

## **Analysis of Social Resilience Conditions and Economic Strength of Farmers After the Covid-19 Pandemic in the Coastal Area**

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### **ABSTRACT**

This study aims to determine the condition of social resilience and economic strength of farmers after the COVID-19 pandemic in coastal areas. The study was conducted in Deli Serdang Regency. The population of this study were farmers who depended on their economic activities in the agricultural sector affected by the COVID-19 pandemic, namely in Percut Sei Tuan District, totaling 12,178 farmer families. The sample in the study was determined as many as 99 respondents using the Slovin formula. The data used in this study were primary and secondary data and were analyzed descriptively. Based on the results of the study, it was concluded; a) the existing condition of farmers' socio-economic resilience is at high vulnerability, based on the financial capital index with a value of 0.788; farmers seek work outside of farming with a high vulnerability index with a value of 0.758; farmers rely on a loan system with a vulnerability index value of 0.858; b) the existing condition of farmers' economic strength in coastal areas is still very vulnerable with an average indicator of total farmer income of IDR 3,313,744.48/month, lower than the regional minimum wage of IDR3,505,076. Based on the research results, it is recommended that the government empower farmers in the coastal areas of Deli Serdang Regency in a programmed and sustainable manner by optimizing the use of available resources in order to strengthen the social and economic resilience of farmers.

**Keywords:** *economic resilience, coastal, farmers, social resilience.*

### **BACKGROUND**

All regions in Indonesia experienced very poor economic growth due to the COVID-19 pandemic in 2020, both urban and rural areas. The socio-economic conditions of the community were also affected (Ranasinghe et al., 2020); (Nainggolan et al., 2021) including the social life of coastal communities. The economic structure of society has changed drastically (Chakraborty & Maity, 2020) consumer behavior is required to change and adjust to the conditions that occur (Donthu & Gustafsson, 2020) social inequality occurs in almost all regions (Gopalan & Misra, 2020). The severity of the COVID-19 pandemic is not only in the health sector but has caused high unemployment and a drastic increase in poverty (Furman et al., 2020), both at the urban community level including coastal and rural areas (Haque et al., 2020). Deli Serdang Regency is one of the areas in North Sumatra Province experiencing the adverse effects of the COVID-19 pandemic, and the second largest area affected after Medan City (Efendi, 2020). The COVID-19 pandemic also adversely affects the socio-economic activities of communities in coastal areas (Bennett et al., 2020).

All economic activities are adversely affected, including; agricultural businesses, trading businesses, farm labor activities, fishing activities, ne;ayan labor.

The economic activities of coastal communities generally depend on climatic, geographical-ecological, socio-cultural characteristics (Sekarningrum & Yunita, 2019) this causes the economic activities of communities in this coastal area to be very vulnerable to climate change, disasters, such as the COVID-19 pandemic. Nurfadilah et al., (2021) said that the COVID-19 pandemic that occurred had a negative impact on the income of fishing communities in Kutai Kartanegara Regency and resulted in a decrease in the sales price of fish caught by fishermen of 30 to 70%, this condition caused people to experience difficulties in maintaining their lives.

Deli Serdang Regency is one of the regions in North Sumatra Province which is located on the East coast of North Sumatra, and the people in the coastal area depend on economic activities in the marine/ fishing sector and coastal agriculture. This region has a coastline along the length of approximately 65 km which includes; Percut Sei Tuan District; Pantai Labu District; Hamparan Perak District and Labuhan Deli District (Nainggolan & Ginting, 2018). BPS data in 2023 shows that fisheries production in this region in 2023 was recorded at 25,694.77 tons. The largest marine fisheries production was produced by Pantai Labu Sub-district at 14,978.15 tons followed by Percut Sei Tuan Sub-district with a production of 6,404.14 tons and Hamparan Perak Sub-district with a production of 18,009.64 tons (BPS, 2024) .

After the COVID-19 pandemic, all parties have carried out various processes in order to restore the social and economic conditions of the community, the economic activities of the community have been running well, the rate of economic growth is accelerating, consumer purchasing power is starting to increase. This condition illustrates the initial growth of economic recovery in general both in the short and long term (Saribulan, 2023). However, the social resilience and economic strength of the community, especially the middle class, has not fully recovered, especially the people in coastal areas who work as farmers and fishermen who are identified with pre-prosperous communities (Rahmawati, Hariyono, et al., 2023). The recovery of the social and economic conditions of coastal communities requires a long time because COVID-19 has affected the social and economic joints of the community both in terms of production, supply, demand and purchasing power of the community (Rahmawati *et al.*, 2021), and the aim of the recovery process is to strengthen social conditions and strengthen the community's economy.

Social resilience describes a community's ability to survive and adapt to uncertainty and vulnerability. Social resilience is a process and dynamics in community life. In building social resilience, the community will increase awareness of social phenomena that occur (Arfidiandra et al., 2020). This social resilience is influenced by various things including; income level, asset ownership (Teräs, 2019), social capital, social change (Parenrengi et al., 2020) including government policies and programs (Elrick-Barr et al., 2024).

Communities in coastal areas are also vulnerable to economic insecurity due to various things, such as the impact of climate change including the long-term impact of the COVID 19 pandemic. The economic resilience of communities including farmers is the ability of the economic system to adapt to economic change (Febriyanti et al., 2021). Economic resilience also describes the ability and stability of economic recovery (Zhou et al., 2019) with indicators; increased savings and income (Nainggolan et al., 2023), adequacy of family income to meet daily needs, financial security and access to health (Shahreza & Lindiatwatie, 2020).

The economic resilience of farming communities also depends on the condition of their family's food security, which includes resilience in times of crisis and rising food prices in the market (Yang et al., 2022), based on the description above, this research was conducted with the aim of; analyzing the condition of social resilience and economic strength of farmers after the COVID-19 pandemic in the Coastal Area of Deli Serdang Regency, North Sumatra Province.

## RESEARCH METHODS

This research was conducted in Deli Serdang Regency, North Sumatra. This research location is an area affected by the COVID-19 pandemic in 2020. Research and data collection were carried out in Percut Sei Tuan District, which is one of 4 (four) sub-districts located in the coastal area of Deli Serdang Regency (BPS, 2021) and was selected purposively (Ika, 2021) .

The population in this study were farmers who depended on their economic activities in the agricultural sector in the coastal areas of Deli Serdang Regency which were affected by the COVID-19 pandemic, namely in Percut Sei Tuan District as many as 12,178 farming families. The number of samples in this study was determined qualitatively-quantitatively (Ika, 2021) by using the Slovin formula (Gomes et al., 2022) ;

$$n_c = \frac{N}{1 + Ne^2} \quad (i) \dots\dots\dots (i)$$

where  $n_c$ =sample size,  $e$  = error interval ( $\infty$ =10%,  $N$ =population). Then based on the calculations carried out, the number of samples in the study was determined as many as 99 respondents.

The data used in this study are primary data obtained from the field through; surveys, interviews using questionnaire instruments and focus group discussions (FGD). Secondary data were obtained from the Central Statistics Agency (BPS), the Deli Serdang Regency Marine and Fisheries Service, research results and other publications. Furthermore, the data obtained were analyzed descriptively and quantitatively.

To analyze the existing conditions of social resilience of farmers after the COVID-19 pandemic in the Coastal Area of Deli Serdang Regency, a descriptive method was used using a quantitative research approach (Sugiyono, 2018). To measure social resilience, the *sustainable livelihood approach* is used (Raharjo, 2018), to analyze the level of vulnerability and sustainability of farmers' *livelihood assets* in the coastal area of Deli Serdang Regency. Livelihood vulnerability is a condition in which farmer households experience pressures and shocks to their livelihood sources, so that their livelihood sustainability is threatened. *The Livelihood Vulnerability Index* (LVI) is an index of vulnerability to natural capital, financial capital, physical capital, human capital and social capital, with the following indicator scale: a) 0.0- 0.30 = low vulnerability; b) 0.31-0.70 = moderate vulnerability; c) 0.71 - 1.0= high vulnerability.

Then to analyze the condition of the economic strength of farmers after the COVID-19 pandemic in the coastal area of Deli Serdang Regency, a qualitative approach was used using indicators of farmers' income (Rahmadana & Sagala, 2020). The income level of farmers in the coastal area of Deli Serdang Regency was analyzed by analyzing the income of farmers in the coastal area of Deli Serdang Regency with the formula:

$$TR = P \times Q \dots\dots\dots(ii)$$

$$\pi = TR - TC \dots\dots\dots(iii)$$

Description;  $\pi$  : Income (IDR); TR: Total revenue (IDR/year); Q: Quantity of farm production (Kg); P: production price (IDR); TC: *Total cost* (IDR/year).

## RESULT AND DISCUSSION

### Characteristics of Respondent Farmers in the Coastal Area of Deli Serdang Regency

Based on the results of research conducted in the coastal area of Deli Serdang Regency, the characteristics of respondents are known as in Table 1.

**Table 1.** Characteristics of Farmer Respondents Based on Age Range, Land Ownership Range and Farming Experience.

| No.   | Respondent characteristics | Description                    | Frequency (hh) | Percentage (%) |
|-------|----------------------------|--------------------------------|----------------|----------------|
| 1     | Age group (Year)           | ≤30                            | 13             | 13.3%          |
| 2     |                            | 31 - 40                        | 17             | 16.7%          |
| 3     |                            | 41-50                          | 25             | 25.0%          |
| 4     |                            | 51 ≥                           | 44             | 45.0%          |
| Total |                            |                                | 99             | 100.0%         |
| 5     | Education level            | Not in School                  | 25             | 25.0%          |
| 6     |                            | Elementary School/ Equivalent  | 49             | 49.0%          |
| 7     |                            | Junior High School/ Equivalent | 16             | 16.0%          |
| 8     |                            | High School/ Equivalent        | 9              | 10.0%          |
| Total |                            |                                | 99             | 100.0%         |
| 9     | Farming experience (Years) | ≤ 5                            | 7              | 6.7%           |
| 10    |                            | 6 - 10                         | 13             | 13.3%          |
| 11    |                            | 11 - 15                        | 23             | 23.3%          |
| 12    |                            | 16 - 20                        | 46             | 46.7%          |
| 13    |                            | 21 ≥                           | 10             | 10.0%          |
| Total |                            |                                | 99             | 100.0%         |
| 14    | Range of farm size         | ≤0,25                          | 10             | 10.0%          |
| 15    |                            | 0,26 - 0,50                    | 25             | 25.0%          |
| 16    |                            | 0,51-0,75                      | 44             | 45.0%          |
| 17    |                            | 0,76-1,0                       | 15             | 15.0%          |
| 18    |                            | 1, 1≥                          | 5              | 5.0%           |
| Total |                            |                                | 99             | 100.00%        |

Source: Primary data processed Year, 2024.

Based on the results of the study in Table 1, it is known that the characteristics of respondent farmers in the coastal area of Deli Serdang Regency based on age groups, the majority of farmers or 45% have an age above 51 years, followed by the age group 41-50 years as much as 25%. The results of this study indicate that farmers are categorized as very productive, and of course this will have a good impact on farmers' income. The results of research (Kirana, 2023) convey that productive age is in the range of 15 to 64 years and is ideal for working well to carry out farming and non-farming activities. Gusti et al., (2021) also conveyed that the age group 15-64 years is categorized as a productive community group, because in this age range it is considered capable of producing goods and services productively.

The results of the study in Table 1, also show that the majority or 49% of respondent farmers have an elementary school / equivalent education level, and 25% do not attend school and 16% have a junior high school education, the results of this study indicate that the level of education in the research location is still very low. Low education causes low productivity, the results of research (Wijayanti, 2019) convey with good education will increase skills and income growth will be achieved. Good education illustrates quality human resources and is one of the inputs to the production process to produce productively.

Based on the research results as in Table 1, it is known that the characteristics of respondent farmers in the coastal area of Deli Serdang Regency, that the majority or 46.7% of respondent farmers have farming experience between 16-20 years and 23.3% experienced between 11-15 years, this shows that in general farmers have quite good experience in developing their farms. The results of research (Astartiana *et al.*, 2020) conveyed that the experience of farmers developing their farms is reflected in the ability of farmers to manage their farms well. Farmers learn from their own experiences and the experiences of others, including in applying innovations and technologies in farming, and the higher the farming experience, the more impact on increasing the productivity of their farms. The results of the study in Table 1 show that the area of farmland owned by farmers in the coastal area of Deli Serdang Regency varies greatly, the majority or 45% of respondent farmers have a land area range between 0.51-0.75 ha, followed by 0.26-0.50 ha as much as 25% and only 5% of respondent farmers who have a land area above 1.1 ha and there are 10% of respondent farmers who only have a land area of 0.25 ha.

## Existing Conditions of Farmers' Social Resilience after the COVID-19 Pandemic in the Coastal Area of Deli Serdang Regency

Based on the results of data analysis, the existing conditions of farmers' social resilience after the COVID-19 pandemic in the coastal areas of Deli Serdang Regency using the *sustainable livelihood approach* method and the *Livelihood Vulnerability Index (LVI)* are known as in Table 2.

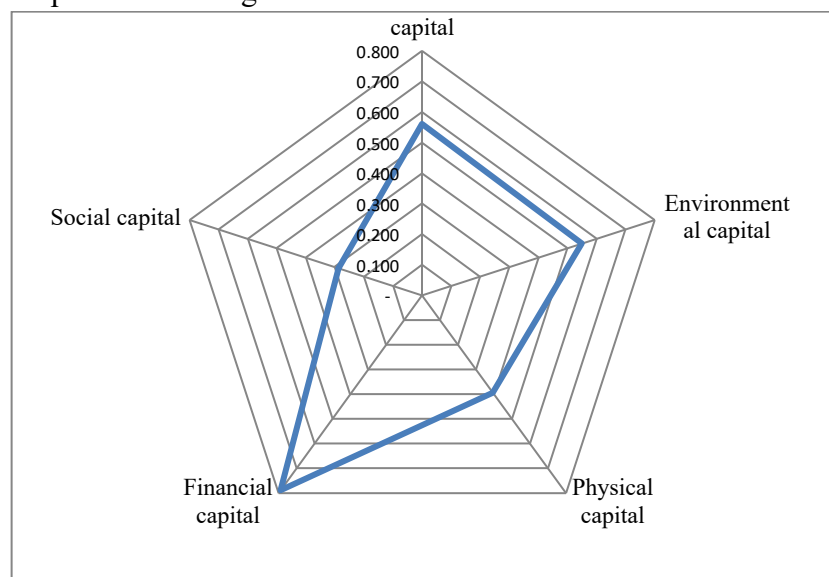
**Table 2.** Results of *Livelihood Vulnerability Index (LVI)* Matrix for Farmers in the Coastal Area of Deli Serdang Regency

| Description           | Key Components                               | Index |       |
|-----------------------|----------------------------------------------|-------|-------|
| Human capital         | Family education level                       | 0.542 | 0.561 |
|                       | Training                                     | 0.685 |       |
|                       | Access to health                             | 0.646 |       |
|                       | Access to employment                         | 0.773 |       |
|                       | Skills and expertise                         | 0.315 |       |
|                       | Knowledge and skills                         | 0.439 |       |
| Environmental capital | Business land                                | 0.375 | 0.549 |
|                       | Yard land                                    | 0.482 |       |
|                       | Animal/livestock ownership                   | 0.642 |       |
|                       | Climate, weather and their impacts           | 0.787 |       |
|                       | Yard plants/herbs                            | 0.578 |       |
|                       | Untapped local wisdom                        | 0.416 |       |
| Physical capital      | Buildings that have not been used/utilized   | 0.523 | 0.394 |
|                       | Ownership of communication networks/channels | 0.286 |       |
|                       | Ownership of equipment/transportation        | 0.298 |       |

| Description                          | Key Components                                           | Index |       |
|--------------------------------------|----------------------------------------------------------|-------|-------|
| Financial capital                    | Ownership of machinery/equipment                         | 0.456 | 0.788 |
|                                      | Public facilities                                        | 0.548 |       |
|                                      | A job with uncertain income, but promising               | 0.758 |       |
|                                      | Interest in saving                                       | 0.768 |       |
|                                      | Lending system and ability to access financial resources | 0.858 |       |
| Social capital                       | Participation in social networks/associations            | 0.245 | 0.287 |
|                                      | Trust                                                    | 0.332 |       |
|                                      | Social norms/maintaining traditions and customs          | 0.283 |       |
| Livelihood Vulnerability Index (LVI) |                                                          | 0.516 |       |

Source: Primary data processed Year, 2024.

Based on the research results as in Table 2, the overall vulnerability value or *Livelihood Vulnerability Index* (LVI) is 0.516. This explains that 51.6% of farmers in the coastal areas of Percut Sei Tuan Subdistrict, Deli Serdang Regency are classified as moderately vulnerable to their livelihood capital after the COVID-19 pandemic. Based on the research results as in Table 2, it is known that the human capital index is 0.561; the environmental capital index is 0.549; the physical capital index is 0.394; the financial capital index is 0.788 and the social capital index is 0.287. The value of the livelihood vulnerability index for each asset is highly influenced by the index value of the sub-components and main components of the asset, and for more details can be seen in the pentagonal diagram of assets as presented in Figure 1.



**Figure 1.** Pentagonal Diagram of Farmers' Livelihood Assets in the Coastal Area of Deli Serdang Regency after the COVID-19 Pandemic. Source: Primary data processed Year, 2024.

Based on Figure 1, it can be noted that the *Livelihood Vulnerability Index* of farmers in the coastal area of Deli Serdang Regency which also describes the existing conditions of farmers' social resilience as indicated by the vulnerability of assets owned by farmers after the COVID-19 pandemic in the coastal area of Deli Serdang Regency. Based on Figure 1, it can be noted that if the pentagonal graph line is getting inward, it indicates that the condition of the farmer's assets is getting better, but

if the line in the pentagon graph is getting outward, it indicates that the condition of the assets owned by farmers is getting worse or very vulnerable. Based on the results of data analysis on the pentagonal asset diagram, it can be seen that financial capital is on the outermost line, this shows that financial capital has the highest vulnerability and at the same time illustrates that the existing condition of farmers' finances as an indicator of social resilience after the COVID-19 pandemic in the coastal areas of Deli Serdang Regency has not experienced a complete recovery.

The results of the study as shown in Table 2 show that the value of the financial capital index is 0.788 and is classified as high vulnerability. This index value is also influenced by three (3) main components, namely; jobs with uncertain but promising income with an index of 0.758; interest in saving with an index of 0.768; and loan systems and the ability to access financial resources with an index of 0.857. Based on the results of this study, it can be described that the existing condition of the socio-economic resilience of farmers in the coastal area of Deli Serdang Regency after the COVID-19 pandemic is still vulnerable based on the financial capital index. This also shows that farmers experience difficulties in financing both for farming activities, health, education, fulfillment of food and non-food needs including meeting energy needs.

Based on the results of the study, it is illustrated that although the economic recovery process has been going well after the COVID-19 pandemic, farmers are still looking for other jobs outside of work as farmers as indicated by a very high vulnerability index of 0.758. In general, farmers also still rely on the loan system (debt) because it is still difficult to access financial resources for farming capital with an index value of 0.858. Related to financial capital, farmers in the coastal areas of Deli Serdang Regency after the COVID-19 pandemic also experienced difficulties in financing farming activities in addition to the high cost of fertilizers and medicines in the research area. The main problem in farming activities is the lack of capital and the difficulty of accessing financial resources or credit and of course this is an integral part of the farmer's economy.

Referring to Scoones (1998) in (Rahmawati, et al., 2023) conveyed that there are three classifications of *livelihood* strategies that allow farmers to do, including in the coastal areas of Deli Serdang Regency, namely: 1) Engineering agricultural livelihood sources, carried out by utilizing agricultural businesses effectively through intensification and extensification; 2) Multiple livelihood patterns (diversification), carried out by diversifying sources of livelihood by looking for other jobs outside agriculture to increase family income by mobilizing family labor to work outside agriculture; 3) Spatial engineering (migration), efforts made by farming families by looking for work outside their village, both permanently and circularly to obtain income.

The existing condition of socio-economic resilience of farmers in coastal areas is also seen from the loan system (debt) and the ability of farmers to access finance which is very vulnerable with an index of 0.858. Access to loans (debt) for farmers plays a very important role when experiencing financial difficulties. Loans made by farmers are not only in the form of money loans, but can also be in the form of rice and other foodstuffs, including farm production factors such as; seeds, fertilizers medicines or pesticides to relatives and neighbors. In borrowing money that will be used by farmers as farm capital or to support household finances can be through non-financial institutions such as toke or loan sharks and through financial institutions, namely; cooperatives, banks, pawnshops and other institutions.

### Existing Conditions of Farmers' Economic Strength after the COVID-19 Pandemic in the Coastal Area of Deli Serdang Regency

The existing condition of the economic strength of farmers in the coastal area of Deli Serdang Regency after the COVID-19 pandemic is known by analyzing farmers' income based on the farms developed and other economic activities. Respondent farmers in the coastal area of Deli Serdang Regency generally develop wet-rice farming, vegetable farming and sweet potatoes. Based on the results of data analysis, it is known that the production costs, revenue and income of farmers in the coastal area of Deli Sedang Regency are as in Table 3.

**Table 3.** Average Production Costs, Receipts and Income of Farmers in the Coastal Area of Deli Sedang Regency (per Year).

| No | Description                                       | Type of farming |              |              | Total         |
|----|---------------------------------------------------|-----------------|--------------|--------------|---------------|
|    |                                                   | Paddy Rice      | Vegetables   | Tubers       |               |
| 1  | Average seedling cost (IDR)/farmer/year           | 353,913.60      | 6,912.00     | 17,280.00    | 378,105.60    |
| 2  | Average seedling cost (IDR)/ha/year               | 384,000.00      | 57,600.00    | 96,000.00    | 537,600.00    |
| 3  | Average cost of medicines (IDR)/ farmer/year      | 689,223.87      | 13,460.67    | -            | 702,684.54    |
| 4  | Average cost of medicines (IDR)/ha/year           | 747,815.19      | 112,172.28   | -            | 859,987.46    |
| 5  | Average fertilizer cost (IDR)/farmer/year         | 5,733,741.33    | 111,981.06   | 130,635.00   | 5,976,357.39  |
| 6  | Average fertilizer cost (IDR)/ha/year             | 6,221,170.00    | 933,175.50   | 725,750.00   | 7,880,095.50  |
| 7  | Average labor cost (IDR)/farmer/year              | 1,239,093.38    | 24,199.73    | 60,499.32    | 1,323,792.44  |
| 8  | Average labor cost (IDR)/ha/year                  | 1,344,429.43    | 201,664.41   | 336,107.36   | 1,882,201.20  |
| 9  | Equipment cost (IDR)/farmer/year                  | 1,615,191.63    | 31,545. 00   | 78,862.50    | 1,725,599.13  |
| 10 | Equipment cost (IDR)/ha/year                      | 1,752,500.00    | 262,875.00   | 438,125.00   | 2,453,500.00  |
| 11 | Average total cost (IDR)/farmer/year              | 9,631,163.80    | 188,098.46   | 287,276.82   | 10,106,539.09 |
| 12 | Average total cost (IDR)/ha/year                  | 10,449,914.61   | 1,567,487.19 | 1,595,982.36 | 13,613,384.16 |
| 13 | Average land area (ha)                            | 0.92            | 0.12         | 0,18         | -             |
| 14 | Average grain production (kg)/farmer/year         | 6,111.37        | -            | -            | -             |
| 15 | Average grain production (kg)/ha/year             | 6,630.90        | -            | -            | -             |
| 16 | Average grain price (IDR /Kg)                     | 5,850.00        | -            | -            | -             |
| 17 | Average production of vegetables (kg)/farmer/year | -               | 1,470.00     | -            | -             |
| 18 | Average vegetable production (kg)/ha/ Year        | -               | 12,250.00    | -            | -             |
| 19 | Average price of vegetables (IDR /Kg)             | -               | 2,250.00     | -            | -             |
| 20 | Average production of yam (kg)/farmer/year        | -               | -            | 3,465.00     | -             |

| No | Description                              | Type of farming |               |               | Total         |
|----|------------------------------------------|-----------------|---------------|---------------|---------------|
|    |                                          | Paddy Rice      | Vegetables    | Tubers        |               |
| 21 | Average production of yam (kg)/ha/ Year  | -               | -             | 19,250.00     | -             |
| 22 | Average price of sweet potatoes (IDR/Kg) | -               | -             | 1,150.00      | -             |
| 23 | Average revenue (IDR)/farmer/year        | 35,751,508,56   | 3,307,500.00  | 3,984,750.00  | 43.043,758.56 |
| 24 | Average revenue (IDR)/ha/year            | 38.790.765,00   | 27.562.500,00 | 22.137.500,00 | 88.490.765,00 |
| 25 | Average income (IDR)/farmer/year         | 26.120.344,76   | 3.119.401,54  | 3.697.473,18  | 32.937.219,47 |
| 26 | Average income (IDR)/ha/year             | 28.340.850,39   | 25.995.012,81 | 20.541.517,64 | 74.877.380,84 |

**Source: Primary data processed Year, 2024.**

Based on the research results as in Table 3, in general, farmers in the coastal area of Deli Serdang Regency manage rice paddy farms with an average land area of 0.92 ha, vegetable farms with an average land area of 0.12 ha and yam farms with an average land area of 0.18 ha. In developing these farms, farmers require production costs of IDR 10,106,539.09/year consisting of; production costs for paddy rice farming of IDR9,631,163.80, then production costs for vegetable farming of IDR 188,098.46 and production costs for yam farming of IDR 287,276.82.

Research results Khairuni et al., (2024) convey capital or production costs are an important factor in producing optimal production. In addition to financial capital, non-cash capital such as tools and other goods are needed by farmers in financing their farming needs. Deyanti *et al.*, (2024) also conveyed that the provision of productive capital will have an impact on family economic empowerment. On the other hand, economic sustainability is also influenced by financial capital variables as a support for the production process in producing goods / services for farmers and avoiding imbalances in the social and economic resilience of the farmers themselves (Deyanti *et al.* ., 2024)

The results of the study as presented in Table 3 show that the production costs or capital used by farmers indicate the adequacy of capital in the development of farming in coastal areas. Febriyanti *et al.*, (2021) conveyed the adequacy of capital in the development of farming shows the condition of socio-economic resilience of farmers which also illustrates the stability of economic recovery with indicators; ownership of capital in developing farming. Conceptually strengthening the economy of farmers in coastal areas is certainly related to programs that are sustainable by involving various parties, social systems and empowerment processes must be carried out in a sustainable manner.

Falah et al., (2022) also conveyed in addition to financial capital, that social capital and environmental capital are also important factors in supporting the sustainability of community farming development in the coastal area of Deli Serdang Regency especially coupled with the empowerment process will increase the productivity of farming for the better, as stated Zhou *et al.*, (2019) that the success of farmer empowerment will increase the socio-economic resilience of farmers.

Based on the results of the study as presented in Table 3, it is known that the average production of paddy rice farming in the study area amounted to 6,111.37 Kg/farmer/year or amounting to 6,630.90/kg/ha/year, then the average production of vegetables amounted to 1,470 kg/farmer/year or amounting to 12,250.00 Kg/ha/year, while the average production of sweet potatoes

obtained by farmers was 3,465.00/farmer/year or amounting to 19,250.00/ha/year. Farmers' receipts from farming in the study area amounted to IDR43,043,758.56/farmer/year consisting of receipts from paddy rice farming of IDR35,751,508.56/farmer/year, then from vegetable farming receipts of IDR 3,307,500.00/farmer/year and receipts from sweet potato farming of IDR3,984,750.00/farmer/year. In addition to developing farming, farming communities in the coastal areas of Deli Serdang Regency also carry out other activities, such as; farm laborers, construction laborers; trading, and other jobs as a source of non-agricultural family income as shown in Table 4.

**Table 4.** Average Farmers' Income from Farming and Non-farming after the COVID-19 Pandemic in the Coastal Area of Deli Serdang Regency

| No. | Description                             | Value         |
|-----|-----------------------------------------|---------------|
| 1   | Average farm income/month (IDR)         | 2,744,768.29  |
| 2   | Average farm income/year (IDR)          | 32,937,219.47 |
| 3   | Average non-farm income/month (IDR)     | 568,976.19    |
| 4   | Average non-farm income/year (IDR)      | 6,827,714.29  |
| 5   | Average total farmer income/month (IDR) | 3,313,744.48  |
| 6   | Average total farmer income/year (IDR)  | 39,764,933.76 |

**Source: Primary data processed Year, 2024.**

Based on Table 4, it is known that the average income of farmers from farming is IDR 2,744,768.29/month obtained from paddy rice farming, vegetable farming and yam farming or amounting to IDR 32,937,219.47 / year. Then based on the results of the study it is also known that the average income of coastal area farmers from outside farming is IDR 568,976.19/month or IDR 6,827,714.29/year.

In accordance with the research results as presented in Table 4, it is known that the average total income of farmers in the coastal area of Deli Serdang Regency is IDR 3,313,744.48 per month, smaller than the regional minimum wage of Deli Serdang Regency of IDR 3,505,076 (Ki, 2024) , this shows that the existing conditions of the economic strength of farmers after the COVID-19 pandemic in the coastal area of Deli Serdang Regency still need attention, so efforts are needed to increase farm productivity and community income.

Increasing the income of farmers in the coastal area of Deli Serang Regency is a special concern with various things, one of which is community empowerment. Increased income is one indicator of the economic strength of the community, where increased income will have an impact on improving the quality of community food consumption. Iskandar, (2017) conveyed that the more the number of goods consumed, illustrating the level of prosperity of consumers is getting better.

On the other hand, farmers' income also has a close relationship with the food security conditions of the farmers themselves. Income is an important factor in determining household expenditures in meeting their food needs (Sultan, 2019) , if farmers' income increases, consumption patterns will be better and more diverse and good nutrition will be fulfilled while describing the economic strength of farmers (Arida et al., 2015) . Febriyanti *et al.*, (2021) conveyed that income will affect the adequacy of capital in the development of farming in a sustainable manner, as well as showing the socio-economic resilience of farmers, illustrating the stability of economic recovery including financial security.

## CONCLUSION AND SUGGESTION

Based on the results of the study it was concluded; a) the existing condition of the socio-economic resilience of farmers in the coastal area is in high vulnerability, based on the financial capital index with a value of 0.788; farmers are still looking for other jobs outside farming with a high vulnerability index with a value of 0.758; farmers still rely on the loan system because of the difficulty of accessing financial resources for farming capital with a high vulnerability index value of 0.858; b) the existing condition of the economic strength of farmers in the coastal area of Deli Serdang Regency is still very vulnerable with an indicator of the average total income of farmers in the amount of IDR 3,313,744.48/month, less than the regional minimum wage of Deli Serdang Regency of IDR 3,505,076. Based on the results of the study, it is recommended that the government empower farmers in the coastal areas of Deli Serdang Regency programmatically and continuously by optimizing the utilization of available resources in order to strengthen the social and economic resilience of farmers.

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