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RICE SUPPLY CHAIN PERFORMANCE ANALYSIS USING THE SUPPLY CHAIN OPERATIONAL REFERENCE (SCOR) APPROACH

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ABSTRACT

Supply chain performance measurement is conducted to evaluate the goal achievement organization and determine its position towards competitors. This study aimed to analyze the supply chain performance of rice at the farmer level using Supply Chain Operational Reference (SCOR). This study is conducted using a case study approach and purposive sampling to locate. Analyze methods using calculation of performance score in every indicator of SCOR attributes, and then the result will be compared to superior card score. Comparing results will indicate the score of parity, advantage, or superior. Results showed that some performance in supply chain activities is not optimal yet, so it has to be fixed. Activities that need to fix to reach a superior score are order fulfilment, order fulfilment cycles, cash to cash cycle time, daily stock, and total supply chain cost. We recommend that MDP Company needs to increase the volume of grains absorbed by farmer partners by adding market targets to push assets flow. The farmers had to reduce moreover remove activities that impacted increasing supply chain costs. In addition, it needs accompaniment from MDP Company to the farmer's partner, especially at post-harvest management, in order to increase the quality of milling raw material and pass the market qualification.

INTRODUCTION

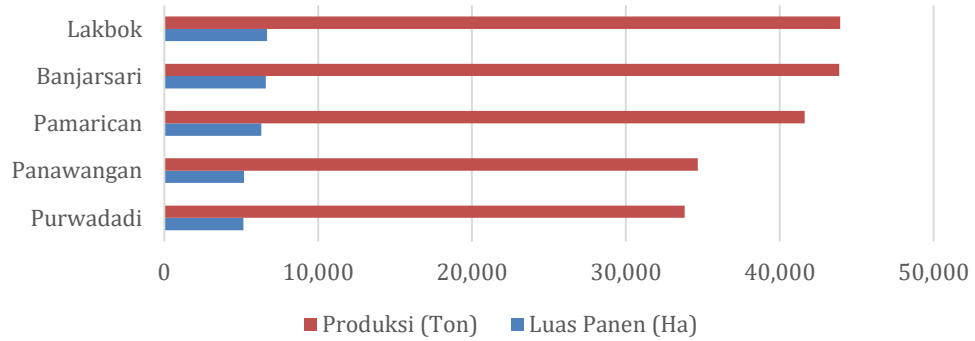
Rice is the primary food of Indonesian because most of them consume rice as their source of energy. An anecdote says, "you are not eating if you have not eaten rice yet" (Agustian & Hamdani, 2018). Rice is widely cultivated and is a staple food for about 3.5 billion people worldwide, with Indonesia being one of the countries with the highest

consumption rate, reaching 38.41 million tons in 2012 (Muthayya, Sugimoto, Montgomery, & Maberly, 2014). In Indonesia, rice accounts for 45% of the total dietary requirement, or approximately 80% of the major carbohydrate source in the consumption patterns of the Indonesian population (Indonesia Statistics Center, 2016).

Even though rice consumption is increasing, the demand for staple rice has not been met so far, so rice production in Indonesia is still low and post-harvest rice is still weak, so the rice import policy is the main reason for the unmet rice. Crop losses are still substantial and crop quality remains low. These conditions must be promptly corrected with proper post-harvest management (Desparita et al, 2020; Wuryantoro & Candra, 2022). However, rice availability in the market is primarily determined by the supply from the producer. This is a constant problem in Indonesia.

While rice is consumed in all regions of Indonesia, its production is concentrated on the island of Java. Statistics Indonesia (2019) notes that in 2018, the top rice producers in Indonesia (Octania, 2021) . Ciamis Regency had become one of the granaries in West Java, Indonesia. Based on the spatial plans of the Ciamis Regency, four districts be appointed to become "Kawasan Strategies Kabupaten" — a Strategic Regency Area — for actualizing food self-sufficiency, such as Lakbok, Banjarsari, Pamarican, and Purwodadi.

Based on figure 1. The agriculture area in Lakbok District as granary is 6.684 ha with a production quantity of 43.922 tons; Banjarsari District had 6.608 ha with 43.868 Tons production Quantity; Pamarican District had 6.316 ha with 41.624 tons, and Purwadadi District had 5.138 ha with 33.813 tons. American district had become Integrated Rice Management Center (IRMC), a government-aided rice mill, among the five most considerable sections producing rice. IRMC was a pilot project from BUMN, a State-owned enterprise, with Rural Ministry that aimed to increase farmer income to develop farmers to perform product downstream. That collaboration was named “Mitra BUMDes Nusantara”. BUMDes Nusantara’s subsidiary called “Mitra Desa Pamarican Company” had been operated in Angsana Village, Pamarican District, Ciamis regency.



source: Food Crop Agriculture Department of Ciamis Regency (2016)

Figure 1. Graphic of land and production area in the biggest districts in Ciamis Regency.

During this time, MDP company had become a farmer partner distributing crops to different cities. At least there are 14 farmer groups with 6.200 members became MDP Company partners as leading ingredient suppliers of rice mill. However, MDP Company was known only to be able to absorb 60% of the total supply of grain produced by farmers, While their warehouse had a capacity of 960 tons. This condition

makes farmers as part of the rice supply chain network at PT. MDP is not satisfied because it does not get optimal benefits. The problem at PT. MDP is related to inadquate suppy chain management.

Supply chain management can serve as an assessment of raw material suppliers for companies with high raw material requirements, facilitate product distribution according to end-user standards, and offset the threat of similar competitors (Gölgeci, Karakas, & Tatoglu, 2019). The case in Ciamis regency automatically indicates that there is something wrong with the supply chain management. The existence of weaknesses or problems in the supply chain network can be indicated by the non-optimal implementation of roles and functions. However, it should be important to have a cooperative and efficient supply chain network in rice production and other institutions involved (Weerabahu & Nanayakkara, 2018).

Chopra & Meindhl (2007) explain that supply chain structure involves all stakeholders, who play both direct and indirect roles in meeting customer needs. West Java province is one of the rice production centers in Indonesia, which produced 11 million tons of dry rice grains, contributing about 22% of the national rice production in 2014 (Irawan, 2014). This study investigated the activities of different stakeholders in the supply chain to gain insights into the mechanics of the rice supply chain in West Java province, Indonesia.

The analysis of supply chain performance measurement is essential because it determines a company's position against competitors and evaluates the achievement of company goals that have been exceeded. This measurement is also helpful as a basis for determining the direction of improvement in creating a competitive advantage. Supply chain performance can be based on procurement, production planning, production, order compliance, and returns. Nevertheless, these activities can also be represented by five attributes of the supply chain: responsiveness, flexibility, reliability, costs, and asset management (Pujawan & Mahendrawathi, 2017; Fanulene & Soediantono, 2022). The performance measurement's effectiveness in the supply chain will affect the company's triumph (Tarasewicz, 2016).

MDP Company and farmers as supply chain performers have tasks and functions that cannot be replaced. As supply chain performers, they distributed the benefit and risks through all the supply chain webs. Accordingly, the higher the collaboration level of the company with another supply chain, the better the company's performance (Stefani & Sunardi, 2014). MDP Company and farmers have a role in increasing the product's value before it reaches the consumer. The main activities carried out by PT. MDP is to supervise the production, procurement, packaging, labelling, and distribution of rice. Meanwhile, Gapoktan stores, product care, harvests, and delivers rice according to the agreed quality and quantity. The various activities carried out will affect whether or not the performance of the rice commodity supply chain at PT. MDP.

In the era of rapid technological development, business competition leads to network competition, no longer a single competition. It means that competing is a network of companies ranging from suppliers to retailers who work together to achieve mutual benefits. So, in this case, PT MDP must collaborate with farmers as suppliers, farmer groups, transportation services, retail agents, and traders in the wholesale market to be better than competitors. Cooperation and collaboration relationships must be appropriately managed to benefit all supply chain members equally. Management of the flow of supply chain elements must be carried out with a supply chain management approach. Implementation of supply chain management is directed to the integration

between planning, coordination, and control of all supply chain business activities in meeting consumer needs so that they can use low costs (Chopra & Meindhl, 2007).

This study was conducted to determine the operations of the rice supply chain. This identity concept explains the resources in the supply chain, the participating supply chain members and the roles of the supply chain members as measured by the SCOR model. The SC Operations Reference Model (SCOR) was developed and approved by the American Supply Chain Council (SCC) as an interdisciplinary standard for SC management, of which the five SCOR processes are the Plan, Source, execution, distribution, and return (http://supply-chain.org).

SCOR was developed to adopt and enhance SC's leading management systems and practices through its structured framework and approach. This method is very comprehensive to improve global rice SC operations. SCOR has a flexible framework and a common language that can improve SC internally and externally by evaluating the objectives, effectiveness of reengineering, performance, quantification, testing and planning of the agricultural sector. Future. Based on previous research (http://supply-chain.org), the SCOR model would be the most appropriate mechanism for the rice supply chain, with a stronger focus on operational efficiency.

The Supply Chain Operations Reference Model (SCOR) is a methodology for managing supply chain activities and processes. This methodology can be used as a practical guide for analyzing SCM practices . Supply chain performance is measured from its model, its evolution, and the communication associated with each component. The SCOR model incorporates certain elements (e.g. trading techniques, benchmarks, best trading practices). It applies them to the supply chain system to develop an overall framework to increase the performance of supply chain management. The SCOR model proposes five main activities (planning, sourcing, manufacturing, supplying, returning, and triggering) covering different levels in the entire supply chain (Putro, Purwaningsih, Sensuse, Suryono, & Kautsarina, 2021). Therefore, the SCOR model chosen in this study for the validation process in the rice supply chain. The novelty of this research is the implementation approach of SCOR using comparing scores on competitor industries equal to rice industry characteristics.

RESEARCH METHODS

This research was conducted using a case study approach, and the location was chosen by purposive sampling. The research is located at MDP Company and the Company partner's farmer. MDP Company had been chosen as the primary processing and distribution industry on the rice supply chain in Pamarican District, Ciamis Regency. The research was conducted from Juni-October 2021.

The process of collecting primary data using the method of observation and interviews with a questionnaire instrument. Primary data used in this research was obtained from observation and in-deep interviews with farmer partners, as many as 30 respondents, four managers, and competent staff on MDP Company. In comparison, Secondary data was obtained from farmer supply and selling data in MDP Company, Literature, and related institutions.

Data Analysis Method

The supply chain performance measurement process using the SCOR approach can be classified into four stages, including 1) Identifying performance metrics or performance indicators that make up internal and external attributes; 2) Calculate the performance of each matrix on the attribute by using the performance matrix formula; 3)

Comparing the calculation results with the comparison value or SuperiorSCOR value on similar products; 4) determine the performance results on each of the measured matrices.

The first stage, data processing for supply chain performance measurement using the SCOR approach, is done by distinguishing two performance attributes that make up the external and internal (Bolstorff, P Rosenbum, 2003). The external attribute performance is performance measurement observed from a customer relationship point of view measured using reliability, agility, and response-ability. In comparison, the internal attributes observed by internal organization ability monitoring such as supply chain cost and asset management (Apriyani dkk 2018; Kinding, 2019)). Those attributes will be explained and adapted to field conditions (Paul, 2014). Furthermore, each performance attribute is calculated using the formula for delivery performance, fill rate, perfect order fulfilment, supply chain response time, order fulfilment lead time, order fulfilment cycle, cash-to-cash cycle time, inventory days of supply, and total supply chain cost. Calculation of performance using the formula will produce a value that is compared with the SuperiorSCOR score.

SuperiorSCOR score card is a combination of supply chain council provision and supply chain measurement of the company in a competitive environment context (Harrison, A. and Van Hoek, 2008). In the comparison value SuperiorSCOR, each performance matrix has three levels: parity, advantage, and superior (Bolstorff, P Rosenbum, 2003; Harrison, A. and Van Hoek, 2008). Parity means that score commensurate with sample performance. The advantage means that score showed enough profit or got the benefits. Last, superior means the best score. Measurement and calculation of every matrix score have been done using this formula:

1. **Reliability** is the performance of the supply chain in delivering the correct product, to the correct place, at the correct time, in the proper condition and packaging, in the correct quantity, with the correct documentation, to the correct customer.
   a. $\text{Delivery Performane}\,(\%) = \dfrac{\text{total on time order delivery}}{\text{total order delivery}} \times 100\%$
   b. $\text{Fill Rate}\,(\%) = \dfrac{\text{order filed}}{\text{total order}} \times 100\%$
   c. $\text{Perfect Order Fulfillment}\,(\%) = \dfrac{\text{total delivery on request}}{\text{total order delivery}} \times 100\%$

2. **Flexibility**

   $\text{Supply Chain Response Time (day)} = \text{product supply cycle}\rangle + \text{product delivery cycle}$

3. **Responsivenes**
   a. Order fulfillment leadtime (days) = measure the number of days from order receipt in customer service to delivery receipt at the customer's dock
   b. Order fulfillment cycle (days) = planning time + packing time + delivery time

4. **Aset**
   a. Cash to cash cycle time (day) = inventory days of supply + days sales outsanding – days payable outsanding

b. Inventory days of supply = $\frac{\text{average inventory}}{\text{average requirement}}$

5. Cost

Total Supply Chain Cost (%)

$$= \frac{\text{Planning costs+procurement costs+packaging costs+shipping cost+return cost}}{\text{revenue}} \text{ x } 100\%$$

Table 1 SuperiorSCOR card values (Benchmark value)

Attribute SCOR	Matrix/ Performance Indicator	*Benchmark*		
		Parity	***Advantage***	***Superior***
	External Performance			
Reliability	Delivery Performance (%)	85.00–89.00	90.00–94.00	≥ 95.00
	Fill Rate (%)	94.00–95.00	96.00–97.00	≥ 98.00
	Perfect Order Fulfillment (%)	80.00-84.00	85.00–89.00	≥ 90.00
Flexibility	*Supply Chain Response Time* (day)	42.00–27.00	26.00–11.00	≤ 10.00
Responsive-nes	Order fulfilment lead time (days)	7.00–6.00	5.00–4.00	≤ 3.00
	Order fulfilment cycle (days)	8.00–7.00	6.00–5.00	≤ 4.00
	Internal Performance			
Aset	Cash to cash cycle time (day)	45.00–34.00	33.00–21.00	≤ 20.00
	Inventory days of supply(days)	27.00–14.00	13.00–0.01	= 0.00
Cost	Total Supply Chain Cost (%)	13.00–9.00	8.00-4.00	≤ 3.00

Source: (Francis J, 2008) ; (Harrison, A. and Van Hoek, 2008); (Bolstorff, P Rosenbum, 2003); (Apriyani et al., 2018)

RESULTS AND DISCUSSION

Supply chain performance measurement was known to indicate the achievement result of supply chain institute on conducting its perform on handling and sending the products. Holistic supply chain performance measurement can be used as a form of monitoring and control, reconnecting organizational goals with the functions of supply chain institutions, knowing the organization's position against competitors, and determining the direction of improvement in creating competitive advantage (Pujawan, 2017).

Palma-Mendoza (2014) states that the SCOR model is a hierarchical model consisting of different processes and metric levels. Measuring supply chain performance at the farmer level can be divided into external and internal attributes. External performance is measured by the ability of farmers to meet consumer demand in the correct quantity, quality, time, and place, which is reflected in the attributes of reliability, flexibility and responsiveness. So the external performance metrics or indicators used include delivery performance, fill rate, perfect order fulfilment, supply

chain response time, order fulfilment lead time, and order fulfilment cycle. Meanwhile, internal performance can be measured by the ability of farmers to manage costs and assets owned. Performance metrics or indicators include cash-to-cash cycle time, inventory days of supply, and total supply chain.

The discussion of supply chain performance measurement at the farmer level from each attribute is described as follows:

a. Reliability

Farmer's reliability in operating supply chain activity can be seen in delivery performance, order fulfilment, and standard suitability. Marketing reliability can be measured from quality, delivery of information, communication skills, and weighing accuracy attributes (Sukiyono & Yuliarso, 2020). The delivery performance showed that farmers could send grain to MPD Company under the date dealt with the company. Based on table 2, the mean performance score of grain supply chain delivery at the farmer level was 99,6%, or more significant than 95%, meaning a superior position. Superior performance results showed that farmers had been able to send grain on time under MDP's order.

Timeliness in delivery has a close relationship with the nature of the product. In this study, grain products have a longer shelf life than vegetables. The nature of the product, which has more extended durability, will undoubtedly affect the delivery performance. Farmers tend to have the opportunity to stock up or store grain at home when demand comes. The process of preparing order fulfilment does not require a long time. Most farmers only need one day to process orders from PT MDP.

That farmer's ability was supported too by transportation facilities owned by the farmer group chairman. Typically, the chairman organized grains from farmers and then collected and sent them to MDP Company. It turns out delivery management collectively can minimize delivery lateness to MDP Company. However, some still have transportation problems because they are not accommodated with transportation facilities from farmer groups. So it needs independent efforts in seeking transportation so that the product reaches the company on time and in a safe condition.

Fill Rate is a percentage of the demand amount from MDP Company that can be fulfilled with the farmers without waiting to prepare on the next day. MDP Company conducted order dividing to all of the farmer partners in order to build and maintain the supplier loyalties. Table 2 shows that the performance score means in order fulfilled is 95,33% or below 96%, which is a parity score. The measurement result of the parity score showed that the farmer partner has not been able to fulfil the whole company stock needed. That is because grain stock cannot reach the water rate standard below 14%, and Half of the stock quota had been fulfilled by the wholesalers out of Pamarican regency, so grains from farmer partners are not maximized absorb. Grain's absorb increasing can be done by expanding, selling out of town, and weaving relationships with distributor agents (Juhasri & Ajo, 2021).

The condition that often impacts grain rejection at PT MDP is the weak ability of farmers' grain to meet water content standards below 14%. Several factors suspected to be the cause of the non-fulfilment of these standards are the condition of the paddy fields, cloudy or rainy weather during the drying process, the low willingness of farmers to dry completely, and the lack of skills of farmers in post-harvest processing of rice. There are two types of policies given by the company regarding water content standards: rejection and acceptance with a purchase price below the standard. As a social enterprise institution, PT MDP still provides opportunities for the supply of grain, which has a standard moisture content of close to 14%, which is still purchased but at a

price below the market price standard. It will be negotiated with the farmers whether to continue selling at the given price.

Table 2. The result of supply chain performance measurement of rice at the farmer level.

Attributes and indicators	*Benchmarking*			Mean	results
	Parity	***Advantage***	***Superior***		
	External performance				
Reliability					
Delivery Performance (%)	85	90	95	99,60	*Superior*
Fill Rate (%)	94	96	98	95,33	*Parity*
Perfect Order Fulfillment (%)	80	85	90	97,00	*Superior*
Flexibility					
Supply Chain Response Time (day)	30	25	20	14	*Superior*
Responsiveness					
Order fulfilment lead time (days)	7	5	3	1	*Superior*
Order fulfilment cycle (days)	8	6	4	7	*Advantage*
	Internal Performance				
Aset					
Cash to cash cycle time (day)	80	46	28	54	*Parity*
Inventory days of supply(days)	55	38	22	56	*Parity*
Cost					
Total Supply Chain Cost (%)	13	8	3	12,58	*Parity*

Sources: Primary Data, 2021

On the other hand, PT MDP cooperates in supplying raw materials other than with partner farmers in Pamarican. This procurement cooperation is carried out with suppliers from southern Java. This collaboration is because grain from southern Java has a good moisture content, so the rice produced is more intact, clean, and delicious. One of the rice supply areas outside Pamarican District is Banjaranyar District, Ciamis District. Thus PT MDP does not feel worried about the shortage of raw material supply.

Perfect Order Fulfillment is grain quality farmer partners can fulfil following MDP standards. Table 2 showed the performance score mean of grain that reached standard quality as 97% or belonged to superior criteria. Those results contradicted the fill rate performance. Nevertheless, after an in-depth investigation, Perfect Order Fulfillment used stock and demand data in MDP Company, where the less-qualify stock was tolerated, still accepted with a relatively low price. Apparently, Half of the grains have achieved company qualifications even though not all of the grains were accepted by MDP Company. Grain which not qualified will be bought at a lower price —or reduced Rp10.000/quintal. This solution is considered the best, rather than all grains will be

rejected. Based on the analysis of the performance of the Perfect Order Fulfillment matrix, it is known that most farmers choose to accept the price set by PT MDP rather than having to distribute their grain to other markets. This behaviour is also driven by the obligation to pay farmer instalments to PT MDP for the production cost loan that has been given. PT MDP has a loan program to partner farmers in the form of funds for the allocation of rice production costs, but it must be paid in instalments and paid for with grain when the harvest season arrives.

b. Flexibility

Flexibility of grain supply chain at farmer level showed with farmer partner ability to response unexpected company's order such as enhancement or reduction of the amount of grains product. Grain orders increased to partner farmers when PT MDP had high demand but insufficient inventory in the company's warehouse. Changes in the number of orders made by telephone by the production manager to the head of the farmer group that is forwarded to member farmers. PT MDP will provide delivery deadlines to partner farmers.

Based on table 2, the mean flexibility score of the grain supply chain from the farmer partner is 14 days, which includes superior criteria. The total amount of crops supports this ability from farmers and farmers' behaviour that like to store grain for urgent needs. The achievement of good flexibility performance is influenced by many farmers' harvests and the behaviour of farmers in saving grain for urgent needs. The nature of the product also influences the flexible performance of each commodity, and the number of market segments served. The more perishable the nature of the product (and the more market segments), the shorter the duration of flexibility.

c. Responsiveness

Responsiveness is a pace for conducting tasks measured with order fulfilment cycles and lead time. Responsiveness can be measured using fast, precise, responsive service, good service, and seriously serving attributes (Sukiyono & Yuliarso, 2020). Order fulfilment cycles are calculated by the time needed to farmer partner for fulfilling grain needs from MDP in on-time delivery. The lesser time that is needed in one cycle, the better supply chain performance (Apriyani, Nurmalina and Burhanuddin, 2018). Based on table 2, it can be seen the mean order fulfilment cycle of farmer partners is seven days which means advantage criteria. That can be said that farmers' ability to fulfil the order at one-time delivery is relatively good. It is because the drying process has unpredictable time, depending on the sun.

Dryer technology can improve responsiveness performance, but it is expensive, so no partner farmers have used it yet. The agility performance is also influenced by the busyness of farmers in other jobs. Sometimes farmers have not prepared orders because they have to do other urgent cultivation activities such as land preparation, planting, or handling pests and diseases. Because if these activities are late, it can affect the time and yield of the harvest.

The Supply chain flexibility of farmers is affected too by the order's fulfilment lead time. The supply chain's responsiveness is also influenced by the order fulfilment lead time, which is the time it takes for farmers to fulfil the company's past orders in units of days. The average value of the Order fulfilment lead time of partner farmers to PT MDP is one day, or under three days, so it is included in the superior criteria. The ability of farmers to carry out post-harvest activities to fulfil orders from PT MDP is included in the superior criteria because farmers have stored the grain in a semi-dry conditions.

Accordingly, they need to complete the post-harvest handling process to match the company's criteria and continue the delivery process as soon as possible.

d. Assets

Asset management performance can be seen from two metrics, namely cash to cash cycle time and daily inventory. Cash to cash cycle time is a matrix that reflects the financial health of the supply chain, which is the company's cash flow cycle from product payment to a farmer until products acquittance to the consumer in a day unit. Therefore, the lesser the cycle time needed, the better its supply chain performance. Based on table 2, the time required to cash flow on the supply chain is 54 days belonging to parity. Cash flow occurred relatively long since MDP Company had to wait for payment from the end consumer. Some of PT MDP's target markets apply a consignment system contract collaboration, which is only paid for the products sold. So that the payment process occurs after almost all of the products are sold. Meanwhile, the capital requirement for direct payments to suppliers (partner farmers) is pursued by PT MDP using internal funds. The company tries not to pay too long to the farmers to maintain supplier loyalty.

Assets performance is calculated too from grain's daily inventory matrix in the farmers. Based on table 2, the mean score of daily stock performance of farmers is 56 days which belongs to parity. The farmers conduct daily stock since consumer needs, and dry grain characteristics last up to six months, So it sells when grains price increase. This condition shows the weak turnover of business capital. So that it has less impact on increasing farmers' income, and even tends to hide costs. Because the storage process is too long, the product has the risk of damage, loss, and storage costs.

e. Total Supply Chain Cost

Many distribution activities demand the company to regard transportation problems seen by cost, delivery time, and tools (Regia, Awaluddin, & Ahmad Yusuf, 2021; Arofah & Gesthantiara, 2021). Cost on supply chain management is a total cost incurred to process the supply chain, including worker fare, material price, and transportation price. Total cost was calculated from umpteen percentage of reception acquired by the farmers. Table 2 shows the mean score of the total cost of supply chain relatively high; 12,58% from reception total, which belongs to parity. It means the cost for supply chain activities is relatively high so that needed to reduce inefficiency activities. Supply chain cost decreasing can be performed using risk sharing between the farmers, for example, transportation sharing while delivering and handling personnel sharing post-harvest.

The target for achieving performance in each SCOR indicator is the best or superior position. Based on the research results, several performance indicators are still below the superior standard, including fill rate, order fulfillment cycle, Cash to cash cycle time, Inventory days of supply, and Total Supply Chain Cost. Thus, performance indicators that are still below the superior level must be improved in management to achieve better performance. In general, the performance of external attributes is better than internal attributes. Thus, efforts to improve internal management related to assets and costs at the farm level need to be improved immediately. Farmers cannot only prioritize performance related to customers but do not pay attention to the ability to manage costs and assets owned. It's best to pay attention to both of them in a balanced way.

Some improvement efforts that can be done by farmers to improve supply chain performance are by increasing post-harvest handling skills so that the standard 14%

moisture content is achieved, prioritizing order fulfillment before completing work in other fields, reducing grain storage time that has been allocated for sales, and eliminate unnecessary activities to save supply chain costs.

CONCLUSIONS AND POLICY IMPLICATIONS

Conclusions

The Supply chain performance result showed some activities that need to fix. Activities include order fulfilment, fulfilment cycles, cash-to-cash cycle time, daily stock, and total supply chain cost. The order fulfilment performance score is 95,33%, including parity. The order fulfilment performance score is seven days, including advantage, so that needs to shorten to achieve superior criteria. The cycle time score of cash to cash and daily stock is 54 and 56 days, including the parity category that needs to be shortened to optimize asset flow. The total indicator score of supply chain cost is 12,58%, including to parity category that needs to remove activity cost.

Suggestion

Our suggestions based on this study are:

a. The company must increase the absorbing volume of farmer partner grain by adding contractual market targets using payment time deal to continuity of assets.

b. In comparison, the farmers need to reduce and remove unimportant activities that impact higher costs.

c. It needs accompaniment from the company for farmers related to post-harvest management to adjust grain qualification with the market segment of the supply chain.

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