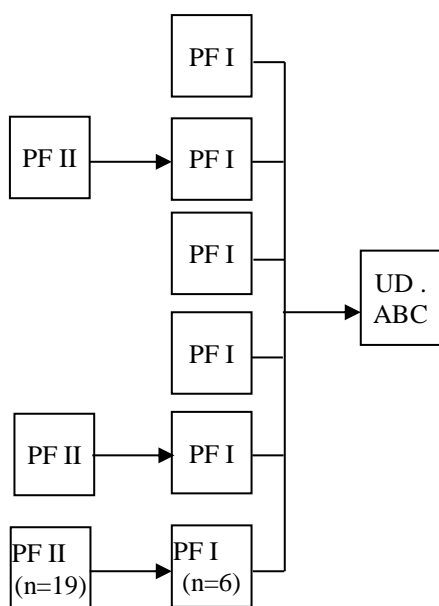
and operational issues are very short term (Srinivasan, 2017).

In this research, we define that there are two schemes of cooperation in rice seeds production:

a. Farmer – PF I

b. PF I - PF II

PF I is the ones who make a directly cooperation to UD. ABC while PF II is the ones who is related to PF I in producing rice seeds



Graphic 1. Relationship schemes in Rice Seeds Production

There are three factors measuring SRM performance in strategic level: quality supplier selection, supplier integration, and effective procurement process. These three factors have their indicators. Quality supplier selection consists of supplier performance, selection process, and green suppliers. Supplier performance shows whether supplier can deliver raw materials on time and in good conditions (Chan, et al., 2003). Selection process describes how UD. ABC selects supplier's quality. Green supplier means whether or not they consider environmental issues in choosing supplier

Supplier integration refers to coordination mechanism between firm and supplier including how they communicate and handle risk in some purchase agreement. It has four indicators: coordination and resource sharing, information integration, organizational relationship, and use of information technology.

Effective procurement process defines the efficiency of all purchasing process in order to get right products from suppliers. Its indicators are effective communication related to production and effective contract administration.

3.1. Supplier Selection

Supplier selection decision determines quality of raw material in production process. If it has good quality so that they will be able to make a good quality products.

Score of quality supplier selection is shown by Table 1.

Table 1. Score of Quality Supplier Selection

No	Variables	Score	Category
A. Firm – PF I			
1	Supplier Performance	39.67	Important
2	Selection Process	11.33	Important
3	Green Suppliers	6.17	Not Important
B. PF I – PF II			
1	Supplier Performance	39.67	Very Important
2	Selection Process	11.33	Important
3	Green Suppliers	6.17	Not Important

Supplier performance is first indicator in measuring supplier selection by considering quality of rice seeds; expectation of seed variety; delivery accuracy in time, quantity, and agreed place; and rice seed storage.

According to the interview results, UD ABC has their own standard to ensure the rice seed produced by PF I. In fact, they expect that quality of rice seeds produced by PF I has been standardized by BPSB. Quality of rice seeds are measured by the accuracy of moisture content, germination rate, and seed weight.

Both relations, firm- PF I and PF I – PF II consider that expectation of seed variety is in line with purchase agreement is important and their seed price should equal to be above market price.

Delivery accuracy definition is different among seed farmers. In this research seed firms assess the raw material delivery service from their PF whether it is accurate in time, quantity, and agreed place. Moreover it makes UD ABC feels satisfy with delivery performance of all their partner firms.

Rice seed storage is evaluated by ensuring that its stock is available in the storehouse for production or any urgent activities. UD ABC should be able to manage planting and

harvesting period for its partner farmers according to the agreement about accepting and releasing period. Furthermore, partner farmers always obey that agreement so that rice seed storage in UD ABC is always under control.

The total score of supplier performance as one of indicators in quality supplier selection is 39.67. It indicates that this indicator is important in the relationship between UD ABC as firm n its PF I. While in the relationship between PF I – PF II, supplier performance is very important (score: 41.21).

Selection process as second indicator in measuring supplier selection explains how firm selects its partner farmers as suppliers. It consists of selection stages, negotiation effectiveness, and fulfilment of obligations and rights under agreement.

Related to selection stages, UD ABC admits that there are no selection stages and there is no written agreement between two parties. That is why selection process stages are unstructured but UD ABC still have some criteria for its PF I: having high commitment, being able to be trusted, having different planting and harvesting period, planting different varieties and these varieties could be adjusted by market demands. In case performance of PF I is getting decreased, UD ABC decides to not continue its agreement for next planting period. While in choosing PF II, PF I have selection process which depends on PF II's performance and their previous production.

After passing selection process, both parties will go to negotiation process about seed production target, seed price, and market. PF I will give seed price which is above market price and PF II and its margin price is IDR 200,00. PF II does not need to worry if their products are not sold because according to the agreement that PF I is ready to share this risk by buying but in lower price. According to the interview, they have never met any failures. While agreement or contract adjustment is informally done and they all agree that it is important in running their work.

The total score of supplier selection process as second indicators in quality supplier selection for firm – PF I is 11.33 while for PF I - PF II is 12. It indicates that this indicator is important for both of them.

Green supply chain management is to integrate environmental thinking into supply

chain management (Chin, et al, 2005). UD ABC has not implemented green supply chain management. Thus in supplier selection process, environmental issues are not considered. Green supplier describes whether suppliers apply organic or semi organic farming system and green packaging. Firm – PF I and PF I – PF II show that this indicator is not important and their score is the lowest compared two other indicators.

3.2. Supplier Integration

Coordination with UD ABC's supplier should be done in order to increase production process, future cooperation, involvement both parties towards unpredictable decisions, and how they manage related to these unpredictable decisions (Pasutham, 2012).

The relationship between firm - PF I and PF I – PF II do not collaborate to increase production activities, do not have something to strengthen their collaboration in the future, and do not coordinate about extra order. It happens because there is no written agreement and there is no dependence among each other. On the other hand, all respondents think that these sub indicators are important and should be considered so that their work will run well.

Information integration explains how far all functions in delivering informations between firm and suppliers can effectively run (Chan, et al, 2003). Communication between firm-PF I related to seed stock availability, rouging schedule, harvesting, and payments.

Organizational relationship shows how suppliers or partner farmers cooperate with firm related to the same business aim that they have and any risk sharing. Firm, PF I, and PF II want to produce rice seed which meet quality standar of 6T (accurate in variety, quantity, quality, time, and location). Unfortunately, UD ABC is not willing to share risk with PF I. In case PF I 's rice seed products do not qualify, UD ABC will not buy these products. In consequences, PF I sells it at consumed grain and its price is lower than what they used to get.

Supplier integration's score can be seen in Table 2. Use of information technology implies how UD ABC, PF I, and PF II adopt the newest technology in their production process. It includes, information system in payment process, effectiveness of payment system, and difficulties in applying the newest information

technology. All respondents said that they only apply cash payments and they feel unsure to apply the newest technology since what they do recently is already comfortable for them and they have never find any difficulties.

Table 2. Score of Supplier Integration

No	Variables	Score	Category
A. Firm – PF I		56	
1	Coordination and Resource Sharing	12.83	Important
2	Information Integration	9.67	Very Important
3	Organizational Relationship	16.67	Important
4	Use of of Information Technology	16.83	Important Enough
B. PF I – PF II		51.26	
1	Coordination and Resource Sharing	11.74	Important
2	Information Integration	9.32	Very Important
3	Organizational Relationship	16.58	Important
4	Use of of Information Technology	13.63	Important Enough

3.3. Effective Procurement Process

In this research, UD ABC has seed specification list which provides produced seeds quality should be adjusted by BPSP's standards and has been agreed by two parties. This list is used to select seeds which are produced by partner farmers. For instance, if PF I produce rice seeds which are inappropriate compared to list specification, UD ABC will not buy them. This list specification is able to determine whether communication related to purchase process is effective or not.

Effective contract administration describes anything related to contract between partner farmers and firm. It includes product evaluation and verification according to agreement, payment procedure effectiveness, and purchase process effectiveness. UD ABC makes sure whether rice seeds produced by PF I meet BPSP's standardisation while PF I does the same thing to PF II.

Table 3. Score of Effective Procurement Process

No	Variables	Score	Category
A. Firm – PF I		18.33	
1	Effective Communication	6.83	Important enough

2	Effective Contract Administration	11.5	Important
		17.83	
B. PF I – PF II			
1	Effective Communication	7.36	Important enough
2	Effective Contract Administration	10.47	Important

4. CONCLUSION

Based on respondents' perception, SRM condition in supply chain management among UD ABC, PF I, and PF II has been running well. They all agree that quality supplier selection, supplier integration, and effective procurement process are important indicators. Firm - PF I and PF I - PF II assumes that the purchase price of seeds is important and the price must be above the market price. However, whether suppliers apply organic or semi organic farming system and green packaging, both parties did not pay attention on these issues because UD ABC has not implemented green supply chain management.

In addition, all parties have used the latest technology in the payment system and they have no difficulty in applying it. If there is more sophisticated information technology, they are willing to use it as long as it is useful in increasing collaboration between suppliers. Thus, UD ABC always ensures that the seeds produced by suppliers have met the standardization of BPSP as a certification body for rice seeds, and farmers' satisfaction as final consumers will always be guaranteed and the relationships between suppliers will be well maintained.

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We hope this research can enrich the science and into recommendations for the government's policy in the development of agri-based small and medium enterprises.

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