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Management of Rice Field Through Water Arrangements to Improve Rice Production

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Abstract

Efforts to achieve an increase in rice field processing programs in increasing agricultural production. However, there are many various kinds of obstacles that we must face. Farmers say their land has been planted with rice so far but often fails to harvest because, in the dry season, it is often drought, and in the rainy season, it is often flooded. To meet the consumption needs of farm families is only enough for daily needs. The purpose of this study is to study the benefits of managing paddy fields by regulating irrigation to increase rice production. Data is taken from experience in Banjar, South Kalimantan. The results show that the use of irrigation is more appropriate for planting 2 to 3 times. It is expected that the printing of paddy fields in the irrigation can be carried out as quickly as possible and run well and smoothly without any obstacles. Thus farmers can enjoy the results with two harvests in a year. To be more supportive of various aspects, related parties can provide various kinds of training and direction so that paddy fields can increase their productivity. At present, far, the expected results.

Keywords: *Biopesticides, Pests, New Paddy Fields.*

Introduction

Rice harvest area in South Kalimantan for the period January-September 2018 amounted to 261,727 hectares. Taking into account the potential until December 2018, the 2018 harvest area will be 278,853 hectares. Rice production in South Kalimantan from January to September 2018 amounted to 1.06 million tons of Milled Dry Grain. Based on production potential until December 2018, it is estimated that total rice production in 2018 will be 1.14 million tons of paddy. If rice production is converted to rice using the conversion rate of MPD to rice in 2018, then rice production is equivalent to 668,984 tons of rice. (BPS, 2018)

One increase in rice productivity we can do is water management that is efficient and effective. According to Subagyono (2001), water management plays a very important role and is one of the keys to the success of increasing rice production in paddy fields. According to Wopereis (in Apriyama, 1999), increasing the efficiency of water use in rice farming becomes important in line with the increasingly limited availability of water. This can be done by improving irrigation facilities, introducing water-saving techniques, setting

planting / planting patterns to maximize the use of rainfall. The dry-wet irrigation system is a system of giving water to paddy fields at a certain level. Then the next water supply is carried out at a certain period after the puddle at that level recedes until there is no inundation. Lowland rice production will decrease if the rice plants suffer from water stress. Common symptoms due to lack of water include rolling rice leaves burning leaves, reduced rice tillers, stunted plants, delayed flowering, and hollow seeds.

Rice plants need water whose volume is different for each phase of growth. Variations in water requirements also depend on rice varieties and paddy land management systems. Water management in rice fields does involve not only irrigation systems but also drainage systems at certain times to reduce the quantity of water or replace old water, thus providing opportunities for oxygen and nutrient circulation. Thus water management techniques need to be specifically developed according to the system of rice production and cropping patterns.

Irrigated paddy fields often lose water in the process of irrigation water distribution and in the use process. Efficiency levels in primary and secondary canals of at 70-87%, tertiary canals between 77-81%, and when combined with loss at the plot level, overall water use efficiency is 40-60% (Kurnia, 2001). The low level of water use efficiency during the use process is caused by the habit of farmers who still often use high inundation up to 15 cm continuously. The efficient use of water is an important aspect with regard to efforts to increase the economic value of rice production in irrigated paddy fields. Abas et.al., (1985) reported that the efficiency of water use in irrigated land was almost 2-3 times higher than that of continuously flooded land.

Method and Data

The approach taken in this research is to use a survey approach to observe the rice processing in the Banjar district in South Kalimantan Province. After the survey, a focus group discussion (FGD) was conducted. The FGD also functions to formulate alternative policy recommendations in the processing of rice fields in increasing rice production in South Kalimantan Province.

According to Suratmo (2002), descriptive research is research based on data description of the status, situation, attitude, relationship, or system of thought of a problem that is the object of study, to get a story, picture or painting systematically, factual, detailed, and accurate between various phenomena. According to Maman (2002), descriptive research tries to describe a social event. In other words, descriptive study aims to provide a description of nature, object of research, or something that is happening (Sudjana, 1996).

Data and Information Collection Techniques

In this study, data and information collection was carried out using a random interview process and direct observation, which was carried out to observe the development of new paddy fields printing in Maluku Province and the problems encountered and possible solutions to improve the effectiveness of new paddy printing in South Kalimantan Province. Then a focus group discussion (FGD) is conducted with experts based on the interaction process to obtain various data and information.

Result

Research Instruments

A research instrument is a tool used to measure observed natural and social phenomena. Specifically, all of these phenomena are called research variables (Sugiyono, 2009).

In this study, there are two instruments used, namely:

a. The instrument used to measure the farmer's socioeconomic status.

b. The instrument used to measure farmers' readiness to manage paddy fields.

Indicators For Successful Agriculture

Ecological / Environmental Aspects

The results of interviews in the villages of Banjar District interviewed farmers whose land was included in the processing of paddy fields as the owner of the paddy fields. Farmers say that their property has been planted so far but often fails to harvest because, in the dry season, it is often drought, and in the rainy season, it is often flooded. To meet the consumption needs of farm families is only enough for daily needs today.

In villages of the Banjar Regency, land use is still very minimal due to limited costs and facilities for the management of their land, which is mostly including swamps, which are challenging to work on. The irrigation system there uses a rainfed irrigation system, and also agricultural processing there still uses the traditional system.

Condition of Layout and Area

- The area of ± 4,668.50 Km2, is the third-largest area in South Kalimantan Province after Kab. Kotabaru and Kab. Land of Spices
- Consists of 20 Districts, 277 Villages, and 13 Kelurahan.

Bordering :

- Northside with HSS & Tapin
- Southside with Banjarbaru & Tanah Laut
- Eastside with Kotabaru & Tanah Bumbu
- Westside with Batola & Banjarmasin

The Location And Status Of Banjar Regency Is Very Strategic

- Banjar District as trans Kalimantan
- Banjar Regency as a buffer city of Banjarmasin
- Banjar District is close to the central government plan of South Kalimantan Province
- Banjar Regency is close to the Airport, Harbor and the location of the planned regional terminal development

- Enter the provincial government plan part of the metropolitan city plan (Banjarmasin-Banjarbaru-Martapura

Farming System

Most of the people earn a living as farmers from oil palm plantations, which on average, are individual plantations. Besides, rubber plantations support the lives of some people who are excellent products. The presence of local, national, and foreign companies engaged in coal mining also contributed to the economy in Banjar District.

Coal mines in this district are managed by companies such as PT. Pamapersada Nusantara, PT. Kalimantan Prima Persada, PT. Pinang Coal Indonesia and others are overseen by the Regional Company (PD. Baramarta).

The majority of plants grown in villages are paddy. Within one year, one planting season is generally planted in February and September.

Economic aspects

Farmers assisted with the cultivation of land usually manage their own land or sometimes with the help of a worker who is given wages, usually laborers planting two million-plus clean weed 1 million in one hectare. Furthermore, farmers also buy various necessities for farming in KUD, Village Kios, or in a neighboring shop. For the maintenance of the land, he cultivated using manure, four sacks of urea for 1 thousand from 90 thousand to 130 thousand, and PPC 2 1 zak 150 thousand.

At present, the yield of each agricultural land reaches 2-2.5 tons/hectare. There are also subsidies from the government in the form of Poor Rice, Fertilizers, and medicines for the processing of agricultural land, so it is very supportive in the management of paddy fields.

Land owned by farmers is mostly privately owned land given by the government as a form of responsibility from the government for being a member of regional Transmigration to be worked on by themselves or individually. The land contour there is less fertile so that farmers process various kinds of plants and food plants such as rice. Farmers who are active in agriculture are immigrants from Java, the majority of which are capable.

Currently, the irrigation used by farmers is to use a rainfed system because the water channel is inadequate for farmers. Therefore it is expected that an adequate irrigation channel is built so that it can provide convenience to the farmers by constructing an irrigation channel to facilitate the farmers in achieving what is expected. Like trying to get harvest season in one year can be harvested twice each year. Usually, the farmers' crops are sold, and some are consumed privately. The problem is that there are still pests and diseases; it is necessary to guide farmers from the local government.

Socio-Cultural Aspects

For socio-cultural aspects describe cultural values, religious beliefs, and traditional traditions in the development of agricultural systems in the area. In villages known for cooperation between residents who are still attached to life in these villages. And also, there are still institutions and farmer groups that overshadow farmers but are active, and there are Charismatic Community Leaders and village cadres selected in community organizing,

which have a variety of skills. Besides, most farmers in this area are farmers from Java who are transmigrants, who, on average, have expertise in agriculture that is quite capable and resilient, of course. Besides, the usual tradition of farmers in these villages is farming using signs. Nature to carry out agricultural activities depends on each other's beliefs because several villages use different rituals.

However, the natural environment of the land if the dry season is often drought and when the rainy season flooded rice fields often fail to harvest many farmers who switch professions go to the city

As for the processing of the land until the harvest is still using the traditional way, How to plant Early in the rainy season with manual using a stick 20 seeds / one spoon, pounded broken 4 or 6 already 20 days, Traced planted if the water receded, the average productivity of 2.5 tons/hectare

Transportation Facilities and Infrastructure

For some places in the villages, there may not be an obstacle to the problem of facilities and infrastructure, especially roads for transportation, both wheels, and four wheels. Because almost all of the land included in the rice field target has adequate transportation access.

Public Facilities and Social Facilities

The facilities available in each village are inadequate in assisting farmers in land management. The office of the Agricultural Extension Worker should routinely monitor the progress of the farmers in each village.

Discussion and Conclusions

It is expected that the printing of paddy fields in the irrigation can be carried out as quickly as possible and run well and smoothly without any obstacles. Thus farmers can enjoy the results with two harvests in a year. In order to be more supportive of various aspects, related parties can provide various kinds of training and direction so that paddy fields can increase their productivity. At present, far, the expected results. The government can pay serious attention to the location of rice fields because farmers are not very interested in utilizing their land because the results do not match what is expected.

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