



Marketing of Red Rice Varieties in Subak Jatiluwih



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Abstract

Jatiluwih Village does not have a large area but is known to be a major producer of brown rice whose marketing has penetrated the international market. The success of Subak Jatiluwih brown rice production is inseparable from the existence of efficient marketing channels. Marketing channels can determine the level of income received by farmers. This study aims to determine the pattern of brown rice marketing channels and analyze the efficiency of brown rice marketing channels in Subak Jatiluwih Penebel District, Tabanan Regency. The methods used in this study were marketing channel analysis, market structure analysis, and marketing efficiency analysis (marketing margin and farmer's share). The research respondents totaled 98 people consisting of 84 farmers (using the Slovin formula) and 14 traders (using the snowball sampling method). Marketing institutions involved in the marketing of brown rice in Subak Jatiluwih Penebel Sub-district, Tabanan Regency are village-level intermediary traders as many as nine people, and retail traders as many as five people. The results of the study there are three marketing channels. The marketing structure of brown rice in Subak Jatiluwih District Penebel Tabanan Regency at the farm level leads to a medium concentration oligopoly market structure.

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1 Introduction

The agricultural sector is one of the most expected bases in supporting economic growth, both now and in the future. One of the main commodities of the food crop subsector is rice, rice plants are an important commodity for all Indonesian people. Several food crops can be used as staple foods because they contain sources of energy and protein needed by the human body and one of them is rice, which has carbohydrates needed by the body (Wulandari & Hanayani, 2022). The process of rice from farmers to rice involves several institutions to become rice that is ready to be consumed. The number of institutions involved can affect the amount of costs in the supply chain channel (Saragih et al., 2017). Efforts to increase farmers' income are very necessary, including efforts to improve marketing and prices received by farmers, because price levels and price stability greatly affect farmers (Suminartika & Djuanalina, 2017).

Bali is famous as an agricultural area with its Subak system, one of the eight regencies and one city in Bali that has enormous natural wealth potential is Tabanan Regency. One of the areas in Tabanan that has quite a large agricultural potential is Jatiluwih Village. In 2020, paddy production in Tempek Gunung Sari at Subak Jatiluwih reached 20,610 tons and in 2021 it decreased by 0.19% or to 10,847 tons (Subak Jatiluwih, 2021). Subak Jatiluwih classifies rice into three groups, namely white rice, black rice, and red rice. The red rice produced at Subak Jatiluwih is organic red rice. Jatiluwih organic red rice is organic red rice that is grown organically (without chemical pesticides and chemical fertilizers) in the Jatiluwih area and its surroundings. Its organic nature has started from the beginning of seed selection until it becomes rice. This process is always monitored and audited by the LESOS Certification Institute, thus ensuring that Jatiluwih organic rice is truly organic rice.

The problems that occur in Subak Jatiluwih is the non-uniformity of prices at the consumer level, there are differences in prices in carrying out buying and selling activities through marketing institutions so the marketing of red rice is unstable from several institutions involved to the end consumer. Although farmers are the main producers of rice, the greatest profit is generally obtained by collectors. Subak Jatiluwih farmers sell their agricultural products to collectors in the form of dry grain. This makes collectors have a major influence on rice prices in the market. The existence of collectors is generally due to the flow of market information that rarely reaches farmers, in addition to the lack of farmer capital to market rice to the end consumer market so a liaison is needed between producers and end consumers such as collectors and retailers (Grunert, 2002; Van Kleef et al., 2005).

The problem can be formulated become two (1) What is the pattern of red rice marketing channels? (2) How is the efficiency of the red rice marketing channels? The research objectives are to determine the pattern of red rice marketing channels and to analyze the efficiency of red rice marketing channels in Subak Jatiluwih, Penebel District, Tabanan Regency.

2 Materials and Methods

The research was conducted in Subak Jatiluwih, Penebel District, Tabanan Regency. This location was deliberately chosen considering that there had never been similar research in Subak Jatiluwih. This research was conducted from December 2022 to February 2023. The types of data used in this study are qualitative data and quantitative data. Qualitative method analysis is used to analyze marketing channels, while quantitative data analysis is used to analyze marketing efficiency including marketing margins and farmer's share (Chen et al., 2014; Printezis & Grebitus, 2018). The data collection technique used by the researcher was by interview. In this study, interviews were conducted with Kelian Subak Jatiluwih as key respondents, as well as farmers, collectors, and retailers as samples. This data collection method uses a list of questions through a questionnaire that will be given to market players, namely farmers, collectors, and retailers, as well as related parties in the red rice marketing channel in Subak Jatiluwih.

Determination of research sample

This study has key informants who are sources of information about the situation and conditions of the research background as well as in-depth information. The selected key informants are considered to understand and know the conditions of Subak Jatiluwih, in this study is the Kelian Subak Jatiluwih. The population in this study were farmers in Subak Jatiluwih totaling 545 people. In obtaining data information from the population, a sample is needed which is a subgroup of the population selected for use in the study (Hermawan, 2006). The sample is part of the population being studied and is considered to be able to describe the population. The determination of the sample used in this study was by accidental sampling. According to Sugiyono (2016), Incidental Sampling/Accidental Sampling is a sample determination technique based on coincidence, namely any patient who accidentally meets the researcher can be used as a sample if the person who happened to be met is considered suitable as a data source. One method used to determine the number of samples is to use the Slovin Formula.

Based on the calculation with the Slovin Formula, a sample of 84 people was obtained by dividing it into seven Tempek in Subak Jatiluwih. Tempek umakayu as many as seven people, Tempek gunung sari as many as 18 people, Tempek telabah gede as many as 21 people, Tempek Perdamaian as many as eight people, Tempek kesambi as many as six people, Tempek besikalung as many as 15 people, and Tempek umadui as many as nine people.

Determination of the number of respondents of marketing institutions was carried out using snowball sampling. The snowball sampling method is a method of determining samples that are initially small in number and then increase (Sugiyono, 2018). The respondents of the institution consist of village-level collectors and retailers. The researcher chose snowball sampling because of the lack of information regarding the number of red rice marketing institutions in Subak Jatiluwih. This snowball sampling method begins with farmers seeking information about collectors, then through collectors, information will be sought about retailers involved in marketing red rice in Subak Jatiluwih.

Research variables and measurement

Table 1
Variables, Indicators, and Measurement of Rice Marketing Channel Analysis in Subak Jatiluwih, Penebel District, Tabanan Regency

Variables	Indicator	Measurement
Marketing Channel Pattern	1. Number of marketing institutions involved in each channel	Qualitative
Market Structure	1. Buyer volume and volume transacted	Qualitative
Marketing Margin	1. Price of brown rice purchased at farmer level 2. Price of brown rice purchased at consumer level Traditional Market and Modern Market	Qualitative Qualitative
<i>Farmer's Share</i>	1. Price at the farmer level 2. The last retail price	Qualitative Qualitative

Data Analysis

The data analysis used in this study uses qualitative and quantitative analysis. Qualitative data analysis in this study explains the rice marketing channels and quantitative analysis in this study is the marketing efficiency of Subak Jatiluwih rice farmers, which consists of market structure analysis, marketing margins, and farmer's share in each channel with various formulas (Min & Wolfinbarger, 2005; Gregory et al., 2019).

(1) Market structure

Analysis of the brown rice market structure at the farmer level can be done by quantitative analysis, namely by quantitative analysis by analyzing market concentration. Analysis of the market structure at the farmer level will be done by looking at the transactions of marketing institutions that make direct transactions to brown rice farmers, which are systematically formulated as follows (Albrow, 1989):

$$CR_n = \frac{S_1 + S_2 + \dots + S_n}{S_t} \times 100\% \dots\dots\dots(1)$$

Description:

- CR_n = Concentration Ratio
 S₁ = Sales volume of brown rice by trader 1 (kw/peak harvest)
 S_n = Sales volume of brown rice by trader n (kw/peak harvest)
 S_t = Total sales of brown rice by producers (kw/year)

This ratio concentration is only applied from the first marketing institution so that the control of red rice trade at the farmer level can be known. With the following provisions (Hay & Morris, 1992):

- a) If there is one trader (Kr1) who has a Kr value of 95%, then the market is a monopsony competition market.
- b) If there are four traders (Kr4) who have a Kr value of less than 80%, then the market is heading towards a medium concentration oligopsony.
- c) If there are four traders (Kr4) who have a Kr value of more than or equal to 80%, the market is heading towards a high concentration oligopsony.
- d) If there are eight traders (Kr8) who have a Kr value of less than or equal to 80%, the market is heading towards a low concentration oligopsony.
- e) If there are eight traders (Kr8) who have a Kr value of more than or equal to 80%, the market is heading towards a medium concentration oligopsony.

(2) Marketing margin

Marketing margin analysis is used to see the level of rice marketing efficiency. Marketing margin is calculated based on the difference in price at the producer level and the price at the consumer level (Tobaol et al., 2018). So that the marketing margin can be formulated as follows:

$$MP = Pr - Pf \dots\dots\dots(2)$$

Description:

- MP = Marketing Margin (IDR/Kg)
 Pr = Consumer level price (IDR /kg)
 Pf = Producer level price (IDR /kg)

(3) Farmers' share

Farmer's share according to Hudson (2007), is the ratio between the price at the farmer level and the price at the trader level. Farmer's share analysis is useful for knowing the portion of the price received by farmers from the price at the consumer level expressed in percentage (%). Farmer's share is expressed as follows.

$$Fs = \frac{Pf}{Pr} \times 100\% \dots\dots\dots(3)$$

Description:

- F_s = Percentage received by farmers
 P_f = Price at farmer level (IDR/kg)
 P_r = Last retail price (IDR/kg)

3 Results and Discussions

Marketing channels

The red rice marketing system in Subak Jatiluwih, Penebel District, Tabanan Regency involves marketing institutions that distribute red rice to consumers. Marketing institutions greatly assist farmers in marketing their products (Maskar et al., 2023). The marketing institutions involved in this study were village-level collectors and retailers outside Jatiluwih village. The marketing channel scheme in Figure 4.3 is the red rice marketing system in Subak Jatiluwih, Penebel District, Tabanan Regency, which is carried out by producers and marketing institutions during each main harvest season (July-November 2022). The harvest yield was 16 tons from 84 respondent farmers.

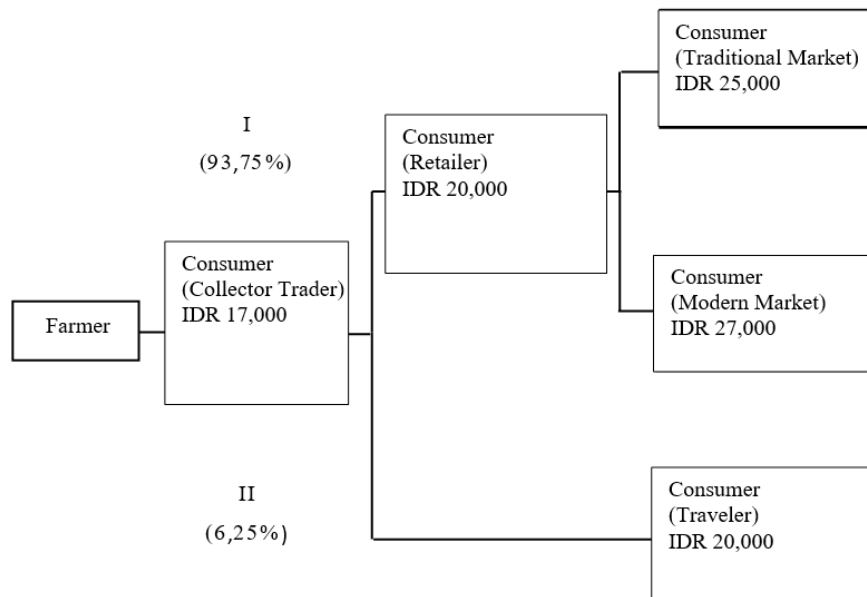


Figure 1. Marketing Channels

There are three types of red rice marketing channels in Subak Jatiluwih, Penebel District, Tabanan Regency, as follows.

- a) Marketing Channel I: Farmers → Village-level Collectors → Non-Village Retailers → Traditional Market Consumers
- b) Marketing Channel II: Farmers → Village-level Collectors → Non-Village Retailers → Modern Market Consumers
- c) Marketing Channel III: Farmers → Village-level Collectors → Consumers (Tourists)

Market structure

The market structure at the level of red rice farmers in Subak Jatiluwih, Penebel District, Tabanan Regency was analyzed using the concentration ratio. Looking at the volume purchased directly by marketing institutions from farmers (Gelos & Roldos, 2004; Markusen et al., 1993). The measurement of the concentration ratio was carried out by combining the four highest sales volumes from first-level marketing institutions in the marketing of red rice in Subak Jatiluwih, Penebel District, Tabanan Regency.

Table 2
Purchase Volume and Concentration Ratio of Red Rice by Marketing Institutions Directly to Farmers

No	Name	Purchase Amount	Cr _n
1	Collector 1 to retailer	2	13%
2	Collector 2 to retailer	3	31%
3	Collector 3 to retailer	4	56%
4	Collector 4 to retailer	2,5	72%
5	Collector 5 to retailer	1,5	81%
6	Collector 6 to retailer	1	88%
7	Collector 7 to retailer	1	94%
8	Collector 8 to consumer	0,5	97%
9	Collector 9 to consumer	0,5	100%

Source: Primary Data (2023)

Based on Table 2, four traders have a Cr_n value of less than 80%. This shows that the structure of the brown rice market in Subak Jatiluwih, Penebel District, Tabanan Regency is heading towards a medium-concentrated oligopsony market (Cho & Lim, 2016; Gong et al., 2017). This means that village-level collectors have moderate power in determining the price of brown rice to farmers. According to Yuniarti et al. (2017), a market structure that has moderate concentration tends to have a fairly high level of price competition between marketing and distribution institutions, not only concentrated in the research area.

Marketing margin

Marketing margin analysis is the difference between the price received by farmers and the price paid by consumers. The higher the margin value, the greater the income received by the marketing institution, but this results in the income received by farmers being smaller. Table 3 shows the marketing margin in the red rice marketing channel in Subak Jatiluwih, Penebel District, Tabanan Regency.

Marketing margin can be said to be efficient if the marketing costs incurred to carry out marketing functions are low and the portion of profit obtained is higher, this shows that the distribution of margins, costs and profits can be evenly distributed. Conversely, the marketing margin is inefficient if the marketing costs incurred for marketing costs are high and the profits obtained are lower.

Table 3
Marketing Margin Analysis in the Red Rice Marketing Channel in Subak Jatiluwih, Penebel District, Tabanan Regency

Marketing Channels	Purchase Price at Consumer Level (IDR/kg)	Purchase Price at Farmer Level (IDR/kg)	Marketing Margin (IDR/kg)
I	25.000	17.000	8.000
II	27.000	17.000	10.000
III	20.000	17.000	3.000

Source: Primary Data (2023)

The lowest marketing margin is in marketing channel pattern III, the margin is IDR 3,000.00/kg. The purchase price of red rice from village-level collectors from farmers is IDR 17,000.00/kg. Village-level collectors directly sell red rice purchased from farmers to consumers for IDR 20,000.00/kg. Consumers who buy red rice through these collectors usually come directly to the collector's RMU (Rice Milling Unit) located on the side of the Subak Jatiluwih road.

Farmer's share

Farmer's share is the percentage of the price received by farmers to the price paid by consumers. Table 4 shows the value of farmers' share in the red rice marketing channel in Subak Jatiluwih, Penebel District, Tabanan Regency.

Table 4
Farmer's Share Value of Red Rice Marketing Channel in Subak Jatiluwih, Penebel District, Tabanan Regency

Marketing Channels	Farmer's share (%)
I	68
II	63
III	85

Source: Primary Data (2023)

Based on Table 4, the farmer's share value in the three red rice marketing channels in Subak Jatiluwih, Penebel District, Tabanan Regency is different. The difference in farmer's share in each marketing channel is due to differences in consumers and the number of marketing institutions in distributing red rice. The largest farmer's share value is in marketing channel III.

The purchase price of rice from collectors from farmers in each channel is the same, namely IDR 17,000.00/kg. Based on the calculations that have been made, the farmer's share value received by farmers in marketing channel I is 68%, in marketing channel II is 63%, and in marketing channel III is 85%. This means that marketing red rice in Subak Jatiluwih in marketing channel III is more efficient when compared to marketing red rice in channels I and marketing channels II.

4 Conclusion

There are three red rice marketing channels in Subak Jatiluwih, Penebel District, Tabanan Regency with a proportion of commodities from collectors to retailers of 93.75% and a proportion of commodities from collectors to direct consumers of 6.25%. Red rice marketing channels in Subak Jatiluwih, including:

- a) Marketing channel I: Farmers → Village-level Collectors → Retailers → Traditional Market Consumers
- b) Marketing channel II: Farmers → Village-level Collectors → Retailers → Modern Market Consumers
- c) Marketing channel III: Farmers → Village-level Collectors → Final Consumers

Marketing efficiency obtained from the calculation of marketing margins and farmer's share from each red rice marketing channel in Subak Jatiluwih, namely:

- a) Marketing channel I have a marketing margin value of IDR 8,000.00/kg with a farmer's share value of 68%.
- b) Marketing channel II has a marketing margin value of IDR 10,000.00/kg and a farmer's share of 63%.
- c) Marketing channel II has a marketing margin value of IDR 3,000.00/kg and a farmer's share of 85%.

Based on the calculation of the marketing margin, the most efficient channel is marketing channel III with the lowest marketing margin of IDR 3,000.00/kg with a farmer's share value of 85%.

Suggestions

- 1) The lack of direct farmer involvement in rice distribution means that farmers cannot capture incentives from the added value of rice sales. In the short term, the government should encourage farmers to be able to sell rice or grain in the form of rice so that rice and rice commodities have a higher economic value. Therefore, government involvement is needed through counseling and the development of farmer groups to create rice barns and drying facilities. This will shorten the distribution chain so that it is expected to reduce the difference between the price of rice and the price of rice.
- 2) The difference in price in each channel makes consumers have to consider which channel is more efficient to get the right price. If consumers want to buy brown rice in small quantities, it is more efficient in marketing channels I and II because it can save transportation costs even though the price received has a fairly large difference. Meanwhile, if consumers want to buy brown rice in large quantities, marketing channel III is more efficient compared to other marketing channels because the price obtained will be cheaper and can cover transportation costs.

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