Article Type

Strengthening Local Food Systems: The Impact of Farmer Groups on Rice Production in Kaloling Village, Indonesia

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Abstract: Farmer groups have not yet played an optimal role, as evidenced by groups whose members are less active, groups that have difficulty retaining members, while some farmer groups are actually progressing, and many members only use the group to obtain subsidized fertilizer and plant seeds. This study aims to determine the role of farmer groups in increasing rice production in Kaloling Village, East Sinjai District, Sinjai Regency. The research method used is a quantitative descriptive method. Sampling was conducted using simple random sampling with 80 respondents. The analysis revealed that the role of farmers' groups as learning classes and production units does not have a significant impact on rice production in Kaloling Village. This is attributed to low levels of farmer education, inappropriate learning methods, and farmers' tendency to farm individually. On the other hand, the role of farmer groups as a vehicle for cooperation among group members does influence rice production. The cooperation established creates a collaborative environment that encourages farmers to increase rice production.

Keywords: Farmers, Farmer groups, Rice, Role

1. Introduction

Indonesia is an agrarian country with the majority of its population working as farmers. The government aims to achieve national development by strengthening the agricultural sector, particularly through the development of rice commodities, which are the main source of national food supply (Handayani et al., 2024). Efforts to increase agricultural production are carried out through farmer empowerment, one of which is the formation of farmer groups in rural areas. Farmers' groups serve as learning platforms, production units, and cooperation tools that support farmers' independence and well-being (Sinaga et al., 2019). The formation of farmer groups is an agricultural development effort that serves to facilitate agricultural production and provide a solid platform in rural areas, as well as a place to strengthen cooperation among farmers in the group to face various threats, challenges, obstacles, and disturbances (Sinaga et al., 2023).

In South Sulawesi Province, farmer groups are formed directly by organized farmers for farming activities. The Ministry of Agriculture here describes farmer groups as a collection of farmers, ranchers, or planters formed based on common interests and environmental conditions (social, economic, resources) as well as good relationships to improve and develop the businesses of their members (Suhaedi, 2018). South Sulawesi is one of the national food-producing regions with very high rice production potential (Ilyas, 2018). Bone Regency is recorded as the largest contributor to rice production, while Sinjai Regency also shows significant contributions.

However, data indicates fluctuations in harvested area and rice production in Sinjai District over the past three years, with a declining trend in productivity in some areas (BPS, 2024).

Sinjai Timur Subdistrict, particularly Kaloling Village, is one of the areas with great agricultural potential. Farmers in Kaloling Village primarily cultivate rice, with data indicating an increase in production in 2024 alongside the expansion of cultivated land. The following is the rice production data for Kaloling Village, Sinjai Timur Subdistrict, Sinjai District:

Table 1. Planting, Harvesting, Production, and Productivity Data for Rice Crops in Kaloling Village, Sinjai Timur Subdistrict, Sinjai District, 2020-2024

Year	Planting area (Ha)	Harvesting area (Ha)	Production(Ton GKP)	Productivity (Kw/Ha)
2020	250,00	250,00	1.063,75	42,55
2021	250,00	250,00	1.159,00	46,36
2022	250,00	250,00	1.146,75	45,87
2023	230,00	230,00	1.139,88	49,56
2024	290,00	290,00	1.445,36	49,84

Source: Village Extension Officer, Kaloling Village, Sinjai Timur Sub-district

In general, farming groups in Kaloling Village face challenges due to limited working capital. Although farming groups are recognized as important platforms for learning, production units, and cooperation tools. However, over time, it has been observed that some members remain inactive, some groups struggle to retain their members, while others continue to progress. Additionally, there is a tendency for group members to use the group solely as a means to obtain subsidized fertilizers and plant seeds. Farmers' groups possess significant potential but also face various challenges, such as climate change and government support.

Given these issues, this study focuses on the role of farmer groups by exploring in depth their structural and functional contributions in promoting increased rice production. The primary focus of the research will be on the role of farmer groups as learning communities, production units, and platforms for inter-group collaboration.

The objective of this study is to determine the role of farmer groups in increasing rice production in Kaloling Village, Sinjai Timur Sub-district, Sinjai District. The benefits of this research include expanding knowledge and understanding in the field of agriculture, particularly regarding the role of farmer groups, and providing insights for other researchers conducting further studies on farmer groups and rice production. Additionally, this research can offer practical recommendations for farmer groups to enhance production and strengthen networks among farmer groups, agricultural extension officers, and related institutions to mutually support production improvements.

2. Methodology

2.1. Research Location

This research was conducted in Kaloling Village, East Sinjai District, Sinjai Regency, from February to June 2025. The research location was selected purposively (intentionally). The consideration was that there are 12 farmer groups in Kaloling Village. The selection of Kaloling Village as the research location was also based on the fact that the majority of the community's livelihood is as farmers.

2.2. Sampling Technique

The population in this study consists of all farmers who are members of farmer groups, totaling 411 individuals across 12 groups. To determine the sample size, this study used the Slovin formula. The sample size in this study was 80 respondents. The sampling technique used in this study was probability sampling, specifically simple random sampling.

2.3. Types and Sources of Data

The types of data used in this study were primary and secondary data. Primary data in this study were obtained directly from farmer group members through interviews using a prepared questionnaire. Secondary data in this study was

obtained through theses, dissertations, journals, and data obtained from the Sinjai Timur District Agricultural Extension Office and the Sinjai Regency Food Crops, Horticulture, and Plantation Office.

2.4. Data Collection Techniques

The data collection techniques used in this study were observation, questionnaire distribution, interviews, and documentation. Observation is the observation and recording of data on phenomena or symptoms being studied (R. Handayani, 2020). A questionnaire is a data collection technique carried out by providing a set of questions or statements to respondents to answer (Riyanto & Hatmawan, Andhita, 2020). An interview is an interaction in which there is an exchange of rules, responsibilities, feelings, beliefs, motives, and information (R. Handayani, 2020). Data collection through documentation is carried out by collecting data from records relevant to the issue being studied.

2.5. Research Variables

In this study, there are two research variables, namely:

a) The Role of Farmer Groups, the role of farmer groups is an independent variable (free), a variable that influences and can be measured from the role of farmer groups, namely learning classes, production units, and cooperation platforms between groups in Kaloling Village, East Sinjai District, Sinjai Regency.
b) Increase in Rice Production: The increase in rice production is the dependent variable, the variable that is influenced in the relationship between the two variables. The dependent variable is often referred to as the dependent variable, which is the variable that is influenced or the result of the independent variable.

2.6. Research Instrument Analysis

The research instruments used in this study are validity tests and reliability tests. Validity tests are conducted to determine the validity level of the tools (questionnaires) used for data collection. Reliability tests are performed to assess the consistency of the measurement tools used; in other words, the tools produce consistent results when used repeatedly at different times.

2.7. Data Analysis Techniques

The data analysis technique used in this study is quantitative descriptive analysis. This study will analyze the role of farmer groups in increasing rice production, including aspects such as farmer groups acting as learning groups, production units, and platforms for cooperation among farmer groups. This descriptive analysis is conducted using percentages in the form of frequency tables or through data tabulation sourced from questionnaire results. The data obtained through the questionnaire is measured using a Likert scale (Ridwansyah, 2019). This research was analyzed using:

a) Classical assumption test. The classical assumption test aims to determine the conditions of the data used in the research. The normality test is to test whether in the regression model, the dependent variable and independent variable both have a normal distribution or not. The regression analysis model in this study requires assumption tests on the data, including normality tests, multicollinearity tests, heteroscedasticity tests, and correlation tests.
b) Multiple linear regression. Multiple linear regression is an equation model that explains the relationship between one dependent variable/response (Y) and two or more independent variables/predictors (X1, X2, ... Xn). The purpose of multiple linear regression testing is to predict the value of the dependent variable/response (Y) when the values of the independent variables/predictors (X1, X2,…Xn) are known (Yuliara, 2016).
c) Hypothesis testing. The hypothesis tests used in this study are the T-test, F-test, and coefficient of determination.

3. Results and Discussion

Kaloling Village is a village located approximately 7 km from the capital of Sinjai Regency and approximately 5 km from East Sinjai Subdistrict, with an area of approximately 574.85 ha. It consists of various types of land, including: dry land (236 hectares), residential land (182 hectares), rice fields (333 hectares), gardens (54 hectares), and plantations (2 hectares). Kaloling Village is divided into four hamlets: Kaloling Hamlet, Bonto Kamase Hamlet, Bainang Hamlet, and Bilalang Hamlet. The boundaries of Kaloling Village are as follows:

North : Saukang Village
East : Samataring Subdistrict
South : Aska Village
West : Salohe Village

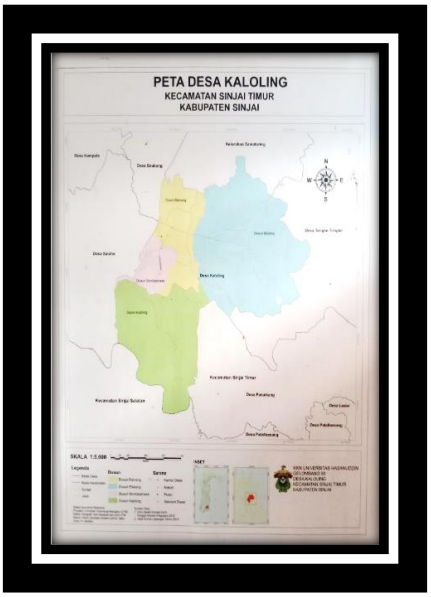

Figure 1. Map of kaloling village

3.1. Respondent Characteristics

Respondent characteristics are profiles of the research subjects that can provide answers/research results regarding the role of farmer groups in increasing rice production in Kaloling Village. The respondents in this study were 80 respondents who were members of farmer groups in Kaloling Village. The respondent characteristics studied included age, gender, number of dependents, and highest level of education.

3.1.1. Respondent Characteristics Based on Age

Data on respondents based on age aims to describe the identity of respondents based on age, which was used as the research sample. The characteristics of the respondents can be seen in the following table.

Table 2. Respondent characteristics based on age

Age	Number	Persentage (%)
20-30	1	1,25%
31-40	13	16,25%
41-50	29	36,25%
51-60	22	27,5%
61-70	8	10%
71-80	6	7,5%
80-90	1	1,25%
Total	**80**	**100%**

Source: primary data processed in 2025

Farmers in Kaloling Village are generally elderly. As shown in Table 2, the majority of farmers are over 40 years old, with the largest age group being 41-50 years old, comprising approximately 29 people or around 36.25%. The age of respondents has a significant impact on their physical ability to work and think. Younger farmers tend to have higher capabilities compared to older farmers. Those who are still young are more open to innovation and new suggestions, enabling them to gain valuable experience in agricultural activities more quickly. On the other hand, older farmers have better capacity in managing agricultural businesses and tend to be more cautious in making decisions, thanks to the experience they have accumulated over the years.

3.1.2. Respondent Characteristics Based on Gender

The gender of farmers influences farming practices, with males generally having higher productivity than females. Respondent characteristics based on gender can be seen in the table below:

Tabel 3. Respondent Characteristics Based on Gender

Gender	Number	Persentage (%)
Male	64	80%
Female	16	20%
Total	**80**	**100%**

Source: primary data processed in 2025

3.1.3. Respondent Characteristics Based on Number of Dependents

The description of the number of family members of farmers aims to understand the extent of the financial burden borne by the family. Farmer families typically consist of the farmer himself as the head of the household, his wife, children, and other members living together under one roof. Most farmers in Kaloling Village, East Sinjai District, Sinjai Regency, utilize labor from their own family members, which indirectly becomes the responsibility of the head of the household to meet the family's living needs. To survive, rice farmers have their main source of income from rice farming (Hikmah, et al., 2023). The characteristics of the respondents can be seen in the Table 4 below.

Table 4. Characteristics of Respondents Based on Number of Dependents

Number of dependents	Total	Percentage (%)
Tidak ada tanggungan	3	3,75
1	9	11,25
2	20	25
3	25	31,25
4	14	17,5
5	8	10
6	1	1,25
Total	**80**	**100%**

Source: primary data processed in 2025

Based on Table 4, the number of dependents in families varies in Kaloling Village. The dominant number of dependents is 3, with 25 respondents and a percentage of 31.25%. This is followed by 2 dependents, with 20 respondents and a percentage of 25%. The smallest number of dependents is 6, with 1 respondent and a percentage of 1.25%. The number of family dependents will affect income, as the more dependents there are, the greater the needs that must be met.

3.1.4. Respondent Characteristics Based on Education

The level of education generally has a significant influence on farmers' mindsets. Farmers with higher levels of knowledge tend to be quicker to adopt innovations and technological changes. This is evident in rice farming practices, where farmers with higher education are more responsive in applying modern technology, such as the use of tractors, pesticide sprayers, rice harvesters, and other equipment. Thus, changes in farming methods will align with advancements in agricultural technology.

Table 5. Characteristics of Respondents Based on Education

Education	Number	Percentage (%)
Not in school	2	2,5%
Elementary school	43	53,75%
SMP	8	10%
High school	24	30%
Srata 1 (S1)	3	3,75%
Total	80	100%

Source: primary data processed in 2025

Table 5 shows that the majority of respondents' formal education levels are at the elementary school level, with 43 people accounting for 53.75%, junior high school level with 8 people accounting for 10%, and senior high school level with 624 people accounting for 30%. Meanwhile, for the community with a bachelor's degree, there are 3 people with a percentage of 3.75%, and those who have never received education are 2 people with a percentage of 2.5%.

3.2. Validity test

The validity test was conducted to determine the validity of a questionnaire for each variable by comparing the calculated r value with the table r value. The table r for the degree of freedom (df) = n-2, where n is the number of samples. With df = 80-2 and alpha = 0.05, the table r value is 0.2199. If the calculated r value is greater than the table r value, then the indicator statement is valid. The results of all statements regarding the learning class (X1), production unit (X2), cooperation vehicle among group members (X3), and rice production (y) are valid, indicating that r-count > r-table.

3.3. Reliability Test

Table 6. Reliability Test

Variable	Cronbach's Alpha	Reliability Standard	Notes
Learning class (X1)	0.918	>0.60	Reliable
Production unit (X2)	0.898	>0.60	Reliable
Collaboration platform among members (X3)	0.890	>0.60	Reliable
Rice production (Y)	0.856	>0.60	Reliable

Source: processed primary data 2025

Based on the table above, the reliability test on the statements of learning class (X1), production unit (X2), cooperation platform among group members (X3), and rice production (Y) is declared reliable, as the results show that the reliability standard is greater than 0.60.

3.4 Classical assumption test

The following classical assumptions are used:

3.4.1. Normality test

The normality test was conducted using the non-parametric Kolmogorov-Smirnov (K-S) statistical test. The data is normally distributed, as evidenced by the significant value of the Kolmogorov-Smirnov (K-S) test, where the asymptotic significance value (asymp sig) is 0.200 or higher than 0.05 (0.200 > 0.05). Provided that the Kolmogorov-Smirnov (K-S) significance value is greater than 0.05, the research data meets the normality requirement.

3.4.2. Multicollinearity Test

This test aims to determine whether there is correlation between independent variables in the regression model. In a good regression model, there should be no correlation between independent variables. To detect the presence of multicollinearity in the regression model, the tolerance value or variance inflation factor (VIF) can be examined (Sudariana & Yoedani, 2022). The results of the multicollinearity test in this study are presented in the following table.

Table 7. Multicollinearity Test

Model	Tolerance	VIF
Learning class (X1)	0.372	2.690
Production unit (X2)	0.254	3.940
Collaboration platform among group members (X3)	0.221	4.520

Source: SPSS Version 25 output.

The table above shows that there is no multicollinearity in the learning class (X1), production unit (X2), and collaboration platform among group members (X3) because the tolerance value is > 0.1 and the VIF value is < 10.

3.4.3. Heteroscedasticity Test

The heteroscedasticity test aims to test whether there is unequal variance of residuals from one observation to another in the regression model. If the variance of residuals from one observation to another remains constant, it is called homoscedasticity, and if it differs, it is called heteroscedasticity. A good regression model is one that is homoscedastic or does not exhibit heteroscedasticity (Sudariana & Yoedani, 2022). The results of the heteroscedasticity test in this study are presented in the following table.

Table 8. Heteroscedasticity Test

Variable	β	Sig.
Learning class (X1)	0.020	0.729
Production unit (X2)	0.008	0.928
Cooperation vehicle between group members (X3)	-0.0069	0.385

Source: SPSS Version 25 output

The table shows that the Glejser test values for the subvariables are greater than 0.05. Therefore, it can be concluded that for the regression model, there is no heteroscedasticity in the subvariables, as evidenced by the sig. values being greater than 0.05 (> 0.05).

3.5. Multiple linear regression analysis

Table 9. Multiple Linear Regression

Model	Unstandardized coefficients
	B
Constant	5.958
Learning class (X1)	0.124
Production unit (X2)	0.114
Cooperation vehicle between group members (X3)	0.504

Source: SPSS VERSION 25 output

The regression coefficients used are Standardized Coefficients. Based on these values, the following linear equation can be derived:

$$Y = 5.958 + 0.124\ X1 + 0.114\ X2 + 0.504\ X3$$

a. The regression coefficient for the learning class subvariable is positive at 0.124. This indicates that as the learning class improves, rice production also increases. In other words, the better the learning class, the higher the rice production.
b. The regression coefficient for the production unit subvariable is positive at 0.114. This indicates that as the production unit increases, rice production also increases. This means that the better the production unit, the higher the rice production.
c. The regression coefficient for the subvariable of cooperation among group members is positive at 0.504. This indicates that if cooperation among group members increases, rice production also increases. This means that the better the cooperation among group members, the higher the rice production.

3.6. Hypothesis testing

3.6.1. T-test

Table 10. T-Test analysis

Model	t	Sig.
constant	5.781	0.000
Learning Class (X1)	1.421	0.159
Production Unit (X2)	1.087	0.280
Cooperation Among Group Members (X3)	4.196	0.000

Source: SPSS Version 25 output

Based on Table 10, a decision can be made. To determine the significance of the influence of independent variables on dependent variables partially or separately. With a confidence level of 0.05. If 0.05 is greater, then Ho is accepted, and if 0.05 is smaller, then Ha is accepted and Ho is rejected. As seen in Table 30, the results are as follows:

1. The coefficient for X1 is 0.124 with a t-value of 1.421, resulting in a significance level of 0.159 > 0.05. Therefore, Ho is accepted, meaning that the learning class does not influence rice production.
2. The coefficient for X2 is 0.114 with a t-value of 1.087 and a significance level of 0.280 > 0.05, so Ho is accepted, meaning that production units do not affect rice production.
3. The coefficient for X3 is 0.504 with a t-value of 4.196 and a significant result of 0.000 < 0.05. Therefore, Ha is accepted, meaning that cooperation among group members affects rice production.

3.6.2. F-test

Table 11. F-test

Model	F	Sig.
1 Regression	54.1777	0.000

Source: SPSS version 25 output

In Table 11, based on the results of the F test in the table above, the calculated F value is 54.177 with a significant result of 0.000 < 0.05. Since the significance is less than 0.05, Ho is rejected and Ha is accepted, meaning that the role of the farmer group variable simultaneously influences the increase in rice production.

3.6.3. Determination Coefficient Test (R^2)

The coefficient of determination (R^2) test aims to determine the extent to which the role of the farmer group, as influenced by the variables of learning class (X1), production unit (X2), and cooperation among group members, affects the increase in production quantity (Y). This coefficient of determination is indicated by the adjusted R-square (R^2). The regression form is as follows:

Table 12. Coefficient of Determination

Model	R square	Adjusted R square
1	0.681	0.669

Source: SPSS Version 25 output

Table 12 shows the coefficient of determination, which is 0.669, indicating that the variables—learning class, production unit, and collaboration among group members—contribute an influence of 68.1%.

This study was conducted by examining two variables with three independent sub-variables, namely learning classes, production units, and cooperation between group members in terms of their influence on increasing rice production. The respondents in this study were members of the farmer group in Kaloling Village, Sinjai Timur Subdistrict, Sinjai District, with a sample size of 80 respondents, yielding the following results:

a) The Influence of the Role of the Farmer Group as a Learning Class on Rice Production Improvement

From the results of the T-test, the calculated t-value was 1.421 < t-table 1.990 (t-table value for n=80 with significance 0.05) with significance of 0.159 > 0.05. Therefore, the null hypothesis (Ho) is accepted and the alternative hypothesis (Ha) is rejected, meaning that the role of farmer groups as learning classes does not influence rice production in Kaloling Village, Sinjai Timur Sub-district, Sinjai District.

It is known that the majority of farmers in Kaloling Village have a primary school (SD) education background. Low educational levels affect farmers' ability to understand or apply the learning materials presented. Respondents in this study were not actively participating in the training sessions conducted, leading to farmers having limited understanding of agricultural techniques or new innovations that could enhance rice production. Farmers were unable to apply new knowledge or skills in the field, resulting in less efficient agricultural practices and limitations in making appropriate decisions regarding farm management due to insufficient information and knowledge.

Farmers' groups have not been able to identify and design farmers' learning needs. Although farmers' groups have brought agricultural extension workers to Kaloling Village, the effectiveness of extension depends on learning methods that are not suitable for farmers' learning styles, for example, farmers prefer practical learning in the field rather than theory in the classroom. The frequency and continuity of meetings may be insufficient to build maximum understanding. Additionally, learning outcomes cannot be implemented due to insufficient economic support and inadequate infrastructure. Farmers facing capital and facility constraints will find it difficult to apply the knowledge gained from learning sessions to significantly increase rice production.

As a result, low participation in training or farmer group meetings and the inability of the group to meet farmers' needs contribute to the suboptimal role of farmer groups as learning platforms, thereby failing to have a significant impact on increasing rice production in Kaloling Village.

Farmers' groups can function effectively if they have implemented regular planning and conduct meetings. This allows farmers to learn from the meetings to address the challenges they face or serve as a platform to access information sources (Supu et al., 2022). Farmers' groups as learning platforms must be able to discipline members by actively participating in meetings.

This result aligns with the partial hypothesis stating that the role of farmers' groups as learning classes does not influence rice production. This is consistent with research conducted (Wibawanti et al., 2022) indicating that the role of farmers' groups as learning platforms and production units does not impact agricultural productivity. This finding is in line with the results of research in Kaloling Village, which indicates that although farmer groups have undergone a learning process, this is not sufficient to increase rice production. The similarity of this research is that it reinforces the argument that the level of education and inappropriate learning methods are obstacles. This research differs from research.

b) The Influence of the Role of Farmer Groups as Production Units on Rice Production Increases

From the results of the T-test, the t-value was 1.087 > t-table 1.990 (t-table value for n=80 with significance 0.05) with significance of 0.280 > 0.05. Therefore, the null hypothesis (Ho) is accepted and the alternative hypothesis (Ha) is rejected, meaning that the role of farmer groups as production units does not influence rice production in Kaloling Village, Sinjai Timur Sub-district, Sinjai District.

Farmers in Kaloling Village tend to operate their farming businesses individually and do not fully utilize the potential of farmer groups as production units. This is due to a lack of trust in collective management; farmers prefer to rely on their own abilities and methods. Additionally, there is a lack of interest in collective mechanisms such as profit sharing and joint capital management. Furthermore, farmer groups may not yet have sufficient capacity.

According to research (Sasaerila et al., 2023), the formation of farmer groups significantly assists members in accessing seed, fertilizer, and equipment assistance, which simplifies and reduces the expenses incurred by each member in their farming activities. Agricultural machinery assistance from the government is provided directly to Farmer Groups (Poktan). This assistance requires special attention from the government due to several factors, including: assistance is often centrally managed by the group leader or core management, so ordinary members have limited access to or information about available assistance; government assistance is limited and cannot cover all farmer group members, so priority is often given to groups considered most in need or those with closer access to decision-makers.

This aligns with research (Bello, 2022) showing that farmers' groups do not function as they should because farmers indirectly depend on the government for fertilizer and seed assistance. Thus, the role of capital providers is

crucial in supporting rice farmers' production outcomes. This result aligns with the partial hypothesis stating that the role of farmer groups as production units does not influence rice production. This is consistent with research conducted by Wawan Syahbudin (2015), which found that farmer groups are less active in encouraging farmers to obtain or increase agricultural production. This indicates that production units are not yet optimal in increasing rice production.

c) The Influence of the Role of Farmer Groups as a Vehicle for Cooperation Among Group Members on Rice Production

From the results of the T-test, the t-value was 4.196 > t-table 1.990 (t-table value for n=80 with significance 0.05) with significance of 0.000 < 0.05. Therefore, the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted, meaning that the role of farmer groups as a vehicle for cooperation among group members influences rice production in Kaloling Village, Sinjai Timur Sub-district, Sinjai District.

Cooperation among farmer group members in Kaloling Village creates a positive environment, and a collaborative atmosphere encourages members to help one another and share practical experiences, which directly drives the increase in rice production. This cooperation is practical and its benefits are directly felt by farmers, unlike learning classes, which are more conceptual, and production units, which require more complex management.

These results align with the partial hypothesis stating that the role of farmer groups as a platform for cooperation among group members influences rice production. The findings of this study are consistent with research conducted by W. A. Handayani et al. (2019), which found a significant relationship between the role of farmer groups as a platform for collaboration and rice farming productivity. Farmer groups establish good collaborative relationships among members, characterized by mutual familiarity, trust, and cooperation, as well as clear task distribution among members. In the study by Tambuwun et al. (2021), the role of farmer groups as a vehicle for cooperation in farming shows that farmer groups are a place to strengthen cooperation among farmers within the group, between groups, and with other parties.

4. Conclusion

Based on the research findings and data obtained regarding the role of farmer groups as learning classes, production units, and platforms for cooperation among group members in increasing rice production in Kaloling Village, Sinjai Timur Sub-district, Sinjai District, from the results of multiple linear regression analysis, the role of farmer groups has a positive influence on rice production.

The role of farmer groups as learning classes does not significantly influence rice production. The main obstacles are the low educational level of farmers, learning methods that are not suitable for farmers' needs and learning styles, and low active participation of farmers in group learning activities. The role of farmer groups as production units also does not have a significant impact on rice production. This is due to farmers' tendency to operate independently, lack of trust in collective management, and the farmer groups' insufficient capacity to manage production units effectively. The role of farmer groups as a platform for cooperation among group members has a significant impact and makes a tangible contribution to increasing rice production. Cooperation among farmer group members creates a positive collaborative atmosphere, mutual support, sharing of practical experiences, and facilitates access to and procurement of production facilities together, thereby increasing the efficiency and production of farming businesses.

The strength of farmer groups in Kaloling Village lies in the social aspect, namely solidarity and cooperation among members. Revitalizing the role of farmer groups as learning classes and production units remains necessary, but must be adapted to the actual conditions of farmers in the field. Active support from the village government, agricultural extension workers, and stakeholders is crucial to strengthen the role of farmer groups so they can become the driving force behind increased rice production and farmer welfare in Kaloling Village. Thus, the success of production increases through farmers' groups in Kaloling Village depends heavily on strengthening cooperation among group members, accompanied by improvements in education, training, and collective and professional management of production units.

Future development strategies for farmers' groups must prioritize cooperation as the foundational pillar of rural agricultural development.

Farmer groups are expected to improve the quality of the learning process by adapting practical learning methods or methods that suit farmers' learning styles. It is hoped that farmer groups will improve their capacity to manage production units and enhance facilities for the provision of production inputs, technology, and capital so that members do not operate their farming businesses individually. Farmer groups should also expand the scope of cooperation not only in production activities but also in marketing and managing rice yields so that the benefits of cooperation are felt by every group member.

The government should provide adequate support in the form of facilities, access to capital, and agricultural infrastructure that supports the performance of farmer groups. Policies that support the strengthening of farmer group institutions, including transparency and accountability in the management of assistance. Researchers are encouraged to expand their knowledge or use this as necessary literature for further research.

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