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Analysis Of Farm Laborers' Household Income At The Agricultural Modernization Implementation Site (IPMP) In Makariki Village, Amahai Subdistrict, Central Maluku Regency

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Abstract

This study aims to determine (1) the income of farm laborers at the Agricultural Modernization Implementation Facility (IPMP) in Makariki Village, Amahai District, Central Maluku Regency, and (2) the contribution of farm labor income to total household income. The study employs a quantitative descriptive approach using a census of 20 respondents. Data were collected through observation, interviews, and documentation, and were analyzed by calculating monthly income from farm labor and from work outside farm labor, as well as their contribution to total household income. The results show that the average income from farm labor is IDR 2,075,000 per month, based on an average of 20.75 working days at a daily wage of IDR 100,000. In addition, the households earn IDR 2,108,101 from crop farming, IDR 850,911 from fishing, and IDR 196,563 from poultry raising per month, bringing average total household income to IDR 5,230,574 per month. Farm labor income contributes 39.67% of total household income, while crop farming, fishing, and poultry raising contribute 40.30%, 16.27%, and 3.76%, respectively. The harvests, fish catches, and poultry are not only sold but also consumed by the households to meet their food needs. Thus, the household income of these farm laborers does not depend solely on work at the IPMP but is also strongly supported by work outside farm labor.

Keywords: income, farmworkers, side jobs, agricultural modernization, Makariki Village.

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INTRODUCTION

The agricultural sector plays a vital role in supporting Indonesia's economic development. In addition to helping meet the population's food needs, this sector also provides employment opportunities and serves as a major source of income, particularly for people living in rural areas. Agricultural activities involve various parties, including farmers who manage the land and farmworkers who assist in the production process. Farmworkers are responsible for carrying out various agricultural tasks, ranging from land preparation, planting, crop maintenance, and fertilization to harvesting. Therefore, the farmworker labor force is an essential component in ensuring the smooth operation of agricultural production in Indonesia.

Development in the agricultural sector is aimed not only at increasing agricultural production and productivity but also at improving the well-being of people working in this sector. Soekartawi (2002) explains that farming activities involve the use and allocation of resources to achieve desired outcomes. One of the resources required for agricultural activities is labor, which is responsible for carrying out the various stages of farm work.

The province of Maluku is one of the regions in Indonesia where the population engages in various economic activities, including those in the agricultural sector. For rural communities, farming is a source of income to meet their families' needs. As an archipelago, Maluku has diverse geographical conditions and economic characteristics among its communities, and a labor force is still needed to perform tasks such as land preparation, planting, crop maintenance, and harvesting.

As times change, agricultural modernization has become one of the efforts to improve efficiency and support the advancement of agricultural activities. This modernization can be achieved through the use of agricultural tools and machinery, the application of cultivation technologies, improvements to farm management systems, and the enhancement of workers' skills. The application of technology can help speed up the completion of tasks and improve the efficient use of resources. However, the impact of modernization on employment opportunities and farmworkers' income needs to be assessed based on actual conditions in the field. The use of agricultural tools and machinery has the potential to reduce the need for labor in certain tasks, but other activities still require human labor.

Central Maluku Regency is one of the regions in Maluku Province engaged in agricultural activities, particularly in the food crop sector. The people of Central Maluku Regency cultivate various crops, such as rice, corn, cassava, sweet potatoes, and peanuts, to meet their food needs and as a source of income. The harvested area and production volume of food crops in Central Maluku Regency indicate that agricultural activities still require a significant labor force for their

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implementation. Data on the harvested area and production of food crops in Central Maluku Regency for the year 2024.

Table 1. Harvested Area and Production of Food Crops in Central Maluku Regency Year 2024

Commodities	Harvested Area (Ha)	Yield (Ton)
Paddy Rice	6.758	34.604,25
Upland Rice	0,25	0,4
Corn	410	1.374
Cassava	686,5	17.313
Sweet Potatoes	278	6.863
Peanuts	188,5	584,6

Source: LKJ of Central Maluku Regency, 2024.

Based on the data above for the year 2024, it can be seen that food crops in Central Maluku Regency vary in terms of harvested area and production volume. Irrigated rice has the largest harvested area, at 6,758 hectares, with a production of 34,604.25 metric tons. Next, cassava has a harvested area of 686.5 hectares with a production of 17,313 metric tons, while sweet potatoes have a harvested area of 278 hectares with a production of 6,863 metric tons. Corn has a harvested area of 410 hectares with a production of 1,374 metric tons, while peanuts have a harvested area of 188.5 hectares with a production of 584.6 metric tons. As for upland rice, it has the smallest harvested area, at 0.25 hectares, with a production of 0.4 metric tons. These data indicate that food crop farming activities in Central Maluku Regency are quite diverse, with paddy rice being the commodity with the largest harvested area and production. This situation demonstrates that the agricultural sector remains one of the key economic activities that requires labor support in its production process.

Makariki Village is one of the villages engaged in agricultural activities that have adopted agricultural modernization through the Agricultural Modernization Implementation Facility (IPMP)—an agricultural area managed to implement and demonstrate the use of agricultural tools, machinery, and technology—but which also requires labor to support production activities. Not all farming families have sufficient land, capital, or the opportunity to run their farms independently. Therefore, rural residents earn income by working as laborers on IPMP land as casual day laborers. The work they perform—for which they are paid—includes land

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preparation, planting, crop maintenance, fertilization, and harvesting. The wage received is 100,0000 per day. The amount of the wage depends on the number of days worked.

Based on the above description, research on the analysis of farm laborers' household income at the Agricultural Modernization Implementation Facility in Makariki Village is necessary to obtain information regarding the characteristics of farm laborers, the types of work performed, the amount of wages received, the number of working days, and the income earned over a specific period. This study aims to determine (1) the level of farm laborers' income at the IPMP in Makariki Village, Amahai Subdistrict, Central Maluku Regency, and (2) the contribution of farm laborers' income to total household income at the IPMP. The results of this study are expected to provide a clearer picture of the income conditions of farmworkers and serve as a basis for consideration by relevant parties in addressing the welfare of workers in the agricultural sector.

RESEARCH METHODOLOGY

This study was conducted at the Agricultural Modernization Implementation Facility (IPMP) in Makariki Village, Central Maluku Regency, Maluku Province, in May 2026.

The study population consisted of all 20 farmworkers employed at the IPMP in Makariki Village, all of whom were included as respondents (census). Primary data were collected through observations and interviews regarding the respondents' characteristics, type of work, number of working days, wages, and income, while secondary data were obtained from documents provided by the facility management, the village government, agricultural agencies, and scientific literature. Documentation was used to supplement the necessary information.

This study employs a quantitative descriptive approach, which involves describing a phenomenon based on numerical data that has been systematically processed and presented, as used by Wahyuni et al. (2023) in analyzing farmworkers' income.

Data analysis was conducted using quantitative descriptive methods. Farmworkers' income was calculated on a monthly basis:

$$\mathbf{Pb = Uh \times Hb}$$

Explanation:
Pb = Monthly income (Rp),
Uh = Daily wage (Rp), and
Hb = Number of workdays

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Income from sources other than agricultural labor (farming, fishing, and poultry farming) was obtained from interviews and presented as a monthly average. The contribution of agricultural labor income to total household income was used to determine the extent to which agricultural labor income plays a role in meeting the family's economic needs. The formula is as follows:

$$K = (YBT / YRT) \times 100\%$$

Explanation:
K = The contribution of farm laborers' income to total household income (%),
YBT = Income from work as a farm laborer (Rp), and
YRT = Total household income (Rp).

Total household income is calculated by adding the income of farm laborers to the income from non-farm labor.

RESULTS AND DISCUSSION

Overview of the Agricultural Modernization Implementation Program (IPMP)

The Makariki Agricultural Modernization Implementation Facility (IPMP) is an agricultural area located in Makariki Village, Amahai Subdistrict, Central Maluku Regency, Maluku Province, and has been in operation since 1953. The area covers approximately 307 hectares of land used for agricultural activities and to support the facility's operations. Agricultural activities at the Makariki IPMP include several types of crops, namely corn, upland rice, peanuts, red beans, coconuts, and sago. Corn and upland rice are each cultivated on 5 hectares of land using a monoculture system—a farming method that involves planting a single crop on a specific plot of land; although they are located within the same general area, these two crops are grown separately on their respective plots. Red beans and peanuts are each cultivated on 0.5 hectares of land. Both crops belong to the legume group, which has the potential to enhance soil fertility through nitrogen fixation with the help of symbiotic bacteria in root nodules, and can be grown using an intercropping system if planted on the same land during the same period. In addition to food crops and legumes, IPMP Makariki also maintains a 20-hectare coconut plantation with a population of approximately 1,000 trees, as well as a 1-hectare sago plantation.

Agricultural activities at IPMP Makariki are supported by 33 workers, consisting of 13 permanent employees and 20 day laborers. Permanent staff are responsible for carrying out ongoing tasks, such as operating tractors and planting equipment, organizing planting using the

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legowo row system, performing crop maintenance, and maintaining facilities and land security. Meanwhile, day laborers are hired based on on-site labor needs, particularly for land preparation, planting, crop maintenance, irrigation, harvesting, and post-harvest activities. The involvement of day laborers is necessary because each stage of agricultural activities has different labor requirements. The wage system for day laborers at IPMP Makariki is based on the number of workdays, with a daily wage of Rp100,000 per person. Under this system, the income received by each farmworker depends on the number of days worked, assuming that all workdays are paid in full and there are no wage deductions. Although the daily wage rate is the same, the total income received by each farmworker may vary due to differences in the number of days worked.

Respondent Characteristics

The respondents in this study consisted of 20 farmworkers, whose characteristics—including age, education, farming experience, and number of dependents—are outlined below.

Table 2. Characteristics of Farmworker Respondents in the IPMP in Makariki Village, 2026

Characteristic	Category	Frequency	Percentage (%)
Age	Working-age (15–64 years)	20	100
	Non-working-age (>64 years)	0	0
Education	SD	1	5
	SMP	4	20
	SMA	12	60
	D3	1	5
	S1	1	5
	S2	1	5
Farming Experience	4–6 years	15	75
	7–9 years	3	15
	10–15 years	2	10
Number of family dependents	1–2 people	11	55
	3–4 people	8	40

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Characteristic	Category	Frequency	Percentage (%)
	5–6 people	1	5

Source: Processed Primary Data, 2026.

Age is related to a person's ability to perform physically demanding agricultural tasks, such as land preparation, planting, crop maintenance, irrigation, harvesting, drying, and threshing. Soekartawi (2002) states that age affects maturity as well as the ability to think and work: young, healthy farmers generally have greater physical strength, while older farmers have somewhat less physical strength but more work experience. However, work capacity is determined not only by age but also by health status, experience, skills, and the type of work performed. All respondents fell within the productive age group (15–64 years), indicating that the workforce comprising the respondents was within the productive age range. The productive age is the age range during which a person is considered physically and economically capable of working and generating income, namely 15–64 years (Ardiansyah et al., 2024).

Educational level refers to the formal education that respondents have pursued and completed. Education can reflect respondents' level of knowledge and ability to understand information, follow instructions, and apply knowledge in their work, although knowledge and skills in agriculture can also be developed through experience and hands-on work. One respondent (5% of the 20 respondents) held a master's degree. This indicates that work as farm laborers at IPMP is not only performed by people with low levels of education but also by individuals with higher education. The choice of this occupation may be related to employment opportunities, economic needs, and the availability of jobs.

Most respondents (75%) had 4–6 years of farming experience, while 15% had 7–9 years of experience and 10% had 10–15 years of experience, indicating that the respondents had sufficient experience. According to Soekartawi (2002), farming experience is a crucial asset because through this experience, farmers can improve their ability to adopt innovations, manage production factors, and make sound decisions. Based on the number of family dependents, the majority of respondents (11 respondents, 55%) had 1–2 dependents, followed by 8 respondents (40%) with 3–4 dependents, and only 1 respondent (5%) with 5–6 dependents.

Farm Workers' Income

The analysis of farm laborers' household income in the IPMP in Makariki Village was conducted based on data from 20 respondents. Farm laborers' income was calculated by multiplying the number of paid workdays by the daily wage. The average number of workdays

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per respondent was 20.75 days per month, while the average income earned by each respondent was Rp2,075,000 per month.

Since the daily wage is the same for all respondents, differences in income among respondents are solely due to differences in the number of workdays. The respondent with the fewest workdays worked 16 days per month and earned Rp1,600,000, while the respondent with the most workdays worked 30 days per month and earned Rp3,000,000. The more days worked, the higher the income earned, assuming the daily wage remains constant.

Contribution of Farmworkers' Income to Total Household Income

The contribution of farm laborers' income to total household income is calculated by comparing farm laborers' income with other income sources outside of farm labor. Total household income in this calculation is the sum of farm laborers' income and income from side jobs.

Table 3. Average Income of Farm Workers and Non-Farm Workers

No	Description	Average income (Rp/month)	Contributions (%)
1	Farmworkers' income	2,075,000	39.67
2	Income other than that from farm labor:		
a	Agricultural farming (coconuts, cassava, bananas, peanuts, and mung beans)	2,108,101	40.30
b	Fishermen	850,911	16.27
c	Chicken farmer	196,563	3.76
	Total household income	5,230,574	100.00

Source: Research data, compiled in 2026.

Based on Table 3, the average income of farm laborers in the IPMP is Rp2,075,000 per month. Income from occupations other than farm labor consists of agricultural farming at Rp2,108,101, fishing at Rp850,911, and chicken farming at Rp196,563 per month. Thus, the average total household income is Rp5,230,574 per month, which is the sum of farm laborers' income and the three sources of income from activities other than farm labor. Farm laborers'

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income accounts for 39.67% of total household income.

Kontribusi pendapatan dari pekerjaan di luar buruh tani masing-masing adalah: usahatani pertanian 40,30%, nelayan 16,27%, dan peternak ayam 3,76%. Jumlah seluruh kontribusi 100%.

Agricultural farming is the largest source of income aside from farm labor. The harvests of coconuts, cassava, bananas, peanuts, and mung beans are not only sold but also consumed by households to meet the family's daily food needs. Cassava, bananas, peanuts, and mung beans are processed into staple foods and side dishes, while coconuts are used as ingredients in cooking, allowing households to reduce their spending on food purchases. Surplus crops are sold fresh—such as coconuts, cassava tubers, bunches of bananas, as well as peanuts and mung beans—to wholesalers or directly to consumers at the nearest market. The proceeds from these sales are used to meet households' daily needs—such as buying rice, side dishes, and school supplies for children—as well as to fund farming expenses for the next planting season.

Fishermen's efforts yield a catch that is not only sold but also consumed by the fishermen themselves as a side dish to meet their families' dietary needs. The fish sold are generally marketed fresh to buyers in the surrounding villages, fish vendors, or at markets. The proceeds from fish sales are used to cover daily living expenses and the costs of going out to sea, such as fuel and maintenance of fishing gear. The amount of income earned by fishermen can vary depending on the weather and the fishing season.

Chicken farming is generally conducted on a small scale, so its contribution is the lowest (3.76%). The chickens and eggs produced are not only sold but also consumed by the farmers themselves to meet their families' dietary needs. The products sold include live chickens, broiler chickens, and eggs to neighbors, small shops, or other buyers. Income from chicken farming is used to help meet daily household needs, and chickens can also be sold at any time when the family needs cash.

Overall, farm laborers' wages at IPMP provide a steady income but are limited by the number of working days, whereas farming, fishing, and chicken farming—carried out in addition to their work as farm laborers—collectively generate a higher income than farm laborers' wages, and the produce is consumed to meet the household's food needs.

CONCLUSION

Based on the results of a study at the Agricultural Modernization Implementation Facility (IPMP) in Makariki Village, Amahai Subdistrict, Central Maluku Regency, it can be concluded that the average income of farm laborers is Rp2,075,000 per month, derived from an average of 20.75

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working days at a wage of Rp100, 000 per day. The respondent households also derive income from agricultural farming amounting to Rp2,108,101, fishing amounting to Rp850,911, and chicken farming amounting to Rp196,563 per month, resulting in an average total household income of Rp5,230,574 per month. Agricultural laborers' income contributed 39.67% to total household income, while agricultural farming contributed 40.30%, fishing 16.27%, and chicken farming 3.76%. Agricultural produce, fish catches, and chicken are not only sold but also consumed within the household to meet the family's dietary needs. Since the daily wage is the same for all respondents, farm laborers' income is largely determined by the number of days worked; therefore, an increase in the number of working days under the IPMP program has the potential to boost their income.

REFERENCES

Badan Pusat Statistik. (2023). *Statistik Upah Buruh Tani di Perdesaan 2022*. Badan Pusat Statistik.

BPS Kabupaten Maluku Tengah. (2025). *Kabupaten Maluku Tengah dalam Angka 2025*. BPS Kabupaten Maluku Tengah.

BPS Provinsi Maluku. (2024). *Hasil Survei Ekonomi Pertanian (SEP) 2024*. BPS Provinsi Maluku.

Hidayanti, A. A., & Setiawan, R. N. S. (2024). Peramalan Rata-Rata Upah Buruh Tani (Rupiah) di Indonesia Menggunakan ARIMA Model Intervensi. *Agroteksos*, 34(1), 318–326. https://doi.org/10.29303/agroteksos.v34i1.1102

Saputra, A. A., Romdhon, M. M., Sukiyono, K., & Saleh, Y. (2025). Faktor-Faktor yang Mempengaruhi Penerimaan Buruh Tani Wanita di Kecamatan Pondok Kubang Kabupaten Bengkulu Tengah. *Agroteksos*, 35(1). https://doi.org/10.29303/agroteksos.v35i1.1307

Soekartawi. (2002). *Analisis Usahatani*. Universitas Indonesia Press, Jakarta.

Wahyuni, R., Gultom, N. F., Meidalima, D., & Chuzaimah. (2023). Dampak Mekanisasi Pertanian terhadap Pendapatan Buruh Tani Perempuan di Desa Sungai Dua Kecamatan Rambutan Kabupaten Banyuasin. *Journal of Integrated Agribusiness*, 4(2). https://doi.org/10.33019/jia.v4i2.351

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