

Value Chain Analysis and Supply Chain of Layang Fishing Prigi Fish Auction Trenggalek Regency, East Java Indonesia

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Abstract

The objective of this research was to understand value chain analysis and fish supply chain in the fishery field because the process need so much cost and consuming too much time—many problems deal with many costs, and also much time allocation to get Layang Fish for consumption commodity. The value chain is useful to produce things or service which have main activity elements and support to achieve the goal. Supply chain is dealt with the costs spent to get Layang Fish on the sea. The result obtained from both analyses were to understand activities from Prigi Fishery Bureau and the cost spent on every trip to get fish. In one trip, there was a dividing percentage, namely 60% for the shipowner, 30% for fishers (5 peoples), 5% for ship's captain, and 5% for ship's worker. So, the value chain will distribute to consumers consistently.

Keywords: Supply Chain, Layang Fish, Place of Fish Auction.

1. Introduction

Fish is one of the sea products in Indonesia waters. According to Pudjiastuti (2014), the fishery sector in Indonesia gets the first predicate in Southeast Asia. In line with the data, fish supplies increase from 6.5 million tons to 12.6 million tons. Based on the fact, the fishermen become prosperous, and the business of fisheries get much profit. While according to the research done by Rosales et al. (2017), it is said that in the fisheries sector, there are needs for supply chain and analysis of value chain and also fishery management. The supply chain in the fishery sector deals with sea products produced that will be sent to destinations. When accessing the locations, it needs to analyze the destinations and to keep the quality of sea products. From this strategy, it can be gotten, the fisherman is more prosperous and got many benefits. The purpose of this study is to find out fishery activities and budget cost of one trip. The scope of this research is on logistics distribution activities in a one-trip cost approach.

Value Chain Concept

According to Syaifuddin and Budi (2018), the value chain is a combination of nine general activities in a company. The focus of the value chain is the profit that added to the consumers, which depend on something that produces value and the demand at

cost current made. The value chain is the process of identifying the main activities to add the value of products used by customers (Bush et al.2019). The usage of the value chain is to analyze internal activities of the company about strength and weakness. The value chain used is Porter's Value Chain, introduced by Michael Porter in 1985.

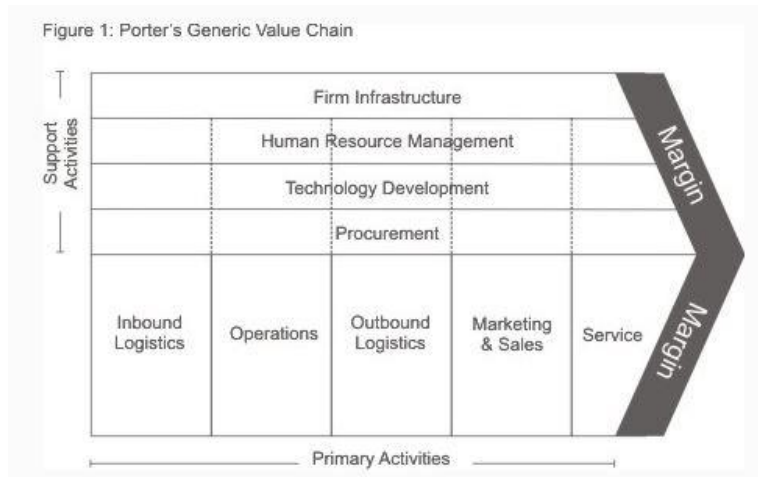


Figure 1. Porter's Value Chain

In Figure 1 Porter's Value Chain describes the way how the inputs become outputs after passing the process, which focuses on the system in primary activities and supports. In main activities, they focused on creating product appearance, how to sell and to maintain. Supporting products is the process deal with the way to receive products, to keep, how to distribute them, and the process of raw materials become products that can be sold to the consumers. The next process is how the consumers want to buy the products, keep the value of the product, and service ways also all of the activities to support (Sumangkut, 2013). In Trenggalek, the commodity is Layang fish, which is caught by using a big dragnet. When the dragnet throws into the sea, the fish will trap in it. If there are fish undersize, they should be released to the sea in the order they can grow bigger. The usage of value chain deals with the problems emerged among fishery market in Trenggalek: (1) The strategies and promotion of selling have not maximal yet because the sellers haven't thought about strategy, (2) The sea products are variant, so in marketing aspect, the sellers have not mastered yet the best way to sell their products sold (Ellram and Murfield, 2019). In the value analysis for Prigi Fish Auction of Trenggalek Fishery Bureau based on Figure 1 Porter's Value Chain, the activities as following:

1. Inbound Logistics

The inbound logistics close relation with activities of buying, receiving, storage, and managing sea products, which will be sold to agents, big sellers, and consumers. Prigi Fish Auction of Trenggalek Fishery Bureau (Dinas Perikanan UPTD TPI PRIGI) has roles to take data of sea products that will be sold and to give policies in the marine field. The policies such as prohibition to use blaster materials because it can damage

the sea habitat. The fish caught will be sent to big sellers, agents, and the last is the consumers. The distribution covers the East Java area, and it is being transported by car from Trenggalek. In the management of sea products, the Fishery Bureau uses First in First out System (FIFO). It means that the sea products received first must be sent to some locations to keep quality and the best service.

2. Operations

Production operations and the packaging of sea products so that the products will be received by consumers in good condition. Fishery Bureau always informs to the fishermen and delivery division to pay attention and obey the rules of proper delivery. The main products are Layang Fish, which is put in a big barrel with ice and closed tightly in every delivery to keep the fish freshness. In operations, it is checked the weight of every barrel, the tightness in the package, and also the protection rope if it is delivered by car.

3. Outbound Logistic

Outbound logistics is the way to keep sea products in the storehouse. It is because the sea products must be ready to sell at the same time. According to inbound logistics, there is no storage place in Fishery Bureau. Every production of sea products, Layang fish, after weighing and deciding price, must be distributed to the consumers either agent or big sellers in the East Java area.

4. Marketing and Sales

In marketing and sales activities, it has a function to find new customers. They will have an impact on outbound dan inbound logistics. If many customers need fresh fish from Trenggalek, so Fish Auction of Trenggalek Fishery Bureau suggests buying sea products that have been weighed and priced. If they have not been weighed and priced by the related department, or it is not in line with the policy, so there is a suggestion not to buy the products because the quality is not good.

5. Service

In service, the activities are to receive complaints and suggestions from customers toward the performance of Fish Auction of Trenggalek Fishery Bureau (Dinas Perikanan UPTD TPI PRIGI) in weighing and deciding the price. Fishers of Layang Fish, agents, and consumers are the elements in creating the right conditions for the Fishery Department. Therefore, the Fishery Department should improve the performance quality in order not to inflict a loss for involved stakeholders (Brunaud et al., 2018).

Chain Analysis for Fish Auction of Trenggalek Fishery Bureau (UPTD TPI PRIGI) based on Figure 1 Porter's Value Chain supporting activities as following:

1. Firm Infrastructure

Firm Infrastructure is functioned to support operational activities, such as the system used in collecting data of Layang Fish, reporting system to Central Fishery Department, and the culture of an organization supporting the working environment,

which is in line with the vision and mission of the company. In collecting data of Layang fish produced, it is done by weighing for every fish taking from the sea, and every fisher should fulfill the requirements and policies from the Fishery Department. There is some deceit done by some of the people who take fish on the sea without permission. It is explained why the data obtained from weighing fish caught by fishermen, which are sold to agents, suppliers, and consumers, are not really suitable. The means of communication use WhatsApp and office phone and also information on board. Activities of Reporting data is done by making recapitulation every month. The goal of monthly report is to help Data Division from overload task burden when they must recapitulate the data deal with sea products and make reports to the central office.

2. Human Resource Management

Human Resource Management manages Human resources to increase the performance of the related department. Human resources needed must do training, which means deciding what kind of field should be done after being a member of the department. The training includes the way to weigh sea products from fishers, deciding the price, giving authorities to the staff, and also responsible to the central Fishery Department.

3. Technology Development

The technology used in PRIGI Fish auction has not been further developed yet because the company still uses the suggestions from the users to improve its performance.

4. Procurement

Procurement is activities about ordering and repeatedly buying because the quality is in line with consumers' will. In Fish Auction of Trenggalek Fishery Bureau (UPTD TPI PRIGI) still depends on the agent and fishers for sea products. The sea products are selected based on the shape of Layang fish, and then it can be decided on the price. Based on the shape of fish, the price is categorized by the decision of the Fishery Bureau.

The Result of Value Chain Analysis of UPTD TPI PRIGI in Figure 2, the main activities in the inbound logistics process is the prohibition not to use blaster materials in catching fish. FIFO system in which the fish got first must be sold first because the delivery process also relates to packing and some requirements from the Fishery Bureau that must be fulfilled. In outbound logistics, it cannot store fish in the storehouse because it can influence the quality of fish. In this case, the fishermen sell or weigh the fish caught to the Fishery Bureau, so it needs to search for new customers to avoid fish accumulation. The consumers are also prohibited from buying fish from illegal ways. Fishery Bureau opens in receiving criticism and suggestion to deal with the rules that must be obeyed by the fishermen to improve its performance (Lai lossa , 2009).

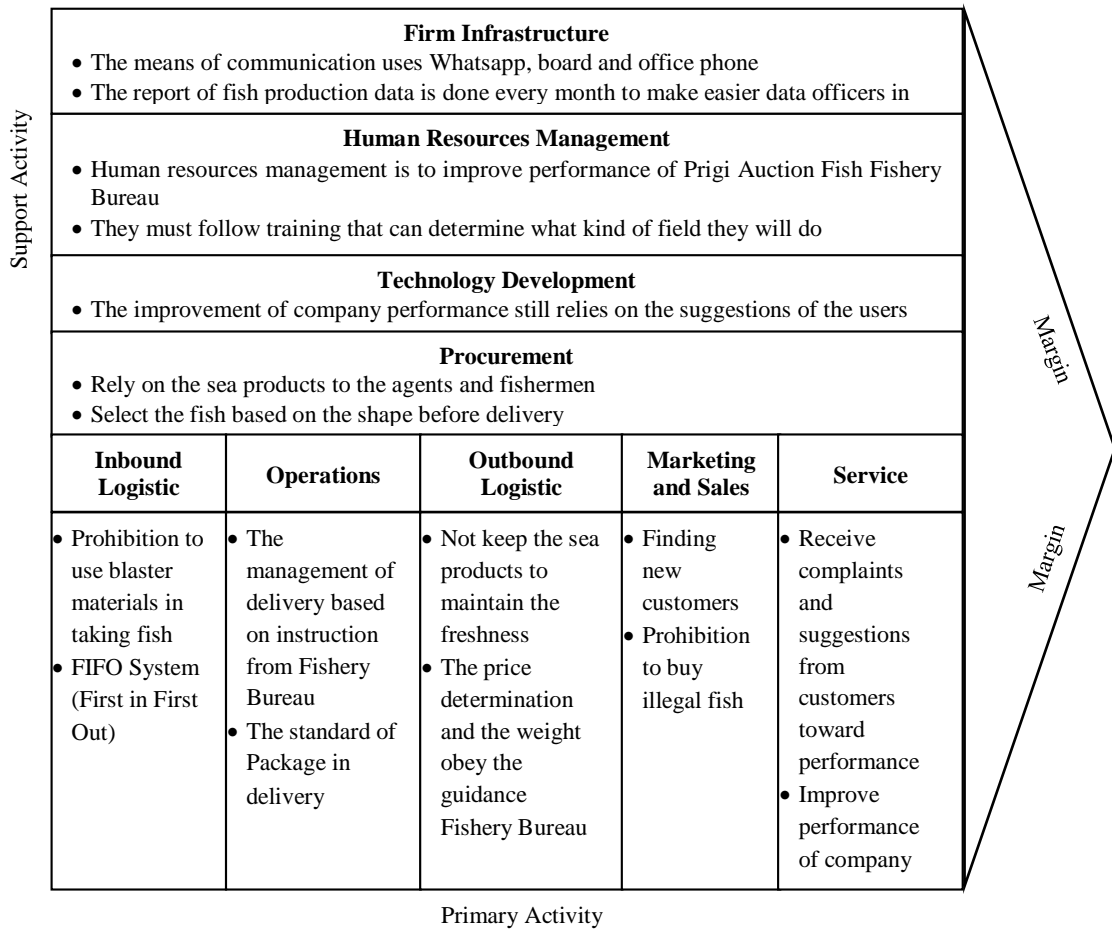


Figure 2. The Result of Value Chain Analysis of UPTD PRIGI

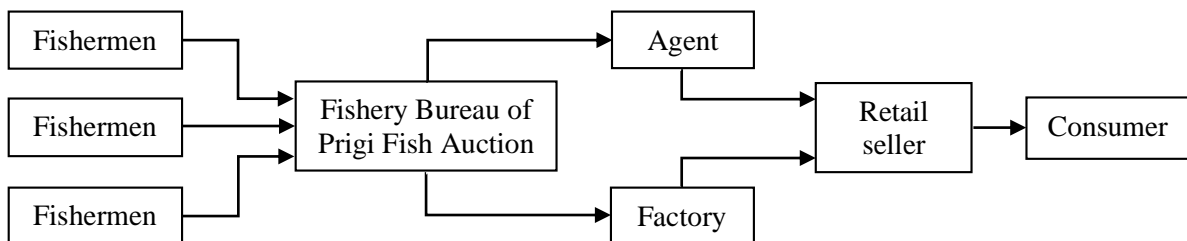


Figure 3. The Result of Value Chain Analysis of UPTD PRIGI

Supply Chain

According to Gan et al. (2018), the supply chain is the united flows deal with the distribution of products until consumers. Supply chain relating to management always involves the improvement of distribution flow quality and the development of technology, especially in management deals with industry, so distribution flows are more comfortable to be monitored and checked via the internet. It has an essential role in the companies which use supply chain deal with factory condition, distributor, retail shop, and suppliers cannot be separated with this kind of logistic service. The existence of logistic service makes the company no need to prepare its logistic division because logistic service can handle all affairs deal with product delivery to

be received by consumers. According to Budiman (2013) in supply chain deals with management, it will give some items which have the benefit of satisfying consumers, increase profit, reduce the production cost, and use company infrastructure. According to Raut et al. (2019), all of the product distribution until the last consumers, the company must be able to measure its performance to get a high response for consumers.

2. Methodology

In this research, the goals are to know the value chain based on Porter Value Chain, and to make counting analysis of the trip which is showed in Table 1. From the collected data related to the production data from January-December 2019, the data was about the kind of fish, production number per kg, and price per kg. From the value chains, it can be applied for the fishery sector in the Trenggalek area. It is useful for doing better marketing.

Table 1. Layang Fish Production

Month	Production (kg)	Price per kg (rupiahs)
January	9,188	11,268
February	23,469	15,060
March	44,110	11,821
April	30,468	9,256
May	248,339	86,95
June	35,116	6,178
July	178,194	7,621
August	417,698	9,860
September	585,947	8,025
October	340,893	5,789
November	238,094	5,032
December	38,744	6,239

Source: UPTD TPI PRIGI, 2019

3. Result and Discussion

The scheme of Prigi Fish Auction of Trenggalek Regency Fishery Bureau (Dinas UPTD TPI PRIGI) in doing its duties is as the place to handle fishery and marine affairs and also as coordinator between fishermen and agents in Layang fish distribution to the consumers. In doing supply chain of Layang fish, the involved elements such as fishermen, ship's owner, ship workers, big seller, and factories. The fish caught by fishermen will be sent to Dinas Perikanan UPTD TPI PRIGI. Then the fish is weighed and priced, and ready to be delivered. The fishermen spend 6 hours a day to catch fish on the sea, and after arriving at the beach the fish is weighed directly and determined the price. The data of Layang Fish Production from Fishery Bureau is provided in Table 2.

Table 2. Layang Fish Production in 2019

Months	Price per kg (rupiahs)	Production (kg)
January	9,188	11,268

Months	Price per kg (rupiahs)	Production (kg)
February	23,469	15,060
March	44,110	11,821
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Source: UPTD TPI PRIGI, 2019

Based on Table 2, the fishermen do one trip to catch the fish on the sea. One trip is about 2-3 days or more. The fisherman who was interviewed by the writer told that he could spend one trip in 3 days. During three days he spent cost as the following:

The number of fish caught (on average) kg	=	600
The cost of 1 trip	=	Rp.6.760.800,-
Detail spending	=	
Food and drink in 3 days for eight-person	=	Rp.285.600,-
Ice cube 120 unit @18.000 (rupiahs)	=	Rp.2.160.000,-
Fuel 800 liter @6.760 (rupiahs) (discount 20%)	=	Rp.4.326.400,-
Water 900 liter @800 (rupiahs)	=	Rp.560.000,-

The total of income from 1 trip in January 2019.

With the assumption, the selling is 100% to the consumers by increasing the price from the Fishery Department from Rp.11.268/kg to 13.500/kg

600 kg x Rp.15.775	= Rp. 9.465.000,-
Rp.9.465.000,- -Rp.6.760.800,-	= Rp. 2.704.200,-

Dividing of wage

- Ship's owner 60%	= Rp. 1.622.520,-
- Ship's crews, 30% (five persons)	= Rp. 811.260,-
- Ship's captain, 5%	= Rp. 135.210,-
- Ship's worker 5%	= Rp. 135.210,-

Based on the table above, the count of profit started when the fishermen caught fish in January with the price of Layang Fish decided by Fish Auction of Trenggalek Fishery Bureau (UPTD TPI PRIGI) was 11.268 rupiahs per kilogram. However, at that time, the fishermen sold Layang fish to the consumers 15.775 per kilogram because the fish caught was 600 kilograms in one trip. Based on the supply chain analysis, everyone who went to catch the

fish got wage with the percentage determined by the ship's owner. After weighing the fish, the fishermen choose to sell the Layang fish to consumers directly because the price is higher.

4. Conclusion

Value chain analysis in Fish Auction of Trenggalek Fishery Bureau (UPTD TPI PRIGI) shows that to improve performance, the department relies on criticism and suggestion from the users. Deal with the rules and requirements on fishery field such as prohibition to use blaster materials and prohibition to buy illegal fish; it is a wise instruction. Fisher's prosperity can be analyzed at the supply chain of catching fish in one trip in January 2019. It needed 6,760,800 rupiahs with the assumption that 100% of fish produced would be sold to the consumers (15.775/kg x 600 kg fish), and the total of income was 9.465.000 rupiahs. It was used to one trip, and the rest was 2,704,200 rupiahs. From the amount, the owner of the ship got 60%, the crews got 30% (5 peoples), the ship's captain 5%, and ship's worker got 5%. From the percentage of this research, all of the people involved in the trip got wages in line with their tasks, and it can make prosperous fishermen for the future.

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