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IMPLICATIONS OF SUPERIOR RICE VARIETIES PLANTING ON THE WELFARE OF FARMER HOUSEHOLDS IN TIDAL SWAMPLANDS OF BARITO KUALA REGENCY, SOUTH KALIMANTAN

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ABSTRACT

Efforts to increase rice production to maintain food security, especially rice, continue to be improved, among others by planting superior varieties of rice that can increase IP 100 to IP 200. Efforts to increase production are also carried out by utilizing the optimization of tidal swamps that are widely available in South Kalimantan, especially in Batola Regency which is known as one of the rice granaries in South Kalimantan. In Batola Regency, tidal swamp land has long been used for rice farming, but the varieties planted are local varieties that produce only once a year. With the implementation of the production increase program using superior rice varieties, it is also expected to have an impact on increasing income which in turn can improve the welfare of farmer households, especially farmers in the tidal swampland area of Batola Regency. This study aims to: 1) to analyze the cost, revenue and income of rice farmers who grow superior varieties and local variances; 2) analyzing the welfare of farmer households that grow superior and local rice varieties in tidal swamplands of Batola Regency. The research site in the Batola Regency area was selected for each village in the sub-district whose farmers grow superior varieties of rice and local varieties. Each village was randomly taken by 20 respondents so that the total respondents were 40 people. This classification of prosperous families uses indicators compiled by Euis Sunarti from the Faculty of Human Ecology IPB and commonly used by BKKBN, namely as many as 21 indicators who will be divided into prosperous family groups (KS) I, KS II, KS III and KS III Plus. The results showed that the income of local varieties rice farmers of IDR 21,187,355 was greater than the income of superior varieties rice farmers of IDR 17,039,743. Furthermore, in terms of welfare measured in terms of meeting physical needs, social needs, psychological needs and development needs, it seems that there is not much difference between farmers who farm rice with local varietals and superior varietals, which are both more in the Prosperous Family II stage, although for farmers who plant superior varietals the percentage is higher and some are even in the Prosperous Family III stage. It can be said that by carrying out better farming will be able to achieve a better business that can finally feel a more prosperous life or better living.

KEYWORDS

Superior variety, rice, welfare, tidal lands.

One of the efforts to maintain food security, especially the availability of rice, is to increase rice production. Efforts to increase rice production can be carried out by intensification, or extensification, among others, by optimizing the use of potential lands for rice farming such as the use of tidal swamps. The use of tidal swamps is one of the alternative choices in order to increase rice production which tends to experience a decrease in productivity in irrigated and rainfed rice fields. This is in line with the increasing conversion of agricultural land to the non-agricultural land sector, including what happened in South Kalimantan.

South Kalimantan is one of Indonesia's rice granaries and Barito Kuala is the most rice-producing area in South Kalimantan. Agricultural land in the Barito Kuala area has tidal swamp land that is quite large and has not been utilized optimally, it is estimated that swampland is around 300 thousand ha and has only been utilized around 120 thousand ha.



Therefore, the use of tidal swamp land can be an alternative to offset the loss of food / rice production nationally. Programs run by the government in utilizing tidal swamps include the SERASI (Save the Swamp Prosperous Farmers) program which aims to increase the Crop Index from 100 to 200. The Barito Kuala area as one of the regions in South Kalimantan appointed to implement the program is in three sub-districts, namely Marabahan, Mekarsari and Anjir Pasar Districts. While in other sub-districts it is still not complete to plant rice with superior varieties. The results of previous studies showed that the community's attitude towards the recommendation to plant superior varieties of rice was very positive, especially in tidal swampland areas type B and type C. They were also satisfied with their rice production which was higher than the local rice varieties they usually planted. Efforts to increase rice production should also have an impact on increasing farmers' incomes which can ultimately improve the welfare of farmer households, especially farming communities in tidal swampland areas of Barito Kuala Regency. In fact, increasing rice production is said to be successful if it has been able to improve the welfare of farming families. Well-being is closely related to basic human needs, simply prosperous when basic needs are met. Euis Sunarti in his article entitled *Sejahtera Family Indicators* has determined 21 indicators to measure prosperous families. This measure has considered the fulfillment of basic needs, social needs, psychological needs, development needs and social care which are divided into 4 groups of prosperous family classifications, namely the Prosperous Family I group, Prosperous family II, Prosperous family III, and prosperous family group III plus. In relation to the above, with the success in increasing rice production (better farming) is also always followed by success in improving welfare (better living) in farmer households, therefore it is necessary to conduct research on the welfare of farmer households as a result of planting this superior variety of rice, especially farming communities in tidal swampland areas of Barito Kuala Regency.

METHODS OF RESEARCH

This study was purposively determined in the tidal swampland area of Barito Kuala Regency, namely in the BPP Rantau Badauh area. The research will be conducted in fiscal year 2023 which includes preparation, field implementation and reporting.

This research was conducted by survey method, with the number of respondents as many as 40 rice farmers in tidal swamp fields consisting of 20 respondents who planted superior varietal rice and 20 people who planted local varietal rice in the BPP Rantau Badauh area, Batola Regency. Sampling is done by simple random sampling.

Research variables include: explicit costs of local and superior rice farming; revenue from local and superior varietal rice farming; local and superior rice farming income; household welfare of local and superior rice farmers.

The collected data are processed and calculated according to the research objectives and presented in the form of tabulations, and to measure the welfare of farmer households, 21 indicators are compiled by Euis Sunarti from the Faculty of Human Ecology IPB calculated in percentages, then analyzed descriptively.

Revenue is the difference between receipts and actual costs incurred in the production process, or in other words Revenue is revenue minus explicit costs.

$$\text{Total Revenue} = \text{TR} = Y \times P_y$$

Where: TR = total receipts (Rp); Y = total production (kg); P_y = production price (Rp).
In addition to production costs, in farming there is also the cost of depreciation of tools, the cost of equipment minus the residual value throughout the life of the equipment.

$$D = \frac{N_a - N_s}{U_p}$$

Where: D = the depreciation value of fixed capital goods for one year (Rp); N_a = Initial value of fixed capital goods (Rp); N_s = Residual value of fixed capital goods (Rp); U_p = service life of goods (Th).



The welfare measurement used in accordance with the writing of Euis Sunarti from the Faculty of Human Ecology IPB contains various human needs viewed from various angles, namely from basic needs, social needs, psychological needs, development needs and social care, all of which contain as many as 21 indicators to be grouped into 4 classifications of prosperous families, namely Prosperous Family I, Prosperous Family II, Prosperous family III and Prosperous family III plus.

KS I family is a family that can meet basic needs, but has not been able to meet psychological needs, namely:

- All household members eat 2x or more meals a day;
- All household members have different clothes between home, work/school and travelling;
- The house occupied by the family has a good roof, floor, walls;
- If there is a family member who is sick, taken to a health facility;
- EFAs who want to have birth control go to contraceptive services;
- All children aged 7 – 15 years in the family attend school.

Prosperous Family II is a family that has met basic needs, social needs, psychological needs, but has not met development needs, namely:

- Family members perform worship in accordance with their beliefs;
- In a week family members eat at least once meat/fish/eggs;
- In a year all family members get at least one set of clothes;
- In one house, each occupant has a floor area of at least 8 square m;
- In the last 3 months the family is in good health, so they can carry out their respective duties and functions;
- Family members (one or more) who work to earn income;
- All family members aged 10 – 60 years can read Latin characters;
- EFA who has 2 or more children, using contraceptives.

Prosperous Family III is a family that has met physical, social, psychological needs, but has not met social care, namely:

- The family seeks to increase religious knowledge;
- Part of the family's income is saved in the form of money/goods;
- There is a family habit to eat together, at least once a week which is used to communicate;
- Families often participate in community activities in the neighbourhood;
- The family obtains information from newspapers/magazines/radio/TV.

A prosperous family III plus is a family that has been able to meet all physical, social, psychological, development needs and can:

- make regular voluntary material donations to social activities;
- There are family members who are active as administrators of social associations/foundations/community institutions.

Table 1 – Indicators of classification of the level of welfare of peasant households

No	Level of Well-Being	Number of Indicator Achievements	% Indicator Achievement
1	KS I	6 - < 14	28.57% - < 66.7%
2	KS II	14 - < 19	66.7% - < 90.5%
3	KS III	19 - < 21	90.5% - < 100%
4	KS III Plus	21	100%

RESULTS AND DISCUSSION

In this study, what is analyzed in rice farming activities both planting superior and local varieties is in the form of explicit cost calculations, revenues and income from each of these farms.

The local rice varieties planted by farmers in this region are mostly Siamese rice, Siam Unus and Karang dukuh which are generally very much liked by the community.



The results showed that the explicit costs incurred by farmers to plant local varietal rice were Rp 3,670,645 with an average agricultural land area of 1.73 ha. Adaun explicit costs incurred consist of seed costs, fertilizer costs, pesticide costs, tool depreciation costs and harvesting costs.

The rice production obtained by farmers from planting local varieties is 2,218 kg per hectare. The average cultivated land area is 1.73 hectares. The GKG price for local varietal rice in 2023 in this region is IDR 11,000 per kg. The amount of receipts obtained is 2,218 kg multiplied by Rp 11,000 equals Rp 24,398,000.

Local varieties rice farming income is revenue reduced by explicit costs, so that the amount of income obtained from local varieties rice farming is equal to Rp 21,187,355.

Superior varieties that are widely planted by people in this region are Infari varias, Hybrids and there are also those who try to plant new varieties that harvest quickly but taste like Siamese unus rice varieties named Siam Setara or Siam Madu varias. The average land area cultivated by farmers to plant this superior variety of rice is 1.57 hectares with an average amount of rice production per hectare of 3,338 kg or around 3.3 tons per hectare.

Explicit costs that are taken into account are seed costs, fertilizer costs, pesticide costs, tool depreciation costs and harvesting costs calculated in each hectare of cultivated area. The calculation results show that the amount of explicit costs incurred by farmers amounted to Rp 4,657,257. When compared between planting local varietal rice with this superior variance, the explicit cost of planting superior varietal is greater than planting local varietal. This can be understood because this superior variety technically requires more intensive maintenance compared to planting local varietals while also being supported by land suitability.

The results showed that the GKG price of superior rice in this region per kilogram was Rp 6,500, with a total rice production of 3,338 kg, the total revenue obtained from this superior varietal rice farming was Rp 21,697,000. When viewed from the amount of revenue from planting local varieties rice, it turns out that the revenue from local varieties rice farming is slightly higher than the receipts of superior varieties, this is because the explicit cost expenditure for planting superior varieties is higher than planting local varieties, besides that the GKG price of superior varieties is much cheaper than local varieties rice. This condition is thought to have something to do with the demand aspect for superior rice varieties.

The amount of revenue is the amount of revenue from the sale of production multiplied by the production price per kg. For GKG rice superior varietal prices in this region are Rp 6,500 per kg, so that with the total production of superior rice as much as 3,338 kg multiplied by Rp 6,500 the income is Rp 17,039,743. It can be said that the income of farmers who grow superior varietal rice is slightly lower than the income of farmers who grow local varietals even though the amount of superior rice production is far more than the amount of local rice production. For more details can be seen in the following table.

Table 2 – Components of costs, revenues and income of superior and local rice farming varieties

Cost Component, acceptance & revenue (Rp)	Local varieties (Rp)	Superior variance (Rp)
Explicit cost:		
• Seed cost/ha	242.000	254.881
• Fertilizer cost/ha	452.500	502.500
• Cost of pesticides/ha	859.700	1.226.300
• Tool depreciation cost/Th	150.545	148.520
• Harvesting fee/ha	1.965.900	2.525.056
Sum	3.670.645	4.657.257
Total production (kg/ha)	2.218 kg	3.338 kg
Price/kg GKG	11.000	6.500
Acceptance	24.398.000	21.697.000
Income	21.187.355	17.039.743

Source: Processed from primary data, 2023.

Welfare is the achievement of life desired by every human being. Humans can be said to be prosperous when all their needs can be met through various efforts made to obtain this



welfare. According to BKKBN, the operational limitation of a prosperous family is the family's ability to meet basic needs, social needs, psychological needs, development needs and social care. In this regard, in agricultural development, the ultimate goal is to try to improve the welfare of the farming community starting from how to provide alternative choices to the farming community about good farming techniques (better farming), then doing good business (more profitable farming), and finally expected to achieve a more prosperous life (better living). To achieve better living, one of them is indeed supported by an increase in income, and the ability to distribute the income not only to meet from material or physical aspects but also must be able to meet the social needs, psychological needs, and self-development needs of all family members. The results showed that the welfare level of farmers both planting superior varietal rice and local variance was in this region both at the level of Prosperous Family II, and farmers who planted superior varieties were a small part (4.8%) at the level of prosperous families III. The details are as shown in the following table.

Table 3 – The level of welfare of farming families who grow superior and local varieties of rice

No.	Farmers who farm rice	Level of well-being			
		KS I	KS II	KS III	KS III+
1.	Local varieties	14,3 %	85,7 %	-	-
2.	Superior variety	-	95,2 %	4,8 %	-

Source: Processed from primary data, 2023.

Based on the results of this study, it appears that farming communities who plant local varietal rice are at the level of family welfare at the stage of Family Welfare phase I and phase II, while farming communities who plant superior varieties of rice are at the level of family welfare at stage II and phase III. If we look at the percentage of achievement of their welfare level, farming communities who plant superior varietal rice are higher than farming communities who grow local varietal rice. Prosperous Families phase I are families that have been able to meet their basic needs minimally, but have not been able to meet all their socio-psychological needs such as worship needs, eating animal protein, clothing, space for family interaction, being in good health, having income, being able to read and write Latin and family planning.

Prosperous Families phase II are families in addition to being able to meet their basic needs, have also been able to meet all their psychological needs, but have not been able to meet all their development needs such as the need for religious improvement, saving, participating in family activities, participating in community activities and obtaining information.

Prosperous Families phase III are families that have fulfilled all their basic needs, social psychological and development needs, but have not been able to make a maximum contribution to society such as making material and financial contributions for social community interests and playing an active role by becoming administrators of Community Institutions or Social Foundations, Sports, Education, and so on.

CONCLUSION

The conclusions of the results of this research discussion are as follows:

- The average rice production per hectare of local varieties is 2,218 kg or 2.2 tons, while for superior varieties it is 3,338 kg or 3.3 tons;
- The price of local varieties of GKG rice per kg is IDR 11,000 while the price of superior variance rice GKG per kg is IDR 6,500;
- The income of farmers who planted local varieties amounted to Rp 21,187,355 and the income of farmers who planted superior varieties amounted to Rp 17,039,743;
- The welfare level of farming families, both those who grow superior and local varietal rice, is more at the level of prosperous families II.

The recommended suggestions resulting from this study are that the price of GKG and local rice should be in favor of farmers and in planting superior rice as efficiently and



effectively as possible. The rice planting pattern to achieve IP 200 must be taken into account regarding the risk of pest attacks that will have an impact on decreasing rice production.

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