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A Comparative Analysis of Farmgate and Regulated Prices of Palay in Nueva Ecija, Philippines: A Policy Revisited

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Abstract

The study analyzed the interplay between the palay farm gate price and government price subsidy for palay in Nueva Ecija, Philippines. The paper argued that there is a gap in the implementation of the latter (government subsidy). Hence, this paper determined the monthly pattern of prices of palay, measured the difference between the average farm gate and government support price (subsidy) for palay from 1994 to 2005 and its influence to actual government procurement of palay vis-a-vis the supply and demand of palay grains in the market. The study utilized secondary data from the National Food Authority (NFA) and Bureau of Agricultural Statistics (BAS). This was subjected to t-test to assess whether the means of two groups were statistically different from each other. In general, farm gate prices (FG) (in the province) were higher compared to the government support price (subsidy) except in the years 1999, 2000, 2001, 2002 and 2003. From the years 1994 to 1998 and 2004 to 2005, the t-value is greater than the critical values of the t-distribution leading to the rejection of null hypothesis that government support price is higher than the farm gate price. The NFA consolidated actual procurement in (Nueva Ecija) the province that from the years 1994 until 2004, it constituted (a measly) 0.95 percent of the total palay production equivalent to 9,828,224 metric tons. This yielded a correlation coefficient between the actual price subsidy and actual procurement as "significant but very low" with a value of 0.16. The actual procurement correlation to farm gate price showed a significant but negative correlation of −0.18. This means that as the farm gate price increases, the actual procurement of NFA decreases. The subsidy and farm gate prices are positively correlated with a coefficient of 0.54 significant at 1 percent level. The study concluded that the objectives of subsidy are not met

and necessary governmental adjustments must be made to realize them.

Keywords

Farm Gate Prices, Price Support, Palay Trade, NFA Palay Subsidy

1. Introduction

In the Philippines, rice is a major agricultural and a highly political commodity. It impacts on every Filipino table since this is a staple food. Hence it is important to stabilize rice prices. The National Food Authority (NFA), a government agency, was mandated to protect the interest of rice farmers and consumers. The province of Nueva Ecija has been considered the rice granary of the Philippines because of its vast rice production. NFA buys from farmers at the government support price directly competing with local rice traders. Sometimes, these support prices have not been competitive. This study analyzed the interplay between the farm gate price and government procurement price for palay using the t-test and correlation coefficient as statistical tools which covered the period 1994 to 2005. It further assumed that the amount of government procurement directly affects the behavior of the price of palay in the market.

Rice is the most important economic commodity in the Philippines. It is a political commodity in the Philippines [1]. Rice accounts for about 20 percent of the total value of agricultural goods produced in the country. It is planted in 2.3 million hectares or 30 percent of the total crop area. Rice provides livelihood to at least two million farmers, 86,000 wholesalers and retailers and 12,000 millers. Moreover, it is the primary food of 65 million Filipinos [2].

Since 1930s the government has been trying to regulate the supply and demand for rice through National Food Authority (NFA) to achieve the twin objectives of improving the lives of farmers, and at the same time regulating the price of rice in the market [3].

Nueva Ecija is known as the rice granary of the Philippines. Palay is the dominant crop in the farms of Nueva Ecija. It is the number one producer of palay in the country [4]. In 2003, palay production in the province reached 13,499.4 thousand metric tons from 4006.4 thousand hectares [5].

Being a commodity of economic and political significance, it is subjected to government policy having conflicting objectives of price stabilization, increasing producer's income, reducing consumer's prices and self-sufficiency that have the direct bearing on the rice marketing [6].

To achieve such objectives, the National Food Authority was created from the defunct National Rice and Corn administration and National Grains Authority ([7] In 1972, the NFA was created and vested with authority to regulate grains and farm production, manufacturing, processing, and packaging of food products, and to assure adequate and continuous supply at reasonable prices. In-

cluded in its operations are corn, feed, grains, and all other basic commodities [8]).

The NFA regulates the supply and demand of rice in the market by providing government subsidy. The specific objectives of price policy focused on consumer food price (stabilization, reduction, and urban preferences), food supply (food security), producer prices (production incentives and relative commodity prices), agricultural trade (increased export and reduced food import), revenue (provision of government revenue) and industrialization (provision of resources, favorable terms of trade for the manufacturing sector).

The strategy of providing government subsidy to regulate prices of rice in the market is hinged on the following reasons: prices are the efficient indicator of the relative values of a product and knowledge of price shapes the behavior of producers, distributor, and consumers in the market [9]. The price support or subsidy is the price flooring set by the government to motivate farmers to produce more with the guarantee that during harvest seasons, when the supply is high, there will be no unreasonable decrease in the price in the market leading to their eventual capital loss [10].

The national government, as part of stabilization program, is motivated mainly by objectives of controlling prices at the farm to improve both the consumers and producers welfare. One program of the government to achieve this goal is the paddy price support [11].

In September 9 1980, Executive Order 22 authorized the National Food Authority (NFA) to intervene in the stabilization of rice prices and supply of basic food items. Paddy price support in the Philippines was set based on the production as surveyed by the Department of Agriculture through the Bureau of Agricultural Statistics, the estimated income of the farmers adjusted for inflation based on the support price level to be adopted vis-a-vis income of farmers planting other crops, the corresponding price level of rice based on the support price to be established giving due consideration to a reasonable consumers price level, and other factors such as nitrogen and paddy price ratio, and price parity with the world market [12].

The main task of government is to satisfy the social needs of the population. For 30 years now, the National Food Authority (NFA) exists as a government guardian of the nation's food security, and has stabilized food supply and prices. NFA ensures the availability of cheap and higher quality rice and buffer stock during emergencies caused by natural calamities and man-made disasters.

The Philippine government controls rice prices and regulates trading activities. However, starting from the Aquino administration, steps were taken to reduce government intervention and increase private participation mainly to promote economic efficiency and reduce the budgetary requirement for its stabilization for this move of the government of allowing private businessmen to participate in rice trading would render useless the subsidy policy of the government [13]. But despite the seeming importance of rice in the market, and the

government role to stabilize its prices as the main objective of the NFA, there is a few data available to measure the influence of price policy on the movements of palay in the market alongside with the determination of its usefulness to the farmers and the price stabilization.

Objectives of the Study

This study aimed at analyzing the government policy in the appropriation of government subsidy for palay in Nueva Ecija Philippines by measuring the farm gate prices, government support price subsidy and palay procurement statistics of the National Food Authority in the years 1994 to 2005. Specifically, this study aimed at determining the following:

The monthly pattern of farm gate prices of palay received by farmers from 1994 to 2005;

The difference between the average farm gate prices and government procurement price for palay from 1994 to 2005;

The proportion of NFA total procurement and the entire production of palay in the province from 1994 to 2005; and

The relationship between NFA actual procurement and government subsidy of palay for the province from 1994 to 2005.

The hypotheses:

1) The farm gate price for palay received by farmers is lower than the government price subsidy;

2) The amount of palay procured by NFA is significantly related to the implemented government price subsidy.

2. Methodology

2.1. Study Locale

The study locale is in Nueva Ecija, the largest province in Region III and top producer of rice in Central Luzon, thus, it is often referred to as the "Rice Bowl of the Philippines." Almost half of its land area is used for agriculture with a total of 196,390 hectares devoted to rice. This study focused on the analysis of government price subsidy for rice from the year 2004 to 2005 implemented by National Food Authority (NFA).

2.2. Study Design

The study used both the quantitative and qualitative research methods. The quantitative aspect was applied in interpreting the data taken from National Food Authority (NFA) on price subsidy and procurement records for palay. Farm gate prices and actual production data were gathered from Philippine Statistics Authority (PSA). The qualitative part involved the use of interviews and personal observation as bases for insights and trend in the market of palay which have direct implication to the supply and demand for palay grains in Nueva Ecija Philippines.

2.3. Sources of Data

This study focused on the implementation of government subsidy for palay price in the province. This study used secondary data. Secondary data were secured from the repository of National Food Authority (NFA) in Nueva Ecija and Philippine and Statistics Authority (PSA). Grains procurement, government price support, farm gate price and palay production covered the year 1994-2005.

2.4. Methods of Analysis

This study was evaluated using the t-test on the relationship between palay-farmgate price and government support price i.e., two population means testing the difference between the samples. The second test used was the correlation coefficient which measured the statistical relationship or magnitude of the association, as well as its direction pertaining to the amount of government procurement could directly affect the behavior of price of palay in the market.

Validation of data gathered from NFA and BAS were matched against the receipts filed with their offices as every transaction was meticulously recorded as matter of policy and for audit purposes.

Hence, these data were tabulated and analyzed using mean and percent difference. To estimate the proportion of palay obtained through procurement and total rice production the following formula was used:

$$\%\ \text{procured} = \frac{\text{TPc}}{\text{TPd}} \times 100$$

where:

TPc = total procurement at time *t*

TPd = total production at time *t*

The formula for t-test is:

$$\text{tc} = \frac{\overrightarrow{X_1} - \overrightarrow{X_2}}{\text{S12} + \text{S22}}$$

n1, n2

where:

$X_1 - X_2$ = mean of the different variable (monthly NFA price support and actual procurement from the year 1994 to 2005, respectively);

S12 + S22 = variance of the different variables (monthly NFA price support and actual procurement from the years 1994 to 2005, respectively);

n1 + n2 = number of sample (NFA price support and actual procurement).

To determine the relationship between price support and actual procurement by NFA, Pearson product moment correlation analysis was used. As stated by Kwanchai A. Gomez *et al.* (1998), Pearson product-moment correlation analysis deals with the estimation and test of significance of the simple linear correlation coefficient r, which is a measure of the degree of linear relationship between two variables X and Y.

The correlation coefficient was done using this formula:

$$r = \frac{n(\sum xy) - (\sum y)}{n(\sum x2) - (\sum x)2n(\sum y2) - (\sum y)2}$$

where:

r = correlation coefficient;

n = number of sample data;

x = support prices;

y = NFA's actual procurement.

The following was used to determine the extent of correlation between paired variables [14] [15].

0.00 to + 0.20—negligible correlation

+ 0.21 to + 0.40—low correlation

+ 0.41 to + 0.50—substantial correlation

+ 0.51 to + 0.80—marked correlation

+ 0.81 to + 1.00—high to very high correlation

2.5. Conceptual Framework

Figure 1 illustrates the systems approach model. This entails analysis of problems and synthesizing solutions. The examination of the forces affecting it must be identified, and where the situation must be viewed as a system composed of interconnected parts and its relation to other systems.

The NFA support price in the form of subsidy aims to stabilize price of palay and rice and serves as a strategy to ensure food security. Thus, NFA is involved in the procurement, distribution, and storage of rice to control prices at the farm and consumer level to improve producers' and consumers' welfare. With this principle in mind, the government can influence the economic activity in the grains agricultural sector by way of price control. This further balances price speculation in the market and prevents hoarding by unscrupulous traders in the guise of shortage in supply. This is the reason, too, why NFA stores the procured palay to ensure it has enough stocks especially in times of calamities to cushion unwanted rise in the price of rice. Local traders would naturally follow the trend in as much it directly benefits the farmers.

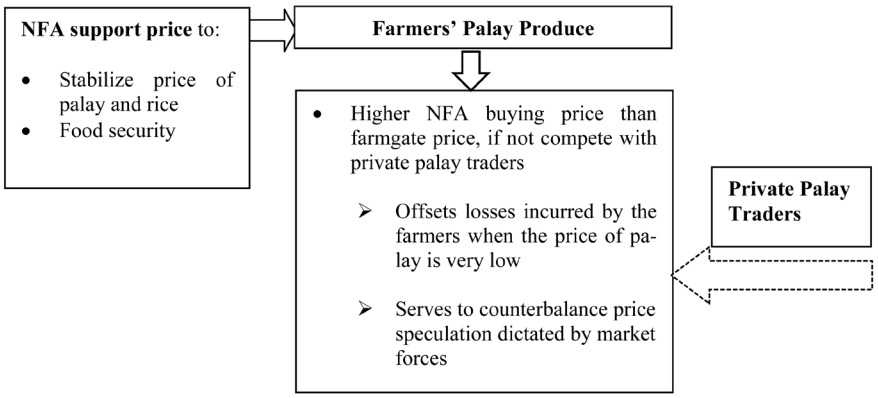

Figure 1. Conceptual framework of the study.

3. Results and Discussion

3.1. Monthly Pattern of Farm Gate Prices of Palay in Nueva Ecija

The monthly farm gate prices of palay in Nueva Ecija from the years 1994 to 2005 are shown in Table 1. The average farm gate prices of palay fluctuated from P6.91 in 1994 to P11.14 per kilogram in 2005. On a monthly basis, farm gate prices of fresh palay started to increase during the month of June and peaked during the month of August. In 1994, monthly farm gate prices were high during the first and second quarter and low in the last quarter of the year. Highest price per kilogram was observed during the months of June (P7.67), July (P7.62) and August (P7.70) and consequently low from October (P5.88), November (P6.44) and December (P6.44). In 1995, monthly farm gate prices of palay increased from P6.63 in June to P 12.00 in August then started to decline from the month of September until December. The highest price of palay was received in August at P12.00 per kilogram. In 1996, monthly farm gate price fluctuated from P9.00 to 10.22 per kilogram. In 1997, the highest price of palay was received during the months of July, August and September at P10.00 per kilogram then declined to P7.71 in October to P7.78 in November. In 1998, farm gate prices of palay from the months of January to September also fluctuated from P8.51 to P8.91 per kilogram then continuously increasing from the succeeding months. In 1999, prices were higher in the months of January, February, June, and July. The lowest price was observed at the month of November at P7.20 per kilogram. In 2000, farm gate prices of palay from the months of January to May fluctuated from P9.46 to P8.41 per kilogram.

Based on the data shown in Table 1, farm gate prices during the first and third quarter for the years 1994-2005 were relatively higher. During these

Table 1. Monthly average farm gate prices of palay, Province of Nueva Ecija, 1994-2005.

YEAR/MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVE
1994	7.02	6.99	6.83	6.68	6.74	7.67	7.62	7.70	6.95	5.88	6.44	6.44	6.91
1995	6.63	6.81	6.95	7.54	8.37	8.81	10.59	12.00	8.00	8.52	8.53	9.93	8.56
1996	10.22	10.47	10.00	10.23	9.62	9.45	9.74	10.00	6.67	7.19	7.08	9.00	9.14
1997	8.29	8.02	8.18	8.10	8.15	8.73	10.00	10.00	10.00	7.71	7.78	8.93	8.66
1998	8.51	9.00	9.07	8.89	10.13	9.55	10.00	10.50	8.91	10.00	10.00	10.50	9.67
1999	10.00	10.00	9.08	8.72	9.40	10.00	10.00	9.91	9.00	8.26	7.20	7.92	9.12
2000	9.46	9.73	9.54	8.88	8.41	10.07	10.49	11.20	8.84	8.38	8.39	9.00	9.37
2001	8.84	9.33	9.83	8.08	8.17	9.17	9.44	10.00	7.38	8.00	8.31	9.28	8.82
2002	9.00	8.67	8.22	9.49	9.14	10.41	11.17	13.00	9.06	8.70	8.90	9.11	9.57
2003	8.94	9.00	9.46	9.62	9.80	11.57	10.13	10.41	9.23	8.58	8.92	9.00	9.56
2004	9.45	9.33	9.14	10.48	11.19	13.05	11.56	9.34	10.01	9.30	10.15	10.85	10.23
2005	10.41	9.46	10.64	11.85	11.03	13.00	13.00	13.11	9.00	9.99	10.52	11.67	11.14

months, main cropping season was at its onset, and palay supply was near depletion resulting in a higher farm gate prices.

Results of the study show that during the peak harvest of wet (September to November) and dry season (January to March), farm gate prices are relatively lower than the other months of the year.

However, the price of palay during peak harvest months of the dry season is relatively higher compared to the peak harvest of the wet season. This is attributed to the relatively better quality of palay produced during the dry season. Palay produced during the wet season are inferior in quality due to monsoon rains and typhoons.

The consolidated farm gate prices of palay from the years 1994-2005 are shown in Figure 2. Farm gate price was lowest and highest in the month of October (1994) and August (2005) at P5.88 and P13.11 per kilogram, respectively. In general, farm gate prices of palay were observed to be highest during the months starting June to August where palay supply was at its lowest.

3.2. Government Subsidy for Price of Palay

The historical palay support price from the years 1994 to 2005 is presented in Table 2. The support price of rice based on rough estimate was the government-guaranteed farm price through NFA procurement operations. This price was enforced nationwide regardless of its geographic location to 1) provide farmers a reasonable return on their investment, 2) designed to inform commercial grains businessmen of the minimum price level of the said commodity. The support prices were generally adjusted each year and have increased from P6.00 per kg in 1994 to P10.00 per kg in 2005. The support price for palay was based on quality specification of moisture content and purity of palay. Discolored and damaged grains are not accepted.

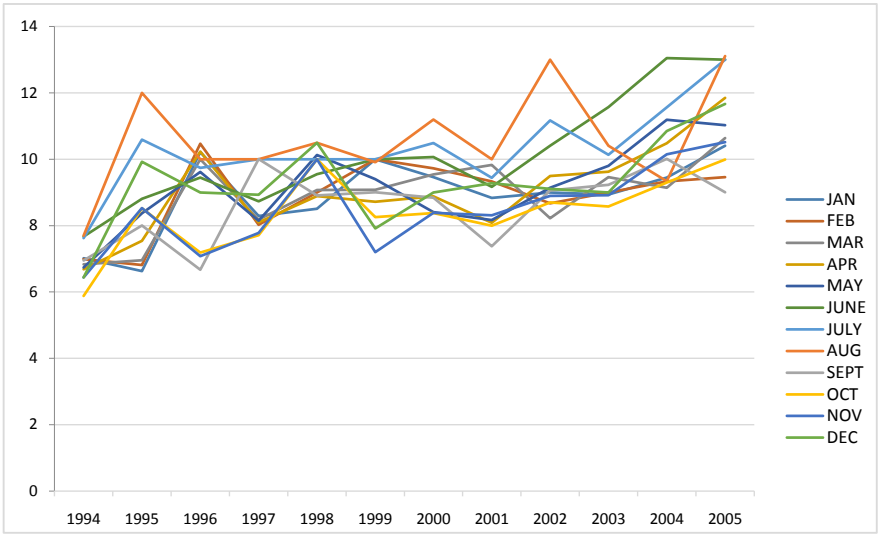

Figure 2. Consolidated farm gate price of palay, Province of Nueva Ecija, years 1994-2005. Source : Bureau of Agricultural Statistics.

Table 2. Palay support prices, Province of Nueva Ecija, years 1990-2005.

EFFECTIVE DATE	OFFICIAL SUPPORT PRICE (Php/Kg)	SUPPORTING LEGISLATION
Oct 1, 1990-Jan 31, 1996	6.00	Administrative Order No. 050, September 28, 1990
Feb 1, 1996-Jan 31, 1999	8.00	Administrative Order No. 99-001043 January 26, 1999
Feb 1, 1999-Aug 31, 1999	10.00	Administrative Order No. 99-001044 January 27, 1999
Sep 1, 1999-Feb 2000	9.00	-do-
Mar 1, 2000-Aug 31,2000	10.00	-do-
Sep 1, 2000-Feb 2001	9.00	-do-
Mar 1, 2001-Aug 31, 2001	10.00	-do-
Sep 1, 2001-Feb 2002	9.00	-do-
Mar 1, 2002-Aug 31, 2002	10.00	-do-
Sep 1, 2002-Feb 2003	9.00	-do-
Mar 1, 2003-Aug 31, 2003	10.00	-do-
Sep 1, 2003-Feb 2004	9.00	-do-
Mar 1, 2004-Aug 31, 2004	10.00	-do-
Sep 1, 2004-Nov 31, 2004	9.00	-do-
Dec 1, 2004-present	10.00	Administrative Order No. 019 November 23, 2004

Source: National Food Authority

The official price subsidy for palay from October 1, 1990 until January 1999 was P 6.00 per kilogram. This was supported by Administrative Order No. 050 dated September 1990. From February 1, 1999 to January 31, 1999, the official price support for palay was P8.00 per kilogram. Between February 1, 1999 to November 31, 2004, the official price support for palay was alternately pegged at P10.00 and P9.00 per kilogram, respectively. This was based under Administrative Order No. 99-01043 dated January 1999. From December 2004 up to present, official price support was pegged at P10.00 per kilogram under the Administrative Order No.019 dated November 23, 2004.

3.3. Government Support and Farm Gate Prices in Nueva Ecija

Table 3 presents the farm gate prices and support prices for palay in Nueva Ecija from the year 1994 to 2005. In 1994, monthly farm gate prices of palay increased from P6.44 to P7.02 per kilogram while price support was pegged at P6.00 per kilogram. Average farm gate price was higher than the government support price. In 1995, monthly farm gate price increased from P6.63 to P12.00 per kilo-

gram. In 1996, price support was P6.00 in January and increased to P8.00 in the preceding months. Average farm gate prices during this period were P9.14 per kilogram. From 1997 until 1998, average farm gate prices were P8.66 and P9.67 per kilogram, while price support was pegged at P8.00 per kilogram. From 1999 to 2003, average farm gate prices appreciated from P9.12 to P9.56 per kilogram and continued to increase to P10.23 in 2004 and P11.14 per kilogram in 2005. Data shows that from 1994 to 2005, farm gate prices of palay in Nueva Ecija were higher than the implemented price support by the government. It only shows that the price support was ineffective because the prevailing market price is much higher.

Difference between Farm gate (FG) and Support Prices (PS) for Palay

Table 4 presents the difference between farm gate and support prices of palay in Nueva Ecija from the years 1994 to 2005.

Table 4 shows that in the years 1994, 1995, 1996, 1997, 1998, 2004 and 2005 farm gate prices (FG) in the province were higher compared to the price support (PS) implemented by NFA with a percentage difference of 13.17, 29.91, 12.47, 7.62, 17.27, 2.24, and 10.23 percent, respectively. During the years 1999, 2000, 2001, 2002, and 2003, price support was higher than the farm gate prices.

Throughout the years 1994 to 1998 and 2004 to 2005 the t-value is larger than the critical values of t-distribution hence, the hypothesis is rejected because the farm gate price is higher than the price support instituted by the NFA at 1 percent level of significance.

3.4. The Hypotheses

1) The farm gate price of palay received by farmers is lower than the support price of NFA is rejected and;

2) The amount of palay procured by NFA is significantly related to the implemented government price subsidy is accepted.

The price support program of NFA is being implemented to promote growth in palay production as well as assure farmers of reasonable income. This program was rendered ineffective because the offered price in the market was much higher than the NFA implemented support price in the province. This further means that farmers failed to realize the intended benefits from the price support program.

3.5. The NFA Palay Procurement Scheme

Table 5 shows the difference between the NFA target procurement and actual paddy procurement from the year 1994 to 2005. Data revealed that in the year 1999 and 2000 NFA had exceeded their target procurement by 481.40 and 419.28 metric tons. This is due to higher price support in those years. On the other hand, during the year 1994 to 1998 and 2001 to 2005, NFA failed to achieve their target procurement. As stated in palay procurement scheme, NFA palay procurement in Nueva Ecija is done by setting up stationary buying stations and pick-up points in strategic places and deployment of mobile procurement teams.

Table 3. The average monthly farm gate prices and government price subsidy for palay (P/kg), years 1994-2005.

YEAR/MONTH	JAN		FEB		MAR		APR		MAY		JUN	
	FG	PS	FG	PS	FG	PS	FG	PS	FG	PS	FG	PS
					6.83	6.00	6.68	6.00	6.74	6.00	7.67	6.00
1994	7.02	6.00	6.99	6.00								
1995	6.63	6.00	6.81	6.00	6.95	6.00	7.54	6.00	8.37	6.00	8.81	6.00
1996	10.22	6.00	10.47	8.00	10.00	8.00	10.23	8.00	9.62	8.00	9.45	8.00
1997	8.29	8.00	8.02	8.00	8.18	8.00	8.10	8.00	8.15	8.00	8.73	8.00
1998	8.51	8.00	9.00	8.00	9.07	8.00	8.89	8.00	10.13	8.00	9.55	8.00
1999	10.00	8.00	10.00	10.00	9.08	10.00	8.72	10.00	9.40	10.00	10.00	10.00
2000	9.46	9.00	9.73	9.00	9.54	10.00	8.88	10.00	8.41	10.00	10.07	10.00
2001	8.84	9.00	9.33	9.00	9.83	10.00	8.08	10.00	8.17	10.00	9.17	10.00
2002	9.00	9.00	8.67	9.00	8.22	10.00	9.49	10.00	9.14	10.00	10.41	10.00
2003	8.94	9.00	9.00	9.00	9.46	10.00	9.62	10.00	9.80	10.00	11.57	10.00
2004	9.45	9.00	9.33	9.00	9.14	10.00	10.48	10.00	11.19	10.00	13.05	10.00
2005	10.41	10.00	9.46	10.00	10.64	10.00	11.85	10.00	11.03	10.00	13.00	10.00

JUL		AUG		SEPT		OCT		NOV		DEC		AVE	
FG	PS	FG	PS	FG	PS	FG	PS	FG	PS	FG	PS	FG	PS
		7.70	6.00	6.95	6.00	5.88	6.00	6.44	6.00	6.44	6.00	6.91	6.00
10.59	6.00	12.00	6.00	8.00	6.00	8.52	6.00	8.53	6.00	9.93	6.00	8.56	6.00
9.74	8.00	10.00	8.00	6.67	8.00	7.19	8.00	7.08	8.00	9.00	8.00	9.14	8.00
10.00	8.00	10.00	8.00	10.00	8.00	7.71	8.00	7.78	8.00	8.93	8.00	8.66	8.00
10.00	8.00	10.50	8.00	8.91	8.00	10.00	8.00	10.00	8.00	10.50	8.00	9.67	8.00
10.00	10.00	9.91	10.00	9.00	9.00	8.26	9.00	7.20	9.00	7.92	9.00	9.12	10.00
10.49	10.00	11.20	10.00	8.84	9.00	8.38	9.00	8.39	9.00	9.00	9.00	9.37	10.00
9.44	10.00	10.00	10.00	7.38	9.00	8.00	9.00	8.31	9.00	9.28	9.00	8.82	10.00
11.17	10.00	13.00	10.00	9.06	9.00	8.70	9.00	8.90	9.00	9.11	9.00	9.57	10.00
10.13	10.00	10.41	10.00	9.23	9.00	8.58	9.00	8.92	9.00	9.00	9.00	9.56	10.00
11.56	10.00	9.34	10.00	10.01	9.00	9.30	9.00	10.15	9.00	10.85	10.00	10.23	10.00
13.00	10.00	13.11	10.00	9.00	10.00	9.99	10.00	10.52	10.00	11.67	10.00	11.14	10.00

Source: FG = Bureau of Agricultural Statistics PS = National Food Authority.

Regular coordination with individual farmers, farmer leaders of different cooperatives, LGU's, DA and BAS officials is undertaken to monitor schedules of harvest and prevailing farm prices in different cities/municipalities of the province. Also, NFA's palay procurement policies and strategies were explained to all stakeholders thru meetings conducted and thru radio announcement.

Table 4. Difference between the average farm gate and support prices for palay, 1994-2005.

YEAR	AVERAGE PALAY PRICES		DIFFERENCE		
	FG	PS			t-test
	(Php)	(Php)	(Php)	(%)	
1994	6.91	6	0.91	13.17	5.76***
1995	8.56	6	2.56	29.91	5.49***
1996	9.14	8	1.14	12.47	2.81***
1997	8.66	8	0.66	7.62	2.60**
1998	9.67	8	1.67	17.27	7.71***
1999	9.12	10	−0.88	−9.65	-1.36^{ns}
2000	9.37	10	−0.63	−6.72	-0.58^{ns}
2001	8.82	10	−1.18	−13.38	−2.99***
2002	9.57	10	−0.43	−4.49	-0.03^{ns}
2003	9.56	10	−0.44	−4.6	-0.16^{ns}
2004	10.23	10	0.23	2.24	2.50**
2005	11.14	10	1.14	10.23	2.83**

***significant at 99% confidence level. **significant at 95% confidence level. *significant at 90% confidence level. ^{ns}not significant.

Table 5. Comparison between actual paddy procurement and target procurement of NFA, Province of Nueva Ecija, years 1994-2005.

	TARGET	ACTUAL PADDY		
YEAR	PROCUREMENT	PROCUREMENT	DIFFERENCE	
	(mt)	(mt)	(mt)	(%)
1994	275.00	3.31	271.69	98.80
1995	369.00	0	369.00	100.00
1996	340.00	293.07	46.93	13.80
1997	130.00	10.43	119.57	91.80
1998	125.00	5.34	119.66	95.73
1999	2090.00	2571.40	−481.40	−23.03
2000	2375.00	2794.28	−419.28	−17.65
2001	1750.00	991.97	758.03	43.25
2002	875.00	62.27	812.73	92.88
2003	975.00	363.93	611.07	62.67
2004	900.00	118.51	718.49	79.83
2005	430.00	119.89	310.11	72.12
TOTAL	10634.00	7334.40	3299.60	710.45

Source: NFA.

NFA also procures palay from the Farmer's Organization (FO) and individual farmers. These FOs are primarily small agricultural producers, farmers, farm-workers, and other agrarian reform beneficiaries. Palay procurement in Nueva Ecija was limited to 7.0 and 3.0 hectares per season for FOs and individual farmers, respectively. This is equivalent to an average of 700 and 300 bags of palay per season, respectively. Procurement for walk-in-farmers is limited to 50 bags only per season.

Quality specifications are strictly followed in procuring palay. These include the moisture content (MC) of palay maximum of 14 percent level, purity of palay, color or damages and chalkiness of palay. To encourage farmers, NFA grant procurement incentives such as the additional P0.25 per kilogram to accredited FOs *i.e.*, P0.10 for delivery incentives and P0.15 for drying.

Farmer's Organization (FO) and individual farmers are required to satisfy the needed procurement requirements such as the approved or revalidated passbook by NFA. Under this setup, procured grains are directly delivered to NFA buying station/warehouses. Hauling of palay grains at farmer's assembly point center is on scheduled by NFA upon availability of its transport services. Stocks will then be classified, weighed, documented, recorded, and paid at the NFA receiving warehouses in the form of a check.

Based on the results, this procurement scheme of NFA was found to be ineffective. Data shows that approximately 99 percent of the farmer's produce was sold to private traders in the area. This was perhaps due to the immediate need for cash by the farmers where higher prices were offered by local traders and hassle-free marketing because there were no other conditions needed in the selling of palay unlike the burdensome documentary requirements prescribed by NFA. Farmers were also reluctant to sell to NFA for fear that their previous Masagana loans or loans from their cooperatives might be deducted from the proceeds out of palay proceeds. In the years 1994 to 1998, NFA did not meet the targeted procurement for palay. The main reason was that prevailing market price in the market was high. But between the years 1999 up to 2000, NFA exceeded its palay procurement because government price was higher than the farm gate price. Again, from the years 2001 to 2005, NFA did not meet its targeted procurement because farm gate price in the market during this time was high.

NFA Palay Procurement and Production in Nueva Ecija

Table 6 presents the NFA paddy procurement from the years 1994 to 2005 in comparison with the paddy production in the province for the same year. Palay production in the province fluctuated from 1994 to 2002. However, from years 2003 to 2005, palay production continued to increase from 958,334 to 1,008,653 metric tons, respectively due to the introduction of hybrid varieties of palay.

On the other hand, NFA palay procurement for the covered period was very minimal. Despite the NFA's effort to increase procurement in 1994, it was able to procure only 3.31 metric tons out of the 812,206 metric tons grains production

Table 6. NFA palay procurement and average production in Nueva Ecija, 1994-2005.

YEAR	PADDY PRODUCTION (mt)	PADDY PROCUREMENT (mt)	PERCENT (%) PROCURED
1994	812,206	3.31	0.0004
1995	756,392	0	0
1996	788,308	293.07	0.04
1997	799,360	10.43	0.001
1998	593,743	5.34	0.0009
1999	717,117	2571.40	0.36
2000	775,223	2794.28	0.36
2001	818,990	991.97	0.12
2002	817,407	62.27	0.008
2003	958,334	363.93	0.04
2004	982,491	118.51	0.01
2005	1,008,653	119.89	0.01
TOTAL	9,828,224	7,334.40	0.95

Source: National Food Authority (actual procurement) (NFA) Bureau of Agricultural Statistics (actual production) (BAS).

in the province. This very low NFA procurement was due to the high prevailing market price in the province for the period averaging to P6.91 per kilogram as compared to P6.00 price support (Table 3).

In 1995, there was no palay procurement due to the very high farm gate price that prevailed at commercial market that averaged to P8.56 per kilogram. In 1996, palay production in the province was 788,308 metric tons while NFA's procurement was only 293.07 metric tons or equivalent to 58,614 bags. In 1997, procurement was 10.43 metric tons or only 0.001 percent of the total production in the province. The low accomplishment in palay procurement for the period was again attributed to the high farm gate prices of palay that prevailed at the market level which averaged to P8.66 per kilogram.

Highest (NFA) procurement was achieved in 1999 and 2000 with 2,571.4 and 2,794.28 metric tons respectively, representing 0.36 percent of the total production. This increase was due to the proper planning and early deployment of mobile procurement teams and availability of buying stations in rice-producing areas. Average farm prices of palay during this period was P9.12 and P9.37 per kilogram respectively which was lower than NFA support price at P10.00 per kilogram. This shows that price support was a bit higher than the prevailing farm gate prices. However, despite the differences in prices, NFA's procurement was still negligible. In 2001, NFA procured only 991.97 metric tons of palay from 818,990 metric tons of palay production in the province. The decrease could be

attributed to a favorable commercial farm price of palay that prevailed in the province during this period. Average farm price of palay during the year was P8.82 per kilogram. In the year 2004 to 2005, NFA procured 118.51 and 119.89 metric tons of palay from a total production of 982,491 and 1008,653 metric tons, respectively. The very low procurement volume during the period was due to the high farm price at the commercial level which averaged to P10.23 and P11.14 per kilogram, respectively. This shows that bulk of the farmers produce in the province went to the private traders in the area. One possible reason was that farmers were paid outright cash by the local traders.

Other than the needs of farmers for immediate cash, NFA procurement requirements include the presentation of recently approved/revalidated passbook for farmer's organization, a certification from the Municipal Agriculture Office (MAO) and the local Brgy. Captain as to the producer's farm location and effective area, and the initial delivery of 50 bags. Moreover, for the succeeding deliveries, farmer's passbook must be approved first, while for the walk-in farmer an endorsement from the Brgy. Captain or religious leader is likewise required. Accomplishing all these requirements has been a burden to the farmer. Thus, instead of selling their palay to NFA they end up selling to private traders.

3.6. The NFA's Procurement in Nueva Ecija and the Price Subsidy

Table 7 presents the results of correlation analysis between actual procurement, price support and farm gate prices of palay in Nueva Ecija from the years 1994 to 2005. AP, PS, and GS correspond to actual procurement, price support, and farm gate price, respectively. Based on the results, the correlation coefficient between the actual price support and actual procurement is significant, but very low with a value of 0.16. Regarding actual procurement to farm gate price, correlation coefficient also showed a significant, but negative correlation of −0.18. This means that as farm gate price increases, NFA procurement decreases.

The government price subsidy and farm gate price are positively correlated with a coefficient of at 0.54 significant at 1 percent level. This explains the distinct relationship between the two variables as shown in Table 6 wherein from 1994 to 1998 and 2004 to 2005 farm gate price is higher than the government palay

Table 7. Relationship between actual procurement, price support and farm gate price of palay, Province of Nueva Ecija, years 1994-2005.

	PEARSON CORRELATION		
ITEM	AP	PS	FG
AP	1	0.16*	−0.18**
PS		1	0.54***
FG			1

*correlation is significant at the 0.05 level (2-tailed). **correlation is significant at the 0.01 level (2-tailed).

support price, while in the years 1999 to 2003 government price is higher compared to farm gate price. Hence, it can be deduced from the data that government subsidy should be adjusted periodically to match the increasing price of palay in the market.

4. Summary, Conclusion and Recommendation

4.1. Summary

The study analyzed the difference between the farm gate and government support price for palay in the province of Nueva Ecija. Specifically, it determined the monthly pattern of prices for palay, measured the difference between the average farm gate prices and government price subsidy for palay from 1994 to 2005, estimated the proportion of the national Food Authority (NFA) total procurement with the total production in the province and determined the relationship between the NFA actual procurement and government price subsidy for palay from the year 1994 to 2005. Correlation analysis between the two variables (price support and actual procurement) was analyzed using Pearson product-moment correlation coefficient.

Farm gate prices during the first and third quarter for the years 1994 to 2005 are relatively higher. During the peak harvest of wet (September to November) and dry season (January to March), farm gate prices are relatively lower than the other months of the year. However, prices of palay during peak harvest months of the dry season are relatively higher compared to the peak harvest of the wet season. This is attributed to the relatively better quality of palay produced during a dry season.

Government subsidy for the price of palay guaranteed ex-farm price through NFA procurement operation. From October 1, 1990 to Jan. 31, 1996, official price support was Php 6.00 per kilogram. Official price support was increased by Php 2.00 per kilogram starting February 1, 1996 to January 31, 1999. From February 1, 1999 to November 31, 2004, official price support was alternately pegged at Php 10.00 and Php 9.00 per kilogram, respectively. From December 1, 2004 to present, price support for palay was Php 10.00 per kilogram.

Palay procurement is one of the important missions of the National Food Authority. This activity influences the increase of farm prices of palay to the advantage of farmers. This also fulfills the NFA price stabilization function of buffer stocking for the traditional lean months especially in terms of price and food security.

The table shows that in the years 1994, 1995, 1996, 1997, 1998, 2004 and 2005 farm gate (FG) prices in the province were higher compared to the prices support (PS) implemented by NFA with a percentage difference of 13.17, 29.91, 12.47, 7.62, 17.27, 2.24, and 10.23 percent respectively. While in years 1999, 2000, 2001, 2002, and 2003 price support was higher than the farm gate prices.

In the year 1994 to 1998 and 2004 to 2005, t-value is larger than the critical values of the t-distribution, thus the hypothesis is rejected which means that

farm gate price is indeed lower than the price support by the NFA. This means farmers failed to receive the intended benefits from the palay price support program.

Price support program is implemented to promote growth in production as well as assure farmers of reasonable income. This program was ineffective because the offered price in the market was much higher than the implemented price support of palay in the province.

In the year 1994 to 1998, NFA did not meet the targeted procurement for palay. The main reason is that prevailing market price in the market was high. In the year 1999 to 2000, NFA exceeded its palay procurement because government price was higher than the farm gate price. From the year 2001 to 2005, NFA did not meet the targeted procurement because farm gate price during this time was very high.

The NFA consolidated actual procurement of palay in Nueva Ecija from the year 1994 to 2005 was 7334.40 metric tons. This shows that only 0.95 percent of the total paddy production of 9,828,224 metric tons was procured in the province.

Correlation analysis between price support and actual procurement yields significant but very low value of 0.16 only. Moreover, the correlation coefficient between actual procurement to farm gate price showed a significant but negative correlation of −0.18. This means that as farm gate price increases actual procurement of NFA decreases. The price support and farm gate price are positively correlated as expected with a coefficient of at 0.55 significant at 1 percent level. This explains the distinct relationship between the two variables as shown in Table 6 wherein from the year 1994 to 1998 and 2004 to 2005 farm gate price is higher than the price support and in the year 1999 to 2003 price support is higher compared to farm gate price. The price support must be adjusted accordingly to match the prevailing market price.

4.2. Conclusion

Based the findings of the study, the following conclusion was drawn.

1) Farm gate price of palay received by farmers from 1994 to 2005 is relatively higher as compared to the implemented support price by NFA. Thus, the hypothesis that farm gate price for palay received by farmers is lower than the support price of NFA is rejected.

2) The NFA consolidated actual procurement of palay in Nueva Ecija was very minimal, and 99 percent of the produce in the province goes to private traders.

3) NFA actual procurement and support prices for palay are positive, correlated but the coefficient is very low. Thus, the hypothesis that the amount of palay procured by NFA is significantly related to the implemented price support in the province is accepted.

4.3. Recommendation

In the light of the findings and the preceding conclusion, the following recom-

mendations are offered.

1) Since the farm gate price for palay is significantly higher than the implemented government support price, NFA should review and update its subsidy support program to match the prevailing market price. Support price should be set higher than the farm gate price to help farmers increase their income and productivity and to shield them from the monopolistic practices of big rice millers and private palay traders in the area.

2) The NFA must promote its procurement program to the farmers by improving its accessibility, especially to small farmers. They should consider reducing the criteria or requirements for procurement, the sourcing of fund to increase the volume of procurement and the timely release of the same during the period immediately after harvest season of palay. These will provide substantial gains to farmers.

3) The use of other implementing agencies could minimize policy gap. The intended result of providing gains to the farmers of the subsidy is not clearly realized because of low allotted subsidy. Instead, the farmers were more motivated to sell their farm produce to the private businessmen.

4) The proliferation of smugglers and illegal traders of rice artificially influenced the supply of rice in the market leading to decrease in the sale of palay grains but spiraling increase in the price of rice because of hoarding by unscrupulous traders.

5) The result of this study is intended to improve the policy, and make the necessary adjustment to address this gap. The study further reflected the effects in farmers' productivity as against the NFA's intention for price stabilization, and finally the realization of improving the income of farmers. It can also be noted of the actual NFA procurement is small in percentage compared to the palay production in the province. Thus, the majority of the harvest went to the businessmen and private traders that take advantage of farmers in need of cash. Therefore, NFA must increase its procurement capacity so that it could have control of price in the market.

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