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## The Contribution of Rice Farming on The Farmers' Income: a Study Case in Klambir V Kebun Village, Hampan Perak Subdistrict, Deli Serdang Regency

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### ABSTRACT

Two objectives of agricultural expansion are food security and farmers' welfare, thus the government must always endeavor to guarantee its availability through a range of policy initiatives. To improve farmers' income, it is also intended that the rice farming should be set at a level that generates a profit for farmers. The study was carried out in the Hampan Perak District of the Deli Serdang Regency, specifically in Klambir V Kebun Village. This study's objective was to provide detailed information regarding the impact of rice farming on farmers' income. This study evaluated the literature using library research using a descriptive qualitative methodology. Information sources included field data pertinent to the topic as well as data from websites used as publication sources. The findings showed that 78.18% of farmers' household income came from rice cultivation, with side jobs outside of agriculture making up the remaining 21.82%. The rice growing method used in the current study is workable and can provide enough income to support a family. Rice farming has a significant impact on the welfare of the farmers.

**Keywords:** Rice Farming, Farmers' Income, Agricultural expansion

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### 1. INTRODUCTION

Numerous studies as well as recent polls conducted in Indonesia have likewise revealed a noticeably worse level of farm management performance. This frequently occurs as a result of farmers not having the managerial abilities to effectively oversee their farming systems. Crop production losses and the squandering of some natural resources are among the consequences. In order to improve farm performance, it is not only important to encourage the application of farming programming strategies; system designs and performance must also be improved, and farmers' abilities must be upgraded to better control and manage their farming system.

The operation of the farm is largely dependent on the farmers' management skills because, in most cases, no provisions are made for adapting systems to the local operating

environment or to the technical proficiency of the farmers in controlling their systems. Data on farm production performance, either by itself or in conjunction with financial data, must also be used to delve deeper into any issues. The next stage is to identify the precise reason or causes, after which efforts should be made to identify potential remedies. Budgets should be created in order to assess which solutions are the most promising in terms of their potential effects on cash flow and profitability. When making significant adjustments, it is necessary to create an implementation plan and keep an eye on farm performance to ensure the modifications are having the desired effect (Nurliza et al., 2017).

The level of the economy will decline as a result of farmers' unpredictable crop. The majority of farmers who rely on the harvest occasionally experience unpredictable incomes. Crop failure, or poor harvests, frequently leads to additional issues that significantly affect farmers' ability to survive. Therefore, in order to address these issues, it is imperative that farmer welfare be improved (Faried & Sembiring, 2020). People's consumption patterns are also influenced by occupation, income and the external environment such as economic conditions. One of the factors that has been worsening economic conditions and reducing people's purchasing power, especially lowering consumption, is the presence of the especially reducing consumption is the Covid-19 pandemic (Rusiadi et al., 2023).

Inadequate farmer organizations, limited access to markets, capital, and technology are the main issues that farmers face. One step in the process of enhancing the community's welfare, independence, and yields is participatory rural evaluation. The purpose of the assessment of rural conditions is to boost community capacity and confidence in recognizing and evaluating their own circumstances, opportunities, and issues (Lubis et al., 2024).

Good rice production requires supporting variables, and if our rice production is good, then so are the outcomes. If the current production variables in farming are used effectively, the end product will be good. Klambir V Kebun village is among the villages in the Hamparan Perak Subdistrict that cultivate rice. The ability of rice farmers to provide for their families' fundamental needs—such as clothing, food, shelter, health care, and education—tells us something about their welfare. Farmers and their families are seen as rich when they are able to provide for these necessities; conversely, if they are unable to do so, they are viewed as impoverished. Food security and farmer welfare are two goals of agricultural growth, so the government must constantly work to ensure its availability through a variety of policy initiatives. Additionally, it is desired that the selling price of rice be at a level that allows farmers to make a profit in order to enhance the welfare of farmers.

In Klambir V Kebun village, there are still many rice farmers whose lives are arguably still lacking. The income they generate from their harvests often cannot meet their needs until the next harvest, even though some farmers have their own agricultural land. In addition, many agricultural lands are also made into residential areas because of the increasing population growth every year. If the agricultural land is getting narrower, their yields are also getting smaller so that the income they get is also small. Then, also often farmers experience drought on their land due to the lack of irrigation channels or waters, so if there is no rain and no one irrigates their agricultural land then their rice production will get bad results, it can cause the selling price of rice to decrease, so then the farmers can experience losses and not return capital.

## 2. LITERATURE REVIEW

### a. Rice Farming

The rising population is driving up the country's need for rice, which keeps rising every year.

Therefore, it is imperative to expand and enhance more rice fields, such as rainfed rice. After wetland rice, rainfed rice is the second-biggest rice producer in the country. Rainfed rice development continues to face challenges, chief among them being low productivity (René et al., 2016). Since rainfed farms only have access to rainwater, it is impossible to isolate the issue of water supply from rice production (Arifin et al., 2021).

Wetland rice often produces rice at a higher pace than rainfed rice. Rainfed rice fields are considered high-risk ecosystems by the global rice research community due to their vulnerability to pest assaults, salinity, flooding, and drought (Arifin et al., 2019). Plant cultivation, cultivation methods, and rice nutrient management are methods used to anticipate risks. Due to the hazards and conditions of rainfed rice fields, farmers that cultivate rice there can only make a limited amount of money during the rainy season.

Maintaining food security and national economic growth are significantly aided by increased rice production. Farmers' income is anticipated to be directly impacted by increased output and the importance of a strong selling price (Tambi, 2019). Increasing food self-sufficiency in every region—provinces, districts, towns, and villages—is the main goal of efforts to attain food security.

Food needs have increased in tandem with population growth and local wealth (Wardie & Sintha, 2018). Food demands and food security are determined by these two factors. One factor in determining a household's capacity to supply food or its ability to make food affordable is purchasing power.

### b. Farmers' Income

Selling prices of organic rice multiplied by production volume equals farming revenue (Suswadi et al., 2021). An important element that serves as an indicator of farmer welfare is the amount of income and its balance with expenditure. In this regard, one of the measurement tools often used is the Farmer Exchange Rate (FER). The calculation of FER is obtained from the ratio of the price index received by farmers to the price index paid by farmers. The farmer exchange rate illustrates the level of exchange power/purchasing power of farmers against products that farmers buy/pay for which includes consumption and production inputs purchased.

The higher the farmer exchange rate, the better the purchasing power of farmers towards consumption products and production inputs, and means relatively more prosperous. There are practically no unique welfare markers for farm households, so FER is the only option for agricultural development observers in assessing the welfare level of farmers. Thus, FER is one of the relative indicators of farmer welfare. The higher the FER, the relatively more prosperous the level of farmers' lives (National Development Planning Agency and JICA, 2013).

Using the general equilibrium theory shows that FER can be used as a measuring tool for farmers' welfare. Conceptually, the direction of the FER (increase or decrease) is the resultant of the direction of each constituent component, namely the revenue component which has a positive direction towards the welfare of farmers and the payment component

which has a negative direction towards welfare. If the rate of the component is higher than the rate of payment then the farmer exchange rate will increase, and vice versa. The movement of the FER up or down reflects the rise and fall of farmers' welfare. Furthermore, the FER has characteristics that tend to decline. This is related to the inherent characteristics of agricultural and non-agricultural commodities. There are three explanations for the decline in FER, namely: (1) income elasticity of agricultural products is inelastic while non-agricultural products tend to be more elastic, (2) technological change at different rates favors manufactured products, and (3) differences in market structure, where the market structure of agricultural products tends to be competitive, while the market structure of manufactured products tends to be less competitive and leads to a monopoly/oligopoly market (Nasution, 2020).

### **3. RESEARCH METHOD**

This study used a descriptive qualitative methodology and conducted a literature evaluation through library research. Data from websites used as publication sources as well as field data relevant to the subject were included in information sources. Kurniawan (2014) claimed that the descriptive qualitative approach, which used the researcher as the main instrument, was based on philosophy and was intended to study scientific phenomena. According to Sugiyono (2012), this approach was philosophical in nature and was used in scientific settings where the researcher act as the main tool. Understanding underlying meanings was the goal of qualitative data collecting and analysis methods (Rangkuty et al., 2024).

### **4. RESULTS AND ANALYSIS**

#### **a. The Effect of Rice Farming on The Farmers' Income**

In order to swiftly generate money for their livelihoods, farmers who are unable to produce enough rice must look for fast-growing crops (such as potatoes, cabbage, chilies, and passion fruit) (Otsuka 2009). In the research locations, 46 households planted annual crops such pumpkin (*Cucurbita maxima* L.), cassava (*Manihot esculenta* Crantz), corn (*Zea mays* L.), cucumber (*Cucumis sativus* L.), French bean (*Phaseolus vulgaris* L.), and cowpea (*Vigna sinensis* L.) on their dryland in 2013. The planting of annual crops has the potential to yield an average monthly income of Rp 1,860,000.00. Less than 50.00% of a family's income comes from secondary crops like bananas, cocoa, and maize.

There's been some variety. The economic benefits of crop diversity assist in raising the average household income. Perennial crops provided 22.90%–39.64% of income in this study, whereas annual crops generated 14.37%–71.86%. Farmers that adopt crop diversity as a farming strategy can generate money all year round because different crops can be gathered at different seasons. Crop diversity also has the economic benefit of lessening the impact of price fluctuations (Karmini & Karyati, 2018).

The profit that farmers receive from their production after deducting the cost of employing the inputs of production is known as farmer's income. A total of 271,300 kg of rice were produced by the 100 farmers in the Sengah Temila District sampled. The cost per kilogram of paddy is Rp 4,500.00. The constant cost of land rent is Rp 92,600,000.00, while the variable costs are Rp 16,270,000.00 for seeds, Rp 105,300,000.00 for fertilizer, Rp 36,240,000.00 for pesticides, and Rp 416,080,000.00 for labor. Farmers earn Rp. 554,360,000.00, or Rp. 5,543,600.00 per farmer in four months, or Rp. 1,385,900.00 per

farmer household per month, according to the calculation results. Farmers' income in 2017 was even less than the UMR of 2.000.920,00 for the Landak regency. High labor, fertilizer, and pesticide production costs result in low farmer revenue (Pudaka et al., 2018).

Net profit is another term for agricultural income, including both organic and non-organic revenue. Finding the difference between revenue and total production expenses is how farm income is calculated. An average rice farmer makes Rp 21,930,748 a year from organic cultivation. Compared to the income from inorganic farming, which is Rp 21,411,372, this income is larger. Because more rice is produced organically than non-organically, there is a difference in acceptance between organic and inorganic rice farming. The net income received is further impacted by the fact that organic rice sells for more money than inorganic rice does. The household income of organic and inorganic rice growers does not differ significantly. In conclusion, there is no statistically significant difference in the income earned by organic and inorganic farmers, despite the fact that mathematically, organic farmers make more money per household than inorganic farmers do (Juni et al., 2022).

An analysis of rainfed rice cultivation with respect to production, price, revenue, total cost, and average income. The average results of the rainfed lowland rice farming varied between sites, according to the investigation. The production component of Maros Baru District (5,246.67 kg) was the greatest in terms of production, revenue, and total costs in the farming analysis component. Simbang District (4,487.50 kg) and Lau District (4,820.30 kg) were the next two districts in line. Maros Baru District has the largest revenue component, followed by Simbang District and Lau. Maros Baru District has the largest overall cost component, followed by Simbang District and Lau. In contrast to Simbang District and Maros Baru, where the price of rice was the same in the previous two regions, Lau District had a higher price for rice. In terms of income, the largest districts were Maros Baru and Simbung District, then Lau District (Arifin et al., 2021).

In contrast, the biggest percentage of farmers' family income came from rainfed lowland rice production in Lau District. Simbang District and Maros Baru came after this. In the meantime, the t-test revealed that the calculations among districts varied significantly ( $p=0.05$ ). Furthermore, there were notable differences in the calculations between Simbang District and Lau ( $p=0.10$ ). An overview of how rainfed rice farming contributes to household income is shown in Table 3. The majority of farmers relied on rice cultivation in rainfed rice fields as their primary source of income. This indicates that, in comparison to other enterprises, rainfed rice cultivation is the primary source of revenue for households. Rice growing helps farmers by providing a source of income for their households as well as staple food. The agricultural sector continues to be the community's primary source of income and activity, particularly for those living in rural areas. Accordingly, the majority of households rely on the agricultural sector for their means of subsistence.

Farmers continue to rely heavily on their farming revenue. This is a result of farmers' lax attempts to look for sources of revenue outside of farming. The money from rice growing is what keeps the economy functioning and allows farmer families to meet their basic necessities. Therefore, in order to support their families, farmers must diversify their sources of income. The goal of diversification for farmers is frequently to stabilize their revenue. For farmers to obtain employment outside of farming, they must also acquire labor skills.

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Outside of rice farming, farmers earn a wide range of incomes from both the agricultural and non-agricultural sectors (Syamsiyah et al., 2017). Maize, pond farming, and food crops are the usual other farms operated by farmers. In order to support their family if the income from farming activities is insufficient, the farmers' household looks for employment outside of agriculture (Norfahmi et al., 2017). Outside of the farm, laborers, masons, and rice motorcycle taxis provide revenue for farmers. The satisfaction of farmers' basic requirements, as determined by the standard of decent living demands, can be used to determine the welfare of farmer households with this source of income (Pratiwi et al., 2018).

When it comes to family income, non-farm and on-farm income are less profitable than off-farm income. Farm households depend on revenue from both non-farm and off-farm sources. As a result, for a number of agricultural homes, the distribution of time among these activities is likely to influence economic decisions (such as the adoption of new technology and other production choices). Even while choices about how to allocate our time are rarely assessed precisely, we frequently see the results of these choices—such as money from sources other than farms. According to (Fernandez-Cornejo, 2007), the size of the farm affects both the off-farm revenue and employment of the farm operator. Smaller farm operators can increase their profitability by increasing their participation outside of the farm to offset the scale disadvantages of their operation. Work performed off-farm can raise family technical efficiency while decreasing farm-level technical efficiency. The goal of adopting agricultural innovations that reduce management time is to increase income earned off the farm (Nurliza et al., 2017).

This research also demonstrated that households' needs have not been fully satisfied by the income of rice farmers, leading them to search for alternative sources of income outside of farming, including labor, fishing, merchants, transport suppliers, industrial household work, or other low-skilled jobs. The features of land tenure, productivity, and the income earned by rice producers each season have reinforced those conclusions. The sustainable farm techniques are also in line with Flynn (2015), who stated that in order to create policies that will be acceptable for promoting rice production, policymakers would like information on the state of rice production as well as on improved technologies that are available for sustainable intensification of rice production. Conversely, global challenges to rice production include inadequate access to water, land, and energy resources, as well as global climate change. Because rice ecosystems vary in terms of their environmental, socioeconomic, and intensification levels, there are differences in the challenges and opportunities for a sustainable growth in rice production.

The use of improved and promising technologies, such as genetic improvement, minimizing the effects of water, land, and labor scarcity, minimum and/or zero tillage, land leveling victimization laser beam, direct seeding in lowland rice production, motility and intermittent irrigation, aerobic rice or irrigated upland rice, and innovation in a traditional trade, can increase farmers' productivity and incomes while ensuring environmental conservation. Agroecological farmers and smallholders have a voice in determining agricultural investments and policies. This calls for the establishment or bolstering of multi-stakeholder platforms that support small-scale food producers at the local, national, and international levels. Secondly, ensure that appropriate policies are in place to support agroecological techniques, create sufficient public incentives to promote agroecological practices, and establish robust, farmer-led, bottom-up knowledge and research systems.

## **b. The Case in Klambir V Kebun Village, Hamparan Perak Subdistrict, Deli Serdang Regency**

The total area of land used for farming, whether it is owned, rented, or tapped, is referred to as agricultural land area. The amount of farmland affects farmers' welfare, level of living, and income. The higher the output yield on a larger plot of land, the greater the farmers' income. Farmers will be able to generate a variety of goods from the land they own. As the area of land planted to rice grows, so too will the farmers' capacity to produce, and vice versa. This implies that the quantity of products produced will depend on the size of the farmer's land area. Production will rise in proportion to the size of farmers' land holdings. This is due to the fact that the land area is an element that is crucial to the production process in order to create the quantity of production that will influence farmers' increased income (Lubis et al., 2024).

According to the Confirmatory Factor Analysis (CFA) results, it is clear from the Explained Variance table that just three components have been generated. Production is the primary element originating from component 1, and price is the primary factor originating from component 2. These research results are consistent with a study by (Wahed, 2018), which claims that in Klambir V Kebun village, land area, output, and price significantly affect farmers' welfare (Fadlan et al., 2024).

Increasing farmer welfare through increased output is prioritized in the food crops sub-sector and in the lowest cluster, according to the results of a multiple linear regression test conducted by (Dahiri, 2022) and (Kuswanto et al., 2019). Maintaining price stability, raising food crop yield, and preserving the current planted area are the three major strategies used to boost the production of the food crop subsector. A different study also discovered that agreeableness, conscientiousness, neuroticism, and openness are all influenced by five points, one of which is the capital. The majority of farmers lack confidence in their abilities to carry out agricultural tasks, while being eager and having passable communication skills. Fundamental to rural communities, the concepts of social capital and trust lay the groundwork for improving other facets of their operations, such as mutual aid and respect (Supratikno et al., 2023; Saleh, 2022).

## **5. CONCLUSION**

The results of the research revealed that rice farming contributed 78.18% of farmers' family income, while side jobs outside of agriculture only account for 21.82%. The current study's rice farming is practicable to implement, and the money generated by it can meet the demands of a family. The farmers' welfare is greatly impacted by rice farming. It is hoped that farmers in Klambir V Kebun Village, Hamparan Perak District, Deli Serdang Regency, will pay attention to rice care and production inputs like seeds, fertilizers, pesticides, and agricultural tools in order to increase rice production and achieve the best possible results.

## **REFERENCES**

Arifin, Biba, M. A., & Syafiuddin. (2021). The contribution of rainfed rice farming to income and food security of farmers' household. *Journal of Socioeconomics and Development*, 4(2), 180–188. <https://doi.org/10.31328/jsed.v4i2.2252>

- Dahiri. (2022). Disparitas Dan Upaya Meningkatkan Kesejahteraan Petani. *Jurnal Budget: Isu Dan Masalah Keuangan Negara*, 7(2), 298–317.
- Fadlan, A., Lubis, R. P., & Tarigan, M. H. (2024). The Effect of Production and Capital on the Farmers' Welfare in Klambir V Kebun Village, North Sumatra. *Jurnal Masyarakat Maritim*, 08(1), 54–63.
- Faried, A. I., & Sembiring, R. (2020). Creative Economy Potential through Typical Ulos Fabric Small Industries to Promote the Economy of Lumban Suhi-Suhi Village, Toruan Samosir Regency. *International Journal of Management and Humanities*, 4(5), 116–122. <https://doi.org/10.35940/ijmh.E0550.014520>
- Juni, Efrianti, R., & Sari, F. P. (2022). Comparative Analysis Of Rice Farming Income Organic And Non-Organic In East Oku Regency. *International Journal of Social Science*, 2(2), 1375–1378. <https://doi.org/10.53625/ijss.v2i2.2740>
- Karmini, & Karyati. (2018). The various sources of household income of paddy farmers in east Kalimantan, Indonesia. *Biodiversitas*, 19(2), 357–363. <https://doi.org/10.13057/biodiv/d190201>
- Kuswanto, K., Alamsyah, Z., Armandelis, A., & Zulfanetty, Z. (2019). The Impact of the Efficiency of Rubber Production on the Welfare of Rubber Farmers in Jambi Province. *International Journal of Economics and Financial Issues* /, 9(2), 80–86. <https://doi.org/10.32479/ijefi.7503>
- Lubis, R. P., Abdiyanto, & Sabilayana. (2024). Increasing the Income of Rice Farmers in Klambir V Kebun Village, Hamparan Perak District, Deli Serdang Regency. *The 2nd Tanjungpura International Conference on Management, Economics, and Accounting (TICMEA)*, 432–436.
- Nasution, D. P. (2020). Analysis of Factors Affecting Rice Farmer's Welfare in Sirampit District. *American Journal of Humanities and Social Sciences Research*, 4(4), 168–172. [www.ajhssr.com](http://www.ajhssr.com)
- Norfahmi, F., Kusnadi, N., Nurmalina, R., & Winandi, R. (2017). Analisis curahan kerja rumah tangga petani pada usahatani padi dan dampaknya terhadap pendapatan keluarga. *Jurnal Informatika*
- Nurliza, N., Dolorosa, E., & Hamid A. Yusra, A. (2017). Farming Performance of Rice Farmer for Sustainable Agriculture and Food Security in West Kalimantan. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 3(2), 84–92. <https://doi.org/10.18196/agr.3248>
- Pratiwi, C. A., Gunawan, D. S., & Istiqomah. (2018). Analisis ekonomi usahatani padi dan kelayakan rumah tangga tani di Desa Sambeng Kulon Kecamatan Kembaran Kabupaten Banyumas. *JSEP*, 11(1), 33–45. Retrieved from <https://jurnal.unej.ac.id/index.php/JSEP/article/view/5315/5525>
- Pudaka, D. L., Rusdarti, & Prasetyo, P. E. (2018). Efficiency Analysis of Rice Production and Farmers' Income in Sengah Temila District Landak Regency. *Journal of Economic Education*, 7(1), 31–38. <http://journal.unnes.ac.id/sju/index.php/jeec>
- Rangkuty, D. M., S, A. T., Marcella, M., & Fasya, N. (2024). What Is The Role Of Badan Riset Dan Inovasi Daerah (BRIDA) At Medan City? *IJEMS: International Journal of Economics and Management Sciences (IJEMS)*, 1(1), 1–8.

- Rusiadi, R., Suhendi, S., & Adianti, V. (2023). Edukasi Pola Konsumsi dalam Memperkuat Ekonomi Pasca Covid-19 Pada UMKM Desa Klambir Lima Kebun. *Jurnal Pengabdian Kepada Masyarakat*, 1–6. <https://doi.org/10.30999/jpkm.v13i3.2920>
- Saleh, K. (2022). The Role of Social Capital in Improving the Welfare of Rice Farmers in Tangerang Banten Regency. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 4, 29648–29657. <https://doi.org/10.33258/birci.v5i4.7117>
- Supratikno, S. I., Adi, I. R., & Lubis, D. P. (2023). The Influence Of Agrarian Reform, Social Capital, Farmer Spirituality And Personal Tribute On Farmers' Welfare In Kabupaten Bogor, West Java. *Eduvest-Journal of Universal Studies*, 3(5), 966. <http://eduvest.greenvest.co.id>
- Suswadi, Vinolia, A. S., Prasetyo, A., Kartikasari, R. D., & Mahananto. (2021). Analysis of organic rice farming contribution to farmer household income in Andong Village, Boyolali Regency. *IOP Conference Series: Earth and Environmental Science*, 905(1), 1–4. <https://doi.org/10.1088/1755-1315/905/1/012078>
- Syamsiyah, N., Thoriq, A., Pardian, P., Karyani, T., & Kusno, K. (2017). Tingkat pendapatan usahatani padi dan kontribusinya terhadap pendapatan petani. *Jurnal Agribisnis Terpadu*, 10(1), 76–88. <http://doi.org/10.33512/jat.v10i1.5057>.
- Wahed, M. (2018). Pengaruh Luas Lahan, Produksi Dan Harga Gabah Terhadap Kesejahteraan Petani Padi Di Daerah Sentral Produksi Padi Kabupaten Jember. *Journal of Economics Development Issues (JEDI)*, 1(1), 33–40.