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Income from Urban Farming Beans (*Phaseolus vulgaris L.*) in Benpasi Village, Kefamenanu City District

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Abstract

Through a survey approach in June 2020, this study intends to (1) determine the general description; (2) determine income; and (3) calculate the relative advantages of urban farming of chickpeas in the Nekaf Mese farmer group in Benpasi Village, Kefamenanu City District, North Central Timor Regency. The research respondents were chosen from a purposive sample of 20 farmers who were members of farmer groups. The quantitative descriptive method was employed to find out. The findings revealed that bean farmers in Benpasi Village, particularly in the Nekaf Mese Farmer Group, grow their own land, ranging in size from 6 to 9 acres, and engage in all stages of urban farming, including seed preparation, land preparation, planting, maintenance, harvesting, and post-harvest. Farmers' overall revenue from farming activities is Rp. 36.550.000,- with an average of Rp. 1,827,500,- for one planting season, and the total income earned is Rp. Rp. 15,921,000, - with an average income of Rp. 796,050, - for a single planting season. Farmers in the Nekaf Mese Farmer Group, Benpasi Village, Kefamenanu City District, made an average relative profit of 1.74 in bean farming activities, which means that the bean farming activities carried out by farmers in the Nekaf Mese Farmer Group, Benpasi Village, Kefamenanu City District, made an average relative profit of 1.74 in bean farming activities. Because the computation results are more than 1, it can be economically profitable.
Keywords: beans, income, urban farming

A. Introduction

Agriculture is an economic sector that has an important role in Indonesia. The agricultural sector is very strategic as the economic base of the people in rural areas, controlling the livelihoods of most of the population. Positive growth in the agricultural sector can also be seen from data from the Central Statistics Agency (BPS). Based on the BPS report, the agricultural sector contributes to Indonesia's Gross Domestic Product (GDP) up to 13.6%. The agricultural sector is very important because more than half of

the GDP of the manufacturing sector is based on agriculture. In addition, the agricultural sector is also the largest absorber of labor, which is around 35% of the total workforce (BPS RI, 2020).

During the Covid-19 pandemic in Indonesia, the agricultural sector was able to grow by 16.4%. This is because products from the agricultural sector are very much needed by the community. BPS noted, during April-June 2020, the performance of the agricultural sector grew 2.19% on an annual basis. The contribution of the agricultural sector to Gross Domestic Product (GDP) was 15.46%, becoming the second largest sector. (BPS RI, 2020).

The impact of the Covid-19 pandemic on farmers and agricultural sector actors in NTT Province is suspected to have decreased crop yields and income. Decrease in crop yields due to less or less regular rain. The decline in selling prices was due to the closure of market access due to the Covid-19 pandemic. This also has an impact on districts in NTT including TTU (mongabay.co.id)

Chickpeas are very familiar with Indonesian people. However, perhaps many do not know that the bean, which has the Latin name *Phaseolus vulgaris.L* . This is not a native Indonesian plant. Chickpeas are native to America, while *kidney*- beans are native to the Tahuacan-Mexico valley. The spread of the bean plant from America to Europe has been carried out since the 16th century. The center of the spread began in England (1594), spread to European countries, Africa, to Indonesia. Cultivation of chickpeas in Indonesia has been widespread. In 2017, the area of bean planting in Indonesia was around 23,746 hectares, with a production of 279,041 tons.

Urban farming is an agricultural or plantation concept that is carried out by utilizing limited (narrow) land. *Urban farming* is also called urban agriculture, according to experts, the notion of *urban farming* or *urban agriculture* as an activity of cultivating plants or raising livestock in and around large cities (metropolitan).) or small towns to obtain food or other needs and financial additions, including processing crops, marketing, and distribution of products resulting from these activities (Anggrayni et al., 2015; Nur'aini & Krisdianto, 2017; Yusoff et al., 2017).

Bean production in 2017 at TTU was 17.1 tons. (BPS Kabupaten TTU, 2018). The Nekaf Mese Farmer Group is one of the farmer groups in Benpasi Village that cultivates chickpeas. This bean farming has been cultivated since 2015 until now with production in 2017-2018 of 10,000 kg/ha. Bean farming in the Nekaf Mese Farmer's Group, Benpasi Village, Kefamenanu City District, North Central Timor Regency is aimed at providing additional income for farmers. However, the calculation of income from farming is rarely done by farmers so that there is no information on how much income they get from farming beans. Research on bean farming needs to be carried out, so that it can be seen how much profit and feasibility of farming it is.

B. Methodology

The research was carried out in Benpasi Village, Kefamenanu City, North Central Timor Regency through a survey method in June 2020. The sample of the research respondents was 20 bean farmers who were taken by *purposive sampling* who were members of the Nekaf Mese farmer group. Sources of data in this study are primary data and secondary data. Primary data comes from the results of direct structured interviews with farmers through a questionnaire guide. Secondary data is supporting data sourced from the relevant agency services, such as: the agriculture office. The research variables of farmer characteristics consist of: age, formal education, farming experience, production, costs (fixed and variable), price, and farm area.

To find out the first purpose of data analysis used in this study is to use qualitative descriptive analysis, to answer the second problem, income analysis is used. To find out how much income from bean farming can be calculated using the formula according to Soekartawi (1995):

$$I = TR - TC \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

I = Income
TR = Total Revenue
TC = Total Cost

Mathematically, the R/C ratio can be written as follows (Rahim and Hastuti, 2008):

$$a = \frac{R}{c} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$= \frac{p\ y\ x\ y}{VC+FC} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Information :

a = R/C *ratio*
R = revenue (*revenue*)
C = cost (*cost*)
Py = output price
Y = output
FC = *fixed cost* (*fixed cost*)
VC = variable cost (*variable cost*)

Decision criteria:

R/C > 1, profitable farming
R/C < 1, farming is detrimental
R/C = 1, break-even farming (no profit / no loss)

C. Findings and Discussion

The Nekaf Mese Farmer Group was formed on March 13, 2014. At the beginning of the group's formation there were 20 members and the number of members is up to now. The Nekaf Mese Farmers Group is located in Benpasi Village, Kefamenanu City District, North Central Timor Regency.

1. Vision and mission

The Vision and Mission of the Nekaf Mese Farmer Group are as follows:

a. Vision

Based on deliberation and consensus in developing farming in order to improve household welfare and economy.

b. Mission

1. Improving the welfare of members in particular and society in general.
2. Empowering the existing natural resources and human resources in the Benpasi Village Community.
3. Establish and succeed the Community economic movement.
4. Prioritizing a sense of unity and integrity between members and the community.

2. Organizational structure

The organizational structure is very important for the progress of the group, because every activity or activity in the group and the members who join in it must form a clear arrangement regarding a form of duty, authority, and responsibility of each position. Therefore, this Nekaf Mese farmer group also has the following organizational structure:

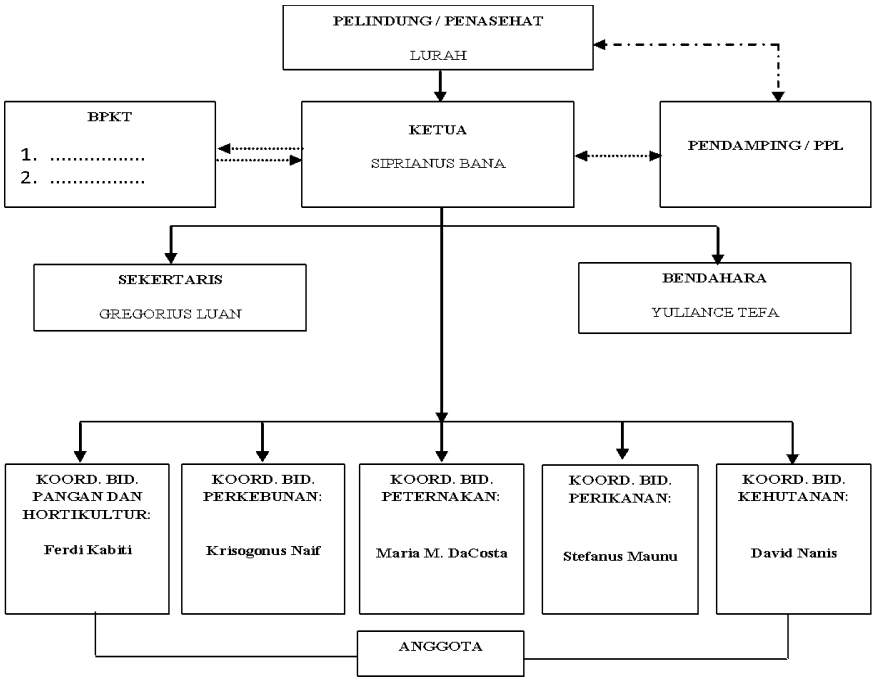

Figure 1: Organizational Structure of the Nekaf Mese Farmer Group

3. An Overview of *Urban* Bean *Farming* in the Nekaf Mese Farmer Group

3.1. Seed Preparation

Bean farming in the Nekaf Mese Farmers Group, the seeds used by farmers in their bean farming are chickpea seeds purchased at the Kefamenanu farm shop. The community chooses the Maksipro seed type because the seeds are of high quality and the fruit produced is dense, this seed is also very suitable for growing in lowland areas.

3.2. Land preparation

The land used for farming the beans is self- owned land with an area ranging from 6-9 acres. Land preparation is carried out with the aim of obtaining good production results. The prepared land is cleaned of grass using tools, namely hoe and machete, the roots of trees and rocks that exist after that the land is then made a bed with a bed size of 40 cm with a bed length adjusted to the length of the land with the labor used ranging from 2- 3 people.

3.3. Planting

Planting is done by making holes using a piece of wood on a bed that has been made with a hole depth of 3-4 cm with a distance between holes of 20-30 cm and then each hole is filled with 3-4 seeds and then covered with soil.

3.4. Maintenance

When the bean plant has grown and begins to spread, a support pole is made and then cleans the weeds around the bean plant. Watering is done 2 times a day, namely in the morning and afternoon during the summer, while when it rains the watering is adjusted to rainy conditions, watering is carried out by bean farmers in the Nekaf Mese Farmer Group using a water pump machine, at the end of the hose tied with a can with the bottom already holes so that the water that comes out of the pump does not hit the newly planted plants. Weeding is also done carefully so as not to damage the bean plants.

The fertilizers used by farmers in farming beans include Urea, SP 36 and KCL fertilizers. Fertilization is carried out 2 times, namely when the plant is 10 days old and when the plant is 20 days old fertilizing in order to fertilize the plant, usually farmers mix the three types of fertilizer so that the reaction is very fast and the plant becomes fertile. The fertilization method is simple by preparing one bucket of ocher water for around 20 liters of large size and then put fertilizer ranging from 3 grams then stirred

until the fertilizer decomposes and then watered on the bean plant using a flush tool made using a paint can.

Bean plants are usually attacked by leaf beetles, bean flies, aphids, and leaf borers. While the diseases include powdery mildew, fusarium wilt, leaf blight and wilt disease. To prevent these pests and diseases, farmers in the Nekaf Mese Farmer Group usually use the Clinset pesticide which is sprayed using a sprayer filled with 5 liters of water and then poured 3 clinset bottle caps. Farmers choose this pesticide because it does not pose a risk to vegetable crops and the reaction is very fast in dealing with pests or diseases that attack these plants.

3.5. Harvest and Post Harvest

Harvesting can be done when the plant is 60 days old, by harvesting the fruit and can be done gradually, ie once every 2-3 days. This is intended to obtain uniform fruit in the level of ripeness. Harvesting 4 times in one planting season. When the fruit is picked, it is put into a bucket, after that it is put back in a sack and delivered to the market and then weighed using a hanging rod.

Post-harvest is the last stage in farming activities, where after picking it is cleaned and packaged in sacks and is ready to be marketed in the new market and the old market.

5. Income Analysis of Beans *Urban Farming* in the Nekaf Mese Farmer Group

5.1. Cost

Cost is the total amount of expenditure used in farming beans which is divided into two, namely fixed costs and variable costs:

a. Fixed cost

Fixed costs are those costs incurred during the production process that magnitude is not influenced by the amount of production that is produced, expressed in units of rupiah. Fixed costs in this study is a tax expense of Rp. 54,000, - with an average tax cost for one planting season of Rp. 2.700,- for equipment costs not included because the average equipment used by farmers is over 5 years old in line with the Manikin & Joka (2020) study related to local corn farming income, where equipment that is over 5 years old is no longer calculated for depreciation.

b. Variable Cost

Variable costs are sacrifices that must be incurred continuously by farmers for one time production and other supporting materials for the course of the production process. Based on the results of the study, the total variable costs incurred during one planting season for 20 respondents were Rp. 19,975,000, - with an average per respondent of Rp. 998.750,-. Variable costs incurred in the following bean farming, seed costs Rp 3.575 million **-** , watering Rp 13.8 million, -, transportation costs Rp 800,000, - and the cost of the drug (clinset) amounting to Rp 2,400,000, - and for the average variable cost per respondent can be seen in table 1.

Table 1. Variable Costs of *Urban Farming* Beans.

No	Fee Type	Average Cost (Rp)
1	Seeds	178,750,-
2	Sprinkling	690,000,-
3	Transportation	40,000,-
4	Medicine (Clinset)	120,000,-

Source: Primary Data Processed, 2020.

5.2 Revenue

Revenue is the product of the production of beans (kg) obtained with the selling price of beans (rupiah) at the community level. Based on the results of research conducted on farmers who try to grow beans, the total production of beans in one growing season is 3,655 kg with an average of 20 respondents producing 182.75 kg.

The price of beans is an element that greatly affects revenue, based on the results of research conducted, it was found that the price of beans was Rp. 10,000,/kg. Farmers know that they sell their produce at a relatively cheap price but this is due to the household economic needs that must be met and the needs of school children, so the total income in one season of bean planting is Rp. 36.550.000,- with an average of Rp. 1.827.500,-.

5.3 Income

Income is the result of net sales received by farmers in farming activities, income is obtained from the difference between revenues and total costs consisting of fixed costs and variable costs. Based on the calculation results, the total income received by bean farmers in the Nekaf Mese Farmer Group is Rp. 15,921,000-, with an average income of IDR 796,050, in line with the research of Bete *et al.,* (2021), related to the income of tomato farming on paddy fields in Leuntolu Village, Belu Regency.

5.4 Relative Profit (R/C Ratio)

The relative profit is the division between the total revenue of Rp. 36.550.000,- with a total cost of Rp. 20,629,000, - so that the R/C Ratio of 1.74 means that economically the chickpea farming in the Nekaf Mese Farmer Group is profitable so it is feasible to continue because the value obtained is greater than 1 in line with the research of Simamora et al., (2020). For more details, see the table below.

Table 2. Total Revenue, Income and R/C Ratio

Average	Total Reception	Total cost	Total Income	R/C Ratio
Group	36.550.000,-	20,629,000,-	15,921,000,-	35
Farmer	1,827,500,-	1.031.450,-	796,050,-	1.74

Source: Primary Data Processed, 2020.

D. Conclusion

1. Bean farmers in Benpasi Village, especially in the Nekaf Mese Farmer Group, cultivate their farms on their own land with a land area that varies between 6-9 acres with the stages of *urban farming* activities starting from seed preparation, land preparation, planting, maintenance, harvesting and post-harvest. harvest.
2. Labor used in farming activities come from farming families themselves so that counts only the total fixed costs Rp 54,000, - with an average fixed costs Rp 2,700, - total variable costs amounted to Rp 20.575.000-, with average -average variable costs of Rp. 1,028,750,- the total income obtained by farmers in farming activities for one planting season is Rp. 36.550.000,- with an average of Rp. 1,827,500, - and the total income earned is Rp. 15,921,000, - with an average income obtained by farmers for one planting season of Rp. 796,050,-.
3. The average relative profit in bean farming activities obtained by farmers is 1.74, meaning that the bean farming activities carried out by farmers in the Nekaf Mese Farmer Group, Benpasi Village, Kefamenanu City District can be economically profitable because the calculation results are more than 1.

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