



Analysis of Income and Expenditures for Land Water Spinach Farming in Fakfak District, West Papua

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Abstract— Bomberay and Tomage Districts are one of the horticultural crops producing areas in Fakfak Regency, West Papua. The type of horticulture cultivated by farmers is land water spinach. Land water spinach is distributed to several markets in this area and urban areas of Fakfak Regency. Harvesting of land water spinach is carried out routinely or periodically. However, farmers have several obstacles, namely the location of the land close to swamps, expensive fertilizer prices, and cheap selling prices so that farmers' income is low and their expenses are large. Apart from that, farmers' lack of knowledge about farming is also a problem that causes farmers' welfare to be achieved in farming. This research aims to determine the costs incurred by farming businesses, income, and income levels from land kale farming businesses in the Bomberay and Tomage Districts. The type of research used is quantitative descriptive research. The sampling technique used the census method with 30 respondents. The data collection technique uses a questionnaire. The results of the research that has been carried out are that the average income per year is IDR 7,480,454.-. The average costs incurred by water spinach farming businesses in the Bomberay and Tomage Districts in one year is IDR 16,338,213.-. The income level of the land kale farming business in the Bomberay and Tomage Districts from the ratio value (R/C Ratio) is 1.45, which means that the land water spinach farming business in the Bomberay and Tomage Districts is feasible to develop.

Keywords—Land Water Spinach; Income; Expenditures;

I. INTRODUCTION

Fakfak Regency is one of the regions in West Papua Province that relies on the agricultural sector as one of the sectors that has an important role in its economy. Land kale production in Fakfak Regency in 2019 was 394.80 tons. This increased from the previous year, in 2018 water spinach production was 291.30 tons [1].

Bomberay and Tomage are one of the horticultural crop producing areas in Fakfak Regency. The vegetable commodity cultivated is the land kale plant. Land kale is distributed to several markets in this area and also urban areas to meet the huge need for land kale vegetables in urban areas, especially Fakfak Regency.

The vegetable potential in the Bomberay and Tomage Districts is quite promising for producing vegetable commodities such as land kale. The influence of a good climate has made the Bomberay and Tomage Districts the largest producers of land kale in the Fakfak Regency area. The advantage of land kale is that this plant has broad adaptability or adaptability to various environmental conditions for growing, is easy to maintain and has affordable capital to provide for farming costs.

Land water spinach farmers in this area experience several obstacles, namely the location of the land near swamps, expensive fertilizer prices and cheap product selling prices. This causes farmers' income to be low and expenses to be high. Apart from that, farmers' lack of knowledge about farming is also a problem that causes farmers' welfare to not be achieved in land kale farming, this can be seen from the farmers' simple lives. Therefore, efforts need to be made to increase the income of the land kale farming business so that the land water spinach farming business can run optimally so it is necessary to analyze the income and expenses of the land water spinach farming business. By carrying out this analysis of the land water spinach farming business it will be seen whether this farming business is feasible developed or not. Based on the description above, the author is interested in analyzing the income and expenses of land kale farming in Bomberay and Tomage Districts, Fakfak Regency.

Objectives Study

1. To find out the costs incurred by the Land water spinach farming business in Bomberay and Tomage Districts, Fakfak Regency.
2. To determine the income of Land water spinach farming in Bomberay District and Tomage, Fakfak Regency.
3. To determine the level of income from Land water spinach farming businesses in the District Bomberay and Tomage, Fakfak Regency

II. RESEARCH METHOD

A. Research Location

This research was carried out for 3 months starting from the data collection stage to preparing the report, namely from May 2023 to July 2023. The research location was carried out in Bomberay and Tomage Districts, Fakfak Regency.

B. Sampling Method

The This research is a quantitative descriptive research using the census method. The census technique or saturated sampling is a sampling technique when all members of the population are sampled. This is done if the population is relatively small, 30 or < 30 [2]. The sample taken in this research covered 2 districts, namely 30 respondents.

C. Data Type and Source

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

D. Data Analysis Method

The data obtained was processed descriptively quantitatively. The data analysis used in this research is income analysis and production cost analysis (R/C Ratio) from land kale farming businesses in Bomberay and Tomage Districts, Fakfak Regency.

a. Land Water Spinach Farming Expenditures

The expenditure calculation formula is as follows [3]:

$$TC = FC + VC$$

Where:

TC = Total Cost

FC = Fix Cost

VC = Variable Cost

b. Land Water Spinach Farming Revenue

The revenue calculation formula is as follows [4]:

$$Y = Q_y \cdot P_y$$

Where:

Y = Revenue

Q_y = Total Product

P_y = Price

c. Depreciation cost

The formula for depreciation costs for production tools and machines is as follows [3]:

acquisition cost - (residual value - 1) / economic age

d. Land Water Spinach Farming Income

The income calculation formula is as follows [5]:

$$\pi = TR - TC$$

Where:

π = Income

TR = Total Revenue

TC = Total Cost

e. R/C Analysis

III. RESULTS

A. Characteristics of Respondents in Land Water Spinach Farming Businesses in Bomberay and Tomage Districts

Respondent characteristics are a general description of the respondent's condition which includes age and main occupation. The respondents used in this research were land kale farming businesses in Bomberay and Tomage Districts, Fakfak Regency. The identities of the respondents are as follows:

Respondent's Age and Main Occupation

Age can influence a person's activities at work. In general, young and healthy farmers have stronger physical abilities and are relatively more receptive to new innovations than older farmers. Therefore, the difference in a person's age can be used as an indicator to assess the level of work ability, whereas older farmers have less physical ability, but relatively have more work experience so they are more innovative in implementing new innovations. The age level of respondents can be seen in Table 1.

Table 1. Land Status and Land Area

No	Age (Year)	Total (Person)	Presentase (%)
1.	30-50	3	10
2.	50-70	18	60
3.	70-90	9	30
	Jumlah	30	100

Table 1 shows that based on the number of respondents there were 30 land kale farmers. The dominant age level involved in farming activities is the age level of 50-70 years with a total of 18 respondents with a percentage level of 60%. This figure shows that the productive age level is at the age level of 50-70 years. Based on the results of interviews conducted with 30 respondents, data was obtained that land kale farming businesses in the Bomberay and Tomage Districts have their main job as farmers.

Land Status and Land Area

Based on the results of interviews conducted with 30 land kale farming respondents. Overall, the land ownership status of farmers is their own, with 30 respondents (100%). This is due to the existence of hereditary land ownership where ownership usually falls into the hands of the family. The largest area of land used by farmer respondents for farming water spinach is 0.25 hectares. The land area used for land kale vegetable farming in the Bomberay and Tomage Districts can be seen in Table 2.

Table 2. Average land area

No	Land Area (Ha)	Total (Person)	Percentage (%)
1.	0,0025-0,015	9	30
2.	0,015-0,05	7	23,33
3.	0,05-0,25	14	46,67
	Jumlah	30	100

B. Analysis of Land Water Spinach Farming Costs in Bomberay and Tomage Districts in 2022

Production costs are all expenses required to produce a certain number of products in one production. Production costs can be classified on the basis of the relationship between changes in production volume, namely fixed costs and variable costs. The farming costs used by each respondent are different, this is influenced by the use of seeds, fertilizer, pesticides and the area of land used. These factors also influence the costs of each respondent's farming business. The average cost of land kale farming in Bomberay District and Tomage District in one year can be seen in Table 3.

Table 3. Average costs of land kale farming in the Bomberay and Tomage Districts in 2022

No	Item	Total Cost (IDR)
1.	Fix cost	
	Tax	66.220,-
	Total	66.220,-
2.	Variable cost	
	Seed	8.920.000,-
	Fertilizer	3.163.267,-

	Pesticide	275.667,-
	Labor	2.348.000,-
	Transportation	620.000,-
	Depreciation	945.000,00,-
	Total	16.271.99,-
	Total Cost (FC + VC)	16.338.213,-

Based on Table 3, it shows that the average total cost of farming for land kale farmers in the Bomberay and Tomage Districts in 2022 (January – December) is IDR 16,338,213. This value is obtained from the sum of total fixed costs of IDR 66,220 and total variable costs of IDR 16,271,993.

C. Analysis of Water Spinach Farming Income in Bomberay and Tomage Districts in 2022

Income is an indicator to measure the welfare of a person or society, so that society's income reflects the economic progress of a society. Revenue is the reduction of receipts from total costs. Average production, total costs, selling prices, revenues and income from land kale farming businesses in the Bomberay and Tomage Districts in one year can be seen in Table 4.

Table 4. Average production, total costs, selling prices, expenses and income from land kale farming businesses in Bomberay and Tomage Districts in 2022

Biaya Total	Harga Jual	Penerimaan	Pendapatan
Rp16.338.213,-	Rp5.133,-	Rp23.818.667	Rp7.480.454,-

Based on Table 4, it shows that the average income of land kale farmers in the Bomberay and Tomage Districts in one year is IDR 7,480,454.-. This value is obtained from the difference between total revenue and total production costs. The average selling price of land kale farmers in the Bomberay and Tomage Districts in 2022 is IDR 5,133/bundle. The average production of land kale is 4,640 bunches/year. The average income from land kale farming businesses in the Bomberay and Tomage Districts in 2022 is IDR 23,818,667/year. The income earned by respondents from land kale farmers in the Bomberay and Tomage Districts in 2022 is IDR 7,480,454/year. Based on the income obtained by respondents from the land kale farming business in the Bomberay and Tomage Districts, it can be said that the income obtained is still low where farmers are not yet said to be prosperous because of the low income earned in one year, namely an average of IDR 7,480,454,-/year. The average monthly income of kale farmers is IDR 623,371.-.

D. Analysis of Income Levels Using R/C Ratio of Land Water Spinach Farming in Bomberay and Tomage Districts in 2022

Farming income analysis is used to see the extent to which a business activity can be said to have benefits and is worthy of development. The way to carry out an analysis of farming income for water spinach farmers in the Bomberay and Tomage Districts is an analysis of the revenue to cost ratio (R/C Ratio). Revenue to Cost Ratio Analysis (R/C Ratio) is an analysis that compares the value of revenue from kale farming with the total production costs (costs) sacrificed. Researchers used R/C analysis to determine the feasibility of water spinach farming in the Bomberay and Tomage Districts. The income obtained by land kale farmers in the Bomberay and Tomage Districts was IDR 23,818,667.-. The average cost of land kale farming is IDR 16,338,153. the value of the cost ratio (R/C Ratio) is 1.45. Land spinach farming in the Bomberay and Tomage Districts can be said to be efficient if the revenue to cost ratio is more than one ($R/C > 1$). This shows that the land kale farming business in the Bomberay and Tomage Districts is worth pursuing, because from this calculation it can be interpreted that R/C is >1 , namely 1.45, which means that the land water spinach farming business in the Bomberay and Tomage Districts is worth developing because it provides more income. greater than the expenditure.

IV. CONCLUSION AND SUGGESTIONS

Based on the results and discussion obtained, it can be concluded that the costs incurred by land kale farming businesses in the Bomberay and Tomage Districts in one year are IDR 16,338,153.-. The average annual income of land kale farming in Bomberay and Tomage Districts, Fakfak Regency is IDR 7,480,454.-. The income level of the land kale farming business in the Bomberay and Tomage Districts in terms of value (R/C Ratio) is 1.45, which means that the land water spinach farming business in the Bomberay and Tomage Districts is feasible to develop.

Based on the results and discussions that have been carried out, suggestions that can be given are:

1. The government is advised to focus more on paying attention to farming businesses by providing subsidies in the form of fertilizer and providing irrigation at large and small rivers that are directly adjacent to farming land. This aims to prevent waterlogging on the land due to flooding.

2. Farmers are expected to further reduce costs and increase product selling prices in order to obtain profits as expected.

3. Researchers are advised to carry out further research regarding development strategies using SWOT analysis in Bomberay and Tomage Districts, Fakfak Regency.

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