MINAPADI PROTANI SALIBU ENGINEERING TO INCREASE SUSTAINABLE PRODUCTIVITY IN DEALING WITH THE IMPACTS OF GLOBAL CLIMATE CHANGE

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Abstract. Integration of rice and fish cultivation in one planting area, minapadi, is one of the alternative efforts to increase productivity while developing the tourism sector. Panembangan Village, Cilongok District, Banyumas Regency has developed minapadi since 2020 but has experienced problems with the continuity of the existence of minapadi as the main attraction of the Svarga Minapadi tourist attraction managed by BUMDesa. There is a gap of about 1-2 months during the planting season. The existence of Minapadi Protani Salibu is expected to increase sustainable production by utilizing technological innovations of superior Inpago Unsoed Protani varieties and Salibu technology. This fostered village program aims to transfer technology to the Panembangan Village community, especially farmers in the Krido Yuwono 5 farmer group and the Krido Yuwono fish farmer group. Increased knowledge and skills are carried out through technology dissemination and community participation in cultivation activities in pilot areas. Technology mastery is measured based on pre-test, post-test, and skill assessment in pilot areas. Based on the results of the technology mastery measurement, it is known that farmers and fish farmers in Panembangan Village have increased their knowledge by 97.25% regarding minapadi protani salibu, 77.50% regarding rice varieties that can increase productivity, and increased by 72.5% in their knowledge about new superior varieties, Inpago Unsoed Protani. Increasing farmers' knowledge and skills about rice is a driver for revitalizing minapadi in Panembangan Village and supports national food security.

Keywords: Minapadi Protani Salibu, ratoon, Inpago Unsoed Protani, increased productivity, tourism

A. Introduction

Minapadi-based tourism has been developed by the Panembangan Village Government, Cilongok District, Banyumas Regency since 2019. Inconsistency in applying the minapadi concept and the occurrence of empty minapadi after the harvest season. This resulted in the Svarga Minapadi tourist attraction developed by the Panembangan Village Government, which was originally visited by many visitors, having a decrease in the number of tourists, thus having an impact on the economic conditions of the community, especially those around the tourist

location. On the other hand, rice production in Panembangan Village, which is not yet optimal (only two rice plantings), high fish feed prices, and limited tourism management capacity are problems for partners, namely the Krido Yuwono V Farmer Group and the Krido Yuwono Fish Farmer Group in reviving and managing Svarga Minapadi.

Jenderal Soedirman University, with the development of science and technology, plays a role in overcoming these four problems through this PDB program. The engineering of the Salibu Protani minapadi technology, which combines the superior variety Inpago Unsoed Protani, which has been released as a national superior variety by the Indonesian Minister of Agriculture in 2020 with the Jajar Legowo and Salibu cultivation techniques, is expected to be able to overcome the first and second problems. Meanwhile, the technology for making fish feed from local/non-imported ingredients is carried out to answer the third problem. The development and assistance of technology in the form of an integrated tourism management information system are expected to solve the obstacles to managing Svarga Minapadi.

This Fostered Village Program aims to revitalize tourism based on Panembangan Village minapadi through the engineering of Salibu Potani minapadi technology and the implementation of an integrated tourism management information system. The program is planned for 3 years, with the first year's activities including the dissemination of science and technology followed by training and application of the Salibu Protani Minapadi technology using the new superior variety Inpago Unsoed Protani, introduction and training in making fish feed from local/non-imported ingredients and introduction and assistance in the implementation of the tourism management information system in stages.

B. Methods

The program is planned for 3 years, with the first year's activities including the dissemination of science and technology followed by training and application of the Salibu Protani Minapadi technology using the new superior variety Inpago Unsoed Protani, introduction and training in making fish feed from local/non-imported ingredients and introduction and assistance in the implementation of the tourism management information system in stages. Technology mastery is measured based on pre-tests and post-tests, as well as skill assessment in pilot areas.

C. Results And Discussion

1. Description

Based on the results of the technology mastery measurement, it is known that farmers and fish farmers in Panembangan Village have increased by 97.25% regarding minapadi protani salibu. The engineering of the Minapadi Protani Salibu cultivation technology combines salibu cultivation technology with Minapadi cultivation technology, with the addition of superior rice variety interventions (1), biofertilizers, and mechanization in the implementation of harvesting and cutting of rice cobs to grow new shoots. Salibu is one of the rice cultivation technologies that is carried out by utilizing the remaining rice cobs from the previous planting so that farmers can save time, costs, and labor. This Salibu system has been implemented by the proposing team in the Cilacap Regency area with facilitation from Bank Indonesia and in Purbalingga Regency with facilitation from the Ministry of Agriculture, proven to increase the planting index from IP100 which is only 1 harvest to three harvests (IP300) continuously without a break, as well as efficient production costs by reducing the cost of procuring seeds, nurseries, soil cultivation, and transplanting. The harvest time for Salibu rice is relatively fast, around 40 days, compared to the transplanting system usually carried out by farmers in conventional and Minapadi cultivation systems. Applying the Salibu system to minapadi cultivation technology in Panembangan Village will solve the problem of empty minapadi fields between the changing planting seasons.

The availability of a pilot area in the application of Minapadi Protani Salibu technology in the Techno Park Minapadi land in Panembangan Village has a positive impact, including as a reference and referral for the community to alternative minapadi cultivation techniques that can be available at all times, without being limited by the planting season, as an educational park and the main attraction of Svarga Minapadi. Interactive activities that will be further developed in the pilot area are expected to increase the number of visitors.

Knowledge and skill mastery of farmers and fish farmers in Panembangan Village have also increased to 77.50% regarding rice varieties that can increase productivity. So far, farmers and fish farmers in Panembangan Village have only planted the Inpari 32 variety for minapadi cultivation. Inpari 32 is quite adaptive to minapadi cultivation, but its yield is limited, and there is a drawback: it is easy to collapse. This causes its production to be unable to reach its optimum. The introduction of other superior rice varieties needs to be done as a reference for farmers in rice cultivation using minapadi, which is oriented towards high yields. The superior rice varieties introduced include inbred rice (Inpari 48, Inpari 42 Agritan, Ipnago Unsoed Protani, and Inpari Unsoed P20Tangguh) and hybrid varieties (Mapan, HIPA, and others).

Farmers and fish farmers in Panembangan Village have also increased by 72.5% their knowledge about new superior varieties, Inpago Unsoed Protani. Inpago Unsoed Protani rice variety is the progeny of hybridization between Ciherang rice and G 39 rice assembled by the plant breeding team of Jenderal Soedirman University. The Protani rice variety is an upland rice variety with high yield, high protein content, and resistance to pests and plant diseases. Inpago Unsoed Protani is included in the category of moderately resistant to four races of blast disease caused by the fungus *Pyricularia grisea*. Another advantage is the short posture of the rice, which means that it is not at risk of falling over if there is windy rain during the seed-filling phase. Increasing farmers' knowledge and skills about rice is a driver for revitalizing minapadi in Panembangan Village and supports national food security.

2. Figures and Tables

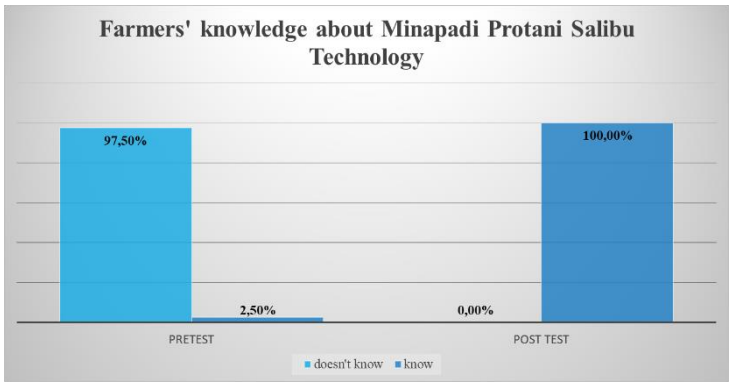

Figure 1. Farmer’s knowledge about Minapadi Protani Salibu

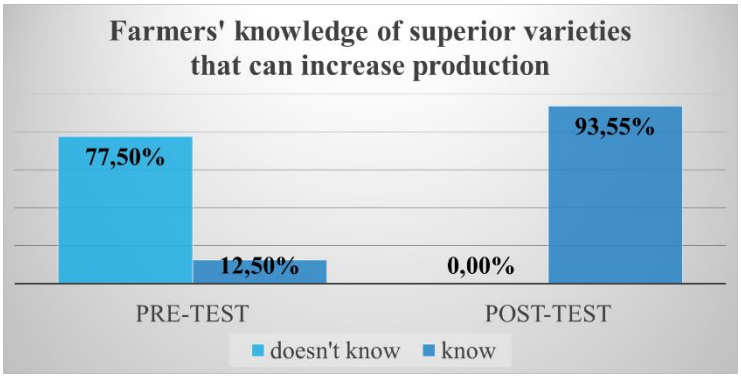

Figure 2. A farmer's knowledge of superior variety can increase productivity

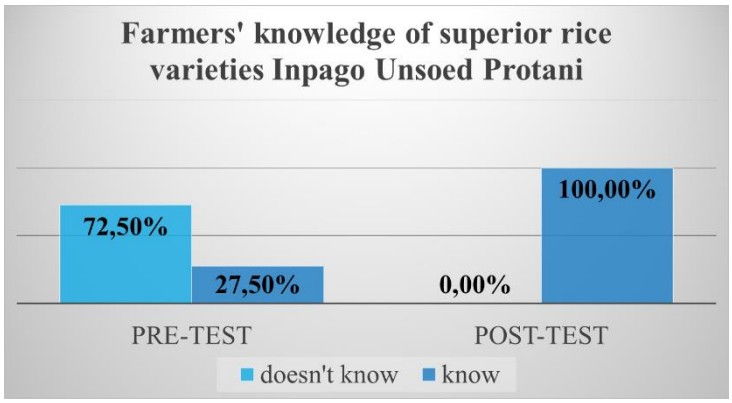

Figure 3. Farmer's knowledge about superior rice variety Inpago Unsoed Protani

D. Conclusion

Based on the discussion, the conclusions of the research are mentioned below:

1. Farmers and fish farmers in Panembangan Village have increased to 97.25% regarding minapadi protani salibu cultivation technology.
2. Farmers and fish farmers in Panembangan Village also have increased to 77.50% of rice varieties that can increase productivity and increased to 72.5% in their knowledge about new superior varieties, Inpago Unsoed Protani.
3. Increasing farmers' knowledge and skills about rice is a driver for revitalizing minapadi in Panembangan Village and supports national food security.

E. Acknowledgment

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