



SURVIVAL STRATEGIES FOR RICE FARMERS ON RODUCTIVITY IN TANJUNG BERINGIN VILLAGE WEST TABIR SUBDISTRICT

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ABSTRACT

This research was motivated by the existence of an imbalance in rice productivity in Tanjung Beringin Village for the last five years from 2018-2022, where in 2022, there was a relatively low decline in rice productivity from the previous year. This problem shows that there are major challenges faced by rice farmers in Tanjung Beringin Village in terms of climate change, resource availability, and agricultural practices that have been carried out, so that rice farmers in Tanjung Beringin Village apply survival strategies so that rice productivity increases. Thus this study aims to analyze the survival strategy for rice farmers in productivity in Tanjung Beringin Village, West Tabir District. The theory used is the theory of survival strategies from Hardestry (1977). This research uses a descriptive qualitative approach, with data collection techniques through observation, interviews, and documentation. The data analysis used the interactive method of Miles and Huberman. The results of this study indicate that the strategy of rice farmers in Tanjung Beringin Village in maintaining productivity implements strategies: 1) Technology adaptation with the use of superior rice varieties and water management technology in the form of making small ponds or intermittent irrigation. 2) Socio-economic capacity building through strengthening cooperation between farmers, diversification of farming businesses, and utilization of local labor, 3) Environmental risk management strategies by using organic fertilizers, and conservative soil management.

1. INTRODUCTION

Indonesia has a vast wealth of agricultural land, making it one of the countries with an agricultural sector that plays an important role in the national economy (Suhueb et al., 2024). The potential of fertile land provides a great opportunity for the community to utilize it as the main source of livelihood (Aeni, 2023). The agricultural sector contributes significantly to the fulfillment of food needs, supports economic, social, and cultural stability, and plays a vital role in maintaining environmental sustainability (Anis, 2019).

As an agricultural country, the output of the agricultural sector is one of the main determinants of success in realizing various development goals, including food security and community welfare (Dai et al., 2022). The role of this sector is not only limited to meeting the increasing needs of domestic consumption, but also an important element in maintaining global economic stability through strategic commodity exports (Hoang et al., 2021). Therefore, the sustainability of the agricultural sector requires continuous support through technological innovation, supportive policies, and efficient resource management to increase productivity and meet the growing needs of society (Deviani et al., 2024).

Thus, rice farmers, as the main actors in strategic food production, face various challenges in maintaining productivity amid environmental, social, and economic dynamics (Hasna et al., 2024). These challenges are further exacerbated by the threat of climate change, which causes uncertainty in weather and planting seasons, limited land due to land conversion into non-agricultural areas, fluctuations in grain prices that are often unfavorable, as well as minimal access to modern technology, agricultural

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infrastructure, and inadequate business capital experienced by rice farmers in every region, especially Tanjung Beringin Village (Rusdiyana et al., 2021).

Tanjung Beringin Village is one of the areas in Merangin Regency that relies heavily on the rice farming sector as the main support of the community's economy. Working as a farmer is the main source of livelihood for the people of Tanjung Beringin Village to fulfill their needs (Indahsari et al., 2018). Based on the data obtained, the following is a classification of the livelihoods of the Tanjung Beringin Village community:

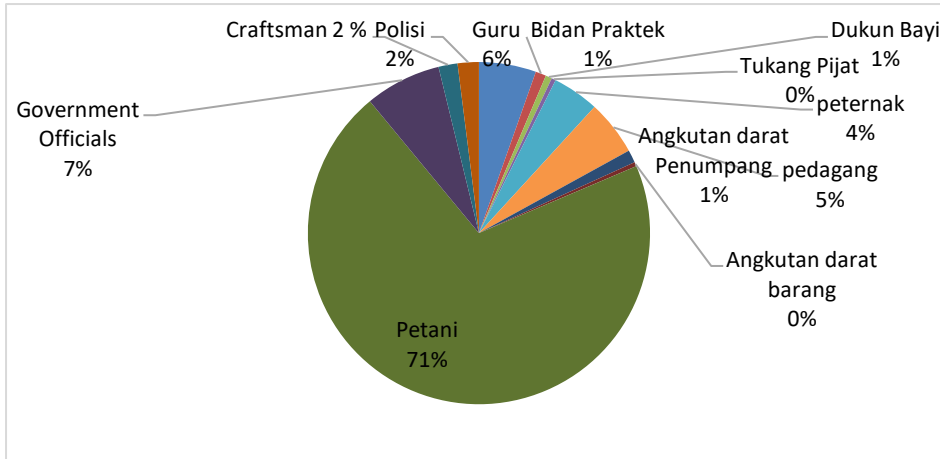


Figure 1. Classification of livelihoods of the Tanjung Beringin Village community Source: Source: BPS Database of West Tabir District 2023

Based on the figure above, the majority of community livelihoods in Tanjung Beringin Village are farmers. This is due to the significant contribution of the agricultural sector, especially rice farming, to local welfare. However, the agricultural sector in the region is facing increasingly complex challenges (Ghosh-Jerath et al., 2021). One of the main challenges is the unpredictable impact of climate change, such as the uncertainty of the rainy and dry seasons, which affects cropping patterns and crop productivity (Juanda et al., 2019). In addition, the decline in soil quality and fertility is a serious problem due to the excessive use of chemical fertilizers without the application of sustainable agricultural practices. This condition is further exacerbated by limited access to modern agricultural tools and technologies that are needed to increase efficiency and productivity (Irwan, 2015)

According to the data from the Central Bureau of Statistics (BPS) of West Tabir District related to the Harvested Area, Production and Average Production of Paddy Rice in West Tabir District in 2018 - 2022 as follows:

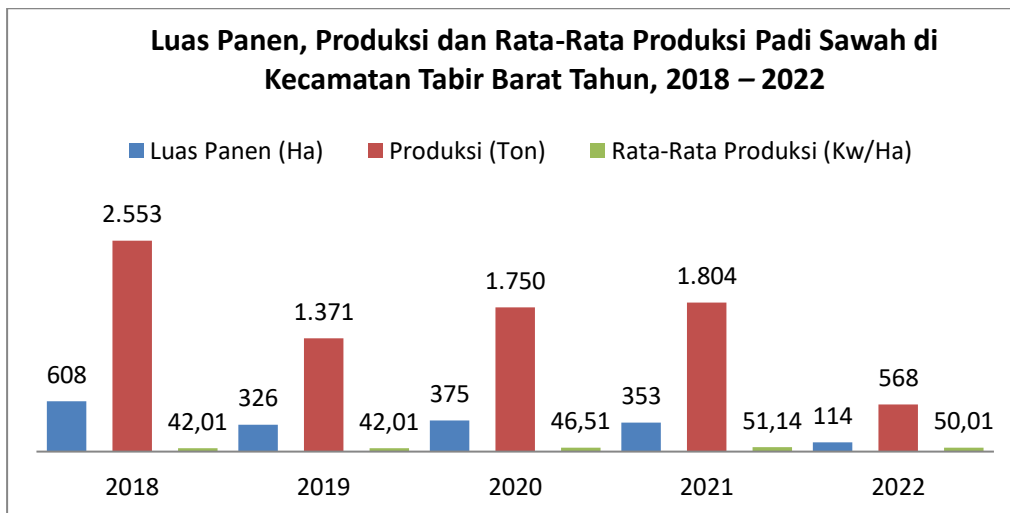


Figure 2. Harvested Area, Production and Average Production of Rice Paddy in West Tabir District, 2018 – 2022; Source: Source: BPS Database of West Tabir District 2023

Based on the figure above, it can be seen that rice productivity has experienced an imbalance over the last five years. In 2022, there was a relatively significant decrease in rice productivity compared to the previous year. This issue indicates the major challenges faced by farmers, both in terms of climate change, resource availability, and the agricultural practices used. This decline highlights the importance of implementing innovations in cropping patterns that are more adaptive to weather and environmental conditions. In addition, more effective survival strategies are needed.

According to Snel and Staring (Suhaeb et al., 2024), survival strategies are defined as a series of actions systematically chosen by individuals and households from the socioeconomic lower middle class. Through these strategies, a person can increase income by utilizing other sources or reduce expenses through adjusting the quantity and quality of goods and services used. In addition, survival strategies also involve the application of multiple livelihood patterns, which are an integral part of economic strategies to overcome economic pressures and meet life needs (Temo et al., 2023).

Survival strategies are very important for rice farmers (Titing, 2024). Farmers in Tanjung Beringin Village often rely on farm diversification, such as combining rice cultivation with horticultural crops or small livestock, to expand their sources of income. In addition, the use of organic fertilizers, more efficient water management, and the formation of farmer groups to access government assistance are also common strategies (Rana & Moniruzzaman, 2021).

However, while various strategies have been implemented, further interventions are still needed to support the resilience of rice farmers in Tanjung Beringin Village. The government has an important role in ensuring the stability of grain prices through a floor price policy that guarantees farmers' profits, building supporting infrastructure such as modern irrigation and storage warehouses, and providing intensive training on modern agricultural technologies that can help improve efficiency and yields. In addition, funding in the form of low-interest farm loans can help farmers overcome financial constraints that are often a major barrier to farm business development (Umanailo, 2019).

Thus, in improving agricultural sustainability, partnerships between the government, non-governmental organizations, and the private sector in supporting the marketing of farm produce are also important so that farmers can carry out survival strategies for rice farmers in productivity. This is what motivates researchers that this research is very important to do.

2. METHODS

This research uses a qualitative approach that aims to reveal and understand reality in accordance with the conditions that actually occur in the field. The type of research used is descriptive, which aims to provide a detailed, factual, and accurate description of the background of observations, actions, and interactions that take place in the field. The type of data used in this research consists of primary data and secondary data (Yanuartati et al., 2023). The data collection techniques used include observation to understand the situation directly, interviews to explore informants' perspectives, and document analysis which serves to complement the previously obtained data. Data analysis was conducted using Miles and Huberman's interactive analysis model, which involves a process of data reduction, data presentation, and conclusion drawing.

3. RESULTS AND DISCUSSIONS

Condition Of Rice Farmers In Tanjung Beringin Village

Tanjung Beringin Village is one of the villages located in West Tabir Sub-district, Merangin Regency, Jambi Province. This village is known as an area where the majority of the population relies on the agricultural sector, especially rice farming, as their main livelihood. The people of Tanjung Beringin Village mostly consist of smallholder farmers who cultivate rice fields. Side jobs such as animal husbandry, plantations, and petty trading are also carried out to supplement income (Yulianda et al., 2023). Relationships between residents in this village are generally close, with a culture of gotong royong that is still very strong, especially in agricultural activities, village infrastructure development, and traditional events. In addition, rice farmers in Tanjung Beringin Village have different socioeconomic conditions, which are influenced by differences in religion, beliefs, and local culture. This difference can be seen from the interview results which show that the majority of farmers in Tanjung Beringin Village, who are Muslims, have a unique tradition before carrying out agricultural activities. Before planting, farmers must ask permission from the spiritual inhabitants of the land, called "tuang tanah" (land-dwelling spirits).

The majority of farmers are small landowners, with an average land area of less than 2 hectares. The following is data on the Harvest Area, Production and Average Rice Productivity in West Tabir sub-district, Barangin district 2023:

Table 1. Harvested Area, Production and Average Rice Productivity in West Tabir sub-district, Barangin district 2023

No	Kecamatan	Luas Panen Area (Ha)	Produksi (Ton)	Rata-Rata Produktivitas (Kw/Ha)
1	Jangkat	1.470	8.511	57.9
2	Jangkat Timur	1.898	9.445	49.76
3	Muara Siau	756	2.857	37.8
4	Lembah Masurai	623	2.406	38.63
5	Tiang Pumpung	62	268	43.05
6	Pamenang	261	1.331	51.02
7	Pamenang Barat	29	140	48.85
8	Renah Pamenang	59	329	55.83
9	Pamenang Selatan	84	431	51.64
10	Bangko	58	198	0
11	Bangko Barat	220	757	34.4
12	Nalo Tantan	295	1.034	35.04
13	Batang Masumai	306	1.491	4873
14	Sungai Manau	1.214	7.039	57.97
15	Renah Pembarap	298	1.476	49.54
16	Pangkalan Jambu	651	3.283	50.45
17	Tabir	3.194	16.409	51.37
18	Tabir Ulu	1.065	5.426	50.97
19	Tabir Selatan	27	155	56.66
20	Tabir Ilir	822	3.019	36.72
21	Tabir Timur	16	40	24.81
22	Tabir Lintas	619	2.717	43.93
23	Margo Tabir	808	3.391	41.95
24	Tabir Barat	505	2.523	49.97
Kabupaten Merangin		15.339	74.677	48.68

Sumber : Sumber : Database BPS Kecamatan Tabir Barat 2023

Based on the table above, Kecamatan Tabir Barat, Kabupaten Merangin, ranks 9th in terms of total production and productivity compared to the other 23 kecamatan in the region. This position indicates that although Kecamatan Tabir Barat has considerable potential in the agricultural sector and other production activities, there is still room for improvement and development in order to better compete with other kecamatan (Santoso et al., 2023). Farmers in Tanjung Beringin Village also practice a cropping system that depends on the season, so cropping and harvesting patterns are strongly influenced by the weather. Although crop yields contribute significantly to the village's economy, productivity often faces challenges such as declining soil fertility and climate fluctuations, here is a picture of the rice field area with rice plants in Tanjung Beringin Village:



Figure 3. rice fields with rice plants in Tanjung Beringin Village

Based on the picture above, the rice fields in Tanjung Beringin Village with rice plants that grow quite fertile, showing healthy rice growth with bright green leaves, indicating that the plants get enough nutrients and growth is optimal and potentially productive. In addition, the rice fields are terraced or terraced, which is commonly used in areas with hilly land contours. This system helps prevent soil erosion and regulates water distribution well. The paths or bunds of the rice fields are clearly visible, which serve as access for farmers to manage crops. While the natural surroundings help create a good agricultural ecosystem. Farmers in Tanjung Beringin Village provide water distribution and soil nutrient conditions so that rice plants grow optimally until harvest time (Wahyudi & Wafi, 2021).

Survival Strategies For Rice Farmers In Productivity

Technology Adaptation

Survival strategies are various ways that a group of people follow in order to survive and be able to reduce family expenses and be able to cooperate with people so that they can help the family economy (Connor et al., 2023). According to Hardestry, there are 2 kinds of adaptive behavior, namely idiosyncratic behavior (unique ways of individuals in overcoming environmental problems) and cultural adaptations that are idiosyncratic, shared among group members, and traditions. For Hardestry, adaptation is seen as a process of taking space for change, where the change is in cultural behavior that is technological, organizational, and ideological. Rice farmers in Tabir Barat Subdistrict, Tanjung Beringin Village, in the productivity of rice yields carry out technological adaptation strategies. Technology in agriculture refers to the application of knowledge and technological tools to improve the agricultural production process, resource efficiency, and the results obtained from farming activities. Agricultural technology includes various innovations that are applied in all aspects of agriculture, from nursery, planting, crop management, to post-harvest.

Rice farmers in Tanjung Beringin Village face various difficulties related to the limited harvesting equipment available, which greatly affects the cost and efficiency of the harvesting process. This condition is further exacerbated by natural disasters such as floods that inundate the land, making harvesting machines difficult to use in waterlogged areas.

In this regard, Suharno and Edi (Lamawitak et al., 2023) emphasize the importance of adaptation to more effective and environmentally friendly technologies as part of a survival strategy (ISWORO & OETARI, 2022). For example, while many harvesters cannot be used in these conditions, farmers hope to receive assistance with more adaptive technologies, such as harvesters designed to work in waterlogged fields or tools that can be operated more efficiently in extreme conditions. This is key to increasing agricultural productivity and reducing the negative impacts of unpredictable natural disasters. Therefore, the application of appropriate technology is essential to maintain the viability of farming despite facing major challenges such as extreme weather and lack of access to adequate tools.

The application of appropriate technology is in line with the challenges faced by farmers, especially related to climate change and limited resources. One of the technologies applied by farmers in Tanjung Beringin Village is the use of improved rice varieties that are more resistant to drought stress and pest attacks, which is becoming increasingly important in the face of weather uncertainty. The use of improved rice varieties that are resistant to pests, diseases and extreme climatic conditions such as drought or flooding can significantly increase yields. This technology also allows farmers to reduce reliance on chemical pesticides, which has a favorable impact on plant health and the environment.

In addition, farmers in Tanjung Beringin Village use water management technologies such as the creation of small ponds or intermittent irrigation are also applied to increase the resilience of rice crops in rainfed lands that are often prone to drought. Water management technologies such as drip irrigation systems or small ponds assist farmers in organizing water distribution more efficiently, reducing water wastage and maintaining sufficient water supply during the dry season. This technology is very important for rice farmers to avoid crop failure.

Socio-Economic Capacity Building

Smallholder farmers in Tanjung Beringin Village also rely on social solidarity and external support to help them cope with losses due to crop damage. Social solidarity is a concept that refers to the relationship between individuals in a society based on a sense of togetherness, mutual support, and cooperation (Ariyanto, 2024). Social solidarity is an important element in maintaining unity and stability in a group or community, especially when facing challenges or difficult situations.

According to Farmers in Tanjung Beringin Village strengthening farmers' socio-economic capacity is crucial for their long-term resilience. This includes developing cooperative networks among farmers to share resources, working capital, as well as useful information to deal with the agricultural crisis. The government also has an important role in providing assistance, both in the form of more efficient farming

tools and in the form of funding or training programs that can improve farmers' ability to manage their land more productively (Dar et al., 2021). In addition, better management of human resources, such as overcoming labor shortages during the harvest season, is also an important aspect of implementing socio-economic strategies. The forms of socio-economic strategies carried out by farmers in Tanjung Village are as follows:

1. Strengthening Inter-farmer Cooperation

Farmers in Desa Tanjung actively form farmer groups to facilitate coordination in various aspects of farming, such as sharing information on effective cultivation techniques, easier access to working capital, and shared use of modern farming tools. This cooperation not only improves operational efficiency but also creates social solidarity among farmers. Through this solidarity, they can help each other, especially when facing difficulties such as labor shortages during harvest or losses due to natural disasters (Addison et al., 2022). In addition, farmers in Tanjung Village form farmer groups to serve as a forum for discussion to design collective strategies, such as setting a uniform planting schedule, which aims to reduce the risk of simultaneous pest attacks.

2. Farm Business Diversification

Farmers in Tanjung Village also engage in socio-economic activities in the form of farm diversification as a strategy to increase income and reduce dependence on rice yields. Farmers in Tanjung Village have begun to plant additional crops such as vegetables or fruits that have a shorter harvest period, so that they can be an alternative source of income outside the rice harvest season. In addition, some farmers in Tanjung Village have begun to develop small livestock businesses, such as chicken or fish, to increase family income. This diversification helps farmers reduce the financial risk of crop failure, as they have other sources of income that can support their daily needs (Onyeneke, 2021).

3. Utilization of Local Labor

Due to labor limitations, especially during the harvest season, farmers in Tanjung Village utilize a system of mutual cooperation among farmers to overcome labor limitations. This system for farmers in Tanjung Village not only helps to reduce operational costs but also speeds up the harvesting process in the face of often unpredictable weather conditions. In addition, farmers in Tanjung Village also involve their family members to help with light work on the land, thus reducing dependence on external labor. For farmers in Tanjung Village who have better access to technology, the use of modern farming tools is also a solution to overcome labor limitations, especially in work that requires a lot of time and energy, such as harvesting or cultivating the land (Edo et al., 2023).

Environmental Risk Management Strategy

Farmers in Tanjung Beringin Village apply cooperation in monitoring and controlling pests collectively to protect their crops from the threat of widespread damage. This is done using an integrated approach, involving various prevention and control methods. One of the measures taken by farmers in Tanjung Village is :

1. Use of Organic Fertilizers

Farmers are increasingly relying on organic fertilizers, such as manure, compost, or green manure, to naturally improve soil fertility. Organic fertilizers not only improve soil structure but also increase organic matter content, which is important for supporting the growth of soil microorganisms. In addition, the use of organic fertilizers helps reduce dependence on chemical fertilizers, which in the long run can damage the soil and pollute groundwater. By utilizing organic waste from the surrounding area, farmers in Tanjung Village also reduce the cost of agricultural inputs, making this method more economical and environmentally friendly. In addition, the use of environmentally friendly natural pesticides, such as certain plant extracts, to reduce dependence on chemical pesticides that can damage soil and the environment. In addition, crop rotation is applied to break the life cycle of pests and decompose (Ojo et al., 2021).

2. Conservative Soil Management

Farmers in Tanjung Beringin Village apply soil conservation techniques such as terraces, mounds, or cover crops to prevent erosion, especially on sloping land. Terraces help reduce the speed of rainwater flow, so that soil is not easily washed away. In addition, planting perennials or strong-rooted plants along the edges of farmland helps stabilize the soil and prevent landslides. This system ensures that soil fertility is maintained, even on land prone to degradation (Choudhary et al., 2022).

4. CONCLUSION

Tanjung Beringin Village, located in West Tabir Sub-district, Merangin District, Jambi Province, has a majority of the population dependent on the agricultural sector, particularly rice. Although most farmers own small plots of land, they face various challenges such as declining soil fertility and climate fluctuations that affect crop yields. To sustain yield proctivity but farmers in Tanjung Beringin Village apply

technological adaptation strategies, such as the use of superior rice varieties and efficient water management technologies. In addition, they also rely on social solidarity through cooperation among farmers, diversification of farming businesses, and utilization of local labor. Farmers in this village also manage environmental risks by using organic fertilizers, natural pesticides, and applying soil conservation to maintain fertility and prevent erosion. Despite the challenges, the people of Tanjung Beringin Village continue to improve their socio-economic capacity and agricultural productivity through innovation and strong cooperation.

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