# Factors that Affect the Participation of Non-Tidal Swamp Rice Farmers in Implementing Floating Rice Cultivation in Hulu Sungai Selatan Regency

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**Abstract: In 2019, the potential area of swamp land in South Kalimantan was 525,029 ha. However, the non-tidal swamp land still could not be utilized optimally by local farmers. A concrete step taken by the Provincial Government of South Kalimantan to maximize swamp land was the cultivation of floating rice in Hulu Sungai Selatan Regency. The purpose of this study was to analyze the factors that affect non-tidal swamp rice farmers in implementing floating rice cultivation in Hulu Sungai Selatan Regency, as well as to analyze the magnitude of costs, revenue, net income, and the feasibility of floating rice farming and conventional rice farming in Hulu Sungai Selatan Regency. Based on the results of the binary logit regression analysis at the 95% confidence level, the participation of non-tidal swamp rice farmers in implementing floating rice cultivation was affected by complexity, planting intensity, farmer participation in disseminating and/or providing technical guidance for the floating rice program, and knowledge of floating rice cultivation. In floating rice farming, the average total cost was IDR 2,098,020 per farming unit or IDR 42,693,817 per hectare, and the average revenue was IDR 2,288,097 per farming unit or IDR 46,575,414 per hectare, with an r slash c ratio value of 1.09. In conventional rice farming, the average total cost was IDR 8,247,407 per farming unit or IDR 8,495,418 per hectare, and the average revenue was IDR 10,753,629 per farming unit or IDR 11,077,006 per hectare, with an r/c ratio of 1.30. Based on the independent t-test results, there was no significant difference in average net income between floating rice farming and conventional rice farming.**

**Keywords:** *Floating Rice, Binary Logit Regression, Participation Factors, Net Income.*

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## I. INTRODUCTION

One of the sub-optimal land types that can be utilized for the development of the agricultural sector in Indonesia is non-tidal swamp land. In general, agricultural activities that can be carried out on non-tidal swamps include lowland rice farming, secondary crops, and horticulture (vegetables). Non-tidal swamp land in Indonesia is distributed across three major islands, namely Sumatra, Kalimantan, and Papua. Given the potential of non-tidal swamp land, its development for rice cultivation has been initiated since 1930 through the construction of polders, one of which was realized in Kalimantan Island. South Kalimantan Province has become the province with the largest and most potential non-tidal swamp area for development in Kalimantan Island (Ritung, 2011).

The Provincial Government of South Kalimantan optimized swamp land through floating rice cultivation using styrofoam raft media (21 holes per unit), which has been implemented since 2021 in Hulu Sungai Selatan Regency. Floating rice cultivation is a technique of planting rice using a growing medium (raft or styrofoam) that can float in order to adapt to inundated land. Hulu Sungai Selatan Regency is categorized as a medium non-tidal swamp area, covering 87,562 to 103,893 ha, with an inundation period of 3 to 6 months per year (Bappelitbangda HSS, 2024). This cultivation enables the use of waterlogged land during the rainy season, which is difficult to control, allowing farmers to plant rice only once a year. The development locations are in the Daha Selatan, Daha Utara, and Daha Barat Districts, using appropriate technologies and a participatory approach to increase the productivity of non-tidal swamp land.

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## II. RESEARCH METHODOLOGY

### *A. Research Location and Period*

This research was conducted in Hulu Sungai Selatan Regency, and the research process began in December 2024 and continued until September 2025.

### *B. Population and Sample*

The respondents for this study consisted of 31 floating rice farmers, selected as the sample in each district, using a non-probability sampling method based on total sampling, following recommendations from BPP Daha Barat, BPP Daha Selatan, and BPP Daha Utara regarding the willingness of farmer members. In addition, 31 conventional rice farmers were selected using a probability sampling method through simple random sampling, distributed across several villages located in Daha Barat District, Daha Selatan District, and Daha Utara District.

### *C. Data Analysis Method*

Descriptive analysis was needed to collect descriptive data, namely, categorized social phenomena, in the form of field notes, population documents, photographs, and other literature during the research period. This method was used to describe the implementation of the floating rice cultivation program in the Daha Barat, Daha Selatan, and Daha Utara Districts of Hulu Sungai Selatan Regency. The logit regression analysis in this study aimed to identify the factors affecting non-tidal swamp rice farmers' implementation of floating rice cultivation in the Daha Barat, Daha Selatan, and Daha Utara Districts of Hulu Sungai Selatan Regency. Binary logistic regression was used with a dummy dependent variable (0 and 1). In this study, the dummy variable was 1 if the farmer used floating rice cultivation technology and 0 if not. The model states that the natural logarithm of the inverse of the conditional probability of *Y* given *Xn* is described as a linear function consisting of a constant term and four explanatory variables. In verbal form, this indicates that the logarithmic expression is determined by the intercept and the coefficients associated with $X_1$, $X_2$, $X_3$, and $X_4$ along with an error component. The description about each variables are:

$\ln Y$ : the probability of participation in the non-tidal swamp rice farmers in floating rice cultivation, where

$Y_i = 1$ for participating in the floating rice program
$Y_i = 0$ for not participating in the floating rice program

$X_1$ : complexity
1 = floating rice cultivation is easy to implement
0 = floating rice cultivation is difficult to implement

$X_2$ : planting intensity
1 = more than once a year
0 = at most once a year

$X_3$ : farmer participation in the dissemination and/or technical guidance of the floating rice program
1 = farmers have attended dissemination and/or technical guidance
0 = farmers have never attended dissemination and/or technical guidance

$X_4$ : farmers' knowledge of floating rice cultivation
1 = knowledgeable
0 = not knowledgeable

$\beta_0$ : constant
$\beta_1 \ldots \beta_4$ : estimated coefficients of the independent variables
$\varepsilon$ : error term

Hosmer and Lemeshow (2000) stated that parameter testing needs to be conducted simultaneously and partially. The G-test is used for simultaneous testing, while the Wald test is used for partial testing. In this study, the testing of the regression coefficients using the G-test was carried out with the following hypothesis:

$H_0$ : $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$, meaning that none of the independent variables significantly affect the dependent variable.
$H_1$ : at least one independent variable has $\beta_j \neq 0$; j = 1, 2, 3, 4, meaning that at least one independent variable significantly affects the dependent variable.

Partial testing was carried out using the Wald test, which assesses whether parameter estimators affect the response variable. The hypotheses used in this study were:

$H_0$ : $\beta_j = 0$ the independent variable does not have a significant effect on the dependent variable.
$H_1$ : $\beta_j \neq 0$; the independent variable has a significant effect on the dependent variable.

Next, it was necessary to analyze the net income received by rice farmers in Hulu Sungai Selatan Regency. The net farming income was calculated by subtracting total revenue from total costs, which included both explicit and implicit costs, and can be written as follows (Kasim, 1997:26).

In calculating the net farming income of seasonal crops (such as rice), the cost concept used includes explicit and implicit costs because, in farming activities, farmers as managers are not explicitly paid (Kasim, 1997).

The net income of floating rice farmers and conventional rice farmers in the Daha Barat, Daha Selatan, and Daha Utara Districts of Hulu Sungai Selatan Regency would be tested for significance using a t-test to compare the two groups. Subtracting costs from income yields net farm income. The hypotheses used in this study were as follows:

$H_0$: there is no significant difference between the average net income of floating rice farming and conventional rice farming.

$H_1$: there is a significant difference between the average net income of floating rice farming and conventional rice farming.

Lastly, to assess the feasibility of farming activities using the floating rice cultivation system, a revenue cost ratio analysis was conducted. The purpose was to determine

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whether the floating rice farming system practiced by non-tidal swamp rice farmers was profitable or not. This study found that floating rice farming is considered successful when the R/C ratio is > 1 because each additional expenditure can generate income greater than the costs incurred. Floating rice farming cannot operate when the R/C ratio is < 1, because each additional expenditure generates lower income. If the R/C ratio is 1, floating rice farming is in a break-even condition or obtains a normal profit.

## III. ANALYSIS

### *A. Respondent Profile*

Table 1. Characteristics of Respondents

| Characteristics | Frequency | Percentage (%) |
|---|---|---|
| ***Gender*** | | |
| Man | 44 | 70.97 |
| Woman | 18 | 29.03 |
| ***Age*** | | |
| 0 – < 15 years | 0 | 0 |
| 15 – ≤ 64 years | 54 | 87.10 |
| > 64 years | 8 | 12.90 |
| ***Farming Experience*** | | |
| <10 years | 17 | 27.42 |
| 10 - 19 years | 7 | 11.29 |
| 20 – 29 years | 11 | 17.74 |
| 30 – 39 years | 11 | 17.74 |
| 40 – 49 years | 11 | 17.74 |
| >50 years | 5 | 8.06 |
| ***Education Level*** | | |
| No schooling | 3 | 4.84 |
| Did not complete elementary school or equivalent | 8 | 12.90 |
| Elementary school or equivalent | 26 | 41.94 |
| Junior high school or equivalent | 8 | 12.90 |
| Senior high school or equivalent | 14 | 22.58 |
| Bachelor’s degree (equivalent to a bachelor’s/D4) | 3 | 4.84 |
| ***Number of Family Dependents*** | | |
| No dependents | 3 | 4.84 |
| 1–2 persons | 31 | 50 |
| 3–4 persons | 27 | 43.55 |
| ≥ 5 persons | 1 | 1.61 |
| ***Land Status*** | | |
| Own land | 57 | 91.94 |
| Sakap | 5 | 8.06 |

### *B. Binary Logistic Regression Analysis*

Based on the results of the analysis in Table 1 using binary logistic regression on the factors that affect the adoption of floating rice cultivation by non-tidal swamp rice farmers in Hulu Sungai Selatan Regency, it can be seen that the factors of complexity, planting intensity, farmer participation in the dissemination and or technical guidance of the floating rice program, and knowledge of floating rice cultivation had a significant influence at the 5% significance level. Therefore, these factors affected the decision of non-tidal swamp rice farmers in implementing floating rice cultivation.

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Table 2. Results of Binary Logistic Regression Analysis

| ***Variable*** | ***B*** | ***Wald*** | ***Sig.*** | ***Exp (B)*** |
|---|---|---|---|---|
| Complexity ($X_1$) | -1.293 | 4.437 | 0.035* | 0.274 |
| Planting intensity ($X_2$) | 1.441 | 4.737 | 0.030* | 4.226 |
| Farmer participation in dissemination and/or technical guidance of the floating rice program ($X_3$) | 1.346 | 3.892 | 0.049* | 3.843 |
| Farmer knowledge of floating rice cultivation ($X_4$) | 1.412 | 4.368 | 0.037* | 4.103 |
| Constant | -1.684 | 2.712 | 0.090 | 0.186 |
| Note : *Significant at the 5% significance level | | | | |

*C. Significance Testing of Parameter Estimation in a Simultaneous Manner*

The significance level used in this study was 5%, corresponding to a confidence level of 95%. The simultaneous testing in this study used the G-test statistic by following the chi-square distribution ($\lambda^2$). The hypotheses used in this study were as follows:
$H_0$ : $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$, meaning that none of the independent variables significantly affect the dependent variable.

$H_1$ : at least one independent variable has $\beta_j \neq 0$; j = 1, 2, 3, 4, meaning that at least one independent variable significantly affects the dependent variable.

The testing criteria were as follows:

- If the value of $\lambda^2_{statistik} > \lambda^2_{(\alpha;k)}$ or Sig. < α, then $H_0$ is rejected and $H_1$ is accepted. This indicates that at least one independent variable has a significant effect on the dependent variable.
- If the value of $\lambda^2_{statistik} < \lambda^2_{(\alpha;k)}$ or Sig. > α, then $H_0$ cannot be rejected and $H_1$ is rejected. This indicates that none of the independent variables has a significant effect on the dependent variable.

Table 3. Simultaneous Testing of Parameter Significance

| ***Chi-square*** | | | ***df*** | ***Sig.*** |
|---|---|---|---|---|
| ***Step 1*** | *Step* | 16.037 | 4 | 0.003 |
| | *Block* | 16.037 | 4 | 0.003 |
| | *Model* | 16.037 | 4 | 0.003 |

Based on the chi-square distribution with the degree of freedom (df) determined by the number of independent variables (k), the chi-square table value($\lambda^2_{(0.05;4)}$) obtained was 9.488. Berdasarkan Tabel 3, menunjukkan nilai *chi*-Based on Table 3, the chi-square statistical value was 16.037. Thus, the value of $\lambda^2_{statistik}$. Based on Table 3, the chi-square statistical value was 16.037. Thus, the value of $\lambda^2_{(0.05;4)}$. In addition, the Sig. value (0.003) was smaller than the α value (0.05). Based on these results, it can be concluded that $H_0$ can be rejected and $H_1$ can be accepted. This means that the independent variables in the model simultaneously had a significant effect on the dependent variable. Therefore, all variables used in the model collectively had a significant effect on the decision of non-tidal swamp rice farmers in implementing floating rice cultivation.

*D. Significance Testing of Parameter Estimation in a Partial Manner*

The significance level used in this study was 5% (95% confidence level). The hypotheses used in this study were as follows:
$H_0$: $\beta j = 0$; the independent variable does not have a significant effect on the dependent variable.
$H_1$ : $\beta_j \neq 0$; the independent variable has a significant effect on the dependent variable.

The testing criteria were as follows:

- If the value of $W_j > \lambda^2_{(\alpha;1)}$ or Sig. < α, then $H_0$ can be rejected and $H_1$ can be accepted. This indicates that the j-th independent variable has a significant effect on the dependent variable.
- If the value of $W_j < \lambda^2_{(\alpha;k)}$ or Sig. > α, then $H_0$ cannot be rejected and $H_1$ is rejected. This indicates that the j-th independent variable does not have a significant effect on the dependent variable.

The Wald test statistic follows the chi-square distribution with a degree of freedom (df) of 1. Thus, the chi-square table value ($\lambda^2_{(0.05;1)}$) obtained was 3.841. Based on the results of the Wald statistical test in Table 2, the partial testing results showed that the participation of non-tidal swamp rice farmers in implementing floating rice cultivation was affected by complexity, planting intensity, farmer participation in the dissemination and or technical guidance of the floating rice program, and knowledge of floating rice cultivation.

*E. Costs, Revenue, and Net Income of Rice Farming with Floating Rice Cultivation in Hulu Sungai Selatan Regency*

Implicit costs are costs that farmers only calculate, not incur. In calculating the cost of privately owned land per hectare, the prevailing land rental price was used, namely IDR 240,000.00. Meanwhile, explicit costs are those actually incurred by farmers in a given planting season. Explicit costs are real, measurable, and clearly recorded in financial reports or bookkeeping. The details of implicit and explicit cost components are presented in Table 4.

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Table 4. Implicit and Explicit Cost Components

| No | Cost Component | Per Farming Unit (IDR) | Per Hectare (IDR) | Percentage (%) |
|---|---|---|---|---|
| | | ***Implicit Costs*** | | |
| 1 | Own land rental value | 11,796 | 240,000 | 1 |
| 2 | Family labor (unpaid labor) | 794,214 | 16,159,573 | 99 |
| Total | | 806,009 | 16,399,573 | 100 |
| | | ***Explicit Costs*** | | |
| 1 | Equipment depreciation | 312,468 | 6357,663 | 24.18 |
| 2 | Fertilizer | 705,558 | 14,355,730 | 54.60 |
| 3 | Seeds | 16,258 | 330,797 | 1.26 |
| 4 | Pesticides/chemicals | 181,653 | 3,696,031 | 14.06 |
| 5 | “Lamuk” soil | 65,894 | 1,340,712 | 5.10 |
| 6 | Hired labor | 10,484 | 213,311 | 0.81 |
| Total | | 1,292,314 | 26,294,243 | 100 |

Farm revenue is defined as the product of the output obtained and the selling price of the commodity. In this study, the output sold was Harvested Dry Grain (HDG), and its selling price corresponded to the seed variety used. The seed varieties used included Inpari 32 (HDG selling price: IDR 6,500/kg), Mekongga (HDG selling price: IDR 6,500/kg), Siam Madu (HDG selling price: IDR 7,500/kg), and Cakra Buana (HDG selling price: IDR 8,800/kg). Furthermore, net farm income is defined as the income received by farmers, calculated by subtracting total costs from total revenue, including both explicit and implicit costs over one production cycle.

Table 5. Production, Total Cost, and Net Income of the Floating Rice Program

| No | Description | Per Farming Unit | Per Hectare |
|---|---|---|---|
| 1 | Production (kg) | 337.53 | 6,867.67 |
| 2 | HDG selling price (IDR/kg) | 6,787 | 6,787 |
| 3 | Total cost (IDR) | 2,098,020 | 42,693,817 |
| ***Revenue (IDR)*** | | 2,289,097 | 46,575,414 |
| ***Net income (IDR)*** | | 190,773 | 3,881,597 |

*F. Differences in Net Income Between Floating Rice Farming and Conventional Rice Farming in Hulu Sungai Selatan Regency*

This study analyzed the differences in net income between floating rice farming and conventional rice farming using a mean difference test within a single planting season. The data used included total costs, revenue, and income. The average land area for floating rice farming in Hulu Sungai Selatan Regency was 0.049 ha, so the comparison of net income between the two systems was carried out on the same scale.

Table 6. Comparison of Costs, Revenues, and Net Income of Floating Rice and Conventional Rice in 0.049 ha

| No | Component | ***Floating Rice Farming*** | ***Conventional Rice Farming*** |
|---|---|---|---|
| | | Value (IDR) | Value (IDR) |
| 1 | Implicit Costs | | |
| | Own land | 11,796 | 9,937 |
| | Family labor (unpaid labor) | 794,214 | 40,508 |
| Total Implicit Costs | | 806,009 | 50,445 |
| 2 | Explicit Costs | | |
| | Equipment depreciation | 312,164 | 5,924 |
| | Fertilizer | 705,558 | 46,944 |
| | Seeds | 16,258 | 113,790 |
| | Pesticides/chemicals | 181,653 | 39,906 |
| | “Lamuk” soil | 65,894 | - |
| | Hired labor | 10,484 | 157,517 |
| | Land rent | - | 2,095 |
| Total Explicit Costs | | 1,292,011 | 336,117 |
| Total Cost | | 2,098,020 | 416,622 |
| 3 | Revenue | | |
| | Production (kg) | 337.53 | 79.16 |
| | HDG selling price (IDR/kg) | 6,787 | 6,823 |
| Revenue | | 2,288,097 | 543,225 |
| 4 | Net farming income | | |
| | Revenue | 2,288,097 | 543,225 |

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| ***No*** | ***Component*** | ***Floating Rice Farming*** | ***Conventional Rice Farming*** |
|---|---|---|---|
| | | Value (IDR) | Value (IDR) |
| | Total cost | 2,098,020 | 416,622 |
| Total net farming income | | 190,773 | 126,603 |

Significance testing was conducted to analyze whether there was a difference in net income between floating rice farmers and conventional rice farmers. The significance level used in this study was 5% (95% confidence level). The hypotheses used in this study were as follows:

$H_0$ : There is no significant difference between the average net income of floating rice farming and conventional rice farming.
$H_1$ : There is a significant difference between the average net income of floating rice farming and conventional rice farming. The testing criteria were as follows:

- If the Sig.(2-*tailed*) > $\alpha/2$, then $H_0$ cannot be rejected and $H_1$ is rejected. This indicates that there is no significant difference in average net income between floating rice farming and conventional rice farming.
- If the Sig.(2-*tailed*) value < $\alpha/2$, then $H_0$ can be rejected and $H_1$ is accepted. This indicates a significant difference in average net income between floating rice farming and conventional rice farming.

Table 7. Independent sample t-test

| | | ***Levene's Test for Equality of Variances*** | | | | |
|---|---|---|---|---|---|---|
| | | **F** | **Sig.** | **t** | **df** | **Sig. (2-*tailed*)** |
| Net Income | *Equal variances assumed* | 7.221 | 0.009 | 0.819 | 60 | 0.416 |
| | *Equal variances not assumed* | | | 0.819 | 31.087 | 0.416 |

The Levene's Test for Equality of Variances showed an F value of 7.221 with a Sig. value of 0.009. This indicates that the variances differed between floating rice farmers and conventional rice farmers, so the assumption of homogeneity of variances was not met. A significance value of less than 0.05 indicates that there was a difference in income between floating rice farmers and conventional rice farmers. Based on Table 8, the Sig. (2-tailed) value of 0.416 (>0.05) indicates that $H_0$ cannot be rejected and $H_1$ is rejected. This indicates that there was no significant difference in average net income between floating rice farming and conventional rice farming. Although there was an average income difference of IDR 64,170, this result still could not provide a significant indication of the difference between the net income of floating rice farmers and conventional rice farmers. In floating rice farming, there were costs for providing floating raft media, additional growing media, and a larger quantity of organic inputs, resulting in higher production costs than in conventional rice farming.

### *G. Farming Feasibility Analysis*

The R/C ratio analysis was conducted to determine whether rice farming activities undertaken by non-tidal swamp rice farmers in Hulu Sungai Selatan Regency were profitable by calculating the ratio of total revenue to total cost (R/C ratio).

Table 8. Average Revenue Cost Ratio of Floating Rice Farming Compared to Conventional Rice Farming

| **No** | **Component** | **Floating Rice** | **Conventional Rice** |
|---|---|---|---|
| 1 | Revenue per farming unit | | |
| | Revenue (IDR) | 2,288,097 | 10,753,629 |
| | Total cost (IDR) | 2,098,020 | 8,247,407 |
| **R/C ratio per farming unit** | | 1.09 | 1.30 |

Based on the results shown in Table 8, the revenue cost ratio (R/C ratio) of floating rice cultivation was lower compared with conventional rice farming. This was because most of the inputs and labor costs for family and hired labor in floating rice cultivation were provided by related institutions as assistance. Therefore, in this study, all assistance received by the participating farmers was converted using the prevailing market prices.

## IV. CONCLUSION AND SUGGESTIONS

### *A. Conclusion*

From the results of this research, it can be concluded that:

- Based on the results of the analysis using binary logistic regression on the factors that affect the adoption of floating rice cultivation by non-tidal swamp rice farmers in Hulu Sungai Selatan Regency, it was found that, simultaneously, the factors of complexity, planting intensity, farmer participation in the dissemination and or technical guidance of the floating rice program, and knowledge of floating rice cultivation collectively had a

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significant effect on the decision of non-tidal swamp rice farmers in implementing floating rice cultivation. Partial testing showed that the factors of complexity, planting intensity, farmer participation in disseminating and/or providing technical guidance for the floating rice program, and knowledge of floating rice cultivation had a significant effect on non-tidal swamp rice farmers' decision to implement floating rice cultivation.
- The average total cost of floating rice farmers in one planting season was IDR 2,098,020 per farming unit or IDR 42,693,817 per hectare. The average revenue obtained was IDR 2,288,097 per farming unit or IDR 46,575,414 per hectare, with a Revenue Cost Ratio (R/C) value of 1.09, indicating that floating rice farming was feasible to undertake because the Revenue Cost Ratio (R/C) was greater than 1. Meanwhile, in conventional rice farming, the average total cost was IDR 8,247,407 per farming unit or IDR 8,495,418 per hectare. The average revenue per farming unit was IDR 10,753,629, or IDR 11,077,006 per hectare, with a Revenue Cost Ratio (R/C) of 1.30. In terms of cost-effectiveness, the cost-to-revenue ratio for floating rice cultivation reaches 0.92. This ratio indicates that the cost structure absorbs nearly all of the revenues generated. Therefore, from an economic perspective the floating rice system has not yet achieved a cost-effective level. Based on the results of the analysis, Levene’s Test for Equality of Variances showed an F value of 7.221 with a Sig. value of 0.009, indicating that a significance value smaller than 0.05 showed that there was a difference between the income of floating rice farmers and conventional rice farmers. The Sig. (2-tailed) value of 0.416 (>0.05) indicated that $H_0$ could not be rejected and $H_1$ was rejected. Thus, there was no significant difference between the average net income of floating rice farming and conventional rice farming.

*B. Suggestions*

Based on the results and conclusions of the research that have been described, the researchers can provide various suggestions as follows:

- Floating rice cultivation is an adaptive innovation with strong potential in the non-tidal swamp areas of South Kalimantan. However, floating rice cultivation cannot replace conventional rice farming, as it requires a large initial capital investment, particularly for the provision of floating growing media and the supply of fertilizer and chemical inputs. Therefore, floating rice cultivation is not recommended for large-scale or continuous implementation. Its application is more appropriate for specific purposes such as educational demonstrations, entertainment-based activities, or for individuals or institutions with sufficient capital capacity.
- Based on the financial analysis, floating rice cultivation requires a very large initial capital investment, with an R/C ratio that remains relatively low (1.09), making it difficult to develop on a large scale. This cultivation system is not suitable for development aimed at increasing productivity, enhancing food security, expanding employment opportunities, or optimizing land use. Even with capital assistance, floating rice farming remains inefficient because, from an economic standpoint, it is not cost-effective. Consequently, providing capital support would be inadvisable, as it may create dependency on government assistance.

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