

INDONESIAN EAT RICE, BUT WHY FARMERS ARE POOR?

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Abstract

Rice is Indonesian's staple food and indicator of food sovereignty. Farmers could be a price maker, but rice farmers are poor. This indicates that the problem exists on post harvest rice distribution channels. It is important to analyse the rice distribution system to formulate the government policies. The purpose of this paper is to know the distribution system and margin share of post harvest rice in Indonesia. Also, to know the determinant factors of farmers bargaining power in the post harvest rice distribution process. Data analyse use descriptive analysis (elasticity of price transmission) and literature review. The supporting data used are data from agriculture statistics of Indonesia. The results show that the market faced by all rice distribution market players is the imperfect or uncompetitive actor, i.e. there is monopoly and oligopoly power in the distribution system, and the prevailing distribution system is not efficient yet. There are internal and external factors that influence the bargaining power of rice farmers. The post harvest rice distribution chain needs to be shortened to make it more efficient. To improve the bargaining position of farmers from a monopsony condition is to establish a farmers institution.

Key words: rice distribution chain, margin share, bargaining power, elasticity of price transmission

INTRODUCTION

For Indonesia, rice is such an integral part of life, its consumption is often taken for granted — not just as a staple food but as a driver of national food security, regional political stability, economic growth, and its potential to elevate whole communities out of poverty [26]. Farmers are often identified as hardworking workers who work full of mud and sweat, while the results obtained are classified as minimal in a long time span as well. This view is considered reasonable when viewed from the profile of farmers in Indonesia. Data from The National Labor Force Survey (Sakernas) in 2013 shows that human resources in agriculture sector is 72.6% of whom are just graduated from elementary school or not attend school [2]. The survey results show how low the formal education of farmers in Indonesia. Although to be a farmers there is no requirement related to formal education, but to become a successful farmer and professional still needed good competence and skill.

The agricultural sector plays an important role in the economy of Indonesia, one of which is the second largest contributor to Gross

Domestic Product (GDP). In 2014, the agricultural sector accounted for 13.38% of Indonesia's total GDP [3], and absorbed 34.28% of Indonesia's total labor force [21].

One of the determinants of farmers welfare is the acquisition of the sale of agricultural products, where in paddy cultivation, the farmers generally sell in the form of dry grain (GKP). Dry grain (GKP) is the end result of agricultural paddy or rice cultivating [21]. The dry grain (GKP) is then processed to rice through milling, and through the distribution process to the level of rice retailers. Figure 1 shows the average price of dry grain (GKP) and retail price of rice (HEB) per year, from 2011 to 2016.

High disparity of rice price shows that both rice farmers and consumers are not get benefited in the rice trade. If the value added is not received by rice producers and consumers, then it is more likely to be received by intermediary traders. Marketing theory explains that price disparity in a marketing line can be caused by two things, namely the market power of intermediary traders and/or supply chain that are too long, so the margin that occurs in a

supply chain from producers to consumers (vertical) becomes inefficient and very large.

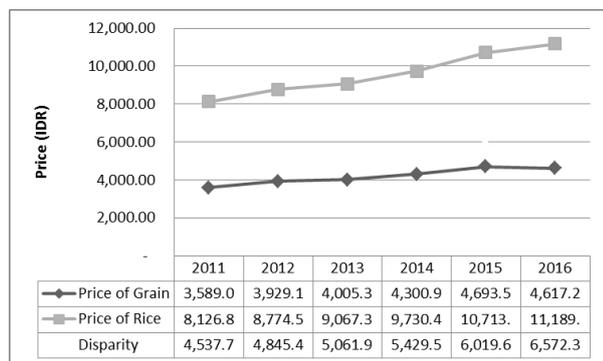


Fig.1. Disparity in Price of Grain and Rice per Kilogram in Indonesia, Year 2008 – 2014

Source: Central Bureau Statistics (2017) [7]

There is a lot of phenomenon that the rate of price change at the rice retailer level is greater than the rate of price change of dry grain (GKP) at the farmers level. The markets faced by all market participants are imperfect or uncompetitive actors, i.e. there is a monopoly and oligopoly power in the marketing system as well as inefficient marketing system. If viewed from macroeconomic theory, the high rice prices will be bad for the Indonesian economy. The government is always trying to regulate the price of rice at a certain level that is profitable for both farmers and consumers, moreover rice is one of the main commodities for inflation. The government is positioned in a food price dilemma, where consumers want rice in the low prices, but farmers want the opposite. Under this dilemma, the government is expected to be able to adopt a rice price policy that can combine the interests of rice farmers and consumers. The suitability of rice price policy will be seen when rice prices are considered high at the level of rice farmers but low at the consumer level.

The low productivity in the agricultural sector has implications for the low income of farmers. One of the causes is limited land owned by households, especially in Java Island. As a result, the purchasing power of farmers is also low, so this situation will encourage farmers to poverty.

In 2013, out of 28 million poor people in rural Indonesia, more than two-thirds were farmers. This is even more alarming, since the real

income of farmers has also not changed significantly over the last 3 (three) years. Farmers Exchange Rate (NTP) is relatively stable during the year 2011 - 2013 at number 104. This shows the income received farmers from the agricultural sector slightly higher than the expenditure. There is no surplus for farmers.

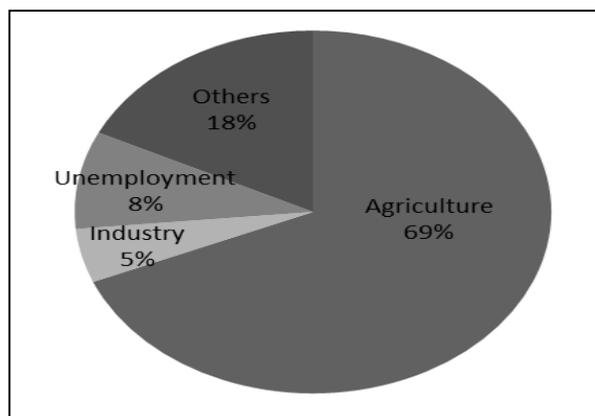


Fig.2. Percentage of Poor Households in Rural Area by The Occupation of Head of Household

Source: Central Bureau Statistics (2014) [2]

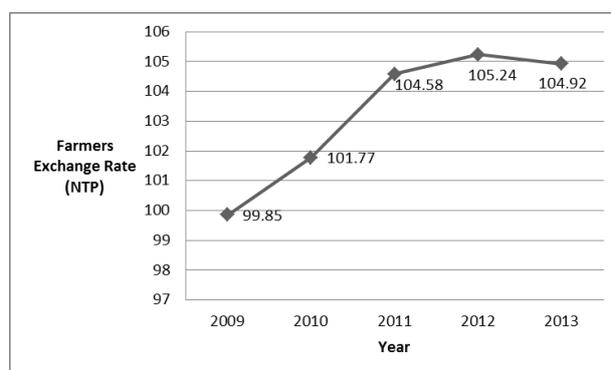


Fig.3. Farmers Exchange Rate of Indonesia Year 2009 – 2013

Source: Central Bureau Statistics (2014) [2]

There is a widespread belief that farmers will be more prosperous if they can produce higher priced products in the retail market, but other research results suggest that farmers do not benefit from high commodity price growth at the retail level [20]. This shows that farmers' profits are more determined by the price of grain. One source of low selling price of grain received by farmers is the length of the grain supply chain.

The high price fluctuations are also a routine phenomenon that almost every year occurs in the seasonal distribution system of agricultural

products. When the harvest season, the product is abundant but the price is very low, vice versa at the time of the harvest season, the price so high. This causes the high harvest is often a frightening specter for farmers. In addition, the problem of distribution is often a constraint and obstacle for producer farmers in implementing their farming, especially concerning the many demands and challenges faced in the distribution process, such as: quality demands, quantity demands, and demands of consumer demand. All these demands became a classic problem in agricultural development.

Although demand for rice tends to be constant, and only significantly influenced by population, problems arise when there is a gap between production and consumption. Rice production fluctuates following cropping pattern, while rice consumption tends to be stable throughout the year. Rice surplus increases during harvest, while in dry season and planting season deficit. The price of rice has the potential to decline when production is abundant (harvest season) to the detriment of farmers, and otherwise rice prices will rise at a time of deficits that harm consumers so that rice prices will fluctuate throughout the year.

After the enactment of rice market deregulation policy in Indonesia in 1998, precisely disparity of rice price at farmer level with rice price at consumer level widened. The policy should make the rice distribution market lead to more competitive market conditions, and if the market mechanism is running perfectly, then intermediary traders will not be able to create large marketing margins. The current unfavorable conditions, where disparities of rice prices are widening, indicate anti-competitive behavior among intermediate traders. Deregulation policy increases domestic rice prices by around 125 percent, poverty increases in both rural and urban areas. One of the causes of asymmetric price transmission between vertically connected markets (in one distribution chain) is the existence of uncompetitive behavior among intermediate traders, especially if the intermediary trader is in a concentrated market. The intermediary trader will certainly try to maintain the profit level, and will not change the price according to the actual price.

Intermediary traders will more quickly respond to price increases than price reductions, thus triggering competition restraint on distribution channels and imperfect price transmission between manufacturers and consumers. The absence of price transmission between two different market levels in one marketing chain is caused by an uncompetitive market. It clearly states that for agricultural commodities, imperfect competition in the marketing chain opens up space for middleman to abuse its market power.

The purpose of this paper is to know the distribution system and margin share of post harvest rice in Indonesia. Also, to know the determinant factors of farmers bargaining power in the post harvest rice distribution process

MATERIALS AND METHODS

Economic justice

Justice according to John Rawls, is a measure that must be given to achieve a balance between personal interests and common interests [18]. There are three principles of justice, namely: (1) the same great of freedom; (2) differences; (3) equitable equality of opportunity. Adam Smith only accepted the concept of commutative justice, with the principle of no harm (non harm to the rights and interests of others), non intervention, and fair [9].

The economy as a business and human action to fulfill its need for goods/services that the number is limited [20]. The goal of any economic activity is to create a constant balance between necessity and supply. As both population and consumption continue to increase, the need is constantly increasing.

Thus justice in the economic field is a situation or situation in the safe that everyone gets what he deserves. This means that justice in the economic field is a fair treatment for everyone to earn a decent living in accordance with the needs and potential that exists.

Supply Chain

Supply Chain is a system where producers and distributors distribute goods and services to consumers. Supply chain is a network of organizations involved from upstream to

downstream, in different processes and activities that produce value in the form of products and services for the end user [5]. In a good supply chain there is a supply system that must be defined, designed and implemented to get an effective flow of material, information and funds in a supply chain [4].

The value chain approach can explain the distribution of profits occurring in a chain, so as to identify appropriate policies for better profitability. The most common empirical indicators used in the assessment of marketing efficiency include marketing margins and price transmission from the consumer market to farmers or to the producer's market. If the marketing margin is the sum of the marketing costs and the trader's profits are smaller, then the distribution system is said to be more efficient. In other words, the difference between the price received by farmers and the price paid by consumers is getting smaller. An efficient distribution system is expected to push the selling price of rice at the consumer level.

It is necessary to study in various fields to improve understanding for the development of rice and rice supply chain, including the use of technology and innovation. However, these efforts must be accomplished with a balanced principle, especially by the actors involved in it. The dynamic interaction between the various actors working in agriculture, the future food system strategy, and the innovative development of ideas can and should be utilized to generate welfare, income and stability, and thereby ensure food security at local, regional and global levels [24].

It should be reviewed also related to the price transmission elasticity of dry grain (GKP) and rice prices, so that more clearly the effect of price changes. The analysis of price transmission elasticity is an analysis that illustrates the extent to which the impact of a goods price changes at one level of the market on the price change of that good in another place or market level [8]. The price elasticity formula of price is:

$$E_t = \frac{\delta Pr / Pr}{\delta Pf / Pf} \text{ or } E_t = \frac{\delta Pr}{\delta Pf} \cdot \frac{Pf}{Pr}$$

Pf and Pr are linearly related in equation $Pf = a + b Pr$,

$$\text{so } \frac{\delta Pf}{\delta Pr} = b \text{ or } \frac{\delta Pr}{\delta Pf} = \frac{1}{b}, \text{ and } E_t = \frac{1}{b} \cdot \frac{Pf}{Pr}$$

Where: E_t = Price transmission elasticity

a = Intercept

Pf = Price at producers level

Pr = Price at consumers level

Government policies of post harvest rice distribution

The role of government in the post harvest rice distribution between one country and other countries is generally different. This is adapted to the existence of different interests and objectives in the handling of domestic rice market. When viewed from the intensity of government's role in rice marketing. There are some form of extreme direct involvement in operations, such as in the African countries of the 1960s, but there are also only limited in the form of coaching and creating a climate that encourages the creation of healthy food marketing [13].

The Government of Indonesia has a responsibility in regulating the domestic rice supply and price stability of rice. The unstable price of rice is the result of the price transmission process carried out by the perpetrators along the rice supply chain. The interaction of actors in the price transmission process is an important factor that often leads to injustice, even though it has been regulated in government regulations. It shows that the rice market in Indonesia is imperfect and inefficient with intermediary traders who gain excessive and unfair advantage. The critical issue with the transmission of prices and the phenomenon of determination lies in the information of unbalanced price transmission due to the supply and competition processes between actors along the rice value chain.

The government intervention in the "rice economy" is done through the rice agency in charge of implementing the government policy in the field of rice, which involves pre production, production process, and post production. One food agency assigned by the government to handle post-production activities, particularly in the areas of pricing,

marketing, and distribution is the Logistics Agency (BULOG).

Government policy can lead to the transmission of asymmetric prices that occur between levels of marketing [11]. Price changes at the farmer level relatively often will cause uncertainty for intermediary traders in determining the selling price, given the price at the farm level is the input cost for intermediary traders [25]. If such input cost changes are temporary, there is no incentive for intermediary traders to make price adjustments.

Each government in almost all countries has a price intervention policy (in the form of floor price) to protect farmers in the event of a price reduction at the farm level. Conversely, if there is a price increase at the farm level, the government will not intervene in price. This policy can indeed reduce the uncertainty of changes in costs faced by intermediary traders, but on the other hand precisely resulted in the transmission of prices from farmer level to consumer level to be asymmetric. This happens because at the time of price increases at the farm level, traders assume that the change is permanent, because there will be no government intervention. Furthermore, traders immediately adjust the selling price of the product in accordance with the price at the farm level. Conversely, if the price declines, traders consider it temporary because the government will soon intervene, so that traders will not quickly adjust the selling price. Finally there is a positive asymmetric price transmission.

Bargaining power of rice farmers

Bargaining power is a negotiation, one-sided capacity to dominate others because of its influence, strength, size, or status, or through a combination of different persuasion tactics. In the monopsony market structure at the farmer level, the trader is the price determiner [22]. In the monopsony structure, the trader will set the price equal to the average cost of farming. The price is lower than the price in the agricultural commodity market. As a result, the price of commodities at the farm level is lower than the price of the commodity at the level of perfect competition market although there is no marketing and processing costs.

This situation will certainly be detrimental to farmers and will reduce farmers' income. That is because in the "monopsony" market, the trader is the price determinant, so the price at the farm level is more influenced by the pricing of traders than the market price. Thus in spite of rising prices in the agricultural commodity market, the price increase is more absorbed to the merchant's profit than the absorption to increase the income of farmers.

RESULTS AND DISCUSSIONS

Distribution chain and margin share on post harvest rice distribution in Indonesia

Efforts to improve the welfare of farmers through pricing policies and other market incentives will be effective if farmers are directly linked to the market so that they can capture the incentives. Farmers' relation to the market is important for farmer's decisions in determining the way of farming. Farmers in developing countries are often separated from the competitive market because of the share of farmed crops consumed (subsistence motives) as well as sales practices with less transparent traders, for example through slash or other non-market mechanisms [6].

In the free market period, the rice distribution pattern did not change significantly. Farmers' habit to sell their grain trimmed or through collecting traders still continues [16] [19] (Figure 4). Institutional distributions are expected to be more efficient in the free market period did not happen. The marketing channels of grain and rice remain as long as in a controlled market period.

Furthermore, related to the dynamics of marketing patterns of rice and grain in Indonesia, mentioned that in Indonesia, the average share margin is about IDR44 to IDR68 from every IDR100 paid by consumers. At the time the price tends to rise, the margin tends to rise also around IDR5 to IDR21 for every IDR100 price increase, so also when the consumer price tends to go down, the margin decreases IDR14 to IDR33 every IDR100 price drop in the consumer market [6].

To analyze the transmission of rice prices, according to the results of data processing in

Figure 1, obtained the following regression analysis results (Table 1).

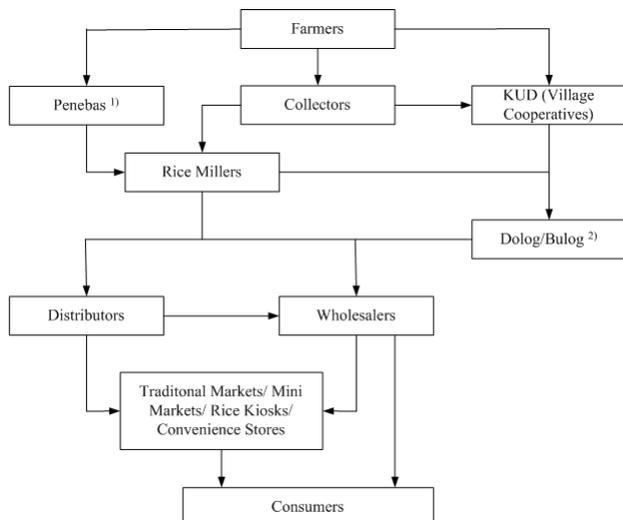


Fig.4. Distribution Chain of Post Harvest Rice (Grain) and Rice from Farmers to Consumers (Source: Natawidjaja, 2001) [16]

Note: ¹⁾ middleman who buys crops still standing in the field and who employs his own labor
²⁾ Bulog/Dolog is a government-owned company in Indonesia which deals with food distribution and price control,

Table 1. Regression Coefficient of Rice Price in Consumers and Producers Level

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 (Constant)	785.133	375.545		2.091	.105
Pr	.355	.039	.977	9.121	.001

a. Dependent Variable: Pf

Furthermore, it can be calculated elasticity of transmission of rice price at consumer level to price at producer level.

$$E_t = \frac{1}{b} \cdot \frac{Pf}{Pr} = \frac{1}{0,355} \cdot \frac{4,189.23}{9,600.34} = 1,23$$

According to the calculation result, it is found that the value of price transmission elasticity that describes the impact of price change at the consumer level on the producer price is 1.23. The value indicates that the rate of price change at the rice retailer level is greater than the rate of dry grain (GKP) price change at the farmers level. The market faced by all market players is imperfect or uncompetitive, i.e. there is a monopoly and oligopoly power in the distribution system and the prevailing distribution system is inefficient.

Factors affecting the bargaining power of farmers on the distribution of post harvest rice in Indonesia

The weak bargaining position of farmers is one of the problems of Indonesia's agricultural sector performance. Yet as a target of agricultural revitalization, this sector is expected to create jobs, foreign exchange, Gross Domestic Product, and better food. Until now the problem of low bargaining power and declining rice prices at the farmer level at the time of rice harvest (market glut) still occur repeatedly [1]. Whereas the domestic food procurement policy that began in 1969/1970 has produced rice self-sufficiency in 1984. Ironically, the economic welfare of farmers seemed marginalized.

The complexity of bargaining power of farmers relates to conditions or factors: natural, technical, social, economic, political, whether relatively in control of farmers or internal factors as well as external factors of farmers, such as government policy. The condition of food farmers (rice) is generally apprehensive, marked by the limited level of education, farming capital, banking access, and technology used [15]. Therefore, it is important to know how far the external internal factors of farmers affect the bargaining power of rice farmers.

The concept of bargaining power which are operationally intended as the relative ability of farmers in influencing the process of selling rice transactions to reach agreement on the selling price at a rate as far as possible exceeding the minimum price desired farmers [10] [12]. In Indonesia, research on the bargaining power of farmers is still limited, even in the international arena, research on bargaining power seems to be more of a theoretical study than empirical research. The focus is mostly on the interaction of negotiation and its benefits, not the cause of the weak bargaining power of farmers [17].

An initial hypothesis can be drawn up that internal-external factors of farmers jointly influence significant bargaining power of rice farmers. Furthermore, it can be arranged working hypothesis that partially higher: the area of arable land; the quantity of rice sold;

farmers' experience of farming; or non-agricultural income, the higher the bargaining power of rice farmers. Conversely, the higher the burden of household dependents, the lower the bargaining power of rice farmers. In the meantime, rice farmers who are partially: have higher education levels; multiple employment status; able to meet its capital requirement independently; planting new varieties of rice; sell good quality rice; has a drying place; delaying rice sales; selling rice with a non-cash payment system; or sell rice based on the base price; each of which has a higher bargaining power than the farmer who has the characteristics beyond the mentioned ones. In contrast, farmers who sell rice because of the urgent need for bargaining power are lower than farmers who sell rice not because of urgent needs.

CONCLUSIONS

Farmers in Indonesia are mostly small-scale farmers, especially when grain harvest is directly sold by farmers with slash system so that the selling price is lower when compared to unhulled rice sold in dry grain conditions. Slash system is a system of selling rice in an area when the harvest. This is usually done by farmers who do not have the funds to harvest. The buyer who then proceeds to harvest.

The value of price transmission elasticity in Indonesia shows that the rate of price change at the rice retailer level is greater than the rate of dry grain (GKP) price change at the farmers level. The market faced by all market players is imperfect or uncompetitive, i.e. there is a monopoly and oligopoly power in the distribution system and the prevailing distribution system is inefficient.

There are internal and external factors that influence the bargaining power of rice farmers. The higher the cultivated land area, the quantity of rice sold, the experience of rice farmers, or non-agricultural income, the higher the bargaining power of rice farmers. Conversely, the higher the burden of household dependents, the lower the bargaining power of rice farmers.

Farmers should not sell grain immediately when the harvest, it is better that partially

stored grains are stored for their needs up to 3 - 4 months ahead, so that more secure and will be able to suppress inflation. Therefore, farmers need to re-intensifies the grain storage of grain storage, so it is safer to anticipate the need for rice, given that selling grain and buying rice is not always sufficient in the market in large quantities. Further studies on the causes of inefficiency of post-harvest rice distribution need to be made in order to make distribution more efficient and share more equitable for farmers. One is to attempt to shorten the post-harvest rice distribution channel. To improve the bargaining position of farmers from a condition that tends to monopsony is to shape the farmers' institutions. Institutions that can be established such as rice milling institutions.

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