Factor Analysis of Pad Rice Input Production in Pematang Pulai Village, Sekernan Muaro District, Jambi District

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A R T I C L E I N F O	A B S T R A C T
  	This research was conducted in Pematang Pulai Village, Sekernan District, Muaro Jambi Regency from March 11, 2020 to March 28, 2020. The analysis used in this research is descriptive qualitative and quantitative analysis presented in the table. Furthermore, to analyze the results of the data used Stochastic Frontier Analysis (SFA). Based on the results of the study, it was found that the influence of the use of lowland rice farmers' production factors in Sekernan District, Muaro Jambi Regency was: 1). The land area of 0.63521862 and the workforce of 0.044675791 gave a positive effect, while the seeds of -0.30512884, fertilizer of -0.28402427 and pesticides of -0.12713943 had a negative effect. This shows that the factors of land area and labor have a significant effect on lowland rice production in Pematang Pulai Village, Sekernan District, Muaro Jambi Regency, 2). Efficiency The use of production factors to the production of lowland rice farming in Sekernan District, Muaro Jambi Regency is a technical efficiency of 99.00%

INTRODUCTION

Food as a basic human need always has a very high level of demand in line with the increasing rate of population growth. The more population in an area, the higher the demand for food. The increase in food needs due to an increase in population according to productivity and rice production is higher, given the speed of increase in population following a geometric progression (Dharmawan, 2010).

The development of the food crops sub-sector in Jambi province is basically an inseparable part of agricultural development in an effort to realize a sustainable agricultural development program. Jambi Province is an area planted with many food crops, one of which is paddy rice. According to BPS Jambi Province (2016), the area of paddy fields in 2015 was 102,207 hectares. If you look at the irrigation system. 29.68% is irrigation

technical. This shows that Jambi Province is a potential area for food crops. Data on the spread of lowland rice farming in Jambi Province can be seen from Table 1.

Table 1. Harvested Area, Production and Productivity of Paddy Rice in Jambi Province in 2018

Kabupaten / Kota	Luas Panen (Ha)	Produksi (Ton)	Produktivitas (Kw/Ha)
Kerinci	26.142	138.631	53,03
Merangin	8.482	41.189	48,56
Sarolangun	6.749	27.751	41,12
Batang Hari	4.985	21.761	43,65
Muaro Jambi	6.368	26.614	41,79
Tanjung Jabung Timur	18.322	75.109	40,99
Tanjung Jabung Barat	**9.152**	**41.244**	**45,07**
Tebo	4.751	22.397	47,14
Bungo	7.001	33.905	48,43
Kota Jambi	392	1.873	47,79
Sungai Penuh	9.863	55.515	56,29
Jumlah/Total	102.207	485.989	47.55

Source: Central Bureau of Statistics Jambi Province, 2019

Table. 1 shows rice production in Jambi Province in 2018 reaching 485,989 tons. Muaro Jambi Regency is one of the Produced off Paddy in Muaro Jambi Regency with kontribution 8,48 to production paddy. If lool of Area land for Muaro Jambi Regency is regency have area land biger in Jambi Province.

THEORETICAL FRAMEWORK
Consept Farming

Farming is usually interpreted as a science that studies how a person allocates existing resources effectively and efficiently for the purpose of obtaining high profits at a certain time. It is said to be effective what they have (which is mastered) as well as possible. It is said to be efficient if the utilization of these resources produces an output that exceeds the input (Soekartawi, 1985).

According to Mosher (1985) that farming is a farming or other type of farming or raising livestock. Farming requires integration between land, labor and capital to produce production which also requires expertise to manage it. As stated by Rivai in Hernanto (1993) that farming is an organization of nature, labor and capital aimed at agricultural production. This organization is managed independently and deliberately managed by a person or group of people, a social group, both genelogically and territorially bound as its manager.

In farming there are four main elements that are always there. These elements are also known as factors of production which consist of land, labor, capital and management (Hernanto, 1993). The form of farming is distinguished by the mastery of production factors by farmers. With the use of these factors of production, it will be determined how the farming is managed and so on. With more in-depth research, it turns out that farmers make economic and financial calculations, although not necessarily in writing (Mubyarto, 1986), the existence of these calculations will influence farmers' decisions in the use of production factors.

In a broad sense farming is synonymous with agribusiness which includes four subsystems, namely: procurement of production facilities, farming production, product processing and marketing. Soekartawi (2002) states that farming aims to maximize profits or generate cost advantages, what is meant by incurring costs is how to allocate resources with a certain amount as efficiently as possible to get maximum profits. while the concept of minimizing costs is to reduce costs to the minimum with the aim of achieving a certain level of production. Meanwhile, according to Umsuf (2011), lowland rice farming is farming where the production process involves rice fields as land, farmers as labor, seeds, fertilizers, medicines and the presence of irrigation in addition to managerial skills or abilities in coordinating these production factors. The level of production is determined by the application of good and effective technology. Improvement efforts production by using these factors of production is expected to increase productivity which in turn will increase farmers' income.

Concept Factor Production

Soekartawi (1994), states that what is meant by factors of production are all the sacrifices given to plants so that these plants are able to grow and produce well. Factors of production are also known as inputs and production sacrifices. The production factor really determines the size of the production obtained. Land production factors, capital to buy seeds, fertilizers, medicines and labor as well as management aspects are the most important factors of production. The

relationship between factors of production (input) and production (output) is usually called the production function or factor relationship (FR).

Rahim and Hastuti (2008), stated that there are four main elements in farming, namely land, capital, labor and processing. According to Soekarno (2003).

Factors of production are objects created by humans or available by nature and can be used to produce the various types of goods needed. It is called a factor of production because it is absolute so that the production process can run and produce a product.

This does not mean that the productivity obtained by farmers will be high, but how farmers carry out their business efficiently is a very important effort. A reduction in production factors is said to be efficient if the production factors used produce maximum production.

Knowing the efficiency is needed to determine the optimal use of inputs. The maximum production that gives the maximum profit is marked by the value of the marginal product of each input must be equal to the input cost per unit.

Efesiency Consept

In an economic sense, efficiency is a comparison between the ability or ability to produce a certain amount (Product or Performance) at a lower cost or at the same cost but more production. In a general sense, efficiency is all general measurements both in standard form and in the form of objectives (objectives) that are used to sort, measure, the performance of the workforce or individuals, organizational machinery and businesses. Efficiency is an effort to achieve the maximum possible performance by using the available possibilities (material, machine, human) in the shortest possible time in real conditions as long as conditions cannot change (without disturbing the balance between objective and time factors). The liang Gie in analins (2000).

According to Hernanto (1993) Says that the allocation of production factors is very much in the economic system as well as choices and policies. The need for agricultural products must be provided and therefore the factors of production must be allocated. Factor allocation production that can increase farming. In line with this, seen from the level of production and productivity it is known that the productivity of superior durian farming in Batin Village, Muara Bulian District, Batanghari Regency has decreased from the previous year, and is still relatively low. In production activities, the role of inputs can be seen not only in terms of their types or their availability at the right time. But it can also be seen from the efficiency of the use of these factors of production, because of these factors there is a productivity gap from the productivity that should be with the productivity produced by farmers (Soekartawi, 1998).

Hypotesis

In this study, the following hypotheses were used: It was suspected that the use of production factors had a positive effect on farm production in Sekernan District, Muaro Jambi Regency.

METHODOLOGY

This research was conducted in Pematang Pulai Village, Sekernan District, Muaro Jambi Regency. The location of the research was taken by purposive sampling (intentionally) on the grounds that Pematang Pulai Village is the village with the highest rice production in Sekernan District. This research was conducted on farmers who are members of farmer groups. The scope of this research is limited to the problem of the level of efficiency in the use of production input factors in lowland rice farming. Production factors analyzed in this study are land, labor, seeds, fertilizers, and pesticides. This research was conducted on March 11 to 28 March 2020.

a. Primary Data

Primary data is obtained directly from farmers directly to answer problems or research purposes. In this study, primary data was obtained directly from farmers who engage in paddy rice farming.

b. Secondary data

Secondary data is obtained indirectly, such as various research reports, reading materials and reports from related agencies that have a relationship with the research to be carried out.

Analisys Method

The data analysis method used in this study is descriptive research analysis and quantitative analysis. Descriptive analysis is used to describe the conditions and situations in the research in the form of statements, which are described in words and to see the general description and characteristics of the respondents in this study (sample farmers). While quantitative analysis is used to analyze the profit function and analysis of the use of input factors for lowland rice production.

$Y_{it} = X_{it} \beta + (V_{it} - U_{it})$: i = 1 ...., N dan t

= 1 .... T Where :

Y_{it} = Production produced by paddy i at time t

X_{it} = Input vector used by rice field -i at time-t.

B = Estimated parameter vector.

U_{it} = Random variable that is assumed to affect the level of technical inefficiency, with internal factors.

V_{it} = Random variable related to external factors.

To calculate efficiency, the following formulation can be used:

1. Price Efficiency (Allocative) Price efficiency explains the relationship between costs and output, price efficiency is achieved if a business is able to maximize profits by equating the Marginal Production Value (NPM) of each factor of production with its price systematically. The formula for price efficiency (allocative) is as follows:

B = Elasticity of production

X = Number of factors of production X Y = Production

Px = Factor Price of Production

Py = production price

RESULTS
Identified Respondent

Paddy Field Farmers are people who cultivate paddy rice as a source of income. The identification results of 45 sample farmers in Pematang Pulai Village, Sekernan District, Muaro Jambi Regency, can be seen in Appendix 1. The identities referred to include: age, formal education, farming experience, number responsibility of the family and the area of cultivated land.

Age of Respondents

Age will affect one's physical abilities and way of thinking, in general it can be said that someone who is young and physically healthy will have high work productivity, just like a farmer that age will affect work productivity and the ability to think, act and try. Younger farmers will usually be more open and easier to deal with an innovation and have the courage to try innovation. This is in line with the opinion of Soekartawi (1988), who said that the younger the farmers, the more eager they are to learn about what they do not know and the more progressive and responsive they are to innovation..

Respondent's Formal Education

Education is one of the facilitating factors in agricultural development. According to Kardikanto (1993), that Farmers who have received formal education longer will usually be more receptive to various educational changes, including changes in post-harvest implementation of paddy rice. The higher the formal education level of the farmer, the more capable he is of interpreting the innovations received or not by the farmer regarding the acceptance of new things, it just depends on his level of intellectuality.

Experience Respondent

The respondent's experience in trying to farm rice is the length of time the respondent understands the field of work as a rice farmer, the application of innovation will be relatively easy if the recommended innovation is not too significantly different from the experience of farmers in previous farming.

The Number of Family Dependent

The number of family dependents is all people who are in the same house or outside the house but are dependents head of family. The large number of family dependents will affect the allocation of the use of income earned by the head of the family and decision making in farming. In addition, the large number of family dependents will affect the level of consumption, which in turn will have implications for work productivity, the ability to invest and innovate.

The Area of Arable

The area of arable land in question is the area of land managed for paddy rice plants. According to Samsudin (1987) that farmers who have large land areas allow them to accept innovations to be implemented in their farming fields, while farmers who have narrow land will find it difficult to accept innovations.

Land

Land is an area cultivated by farmers to cultivate paddy rice in one crop season calculated in units of Ha. The land area cultivated by sample farmers varies from 0.16 Ha - 0.7 Ha.

Seed

The use of seeds ranges from 9 kg to 35 kg or the average use of these seeds is 25 kg (Appendix 3). This shows that the farmers have used the seeds in accordance with the recommended technology, which for superior varieties is between 22-30 kg/ha.

Fertilizer Use

The use of inorganic fertilizers, namely Urea, SP-36 and KCl per farmer varies between 45 kg to 75 kg or the average use of the above fertilizers amounts to 61.44 kg (Appendix 3).

Pesticides

The use of pesticides per farmer varies from 0.5 liters to 1.5 liters or an average of 1.0 liters. This shows that the use of pesticides in pest control is still below the standards applied in IPM, namely 3 -3.5 liters.

The Alocation of Labor

The allocation of labor varies greatly depending on the area of land cultivated and usually the wider the land cultivated, the greater the allocation of labor used. Data on the allocation of labor can be seen
pada Tabel. 15 dibawah ini :

Table 2. HKSP Workforce Deployment

No	Amount HKSP	Frequency	Percentage (%)
1	6-9	11	24,44
2	10-13	16	35,56
3	14-17	18	40,00
	Amount	**45**	**100**

Source: Results of Processed Primary Data, 2020

DISCUSSION

Discussion in research is we have take to methode how to growth production of paddy in Sekernan with several factors as influenced.

CONCLUSIONS AND RECOMMENDATIONS

Conclution

Based on the results of the research and discussion, the following conclusions can be drawn:

1. The influence of the input use of production factors for paddy farmers in Sekernan District, Muaro Jambi Regency is a land area of 0.63521862 and a workforce of 0.044675791 giving a positive influence while seeds are -0.30512884, fertilizers are -0.28402427 and pesticides of -0.12713943 gives a negative effect. This shows that land area and labor factors have a significant effect on lowland rice production in the village of Pematang Pulai, Sekernan District, Muaro Jambi Regency. Muaro Jambi Regency is in the form of technical efficiency of 99.00%.

Recommendation

1. To increase the production of lowland rice farming, it is necessary to utilize better (effective and efficient) production factors.

2. For farmers to be able to use production factors as well as possible so that later they can increase production, and for local governments to carry out counseling activities related to lowland rice cultivation techniques to increase farmers' knowledge in order to get better production.

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