**The Comparative Analysis of Production and Consumption Behavior of Rice Farmer Households Based on Land Typology and Capital Resources**

Andy Mulyana1[[1]](#footnote-1), Yunita1, Riswani1, and Maryati Mustofa Hakim1

1Program Study of Agribusiness Faculty of Agriculture, Sriwijaya University

**Abstract.** The purpose of this research was to analyze differences in rice production and consumption behavior of rice farmers households with different capital sources on irrigated land and rainfed areas in South Sumatra province. A total of 80 respondents selected randomly. Data collected and processed with descriptive statistics and described in tabulation. The results showed that the average of irrigated rice production is higher than the rainfed rice production. The average production of rice farmers with its own capital is higher than farmers with loans and shared equity capital. The consumption of rice farmers household in irrigated rice with their own capital is lower than households with loans and shared equity capital. Similarly, when compared with the average consumption of rice farmers household with their own capital in rainfed land. Rice farmers household‘s food expenditure in rainfed land is higher than farmers household in irrigated land.

**Keywords:** irrigated land, rainfed land, rice production, rice consumption behavior

**1. Background**

Agriculture is a important segment for the development of Indonesia, has a dependency on the climate and weather conditions. Climate change is a real threat and a challenge of the agricultural sector in maintaining the sustainability of food production. A shift of the season, will affect the planning of agricultural activities, so the planting schedule will be disrupted which was resulting production declined and even crop failure, which will further threaten food security.

One of the main problem of our nation in the future is how to ensure the availability of adequate food for all people. By 2015 the population will reach 255 million people, with a consumption rate 135 kg/capita/year we need rice 38.49 million tons/year. To produce that much rice we need the harvested area 13.38 million hectares. Though the available harvest area only 12.65 million hectares, 0.73 million hectares that deficit (Central Food Security Council, 2013).

Based on the results of Soepardi‘s research (1996); Mulyana (1998); Purnamawati and Purnomo (2007), that as food, rice production is the most basical consumer goods of Indonesian people. Further, stated by Mulyana (2008) that, as the majority of the staple food of Indonesian people, rice commodity was instrumental until nowdays, therefore, generally has not significantly replaced by alternative commodities, such as cassava, sweet potato, and corn sourced of production of the farmers itself, or from imports, such as wheat that processed into instant noodles. Rice is the staple food for the people of Indonesia that provides high energy and nutrients. Role of rice, in addition as a staple food source is also a source of income for farmers and the needs of everyday life for millions of people.

Problems encountered in farming by Syukuriwantoro (2009) is limited farmers' access to capital and high interest rates on farming. Most of farmers do not have enough capital. Accessibility of farmers to the capital resources are still very limited, especially for rice farmers who control a narrow area which is the largest communities of rural communities.

South Sumatra, as one of the National Food Barn Province, has a range of typologies of agricultural land area of 5,524,725 hectares, or about 70 percent of the total land area, including rainfed land, tidal land, swampy lowlands, and lands with technical irrigation. In relation with the ownership status of arable land, in

South Sumatra generally, there are variations in the status of ownership of arable land. Some farmers who have land worked on their own rice fields (owner and tiller). In addition there are farmers who work in the land owned by someone else, and the relationship between the owner of the tillers could be profit-sharing and leasing to provide a sum of money or in kind (eg, grain) in each growing season.

Rice-producing areas in South Sumatra include the Ogan Komering Ilir and Musi Rawas. Ogan Komering Ilir regency represent typologies of rainfed areas, while the Musi Rawas represent typologies of irrigated land. The purposes of this research were: (1) analyze the differences in the rice production in irrigated and rainfed areas in South Sumatra Province, and (2) analyze the consumption behavior of rice farmers household in the typology of irrigated land and rainfed areas of South Sumatra.

**2 . Literature Reviews**

Farmers households is a mixture of activities, namely as a company because it has a production activity, and as a consumer because there are consumed (Yamin, 2003). Furthermore BPS (2005) stated that the household is a person or group of people who stay in a building and usually live together under one roof, eat in one kitchen in the relation of economic, social and cultural. In economic theory of the household is assumed to act rationally in allocating resources and consume goods and services. Therefore be regarded as household economic unit that has the goal to fulfillment by utilizing a number of resources availability. Kusnadi‘s study results (2005), in a household objectives is to maximize utility by utilizing a number of resources.

Broadly speaking household needs can be grouped into two major categories, namely food and non-food needs. This means that, at a certain income level households will allocate income to meet both these needs. Naturally, quantity of food needed for someone will reach saturation point while the non-food needs including food quality is not constrained in the same way. Thus the amount of income proxied by total expenditure spent on food of a household can be used as a guideline level of prosperity of the household or in other words, the higher share of food expenditure, means the less prosperous households concerned. Conversely, the smaller share of the household food expenditure is increasingly prosperous (Purwantini and Ariani, 2008), or households with a high share of food expenditure by households belonging to the low level of well-being compared with the proportion of households with low food expenditure (BPS, 1996; BPS, 2009; Rachman and Supriyati, 2004).

Consumption and expenditure patterns generally differ between agroecosystems, between income groups, ethnic or inter-ethnic and inter-temporal (Arifin and Simatupang, 1988; Suryana et al, 1988 and Rahman and Wahida, 1998). People's food consumption behavior based on the eating habits that grow and thrive in a family environment through a process of socialization. Eating habits can be influenced by the ecological environment (characteristic of crops, livestock and fish are available and can be local cultivated), cultural environment and economic systems. In the central areas of rice production is assumed to land use and the use of the technology involved, as a result there are differences that will affect the level and type of rice consumption.

**3. Method**

The research method used was a survey of Rice Farmers Household in the village of Suko Mulyo and Nawang Sari Tugumulyo sub-district Musi Rawas regency and village of Lubuk Makmur and Muara Bunai I Lempuing Jaya sub-district Ogan Komering Ilir regency. The village conducted by consider that the village can represent land owned by farmers and tillers population, as well as the diversity of sources of capital owned by farmers (own capital, loan capital, and the shared capital). Sample as 80 households collected by simple random sampling. Primary data through interviews with the help of questionnaires, while secondary data obtained from the literature such as reports from various departments, relevant agencies as well as the results of previous studies of a variety of educational and research institutions. Data processing was conducted by descriptive statistics and described in the tabulation.

**4. Results and Discussion**

**4.1. Characteristics of Farmers**

The results showed that the average age of farmers is still relatively productive age. Farmers in the irrigated land with its own capital, loan capital, and capital shared around 41-47 years old. Similarly, farmers in rainfed land, the average age of farmers is 44,5 years. At this age a person will work optimally in farming because he can contribute a more effective workforce. Judging from the formal education of farmers, both in irrigated and rainfed land, the level of education has not been so good. The average farmer only formal education for six to eight years. However, when seen from the experience of trying to farm, the average farmer had been long enough rice farming activities, which ranged from 11 to 22 years in irrigated land, and for 20 years in the rainfed. Considerable farming experience is expected to have a positive impact, more farmers get lesson of farming so the motivation to improve production and quality can be built and produce better. Number of members of peasant households in both types of land and capital resources owned by no difference, which ranges from three to four people.

**4.2 . Rice Production**

There is a vast cultivated difference between rice farmers on the typology of irrigated land and rainfed land. Similarly, farmers with their own capital, loan capital, and the shared capital. The average area of land cultivated for irrigated farmers with their own capital were greater than farmers with loans and shared equity capital. Similarly, the average area of cultivated land farmers capital owner in irrigated were greater than the farmers in the rainfed (Table 1).

Table 1. Average Land Area (Hectares) Rice Farming based on Typology and Resources capital

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Land Typology |  | Capital Resources |  |
| Own Capital | Loan Capital | Shared Capital |
| 1 | Irrigated | 0,93 | 0,62 | 0,5 |
| 2 | Rainfed | 0,84 |  |  |

Table 2 explain that the ratio between rice production per hectare of irrigated and rainfed rice fields showed that the average production of irrigated land is higher than rainfed land. This is caused by the irrigated rice get a good watering and regular than the rainfed rice. Besides rice seeds used in the average irrigated seed that is recommended, ie Ciherang or IR 64. Use of improved seed is dominated by farmers on irrigated typology makes the quantity and quality of rice produced better than in the typology of rainfed land. In addition, the typology of irrigated land, most farmers have been using fertilizer as recommended, instead of rice farmers in the rainfed typology did not use fertilizer as recommended yet.

Table 2 . Rice Production (MPD) based on Typology of Land and Capital Resources

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Land Typology |  | Capital Resources |  |
| Own Capital | Loan Capital | Shared Capital |
| 1 | Irrigated | 6,102 | 5,494 | 1,144 |
| 2 | Rainfed | 4.737 | - | - |

**4.3. Household Food Consumption Behavior Farmers**

Food consumption behavior of rice farmers households in this study reflected on the many rice consumed, percentage of rice stored and sold, and the amount of expenditure on food and non-food, Table 3 shows that there is a difference between the amount of rice consumed by rice farmers households in irrigated and tides. Similarly, among rice farmers households that have their own capital, loans and shared equity capital. Rice farmers household in irrigated land with their own capital consumed the rice lower than rice farmers household with loans and shared equity capital. However, when compared to the average consumption of rice farmers households own capital on the typology of irrigated with rainfed, the average rice farmers household consumption of rice farmers with their own capital in the rainfed higher, as many as 120 kg per capita.

Table 3. Average Rice Consumed based on Typology of Land and Capital Resources

|  |  |  |  |
| --- | --- | --- | --- |
| No | Land Typology | Capital Resources |  |
| Own Capital Loan Capital | Shared Capital |
| 1 | Irrigated | 335,71 kg/RTP or  392 kg/RTP or 98 kg/capita  111,9 kg/capita | 360 kg/RTP or 90 kg/capita |
| 2 | Rainfed | 480 kg/RTP or 120 kg/capita - | - |

The results also showed that the farmers in the area who observed the second typology, there is the phenomenon that a percentage of the amount of rice sold is greater than the stored rice. The average rice sold by the rice farmer households in irrigated land ranged from 71 percent to 83 percent, while rice farmers households in the rainfed land average of 75 percent.

Table 4. Average Farmers Household Food Expenditure based on Typology of Land and Capital Resources (Rp/Month)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Land Typology |  | Capital Resources |  |
| Own Capital | Loan Capital | Shared Capital |
| 1 | Irrigated | 849,455 | 723,625 | 770.000 |
| 2 | Rainfed | 947,733 | - | - |

Consumption behavior seen of farmers household expenditure on food needs showed that farmers household food expenditure in rainfed land is higher than farmers household food expenditure in irrigated land. Similarly, when viewed from the source of capital ownership. This is consistent with research showing that rice farmers household consumption in the rainfed land has the highest number.

**5. Conclusion**

1. Average irrigated rice production is higher than the rainfed rice production. The average production of rice farmers with its own capital is higher than farmers with loans and shared equity capital.
2. Rice farmers household in irrigated rice with their own capital consumed rice lower than rice farmers households with loans and shared equity capital. Similarly, when compared with the average rice consumption of rice farmers household with their own capital in rainfed land.
3. The average rice sold by the rice farmer households in irrigated land ranged from 71 percent to 83 percent, while households in the rainfed land average of 75 percent.
4. Farmers household food expenditure in rainfed land is higher than farmers household food expenditure in irrigated land.

**6. References**

1. Ariani, M. and T. B. Purwantini. 2008. Analysis of Household Food Consumption After the Economic Crisis in West Java. Center for Agriculture Socio Economic researchers.
2. Aripin, M and P. Simatupang. 1988. Consumption patterns and Adequacy of Calories and Protein in Rural West Sumatra in the Proceedings Patanas Rural Economic Change Towards Balanced Economic Structure. Agro Economic Research Centre.
3. Khudori. 2013. Agricultural Land Conversion Moratorium need. Central Food Security Council.
4. Kusnadi, N. 2005. Farmers Household Economic Behaviour in Imperfect Competition Market in Several Provinces in Indonesia. Dissertation Doctoral Program of the Graduate School of Agricultural Economics IPB (unpublished).
5. Rachman, H. P. S. and Wahida. 1998. Pattern dynamics and Household Consumption Expenditure And Prospects of Food Demand in Rural Economic Dynamics: Structural Changes in Income, Employment and Household Consumption Patterns. Research Center for Agriculture Socio Economic cooperation with the Ford Foundation, Bogor.
6. Suryana, A, B. Rachman and P. U. Hadi. 1988. For Consumption Expenditure Pattern in Rural West Java, in Proceedings of the Rural Economy Patanas Change Towards Balanced Economic Structure, Agro Economic Research Centre.

Yamin , M. , 2003. Strategy Household Migrants In Fulfilling Basic Needs In South Sumatra

1. Corresponding author. Tel.: +628127118488

   *E-mail address*: andy\_sep@yahoo.com [↑](#footnote-ref-1)