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# Supply Chain Model of Fish Caught Landed at The Pelabuhan Perikanan Samudera (PPS) Cilacap, Central Java

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A B S T R A C T

The purpose of this study is to analyze the supply chain model of fish caught landed at PPS Cilacap. The method used in this study is a survey method with purposive sampling data collection techniques. The results showed that the management of the supply chain of catches landed at Ocean Fishing Port PPS Cilacap has been formed downstream of fishermen's catches to the hands of domestic and foreign consumers. Parties who have a strategic role in ensuring the fulfillment of fish are fishermen as the main supplier and ship owners as collectors and distributors. PPS Cilacap has also carried out its role in collecting fishery products and delivering information to all parties in need through Pusat Informasi Pelabuhan Perikanan (PIPP). The distribution of fish abroad opens up opportunities to increase state income from the export of fishery products and this also shows the fulfillment of the operational criteria of PPS Cilacap as a type A (ocean) fishing port based on government regulations on fishing ports

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## INTRODUCTION

Cilacap Ocean Fishing Port (PPS) is one of the type A fishing ports allocated in Cilacap Regency, Central Java, Ocean Fishing Port as a Technical Implementation Unit (UPT) of the Directorate General of Capture Fisheries. PPS Cilacap has a capacity to accommodate 100 units of fishing vessels. The volume of fish landed is approximately 50 tons per day and distribution to local and export markets. PPS Cilacap has an area of 30 hectares and has mooring facilities for fishing vessels measuring 30-100 GT (Cilacap Ocean Fishing Port, 2019).

In addition, there is a private fisheries processing industry located around the port and there are fishery product quality development facilities managed by PPS Cilacap. The location of PPS Cilacap facing the Indian Ocean has a positive impact, namely the great potential to increase the production of fish caught at fishing ports. PPS Cilacap as one of the type A (Ocean) fishing ports has operational requirements to export fishery products. Good supply chain management will ensure the availability of fish to be consumed and provide benefits evenly from upstream to downstream. Fish itself is one type of food that has an important meaning with high nutritional content, diversity of types and relatively cheap prices. Therefore, proper supply chain management is needed for fishery products landed at PPS Cilacap.

## LITERATUR REVIEW

The supply chain includes the organization and processes for the acquisition, storage and sale of raw materials, semi-finished products and finished products. Supply chain flows are linked by physical, monetary, and information flows (Poluha, 2006).

A company's supply chain is the network of organizations and business processes for acquiring raw materials, transforming these raw materials into semi-finished or finished goods, and distributing finished goods to customers. The supply chain links suppliers, manufacturers, distribution centers, retail stores, and customers to provide goods and services from source through consumption. Raw materials, information, and payments flow through the supply chain in both directions (Laudon and Laudon, 2007, translation of Sungkono and Eka, P, 2008).

Supply Chain is the management of various activities in order to obtain raw materials, followed by transformation activities so that they become products in process, then become finished products, and are forwarded to delivery to consumers through the distribution system. Supply chain is the flow of materials, information, money and services, from suppliers through factories, werehousing, and finally customers (Arif, 2018).

Supply chain management is management that integrates activities to obtain the resources a company needs, both material and services, and turn them into goods and services as final products, and then send them through the distribution system. Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that merchandise is produced and distributed in the right quantities, to the right locations, at the right time, in order to minimize systemwide costs while satisfying service level requirements (David Simchi-Levi. 2020).

Companies with all efforts made in managing the supply chain have a goal to build a supply chain that focuses on maximizing value for its end customers. Meanwhile, according to Ibeng (2020), the goal of supply chain management is to align demand and supply effectively and efficiently.

## METHODOLOGY

The method used in this study is a descriptive method through surveys and direct interviews and is guided by a list of questions that have been prepared beforehand. The data collected are primary data and secondary data. Data collection techniques are carried out by purposive sampling. This research was conducted from January to March 2020 at the Cilacap Ocean Fishing Port, South Cilacap District, Cilacap Regency, Central Java Province.

The analytical method used in this study is a qualitative approach method directed at obtaining detailed information/picture of respondents' perceptions as supply chain participants.

## RESULTS AND DISCUSSION

### Supply Chain Structure

The flow of the catch supply chain has several parties with their respective roles. The first party is Fishermen and Ship Owners, the second party is the agent of the Fish Management Unit (FPI) Exporter company is a contractor of fish for export abroad such as Japan and China, a third party is a large basket trader, the fourth party is a fish warehousing managed privately by the ship owner, and the fifth party is a consumer (local consumers, consumers outside the Cilacap area and foreign consumers).

In general, parties involved in managing a supply chain are suppliers, manufacturers, distributors, retailers and consumers. The catch supply chain model at PPS Cilacap requires more parties to reach consumers as end users, as the results of research by Ghaffar, et al (2023) also show the diversity of parties involved in the supply chain model at PPS Kendari, namely fishermen, collectors, traders, processing companies, small traders, and consumers. In the supply chain model at PPS Cilacap, consumers cannot deal directly with fishermen as the first party. When compared to the supply chain model in Manado City based on research by Jansen and Sumarauw (2016), fishermen have the flexibility to choose buyers and can sell their catches directly in markets, auctions or at fishermen's groups.

Soeratno and Jan (2016), with the results of their research showing that the parties involved in the Skipjack Fish supply chain model at Tumumpa Beach Fishing Port are fishermen, contractors (wholesalers and factory parties), retailers (retailers and factory retailers), and end consumers. Furthermore, Ghaffar, et al (2019) stated that the parties involved in the supply chain at the Paotere Fish Landing Base in Makassar City are simpler, namely fishermen, fishermen cooperatives, large traders, small traders and household consumers. This illustrates the difference in supply chain management in each fish-producing region depending on the number of parties involved and the role of each party. The types of fish landed at PPS Cilacap are skipjack (Katsuwonus pelamis),

lemadang (Coryphaena hippurus) and baby tuna Yellowfin (Thunnus albacares. In the peak season the catch is able to land 7 - 8 tons of fish per vessel.

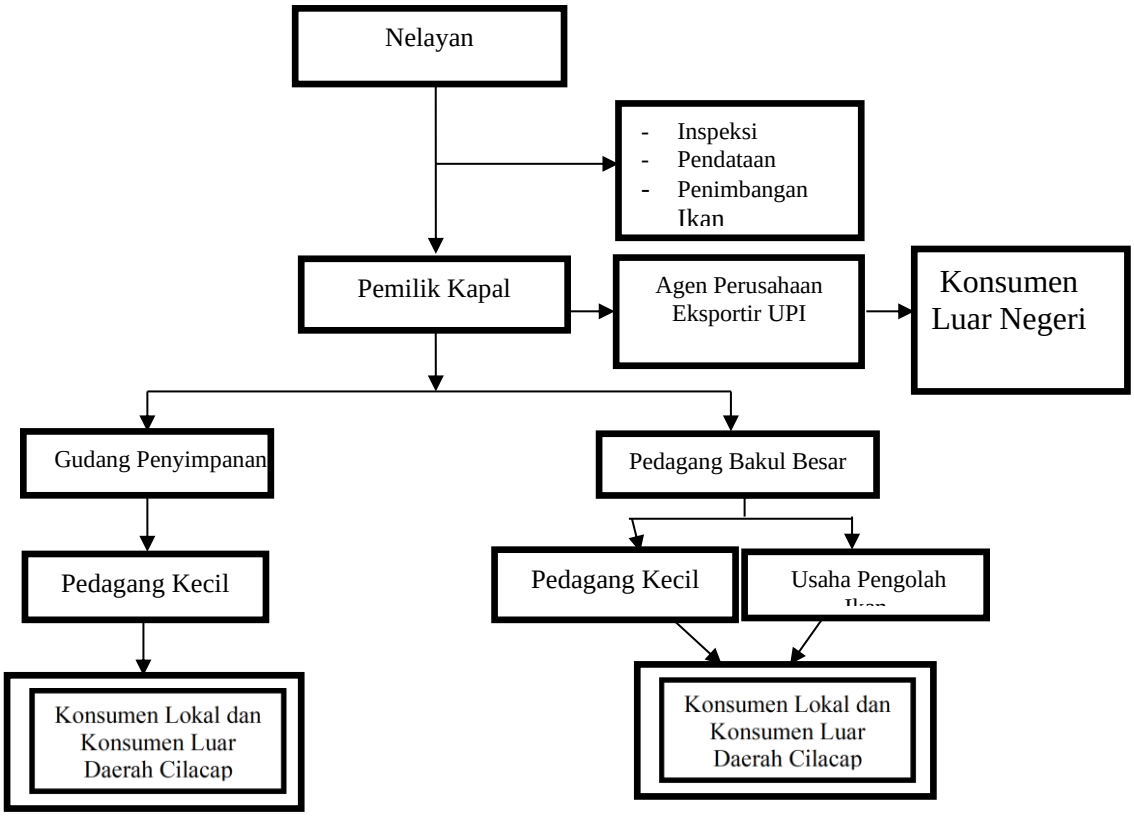


Figure 1 Model of Fish Supply Chain Landed at PPS Cilacap
Source: Primary Data Analysis, 2020

Fishermen carry out fishing activities using boats from the Ship Owner, so that all of their catch will be handed over to the ship owner. Ship owners also provide capital assistance for fishing operations. With this pattern, the potential loss for fishermen will be reduced due to the certainty of purchasing all of their catch. This business relationship has been built for a long time based on the trust of each party. Furthermore, the ship owner will distribute it to Company Agents for export needs, and to Big Bakul Traders. There is a difference in the quality of the fish sold to the Company's agents and to the big basket traders. The fish sold to the Company's Agents are selected fish with the freshest quality because they are the target of the export market, so the selling price is higher. The fish that are sold to Bakul Besar Traders are fresh quality fish but are sold after the Company Agent's needs have been met. Not all of the catch is sold, some are then stored in storage warehouses if the catch is abundant to be resold during the fish famine season. For Small Traders and Fish Processing Units (FPI), they also get fish from Bakul Besar Traders but the number, type and size of fish will be less. In this chain, there is a potential for instability in the supply of fish that will be managed by FPI, so FPI must find a solution to this problem. In addition, Small Traders

also obtain Warehouse fish. Usually this is done if the number of fish landed at PPS Cilacap decreases so that to meet consumer demand it will be taken from the storage warehouse. The last party is consumers who get fish from small traders for fresh fish, while the types of fish obtained from processing units are already in the form of processed fish (salted fish and fish paste). This pattern of supply chain management illustrates the strategic role of Ship Owners and Bakul Besar Traders in ensuring the supply of fish to other parties in this supply chain model and determining who can buy the fish. On the other hand, to carry out government functions, the Cilacap PPS conducts fish unloading inspections to ensure the safety and quality of fish that will be distributed further, fish data collection and fish weighing for continuous monitoring of fish stocks for all fishery resources landed at Cilacap PPS.

T**arget Market**

The market objectives of fish landed at PPS Cilacap are divided into three, namely local consumers, consumers outside the Cilacap area, and Foreign Consumers.

Table 1. Target Market Objectives of Cilacap Ocean Fishing Port, Central Java

| No | Supply Chain Actors | Market Objectives | Request Form |
|---|---|---|---|
| 1 | UPI Corporate Agent | Consumers Outside Cilacap and Export | Fresh Fish |
| 2 | Large Basket Trader | Local Consumers of Cilacap | Frozen Fish |
| 3 | Fish Storage Warehouse | Local Consumers and Consumers Outside the Cilacap Area | Frozen Fish |
| 4 | Small Traders (Retailers) | Local Consumers around TPI and Markets | Fresh Fish |
| 5 | Fish Processing Unit | Local and Outside Cilacap Consumers | Fish in the form of processed salted fish and shrimp paste |

Source: Primary Data Analysis, 2020

Supply chain players in PPS Cilacap already have their own market goals. UPI companies located in the Jakarta area usually distribute fish to out-of-town consumers and export destinations such as Japan and China.

In the fishing season, there are usually many fish landed in the port so that fish can be directly distributed to companies and large basket traders. However, if it is not in season, ship owners experience a shortage of fish supply by previously storing fish into storage warehouses until the company's target in Jakarta is achieved.

**Supply Chain Management**

Supply chain management implemented at PPS Cilacap has shown the downstream of catches ranging from fishermen as the main supplier to consumers as end users. The utilization of fish caught by fishermen is also even distributed abroad, thus opening up opportunities to increase the state budget and also PAD for Cilacap Regency. For domestic consumers, it has been anticipated by the use of refrigerated warehouses to accommodate excess fish stocks and the use of transportation facilities in the form of refrigerated box cars to distribute fish outside the Cilacap area. PPS Cilacap plays an important role in measurable fishing activities through inspection and data collection of the landed fish.

In supply chain management, apart from managing materials and services, it also manages the flow of information. The management of information flow is intended to obtain accurate data regarding the fulfillment of the type of fish desired by consumers and the selling price. The pattern that applies at PPS Cilacap is one-way delivery of information, namely from fishermen to boat owners. Fishermen will provide information to ship owners regarding the type and amount of their catch and this will become the basis for ship owners to determine the selling price of the fish. In addition, fish export companies can obtain information by accessing the Fisheries Port Information Center (PIPP). PPS Cilacap routinely (every day) inputs fishery product data so that an updated picture is obtained. Inputting data in PIPP is one proof of the performance of each fishing port in carrying out government functions and fishing port management functions based on regulations (Ministry of Maritime Affairs and Fisheries Regulation No. 8 of 2012 concerning Fisheries Ports).

**CONCLUSION**

Supply chain management at PPS Cilacap has described the downstream of fishermen's catches to domestic and foreign consumers. Parties who have a strategic role in ensuring the fulfillment of fish are fishermen as the main supplier and ship owners as collectors and distributors. PPS Cilacap has also carried out its role in collecting data on fishery products and delivering information to all parties who need information through PIPP. There are potential problems in the chain of Fish Processing Units that cannot ensure the fulfillment of fish stocks to be processed. The distribution of fish abroad opens up opportunities to increase state income from the export of fishery products and this also shows the fulfillment of the operational criteria of PPS Cilacap as a type A (ocean) fishing port based on government regulations on fishing ports.

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