The analysis of income level of skipper fishermen in Belawan Bahari Village, Medan Belawan District

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Abstract. The Indonesian economy has experienced fairly good growth in recent years, especially in the fisheries and marine sector. The province of North Sumatra is one of the regions with a potential economic structure in fisheries considering the average number of fish produced in the region monthly. The purpose of this study therefore was to determine the income level of skipper fishermen in Belawan Bahari Village, Medan Belawan District. The study population furthermore was made up of skipper fishermen and the data were collected through observation and survey methods. The descriptive method of analysis was employed in this study and based on the observation of 30 skipper fishermen, the average total cost of production of anchovy fish, most common in the region, was IDR. 49,247,767. The average catch was equal to 1,949 kg, while the average distance traveled by sea was 31 km. The average total revenue of the fishermen was IDR. 58,474,000 and the total income was IDR. 9,226,233. Also, the R / C ratio obtained was 35.4 with an average of 1.

1. Introduction
The improvement witnessed in the economy of Indonesia in recent years, is as a result of the growth experienced in various sectors, among which is the fisheries and marine. The enormous resources available in the fisheries sector have the potential to be the major driver of the national economy. The northern part of Sumatra Province is one of the areas with an agrarian economic structure in which most economical activities are within the agricultural sector. Currently in the region, fishing activities in various regencies and cities are fairly higher every year. In 2015, seven districts of the region with the largest fish production include Asahan, Medan, Langkat, Sibolga, Tapanuli Tengah, Tanjung Balai, and Nias.


**Table 1.** Fish production according to catching origin and district/city in North Sumatra (tonnes) 2015.

| S/N | District/City | Sea   | Public waters | Territorial Fisheries | Total   |
|-----|---------------|-------|---------------|-----------------------|---------|
|     |               |       |               | freshwater fisheries |         |
|     |               |       |               | brackish water fisheries |         |
|     |               |       |               | sea water fisheries  |         |
| 1.  | Asahan        | 112.887.0 | 19.852.0 | 1.545.0 | 150.0 | 123.434.0 |
| 2.  | Medan         | 77.687.7  | 56.7      | 419.0   | 478.0 | 664.0    | 79.305.4 |
| 3.  | Langkat       | 33.084.0  | 7.7       | 3.244.0 | 21.37.0 | 3.238.0  | 60.910.0 |
| 4.  | Sibolga       | 56.156.6  | -         | 25.0    | -     | 56.181.6 |
| 5.  | Tapanuli Tengah | 43.777.4 | 1.911.2   | 219.0   | 150.0 | 416.0    | 46.473.6 |
| 6.  | Tanjung Balai | 37.298.0  | -         | 48.0    | -     | 37.346.0 |
| 7.  | Nias          | 36.265.6  | -         | 73.0    | -     | 36.338.6 |

Source: BPS Sumut, 2015.

According to the Medan City Central Bureau of Statistics, there are 3 sub-districts out of the 21 in Medan City, with huge potential for fishing. Medan Belawan, which is one of the sub-districts with a population of 4,493 people. There are 6 villages in the region out of which is Belawan Bahari, which is a village with huge potential to be used as research location. In total, the village has 715 fishermen.

Generally, fishermen are grouped based on capital control status, which consists of skipper and crew [1]. Also, when compared with other groups within the agricultural sector of the community, crew and traditional fishermen can be placed in the poorest social layer, however, it is not a fact that all fishermen are poor [2]. Based on the point of view of capital ownership, fishermen can be divided into three, namely: skipper, workers, and owner [3].

Considering the above background, the problem statement of this study is: what is the level of income of skipper fishermen in Belawan Bahari village of Medan Belawan and benefit from the study was to find out the income level of skipper fishermen in Belawan Bahari village of Medan Belawan.

Fishermen are people who make their livelihoods through marine activities and in Indonesia, they usually live in coastal areas. In general, the fishing community is a group of people who earn a living from marine products and live in coastal or coastal villages [4].

The coastal or fishing communities in various regions are generally characterized by poverty, socio-cultural backwardness, as well as low human resources (HR). The majority of people within the population only had elementary education, while others were unable to complete primary school; hence, the level of business is generally low in the region [5]. Also, fishermen with monthly per capita income of around US $ 7–10 in Indonesia, are classified as being poor [6]. More so, traditional fishermen make use of sailboats in their activities on shallow sea, consequently, the average productivity and income are relatively low, in addition to fishing in sea with little or no fish due to over-fishing [7]. Furthermore, traditional fishermen generally live below the poverty line. This is due to the availability of little or no capital to support the fishing activities, as well as traditional in terms of skills, psychology and mentality [7][8].

Fishermen as a community group whose lives depend directly on marine products, earn income through their business activities revolving around fishing. They generally live on the shore, and in settlements close to the location of their activities. The level of welfare is largely determined by the number of fish catch, where the amount received as income is directly related to the number of catches, which is ultimately used to meet the needs as well as for consumption in the family. Thus the level of fulfillment of the needs of fishermen and their families is largely determined by the income they receive. The factors that influence fishermen’s income include production costs, labor, sea mileage and business experience[9].
2. Materials and Methods
The use of both primary and secondary data were employed in this research. Primary data was obtained by conducting interviews and using questionnaires as research tools while secondary data was obtained from library studies, documentation and official publications from various relevant agencies such as the Central Bureau of Statistics, Belawan Bahari village, as well as research journals and books related to this study. The analysis used to answer the research problem was the descriptive method. The use of this method of analysis in this study provides a clearer picture of the income level of fishermen in the research location.

3. Results and Discussion
The focus of this study was on the income level of skipper fishermen in Belawan Bahari Sub-District. The fishing gear used by the fishermen usually catch anchovy as the main fish. In addition, other types of fish are caught but not for trading, they are normally taken home for consumption.

Considering this study, the lowest anchovy production was 1,430 kg per month while the highest was 2,600 kg per month.

Based on the results of research observations conducted on 30 skipper fishermen, it was discovered that the average cost of production used by the skipper fishermen, with the type of anchovy caught in Belawan Bahari, was IDR. 29,140,690,34 while the average total cost was IDR. 49,247,767. Also, the average catch by these fishermen was 1,949 kg per month with the average distance traveled by sea equal to 31 km and the total revenue put at IDR. 1,754,220,000. The total net income was IDR. 276,787,000 with an average of IDR. 6,539,000, while the R/C ratio obtained was equal to 35.4 with an average of 1. Therefore, it can be concluded that fishermen can carry out their business activities considering the fact that the R/C ratio was at an average of 1. According to the R/C ratio criteria, the feasibility of carrying out business is certain, even though the business requires substantial costs. The table below shows the average production costs and income of the fishermen.

| No. | Item                        | Description                      | Total (IDR/month) |
|-----|-----------------------------|----------------------------------|-------------------|
| 1.  | Cost of Production          | Food and cigarettes              | 2,879,533         |
|     |                             | (IDR/month day)                  |                   |
|     |                             | Diesel (IDR/month)               | 19,045,000        |
|     |                             | Salt (IDR/month)                 | 12,915,000        |
|     |                             | LPG 12 kg (IDR/month)            | 9,715,000         |
|     |                             | Labor (IDR/month)                | 4,940,000         |
|     |                             | Total                            | 49,494,533        |
| 2   | Production                  | Distance (km)                    | 31                |
|     |                             | Production (kg/km)               | 1.949             |
| 3   | Revenue and Income          | Revenue (IDR/month)              | 58,474,000        |
|     |                             | Cost of Production (IDR/month)   | 49,494,533        |
|     |                             | Net Income (IDR/month)           | 8,979,467         |

Source: Primarily Data, 2017.

Based on the calculation of the table above, the costs incurred by labor fishermen are divided into five points, namely food, cigarettes, diesel, salt, LPG, and labor costs. Details of the costs incurred include diesel, IDR 19,045,000, then salt IDR 12,915,000, LPG IDR 9,715,000, labor for IDR 4,940,000 and the lowest cost is the cost of consumption IDR 2,879,533. It can be concluded that the biggest costs incurred by ship owners are the costs of diesel and salt. However, if shared with the revenue obtained by the business owner of the vessel, it is still feasible because the B/C ratio obtained is > 1.

4. Conclusions
Based on the results of this study, it can be concluded that the income level of skipper fishermen in Belawan Bahari Village, Medan Belawan District varies greatly from low to high. Also, the average
income of the fishermen in the village was IDR 276,787,000 and the average value of the R / C ratio obtained was 1.

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