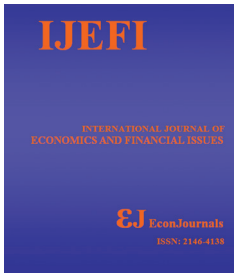

**International Journal of Economics and Financial Issues**

ISSN: 2146-4138

available at http: www.econjournals.com

**International Journal of Economics and Financial Issues, 2015, 5(Special Issue) 150-156.**

2nd AFAP INTERNATIONAL CONFERENCE ON ENTREPRENEURSHIP AND BUSINESS MANAGEMENT (AICEBM 2015), 10-11 January 2015, Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia.

# Value Chain Analysis Towards Sustainability: A Case Study of Fishery Business in Kota Kupang, Indonesia

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**ABSTRACT**

This study aims to provide a value chain map as well as its analysis over fishery business in Kota Kupang, Indonesia. Actors of this business were mapped using the value chain approach then analysed further using profitability ratios in order to know how much profit gained by each actors within the value chain and its impacts towards sustainability of fishery business. In-depth interview and focused group discussion were conducted with 25 supply chain members covering fishermen, association of fishermen members, middlemen, traders, exporters, Fishery Deparment of Local Govenrment, Investment Body, Transporters and Consumers located in Kota Kupang. Data collected were analysed using financial ratios then ended by providing a value chain map complete with its description. This study shows that exporters and big local traders gained higher profits compared to fishermen and other actors within the value chain. Also, there is a big business circle created and managed by those who have capital under the cooperation of andon fishermen, local people, and financing companies. To better addressed the sustainability issue of fishery business in Kota Kupang, it is therefore recommended that the local and central government should hand in hand with local fishermen and local fishery business actors, including local fishermen association to provide improvement of fishery related regulations for local people quality of life and economic growth of Kota Kupang, Indonesia.

**Keywords:** Value Chain, Fishery Sector, Profitability, Sustainability
**JEL Classifications:** M000

## 1. INTRODUCTION

Fishery potency of East Nusat Tenggara Province, Indonesia reached about 365.1 metric ton per year, however, it is only utilized for about 26.5% for local consumption and export puprpose. Kota Kupang which is located sorround Kupang Gulf (capital city of East Nusa Tenggara Province) has a great chance to be a place fishery investment destination. However, lack of information about value added created throughout the value chain to decion makers has been a main problem to local government. Main problems facing by fishery sector are distribution system created by big companies under cooperation with andon fishermen (fishermen who come from other islands and financially supported by big financing companies) and low cooperation between the related organizations in both of government and private corporation in all supply chain members. As a consequence, the majority of fish produced are exported directly by some big companies without any further processes and the rest are sold locally in lower price, which means that there is a short value chain takes place in fishery business. From sustainability perpspective, this business practice will lead to instant business done by local fishermen since there is a perception that keeping natural resource of fishery in order to exist for a longer period will only benefit big companies. In order to make an investment policies and decisions by local government in fishery sector, information about value chain is very important so that the presence of the investor will benefit all parties within the value chain. This means that a complete understanding of all components in the supply chain is the first step on the road to successful supply chain management in a particular sector. Therefore, it is important to know the connection between actors within the value chain of fishery busienss. This study aims to provide a value chain map as well as its analysis over fishery

business in Kota Kupang, Indonesia. Actors of this business were mapped using the value chain approach then analysed further using profitability ratios in order to know how much profit gained by each actors within the value chain and its impacts towards sustainability of fishery business.

## 2. LITERATURE REVIEW

### 2.1. Empirical Studies

Sopadang, et al. (2012, p.1) carried out research in Longan Industry entitled "application of value chain management to Longan industry." That research is carried out in Chiang Mai, Thailand which covering 73 value chain members. Key respondens were farmers, middlemen, transporter, eksporter. Data were collected using indepth interview then analysed using Supply-chain operations reference model and value chain analysis. It shows that exporter gain higher profit compared to farmers in Longan Industry.

Sopadang et al. (2012, p.3) is also pointed out that the value chain analysis has been also implemented in various agro-product sectors such as organic cotton, sugar or wine industry. Different activities in value chain of Indian organic cotton were analyzed to realize where and how value is added in each stage of production. Value chain research in sugar industry is conducted in various aspects. Higgins categorized sugar value chain research into two entities, which are logistical and non-logistical opportunities.

Another research about mapping of value chain was also done by Msuya (2011, p.1). The study tried to map value chain of sweet potato entitled "Mapping of the sweet potato value chain linkages between actors, processes and activities in the value chain: A case of Michembe"and "Matobolwa" products. This study shows that there are 3 marketing channels exist, they are selling directly to consumers, producers to retailers to consumer; and producers to hawkers/village vendors to consumer. Moreover data revealed that (50.7%) of sampled producers set prices after hearing from their fellow farmers. About (44%) of the sampled producers sell their produce direct to the market.

This study differs from the previous studies, which is focusing on fishery sector in order to map the value chain and the value added created throughout the value chain and its distribution of profit to all members within the value chain.

### 2.2. Value Chain

Essentially, value chain shows the full range of activities that should be taken by companies to bring a product from its conception to its end use and beyond. This includes and starting from all design activities, production, marketing, distribution until final consumers. Australian Centre for International Agriculture Research (ACIAR) (2012, p. 21) explain that value chain can be defined into two terms. First, it includes all activites that should be carried out by a particluar firm to produce a certain product. All these activites form all chains starting from producers to final consumer, and each activites that add value to the product. Second, the concept of value chain is not only relates to full range of activites, but also the complexity of activites done by actors to bring raw material through a particular chain until reach end consumer. In addition, value chain is not only an approach, but also a tool of analysis to upgrade competetiveness of all members within the value chain. Porter in Msuya (2012) and Nazir et al., (2014) describes the value chain as a business model that enables the organization of operational activities around the value adding activities that result in a better service or product, then relates them to an analysis of the competitive strength of the organization. Therefore, it evaluates which value of each particular activity adds to the organizations products or services.

Kaplinsky in ACIAR (2012, p.25) pointed out that... "value chain consists of all stages of activities needed to bring the product or services from the conception up to the final consumer and even after the use of the product." It also provides the distribution of revenue for each members who involves in the value chain. This model can show how the governmnet and companies relates to each other in the global context. This will be very useful in determining distribution of the results of a global production system as well as capacities to be developed each manufacturer to improve their operations and then make them follow a path of sustainable revenue growth. Furthermore, it is explained that there is a description of 3 stages in the value chain analysis. The first stage is identification of the value chain activities. At this stage, some companies may be involved in a single activity or part of all activities. For example, some companies may only produce, while other companies to distribute and sell products. The second stage in the value chain analysis is to identify the cost driver at each activity value. Cost drivers are factors that change the amount of the total costs; therefore, the objective of this stage is to identify activities in which the company has a cost advantage both now and excellence. The third stage is to develop a competitive advantage by reducing costs or adding value. At this stage the company needs to determine the nature of competitive advantage by identifying competitive advantage, which can be either cost leadership or differentiation. Value chain analysis can help management to gain a better understanding of the strategic competitive advantages held by the company and can determine more precisely the position of the company in the value chain of the industry as a whole. From the government's perspective, with the understanding of the relationship with external parties (suppliers and customers, and possibly related technical institutions), at a certain level, the government could "get involve" to help the company to operate as normal and guarantee its survival (business sustainability).

ACIAR (2012, p.24) suggested 3 dimensional analysis tools to analyze the value chain, namely the common analysis tools, qualitative analysis tools and quantitative analysis tools. Common analysis tools focused on mapping the value chain, qualitative analysis focused on the relationship between actors, and quantitative analysis tools directed at the analysis of the distribution of income between actors in the value chain map. Further, Kaplinsky and Morris in ACIAR (2012, p. 27) outlines that there are at least four important aspects of value chain analysis, namely mapping the actors in the value chain, identifying and analyzing the distribution of the benefits of the actors in the value

chain, examines the role of upgrading in the value chain and analysis of the role of governance in the value chain.

Mapping of actors are closely related to the identification of the parties participating in the production, distribution, marketing and sales of a particular product. To map the actors in the value chain, it can be done through direct surveys, focused group discussions, participatory rural assessment, informal interviews and secondary data. In the aspect of assessing the distribution of benefits, the emphasis is on analysis of profit margin in the value chain, so as to gain information about anyone who would benefit from participation in the value chain, and which parties gain the benefit from support or better organizing.

Meanwhile, for the last two types of analysis (the role of the increase in the value chain and analyzes the role of governance in the value chain), Kaplinsky in ACIAR outlines that it can be done in terms of increasing the quality and design of the product, while the analysis of the role of governance refers to the structures and mechanisms of the relationship coordination between actors in the value chain. This also refers to the role of governance on how to manage commercial relationships in the value chain that can restrict or impede the achievement of what it is expected by value chain participants. Analysis of the value chain in this study is limited to the first 2 aspects, the mapping of actors and analysis of the distribution of benefits to the parties involved in the value chain.

### 2.3. Sustainability

Essentially, sustainability refers to an ability to keep or maintain something in order to exist for a long period. Research in the field of sustainability has been carried out by a large number of researchers. Spangenberg in Baumgartner (2009, p.2) pointed out that the issue of sustainability cannot be separated from an economic system. In more detail, Robèrt, et al. in Baumgartner (2009, p.2) support this notion by arguing that essentially, the main objectives of sustainability deal with the improvement of the quality of people's lives through economic activities on one hand, and on the other hand, negating the effects of human activities based on economic reasons, such as industrial and agricultural development which could lead to the destruction of environment. In other words, efforts to improve the quality of people's lives in conjunction with the issue of sustainability refer to the exploitation of natural resources in order to meet people's needs and also as a provider of jobs, of the manner in which the exploitation itself can be rejuvenated so that it will be able to provide services in the long-term period. Exploitation of natural resources always refers to business or corporate activities, such as mining industries and growing palm oil trees for industrial needs (Qureshi et al., 2014).

In practice, Norton and Toman (1997, p. 2) argued that it is quite difficult to strike a balance in the implementation of sustainability as explained in the above context since there are different measurements used by economists and ecologists or environmentalists to explain the interactions of humans with their environment. For example, there is a different perspective on how to measure and place value on changes in environmental hazards or its quality, especially when these changes are long-term in nature. In dealing with mega projects for example, economists tend to play down the issue of sustainability and put more attention on economic benefits, by using the indicators of an increase in income per capita and a decrease of the unemployment rate. Also, the implementation of time value of money terms as well as an economic approach in risk calculation are widely used and perhaps with some concern for the environmental impacts on future generations. On the contrary, ecologists or environmentalists often go against this view, particularly in the case of decision making that may have long-term impacts or have potential negative outcomes to society and the next generations. These differences do have direct impacts on the implementation of sustainable policies. They also affect what and which information is needed and considered relevant to decision makers, and they dictate quite different approaches to be considered in making strategic decisions that may or may not improve environmental policies.

To deal with the issue of sustainability, firms are expected and required to implement business strategies as a form of social responsibility to society of the manner in which the firms are able to achieve their mission as well as increase the value of share price on one hand, and on the other hand, they need to eliminate the negative effects of their operations in respect to the issue of environmental damage. This strategy is then called corporate sustainability. IISD et al. Baumgartner (2009, p.2) defined corporate or business sustainability as 'the adoption of business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing human and natural resources that will be needed in the future'. Van Kleef and Roome in Baumgartner (2009, p.2) called corporate sustainability sustainable business management, that is 'management of business that recognizes its embeddedness in social, environmental and economic systems, and focuses on management and relationships to meet the environmental, social, and economic requirements of many different stakeholders in its networks'. However, it is not an easy task to bring into reality. From a business perspective, sustainability is still a debatable issue of the manner in which and whether or not sustainable development and social responsibility benefit the firms.

Baumgartner (2009, p.1) looked at the context of organizational culture in response to the sustainability issue by arguing that corporations play important roles in the process of sustainability itself through the implementation of their business strategies. Since business strategies are developed by headquarters, the issue of sustainability should be in the top management mindset and embedded in the organizational culture. This means that if the issue of sustainability is formulated as one of cultural values within the firms, environmental issues and social responsibility will be considered by managers and stakeholders in formulating the missions and strategies of the firms.

However, according to Welford in Baumgartner (2009, p.11), in reality managers or headquarters of firms tend to play down the vision of environmental and social responsibility issues in formulating the firms' policies and decision making procedures in relation to evaluation of implementation and performance

mechanisms. There are also companies acting like "greenwashers" and change only their rhetoric, not their business practice. This might be because managers' thinking is based heavily on economic language and their policies and practices always refer to the initial objectives of the firms on how to generate much profit, obtain higher rate of return on assets as well as the rate of return on investment. In other words, managers believe that the firm's financial performance will be negatively influenced if they pay too much attention to the issue of environmental and social responsibility, since they normally perceive that consideration of the environmental or ecological dimension could be a great cost for the firms (Khan et al., 2014). As a consequence, it will lead to the high cost of production. This notion was supported by Palmer et al., (1995, p.4) by saying that as firms comply with the environmental regulations, it will result in reduced profits. For example, the pollution abatement expense which is a cost and it is cost that can never be recovered, nor a return for firms.

However, Porter and van der Linde' (1995, p.2) claimed that responding positively to environmental issues and social responsibility will eventually enhance the competitive advantage of firms and therefore benefit their economic performance. The most important thing is how the firms use their resources productively, whether those resources are natural, physical or human and capital within their operations. According to Porter and van der Linde' (1995, p.15) one of the global competition demands in today's global economy is how firms respect environmental issues. Using the example of the U.S. car industry, Porter and van der Linde argued that resisting innovation that reduces pollution will lead not only to environmental damage but also to the loss of competitiveness.

Moreover, in responding to the proposition of Palmer et al., a recent study was carried out by Chang and Kuo (2008, p.9) who claimed that the better sustainability performers may have a tendency of positive influence on firms' profitability and appear to have reciprocal influence between sustainability and profitability within the same period; the influence of sustainability may also disperse to a later period. Within the same year, the impact of sustainability on profitability tends to be stronger than the reciprocal influence generated from profitability. In addition, the significant variance of industrial category using the MANOVA testing may imply the effects of external system context on the firm's internal policy and decision making on sustainability development in terms of economic, environmental and social dimensions. Therefore, the notion that the issue of sustainability always costs the firm and it has a negative influence on the firm's financial performance is not completely true. All in all, the more improvement there is on the sustainability issue, the better financial performance of the company.

The relevance of the above argument to this study is to provide information or inputs to decision makers that the issue of sustainability that might cost the firms or has potential negative effects on firms' financial performance and will affect the competitive advantage of firms in the price context is not completely true. It can be argued that sustainability practices will not only benefit society, but also for the long-term period of the company itself.

Another relevance is that in reality, decision makers tend to use economic indicators and short-term interests to allow particular businesses to operate in a certain area by ignoring the sustainability issue. For example, to improve the quality of people's lives and as the rate of unemployment continues to increase, the presence of agriculture and mining companies might be allowed to operate in that area since it will contribute to reducing the number of unemployed, even if it might have negative impacts on the environment, such as the transformation of forest areas into agricultural or mining fields. If decision makers only consider economic reasons in making strategic decisions, they might have a tendency to permit a particular firm to operate. Reinhardt (2000) argued that sustainable development should be viewed by decision makers in the context of the entity's overall economic activity in evaluating the operating of firms. Decision makers should not only consider the economic benefits, but also they need to have enough and accurate information in dealing with the sustainability issue.

However, in dealing with the sustainability issue in the global context, such as the impact of global warming and climate change, Loorbach, et al., (2009, p.13) argued that it is impossible for firms or business institutions to go and act alone. Interconnection among stakeholders, such as business, government, scientific institutes, Non Governmental Agencies/Organizations (NGOs) as well as individuals, should be established in order to seek appropriate solutions. It is time to act together in formulating and redefining policies and strategies in business, government and NGOs in dealing with the sustainability issue. On the strategic and tactical level, Loorbach, et al., (2009, p.13) suggested that management approach networks among these institutions need to be developed. Also, organizational activities in the larger societal systems need to be set to support each other. For example, several innovative individuals in the energy transition set goals for creating sustainability. Within these goals, several companies formed a coalition to develop all necessary links for production, logistics or raw materials and usage of an alternative fuel. In this case, a strategy of a firm may focus on one level but simultaneously needs to relate to other firms' activities in order to form structural changes in their sector within society. This argument is compatible with the idea of how stakeholders participate actively in formulating the strategic decisions as well as making policies in dealing with issues of sustainable forest management.

## 3. RESEARCH DESIGN

Data used in this study is qualitative data and quantitative data, which is derived from the primary data and secondary data. Primary data obtained through surveys of members of value chain of fishery business, and secondary data obtained from the Association, such as Chamber of Commerce and Indusrty, the Department of Marine and Fisheries and the Board of Investment of Kota Kupang, and association of fishermen members. Secondary data gained such as policy regarding fishery business, actors of fishery business, and additional information regarding business practicess, such as type of fish produced, sales prices, valued added created throughout the value chain of fishery sector in Kota Kupang. Secondary data obtained then compared with primary data and analysed further using profitability ratios.

Populations in this study were all fishermen, middlemen, traders export, association of fish exporter, the executive and staff of the Ministry of Marine Affairs and Fisheries of Kota Kupang, and Investment Bureau of Kota Kupang. Sample size of this study were determined using purposive sampling technique. In the nature of qualitative research, Veal (2005, p. 208) states that the researcher does not have to pay attention to the number of samples, the most important is the respondent who represents key variables to be studied. Thus the sample size in this study were 25 respondents covering fishermen, association of fishermen, traders, the head of the Department of Marine and Fisheries of Kota Kupang, Chief Investment Board of Kota Kupang, and Chairman of Commerce and Industry of Kota Kupang. Snowball method was also used to obtain other respondents were their business related to the fisheries sector in Kota Kupang, such as restaurant and home industries that process fishery products in the form of shredded fish, fish jerky, and so on.

The in-depth interview was widely used in gathering data for this study. The interview was guided by a semi-structured questionnaire. Using this method, participants were interviewed more than once to seek more depth in the information provided (Veal, 2005, p.128). These interviews were electronically recorded and transcribed. Information was also glained from informal discussion with members of the value chain.

Qualitative data were analyzed descriptively and then presented in the form of flow charts and/or maps that illustrate the value chain map, while the quantitative data were analyzed using analysis of the value chain and financial ratios, such as profit margin ratios. Value chain analysis was conducted to identify the stages of the value chain where the firm can increase value for the customer or for lower costs.

## 4. RESULTS AND DISCUSSION

### 4.1. Overview of the Fishery Sector in Kupang

#### *4.1.1. Fishermen profile*

In general, fishermen who conduct fishing activities around Kota Kupang consist of local fishermen and Andon fishermen. Local fishermen are residents of Kupang who have a profession as fishermen; while andon fishermen are fishermen from other areas in Indonesia. Activities undertaken by local and andon fishermen are catching pelagic fish and bottom sea fish; later sold freely. Pelagic fish sold locally with the average price ranges between US$ 0. 5 - US$ 1.5 per kg at the peak season of production; and jumped to US$ 2.5 - US$ 3 per kg at the hard season (generally from January until March). While buttom sea fish are sold to companies that export to overseas through Bali and Surabaya with prices ranging between US$ 2.5 and US$4 per kg depending on the type of fish being sold. In addition, there are also local fishermen financed by certain companies with the primary goal is to catch particular fish to meet the needs of their businesses, such as restaurants.

### 4.2. Actors in Fishery Sector in Kota Kupang

Fishery sector in Kota Kupang in general involve other actors, such as big traders, exporters, small traders (usually doing door to door selling), restaurant, and business of processing various food products made from fish, such as grilled fish, shredded and fish jerky. Big traders are generally person/party who has much money to buy fish in large amount. Generally fish purchased by this party is a type of pelagic and demersal fish that the size does not meet the standards to be exporterted. The fish purchased by big traders then sold to small traders, or directly sold to the public/local consumers. Exporter is a company whose main activity is hiring fishermen to catch fish and/or buy the the fish of fishermen, then sorted and packed/prepared for export purpose. Fish type that they buy is the bottom sea fish which the size and condition meet export standards. Fish that have been sorted and meet export standards, further exported to Surabaya and/or Bali depending targeted market. Fish that are exported from Kupang by exporters, then exported to Singapore, Japan, Europe and America.

Small traders are generally a person whose main business is to buy fish from big traders and then sell directly to final consumers by walking and/or by using motor cycle. Those who have small amounts of capital, they operate just around Kupang city, while those who have big amount of capital employed others to sell fresh fish to the outskirts of Kupang, especially to SoE, Kefamemanu and Atambua. This group generally using coolbox for storage, and then transported using public transport services, pick-up vehicle and even used motor cycle.

Restaurant whose menu is primarily grilled fish or other fish-based usually buy bottom sea fish from big traders or directly from exporters, particularly fish which its condition does not meet the exportd standard. The last sector actors is the processing of various food products made from fish such as grilled fish business, and shredded beef jerky. This business sector actors generally buy and process fish that do not meet export standart.

### 4.3. Types of Fish Caught by Fishermen in Kota Kupang

The types of fish caught by fishermen in Kota Kupang and its surrounding are generally grouped into two types, namely bottom sea fish fish and pelagic fish. The bottom sea fish consists of the red snapper fish/*Lunjanus* spp., white snapper/*Letrinus* spp., big eye tuna/*Thunus obesus*, yellow fin tuna/*Thunus albakares*, grouper/*Epinephelus merra*, tuna/*Eutinus* spp., skip jack tuna/*Katsuworus pelamis*, Mackerel/Scamberamorus suttatus, anggoli and mackerel spanis berets/*Scomberomorus* spp.

Pelagic fish are grouped into small pelagic fish and large pelagic fish. This type consist of *Fringescale*/*Sardinella* spp, Indo - stripert the Pacific mackerel/Rastrelliger kanagurta, Indo - pasific short mackerel/rastrelliger neglectus, barred garfish/Hemirhampuss spp, mackerel cads/*Decaptherus* spp., etc.

## 5. DISCUSSION

### 5.1. Mapping of Actors in Fishery Sector

Mapping actors shows the actor who carried out business activites, starting from those who provide inputs of facilities up to final consumer. As shown in Figures 1 and 2, there are 2 categories of actors in fishery sector, they are actors for bottom sea fish

**Figure 1:** Map of main actors of bottom sea fish in Fishery sector of Kota Kupang

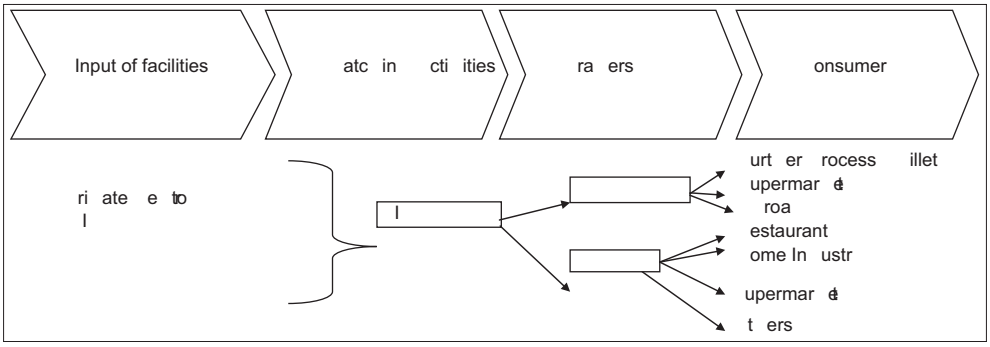
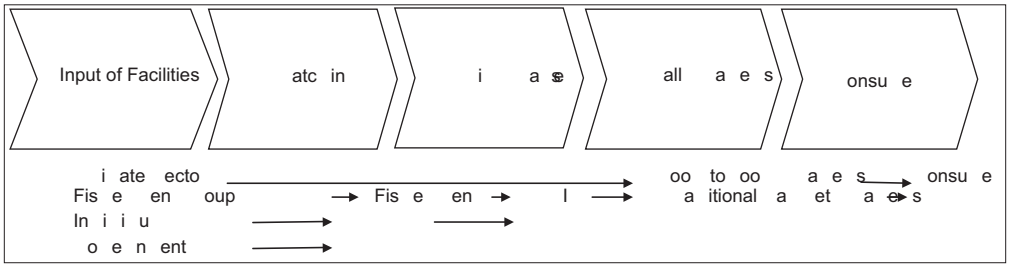



**Figure 2:** Map of main actors of pelagic fish in Fishery sector of Kota Kupang




and pelagic fish. The main difference of these 2 categories is in exporter. There is no exporter for pelagic fish. This means that all pelagic fish are sold locally in Kota Kupang and its sorrounding.

### 5.2. Mapping of Core Process and Distribution of Profit in Fishery Sector

Mapping of core process describes about the main activities carried out by parties or members who participate within the value chain. As can be seen in Figure 3 that there are many business activities takes place within the local market, that is in Kota Kupang and its sorrounding. Unfortunately, all business activities dominated by local traders. However, by using net profit margin ratio (Soffer and Soffer, 2003), it can be seen in Figure 3 that big local traders and exporters/big companies gained the highest profit within the value chain which ranging from 5% to 40%. In practice, local fishermen do this business only to meet their basic needs for household consumption. On another hand, Andon fishermen in practice are financed by big companies/exporter to do their business in sorroundidng Kupang Gulf. As a consequence, sometimes, there is a conflict happen between local fishermen and andon fishermen. From sustainability perspective, this will lead to an instant business practice done by local fisherman, which no longer protect marine resources to lasting for longer time. In addition, from value chain perspective, there is no further process take place in Kota Kupang which means that there is no value added created in Kota Kupang from business activities of fishery sector, since raw fresh fish that meet the export standard are directly exported by local exporter to Bali and Surabaya. The majority of pelagic fish went to local market of Kota Kupang without any further process.

### 5.3. Value Added Created throughout the Value Chain

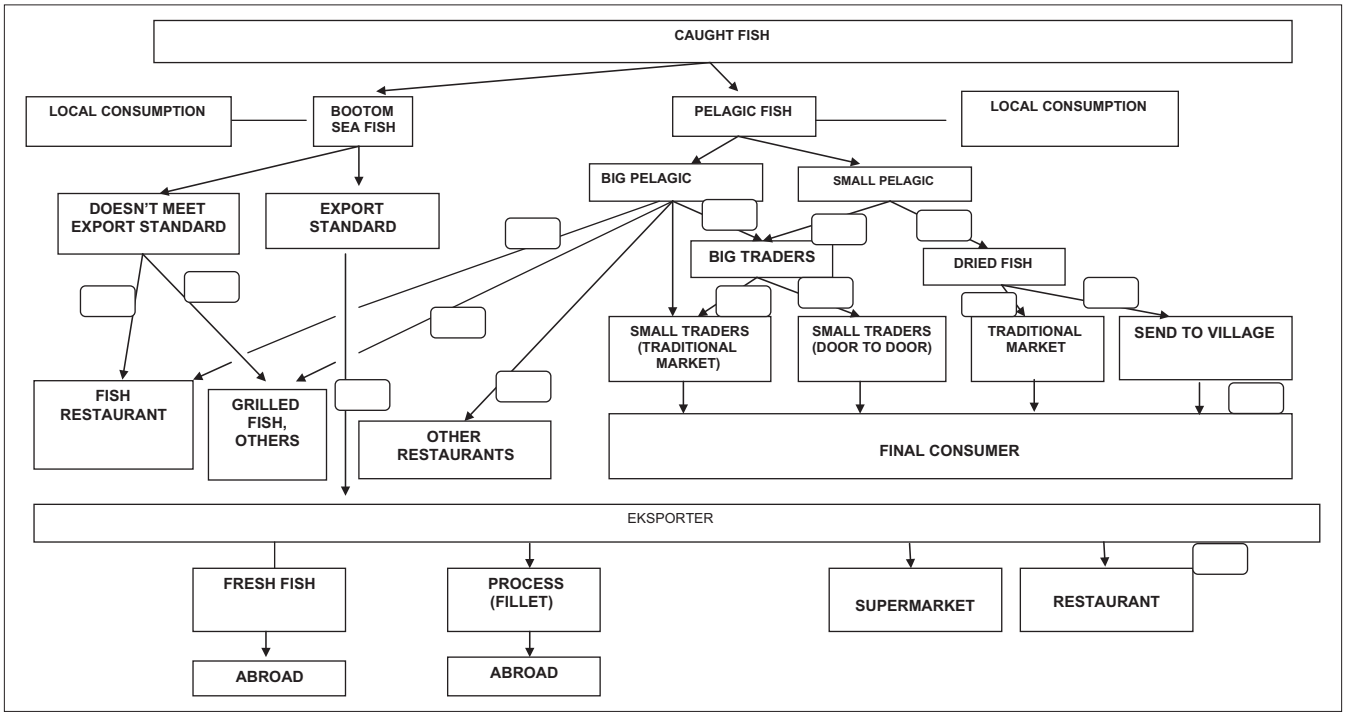
The information derived from the in-depth interview and informal discussion, then analised using net profit margin approach (Soffer and Soffer, 2003) the average profit gainned by local trades ranging from 3% to 10%. However, in the peak season of fish production, sometimes local traders only gain 1-3%. The highest rate of profit gainned by exportir which ranging from 5% to 40% depending on types of exported fish. On the contrary, the fishermen gained a tiny results throughout the value chain. Their income accounted for arround Rp 1,000,000.00 to Rp 2,000,000.00 per month or equal to US$ 100 to US$ 200 per month.

The main point here to improve this condition is depending on investment policy and decision made by government to attract and direct investor to invest in processing level of fishery sector. This condition is also experienced by milk supply chain in the USA; and might be the big change and callenging for actors to enter the processing level (Spackman, 2008). Also a good policy in integrating business activities in terms of value chain enabling business to grow in a particular field or sector due to the decrease of cost and a valuable network (McInerney, 2003).

## 6. CONCLUSION AND SUGGESTIONS

Value Chain Map of Fishery Sector in Kota Kupang is still short and it is dominated by local traders. Through the value chain analysis, it shows that the biggest value chain comes from bottom line sea fish, ranging from 35% to 75%; and the total value added created throughout the value chain was 65%. Exporters and big local traders gained larger profits compared to others actors in fishery business sector in Kota Kupan. Since andon fishermen financed by big companies/exporter to do their business and then gained higher profit, the sustainability aspects of fishery business in Kota Kupang will be in risk for longer time. It is then recommended that the local and central government should hand in hand with local fishermen and local fishery business actors, including local fishermen association to provide improvement of fishery related regulations for local people quality of life and economic growth of

**Figure 3:** Mapping of core process and distribution of profit in Fishery Sector




Kota Kupang, Indonesia. Also, local government of Kota Kupang should attract and support the potential investor to invest in the processing level of pelagic fish to expand the value chain asd create the value added in the fishery sector; and fisherman association should establish a network and cooperation among fisherman to be more focus on processing of pelagic fish.

## 7. ACKNOWLEDGMENT

The author is very grateful for grants given by the Directorate General of Higher Education, Education Ministry of The Republik of Indonesia and for comments of all reviewers of this research.

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