

COMMUNITY EMPOWERMENT THROUGH ORGANIC RICE CULTIVATION: CREATING A SUSTAINABLE AGRICULTURAL ENVIRONMENT

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Abstract

The PSRLB Program in Talang Ubi Utara Village represents a commendable initiative aimed at promoting sustainable and environmentally friendly agriculture practices. This program actively engages local farmers and the community in the pursuit of organic rice cultivation. It achieves this by providing farmers with essential training and guidance in adopting the Sustainable System of Rice Intensification (SRI) method, a sustainable approach that eliminates the need for chemical fertilizers. The results of the PSRLB program's implementation have been promising. It has not only significantly increased the productivity and quality of organic rice harvests but has also mitigated negative environmental impacts associated with conventional farming practices. As such, the PSRLB program stands as a shining example, offering inspiration to other farming communities seeking to embrace sustainable and eco-friendly agricultural methods. Its success underscores the potential for agriculture to harmoniously coexist with nature while fostering healthier, more prosperous farming communities.

Keywords: Talang Ubi Utara, PSRLB, SRI Method, Organic Rice, Sustainable

1. INTRODUCTION

PT Pertamina Rokan Hulu Zone 4 is a company engaged in the oil and gas mining industry (Pertamina EP Pendopo, 2023). The company has a CSR program related to community empowerment, which promotes the Sustainable and Environmentally Friendly Agriculture Program (PSRLB). This program is distributed in three regions: (1) Pendopo Field in Talang Ubi District, Pali Regency, and Jirak Village in Jirak Jaya District, Musi Banyuasin Regency. (2) Prabumulih Field in Patih Galung Subdistrict, West Prabumulih Subdistrict, Prabumulih City. (3) Adera Field in Pengabuan and Pengabuan Timur Village, Abab Subdistrict, Penukal Abab Lematang Ilir Regency, and Payuputat Village in West Prabumulih Subdistrict, Prabumulih City. (LSM Carios, 2023)

In the vicinity of Pendopo Field, the cultivation of Organic SRI Rice and Organic Medicinal and Family Vegetable Plants (TOGA) has been developed. These three types of crops are part of the PSRLB commodity scheme.

The progress of the PSRLB program needs to be assessed to determine its implementation. As the party responsible for Monitoring and Evaluation (MONEV) of the program stages, LSM Carios has undertaken various efforts. These efforts include verifying and identifying the various types of activities and dynamics taking place in the empowerment areas. The monitored activities are related to the technical cultivation of Organic SRI Rice and organic vegetables, as well as TOGA cultivation.

From these activities, LSM Carios is expected to gain insights into the extent of progress and achievements made by the PSRLB community participants in the

operational areas around the company. Based on the evaluation results, actions needed for improvement or refinement will be identified to enhance effectiveness and efficiency.

MONEV is primarily concerned with three key aspects. Firstly, it examines the progress and dynamics of farmer groups participating in the PSRLB empowerment program within designated areas. Secondly, it assesses the cultivation progress of PSRLB commodities, including Organic SRI Rice, Organic Vegetables, and Medicinal and Family Vegetable Plants. Lastly, MONEV evaluates the broader context, encompassing ecosystem conditions, social factors, and economic influences that shape the dynamics of the PSRLB empowerment program.

In the Pendopo Field region, the focus area implementing PSRLB consists of two locations: North Talang Ubi Sub-district in the Talang Ubi District, and Jirak Village in the Jirak Raya District. This program has been in operation in both areas since 2021.

Talang Ubi District is a part of the Penukal Abab Lematang Ilir Regency in South Sumatra. The farmers in North Talang Ubi Sub-district, which is designated as Ring 1 of Pertamina EP Pendopo's working area, are considered to have the potential for cultivating organic rice. North Talang Ubi Sub-district is situated within the Talang Ubi District, Penukal Abab Lematang Ilir Regency, South Sumatra.

Initially, the program faced challenges due to the limited agricultural land available to the farmers in this region. To address this, Pertamina EP Pendopo provided its passive land to be used for agricultural purposes. This marked the initial step in inventorying the company's assets, particularly those utilized by the local community. For the people, this was a highly beneficial measure to commence their farming activities. By utilizing Pertamina's land, the farmers' group, known as the Rejo Mulyo Farming Group, actively transformed the expanse into rice paddies with environmentally sustainable management practices, focusing on their superior product, Organic Sri Rice.

2. LITERATURE REVIEW

The demand for food worldwide continues to increase, leading to the deployment of various agricultural programs to meet these needs. One of these programs is the Green Revolution. The agricultural sector in Indonesia has grown ups and downs throughout the country's development history (Salmaa, 2023). Starting in the early 1970s, the New Order government prioritized the development of agriculture. They adapted the concept of the Green Revolution to be implemented by Indonesian farmers through the Panca Usaha Tani program. In July 2013, the Sapta Usaha Tani program was presented at the 23rd Pacific Conference of the Regional Science Association International (RSAI) in Bandung, which is an advancement of the Panca Usaha Tani. With political and financial support from the government, such as input subsidies, particularly for fertilizers, Indonesia's rice productivity increased from 1–2 tonnes per hectare to 2–4 tonnes per hectare (Jahroh, 2010; Subejo, 2009).

The success of agricultural development reached its peak in 1985 when Soeharto, the former President of Indonesia, received an FAO award as Indonesia achieved rice self-sufficiency in 1984 (Nugraheni & Purnama, 2017). However, the Green Revolution not only had positive impacts but also negative ones (Prabowo, 2022). During President Soeharto's era, the adaptation of the Green Revolution led to negative environmental impacts, including soil nutrient degradation, water pollution, and health issues due to chemical residues (Nugraheni & Purnama, 2017). Other negative impacts included

farmers' dependency on environmentally unfriendly chemical fertilizers and pesticides, unequal distribution of modern farming technologies resulting in disparities, and the emergence of capitalist practices in the agricultural sector (Prabowo et al., 2022).

On the other hand, adopting the principles of organic farming, which utilize natural fertilizers and pest control methods, can yield different results (Sutanto, 2002). The Food and Agriculture Organization, according to (Scherer, 2013), describe that organic farming is designed to increase soil biological activity, maintain long-term soil fertility, promote the use of land, water, and healthy air, and minimize pollution resulting from agricultural practices. Sustainable agriculture (Salikin, 2003) is a moral call to do good on the natural resources regarding three dimensions of environmental awareness, economic, and social character.

With these numerous benefits, it is not impossible to create a sustainable agricultural system. This system can simultaneously meet food demands, preserve the environment, and promote a socio-cultural character that prioritizes environmental conservation.

3. RESEARCH METHODS

This research employs a qualitative research method with descriptive analysis. According to (Cresswell, 2016), qualitative research is one of the methods used to describe, explore, and understand the meanings attributed by individuals or a group of people to social or human issues. This means that the local community is not treated as an object but as a subject. They are involved from the beginning of the planning process, engage in discussions, express their opinions, and implement what has been collectively agreed upon.

In other words, the community is guided to plan, execute, and evaluate so that they can eventually carry out the cultivation process independently, thereby achieving Pertamina's goal of empowering the community to be self-reliant and engage in sustainable activities.

Monitoring and Evaluation (M&E) is an advanced method used by those involved in cultivation to assess the progress of the implemented program. They are expected to be able to identify the strategies and program phases that should be taken next, by verifying and identifying the various types of activities and dynamics occurring in the empowerment areas.

The scope of M&E is carried out in the empowerment areas around PT Pertamina Rokan Hulu Zone 4 (Pendopo Field, Prabumulih Field, Adera Field) through the Sustainable and Environmentally Friendly Agriculture Program (PSRLB). The objectives are as follows: (a) Identifying the progress of farmer participants who apply the cultivation of Organic SRI Rice, Organic Vegetables, and Medicinal and Family Vegetable Plants. (b) Identifying the land area, production facilities (organic materials), and infrastructure that can support the main cultivation of Organic SRI Rice, Organic Vegetables, and Medicinal and Family Vegetable Plants. (c) Identifying the progress of each commodity, harvest results, and various processed products in the empowerment areas. (d) Identifying and analyzing the achievements of the empowerment program through PSRLB, including the outputs, outcomes, impacts, challenges, and recommendations for improvement.

4. RESULTS AND DISCUSSION

4.1. Result

The PSRLB program was initiated in the community of North Talang Ubi in 2021. The dedication of the farmers throughout the program has shown positive results. As of April 2023, there are farmers, both women and men, who actively participate in PSRLB, with 7 male farmers being fully engaged in the program, and 11 others showing potential to join.

In this context, "active farmers" refer to those who have already adopted the Padi Sri cultivation method as a whole, as advocated by Pertamina. "Potential active farmers" are those who have not yet fully embraced Padi Sri cultivation but have made changes in their planting practices, such as adjusting planting distances and experimenting with compost application. By partially participating in the PSRLB program, these potential active farmers are expected to eventually adopt the entire PSRLB process in the future.

At the beginning of 2023, the community of North Talang Ubi managed to allocate 4 hectares of land for the active PSRLB farmers and 5 hectares for potential active PSRLB farmers. This marks a significant increase compared to the initial 1.25 hectares of land allocated in 2021 as part of the program's initial steps.

Regarding the Padi SRI organic commodity, farmers in North Talang Ubi have cultivated a diverse range of 13 varieties as part of the PSRLB program. These include Kumpay, Mentik Susu, Padi Hitam, Padi Merah, Sintanur, Sentani, Pajajaran, Pandan Wangi, Trisakti, Ngaos 01, Ketan, Infari 32, and Mr 207. In terms of production, Padi SRI cultivation has shown an increase in the range of 7 to 10 tons per hectare, while actual harvest yields have reached an improvement in the range of 3.0 to 6.4 tons.

Table 1. Harvest and Sales of Organic SRI Healthy Rice in January-April 2023

No	Variety	Sales Volume (Kg) Januari 2023	Sales Volume (Kg) April 2023
1	Beras Sehat SRI Organik (Ngaos 1)	250	250
2	Beras Sehat SRI Organik (Pandan Wangi)	300	300
3	Beras Sehat SRI Organik (Mentik Susu Lokal)	100	100
4	Beras Sehat SRI Organik (Mentik Susu Gebyah)	150	150
5	Beras Sehat SRI Organik (Padi Hitam)	100	100
6	Beras Sehat SRI Organik (Padi Merah)	-	150
7	Beras Sehat SRI Organik (Sintanur)	-	200

4.2. Discussion

During the implementation of the PSRLB program, the farmer groups in North Talang Ubi also succeeded in producing compost fertilizer from post-harvest straw waste. It all began with the farmers' need for natural compost rather than synthetic chemicals, driven by their desire to save on expenses. The farmers in North Talang Ubi made efforts to produce their own natural compost, learning from the Organic Farmer Group in Jirak Village on how to process and produce non-chemical compost.

The success of the North Talang Ubi Farmer Group in producing their own compost has resulted in cost savings of Rp 16,400,000 per planting season, compared to the previous expenditure of Rp 20,500,000 per season for chemical fertilizers on 15 hectares of rice fields with a price of Rp 250,000 per ton of chemical fertilizer.

Efforts to fulfill the need for compost among local farmers have led to the establishment of various supportive facilities and infrastructure for PSRLB activities at the level of active farmers cultivating Organic Padi Sri. These include 8 compost houses and MOL (Local Microorganisms), with an average availability of 3 tons of compost for each farmer, and 50 to 100 liters of available MOL, which is used as a starter for making solid and liquid organic fertilizers.

This demonstrates Pertamina's commitment to empowering the local community by promoting environmentally sustainable practices, avoiding chemical fertilizer pollution, and enhancing the economic value through cost savings, particularly in organic fertilizer usage.

Additionally, the conversion of straw waste into compost has provided a solution to the harmful practice of burning rice straw, which emits carbon gas. By reducing the burning of rice straw, carbon emissions have been lowered by 217,728 kgCO₂eq per 1 kg of straw burned. Considering that rice straw waste production can reach up to 27 kg per day or 22,680 kg per year, this initiative significantly contributes to reducing carbon emissions. Furthermore, the program has successfully reduced the use of environmentally unfriendly chemical fertilizers by 65 tons in 6 months to zero.

As of April 2023, the Organic Padi Sri cultivation program has started to yield benefits for the community of North Talang Ubi, especially with the commitment of 7 active farmers who have embraced the program sustainably. This indicates that farmers themselves possess the knowledge, skills, and capabilities to preserve the seeds of organic Padi Sri varieties.

In addition, there is an agreement to engage in collective planting of Organic Padi Sri, with consideration of timing during the early rainy season. To implement this agreement, 4 rice field blocks have been prepared for cultivating Organic Padi Sri, namely Pendopo PPMP Block, Rejosari Block, Talang Ubi Block, and Talang Akar Block.

However, like any program, there are challenges that need to be addressed for the sustainability of the program in the future. From a technical perspective, there are challenges in the optimal distribution and application of organic materials, such as compost and MOL, to rice fields, both in terms of timing and quantity before planting. Additionally, the utilization of organic waste like straw has not been fully optimized in the field, with some waste being buried in rice fields before planting, indicating a decline in the application quality of organic Padi Sri cultivation principles.

Geographic and climatic factors also present challenges in both the rainy and dry seasons. Heavy rainfall during the rainy season sometimes leads to flooding in the rice fields, disrupting cultivation processes. Furthermore, prolonged dry conditions during the dry season can hinder the optimal growth of PSRLB commodities. Finding solutions to these geographic aspects is essential while strengthening the commitment to apply the fundamental principles of organic rice cultivation.

Regarding partnerships, there is a perceived lack of effectiveness in collaborating with the Agricultural Research and Development Agency. An effective partnership with this agency could lead to other collaborations that ultimately benefit and profit the active farmers.

5. CONCLUSION

The empowerment of the North Talang Ubi community by Pertamina EP Pendopo is progressing well, although strong commitment from the farmers is still required to adopt the Organic Farming system. This system not only brings positive impacts to the local farmers but also benefits their agricultural lands. The commitment of the North Talang Ubi community's farmers to embrace Organic Padi Sri cultivation is a crucial step that leads to improved livelihoods in both environmental and economic aspects.

To ensure sustainability, the local community is expected to maintain their commitment to adhere to the principles of Organic Padi Cultivation. Despite being relatively new to organic farming, the farmers who have implemented organic rice cultivation will experience long-term positive impacts on their lives and the environment.

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