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## The effectiveness of rice field expansion program in increasing rice product in Tanah Miring District, Merauke Regency

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**Abstract.** The Program of Expansion Rice Fields on Rice Production in Current District Tanah Miring Regency of Merauke. This research aimed to describe the implementation of rice field expansion programs in increasing paddy production, analyze the effectiveness of the rice field expansion program in increasing paddy production, and to find out the supporting and inhibiting factors of the effectiveness of rice field expansion program. The research was conducted using descriptive qualitative and quantitative approach. The research location was Tanah Miring District, Merauke Regency. The data collection was done using structural interviews through the questionnaires and the written documents. The 88 samples were chosen using the Slovin formula and the sampling probability approach. The data were analyzed using a descriptive quantitative and qualitative approach. The research results indicated that the implementation of the rice field expansion program in increasing paddy production had been run according to the regulation and the stated determination. The farmers' evaluation concerning the effectiveness of the rice field expansion program in increasing the paddy production in Tanah Miring District, Merauke Regency were categorized as effective and effective enough. Some of the supporting factors were the improvement of dikes and land management, quality of excellent seeds, good quality fertilizers addition of standard land addition and increase of land area, production increase, and the paddy farmers were able to innovate the technology about the wet rice cultivation. Besides, there were inhibiting factors, such as the dike sizes were not adjusted to the land the planting season was often changed the irrigation water was not available during the planting season, the weather has not been unpredicted the rice fields were not accompanied with the irrigating canals, and the lack of farming roads.

### 1. Introduction

The agricultural sector is one of the mainstay sectors in national economic development because it has a dominant contribution, both directly and indirectly in the achievement of national economic development goals, especially for getting effective marketing [1,2].

The rapid growth of development in all fields, especially industry and settlements, has a very negative effect on the development of the agricultural sector, especially rice production because it causes the conversion of agricultural land, especially paddy fields to non-agricultural or non-paddy fields that can threaten national food security. Nearly some Indonesian's consume rice as a staple food and show higher per capita rice consumption compared to neighboring countries [3]. Based on data



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from the Central Statistics Agency (BPS) noted that the conversion of agricultural land for other purposes during 2002-2010 averaged 56,000-60,000 ha per year which could make Indonesia experience a rice deficit and the value of rice imports will increase in the advancing years. The urgency to resolve the threat of rice deficit is increasingly relevant when it is associated with projections of population growth in the future. In 2025 the projected population of Indonesia will reach 273.2 million, assuming an average growth of 1.3 percent per year. To fulfill the food needs in 2025, it is necessary to add 2.66 million hectares of paddy fields [4,5]. Hence, the effort to expand the standard of agricultural land becomes very important by utilizing and managing existing land and water resources.

The results of the R&D Agency study in 2005 and 2006 published in the Agro-Ecological Zone (AEZ) data of Merauke Regency still demonstrate the potential for agricultural development of 2.5 million hectares consisting of 1.9 million hectares of wetlands and  $\pm 600,000$  hectares of dry land. Meanwhile, based on the Spatial Planning of Merauke Regency, the potential land for agricultural development is 1.2 million hectares, consisting of 700,000 hectares of wetlands and 500,000 hectares of dry land.

Considering the vast available land potential, it is still absolutely possible to carry out activities to expand the area of paddy fields by increasing the standard of land, then through a program to expand the area of food crops which are frequently called the expansion/printing of rice fields carried out by the Department of Food and Horticulture Plants, Merauke Regency. The role of the TNI-AD as a component of implementing civil works and construction is expected to participate in efforts to expedite and accelerate the implementation of rice field expansion activities to support national food security.

The rice field expansion program that has been carried out by the Department of Food and Horticulture Plants in Merauke Regency, especially in the Tanah Miring District as a whole, received the most rice field expansion programs in 2012-2017.

The expansion program of the rice field in Tanah Miring District of Merauke Regency is aimed at increasing the area of harvest and rice production. Therefore, farming in opening new paddy fields must be carried out appropriately including fertilizer input based on soil analysis results and crop needs, affordable by farmers, and with intensive land management. Intensive tillage in opening new paddy fields, among others, through lubrication. Lubrication is important to make soil conditions more suitable for penetration of the rice plant roots, also has a role in the formation of the impermeable layer (plow pan layer). The provision of organic material is also important to consider in the management of opening new paddy fields. This study aims to analyze the effectiveness of the rice field expansion program in increasing rice production in the Tanah Miring District and to determine the supporting and inhibiting factors in the rice expansion program in the Tanah Miring District.

## 2. Methods

### 2.1. Research design

This research is research with quantitative and qualitative approaches. This study aims to determine the effectiveness of the rice field expansion program in increasing rice production in the Tanah Miring District of Merauke Regency.

### 2.2. Research sites

This research was conducted in Tanah Miring District, Merauke Regency. Tanah Miring District was chosen based on the consideration of one of the districts that received the largest area of rice field expansion program, which is one of the rice production centers in Merauke Regency, besides, the location is affordable and accessible to obtain information needed to support the research.

### 2.3. Data and data sources

The data used in this study included data/information from the results of the interview using a questionnaire distributed to rice farmers who received the rice field expansion program. In addition, data were obtained from staff handling the rice field expansion program. Data were obtained from the Central Statistics Agency (BPS) of Merauke Regency and the Department of Food and Horticulture Plants of Merauke Regency.

2.4. Population and sample

Determination of the population as a research area is taken intentionally (Purposive). The population is the whole element that will be used as the generalization area [6]. While the sample is part of the number and characteristics possessed by the population [6]. Taking a sample of quantitative and qualitative methods is have different techniques. Quantitative methods, sampling based on probability sampling techniques, that is random sampling techniques. Whereas, in qualitative methods, sampling is based on a purposive technique that is selecting informants who are considered most knowledgeable about the object/situation being studied. The number of samples to analyze the effectiveness of the rice field expansion program in increasing rice production in Tanah Miring District was determined by adopting the Slovin Umar formula [7]. So, the number of samples obtained as many as 88 farmers who received the program to expand rice fields in Tanah Miring District. While sampling for supporting and inhibiting factors in the rice field expansion program in Tanah Miring District, the researchers demonstrated the purposive technique in which the researcher selected the informants who were considered most knowledgeable about the object/situation being studied. Informants in this study, that is the Department of Food and Horticulture Plants of Merauke Regency, joint fishing groups (gapokkan) and farmers who receive rice field extension program assistance in the Tanah Miring District will also be displayed in the field documentation.

2.5. Collecting data method

Data collection methods are interviews using questionnaires. Researchers collected data from rice farmers who received the rice field expansion program in 2017.

2.6. Data analysis

This research was included in the survey research. Referred to the study [7], survey research is research that is intended to see whether a program of activities runs well or not. The survey method seeks to explain why an event occurred by reviewing selected samples from the population to find the incidence, distribution, and interrelation of the variables studied [8]. Data analysis methods for the effectiveness of the rice field expansion program in increasing rice production in Tanah Miring District of Merauke Regency were analyzed using quantitative and qualitative descriptive data analysis methods. Quantitative description analysis is done by processing data from the results of the questionnaire displayed in the form of a frequency distribution. Then, using the weighting method using the "Likert Scale". The Likert scale used is the Likert scale with five criteria, that are Strongly Disagree (SD), Disagree (D), Fairly Agree (FA), Agree (A), Strongly Agree (SA) [6]. Whereas, to find the weighted average is to add up all times the product of the weight by its frequency divided by the total number of frequencies [9]. The scale of the rating will be determined to determine the sample response. How to find the average of each sample answer to facilitate the assessment of the average, then an interval of 5 is made. The formula [10] used, that is:

$$R_s = \frac{\text{Range}}{n \text{ Class Interval}}$$

- R<sub>s</sub> = Scale Range
- Range = Biggest - smallest weight
- N Class Interval = 5

Based on the formula above, it can be obtained that the weighting index assesses the effectiveness of the rice field expansion program in increasing production with a very ineffective category having a

scale range of 1.00-1.80, ineffective with a scale range > 1.80-2.60, quite effective with a range scale > 2.60-3.40, effective with a scale range > 3.40-4.20 and very effective with a scale range > 4.20-5.00. The variables used in this study consisted of eight aspects including land management, seed selection (superior varieties), planting, irrigation and water management, soil improvement, fertilization, control of plant pests, and harvest. Meanwhile, to find out the supporting and inhibiting factors in the rice field expansion program in the Tanah Miring District of Merauke Regency, a qualitative description analysis was carried out based on the farmers' condition.

**3. Result**

Table 1 shows the effectiveness of the rice field expansion program can be measured using overall values based on respondents' responses to land management aspects included in the effective category, for overall values based on respondents' responses to the seed aspects, planting aspects, and irrigation and water management aspects included in the quite effective category, while the overall value is based on respondents' responses to aspects of soil enhancers, fertilization, aspects of plant pest control organisms, and harvest aspects included in the effective category.

The supporting factors of the rice field expansion program in Tanah Miring District of Merauke Regency are paying attention to the improvement of dike and processing of the soil, high-quality seeds to increase rice production, good quality fertilizer, addition of land standards in Tanah Miring District, increase and enhancement planting area in Tanah Miring District, increasing rice production in Tanah Miring District, rice farmers can find out the application of technological innovations about the cultivation of rice fields. Besides, the inhibiting factor in the rice field expansion program in Tanah Miring District of Merauke Regency is the size of the dike is not adjusted to the land so that the dike becomes unstable, unable to retain water during tillage and causes water to not flow or out, the Planting Season (PS) often changes due to irregular or regular rainy season, carrying capacity of irrigation water that is unavailable when the land is ready to be planted, unpredictable and difficult to predict weather in Merauke Regency has an effect on planting activities, the land developed is unaccompanied by irrigation channels, there is no road, so, that farmers have difficulty during the harvest season to bring tools.

**Table 1.** The overall value of the proportion of respondents' statement on the aspects of the effectiveness of rice expansion program in Tanah Miring District

Effectivity	Score	Qualification
Land management aspects	3.72	Effective
Seed aspect	2.91	Quite Effective
Planting aspects	3.08	Quite Effective
Water and water management aspects	2.78	Quite Effective
Soil improvement aspects	3.51	Effective
Fertilization aspects	3.48	Effective
Control aspects of plant pests	3.92	Effective
Harvest aspects	3.62	Effective

**4. Discussion**

This research shows that the implementation of the rice field expansion program in increasing rice production in Tanah Miring District of Merauke Regency shows land clearing in the food crop production center areas where the allocation of these activities has been carried out since 2006, until 2017. The program is the plan that involves various units that contain policies and a series of activities that must be carried out within a certain period [9].

According to the calculation of the overall value of the proportion of respondents' statements on the aspects of the effectiveness of the rice field expansion program in Tanah Miring District of Merauke Regency, the respondent's total value of each aspect was recognized, that for the land management

aspect the total value was 3.72 so that it could be concluded that the land management aspect was considered effective, this is due to improvements in dike, land management, and fields cultivation that are untreated with plows carried out following with the provisions. The seed aspect has a total value of 2.91, which means that the seed aspect is categorized as quite effective because not all rice varieties are planted, rice seeds planted are *Inpari 32* from the assistance of the Department of Food and Horticulture Plants of Merauke Regency. The planting aspect has the total value of 3.08, which means that the planting aspect is categorized quite effective because it is where the planting season is uncertain or often changes in Tanah Miring District so that it affects the planting schedule of rice farmers because it is adjusted to the availability of water. The aspects of irrigation and water management total value of 2.78 so that it is included in the category of quite effective, this is because the irrigation canal is separated from the drainage channel so that it doubles as an irrigation channel causing the available rice fields not to be optimally utilized because generally, infrastructure is inadequate. The soil improvement aspect has a total value of 3.51, which means that the planting aspect is categorized as effective due to the use of dolomite lime and compost by rice farmers in Tanah Miring District by spreading it out evenly a week before planting and using the recommended dosage of dolomite lime and organic materials according to its dosage. The fertilizing aspect has a total value of 3.48, so, it is categorized as effective due to the use of fertilizer following the recommendations. The control aspects of plant-disturbing organisms have a total value of 3.92 so that they are included in the category of effective due to the prevention and eradication of pests and diseases carried out in the right way. The harvest aspect has a total value of 3.62, so, it is included in the effective category of harvest handling by rice farmers in Tanah Miring District following the recommendations.

The eight aspects assessed to measure the effectiveness of the rice field expansion program in Tanah Miring District can be seen from the overall value of the respondents' responses included in the effective and quite effective categories. Thus, there are supporting and inhibiting factors in the rice field expansion program in Tanah Miring District of Merauke Regency.

Effectiveness is the measure of success in achieving predetermined goals. According to a previous study [11], explained that effectiveness with regard to whether an alternative achieves the expected results, or achieves the objectives of the action. Effectiveness shows success in terms of whether or not predetermined indicators have been achieved, that are the aspect of land management, seeds, planting, irrigation and water management, soil improvement, fertilization, control of plant pests, and harvest. If the activity approaches the indicator, it means the effectiveness is higher. The calculation of the effectiveness rating weight index is categorized as effective and very effective if the scale ranges between > 3.40 to 5.00. Effectiveness is a measure of success in achieving predetermined goals. Effectiveness shows success in terms of whether or not predetermined indicators have been achieved, that are aspects of land management, seeds, planting, irrigation and water management, soil improvement, fertilization, control of plant pests, and harvest. If the activity approaches the indicator, it means the effectiveness is higher. Production is the process of converting inputs into outputs so that the value of the goods increases. Inputs can consist of goods or services used in the production process and outputs are goods and services produced in a production process [12]. Production can be defined as a process that creates or adds new use values or benefits [13].

## 5. Conclusions

The assessment of farmers' perceptions related to the effectiveness of the rice field expansion program in increasing rice production in Tanah Miring District of Merauke Regency is ineffective and quite effective assessment, while the supporting and inhibiting factors in the rice field expansion program in Tanah Miring District can be identified from eight aspects in the effectiveness of the rice expansion program. The rice field expansion program is very good and must continue but must have consideration to aspects of rice cultivation and carry out monitoring and evaluation of activities with the aim as much as possible to solve the problems in the field.

**References**

- [1] Asir M, Darma R, Mahyuddin and Arsyad M 2019 Study on stakeholders position and role in supply chain of cocoa commodities *Int. J. Supply Chain Manag.* **8** 1–9
- [2] esquivias miguel angel 2017 The Change of Comparative Advantage of Agricultural Activities in East Java Within the Context of Asean Economic Integration *Agris On-line Pap. Econ. Informatics* **9** 33–47
- [3] Heriqbaldi U, Purwono R, Haryanto T and Primanthy M 2014 An Analysis of Technical Efficiency of Rice Production in Indonesia *Asian Soc. Sci.* **11** 91–102
- [4] Central Bureau of Statistics 2008 *Kabupaten Merauke Dalam Angka 2008* (Merauke)
- [5] Pangeran F and Rusyanti N 2018 Characteristics And Quality Of Local Rice In Bulungan District, North Kalimantan *Canrea J. Food Technology, Nutr. Culin. J.* **1** 107–17
- [6] Sugiyono 2010 *Metode Penelitian bisnis* (Jakarta: CV. Alfabeta)
- [7] Suharsaputra U 2012 *Metode Penelitian Kuantitatif, Kualitatif dan Tindakan* (Kalapagunung: Refika Aditama)
- [8] Rusidi 1996 *Prinsip-Prinsip Pengukuran dan Penyusunan Skala* (Bandung: Kopertis IV Jawa Barat)
- [9] Durianto D, Sugiarto A W, Widjaja and Supratikno H 2003 *Invasi Pasar dengan Iklan yang Efektif* (Jakarta: PT Gramedia Pustaka Utama)
- [10] Riduwan 2010 *Skala Pengukuran Variabel-variabel penelitian* (Bandung: Alfabeta)
- [11] Dunn W N 2000 *Pengantar analisis kebijakan publik Edisi Kedua* (Yogyakarta: Gajah Mada University Press)
- [12] Adiningsih 1995 *Ekonomi Mikroedisi I* (Yogyakarta: BPFE)
- [13] Assauri 1995 *Manajemen Produksi* (Jakarta: FEUI)

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