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Analysis of Women's Contribution to White Coffee Income in Suco Manelima, Laklubar Administrative Post, Manatuto Municipality

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ABSTRACT
This study aims to analyze the income of Suco Manelima white coffee farmers in Laclubar, Manatuto Municipality, as well as the contribution of women in increasing family income. Agriculture, particularly coffee, is a vital sector for Timor Leste's economy. The research was conducted from March 4 to April 4, 2019, using primary and secondary data collection methods. Primary data were obtained through direct interviews and questionnaires, while secondary data were obtained from relevant sources. The findings show that the total income of white coffee farmers reached U$ 29,650, of which women's contribution in increasing family income was 61%. Total family income was recorded at U$ 18,800, which shows the significant role of women in the household economy. The results confirm that women play an important role in increasing family income through the coffee farming sector. Despite technological limitations and challenges in production, women's contribution in the production process has a positive impact on the family economy and the community. This research highlights the importance of women's empowerment in the agricultural sector to improve the family economy in Timor Leste. Sustainable agricultural development and increased access to technology are key to advancing the sector and reducing poverty.

Keywords: women's contribution; income; white coffee farmers.

INTRODUCTION
Timor-Leste is a newly developing country in Southeast Asia, which gained independence in 2002 after a long period of Portuguese colonization and Indonesian occupation (Bonis-Profumo et al., 2021; Fernandes et al., 2022; Paudel et al., 2022). Although it has made progress in recent years, many challenges remain, especially in the economic sector. One of the vital sectors for the country's economy is agriculture. Most of the population depends on agricultural life, and this sector is the main source of people's livelihoods. The economic conditions in are still vulnerable, with many people living below the poverty line (Coles et al., 2001; Majumdar & McWilliams, 2020; McWilliam, 2015). Rural communities, most of whom are involved in agriculture, often face problems such as limited access to markets, lack of modern technology, and low levels of education (Danish et al., 2014; Gao et al., 2022). Dependence on subsistence agriculture means that many families are unable to meet their basic needs. This has led to a need to increase agricultural productivity and, in particular, to explore the role of women in this sector.

In the midst of the challenges faced by the agricultural sector, the role of women is very important. In many agricultural communities, women are not only responsible for household chores, but are also involved in the production and processing of agricultural products (Gatersleben & Vlek, 2014; GHazali & Zibaei, 2018; Indah et al., 2023; Sakariyau et al., 2023; Walelign et al., 2017; Wattimena & Rahman, n.d.). In the context of coffee production, which is one of the main commodities in Timor-Leste, the contribution of women is often not adequately recognized or valued. Particularly in Suco Manelima, Laklubar District, Manatuto Regency, women play an important role in the coffee production process. However, data on the extent of their contribution to coffee income is still limited. Without a clear understanding of this contribution, it is difficult for the government and stakeholders to design policies that support women's empowerment and the development of the agricultural sector as a whole.

Several studies have been conducted to explore women's involvement in coffee production. Simelton et al. (2021) highlight how financial training and village savings associations can increase women's involvement in the coffee agroforestry value chain in Vietnam, showing that access to training and resources can increase women's participation in economic activities and decision-making. Rölander (2016) discusses the gender impact of Fairtrade on female and male farmers in a coffee cooperative in Kenya, finding that although Fairtrade offers better opportunities for women, structural challenges such as gender stereotypes and limited access to resources remain. Ntambaazi (2016) identified the socio-economic factors that influence women's involvement in coffee production in Uganda, emphasizing the importance of education, access to land, and social support in increasing women's contribution to the agricultural sector. These studies provide important insights into the role of women in coffee production, but also point to the need for further research in different contexts, including in Timor-Leste, where specific data on the contribution of women to household income is still limited.

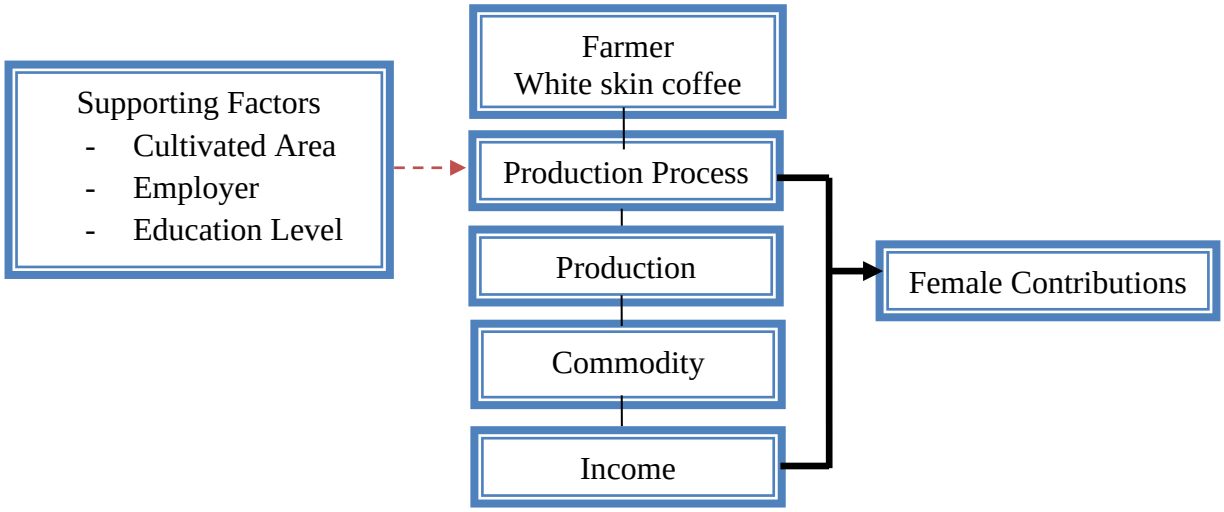
Although there is research on the contribution of women in coffee production, there is still a lack of specific data on the impact of women's contribution to household income in Timor-Leste, especially in the Manelima area. This study will fill the gap by conducting a more in-depth analysis of the role of women and how their contribution can be measured in the local context. One of the new aspects of this research is the focus on measuring women's contribution to income from coffee production, which has not been widely explored in Timor-Leste. Using a systematic methodology, this research aims to provide accurate and relevant data that can be used by the government and non-governmental organizations in designing women's empowerment programs.

The purpose of this study is to identify and analyze the contribution of women in increasing income from coffee production in Suco Manelima. This study is expected to provide better insight into the role played by women in the agricultural sector, as well as the factors that influence their contribution. The benefits of this study are expected to provide useful information for the government and stakeholders in designing policies that support the empowerment of women in the agricultural sector. In addition, the results of this study can provide a basis for more effective interventions to increase the income of women and their families.

The results of this study are expected to contribute to the development of more inclusive and sustainable agricultural policies in Timor-Leste. By understanding the role of women in coffee production, the government can design better programs to support the involvement of women in the agricultural sector. In addition, this research can also provide a basis for further research on the role of women in the agricultural sector in other developing countries. Thus, this research will not only provide new insights into the contribution of women in coffee production, but will also help create a more supportive environment for women in the agricultural sector, which in turn will contribute to poverty alleviation and improved community welfare in Timor-Leste.

Conceptual Framework

Farmer activities carried out step by step during the production process, which the researcher took to analyze the income of farmers in a period. For more details, see the following research idea structure structure:



Scheme: 1 Analysis of income from farmers selling white coffee

Observation:

——— Risk: Linking the Production Process to Earn Income

- - - - - ▶ Risk: Factors supporting the Production Process

▬▬▶ Risk: Female Contribution to Income

RESEARCH METHOD

The method and process used in this research is a descriptive method, in which researchers collect data based on the design and phenomenal facts that occur at the research location. This study used the Simple Random Sampling method, which gives every farmer in the population an equal opportunity to be selected as a sample member. In the population in Suco Lour, the researcher took a maximum of 100 farmers. To determine and calculate the total sample, the Slovin formula was used as follows:

$$n = \frac{N}{N\,(d)^2 + 1}$$

Data collection techniques use three (3) methods as follows: (1). Interview, as a way used to communicate directly with the farming community, to obtain information based on the relationship with the research topic, (2). Observation is a method used to go directly to the field to observe activities carried out by farmers and (3). Questioner, is a way that researchers use information records by preparing questions to obtain information from the farming community.

Income Analysis Methods

With the method of income analysis that the researcher used through counting two (2) instruments are as follows: (a) To know the small or large income obtained from white coffee farmers, will use the formulation of income analysis of farmers as follows: TC = TFC + TVC, TR = P. income, to analyze the contribution of women to increase income to sustain the needs of the family. To determine the contribution of women, analyze using the following formulation:

$$(\text{KR}) = \frac{\Sigma Pup}{\Sigma PRT + PUP}(X\ 100\%)$$

Variable Measurement Concepts

The variables measured in this research are as follows;

1. Income (π) = is the net income obtained by white coffee farmers.
2. Total Revenues (TR/total revenue) = total revenues received from farmers fa'an kafe kulit mutin
3. Total cost (TC/total cost) = is the cost used by white coffee farmers during the production process.
4. Total fixed cost (TFC / total fixed cost) = becomes the cost used in the long term in the period of cultivation of white coffee.
5. Total variable cost (TVC/total variable cost) = is the cost used per period in the cultivation of white coffee.
6. Analyze the contribution of women to increase income to sustain the needs of the family

Operational Concept

The concept of measuring variables, with the definition of the process as follows;

1. Characteristics of rice farmers such as: age, Total Family, Education level and work experience, (Year)
2. Cost: as the budget spent during the production process, cost can be calculated in Dollars (U$$)
3. Production: as the total result of production managed by farmers in one (1) period. Model sales used (Kg)
4. Merchandise: as a public place to meet between sellers and consumers to exchange goods and money (Price), (U$$)
5. Income: as the final production value received from farmers can be calculated in dollars (U$$).
6. Analyze the contribution of women to increase income to sustain the needs of the family

RESULT AND DISCUSSION

Manatuto is a district consisting of six administrative posts, namely: Manatuto Village, Laleia, Laklo, Laklubar, Soibada, and Natarbora. Manatuto District is located on the east coast of the capital city of Dili with an area of 1,706 km². The agricultural potential in Laklubar Administrative Post is promising, as the agricultural sector can provide significant benefits to the community and support the local economy. As such, agricultural enterprises in Laklubar contribute to the development of agricultural wealth and help farmers meet their household needs. The agricultural sector in Laklubar Administrative Post includes important commodities such as coffee and sugar, which play a role in supporting the local economy.

Outcome

Agricultural Identity Responds

Agriculture is taken as a respondent to agriculture that carries out activities for white coffee which is the aspect of respondent identity in the research.

Year Agriculture Responsive

Agriculture is an important and determining factor for the development of a country's economy. To produce natural resources to develop local products depends on the conditions of the area such as Laklubar Administrative Post, Manatuto Municipality, Manelima District, an area that can benefit or sustain the population from contributing white coffee income. For more information, see the following table:

Table 1: Age of Respondents

No	Respondent Age	Frequency	Percent(%)
1	30-35	3	6
2	36-44	21	42
3	45-50	13	26
4	51-55	5	10
5	56-60	4	8
6	61-66	4	8
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the age of the most respondents is 36-44 with a total of 21 percent 42%. However, the age of respondents who are the least number of people is 30-35 totaling 3 people with 6% of this age will be categorized as productive.

Family Member

Generally, families who contribute women to the income of white coffee in Manelima sub-district, Laklubar Administration Post, Manatutu Municipality.

Table 2: Respondent's family

No	Family Members Responding	Frequency	Percent(%)
1	2	2	4
2	4	6	12

No	Family Members Responding	Frequency	Percent(%)
3	8	8	16
4	6	14	36
5	7	9	18
6	>9	8	16
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the largest family is 6 people with a frequency of 14 people with 28% but the smallest family member is 2 with a frequency of 2 people with 4%.

Education Level

Education is basically a factor that affects self-success, because it means that the high level of education for people think to change themselves in an activity, to know more clearly see the following table:

Table 3. Education Level

No	Education	Frequency	Percent(%)
1	Non-alphabet	21	12
2	Primary education	16	32
3	Junior High School	11	22
4	Senior high School	2	4
	Total	**50**	**100**

Based on the table above shows that the education level of agriculture most non-literate respondents is out of school with 21 people with 42% and secondary less than agriculture with 2 with 4%.

Responsive Work Experience

Farmers' work experience is a determining factor to increase growth and production quantity, because of their own knowledge or practical experience gained about the operation of the cultivation area, based on information obtained from some parties. To know more about the work experience of rice farmers can be seen in the following table:

Table 4. Responsive Work Experience

No	Responsive Work Experience	Frequency	Percent(%)
1	10-15	4	8
2	16-29	15	20
3	20-25	7	14
4	26-39	9	18
5	30-35	6	12
6	36-40	7	14
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the work experience of rice farmers respondents in fifty (50), discovered 10-15 farmer work experience with its minimum frequency of 4 people, 8%, discovered farmer work experience between 16-29, found the highest frequency of fifty (15%) people.

Area Cultivation Farmer Respondents

Cultivation area responds to all rice farmers owning the area (land), fertile soil conditions and dominate the area of one-hectare, which farmers use to carry out agricultural activities with various varieties, especially using rice cultivation. To know the area of rice farmers use can be seen in the following table:

Table 5. Area Cultivation Farmer Respondents

No	Area Cultivation Farmer Respondents	Frequency	Percent(%)
1	0,42-0,47	1	2
2	0,48-0,55	6	12
3	0,56-0,63	5	10
4	0,64-0,71	4	8
5	0,72-0,79	4	8
6	0,80-0,89	9	18
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the total area of farmers responded in fifty (50) people, discovered the smallest cultivated area area amounting to 0. 42-0.47, 2%, with its frequency of one (1) person, discovered the largest frequency of cultivated area amounted to nine (90), 42% percent.

Employer

Labor is a very important factor in any agricultural activity, as a resource to manage how to achieve growth in quality and quantity of production. The employers who recognized the rice farmers as respondents with a large or small total, to know clearly can see in the following table:

Table 6. Employer Responds

No	Employer Responds	Frequency	Percent(%)
1	13-15	4	8
2	14-19	10	20
3	20-25	7	14
4	26-31	9	18
5	32-37	8	16
6	38-43	1	2
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the total number of employers responded in fifty (50), discovered the smallest employer amounting to 38-43, 2% percent, with its frequency of one (1), discovered the employer received the highest frequency of ten (10), from 14-19, with 20% percent.

Total Respondent Fixed Cost (TFC)

Fixed costs are the costs used for equipment to facilitate the process of agricultural activities, using long-term costs (TFC), which are invested by grain farmers for the production process. To find out, see the following table:

Table 7. Total Respondent Fixed Cost (TFC)

No	Total Respondent Fixed Costs	Frequency	Percent(%)
1	22-24	4	8
2	25-29	8	16
3	30-34	13	26
4	35-39	10	20
5	40-44	9	18
6	45-54	4	8
Total		**50**	**100**

Sources: From Primary data,2019

Through the table above shows that the fixed cost that farmers use for the production process of white coffee, there are fifty (50) people, found that use costs between ≥55 of white coffee farmers with its minimum frequency of 4 people, 4%, found that used cost between 30-34 farmers with more frequency of white coffee total thirteen (13) people, with 26% percent.

Respondent Total Move Cost (TVC)

Total variable costs such as the cost of some materials and process activities, can be said to use short-term costs (TVC), comes from the capital invested by grain farmers for the production process in one (1) year. To know the total cost of moving using rice farmers, you can see in the following table:

Table 8. Respondent Total Move Cost (TVC)

No	Total Moving Costs Respondents	Frequency	Percent(%)
1	18-19	9	18
2	20-22	15	30
3	23-25	8	16
4	26-28	11	22
5	29-31	2	4
6	32-36	3	6
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the cost that rice farmers use for the rice production process in fifty (50) people, found that used cost between 26-31, 37>, from rice farmers with its minimum frequency of two (2), 4% percent, found that used cost between 20-22 people fifteen (15), with 30% percent.

Respondent Total Move Cost (TMC)

Total variable costs such as the cost of some materials and process activities, can be said to use short-term costs (TMC), comes from the capital invested by grain farmers for the production process in one (1) year. To know the total cost of moving using rice farmers, you can see in the following table:

Table 9. Total Move Cost (TMC)

No	Total cost ($)	Frequency	Percent (%)
1	33-34	7	14
2	35-36	24	48
3	37-38	7	14
4	39-40	6	12
5	41-42	4	8
6	>43	2	4
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the sample for the number of farms using costs during the implementation of white coffee harvesting activities is greater than 35-36 through 24 people with 48% and farmers who use variable costs less than 43% of farmers responded with 2 percent and 4%.

Production (kg)

To know the production of white coffee carried out by respondent farmers in Suco Manelima, based on the results of research that identified the number of production from 50 respondent farmers per year with a total of 29650 kg, and the production of white coffee obtained from each farm. For more information, please see the following:

Table 10. Total Produsen Responden

No	Total Produsen Responden	Frequency	Percent %
1	450	11	22
2	500	8	16
3	550	5	10
4	600	8	16
5	650	9	18
6	750	2	4
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the sample for yield of white coffee responded largest is 450 kg, more than 11 people with its percentage 22%, the sample of white coffee interviewed less is 750 kg, 2 people with its percentage 4%. From the level of production once a year 50 respondent farmers from Manelima sub-district Laklubar administration post.

Total Revenue

Gross revenue is the total revenue from physical production multiplied by the price of production, the harvest of white coffee sold at U$1.00 multiplied by the total production of white coffee. For more information, see the following table:

Table 11. Total Respondent Receipts

No	Total Respondent Receipts	Frequency	Percent %
1	250	11	22
2	275	8	16
3	300	5	10
4	325	8	16
5	350	9	18
6	375	2	4
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the sample of the number of white coffee production that received gross revenue total revenue (TR) during the implementation of white coffee harvesting activities greater than U$250 more than 11 people with its percentage of 22% and farmers gross revenue or total revenue (TR) less than U$375 from other farmers 2 with 4% percent.

Total Income

Income is also the total income from white coffee farmers during the period. A total of less than farmers. For more information, see the following table:

Table 12. Total Income

No	Total	Frequency	Percent (%)
1	418-460	15	30
2	465-515	6	12
3	516-613	10	20
4	614-666	7	14
5	711-716	10	24
6	>717	2	4
Total		**50**	**100**

Sources: From Primary data,2019

Based on the table above shows that the net income and respondent farmers who receive net income greater than U$418-460 more than 15 people with its percentage 30% and farmers who are less than other farmers U$717 total 2 people with its percent 4%.

Income Analysis

From this table is explained about the table of fixed costs used in the production of white coffee activities as follows and variable costs for the total cost of production, Total revenue from the activity is and its average is based on data that has total income from selling white coffee in Manelima, Laklubar Administrative Post, Manatubar Municipality, as follows. For more information, see the following table.

Table 13. Income

Component	Total Value (s)	Average(%)
Permanent Fund		
Panga	330	6000
Sickle	217	4340
TFC	**547**	**1.225**
Variable Funds		
Cutting Grass	236	118.00
Harvest	199	99.50
Spin	297	148.50
Bring	195	97.50
drying	177	88.50
TVC	**1.104**	**552.00**
TC=TFC + TVC	**1.651**	**825.50**

Sources: From Primary data

Based on the table above to explain only two (2) components such as fixed costs, and farmer moving costs, looking at fixed costs (TFC) total result amounted to U$ 547, total means amounted to 1,225%, variable costs (TVC) with its total results amounted to U$ 1,104, means 255%, counted between. (TFC+TVC = 547+1,104 = U$$ 1,651 (TC), mean 825.50%).

Income Analysis (π)

Income analysis is a method to determine the income of white coffee farmers. You can see the following formula: Formula:

TC= TFC+TVC = 547+1104, TC = **1651,** TR= Q×Pq = 29.650×1.00, TR = **29.650,** Π= TR-TC = 29.650-1651, Π = **27.999**

Contribution Analysis

To analyze the contribution of women to increase income to sustain the needs of the family. To determine the contribution of women, analyze using the following formulation:

$$(\text{KR}) = \frac{\Sigma Pup}{\Sigma PRT+PUP}\,(X\ 100\%)$$

$$(\text{KR}) = \frac{29650}{18800+29650}(X\ 100\%)$$
$$(\text{KR}) = \frac{29650}{48450}$$
$$\text{KR} = 61.197$$

Analysis of white coffee income with total contribution from women, **U$ 29,650.** The total gross income received by white coffee farmers is **U$ 29,650**, divided by the total family income of **U$ 18,800** multiplied by 100%, the counting value of the contribution of female farmers increases household income by 61%, generally the contribution of female farmers increases income more than other incomes.

CONCLUSION

Based on the results obtained, it can be concluded that the Total Cost (TC) invested by fifty coffee farmers during the production process reached U$1,651 in one year, while the total income received by fifty coffee farmers was U$1,651 in one year, while the total income received by fifty coffee farmers was U$1,651 in one year, while the total income received by fifty coffee farmers was U$29,650, indicating significant income potential from the coffee sector. The total net income (∏) received by farmers from coffee production was U$27,999, reflecting success in achieving a better income. The contribution of women in increasing family income from coffee production in this area is 61%, which confirms the important role of women in the household economy. The results of this study show that women play a significant role in increasing income from the coffee sector, although there are still challenges in access to technology and resources. Therefore, empowering women in the agricultural sector, particularly in coffee production, is crucial to improving the economic welfare of families and communities as a whole. This research is expected to provide insights for the government and stakeholders in designing policies that support women's empowerment in the agricultural sector and help reduce poverty and improve community welfare in Timor Leste.

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