

Supply Response and Determining the Sale Price of Rice on the Level Farmer in the Province of Central Sulawesi - Indonesia

Max Nur Alam^{1,2,*}

1. Doctoral Students of Agricultural Economics Faculty of Agriculture,
University of Tadulako, Indonesia

2. Department of Agriculture Economic, University of Tadulako, Indonesia

*. E-mail of the Corresponding author: max.nuralam@yahoo.com

Abstract

This research aimed to analyze the price of rice decent on the farm level and analyze the effect of seed's amount, seed's price, rice's price, corn's price, and cassava's price to the supply of rice in the province of Central Sulawesi-Indonesia. The research was determined by method of Multi Stage Random Sampling, in 12 villages located in 6 subdistricts in Parigi Moutong Regency, Sigi Regency, and Donggala Regency, while respondents were 120 farmer households was determined by simple random sampling. The results showed that, when referred to the poverty indicators set by Sayogyo, the sale price must be offered by the rice farmers amounted Rp16,470 kg⁻¹, and if it referred to the adequacy of the standards of the World Bank in the amount U.S. \$ 2 per day per soul, then selling price of rice must be offered by farmers Rp17,647 kg⁻¹. The rice's price and seed's amount had positive effect and significant on the supply of rice in Central Sulawesi Province - Indonesia, while the seed's price and cassava's price had the negative effect and significant.

Keywords: prices, supply response, rice

1. Introduction

More and more increasing population, then more increasing food demand. According Maltus, population growth will be difficult to be followed by an increase in food, although farming is done intensively. Accretion of food to meet the needs of a growing population very rapidly it will be difficult to overcome, because it's that agricultural development strategy would be more appropriate if it is associated with changes in choosing and utilizing the power of public resources efficiently and wisely to achieve self-sufficiency (Kartasapoetra, 1998).

Rice has always been a topic of issues are quite complex and require the attention of various parties involved. Rice issue left entirely to market mechanism will not necessarily be able to solve the problem, may even create new problems. Experience of developing countries to open markets and reduce aid to farmers since 1995, can not change the problems of poverty, rural development declined, food imports increased rapidly, and threaten food security and urbanization can not be controlled, giving rise to new problems in urban areas. Sawit (2001) emphatically wrote, Indonesia still require government intervention in the rice market.

Finally, the problem of food at the state level and farm level remains a dilemma, but the attitude berstrategi still need to be taken so as not to seem, that the government does not pay attention to the fate of poor farmers, the government attempted to meet the national food for reasons of stability and integration, but at the same time impoverishing, or let the poor people who produce food for those who are not poor. In addition to protecting farmers from poverty dilemma, the government imposed a Government Purchase price determination program (HPP) for paddy and rice (Sudaryanto et al, 1999).

Pricing policy is the principal instrument of food policy. Broadly speaking, the target price policy is as follows: (a) protect the producers from market price slump, which usually occurs during the harvest season, (b) protect consumers from price increases in excess of purchasing power, especially in the dry season, and (c) control inflation through price stability. Moreover the pricing policy is also a policy of distribution (Amang, 1994).

Food has always been considered an important issue because it involves the most basic human needs, especially rice. Rice crop as a commodity crop agricultural production is very important in compliance with food Indonesia society.

Central Sulawesi province is one of the rice-producing areas in Indonesia, where the commodity has an important role in the economy of farmers. In Central Sulawesi there are only 3 districts are rice production centers, namely District Parigi Moutong to the productivity of 5.24 ton.ha⁻¹, Sigi was 4.91 ton.ha⁻¹, and Donggala 4.69 ton.ha⁻¹, the rest have a lower productivity level than the level of productivity of Central Sulawesi (BPS. Provinsi Sulawesi Tengah, 2012).

Production and the level of productivity of a farm has a close relationship with the income level of farmers. Rising levels of production in general will be followed by a rise in income, but nevertheless, increase in production is not always followed by increase farmers' income, because the income of rice farming is still influenced by the prevailing level of prices and policies Government Purchase Price (GPP) set by the government .

Rice farm income can not provide enough profit for farmers, although there has been some policy HPP. This is due to the high price of inputs that cause magnitude the cost of production, so that the income from rice farming is relatively small. Based on this thing, the researcher sees the need to analyze the price of rice is which feasible at the farm level and analyze the effect of seed's amount, seed's price, rice's price, corn's price, and cassava's price to supply rice in the province of Central Sulawesi, Indonesia. Empirical analysis of the rice supply response have been made, among others by Ojogho et al. (2013) and Furuya and Meyer (2008). For other commodities have been studied by Lopez and Ramos (1998).

2. Research Methods

The research was conducted in the province of Central Sulawesi. Time of data collection was conducted in March to April in 2013. Place or location of the research were determined using Multi Stage Random Sampling. In this case the first stage was set 3 regency that represent the production center where productivity levels were higher than the provincial rate of productivity. From each regency selected two subdistricts production center, and each subdistricts selected two villages that were production centers at the subdistrict level. Furthermore, from each village sample was set according to the number and diversity of existing populations.

Based on the data listed in Table 1, as well as taking into account the conditions of the region as an area of rice production centers, the districts that selected for the sample were (1) Parigi Moutong Regency, (2) Sigi Regency, and (3) Donggala Regency. Later from three regency, selected 6 subdistricts, namely Parigi Selatan Subdistricts, Torue Subdistricts, Palolo Subdistricts, Dolo Subdistricts, Balaesang Subdistricts, and Damsol Subdistricts. The villages were chosen as sample sites were Tolai Village, Tolai Barat Village, Namaru Village, Dolago Village, Sidondo 1 Village, Sidondo 3 Village, Ranteleda Village, Sejahtera Village, Malonas Village, Ponggerang Village, Sibayu Village and Kampung Baru Village.

Table 1. Harvested Area, Production and Productivity of Rice by Regency in Central Sulawesi, 2011

No	Regency/City	Area Harvested (ha)	Production (ton) *	Production (ton) **)	productivity (ton.ha ⁻¹) *	productivity (ton.ha ⁻¹) **)
1	Banggai Kep.	640	2,512	1,583	3.92	2.47
2	Banggai	40,410	185,478	116,851	4.59	2.89
3	Morowali	14,613	61,407	38,686	4.20	2.65
4	Poso	23,805	101,055	63,665	4.24	2.67
5	Donggala	23,893	111,961	70,535	4.69	2.95
6	Tolitoli	20,255	89,799	56,573	4.43	2.79
7	Buol	5,684	23,255	14,651	4.09	2.58
8	Parigi Moutong	49,500	259,474	163,469	5.24	3.30
9	Tojo Una-Una	2,062	7,006	4,414	3.39	2.14
10	Sigi	39,515	194,199	122,346	4.91	3.10
11	Palu	754	3,482	2,194	4.61	2.91
Total		221,846	1,039,628	654,967	-	-
Average		20,168	94,511	59,542	4.68	2.95

Source : *BPS Provinsi Sulawesi Tengah, 2012*

The population in this study were rice farmers who live in villages paddy production centers, in each subdistrict were selected as the sample location. Given the diversity in each village was relatively homogeneous sample in terms of rice acreage, the number of samples from each village set 10 farmers, so the number of samples originating from 12 villages as a whole was 120 farmers, while the determination of respondents from each village samples was done by using simple random sampling method.

Swastha (1988) states that in order to determine the selling price (first objective) can be used cost plus pricing approach, which was formulated in terms of the following equation:

$$HJ = \frac{BT + M}{P} \quad (1)$$

where:

- HJ = selling price of rice per kg, (Rp.kg⁻¹)
- BT = fixed costs + Variable Costs (Rp)
- M = margin or magnitude of the expected profit (Rp)
- P = number of physical production (kg)

The selling price of a decent indicator in this study was closely related to income eligibility could be evaluated from the following two criteria:

(1). If the selling price could generate income, which was assumed to be greater than the revenue to acquire more than 320 kg of rice equivalent per soul per year, or was above the poverty line according to the criteria Sajogyo.

(2). If the selling price could generate income, which was assumed to be greater than the income standards set by the World Bank, in the amount of U.S. \$ 2 per capita per day.

Analysis of the data used to determine the effect of seed's amount, seed's price, rice's price, corn's price, and cassava's price to supply rice in the province of Central Sulawesi-Indonesia was the supply function model of Cobb-Douglas, as follows:

$$Y = b_0 \cdot X_1^{b_1} \cdot X_2^{b_2} \cdot X_3^{b_3} \cdot X_4^{b_4} \cdot X_5^{b_5} \cdot e^{\mu} \quad (2)$$

The next equation was converted into natural logarithm equation:

$$\ln Y = \ln b_0 + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + b_4 \ln X_4 + b_5 \ln X_5 + \mu \quad (3)$$

where:

- Y = supply of rice (kg)
- b0 = constant
- X1 = amount of seeds (kg)
- X2 = price of seed (Rp)
- X3 = price of rice (Rp)
- X4 = price of corn (Rp)
- X5 = price of cassava (Rp)
- μ = error

3. Results and Discussion

3.1 Farming Income

Measure which was used to determine the amount of income earned from the farm, was the difference between revenue and total total cost, which consists of fixed costs and variable costs. Broadly speaking respondents income rice farmers in all the research sites could be specified as listed in Table 2.

Table 2. The average Income in Rice Farming Moutong Parigi Regency, Sigi Regency, and Donggala Regency, 2012

No.	Clarification	Value (Rp.ha ⁻¹)
1	rice production (2,253 kg.ha ⁻¹)	
2	average rice price (Rp6,830 kg ⁻¹)	
3	revenue	15,387,990
4	Farm Production Costs	
	a. Fixed Costs	
	- Rental value of land	2,242,188
	- land tax	23,438
	- shrinking	105,664
	Sub total (a)	2,371,290
	b. variable Costs	
	- seed	276,919
	- fertilizer	884,526
	- pesticide	107,724
	- Labor	4,500,000
	- Milling costs	1,537,180
	Sub total (b)	7,306,350
5	Total Cost of Production ((a) + (b))	9,677,640
6	Farming Income (3 – 5)	5,710,350

Source: Adapted from primary data, 2013

Table 2 showed paddy farm income by an average of Rp5,710,350 per ha per season. If one growing season reaches 4 months, the rice farm income by an average of Rp1,427,588 month⁻¹. If the number of family members an average household of 4 people, then the income from rice farming was an average of only Rp356,897 per person per month. It was obviously still relatively small, even 2.8 times smaller than the provincial minimum wage (UMP) Central Sulawesi currently (in 2013) was recorded at Rp995,000 month⁻¹.

3.2 Determination of Price of Rice at Farmers

(1). Volume of production at the break-even point could be calculated by the formula in Suratiyah (2006):

$$Q = \frac{TFC}{P - AVC} \quad (4)$$

$$Q = \frac{2,371,290}{6,830 - 3,243}$$

$$Q = 661 \text{ kg}$$

So the volume of sales at break-even point for the physical production of rice at all sites was 661 kg, with a selling price Rp6,830 kg⁻¹.

- (2). Revenue at the position even point was calculated by the formula:

$$P \cdot Q = \text{Rp}6,830 \times 661 \\ = \text{Rp}4,514,630$$

Based on the results of these calculations were known, that basically rice farmers in all research sites, have been managing their farm above the break-even point.

One of indicator to measure poverty levels proposed by Sayogyo (1980), based on the amount of income per capita per year was equivalent to the exchange rate of rice, as follows:

- (1). The poorest groups: if income was less than the exchange rate of rice was 240 kg per capita per year.
- (2). The poor once: when income was only equivalent to the exchange rate of rice was 240 kg up to 360 kg per capita per year.
- (3). The poor: when income was only equivalent to the exchange rate of rice by 360 kg to 480 kg per capita per year.
- (4). The group enough: when earnings equal to the exchange rate of 480 kg of rice up to 960 kg per capita per year.
- (5). The rich: when earnings equal to or more than the exchange rate of 960 kg of rice per capita per year.

Table 2 showed, the average income of all respondents amounted Rp5,710,350 ha⁻¹ per season. If it was assumed in one year could only plant rice 2 times, then the one-year average would be obtained revenues of Rp11,420,700. If it was assumed that current rice price was an average of Rp7,000 kg⁻¹, then the income would be equivalent to 1,632 kg of rice, and with an average number of 4 persons per household, the average income earned as much as 408 kg of rice equivalent per person per year. This fact showed that the average farmer respondents in the group was still relatively poor. Especially if it was assumed that the respondent farmers' income comes only from rice farming.

If you expected to get out of the poverty line with these indicators, the minimum income that must be obtained was equal to 4 X 480 X 7,000 = Rp3,440,000 year⁻¹. If revenue was expected from the results obtained by farmers in rice production, the price level of rice with an average of 7,000 kg⁻¹, the number of rice farmers who had obtained was as much as 1,920 kg, equivalent to 3,096 kg or 3,776 kg of paddy per year GKP, while production of the farmers obtained the respondent was currently 1,632 kg of rice per year, so there was still a shortfall of rice 288 kg of rice per year.

If we assumed that production could no longer be improved by the technology available today, it was an attempt to obtain such income was expected to raise the price of rice, the production rated of 1,632 kg (ceteris paribus), in order to obtain the level of the selling price of Rp13,440,000 / 1,632 = Rp8,235 kg⁻¹. These conditions still exist at the border of the poor, therefore if calculated at a safer level, rice production was to be obtained at 960 kg per capita per year, or an income of 4 X 960 X 7,000 = Rp26,880,000 year⁻¹. Things which could be obtained by increasing the production of an average of 3,840 kg of rice equivalent per hectare per year, or as much as 6,194 kg grain per ha per year, or as many as 7,554 GKP per ha per year. If explored further, respondents obtained rice production as shown in Table 2, an average of 2,253 kg.ha⁻¹ rice equivalent, or about 4,506 kg per ha per year or the equivalent of as much as 7,268 kg of rice paddy per year, or = GKP 8,863 kg per ha per year.

The data showed, that basically all the farmers in terms of production of the respondents could be classified as non-poor farmers, but due to the magnitude of the low cost of production and selling price, so that receipts and the income of farmers in the rice farming was low. Furthermore, if you expected to earn enough income level, assuming the products gained as much as 1,632 kg of rice equivalent per ha per year (ceteris paribus), the sale price must be offered by the rice farmers amounted Rp26,880,000 / 1,632 = Rp16,470 kg⁻¹.

Judging from other indicators set by the World Bank in the amount of U.S. \$ 2 per capita per day, or about 20,000 per capita per day, then the income of farmers who obtained a minimum respondents amounted to Rp600,000 per capita per month, or Rp28,800,000 per household per year, while the data shown in this research, assuming only farm income comes from farming rice, amounting Rp11,420,700 per ha per year, then the income was to be Rp951,725 per household per month or by Rp31,724 per farmer household per day, and if every household there were 4 people, then it became Rp7,931 income per capita per day, a level of income this was still relatively small.

If it was to come out of the category of the poor according to the criteria of the World Bank, then as noted earlier, the respondent farmers had an income of Rp28,800,000 per household per year, and assuming the cost of production, revenue and rice production remains constant (*cieteris paribus*) as shown in Table 2, the price of rice was to be offered was $Rp26,880,000 / 1,632 = Rp17,647 \text{ kg}^{-1}$.

The price of rice was feasible for farmers based on the criteria of poverty and the World Bank was too high when compared with the price of rice was currently available (about 7,000 - 8,000 kg^{-1}). According to research Malian et al. (2004), low rice price policy was not recommended, because the empirical evidence showed that this policy had affected rice farmers and not able to drive the industry to compete in world markets. Policy of price stability in the domestic market-oriented farmers' income increase, a policy package that was necessary at this time rice farmers. Policy research on rice and rice market has been carried out among others by Zolin and O'Callaghan (2011), Hossain and Verbeke (2010), Sung and Zapata (2004), and Khoso et al. (2011).

3.3 Analysis of Factors that affected Rice Supply in Central Sulawesi Province

Analysis to determine the factors that affected the supply of rice in the province of Central Sulawesi used multiple regression. Dependent variable was the supply of rice and the independent variable were the seed's amount, seed's price, rice's price, corn's price, and cassava's price.

Results of statistical analysis with the help of the program PASW version looks 18.00 Table 3.

Table 3. Results Analysis of Factors that Affected Supply of Rice in Central Sulawesi Province, 2012

Variable	Coefficients	t – stat.	Prob.	VIF
constants	-3.889			
Amount of seed	0.706 ***	16.646	0.000	1.062
Price of Seed	-0.298**	-2.086	0.039	1.018
Price of Rice	1.878**	2.263	0.026	1.055
Price of Corn	-0.291 ^{ns}	-1.351	0.179	1.079
Price of Cassava	-0.295*	-1.761	0.081	1.070

Adj-R² = 0.707
 n = 120
 F Stat. = 58.547
 Prob. (F Stat.) = 0.000

Source: primary data analysis, 2013

where:

*) significant at 90% confidence level, **) Significant at 95% confidence level

***) Significant at 99% confidence level, ns) not significant

Table 3 showed, that the adjusted R² value of 0.707, which meant that the independent variable were included in the model could explain variation in rice supply in Central Sulawesi province, which was 70.7 percent. F value significant at the 99% confidence level showed that the independent variable in the model jointly effect supply of rice in Central Sulawesi province.

Based on t test in Table 3 showed using of seed the positive effect and significant on supply of rice in Central Sulawesi province at 99 percent confidence level, but the response was inelastic (0.706). That meant, the increase in the using of rice seed by 1 per cent would lead to an increase in supply of rice by 0.706 percent, assuming other factors constant. This indicates that the supply of rice in the province of Central Sulawesi responsive to use of seed. This research was relevant to the research Ibrahim, et al. (2012). The study recommends that the input supply unit should be strengthened to provide and affordable meant rice production in Borno State, Nigeria. Research Donkoh, et al. (2013) showed education and adoption of modern inputs such as seed and fertilizer would determine the technical efficiency of farmers. Sustainability of the high efficiency of farmers would depend on the supply of inputs and education.

Seed prices the negative effect and significant to the supply of rice in Central Sulawesi province at 95 percent confidence level, but the response was inelastic (-0.298). That meant, the increase in seed prices by 1 percent would reduce the supply of rice in Central Sulawesi province was 0.298 percent. This indicates that the supply of rice in the province of Central Sulawesi responsive to the price of rice seed. Increase in the price of rice seeds would cause farmers to reduce rice seed technology utilization, this would reduce rice production would have an impact on the supply of rice in the province of Central Sulawesi.

Retail rice prices the positive effect and significant on supply of rice in Central Sulawesi province at 95 percent confidence level, and the elastic response (1.878). That meant, the increasing in rice prices by 1 percent would lead to an increase in supply of rice in Central Sulawesi province was 1.878 percent. This indicates that the supply of rice in the province of Central Sulawesi responsive to the retail price of rice. This research deals with the theory that an increase or decrease in the price of goods would lead to an increase / decrease in the number of

goods on offer. From the results of these researches showed that producers respond to offers of rice if there was an increasing / decreasing in the price of rice. This happened because of the limited agricultural land as a result of the conversion of agricultural land into non-agricultural. This research of relefan with research Hadi (without year), that affected the producer price of rice acreage in Indonesia. Higher producer prices would stimulate farmers to manage areas with intensive rice.

Corn's price was not significant affect to supply of rice in Central Sulawesi Province. It became an indication that the corn was not to be one of substitution of goods in the supply of rice in the province of Central Sulawesi. The cassava's price had negative effect and significantly to the supply of rice in Central Sulawesi province at 90 percent confidence level, but the response was inelastic (-0.295). That meant, cassava price increases by 1 per cent would lead to a decrease in supply of rice by 0.295 percent. It became an indication that cassava is a substitution in the supply of rice in the province of Central Sulawesi. If prices rise, the cassava farmers would consume more rice so that the rice offers would be reduced, and vice versa. This research relefan with Sitepu research (2002) which stated response of rice crop area was negatively related to the price of competitive plants. Supply of rice in Central Sulawesi province derived from rice production in the region itself plus reserved early rice and rice imports. Government intervention in the economy in the supply of rice including rice in the country was fundamentally aimed at sustaining domestic rice production, protecting farmers, and ensuring rice sufficiency for the people so that they got easy access economically and physically sustainable (Saifullah, 2004). One of the food agency tasked the government to address the issue of post-production, especially regarding pricing, marketing and distribution of rice was Bulog. Prior to 1998, the task of which was to control Bulog producer prices and kept prices stable at the consumer level, as well as providing rice reserved over time and among regions for the purposes of routine distribution and market operations, as well as the government's rice reserved for emergency purposes. This was similar to Widyarini and Pawitan (2010) suggested Bulog to provide short-term action plans and long term for better governance in the procurement of rice in Indonesia.

4. Conclusions and Recommendations

4.1 Conclusion

- (1). - Referring to the poverty indicators proposed by Sayogyo, then to obtain sufficient levels of income as well as out of the poor, with the assumption that the production of as many as 1,632 farmers obtained equivalent kg rice per ha per year (*citeris paribus*), the selling price of rice to be offered by farmers amounted Rp16,470 kg⁻¹.
 - Furthermore, if it was expected to come out of the category of the poor according to the criteria of the World Bank in the amount of U.S. \$ 2 per day per soul of the farmers had an income of farmers Rp28,800,000 per household per year, and assuming the cost of production, revenue and rice production remained constant, then the selling price to be offered by the rice farmers amounted Rp17,647 kg⁻¹.
- (2). The rice's price and amount of seed were used positive effect and significant on supply of rice in Central Sulawesi Province-Indonesia. Seed's price and cassava's price had negative effect and significant to the supply of rice in the province of Central Sulawesi-Indonesia.

4.2 Suggestions

- (1). Still need the attention of the government in terms of policy determination of the Government Purchase Price (GPP) for paddy and rice, remember the prices are received by farmers today, both in Central Sulawesi in eastern Indonesia in particular and in general is still too low and can not provide enough revenue for farmers and their families to live worthy of the result of the farm.
- (2). Each province is expected to give the proposal to the Central Government, on the magnitude of Government Purchasing Price for paddy and rice in accordance with the conditions of any province in Indonesia.

References

- Amang, 1994. *Pengendalian Pangan dan Harga*. Dharma Karsa Utama. Jakarta.
- BPS. Provinsi Sulawesi Tengah, 2012. *Sulawesi Tengah Dalam Angka 2011*. BPS. Provinsi Sulawesi Tengah, Palu.
- Furuya, J., and Meyer, S.D. (2008). Impacts of Water Cycle Changes on the Rice Market in Cambodia: Stochastic Supply and Demand Model Analysis. *Paddy Water Environ*, 6:139–151. DOI 10.1007/s10333-007-0101-y.
- Hadi, P. (tanpa tahun). Dampak Kebijakan Harga Dasar pada Harga Produsen, Harga Konsumen dan Luas Tanam Padi: Belajar dari Pengalaman Masa Lalu. Pusat Analisis Sosial Ekonomi dan Kebijakan Pertanian Badan Litbang Pertanian Bogor, diakses dari, [http://www.google.co.id/#q=jurnal%2C+Penentuan+Harga+Jual+Beras+Yang+Layak+Pada+Tingkat+Petani+++\(7/9/2013\)](http://www.google.co.id/#q=jurnal%2C+Penentuan+Harga+Jual+Beras+Yang+Layak+Pada+Tingkat+Petani+++(7/9/2013)).

- Hossain, M.I., and Wim Verbeke, W. (2010). Evaluation of Rice Markets Integration in Bangladesh. *The Lahore Journal of Economics* 15 : 2: pp. 77-96.
- Ibrahim, A.A., Mustapha, S.B., and Idris Y.L. (2012). Accessibility to Rice Production Technologies by Farmers Under Borno State Agricultural Development Programme, Nigeria. *Int J Cur Res Rev*, Vol 04 (23): 16-21.
- Kartasapoetra, A.G., (1988). *Pengantar Ekonomi Produksi Pertanian*. Bina Aksara, Jakarta.
- Khoso, I., Ram, N., Ghumro, I.A., and Shaikh, F.M. (2011). Empirical Analysis of Implication of WTO on Rice Market. *International Journal of Economics and Finance* Vol. 3, No. 2; 159-165.
- Lopez, L.A., and Ramos, H.H. (1998). Supply Response and Demand for Basic Grain in El Salvador. *Agribusiness*, Vol. 14 No. 6, 475-481.
- Malian, A.H., Mardianto, S., dan Ariani, M. (2004). Faktor-Faktor yang Mempengaruhi Produksi, Konsumsi Dan Harga Beras Serta Inflasi Bahan Makanan. *Jurnal Agro Ekonomi*, Volume 22 No.2, 119 – 146.
- Ojogho, O., Erhabor, P. O., Eguare, R. A., and Ahmadu, J. (2013). Time-Series Analysis of Nigeria Rice Supply and Demand: Error Correction Model Approach. *Global Journal of Agricultural Sciences*, Vol. 12 : 37-43. DOI: <http://dx.doi.org/10.4314/gjass.v12i1.6>.
- Saifullah, A., 2004. Peran Bulog dalam Kebijakan Perberasan Nasional. *BungaRampai Ekonomi Beras*. LPEM FEUI, Jakarta.
- Samuel A. Donkoh, S.A., Ayambila, S., and Abdulai, S. (2013). Technical Efficiency of Rice Production at the Tono Irrigation Scheme in Northern Ghana. *American Journal of Experimental Agriculture* 3(1): 25-42.
- Sawit, M.H. (2001). Harga dasar gabah: Evaluasi 2000 dan prospek 2001. *Majalah Pangan* 10(36): 30-34.
- Sayogyo, 1986. *Garis Kemiskinan dan Ukuran Tingkat Kesejahteraan Penduduk*. Tidak diterbitkan.
- Sitepu, R.K.K. (2002). Dampak kebijakan Ekonomi dan Liberalisasi Perdagangan Terhadap Penawaran dan Permintaan Beras di Indonesia. *Disertasi*, Program Pascasarjana Institut Pertanian Bogor. Tidak dipublikasi.
- Sudaryanto, T., Prajogo U. Hadi, Sri H. Susilowati dan E. Suryani. 1999. Perkembangan Kebijakan Harga dan Perdagangan Komoditi Pertanian. *Laporan Hasil Penelitian*. Pusat Penelitian Sosial Ekonomi Pertanian. Bogor.
- Sung, C.N., and Zapata, H.O. (2004). A Dynamic Econometric Modeling of the U.S. Rice Market. *Journal of American Academy of Business, Cambridge*; 4, 1/2; BI/INFORM Complete pg. 384.
- Suratiyah K., 2006. *Ilmu Usahatani*. Penebar Swadaya, Jakarta.
- Swastha B, 1988. *Pengantar Bisnis Modern*. Liberty, Yogyakarta.
- Widyarini, M. and Pawitan, G. (2010). Effect of Exchange Rate Fluctuation on Rice Import in Indonesia using VAR Analysis. *GSTF Business Review (GBR)* 1 (2) : 252-257. DOI: 10.5716_2010-4804_1.2.84.
- Zolin, M.B., and O'Callaghan, B.A. (2011). Rice price volatility: Sustainable policies in Asia and Europe. *Asian Business & Management*, Vol. 11, 3, 251–271.

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage:

<http://www.iiste.org>

CALL FOR JOURNAL PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** <http://www.iiste.org/journals/> The IISTE editorial team promises to review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: <http://www.iiste.org/book/>

Recent conferences: <http://www.iiste.org/conference/>

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digital Library, NewJour, Google Scholar

