Analysis of added value in dry sea fish agroindustry in Gebang Sub District, Cirebon Regency

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Abstract. It has been recognized by agricultural economists that the biggest added value to the agribusiness system lies in its agro-industrial sub-system. This is because in the sub-system, agricultural products experience additional benefits so that the selling price becomes higher. High selling prices will increase profits for the perpetrators and on a wider scale will be a source of new economic growth. This study aims to analyze the added value of dry sea fish agroindustry in Gebang Sub District, Cirebon Regency. The research location was determined intentionally and carried out during May - June 2018. The research method was quantitative and survey data collection techniques. The population is 18 processors of wet sea fish into dry sea fish and census sampling techniques. Data analysis uses Hayami Model calculation method. The results showed that the added value of dry sea fish agroindustry was Rp 681, - / kg (8 %). Based on this analysis it can be concluded that the value added of dry sea fish is still relatively small so the opportunity to increase the added value is still open. For this reason, it is suggested to the Cirebon Regency Government to make policies to increase the added value of dry sea fish through the application of appropriate technology.

1. Introduction
In general, added value can be interpreted as the concept of value added in an output (product) because it experiences a processing process in its input in a production process. Mathematically, added value can be interpreted as the difference between the value of output / product and the value of raw material costs and other inputs, and not including labor costs. Examples of simple forms of input processing include: drying, selection, cleaning, packaging, transportation and storage. As for examples of modern forms of input processing, among others: retention, grinding, refining, frying, and canning. The greater the value added output obtained, the higher the profit achieved and the final estuary of the value added concept is to prosper the perpetrators, for example farmers, ranchers and fishermen.

The Republic of Indonesia, which has long been known as an agricultural country in principle has made efforts to create added value in its output even though it is through a simple form of processing (technology) with inputs taken from the surrounding environment, namely from the agricultural products themselves. Examples of processed products include: salted fish, salted eggs, crackers, rice and brown sugar. However, these processed products can still increase profits so that the condition of its business is still in operation. One application of the concept of added value in the fisheries sector (fisheries agroindustry) is the processing of fresh marine fish into dry marine fish through a simple form of processing (technology), namely drying.

Gebang Sub district, Cirebon Regency, West Java Provinsi is known as a center for dry sea fish agroindustry for a long time. The production process is almost every day (if the weather is good) and
the input is petek fish. This is because the body shape of petek is quite large compared to other marine fish products (for example: anchovy, pyrite fish and shrimp) so it is easy to do drying (processed into dried sea fish). Table 1 shows the results of fresh sea fish in Cirebon Regency each sub-district.

Table 1. Development of production of marine fish catches in Cirebon Regency according to district of 2017.

| No | District       | Production (ton) | Production Value (Rp 1,000,-) |
|----|----------------|-----------------|-------------------------------|
| 1  | Kapetakan      | 6.231.0         | 23.444.481                    |
| 2  | Cirebon Utara  | 6.111.9         | 88.047.050                    |
| 3  | Mundu          | 6.905.7         | 20.058.056                    |
| 4  | Astanajapura   | 397.0           | 2.604.942                     |
| 5  | Pangenan       | 3.056.0         | 45.065.502                    |
| 6  | Gebang         | 13.414.5        | 40.116.111                    |
| 7  | Losari         | 3.571.9         | 41.158.088                    |
|    | Total          | 39.688.0        | 260.494.230                   |

Source: Annual report of cirebon regency marine and fisheries service [1].

Based on table 1, it can be seen that the largest freshwater fish products in Cirebon Regency are found in Gebang District, which is 13,414.5 tons or 33.80%. The marine fish products are generally sold directly to local markets in fresh forms such as pyrite fish, anchovy and shrimp, while petek fish are sold to processors to be processed into dried sea fish. Processing into dried marine fish is expected to be sold at a higher price so that it can create added value which is very economically meaningful for the culprit.

The production, consumption and distribution of dry sea fish in Gebang Sub-district, Cirebon Regency, has proceeded in such a way as to form a unique fishery agro-industry economic system that still exists today. However, based on the preliminary survey, no party has conducted a study or analysis of the added value of dry sea fish agroindustry so that the level or classification of the added value has not been known. Is the added value optimal or not optimal for the benefit of its economy. Therefore, it is an interesting thing to do research on the added value of dry sea fish agroindustry. With this research, it is expected to be a material discussion between the Cirebon Regency Government and the Agriculture Faculty of Swadaya Gunung Jati-Cirebon Agribusiness Study Program in order to formulate a policy to improve the welfare of coastal communities by applying value added concepts through fisheries agro-industries.

Based on the description on the background above, the main problem can be formulated is how is the added value of salted sea fish agroindustry in Gebang District, Cirebon Regency? This study aims to analyze the added value of dry sea fish agroindustry in Gebang District, Cirebon Regency. Benefits of research:

- As input for the Cirebon Regency Government and the Agriculture Faculty of Swadaya Gunung Jati-Cirebon Agribusiness Study Program in order to formulate a policy to improve the welfare of coastal communities through the application of value added concepts to the fisheries agroindustry.
- As reference material for readers who are interested in efforts to increase added value in agricultural products, especially fishery products.

1.1. Frame of mind

Dry sea fish agroindustry in Gebang District, Cirebon Regency has been running for a long time. Although it only applies simple technology, namely the drying process through sun drying, it can still create added value and earn profits so that it is still in production. The process of drying (drying) input (fresh sea fish) runs for 1 or 2 days (if the weather is good). The production costs, among others: the
cost of inputs (raw materials), rental of drying places, labor costs and costs of auxiliary materials (salt, sacks, drying places).

In the business cycle, dry sea fish are included in short periods of 1 to 2 days. Therefore, buying and selling rules apply, that is if today's products sell well and tomorrow can produce again, then in the buying and selling process getting profit or creating added value is positive (profitable).

1.2. Previous research
- Research from Syamsul Hadi and Nurul Fathiyah Fauzi, entitled: Opportunities for Development of Marine-Based Agro-Industry in Payangan Hamlet, Sumberejo Village, Ambulu District, Jember Regency, among others, concluded that the added value was IDR 43,672.02 per kg per production process [2].
- Research from Wahyu Hamidi, entitled: Analysis of Added Value of Shredded Patin Agro-Industry in Koto Masjid Village, District XIII, Koto Kampar, Kampar Regency, Riau Province, the results showed that the added value of processing catfish was Rp 12,121.83 / kg [3].

Figure 1. Research paradigm.

2. Research methods
The research location was determined intentionally in Gebang District, Cirebon Regency on the basis of the consideration that in the sub-district is one of the centers of dry sea fish production. When the study was conducted during May 2018. The research design used is quantitative using survey approach techniques. The data obtained are then analyzed quantitatively and then tested hypotheses to be able to draw conclusions. The population in this study were processors of fresh sea fish (petek fish) into dried marine fish products in Gabang Sub district, Cirebon Regency, amounting to 18 people. The sampling technique is carried out in a census.

The variables analyzed are output, input, raw material prices, output prices, other input costs and added value. To be able to operationalize these variables a measurement concept is needed, as follows:

- Output is the amount of production (dried sea fish), which is expressed as kg
- Input is the amount of raw material (fresh sea fish), which is expressed in kg
- The price of raw materials is the price of fresh sea fish (Petek fish), which is expressed as Rp. Kg
- The output price is the selling price of the product, which is expressed in IDR / kg,
- Other input costs are the cost of auxiliary materials which consist of: the cost of salt, the rental of sun beds, sacks and tampah, which are stated in Rp.
- Added value is the difference in output price minus raw material prices and other input costs, expressed in Rp. / Kg.
In analyzing the added value of salted sea fish agroindustry the Hayami Method was calculated, as follows:

Table 2. Procedures for calculating the value of the Hayami method.

| No. | Value Variable                  | Code | Value       |
|-----|---------------------------------|------|-------------|
| I.  | Output, Input and Price         |      |             |
| 1   | Output (Kg)                     | (1)  | 52,00       |
| 2   | Input                           | (2)  | 150,00      |
| 3   | Labor (HKP)                     | (3)  | 100,00      |
| 4   | Conversion Factors              | (4)  | (1) / (2)   |
| 5   | Labor Coefficient (HKP)         | (5)  | (3) / (2)   |
| 6   | Output price (Rp. / Kg)         | (6)  |             |
| 7   | Upah Tenaga Kerja Langsung (Rp/HKP) | (7) |             |
| II. | Revenue and Profit              |      |             |
| 8   | Raw Material Prices (Rp. / Kg)  | (8)  | 6,000,00    |
| 9   | Donations of Other Inputs (Rp. / Kg) | (9) | 1639,00    |
| 10  | Output value (Rp. / Kg)         | (10) | (4) x (6)   |
| 11  | a. Value Added (Rp. / Kg)       | (11a)| (10) - (8) - (9) |
|    | b. Value Added Ratio (%)        | (11b)| (11a) / (10) x 100 % |

Data processing techniques using computer assistance with Microsoft excel software programs that are based on mathematical rules and statistics.

3. Results and discussion

Added value is economic value added for a commodity because the commodity (input) experiences several treatments. The intended treatment, among others: processing/ changes in form, transportation and storage. In the next stage, treatments that can add economic value are called functional inputs [4]. The amount of added value can be obtained from the value of the final product minus the intermediate costs which consists of the cost of raw materials and auxiliary materials in the production process [5]. Kustiari adds that added value in the processing can be defined as the difference between the value of the product and the cost of raw materials and other inputs, not including labor [6].

Based on the results of a survey of 18 samples, it can be seen the elements in determining the value added value of dry sea fish agroindustry in Gebang Village, Cirebon Regency in one production process, which requires an average number of inputs (raw materials for sea fish) of 150 kg, the amount output of 52 kg, input price of Rp 6,000 / kg, output price of Rp 24,000 / kg and processing costs of Rp. 300,985, -. The determination of its added value is calculated according to the Hayami Method, as listed in table 3.

Table 3. Procedures for calculating the value of the Hayami method.

| No. | Value Variable                  | Code | Value       |
|-----|---------------------------------|------|-------------|
| I.  | Output, Input and Price         |      |             |
| 1   | Output (Kg)                     | (1)  | 52,00       |
| 2   | Input                           | (2)  | 150,00      |
| 3   | Labor (HKP)                     | (3)  | 100,00      |
| 4   | Conversion Factors              | (4)  | (1) / (2)   |
| 5   | Labor Coefficient (HKP)         | (5)  | (3) / (2)   |
| 6   | Output price (Rp. / Kg)         | (6)  |             |
| 7   | Upah Tenaga Kerja Langsung (Rp/HKP) | (7) |             |
| II. | Revenue and Profit              |      |             |
| 8   | Raw Material Prices (Rp. / Kg)  | (8)  | 6,000,00    |
| 9   | Donations of Other Inputs (Rp. / Kg) | (9) | 1639,00    |
| 10  | Output value (Rp. / Kg)         | (10) | (4) x (6)   |
| 11  | a. Value Added (Rp. / Kg)       | (11a)| (10) - (8) - (9) |
|    | b. Value Added Ratio (%)        | (11b)| (11a) / (10) x 100 % |

Source: Primary Data Processing (2018)
Based on table 3, it can be seen that the added value of dry sea fish products in Gebang District is 0.08, which means that every production process from fresh marine fish to dry sea fish (fisheries agroindustry) is obtained by an added value of 8% or Rp. 681 / kg. The added value is positive but relatively small because it is still below 40%. Therefore the opportunity to increase its added value in the future is still very open. Other things that can be explained are related to the process of creating added value, namely:

- Input (raw material / fresh sea fish). The average input price is IDR 6,000 / kg and the volume is 150 kg, so the total value of the input in 1 production process is IDR 900,000.
- Output (dry sea fish). The average output price is IDR 24,000 / kg and the volume is 52 kg, so the overall output value is IDR 1,248,000.
- Conversion factor (FK) is a comparison between output and input, so the value of 0.35 means that every 1 kg of input will be an output of 0.35 kg. In this production process there is a factor of yield loss of 65%.
- Contribution of other inputs, namely all production costs in addition to raw material costs and labor costs. So what is included in the contribution of other inputs is the cost of salt, the rent for the cost of the sack and the cost of the amount of Rp. 246,819.
- The actual output value is the product of the conversion factor with the output price so that the value is Rp. 8,320 / kg.
- Added value = Rp. 8,320 - Rp. 6,000 - Rp. 1,639 = Rp. 861, - / kg.

The condition of the low value added of dry sea fish in Gebang Sub District is due to several factors. This is in line with the opinion of Soekartawi who said that the added value of agricultural / fishery products in an area is still low due to the limited factors possessed by farmers / fishermen so that they are not optimal in paying attention to the added value of processing their products [7]. The limitation factors include: capital, insight or knowledge of the business / business and marketing area. However, the concept of value added in processed products must still be considered.

In an effort to increase added value, including in dry sea fish products in Gebang District, it can be reached through ways of product innovation. In this regard, the Ministry of National Education [8], there are several ways to provide added value to processed products, namely: 1) Through the development of new technology; 2) Through the discovery of new knowledge; 3) Through improvement of existing products (goods and services); 4) By finding different ways to produce more goods and services, with fewer resources.

4. Conclusion

Based on the results and discussion above, it can be concluded that the added value of dry sea fish agroindustry in Gebang District, Cirebon Regency is positive but still low, meaning that the creation of added value can be profitable but still small, so the opportunity to increase added value to front still open. Furthermore, it was suggested to the Cirebon Regency Government and the Agriculture Faculty of the Unswagati-Cirebon Agribusiness Study Program to collaborate in formulating policies to improve the welfare of coastal communities through the application of value-added concepts to the fisheries agroindustry.

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