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PERCEPTION OF PADDY RICE FARMERS TOWARDS THE USE OF IRRIGATION FACILITIES IN IMPROVING REGIONAL FINANCIAL PERFORMANCE "Case Study of Indonesia and Malaysia"

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Abstract

This study aims to determine the perception of farmers towards the use of irrigation facilities in an effort to increase the income of paddy rice farmers (Case Study: Paddy Rice Farmers in Indonesia and Malaysia. The method used with the Likert scale is a scale used to measure, behavior, attitude or opinion of a person or group regarding a social event or phenomenon. The results of the study show that the perception of paddy rice farmers towards the use of irrigation facilities in Indonesia, that the highest Score Index is found in the use of fertilizer (98%). With the use of irrigation facilities, it is more economical to use fertilizers. The respondents' answers were 9 (30%) farmers who stated that they strongly agreed, 12 (40%) stated that Sutuju and 9 (30%) stated that they were Neutral and the lowest score index was in the use of pesticides (75%). The use of irrigation facilities can reduce the use of pesticides. The respondents' answers were 5 (16.7%) farmers who stated that they strongly agreed, 15 (50%) stated that Sutuju and 10 (33.3%) stated that they were neutral. The perception of paddy rice farmers towards the use of irrigation facilities in Malaysia, that the highest Score Index is found in the land area (98%). The more land planted with rice paddies using irrigation facilities, the higher the production. The respondents' answers were 28 (93.3%) farmers who stated that they strongly agreed, 2 (6.67%) stated that they agreed and it was easier to manage land that uses irrigation facilities. The respondents' answers were 26 (86.6%) farmers who stated Strongly Agree, 4 (13.3%) stated Sutuju, so with the hope that all rice farmers want irrigation and the lowest score index is in the use of pesticides (78%).

Keywords: Perception, Irrigation, Paddy Rice, Financial Performance, Indonesia, Malaysia

INTRODUCTION

The current era of globalization that plays an important role in the national structure is the agricultural sector, because when there is an economic crisis, only the agricultural sector is able to survive in the face of the crisis than other sectors, the agricultural sector also functions to meet the needs of the population, as a livelihood of the community, as well as increasing farmers' income as a provider of raw materials for industry, providing business opportunities as well as job opportunities, while the agricultural subsector that functions an important function in Indonesia is the food crop subsector with rice commodities.

The majority of people in Indonesia work in the agricultural industry because it is basically an agrarian country. The process of agricultural development provides insight into the evolution of the agricultural industry. This is intended so that the development of agricultural processes becomes a successful agricultural industry. Indonesia's economy as a whole is highly dependent on the agricultural sector. Considering that Indonesia has the fourth largest population in the world, it is natural for the Indonesian people to always pay attention to food security [1]. Some irrigation systems in Indonesia were developed to irrigate rice fields, although not all rice fields are currently served by irrigation systems. Irrigation or irrigation is an effort to bring water by making buildings and channels to rice fields or fields in an orderly manner and disposing of water that is no longer needed, after the water is used properly [2]. Irrigation means utilizing and regulating water

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available in rivers or other sources by using irrigation networks for the purpose of agricultural irrigation. Excessive water in the soil needs to be drained, so as not to interfere with plant life. The construction of irrigation canals is very necessary to support the provision of food, so that the availability of water in the irrigation area will be fulfilled even though the irrigation area is far from the surface water source (river). Irrigated rice fields are the main factor in achieving national food security. Since Indonesia is no longer able to achieve food self-sufficiency, various policy changes have been made by the government in irrigation management.

Members of the Water Users Farmers Association (P3A) in the North Sumatra region have a dependence on irrigation canals because they cannot grow rice if they do not use irrigation canals. P3A is a form of farmer group at the village level, which was established with the aim of regulating and managing irrigation on agricultural land so that it runs well and in an orderly manner. Irrigation water is one of the important means in agricultural cultivation to increase agricultural production and farmers' income. Irrigation water must be managed and utilized effectively and efficiently. Government Regulation No. 77 of 2001 concerning irrigation states that irrigation management is carried out by prioritizing the interests of the farming community as water users as decision-makers and the main actors in irrigation management for which they are responsible. The implementation of P3A activities has been carried out in every region of North Sumatra. The P3A activities carried out make farmers as participants who participate in carrying out the program activities

The expansion of rice harvest and production in North Sumatra during the 2017-2021 period has increased by an average of 0.92 percent per year. This increase is due to the increase in rice production with an average growth of 1.12 percent per year. The districts that contributed the largest area of rice harvest in 2017 were Simalungun Regency with 103,338 Ha or 14.41 percent, followed by Deli Serdang Regency with 74,926 Ha or 10.45 percent, then Langkat Regency with 65,995 Ha or 9.20 percent, Serdang Bedagai Regency with 66,548 Ha or 9.28 percent, Mandailing Natal Regency with 38,794 Ha or 5.41 percent, and Batubara Regency with 34,118 Ha or 4.76 percent of the total rice harvest area in North Sumatra. Deli Serdang Regency is famous for agricultural products, namely paddy rice, although Deli Serdang Regency contributes the second largest rice harvest area in North Sumatra, but rice production for Deli Serdang Regency has always experienced a significant increase.

Rice is also a staple food crop for most of the population in Asia. Therefore, rice is considered a strategic crop that guarantees political stability and economic growth for many countries in the region. Similarly, rice and rice have also become the main focus of Malaysia's self-sufficiency agenda. The Malaysian government recognizes that food security is almost as important as rice security, thus making rice production self-sufficiency part of national policy objectives [3].

Rice in Malaysia is considered the most important food crop under the food subsector for two reasons. First, rice is a staple food for most of the population. On average, Malaysian adults consume 2.5 plates of white rice per day [4]. Second, for the rice farming community, this crop provides the main source of income and livelihood, especially for small-scale farmers and landless agricultural workers. About 40% of farmers depend only on rice cultivation.Thus, Malaysia's rice and rice policy is formulated primarily to achieve three objectives: promoting fair income for farmers, ensuring price stability, and ensuring supply security for consumers. In general, rice security mainly reflects national food security, where achieving rice self-sufficiency is an important factor in promoting food security at the national level [5][6].

The state of Kelantan is the best agricultural country in Malaysia after Sarawak, Sabah, Pahang, Johor, and Perak [7]. The state is located in the north of Peninsular Malaysia which borders Thailand and has a few tropical monsoon climates. This climate is suitable for rice farming and makes Kelantan one of the main rice producing countries in Malaysia. Although a 2022 report shows Penang as the most rice-producing country in Malaysia, Kelantan still has a significant position in agriculture [8]. This is because in addition to the tropical monsoon climate, Kelantan

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also has a large and fertile land to carry out rice planting activities.The purpose of this article is to examine the influence of production factors on income, analyze the amount of farmers' profits, and analyze the feasibility of irrigated and non-irrigated rice farming in Indonesia – Malaysia Recognizing air resources is essential to improve agricultural yields and food security. Rice fields use irrigation networks, using water from rivers to pass through several weirs so that water flows into the rice fields. A functioning and efficient irrigation network must be planned so that it can be used in accordance with its designation. This goal has been achieved in several ways, including the use of boreholes to access deep groundwater sources as well as surface water sources such as rivers and reservoirs. Plants need soil or rice fields to grow in addition to air. Rice fields and decent farmland are both easy to plant, fertile, and have enough air. Planning of irrigation networks will have an impact on the level of good service for farmers and the provision of water in rice fields [9].

The land area that gets water through the irrigation network is known as the irrigation network. Irrigation Networks The network relies on additional growth elements associated with input production in addition to its management in order to increase and stabilize paddy rice production. Soil tillage requires the most water compared to the stages of maintenance, harvesting, fertilization and household integrity. Farmers first need irrigation functions before planting, and if there is not enough water available, the land in the rice fields cannot be cultivated, resulting in lower crop yields [10]. The management of the irrigation system is the right and responsibility of the water user farmer association (P3A). The management of irrigation networks in each province in North Sumatra has several differences in managing or using irrigation facilities. There are farmers who are negligent in managing irrigation facilities properly, resulting in uneven water and reducing the quality of paddy rice farming in irrigation network areas. In addition, the obstacles faced by farmers in irrigation facilities in the North Sumatra region are P3A which sometimes does not run irrigation facilities programs so that the use of irrigation facilities is also hampered.

Perception is said to be a process of arranging, choosing or interpreting people, objects, events, situations or activities. Perception is an active process, it means that something can depend on which aspects to pay attention to and how to organize and interpret the things that are considered. Actually, perception and communication are two things that are interconnected. Through the perspective that a person has, it will affect the choice to communicate, both in terms of language and response [11]. Perception is the starting point from which an answer can be constructed, which allows conclusions to be derived from responses. Farmer perception is the farmer's response to something or the farmer's obstacles in farming [12]. Farmers are existentialist residents who invest time and mind in agriculture while making decisions during the farming process. Farmers are rational economic people. Despite being rational, farmers always face a lack of support from village institutions [13].

Farmer behavior is the daily interaction of farmers with their families, communities, and workplace environment reflected in their behavior. Behavior is a repetitive pattern of thinking and activity. This behavior is permanent. This behavior will not change. Such behavior will also have an impact on how farmers manage crops since the beginning of civilization. Since its inception, agricultural management has focused on providing daily necessities. Farmers have needs because they are encouraged or motivated [14]. There has been a lot of research conducted on how farmers behave in managing their farmland. From these many studies, it can be concluded that farmers as producers basically carry out farming activities to earn a decent income to meet the needs of their families. Many elements, including policy issues, climate and weather, as well as other external factors, influence farmers to maintain their performance in running their farming businesses. In general, the farming family can manage these aspects [15].

Farmers' perceptions can be seen from the success of the objectives of P3A activities, if the perception of farmers is good or positive, then P3A activities will continue, but if the perception of farmers is not good or negative, the activities will not continue. Irrigation management is carried out by administrators who are not P3A members, so those who judge the good or bad irrigation management are P3A member farmers. A person's perception will determine how the real form of

implementing irrigation management in the field by that person, or in other words, the perception of farmers who participate in P3A activities will determine the sustainability of these activities

This study aims to determine the perception of farmers towards the use of irrigation facilities in an effort to increase the income of paddy rice farmers (Case Study: Paddy Rice Farmers in Indonesia and Malaysia.

IMPLEMENTATION METHOD

Location and Time of Research

This research was carried out in Indonesia, precisely in 3 districts, namely Deli Serdang, Serdang Bedagai and Simalungun Regencies and the State of Malaysia, Kelantan. The research was conducted for 2 months, starting from October 2023 to November 2023.

Types and Data Sources

This type of research is Quantitative survey. Data The primary data used in this study are primary data and secondary data. Primary data was obtained from the field through observation & interviews with farmer respondents who used questionnaires, while data secondary was obtained from related agencies, namely the North Sumatra Provincial Agriculture Office, BPS North Sumatra.

Population and Sample

The population in this study is members of the P3A farmer group totaling 60 farmers. The sample of each region is 10 farmers in 3 districts and 30 samples are irrigated rice farmers in the State of Kelantan, Malaysia. Sampling uses the purposive method.

Data Analysis Methods

Data Analysis Method To analyze the first, second and third problems using descriptive analysis, namely providing clear and in-depth problem information interpreted according to the results of research conducted based on theoretical support related to the object of research to measure farmers' perceptions by analyzing using the Likert scale method. The likert scale is a scale used to measure, behavior, attitude or opinion of a person or group regarding a social event or phenomenon (Sugiyono, 2013).

Based on the operational definition that has been established by the research. Presenting a scale of liket or level of agreement to the stagmen in the questionnaire is classified as follows:

a. Strongly Agree
b. Agree
c. Neutral
d. Disagree
e. Strongly disagree

For the suspension of the measurement of each variable below with the answer of each statement in the form of a Liket scale using a scale of 5, namely:

a. Strongly Agree: value 5
b. Agree : value 4
c. Neutral : value 3
d. Disagree: value 2
e. Strongly disagree : value 1

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According to (Junaedi, 2012) in Mathematical interval class The categorization is:

$$i = \frac{a - b}{k}$$

Caption: i = Class Interval
a = Maximum Number of Scores
b = Minimum Number of Scores
k = Number of Classes/Categories.

Farmer Likert Answer Score Interval

Score index	Information
0% - 19,99%	Strongly disagree
20% - 39,99%	Disagree
40% - 59,99%	Neutral
60% - 79,99%	Agree
80% - 100%	Strongly Agree

RESULTS AND DISCUSSION

Farmers' Perception of the Existence of Irrigation Facilities in Indonesia and Malaysia

1. Farmers' Perception of Agricultural Land

a. Indicators of perception of paddy fields in Indonesia

Table 1. Recapitulation of Respondents' Answers to Land

No.	SNA		NA		N		A		Sa		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	4	13,3	6	20,0	20	66,7	30	100
2	0	0	0	0	0	0	2	6,67	28	93,3	30	100

Source : Primary Data Processed, Year 2023

From Table 1 above, farmers' answers to the use of irrigation facilities related to land owned by paddy farmers were obtained Question (1). It is easier to manage land that uses irrigation facilities with non-irrigation. The respondents' answers were 20 (66.7%) farmers who stated that they strongly agreed, 6 (20%) stated that agree and 4 (13.3%) stated that they were neutral Question (2). The more land planted with rice paddies using irrigation facilities, the higher the production. The respondents' answers were 28 (93.3%) farmers who stated that they strongly agreed, 2 (6.67%) stated that they agreed From all the answers to the farmers' perception instrument on the use of irrigation facilities with the benchmark of land area, it can be seen that the score index of the answers obtained, namely: 88.4% and stated Strongly Agree

b. Indicators of Perception of Paddy Farming Land in Malaysia

Table 2. Recapitulation of Respondents' Answers to Land

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	0	0	4	13,3	26	86,6	30	100
2	0	0	0	0	0	0	2	6,67	28	93,3	30	100

Source : Primary Data Processed, Year 2023

From Table 2 above, farmers' answers to the use of irrigation facilities related to land owned by paddy farmers were obtainedQuestion (1). It is easier to manage land that uses irrigation facilities. The respondents' answers were 26 (86.6%) farmers who stated Strongly Agree, 4 (13.3%) stated Sutuju, so with the hope that all rice farmers want irrigation Question (2). The more land planted with rice paddies using irrigation facilities, the higher the production. The respondents' answers were 28 (93.3%) farmers who stated that they strongly agreed, 2 (6.67%) stated that they agreed. From all the answers to the farmers' perception instrument on the use of irrigation facilities with the benchmark of land area, it can be seen that the answer score index obtained, namely: 98% and stated **Strongly Agree**

2. Perception of Paddy Rice Farmers on the Use of Fertilizer

a. Indicators of perception of fertilizer use in paddy rice farming in Indonesia

Table 3. Recapitulation of Respondents' Answers to the Use of Fertilizer

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	8	26,7	10	33,3	12	40,0	30	100
2	0	0	0	0	6	20,0	16	53,3	8	26,7	30	100

Source : Primary Data Processed, Year 2023

From Table 3 above, farmers' answers to the use of irrigation facilities related to the use of fertilizers are obtained Question (1). It is more economical to use fertilizer with irrigation facilities. The answers of the respondents were 12 (40%) farmers who stated that they strongly agreed, 10 (33.3%) stated that Sutuju and 8 (26.7%) stated that they were neutral Question (2). The fertilizer used is of higher quality with irrigation facilities. The respondents' answers were 8 (26.7%) farmers who stated that they strongly agreed, 16 (53.3%) stated that they agreed, and 6 (20%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with the benchmark of fertilizer use, it can be seen that the answer score index obtained, namely: 98% and stated **Strongly Agree**

b. Indicators of perception of fertilizer use in paddy rice farming in Malaysia

Table 4. Recapitulation of Respondents' Answers to the Use of Fertilizer

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	9	30,0	12	40,0	9	30,0	30	100
2	0	0	0	0	12	40,0	10	33,3	8	26,7	30	100

Source : Primary Data Processed, Year 2023

From Table 4 above, farmers' answers to the use of irrigation facilities related to the use of fertilizers are obtained Question (1). It is more economical to use fertilizer with the use of irrigation facilities. The answers of the respondents were 9 (30%) farmers who stated that they strongly agreed, 12 (40%) stated that Sutuju and 9 (30%) stated that they were neutral Question (2). The fertilizer used is of higher quality with the use of irrigation facilities. The respondents' answers were 8 (26.7%) farmers who stated that they strongly agreed, 10 (33.3%) stated that they agreed, and 12 (40%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with the benchmark of land area, it can be seen that the answer score index obtained, namely: 78.6% and stated **Agree.**

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3. Perception of Paddy Rice Farmers Towards the Use of Pesticides

a. Indicators of perception of pesticide use in paddy rice farming in Indonesia

Table 5. Recapitulation of Respondents' Answers to the Use of Pesticides

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	10	33,3	15	50,0	5	16,7	30	100
2	0	0	0	0	12	40,0	16	53,3	2	6,67	30	100

Source : Primary Data Processed, Year 2023

From Table 5 above, farmers' answers to the use of irrigation facilities related to the use of pesticides are obtained Question (1). It is more economical to use pesticides with the use of irrigation facilities. The answers of respondents were 5 (16.7%) farmers who stated that they strongly agreed, 15 (50%) stated that Sutuju and 10 (33.3%) stated that they were neutral Question (2). The pesticides used are of higher quality with the use of irrigation facilities. The respondents' answers were 2 (6.7%) farmers who stated Strongly Agree, 16 (53.3%) stated Agree, 12 (40%) stated Neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with the benchmark of pesticide use, it can be seen that the answer score index obtained, namely: 75% and stated **Agree**

b. Indicators of perception of pesticide use in paddy farming in Malaysia

Table 6. Recapitulation of Respondents' Answers to the Use of Pesticides

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	7	23,3	17	56,7	6	20,0	30	100
2	0	0	0	0	10	33,3	15	50,0	5	16,7	30	100

Source : Primary Data Processed, Year 2023

From Table 6 above, farmers' answers to the use of irrigation facilities related to the use of pesticides are obtained Question (1). It is more economical to use pesticides with the use of irrigation facilities. The answers of the respondents were 6 (20%) farmers who stated that they strongly agreed, 17 (56.7%) stated that Sutuju and 7 (23.3%) stated that they were neutral Question (2). The pesticides used are of higher quality with the use of irrigation facilities. The answers of respondents were 5 (16.7%) farmers who stated that they strongly agreed, 15 (50%) stated that they agreed, and 10 (33.3%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with the benchmark of pesticide use, it can be seen that the score index of the answers obtained, namely: 78% and stated **Agree**

4. Perception of Paddy Rice Farmers on the Use of Farming Equipment

a. Indicators of perception of equipment use in paddy rice farming in Indonesia

Table 7. Recapitulation of Respondents' Answers to the Use of Equipment

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	4	13,3	20	66,7	6	20,0	30	100
2	0	0	0	0	2	6,7	24	80,0	4	13,3	30	100

Source : Primary Data Processed, Year 2023

From Table 7 above, farmers' answers to the use of irrigation facilities related to the use of farming equipment are obtained Question (1). It is more economical to maintain equipment costs with the use of irrigation facilities. The answers of the respondents were 6 (20%) farmers who stated that they strongly agreed, 20 (66.7%) stated that Sutuju and 4 (13.3%) stated that they were neutral

Question (2). The use of equipment can streamline work on irrigation system farming. The respondents' answers were 4 (13.3%) farmers who stated that they strongly agreed, 24 (80%) stated that they agreed, and 2 (6.7%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with the benchmark of equipment use, it can be seen that the answer score index obtained, which is: 81.3% and stated **Strongly Agree**

b. Indicators of perception of equipment use in paddy farming in Malaysia

Table 8. Recapitulation of Respondents' Answers to the Use of Equipment

No.	SN A		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	2	6,7	18	60,0	10	33,3	30	100
2	0	0	0	0	1	3,3	22	73,3	7	23,3	30	100

Source : Primary Data Processed, Year 2023

From Table 8 above, farmers' answers to the use of irrigation facilities related to the use of farming equipment are obtained Question (1). It is more economical to maintain equipment costs with the use of irrigation facilities. The answers of the respondents were 10 (33.3%) farmers who stated that they strongly agreed, 18 (60%) stated that Sutuju and 2 (6.7%) stated that they were neutral Question (2). The use of equipment can streamline work on irrigation system farming. The answers of respondents were 7 (23.3%) farmers who stated that they strongly agreed, 22 (73.3%) stated that they agreed, and 1 (3.3%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with a benchmark for the use of equipment, it can be seen that the answer score index obtained, which is: 84.6% and stated **to be Strongly Agree**

5. Perception of Paddy Rice Farmers Towards the Use of Labor

a. Indicators of perception of labor use in paddy rice farming in Indonesia

Table 9. Recapitulation of Respondents' Answers to the Use of Labor

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	5	16.7	21	70,0	4	13,3	30	100
2	0	0	0	0	3	10,0	18	60,0	9	30,0	30	100

Source : Primary Data Processed, Year 2023

From Table 9 above, farmers' answers to the use of irrigation facilities related to the use of labor are obtained Question (1). The use of labor is less with the existence of irrigation facilities. The answers of the respondents were 4 (13.3%) farmers who stated that they strongly agreed, 21 (70%) stated that Sutuju and 5 (16.7%) stated that they were neutral Question (2). The provision of labor wages is less with the use of facilities in irrigation system farming. The respondents' answers were 9 (30%) farmers who stated that they strongly agreed, 18 (60%) stated that they agreed, and 3 (10%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with a benchmark for labor use, it can be seen that the answer score index obtained, which is: 81.6% and was declared **Strongly Agreed.**

b. Indicators of perception of labor use in paddy rice farming in Malaysia

Table 10. Recapitulation of Respondents' Answers to the Use of Labor

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	3	10	14	46,7	13	43,3	30	100
2	0	0	0	0	4	13,3	21	70	5	16,7	30	100

Source : Primary Data Processed, Year 2023

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From Table 10 above, farmers' answers to the use of irrigation facilities related to the use of labor are obtained Question (1). The use of labor is less with the existence of irrigation facilities. The answers of the respondents were 13 (43.3%) farmers who stated that they strongly agreed, 14 (46.7%) stated that Sutuju and 3 (10%) stated that they were neutral Question (2). The provision of labor wages is less with the use of facilities in irrigation system farming. The respondents' answers were 5 (16.7%) farmers who stated that they strongly agreed, 21 (70%) stated that they agreed, and 4 (13.3%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with a benchmark for the use of labor, it can be seen that the score index of the answers obtained, which is: 83.6% and stated **to be Strongly Agree**

5. Perception of Paddy Rice Farmers on Income

a. Indicators of perception of the income of paddy rice farmers in Indonesia

Table 11. Recapitulation of Respondents' Answers to the Use of Labor

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	9	30	11	36,7	10	33.3	30	100
2	0	0	0	0	6	20	10	33,3	14	46,7	30	100

Source : Primary Data Processed, Year 2023

From Table 11 above, farmers' answers to the use of irrigation facilities are obtained in relation to the income received by farmers Question (1). Farmers' income increases with the use of irrigation facilities. The answers of respondents were 10 (33.3%) farmers who stated that they strongly agreed, 11 (36.7%) stated that Sutuju and 9 (30%) stated that they were neutral Question (2). Rice production in rice fields has increased with the use of irrigation facilities so that farmers receive higher incomes. The answers of respondents were 14 (46.7%) farmers who stated that they strongly agreed, 10 (33.3%) stated that they agreed, and 6 (20%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with income benchmarks, it can be seen that the answer score index obtained, which is: 83% and stated **Strongly Agree**

b. Indicators of Perception of the Income of Irrigated Paddy Rice Farmers in Malaysia

Table 12. Recapitulation of Respondents' Answers to Income

No.	SNA		NA		N		A		SA		Sum	
	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%	Shoes	%
1	0	0	0	0	3	10	12	40	15	50	30	100
2	0	0	0	0	5	16,7	16	53,3	9	30	30	100

Source : Primary Data Processed, Year 2023

From Table 12 above, farmers' answers to the use of irrigation facilities are obtained in relation to the income received by farmers Question (1). Farmers' income increases with the use of irrigation facilities. The answers of the respondents were 8 (26.7%) farmers who stated that they strongly agreed, 12 (40%) stated that Sutuju and 6 (20%) stated that they were neutral Question (2). Rice production in rice fields has increased with the use of irrigation facilities so that farmers receive higher incomes. The respondents' answers were 6 (20%) farmers who stated that they strongly agreed, 16 (53.3%) stated that they agreed, and 8 (26.7%) stated that they were neutral From all the answers to the farmers' perception instrument on the use of irrigation facilities with income benchmarks, it can be seen that the answer score index obtained, namely: 85.3% and stated **Strongly Agree**

Table 13. Results of the Respondent Score Index in Indonesia and Malaysia

No	Variables measured	Perception Score Index of Irrigation Paddy Rice Farmers in Indonesia (%)	Score Category	Perception Score Index of Irrigation Paddy Rice Farmers in Malaysia (%)	Score Category
1	Land	88,4	Strongly Agree	98,0	Strongly Agree
2	Fertilizer	98,0	Strongly Agree	78,6	Agree
3	Pesticides	75,0	Agree	78,0	Agree
4	Equipment	81,3	Strongly Agree	84,6	Strongly Agree
5	Workforce	81,6	Strongly Agree	83,6	Strongly Agree
6	Income	83,0	Strongly Agree	85,3	Strongly Agree
Sum		**507,3**		**508,1**	
Flattening		**84,6**		**84,7**	

Perception of Paddy Rice Farmers Towards the Use of Irrigation Facilities in Indonesia and Malaysia

Based on each benchmark, it can be seen that each score index in each variable benchmark is 84.6% in Indonesia and 84.7% in Malaysia. The details of the benchmark of perception of paddy rice farmers towards the use of irrigation facilities in Indonesia on the Land Area reaching 88.4% means that they strongly agree with the existence of irrigation, the benchmark for providing fertilizer has a score index of 98% which means they strongly agree, the pesticide benchmark has a score index of 75% which means agree, the benchmark for farming equipment has a score index of 81.3% which means strongly agree, The labor force benchmark has a score index of 81.6% which means strongly agree and the income benchmark has a score index of 83% which means strongly agree. The highest score index is found in the fertilizer use benchmark (98%). With the use of a good irrigation system, it is expected to be able to streamline the use of fertilizers, the results of the study concluded that for the average land area of farmers in Indonesia has less land than farmers in Malaysia

The details of the benchmark of perception of paddy rice farmers towards the use of irrigation facilities in Malaysia on a land area of 98% means that they strongly agree with the existence of irrigation, the benchmark for fertilizer application has a score index of 98% which means they strongly agree, the pesticide benchmark has a score index of 76.6% which means they agree, the benchmark for farming equipment has a score index of 78% which means they strongly agree, The labor force benchmark has a score index of 83.6% which means strongly agree and the income benchmark has a score index of 85.3% which means strongly agree. The highest score index occurred in the benchmark of Land Area (98%). In increasing farming income, the land area is very influential to increase farmers' income. In addition to land area, capital and production can also affect the income earned by farmers. The land area for rice farmers is one of the factors that affect the increase in yield income. Villagers whose main activity is farming depend on their land.

Thus, the area of land he owns is one of the indicators of the amount of income received. If the land area increases, farmers' income will also increase and vice versa, if the land area used is small or narrow, then the income earned by farmers will also decrease because the rice planted is small. So, the relationship between land area and farmers' income has a positive relationship. Land area is the entire area where the planting or planting process is carried out, the land area guarantees

the amount or yield that will be obtained by the farmers. The area of land will affect the scale of the business, where this business will ultimately affect the efficiency of an agricultural business or not. The larger the land used as an agricultural business, the more inefficient the land is. This is based on the idea that the size of the land results in efforts to take actions that lead to efficiency will be reduced. On the other hand, on narrow land, efforts to supervise the use of production factors are getting better, so that agricultural businesses are more efficient.

CONCLUSIONS

1. The perception of paddy rice farmers towards the use of irrigation facilities in Indonesia, that the highest Score Index is found in the use of fertilizers (98%). With the use of irrigation facilities, it is more economical to use fertilizers. The respondents' answers were 9 (30%) farmers who stated that they strongly agreed, 12 (40%) stated that Sutuju and 9 (30%) stated that they were Neutral and the lowest score index was in the use of pesticides (75%). The use of irrigation facilities can reduce the use of pesticides. The answers of respondents were 5 (16.7%) farmers who stated that they strongly agreed, 15 (50%) stated that Sutuju and 10 (33.3%) stated that they were neutral
2. The perception of paddy rice farmers towards the use of irrigation facilities in Malaysia, that the highest Score Index is found in the land area (98%). The more land planted with rice paddies using irrigation facilities, the higher the production. The respondents' answers were 28 (93.3%) farmers who stated that they strongly agreed, 2 (6.67%) stated that they agreed and it was easier to manage land that uses irrigation facilities. The respondents' answers were 26 (86.6%) farmers who stated Strongly Agree, 4 (13.3%) stated Sutuju, so with the hope that all rice farmers want irrigation and the lowest score index is in the use of pesticides (78%).

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