

**ANALISIS PENDAPATAN DAN KELAYAKAN USAHA
PENGOLAHAN IKAN ASIN**

**(Studi Kasus: Kelurahan Pasar II Natal, Kecamatan Natal, Kabupaten
Mandailing Natal)**

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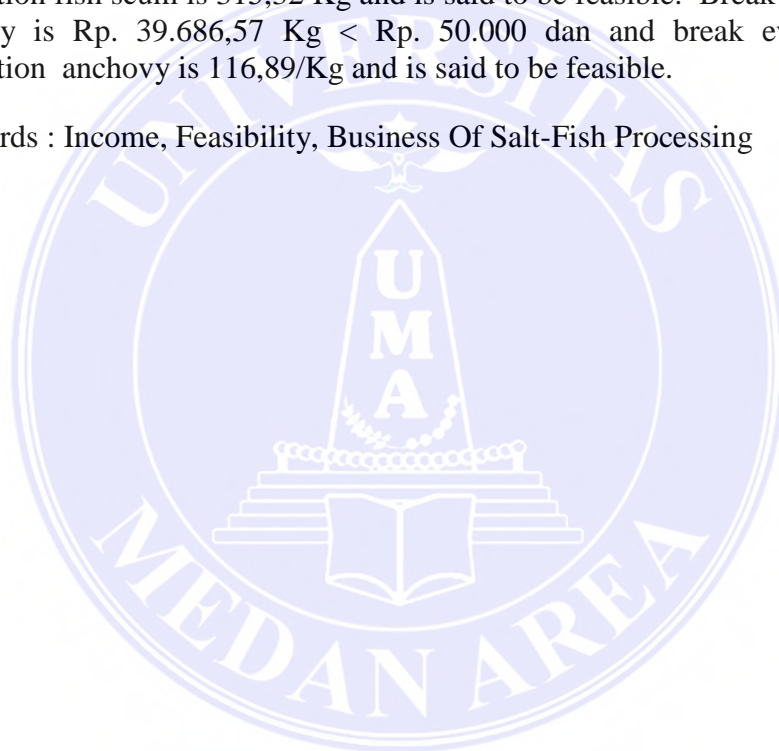
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ABSTRACT

The aim of this study is to know the income of the salt-fish processing business and whether the salt-fish processing business is feasibility. The study is carried out from September to October 2020. The identification of the study has been Purposive, for considering the location with the largest number of salt fish or owner in the Natal district, the sampel number 35 salted fish processing determined by saturated or census method, the data used is primary and sekunder data. The analysis used in the study is, income and feasibility, the feasibility analysis uses two test instruments namely R/C Ratio dan BEP (Break Even Point). The income salt-fish processing business is Rp. 5.007.138 /month, R/C Ratio value The income salt-fish processing business $1,08 > 1$ with break even price of fish scum Rp. 8.833,60/Kg $<$ Rp. 10.000 and break even point of production fish scum is 315,32 Kg and is said to be feasible. Break even price of anchovy is Rp. 39.686,57 Kg $<$ Rp. 50.000 dan and break even point of production anchovy is 116,89/Kg and is said to be feasible.

Keywords : Income, Feasibility, Business Of Salt-Fish Processing



CHAPTER I

INTRODUCTION

1.1 Background of Study

Indonesia is an archipelagic country with the second longest coastline in the world after Canada, Indonesia has a very high diversity of aquatic biological resources. One of them is marine fish resources with sustainable production potential reaching 6.4 million tons per year. The potential of this resource has long been used by the community and has played an important role as a source of livelihood, a source of animal protein, and industrial raw materials, and a means of providing employment opportunities. Even since the formation of the Ministry of Maritime Affairs and Fisheries, these resources are expected to become the primary movers of the Indonesian economy (Widodo, J, et al, 2006).

Its natural resources are abundant and its waters are very wide. When compared between the area of land and sea, the Indonesian seas have a greater dominance, namely 62% of the total territory of Indonesia, while the land area is only 38% of the total territory of Indonesia with this condition Indonesia is known as a maritime country and a maritime country.

Indonesia has marine and public water fisheries production, most of which comes from marine catches. Indonesia consists of 34 provinces, there are several provinces that produce high fishery production, one of which is the province of North Sumatra. Here are 10 provinces that produce the largest marine capture fisheries in Indonesia.

Table 1. Marine Fishery Production sold at TPI (tons) 2019

No.	Province	Production (Ton)
1.	DI Yogyakarta	1.844,45
2.	Central Java	182.359,30
3.	East Java	121.707,10
4.	DKI Jakarta	86.531,44
5.	North Sulawesi	70.949,19
6.	South Sulawesi	54.207,85
7.	Aceh	47.090,10
8.	Southeast Sulawesi	29.747,87
9.	Gorontalo	19.777,79
10.	North Sumatera	12.971,46

Source: BPS Fisheries Statistics Sub-Directorate 2020

Based on Table 1. The first largest fish production from marine catches came from DI Yogyakarta Province with a production of 1,844.45 tons/year. Sumatra is in the tenth position with a total production of 12,971.46. North Sumatra (North Sumatra) has wide waters, the fishery sector is very promising and has bright prospects. Moreover, the waters of North Sumatra which are in the Malacca Strait and the Indian Ocean are rich in fish. The fish caught in the sea not only supply the protein needs of the people of North Sumatra, but also become a source in improving the welfare of the community. Meanwhile, fish production in North Sumatra in the last five years has fluctuated as can be seen in Table 2.

Table 2. Production of North Sumatra Marine Capture Fisheries 2015-2019

Year	Production (Ton)	Percentage (%)
2015	475.789,3	19,48
2016	380.329	-25,09
2017	764.064	50,22
2018	715.422,065	-6,79
2019	368.530	-41,28

Source: Central Bureau of Statistics of North Sumatra 2020

Based on Table 2. fish production in North Sumatra experienced a decrease in production from 2015 to 2016 but increased again in 2017 by 764,064 tons with a percentage of 50.22% and in 2018 it decreased by 715,422,065 with a percentage of -6.79 %, and in 2019 it also decreased by 368,530 with a percentage of 41.28%.

North Sumatra has an East coast of 545 km, a West coast of 375 km and the Nias Islands and the new island of 350 km (DKP Sumut). North Sumatra consists of 25 districts and 8 cities with different amounts of fish production based on the origin of the catch, namely the sea and public waters. The number of fish production with the 10 highest catches by district/city in North Sumatra can be seen in table 3. As follows:

Table 3. Fish Production by Origin of Catch by Regency/City of North Sumatra (tons) 2019

No.	Regency/City	Sea	Public water	Total
1.	Asahan	53.983	-	53.983
2.	Central Tapanuli	48.910	2.146	51.056,00
3.	Langkat	45.844	6.770	52.614
4.	Batu Bara	32.109	-	32.109
5.	Medan	31.576	19.650	51.226
6.	Tanjung Balai	31.086	14.322	45.408
7.	Deli Serdang	26.615	32.191	58.806
8.	Serdang Berdagai	16.609	157	16.766
9.	Nias	15.555	-	15.555
10.	South Nias	15.398	-	15.398
11.	North Nias	13.095	-	13.095
12.	Gunung Sitoli	11.449	4.606	16.055
13.	Labuhan Batu	10.354	2.189	2189
14.	Mandailing Natal	6.184	2.600	8.784
15.	North Labuhan Batu	10.354	2.189	2189

Source: Central Bureau of Statistics of North Sumatra,2020

Based on Table 3. It can be seen that the largest marine fishery production comes from Asahan with marine fishery production of 53,983 tons/year and

Mandailing Natal Regency is one of the fourteenth largest fishery production centers with a production of 6,184 tons per year. Meanwhile, the production of fish caught in the sea in Mandailing Natal in the last 4 years has fluctuated, as can be seen in table 4.

Table 4. Total Production of Marine Capture Fisheries in Mandailing Natal 2015-2018 (tons)

Year	Production (Ton)	Percentage (%)
2015	17.563,80	-3,19
2016	18.586,93	5,50
2017	18.090.17	-2,74
2018	18.786,93	3,70

Source: Central Bureau of Statistics Mandailing Natal 2019

Based on Table 4. in the last 4 years the production of marine capture fisheries in Mandailing Natal Regency has fluctuated, namely the highest production in 2016 with a total production of 18,786.93 tons/year with a percentage of 3.70%, and the lowest production in 2015 with a production of 11,586.80 with a percentage of -3.19.

Mandailing Natal Regency consists of 23 sub-districts, there are three sub-districts that produce marine fish from their catch, namely Batahan District, Natal District, and Muara Batanggadis District. The following is the amount of production of marine caught fish based on the existing sub-districts of Mandailing Natal, which can be seen in table 5 below:

Table 5. Marine Capture Fishery Production by District in Mandailing Natal District 2017 (tons)

No.	District	Production (ton)
1.	Natal	8.520,27
2.	Muara Batang Gadis	5.783,91
3.	Batahan	3.785,99
	Jumlah	18.090,17

Source: Maritime Affairs and Fisheries Service Mandailing Natal 2018

Based on Table 5. That the largest marine capture fish production came from Natal District with a production of 8,520.27 tons/year. And the lowest fish production is in Batahan sub-district with a production of 3,785.99 tons/year.

Fish is a food that contains high quality protein. The protein in fish is composed of essential amino acids needed by the body as an energy source, helps the growth and maintenance of the body, and facilitates physiological processes in the body. Compared to other animal products. Fish has several advantages such as having a fairly high protein content of 20%, fish meat is easily digested by the body, fish meat contains unsaturated fatty acids with low cholesterol, and fish meat has a number of minerals such as K, Cl, P, S. , Mg, Ca, Fe, Ma, Zn, Cu, Vitamins A and D (Adawiyah, 2008).

In addition to having many advantages, fish also have several disadvantages. This is because fish contain high enough water so that they are quickly damaged and decay. Only within 8 hours of being captured and landed, there will be changes that lead to damage (adawyah, 2008).

The shortage of fresh fish can hinder the marketing of fishery products, this causes big losses when fish production is abundant. Therefore, preservation and processing are required. The main objectives of preservation and processing are to

UNIVERSITAS MEDAN AREA from spoilage so that they can be stored for a long time, increase

marketing reach, diversify the processing of fishery products, and increase income. Afrianto and Liviawati (1994), stated that the purpose of the preservation and processing process is to extend the durability and shelf life of fish. In addition, processing is required to obtain added value, both in terms of nutrition, taste, smell, shape/texture, as well as durability. The results of Soejono's research (2008), showed that processing fish into dried fish could increase the added value by 29.6%.

According to Srisuhartini and Nur Hidayat (2005), general techniques used in fish preservation efforts to prevent fish damage are:

1. Methods of using temperature, namely hot temperatures in canning or low temperatures in cooling and freezing.
2. Chemically related to the use of salt coupled with drying. In coastal communities themselves, the method used in preservation is chemically using salt, or salting.
3. The method of smoking is to kill the activity of microbial enzymes.

Fish that are perishable take only 8 hours after catching, the fish will experience decay, to overcome this the way that is taken by the community is to do preservation. A good and correct preservation process makes fish durable and can be distributed to regions. Traditional processed products include traditional and modern processed products. In the last 20 years, fish processing has been dominated by traditional fish processing, which is 43-46% (Ministry of Marine Affairs and Fisheries, 2006).

Modern fish processing is fish processing that is more advanced and developed, such as the use of machines in the production process, the process of making processed fish products is fast, independent of natural conditions. However, behind the advantages obtained in the modern fish processing process, there are

drawbacks, namely, consuming a lot of costs in the production process. So that generally people have not been able to switch from traditional production processes to modern ones. Traditional fish processing is fish processing which is still done manually, and depends on natural conditions in the manufacturing process, so the production process takes quite a long time. According to FAO, traditional processed fish or "cured fish" is a product that is processed simply and is generally done on a home industry scale. Types of processed that are included in traditional preparations are dried fish, or salted fish, pindang fish, smoked fish, and fermented products, namely soy sauce, shrimp paste and the like. Preservation of fish traditionally aims to reduce the water content in the fish's body, so it does not provide an opportunity for bacteria to breed. To get high-quality preserved results, good treatment is needed during the preservation process, such as maintaining the cleanliness of the materials and tools used, using fresh fish and clean salt (Rusman, 2008).

Traditionally processed products have a wide distribution distribution because in general the products are relatively stable even though the preservation and packaging are very simple.

According to Nitibaskara (1988), the characteristics of traditional fish processing are as follows:

- a. The quality of raw materials varies greatly. The raw materials for traditional fish processing are fish which have very diverse chemical compositions, physical conditions, and bacteriological conditions so that their freshness varies.
- b. Process environmental conditions are difficult to control.
- c. Auxiliary materials vary widely.
- d. The end point of the process is uncertain.

Natal District is the westernmost coastal area of North Sumatra which is directly adjacent to the Indian Ocean. Pasar II Natal is one of the 30 villages in the Natal sub-district and is one of the villages that has a fairly large and strategic fishery potential. The location of Natal District, especially Pasar II Natal which is directly adjacent to the sea, makes the local community mostly work as traditional fishermen, and carry out salted fish processing businesses.

Natal District, especially Pasar II Natal Sub-district, is the most prominent area in producing salted fish in Natal District. There are three areas or villages in the Natal sub-district that carry out business or processing salted fish including the Pasar II Natal village, Bintuas village, Buburan village, are the area with the highest number of salted fish processors or producers in the Natal district according to the local community.

Processing fresh fish into salted fish in Pasar II Natal village aims to add economic value and avoid losses when the fish caught by fishermen are not sold out. Most of the residents in Pasar II Natal Village work as fishermen and salt fish makers.

Based on the pre-survey conducted, the production of salted fish in the Pasar II Natal village still uses the traditional method in the use of each manufacturing process. The salted fish processing business in Pasar II Natal is still a household business. Most salted fish entrepreneurs do not know in detail how the economic calculation of the business they run, so they produce without considering the costs they have incurred, and so far the community has not calculated and clearly knows the amount of income they get. From this, it is necessary to know how the income is and whether the business is categorized as feasible to run by considering the production costs that have been incurred with the income from the salted fish

manufacturing business. Therefore, the authors analyze the income and feasibility of the business so that salted fish entrepreneurs can consider the business they have done so far.

Based on the description of the background above, the researcher is interested in researching the income and business feasibility of the Pasar II Natal village community with the title "Analysis of Income and Feasibility of Salted Fish Processing Business" (Case Study: Pasar II Natal Village, Natal District, Mandailing Natal Regency).

1.2 Problems of Study

Based on the background above, the problems of the study were formulated as the following:

1. How much the income was generated from the salted fish processing business in Pasar II Natal village?
2. How was the feasibility of salted fish processing business in Pasar II Natal village in terms of financial aspects?

1.3 Objectives of Study

Based on the formulation of the problem above, the objectives of this study are:

1. To find out the income of the salted fish processing business in the Pasar II Natal village.
2. To determine the feasibility of the salted fish processing business in the Pasar II Natal Village, Natal District from the financial aspect.

1.4 Significance of Study

The significances of this study are as follows:

1. For salted fish business actors, it is hoped that information and considerations can be used as information material in seeing the prospects for the development of processed fish processing businesses.
2. For local governments, it is hoped that the results of this study can be used as references and information in developing salted fish processing businesses.
3. For academics, the results of this research can be used as input for researchers in their fields in the context of developing science and technology.

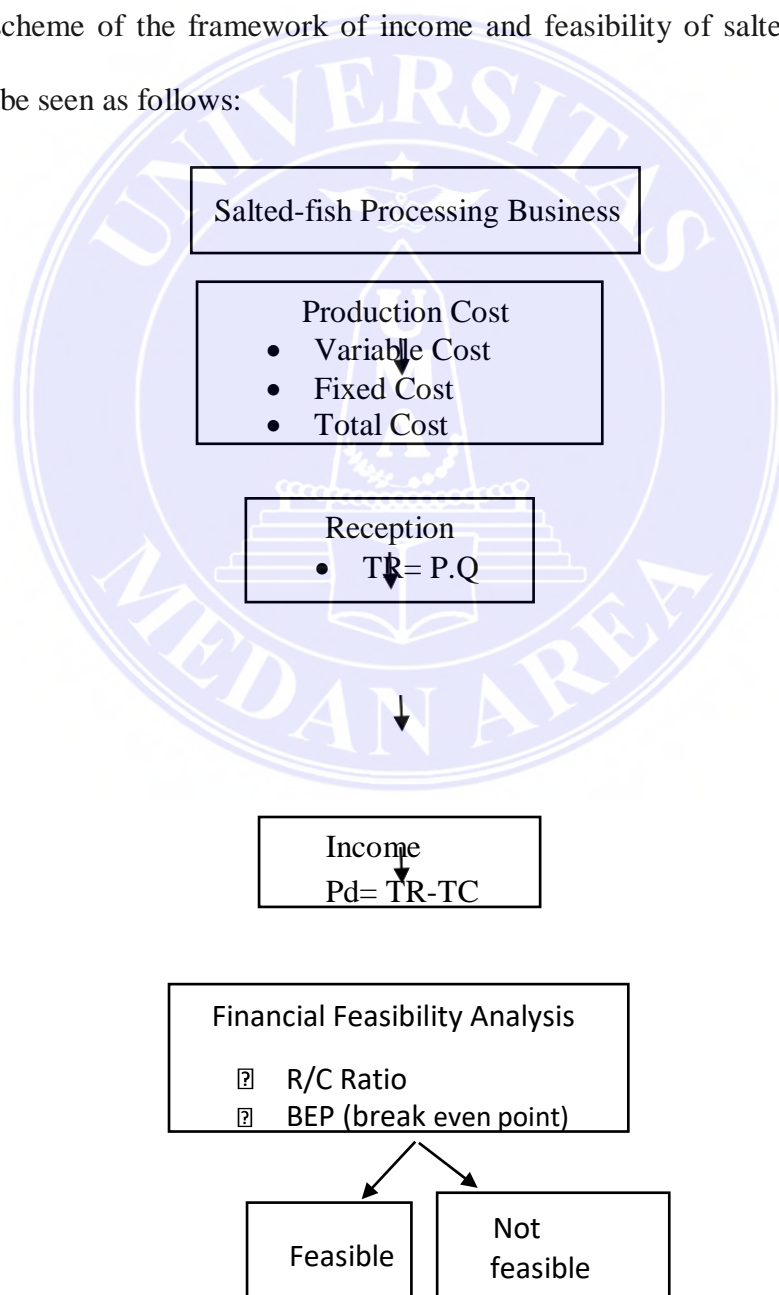
1.5 Framework

Salted fish processing business is a business carried out in processing fish with a salting and drying system. Salted fish processing business in Pasar II Natal is a traditional business. The production process with the production costs incurred in processing salted fish can have an impact on the income received by salted fish entrepreneurs. Revenue from Salted Fish Processing Business is obtained from the selling price of the salted fish production. In addition, in the salted fish processing business, income also needs to be analyzed. The income from the salted fish processing business is obtained from the difference between the total revenue from the salted fish processing business and the total costs incurred for production.

In the salted fish processing business, to determine the income of business actors, analysis is used, namely income analysis, income analysis aims to find out how the income of salted fish processing business is in Pasar II Natal, income analysis in this study uses the formula = $TR-TC$. The feasibility study aims to determine whether or not a business is

feasible to run, in the feasibility test in this study the tool is R/C Ratio, R/C ratio is the ratio of total revenue to total cost. With the provisions that $R/C > 1$ is feasible, $R/C < 1$ is not feasible, and $R/C=1$ break even. BEP (Break Even Point) is the point where a business is in a state of no profit and no loss. From the two tests above, we can determine whether the salted fish processing business in Pasar II Natal is feasible or not to run, for more details, the following is a schematic framework of analysis income and feasibility of salted fish processing business.

The scheme of the framework of income and feasibility of salted fish processing business can be seen as follows:



CHAPTER II

LITERATURE REVIEW

2.1 The Description of Salted Fish

The freshness of the fish cannot be increased, it can only be maintained. According to Juniantio (2003), it is very important to know the changes that occur after the fish die. After the fish dies, physical, chemical, and organoleptic changes take place rapidly. All these processes of change eventually lead to decay. Thus, good handling measures can be taken to maintain the freshness of the fish. Fish handling is an important part of the fishery industry chain because it can affect quality. According to Eddy and Evi Livianan (1994), the good or bad handling of fresh fish will affect the quality of fish as food ingredients or as raw materials for further processing. Therefore, to prevent the process of spoilage, it is necessary to develop various methods of preservation and processing that are fast and careful so that most of the fish produced can be utilized.

The basis of fish preservation is to maintain the freshness and quality of fish for as long or as good as possible. Almost all fish preservation methods leave special properties on each preserved product due to changes in the characteristics of the smell (odor), taste (flavor), appearance or appearance (appearance), and texture (texture) of fish meat. Preservation of fish also aims to inhibit and stop the activities of enzymes and microorganisms that can cause spoilage (degradation of quality) and damage to fish. According to Srisuhartini and Nur Hidayat (2005), general techniques used in fish preservation efforts to prevent fish damage are:

1. Methods of using temperature, namely hot temperatures in canning or low temperatures in cooling and freezing.

2. Chemically related to the use of salt coupled with drying.

3. How to smoke to kill the activity of microbial enzymes.

Salting is a fish preservation method that is widely used in various countries, including Indonesia. This process uses salt as a preservative, both in the form of crystals and solutions. According to Eddy Efrianto and Eviliviawaty (1994) during the salting process there is a penetration of salt into the body of the fish and discharge from the body due to differences in concentration.

Salted fish is fish that has been preserved by salting. This preservation actually consists of two processes, namely the process of salting and drying. The main purpose of salting is the same as the purpose of the preservation process or other processing, namely to extend the durability and shelf life of fish (Simanjuntak, 2012).

Salted fish is a food ingredient made from fish meat that is preserved by adding a lot of salt. With this method of preservation, fish meat that usually rots in a short time can be stored at room temperature for months, although it usually has to be tightly closed. Various types of fish that are usually salted include land and sea fish. These fish are collected in a container and then sprinkled or immersed in a concentrated salt solution. Large fish are usually split or cut in advance so that the salt can easily seep into the meat.

Due to the difference in concentration and osmotic pressure. The salt crystals will attract the cell fluid in the fish flesh. Salting of fish is usually done to reduce the water in the fish so that bacteria cannot live and thrive. The presence of salt will cause the acidosis process to occur in the fish meat cells so that the bacteria die. Hildaniyulia (2012) stated that salting is a preservation process that is widely carried out in various countries, including Indonesia. This process uses salt as a preservative, either in the form of crystals or in solution. During the salting process,

there is a penetration of salt into the body of the fish due to the difference in concentration. The liquid quickly dissolves the salt crystals or dilutes the salt solution. Furthermore, it is explained that along with the discharge of fluid from the fish's body, salt particles will enter the fish's body. Over time, the speed of the salt and liquid exchange process slows down as the salt concentration outside the fish's body decreases. Even the exchange of salt and fluid stops completely after a balance occurs. This process results in the thickening of the remaining body fluids and the accumulation of denatured protein and shrinkage of the fish's body cells so that the nature of the meat changes.

This process continues until a balance of salt concentration is reached outside and inside the meat. The high salt concentration shrinks the cell fluid will stop the autolysis process and inhibit the growth of bacteria in the fish flesh after that, the fish are dried, boiled or fermented to increase their shelf life. Processing and preservation of fishery products are aimed at:

1. To save the abundant catch in the fishing season.
2. Produce diversified fishery products that have a specific flavour.
3. Strive for fish to be marketed in areas far from the center of production.

In principle, there are two (2) processing and preservation, namely traditional and modern. The traditional way is to use simple tools such as salting given to fish or fish mixed with salt. Drying is fish that has been mixed or sprinkled with salt, then dried in the sun or the weather is no longer good as well as drying and fermentation, for example such as salted fish and anchovies. While the modern way is to use advanced technology such as cooling or using ice cubes or freezing. Canning is fish given preservatives and then packaged in cans, for example like sardines (canned fish).

Traditional processing plays an important role in the position of Indonesian fishery products, almost 50% of the catch is processed traditionally.

For traditional processing methods, for example by salting fish. Salting is defined as a combination of chemical and physical processes, namely by penetrating salt into fish and pulling water out of fish body tissues, while the resulting product will experience a change in weight (Heruwati, 2002).

2.2 The Salted Fish Vitamin Content and Benefits of Salted Fish

One of the processed fish products consumed by the people of Indonesia is salted fish. In addition to a more affordable price, salted fish too easily obtained. Salted fish also has a higher protein content than fresh fish. The protein content of fresh fish per 100 grams is 17% while the protein content of salted fish per 100 grams is 42%. The fat content of salted fish is 1.50% lower than fresh fish which is 4.50%. Salted fish has phosphorus and calcium which are good for healthy teeth and bones, salted fish contains iron which can help wound healing, and iron in salted fish can prevent anemia. This makes salted fish more profitable in terms of health (Agung, 2017).

2.3 The Processing of Salted Fish By Salting

Processing is one way to maintain fish from the decay process, so that it can be stored for a long time until it is time to use it as consumption material (Adawyah, 2008). Salting is a preservation process that is widely carried out in various countries, including Indonesia. The process uses salt as a preservative medium, both in the form of crystals and solutions. During the salting process, there is a penetration of salt into the body of the fish and the discharge of fluid from the body of the fish due to the difference in concentration. This process results in the thickening of the remaining body

fluids and protein clumping (denaturation) and the shrinkage of the fish body cells so that the nature of the meat changes (Adawyah, 2008).

Preservation of fish which is done by salting actually consists of two processes, namely the salting process and the drying process. Fish that undergo a salting process will be durable because salt can inhibit or kill the bacteria that cause spoilage in the fish (Afrianto and Liviawaty, 1994). According to Adawyah (2008) fish salting methods can be grouped into 3 (three), namely dry salting, wet salting, and mixed salting.

1. Dry Salting

The dry salting method uses salt crystals mixed with fish. In general, large fish are gutted first and if necessary, split open so that the flesh becomes thin so that it is easier for salt to penetrate. In the salting process, fish are placed in a watertight container, such as a wooden tub or cement brick. The fish are arranged layer by layer in the container, interspersed with layers of salt. The amount of salt used is generally 10-35% of the weight of the fish.

2. Wet Salting

Wet salting uses a 30-50% salt solution (every 100 liters of salt solution contains 30-50 kg of salt). Fish are put into the solution and weighted so that all fish are submerged for a certain period of time depending on:

- a) Size and thickness of fish.
- b) The desired degree of saltiness.

3. Mixed Salting (Kench Salting)

Kench salting is basically dry salting, but not using a bath. Fish mixed with salt crystals as in salting dry on the deck of the ship. The salt solution formed is allowed to flow and is wasted. This method does not require a tub, but requires more salt to compensate for

the salt solution that flows and is wasted. Kench's salting process is slower. In general, the process of processing fish into salted fish can be seen in Figure 2.

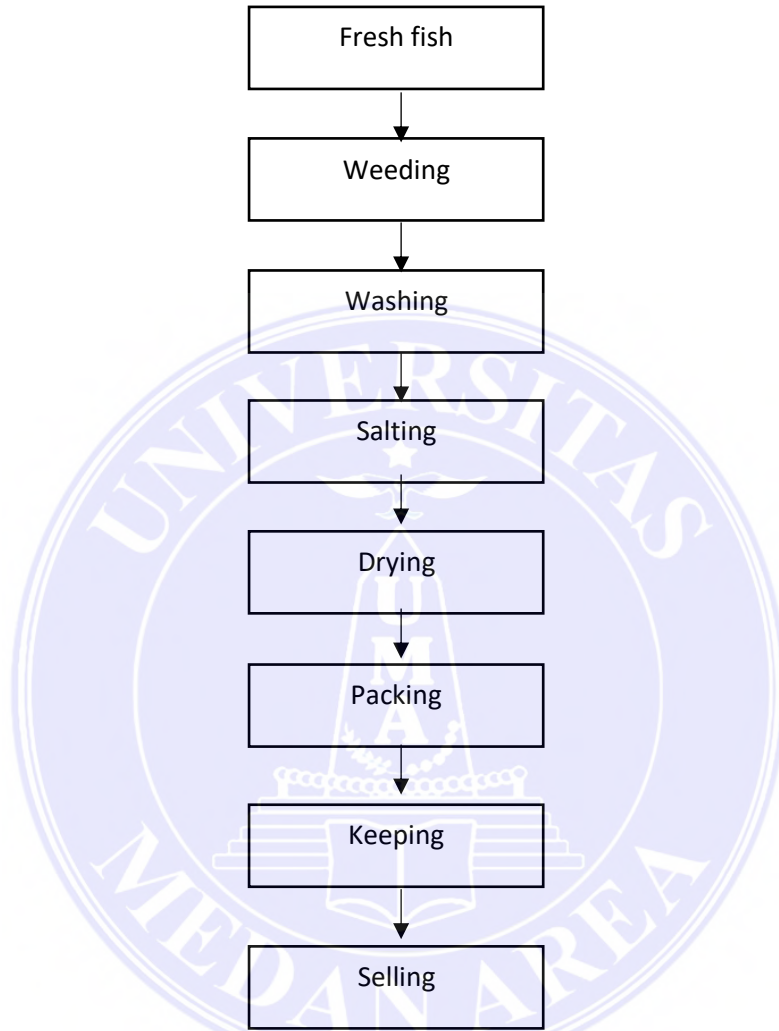


Figure 2. Fish Salting Scheme

a. Weeding

Large fish are cleaned by cleaning the scales and removing the contents of the stomach, then splitting. Some types of fish are cut off the head, such as tuna and salmon. There are many different ways, but in general the difference is not much.

b. Washing

Washing with clean water is done to remove traces of blood, scales and other impurities. Sometimes for washing, a mild saline solution is used as the initial salt

with a low salt content so that the caught fish do not rot while still on board. If the salting is done in the middle of the sea (on a fishing vessel), then sea water is used for washing.

c. Salting

Traditional salting is still done by sprinkling salt crystals on the surface of the fish or brushing it with a salt solution, a mixture of salt crystals and a salt solution. In advanced salting, tools are used that can insert a solution of salt into the fish meat.

d. Drying and Packing

After the salting is done, the fish are then dried in the sun or mechanically dried. Drying only aims to reduce the water content a little, so that the salted fish product does not look runny. So drying is not until the salted fish become completely dry. If drying is considered sufficient then salted fish can be sold.

According to Astawan M. W. M. Astawan (1988), the salting step in salted fish in principle draws water from the fish meat tissue so that the fish meat protein will coagulate and the meat cells will shrink. Programming can also inhibit the growth of spoilage microorganisms but with high levels of salt. With the next drying step, the level of salted fish water will continue to decrease and create conditions that do not allow disturbing microorganisms to grow. Therefore, the amount of added salt should be calculated correctly so that it is not too high, so that salted fish can be consumed more as a protein source in an effort to increase the population's protein consumption. The amount of salt added is very dependent on the freshness of the fish, the size and duration of the fish preservation. Meanwhile, the quality of salted fish is not only determined by the amount of salt added, but also by the level of purity of the salt used.

Salted fish can survive in good conditions for 2-3 months at temperatures below 100C. At temperatures above 150C the damage occurs rather quickly. Salted fish can be stable due to three factors, namely:

- a. Direct action of sodium chloride on a variety of protein-decaying (putrefractive) organisms.
- b. Removal of oxygen from tissues that prevents the growth of microorganisms.
- c. The idea of sodium chloride on the activity of proteolytic enzymes in meat.

2.4 The Definition of Business

Business is all economic activities carried out by humans or carried out by people by directing energy, mind or body in order to achieve certain goals. Efforts can be done alone or in groups to achieve the desired goals. According to Harmaizar Z in the book "Concurrently with Business Opportunities" a business can also be called a company, which is a form of business that carries out activities regularly and continuously with the aim of obtaining profits, whether organized by individual or business entity in the form of a legal entity or not in the form of a legal entity, which is established and domiciled in an area or within a country.

According to Samuelson and Nordhaus (2003, p. 125) "business is an activity that carries out very diverse production activities". The lion's share of economic activity in a developed market economy takes place in several forms of business, one of which is an individual or private business where the capital comes from personal wealth and the risk of loss will be borne by yourself.

2.5 Income

Income is one of the goals of establishing a business. With this income, it means that a business is still running and deserves to be maintained, even though there are actually several other things besides income that can be taken into consideration when continuing a business. By paying attention to the amount of income, it will be known whether a business gains or loses according to M. Munandar (1996: 18) Income is an increase in assets that results in an increase in owners equity, but not because of the increase in new capital from the owner and not an increase in assets caused due to increased liabilities. This definition explains that something comes from the counter-achievement received by the company for the services provided to other parties. Furthermore, an increase or increase in assets will result in an increase in owners equity.

In the analysis of Micro Economics, according to Sadono Sukirno (2002: 391) The entrepreneur's income is profit. In the company's activities, profits are determined by reducing the various costs incurred from the sales obtained. The term income is used when it relates to the flow of income in a certain period originating from the provision of production factors (natural resources, labor and capital) respectively in the form of rent, wages and interest. The income is remuneration for the use of the factors of production. According to Soekartawi (2006) operating income is the difference between revenues and all costs. Income is the factors of production that are used as perfect remuneration in the form of rent, wages and salaries. This understanding emphasizes income as the embodiment of remuneration or participation which is reflected through donations in the form of production factors, which in the process of activities get additional or certain remuneration which is then assessed as income, while personal

income is all types of income obtained without providing any activities. whatever is received by the residents of a country.

Where income on cash costs is income earned on costs that are actually issued. Meanwhile, income on total costs is income after deducting cash costs and calculated costs.

$$Pd = TR - TC$$

Information:

Pd = Income

TR = Total Revenue

TC = Total Cost

2.5.1 Revenue

Revenue is the result of multiplying the total production with the unit cost. Total production is the main and by-product, while the price is the price at the farm level or the selling price of farmers (Soeharjo and Patong, 1973).

According to Soekartawi (2006) revenue is a multiplication between the amount of production produced and the selling price of the product. Meanwhile, Nurdin (2010) stated that total revenue or total revenue in general can be defined as revenue from the sale of goods obtained by the seller. Total revenue can be formulated as follows:

$$TR = Q \times P$$

Information:

TR = Total Revenue

Q (Quantity) = Number of products produced

P (Price) = price per unit of goods.

2.5.2 Production Cost

Cost is the sacrifice of production resources to achieve a certain target/objective which is measured in units of value for money that have or may occur and provide benefits for the future. According to Mulyadi (2009) production costs are costs incurred to process raw materials into finished products that are ready to be sold. Furthermore, it is said that costs can be grouped into two groups, namely: direct costs and indirect costs. Direct costs are costs incurred, the only cause of which is because something is being financed. Direct production costs consist of raw material costs and direct labor costs, while indirect costs are costs that occur not only because of something that is financed.

According to Suhartati and Fathorrozi (2003) costs can be divided based on their nature, meaning linking the expenses to be paid with the product or output produced, namely:

- a. Fixed costs are obligations that must be paid by a company per unit of time for the purpose of paying for all fixed inputs and the amount does not depend on the number of products produced. The types of fixed costs in this salted fish processing business are buckets, hoses, blades, fiber, dipper, fiber, delta.
- b. Variable costs are obligations that must be paid by a company at a certain time to pay for all variable inputs used in the production process. The types of variable costs in this salted fish processing business are the main raw materials for fresh fish, salt, labor, and others.
- c. Total Cost is the sum of fixed costs and variable costs in the production process.

2.6 Feasibility Analysis

A business feasibility study is an activity that studies in-depth information about a business or business being carried out, in order to determine whether or not the business is feasible or not. Feasibility means that in-depth research is carried out to determine whether the current or future business will provide greater benefits than the costs incurred in accordance with the desired goals (Meizi, 2012).

According to Kadariah et al (1978) in Meizi (2012), the objectives of business activity analysis are:

- (1) to avoid losses achieved from the investment of a business
- (2) avoid wasting resources by not doing business if it is not profitable
- (3) conduct an assessment of the existing investment opportunities, so that the most profitable business alternatives can be selected
- (4) determine business priorities.

Determination of feasibility studies aspects that need to be researched in a business feasibility study include market aspects, technical aspects, management aspects, legal aspects, socio-economic aspects, environmental aspects, and financial aspects. This aspect needs to be considered because it determines how the benefits will be obtained from a particular investment and must be considered at every stage in the business planning and implementation cycle.

2.6.1 Financial Aspect

Financial analysis is an analysis of costs (costs) and revenues (benefits). These two components will be analyzed using their respective methods. Costs can be

classified into two, namely variable costs and variable costs also fixed costs (Husnan, 2009).

The financial aspect is related to how to determine the need for the amount of funds and their allocation and find the relevant source of funds efficiently, so as to provide a promising level of profit for investors (Ibrahim, 2003).

Analysis of the financial aspect is used to assess the amount of funds needed to build and operate a business activity. This aspect takes into account the income earned during a business running. The data required in this analysis include investment costs, operational costs consisting of fixed costs and variable costs as well as revenues earned during the life of the business. The data is processed using a business feasibility analysis in the form of investment criteria such as the Net Revenue-Cost Ratio (Net R/C). In the course of the business, there are changes that may occur during the running of the business which can be analyzed using sensitivity analysis and switching value analysis.

Business feasibility analysis is viewed from the investment aspect so that business feasibility can be seen from the investment feasibility side. The investment eligibility criteria used in this study are: Net Revenue Cost Ratio (Net R/C) and Benefit Cost Ratio (B/C).

a. R/C Ratio

R/C stands for Return Cost Ratio or known as the ratio between revenues and costs. This can be written as follows:

$$R/C =$$

Information :

R/C : Total Revenue/Cost Ratio

TR : Total Revenue

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TC : Total Cost

The criteria for assessing the feasibility based on the R/C are as follows:

$R/C > 1$: The business is feasible to run

$R/C < 1$: The business is not feasible to run

$R/C = 1$: The business is neither profitable nor losing.

2.7 Break Even Point

The definition of break even point is a condition where a business does not make a profit and does not suffer a loss (income equals total costs). From this understanding, it can be concluded that a business is said to have reached the break even point if it does not make a profit but also does not suffer a loss, where the profit is zero. So it can be said that the break even point is the relationship between sales volume, costs and the level of profit that will be obtained at a certain level of sales, so that the break even point analysis is often referred to as cost, volume, profit analysis (Mulyadi, 1993).

In addition, break even point analysis is very useful for determining policies within the company, both advanced companies and companies that are just planning. According to Faud (2001) the analysis of the break even point is a point of return on capital where the reduction in total revenue is equal to zero. A company is said to be in a break even state, that is, if after preparing a report, profit and loss calculation for a certain period. The sales revenue obtained for a certain period is equal to the total cost, which has been sacrificed so that the company does not make a profit or suffer a loss.

Break-even analysis is needed to determine the relationship between production volume, sales volume, selling price, production costs and other costs, both fixed and variable, and profit or loss.

To find out how much the production value limit or the production volume of a business is to reach the point of no profit or loss (break even) then the BEP (break even point) calculation is carried out while the price BE formula and production BEP according to Sunarjono (2005) are as follows:

Production BEP =

Where :

Tc= Total cost

And

BEP price =

P = Price (rupiah/kg) Q = Production (kg)

BEP production criteria are as follows:

- a) If production BEP < total production, then the business is in a profitable position.
- b) If production BEP = total production, then the business is in the breakeven position or no profit/no loss.
- c) If the BEP of production > total production, the business is in an unprofitable position.

BEP price criteria as follows:

- a) If BEP price < total price, then the business is in a profitable position.
- b) If BEP price = total price, then the business is at the break-even point or no profit/no loss.
- c) BEP price > total price then the business is in an unprofitable position.

2.8 The Relevant Studies

Takril (2016) with the title Feasibility Analysis of Anchovy Drying Relationship with Fishermen's Income in Kelawa, Lantora Village, Polewali District, Polewali Mandar Regency. This study aims to determine the level of income and feasibility of anchovy frying business in Kelawa, Lantora Village, Polewali District, Polewali Mandar Regency. The analytical method used in this research is quantitative, namely to determine the income and feasibility level of anchovy drying business in Kalawa, Lantora Village, Polewali Mandar Regency. The results of the study show that the net income obtained by anchovy drying fishermen in carrying out their business is Rp. 1,481,612 and the R/C ratio obtained is 1.1, which means that the business is declared feasible, because every additional cost of Rp. 1, it will get a profit of Rp. 1.1. Thus, the anchovy drying business that is carried out is profitable.

Reswita (2016) with the title Feasibility of Salted Fish Processing Business in Sumber Jaya, Kampung Melayu District, Bengkulu City. Respondents in this study, there were 20 salted fish processors. The analytical method used is income analysis, R/C ratio, and ROI (Return On Investment). The results showed that the income from the salted fish processing business was Rp. 134,457.15 R/C ratio of 1.2 and ROI of 9.7%. From the results of the study, it can be concluded that the salted fish processing business is feasible.

Darsalina Puceh Barus. 2019. With the title Analysis of Salted Fish Processing Business in Kuala Baru Village, Kuala Baru District, Aceh Singkil Regency. 2019. The purpose of this study is to analyze the costs, revenues and profits in the salted fish processing business in Kuala Baru Village. Analyzing the amount of efficiency in the salted fish processing business in Kula Baru Village. The basic research method used is descriptive method. Sampling of respondents was carried out proportionally as many as

15 people. The results of this study indicate that the average total cost of salted fish processing business in Kuala Baru Village is Rp.47.749565 per month. The average revenue obtained is Rp. 57,538,667 per month so that the average profit earned by salted fish producers is Rp. 9,789,102 per month. The salted fish processing business that has been run so far has been efficient, as indicated by the R/C ratio of 1.21, which means that every cost incurred in salted fish processing business activities gives an income of 1.21 times the costs that have been incurred.

Rika Ramadani et al (2018) with the title "Analysis of the feasibility of sheep farming in the sub-district of Bandar Simalungun Regency". The method used in sampling in this study is the census method. Analysis in this study by analyzing the feasibility of sheep farming using R/C ratio and BEP tools. First determine the Total Revenue (Total Revenue) and Total Cost (Total Cost), determine the income (profit), determine the break-even point, then determine the feasibility of the livestock business. The R/C Ratio value of 4.63 is greater than one, meaning that each farmer spends Rp. 1,000,000 will be obtained receipt of Rp. 4,630,000 within 6 months. According to Soekartawi (2003), the business is said to be profitable if the R/C Ratio value is greater than one ($R/C \text{ Ratio} > 1$). So it was concluded that the sheep farming business in the research area was feasible.

Mariam A. Basra Pasau, et al (2015) with the title analysis of income and business feasibility of cassava chips in the Pundi Mas Industry in Palu City. The purpose of this study was to determine the income or profits of the cassava chips business obtained by the Pundi Mas Industry in Palu City and also to determine the feasibility of the cassava chips business in the Pundi Mas Industry in Palu City. The analytical method used in this research is income analysis by calculating the difference between revenue (TR) and total cost (TC). The result of this research is the income or

profit of the cassava chips business at the Pundi Mas Industry in Palu City per month is Rp. 22,259,250.34 or Rp. 267,111,004 per year in other words the cassava chips business in the Pundi Mas Industry is Profitable. and also the revenue cost ratio (R/C Ratio) obtained by the Pundi Mas Industry is greater than one, namely 1.17, meaning that the business is feasible to run.

Dirman Btr. 2019. With the title Income Analysis and Business Feasibility Goat Livestock in Siantar City Village, Panyabungan District, Mandailing Natal Regency.2019. This study aims to determine the income of farmers and whether the livestock business is feasible to run. The sample used is a nursery breeder with a total of 44 farmers, the sampling method used is stratified random sampling with three strata, namely small farmers, medium breeders, large breeders, the analysis used in this study is income and feasibility analysis, the feasibility analysis is used two test tools, namely the R/C ratio and BEP (break even point), the income of small farmers is Rp. 1,470,738, the income of medium breeders is Rp. 1,539,682,556 and the income of large farmers is Rp. 6671,706,3. The R/C value of small farmers is $0.90 < 1$ with a break-even point of Rp. 2,801,572.81 $>$ Rp. 2,300,000 and the break-even point of production is 5.65 and is said to be unfeasible. The R/C value of the breeder is $1.09 >$ with a break-even point of Rp. 2,173,673.8 $<$ Rp. 2,300,000 and the break-even point of production is 8.41 and is said to be feasible. R/C value of large breeders $1.24 > 1$ with a price point of Rp. 1,853,630.51 $<$ Rp. 2,300,000 and said to be decent.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Location and Time

This research was carried out in Pasar II Natal village, Natal District, Mandailing Natal Regency, North Sumatra Province. The location of this study was chosen purposively with the consideration that Natal District is the sub-district with the highest marine fish production among the sub-districts in Mandailing Natal Regency which can be seen in table 5 which shows marine capture fisheries production in Mandailing Natal Regency. reasons for choosing Natal District as the research location.

The election of Pasar II Natal Village was based on the results of the Pre Survey on February 1, 2020 that Pasar II Natal Village was the area with the highest number of salted fish processors in Natal with the number of salted fish processors or owners as many as 35 people. This research was carried out in September - October 2020.

3.2 Sampling Method

In a study, the population is needed as a target to obtain data and information to answer research problems. According to Sugiyono (2008) population is a generalization area consisting of objects and subjects that have certain characteristics that are determined by researchers to be studied and drawn conclusions. The following is a table of salted fish processors/salted fish business owners in Natal District.

Table 6. Number of Salted Fish Processors / Business Owners in Natal District

Village	Business Owner (People)
Pasar II Natal Village	35
Bintuas	9
Buburan	5
Total	49

Source: Primary processed data 2020

Based on a pre-survey conducted in February 2020, in Natal sub-district there are 3 villages that produce and carry out salted fish processing businesses. The total population in Natal sub-district is 53 people. In this study, the population is salted fish processors / salted fish business owners in Pasar II Natal Village, with a population of 35 people.

The sample is part of the existing number and characteristics possessed by the population, so the sample must be taken from a representative population (Sugiyono, 2012). According to Arikunto (2012) if the population is less than 100 people, then the total sample is taken, but if the population is greater than 100 people, 10-15% or 20-25% of the total population can be taken. The total population of salted fish business owners or processors in Pasar II Natal is 35 people, because the population is less than 100, the sample of this study is all the population, so this sampling method is a saturated sample or census. Saturated sampling is a sampling technique when all members of the population are used as samples.

3.3 The Technique for Collecting Data

The data collected in this study are primary data and secondary data.

Primary data can be obtained from direct observations and interviews with salted fish processing business owners in Pasar II Natal village, while secondary data can

be obtained from related institutions such as the Central Statistics Agency (CSA), research journals, and other institutions.

3.4 The Technique for Analyzing Data

There are two methods of data analysis carried out in this study, namely income analysis and business feasibility analysis, which can be measured as follows:

3.4.1 Income Analysis

Income analysis is used to determine the value of income earned by salted fish business owners in Pasar II Natal Subdistrict, Natal District, Mandailing Natal Regency. First, the acceptance calculation is carried out with the following formula:

$$TR = P \cdot Q$$

Information :

P = Cost of goods (Rp)

Q = Total production (RP)

Expenditure calculation is as follows: $TC = FC + VC$

Information :

TC = Total fixed costs (Rp)

VC = Total variable costs (Rp)

The income calculation is as follows:

$$Pd = TR - TC$$

Information:

Pd = Total Income received by salted fish business owners (Rp)

TR = Total revenue (total revenue) obtained by salted fish business owners (RP)

TC = Total cost (total cost) incurred by salted fish business owner (Rp)

3.4.2. Feasibility Analysis

The analysis used to measure business feasibility can be measured by calculating the Net Revenue Cost Ratio (Net RC). Net R/C Ratio is a comparison between total revenue and total cost using the following formula:

Net R/C =

Information:

R/C = Return cost ratio

TR = Total Revenue (total revenue)

TC = Total cost (total cost)

In the salted fish processing business, TR (total revenue) is all revenues obtained from the sale of processed salted fish. Meanwhile, TC (total cost) is all costs incurred during the process of making fish into salted fish.

Decision criteria:

R/C > 1 = feasible

R/C < 1 = Not feasible

R/C = 1 = Break-even (Warisno, at al: 2010)

BEP or break-even point is the sales volume where the total revenue and total expenses are the same, there is no net profit or loss (Simamora, 2012).

Production BEP =

And

BEP price =

Where :

Tc= Total cost

P = Price (rupiah/kg)

Q = Production (kg)

BEP production criteria are as follows:

- a) If production BEP < total production, then the business is in a profitable position.
- b) If production BEP = total production, then the business is in the breakeven position or no profit/no loss.
- c) If the BEP of production > total production, the business is in an unprofitable position.

BEP price criteria as follows:

- a) If BEP price < total price, then the business is in a profitable position.
- b) If BEP price = total price, then the business is at the break-even point or no profit/no loss.
- c) BEP price > total price then the business is in an unprofitable position.

3.5 The Definition of Operational

To avoid misunderstandings and misunderstandings, several operational definitions and limitations used in this study are described, namely:

1. Salted fish is fish that is processed with a salting and drying system.
2. Salted fish makers are local people who carry out salted fish processing business and are not fishermen. In this case, it is the people who process fish into salted fish in Pasar II Natal Village, Natal District, Mandailing Natal Regency.

3. Salted fish processing business is a business carried out in processing fish with a salting system into salted fish. In this case, it is a business located in Pasar II Natal Village, Natal District, Mandailing Natal Regency.
4. Salted fish production is the amount of results obtained from fish processing activities into salted fish (Kg/Month). In this case, it is the production received by the salted fish processing business.
5. Selling price is the amount of sales value received by salted fish entrepreneurs (Rp/Kg). In this case, it is the price received by the salted fish processing business.
6. Production costs are the total costs that must be incurred during the production period to produce salted fish products (Rp) per month. In this case, it is the production cost of the salted fish processing business.
7. Revenue is the multiplication between the production obtained and the selling price (Rp/Kg) per month. In this case, it is the revenue obtained from the salted fish processing business.
8. Total costs are total costs including fixed costs, variable costs incurred in conducting salted fish processing business measured in rupiah (Rp) per month. In this case, it is the total cost of the salted fish processing business.
9. Fixed costs are the amount of money spent in salted fish processing business which does not depend on the scale of production measured in units of rupiah (Rp) per month. Variable costs in this salted fish processing business include: knives, buckets, para, viber, tents, baskets, barrels, scales, bags, cardboard.
10. Variable costs are costs whose size is influenced by the amount of production measured in rupiah (Rp) per month. The variable costs of this salted fish

processing business include: fish, salt, labor. In this case, it is the variable cost of the salted fish processing business.

11. Revenue is the amount of salted fish production multiplied by the selling price of salted fish at the salted fish entrepreneur level measured in rupiah (Rp) per month. In this case, it is revenue from salted fish processing business.
12. Revenue is the difference between revenue and total production costs calculated in rupiah (Rp) per month. In this case, it is income from salted fish processing business.
13. Feasibility analysis is to analyze a business is feasible or not feasible to run. In this case is the feasibility analysis of salted fish processing business.
14. R/C Ratio is the comparison between total revenue and total cost. In this case, it is the feasibility of salted fish processing business.
15. Break Even Point is the break-even point or the point where a business is in a state of no loss or no profit.
16. Garbage fish is fish consisting of several types of fish that have low quality and are then collected into one and have a low price among other types of fish.

CHAPTER VI

CONCLUSIONS AND SUGGESTIONS

4.1 Conclusions

Based on the results of the research and discussion in the previous chapter, the conclusions in this research entitled "Analysis of Income and Feasibility of Salted Fish Processing Business (Case Study: Pasar II Natal Village, Natal District, Mandailing Natal Regency)" are as follows:

1. The income obtained from the salted fish processing business is Rp.5,007,138/month.
2. Feasibility analysis using Net Revenue Cost Ratio (Net R/C Ratio) and BEP (Break Even Point). The value of the R/C Ratio is greater than one ($R/C > 1$ or $1.08 > 1$), the price break-even point or BEP for the type of waste fish is Rp. 8,833.60/Kg of waste fish and the break-even point of production or BEP The production of waste fish is 315.32Kg/month. The price break-even point or BEP for this type of anchovy is Rp. 39,686.57/Kg of anchovy and the break-even point of production or BEP Anchovy production is 116.89Kg/month. Based on these results, the Salted Fish Processing Business in Pasar II Natal Village is feasible to run.

4.2 Suggestions

1. To all salted fish producers in Pasar II Natal Village to redevelop their businesses and increase the selling price for each type of fish, because the salted fish business is quite profitable and it is necessary to pay attention to packaging so that the selling value of salted fish increases and becomes a special attraction .

2. The government should pay special attention to salted fish producers in research, such as assistance from extension workers, equipment aids, etc., so that later this salted fish business can develop.
3. To the next researcher, to conduct an analysis with the title Salted Fish Marketing Analysis.

