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The paper deals with two aspects of the fertilizer industry in the Philippines during the period 1954-1972; supply situation and marketing system. Importation and domestic production for the indicated years are included as with corresponding breakdown of fertilizers components imported into the country.

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THE FERTILIZER SUPPLY SITUATION AND MARKETING SYSTEM IN THE PHILIPPINES, 1954-1972

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Table of Contents

	Page
Summary	1
World Supply of Fertilizer: Present Status	7
Philippine Fertilizer Supply Situation: 1954 - 1971	9
Importation	10
Domestic fertilizer production	10
Domestic Total nitrogen supply	12
Total phosphate supply	12
Total potassium supply	13
Fertilizer Utilization	13
Fertilizer Prices	15
Price of imported fertilizer	16
Fertilizer pricing practices	17
Regional price differences	18
Fertilizer Distribution System	19
Distribution by cooperatives	20
Distribution by ACA	20
Distribution facilities	21
Distribution by fertilizer dealers	22
Transport and Movement	22
Differences in handling costs of bagged fertilizers	25
Commercial freight rates for fertilizer in Luzon	26

Table of Contents

	Page
Trucking rates	27
Sea transport	29
Government Agencies and Activities Affecting Fertilizer Demand	31
Tables	36
Appendix Tables	76
Explanatory Note on Computation and Analysis of Materials Gathered	113
Figures	116

List of Tables

Table No.		Page
-	Total available supply of fertilizer	36
2	Total supply of available fertilizer (Nitrogen (N), Phosphorous (P_2O_5), Potassium (K_2O) for the Philippines, 1954 - 1972	37
3	Breakdown of the available supply of fertilizer nutrients	38
4	Summary of domestic fertilizer production by kind, Philippines, 1960-1971	39
5a	Total supply of available Nitrogen (N) for the Philippines, 1954 - 1972	40
5b	Total supply of available Phosphorous (P_2O_5) for the Philippines, 1954 - 1972	41
5c	Total supply of available Potassium (K_2O) for the Philippines, 1954 - 1972	42
6	Total nutrients used by crops, Philippines 1967	43
7	Breakdown of 1964 fertilizer consumption by area and by crop	44
8	Estimated fertilizer consumption by region from 1966 to 1969	46
9	Average wholesale prices for selected fertilizers, Manila, crop year basis	48
10	Deflated wholesale prices, Manila, for selected fertilizers, crop year basis	49
11	Per unit value (CIF) and price indices of plant nutrients, Philippines, 1955-72	50
12	Imported fertilizer price index relationships 1967=100	51
13	Index of selected fertilizer prices 1965/66=100	52
14	Average retail prices of selected fertilizers, Luzon, 1965-1971	53
15	Dealer fertilizer prices by kind, Philippines, 1971 - 1973	54
15a	Dealer fertilizer prices by kind, Region I Ilocos Region, 1971 - 1973	55
15b	Dealer fertilizer prices by kind, Region II Cag yan Valley, 1971 - 1973	56
15c	Dealer fertilizer prices by kind, Region III Central Luzon, 1971 - 1973	57
15d	Dealer fertilizer prices by kind, Region IV Southern Tagalog, 1971-1973	58
15e	Dealer fertilizer prices by kind, Region V Bicol Region, 1971 - 1973	59
15f	Dealer fertilizer prices by kind, Region VI Eastern Visayas, 1971 - 1973	60

List of Tables

Table No.		Page
15g	Dealer fertilizer prices by kind, Region VII Western Visayas, 1971 - 1973	61
15h	Dealer fertilizer prices by kind, Region VIII Northern and Eastern Mindanao, 1971-1973	62
15i	Dealer fertilizer prices by kind, Region IX Southern and Western Mindanao, 1971-1973	63
16	Allocation of fertilizer dealers by regional districts, Philippines, 1970-1971	64
17	Handling and trucking cost per metric ton (20 bags of 50 kgs. of fertilizer) from Planter's Products warehouse to the dealers warehouse, 1972	65
18	Transport and handling costs of fertilizers, Philippines, 1970-1971	67
19	Handling-transport ratio, fertilizer, 1970	68
20	Differences in handling costs of bagged fertilizers at major ports	69
21	Commercial freight rates of fertilizers in Luzon, April 1971	70
22	Trucking rates of fertilizers, Philippines, 1970 - 1971	71
23	Trucking rates per change in distance covered, Philippines, 1970-1971	72
24	Sea transport costs of fertilizer, Philippines, 1968	73
25	Freight rates per nautical miles, Philippines, 1970 - 1971	74
26	Weighted average of sea transport costs of fertilizer, 1970-1971	75

List of Appendix Tables

Appendix Table No.		Page
1	Exchange rate of Philippine pesos to U.S. Dollar, 1960-1972	76
2	Kilograms of N_2, P_2O_5, K_2O in fertilizers commonly sold in the market	77
3	Summary of domestic fertilizer production in per cent, by kind, Philippines, 1960-1971	78
4	Summary of increase (decrease) in domestic fertilizer production, by kind, Philippines, 1960 - 1971	79
5	Percentage rated capacity of fertilizer. Manufactured domestically, 1960 - 1971	80

List of Appendix Tables

Appendix Table No.		Page
6	Quantity of produced plant nutrients by kind, Philippines, 1960-1971	82
7	Summary. Quantity and total landed cost of imported fertilizers, Philippines, 1954-1972 . . .	83
7a	Quantity and total landed cost of imported fertilizers, by kind, Philippines, 1954-1972	84
8	Summary. Total landed cost of imported manufactured fertilizer, Philippines, 1954 - 1972	87
8a	Total landed cost of imported manufactured fertilizers, Philippines, 1954 - 1972	88
9	Total quantity, value and per unit value of imported plant nutrients, Philippines, 1954-1972	94
10	Quantity and value of imported plant nutrients, by kind, Philippines, 1954-1972	95
11	Per unit value and price indices (P.I.) of plant nutrients, by kind of fertilizer, Philippines, 1954 - 1972	99
12	Urea prices, C.I.F. Philippines	102
13	Wholesale prices of domestically produced fertilizer, by kind, Manila, FY 1960-61 1973-74	103
14	Wholesale prices of domestically produced fertilizer, by kind, Manila, Calendar Year 1960-63	104
15	Monthly wholesale prices of Atlas Vita-Gro, Manila, (12-24-12)	105
16	Monthly wholesale prices of Atlas Best-Gro, Manila, (12-12-12)	106
17	Wholesale prices of Sulfate of Ammonia, Manila, (Domestic)	107
18	Monthly wholesale prices of Atlas Solophos (0 - 20 - 0)	108
19	Monthly wholesale prices of Atlas Super-Gro, Manila, (16-20-0)	109
20	Monthly wholesale prices of Urea fertilizer, Manila, (Imported) per metric ton, FY 1969-70 1973 - 1974	110
21	Monthly wholesale prices of Sulfate of Ammonia, Manila (Imported)	111
22	Monthly wholesale prices of Phosphate of Ammonia, (Imported) Manila	112

THE FERTILIZER SUPPLY SITUATION AND MARKETING SYSTEM IN THE PHILIPPINES, 1954-1972

Summary

The recent world monetary crisis has had a telling effect on fertilizer prices as in 1970 after the peso was devalued. The latest dollar devaluation's main effect on Southeast Asian countries has been the upsurge of nitrogenous fertilizer prices especially of urea, which in the last several months have increased rapidly.

Prices of phosphatic fertilizer have also increased by 10 percent, but mainly because of the heavy demand throughout the world during the past eighteen (18) months, and also due to the revaluation of world major currencies.

In the Philippines, a socialized pricing policy has been instituted to control the rise of fertilizer prices at the consumer level through lower prices of fertilizers for food-crop producers relative to those for export-crop producers. This policy, however, is not for long-range implementation.

Supply and Utilization

The Philippine fertilizer supply situation indicates an increasing trend for the period 1954-71, although large imports occurred in 1962 previous to the devaluation which were followed by lower imports during the next three years. Fluctuations in

supply are largely explained by the year-to-year changes in the level of imports.

Nitrogenous fertilizers compose the bulk of fertilizer imports. This is followed by phosphatic fertilizers, with potassic fertilizers trailing behind.

The domestic production of fertilizers from 1960 to 1971 showed no regular trend. Production of ammonium sulphate was characterized by steady increases for the 1960-65 period, except in 1966, followed by a large increase in 1967. The same irregular trend was indicated in the production of complex fertilizer and by other fertilizers produced locally.

On the other hand, fertilizer consumption rose during the period 1957-70, from 57,761 to 63,917 metric tons of plant nutrients, and increased further by 10 percent in 1972.

The country's average yearly consumption over the period was about 320,000 metric tons of fertilizer products. Of the amount consumed, about 56 percent was imported and the rest was supplied domestically. In terms of plant nutrients, nitrogen accounted for the highest percentage of the total share with an average of 57 percent; available potassium ranked next with 23 percent and available phosphorous, 20 percent.

The regions of the country varied in the use of fertilizer. In 1966, the latest year for which statistics are available, Southern Tagalog registered the highest consumption of fertilizer

nutrients with 38 percent of the total. Western Visayas was second with 23 percent and Central Luzon came third with 18 percent. The Cagayan Valley and Bicol Regions had the lowest consumption with only 2 percent of the total. Factors affecting fertilizer usage were: the major crops raised in the region, the number of distribution facilities and the realtive distance to markets for farm products.

Prices

On the average, imported fertilizers showed an increasing trend in price per kilogram from 1954 to 1972, except in 1964 and 1969 when prices declined due to the reduction in freight cost and the lower cost of fertilizer in the world market, respectively.

While the computed price index of imported nitrogen fertilizers generally increased from 1955 to 1971, there were declines during the periods 1956-60 and 1966-69 particularly for urea. Prices then rose in the last two years of the period under review due to the peso devaluation in 1970. Price indices of imported P_2O_5 and K_2O both show no evident pattern throughout the period.

Pricing policies differ in the private sector. Some producers set prices for their fertilizer outlets while others leave price determination entirely to the dealers. Manufacturers, however, have two sets of fertilizer prices: one for private dealers and another for the cooperatives. Fertilizers sold by cooperatives have lower prices than those sold by private dealers because no import levy is imposed on the former.

The fertilizer distribution systems adopted by individual companies differ depending on their marketing set-up. The sales of Maria Cristina Fertilizer Corporation (MCFC) are handled by Polaris Marketing Corporation while other producers have marketing departments within their organizations. Of the four local producers, Planters Product is the only firm where marketing operations at the dealers' level are highly standardized.

Planters Products has to date 26 warehouses situated in different parts of the country. MCFC also has storage buildings in Manila and Cebu and in the Negros provinces to cope with the amount of fertilizers effectively demanded in the locality and nearby places. Trucks and barges that are used to deliver fertilizer output from factories to piers or from ports-of-call to warehouses are usually hired by the manufacturers. Beyond this, transportation becomes the problem of the distributors or dealers.

The Agricultural Credit Administration (ACA), on the other hand, distributes fertilizer through its registered instrumentalities, the Farmers Cooperatives (FC's). ACA maintains three central depots, nine sub-terminals and 275 local warehouses. As of 1971, there were 25 authorized distributors and 311 designated outlets.

Dealers of fertilizer are strategically located in various parts of the country. Among regions, Central Luzon has the largest number of dealers with 328, or 27 percent of all dealers,

followed by Southern Luzon with 242. The smallest number of dealers is found in the Bicol region with 75, or only 5 percent of the total. Eastern Visayas and Southern Mindanao have 114 and 149 dealers, respectively.

Distribution costs consist of expenses incurred in transporting the fertilizer output while undergoing a minimum of five loadings and unloadings from the plant to the farm, and of handling and promotional costs.

Transport and handling costs respectively represent about 66 percent and 34 percent of the total freight cost for shipment from Manila to northern ports of Mindanao, transport and handling costs become 73 percent and 27 percent, respectively.

On a regional basis, the cost of transporting fertilizers overland is highest from Manila to the Ilocos and Cagayan Valley regions at an average of ₱0.20 per ton per kilometer, and lowest in the Southern Tagalog at ₱0.18 per ton per kilometer.

The computed weighted averages of the costs in the trucking of fertilizers showed that for routes more than 70 kilometers, trucking rates in Mindanao were higher than those in the Visayas. The analysis also showed that trucking rates rise more than proportionately with distance whereas the opposite is typical of freight rates. For sea transport, the cost per metric ton of fertilizers is directly related to distance, i.e., the longer the distance covered the higher the sea transport cost of fertilizers.

Lastly, there are a number of government agencies that influence the operations of the country's fertilizer industry. These are the Agricultural Credit Administration (ACA), the Development Bank of the Philippines (DBP), Philippine National Bank (PNB), Cooperatives Administration Office (CAO), National Food and Agricultural Council (NFAC), Department of Rural Banks, Central Bank (DRB-CB) and the Fertilizer Industry Authority (FIA). The last-named agency is newly created and aims to control, regulate and develop the fertilizer industry with the end-in-view of assuring the agricultural sector with an adequate supply of fertilizer at the lowest possible cost.

Working Paper No. 4

THE FERTILIZER SUPPLY SITUATION AND MARKETING SYSTEM IN THE PHILIPPINES, 1954-1972

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THE FERTILIZER SUPPLY SITUATION AND MARKETING SYSTEM IN THE PHILIPPINES, 1954-1972

M.P. Paje, D.E. Kunkel and A.C. Alcasid*

I. World Supply of Fertilizer: Present Supply

After several years of market surpluses of nitrogenous fertilizer in the world market, the nitrogen industry in the developed countries is today characterized by demand far exceeding supply. Time was when this had been deemed impossible in the face of seemingly interminable sources of nitrogen in many parts of the world, but today, this impossibility is taking on different proportions. Such factors as the depletion of some of the world's nitrogen sources and precautionary anti-pollution measures taken by the developed countries have led to the reduced production of gas by-products as a result of the shortage of inputs such as natural gas, which, coupled with the increasing use of nitrogen, have changed the fertilizer picture.

World supplies of fertilizers, in general, were adequate to meet the demand until 1972, but a major crisis in nitrogen, as expected, developed by 1973. In 1972, Stangel studied the fertilizer situation in the Philippines as well as in other countries in the Far East, and thus observed that the impending crisis will have "a telling effect on the nitrogen-deficit countries, unless substantial investments are made

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in new facilities."[1] He added that these investments will have to occur in regions with abundant and cheap sources of energy (oil, natural gas, flare gas).[2] Because of this approaching shortage, prices of fertilizers, particularly those of urea and ammonium sulfate, have risen steadily over the past year. Urea prices abruptly rose in March and April of 1973 and have now reached record levels. A Presidential Fertilizer Commission in 1971 made an in-depth study of the state of the fertilizer industry in the country in relation to that prevailing in the world. The Commission concluded that the tight price situation for nitrogen would continue for at least the next two years, and may even last longer than two years if additional cheap sources of energy are not tapped soon.[3]

The world-wide energy shortage is not the sole factor in the steep rise of fertilizer prices. The monetary crisis, also worldwide, had dealt a blow to many aspects of the economy including the fertilizer industry. The dollar devaluation has likewise affected the prices of phosphatic and potassic fertilizers in the world market; thus the impact is likewise felt in the Southeast Asian countries. The price of phosphatic fertilizer has risen by about 10 percent during the past twelve months; other fertilizer compounds show similar increases in price.

---

[1] Paul J. Stangel. Fertilizer Industry Development Policy Report No. 1. Current Issues and Implications. November 18-23, 1972.

[2] Ibid.

[3] Ibid.

In the Philippines, uncertainties now exist within various elements of the private sector and cooperatives as to where the fertilizer industry is headed. The shortage of energy for fertilizer production will of necessity lead to compounded problems in pricing. Taking cognizance of the importance of fertilizers in the food production program of the government, a socialized pricing policy was instituted in April 1973, whereby the prices of fertilizer intended for use in the production of food crops were reduced and those used for export crops increased.

An additional incentive for boosting the industry is the launching of the Masagana 99 rice production program. The program assigns further importance to fertilizer policy as fertilizer inputs form a major component in the Government's food self-sufficiency campaign. This poses problems since the existing fertilizer facilities in the country appear inefficient and inadequate to meet the long-term plant food needs of the country. The Fertilizer Industry Commission estimated that the fertilizer industry would incur a total loss in the year 1973 in spite of the tax exemption on raw material imports granted by the President in February 1973. With the upsurge in the cost of fertilizer imports, neither the industry nor the export sector could shoulder the full cost of socialized pricing without a fertilizer subsidy. To cover these losses, the President has approved a subsidy plan to enable fertilizer manufacturers to break even; which subsidy has been estimated by the Fertilizer Industry Authority to be ₱90 million for the period May to December 1973 due to greatly increased world prices.

Philippine Fertilizer Supply Situation: 1954-1971

For an effective view of fertilizer use, the basic data gathered

on yearly total production were added to net imports to obtain an estimate of total available supply. Data were also converted to their corresponding nutrients, N, P, and K, using given percentages of each component for each kind of fertilizer. (See Table 1 for total fertilizer supply, Table 2 for total nutrients, and Table 3 for breakdown into individual elements.)

Figure 1 illustrates the total fertilizer supply picture in the country. Trend lines indicate that total supply is rapidly approaching the 600 thousand metric-ton mark of fertilizer materials. The general trend is towards a steep increase although decreases occurred in the years 1963 and 1966, following the peso devaluation. These fluctuations, however, are largely explained by the year-to-year change in the level of imports. They are more prominent in earlier years prior to 1967. From 1967 to 1971, domestic production steadily increased while imports during the same years were almost constant except in 1971 when importation rose from about 194 thousand metric tons in 1970 to 277 thousand metric tons in 1971, bringing the total supply to a high of 570 thousand metric tons.

In terms of total nutrients, the fertilizer supply in the Philippines rose from 58 thousand metric tons in 1957 to 164 thousand metric tons in 1970 (Figure 2). In 1972, supply further increased by 10 percent. Since 1956 the use of chemical fertilizer in the Philippines has been growing at an annual rate of about 9 percent based on the reported quantities of both imported and locally produced fertilizer.

In terms of plant nutrients, nitrogen had the highest percentage of the total with an average of 57 percent, followed by available potash with 23 percent; available phosphorous trailing closely behind with 20 percent (Figure 3).

Figure 1. – TOTAL FERTILIZER SUPPLY, 1955 – 1972

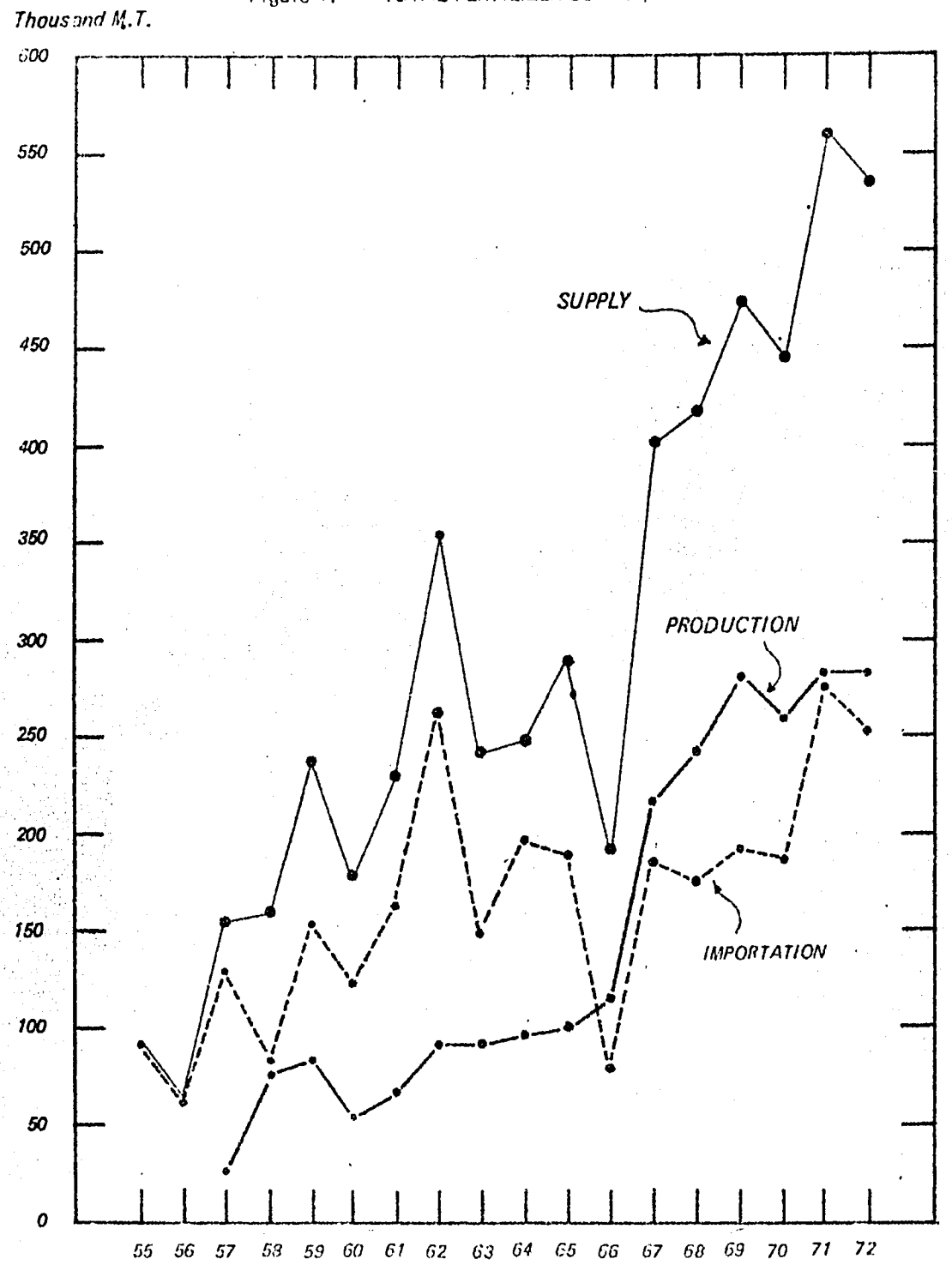
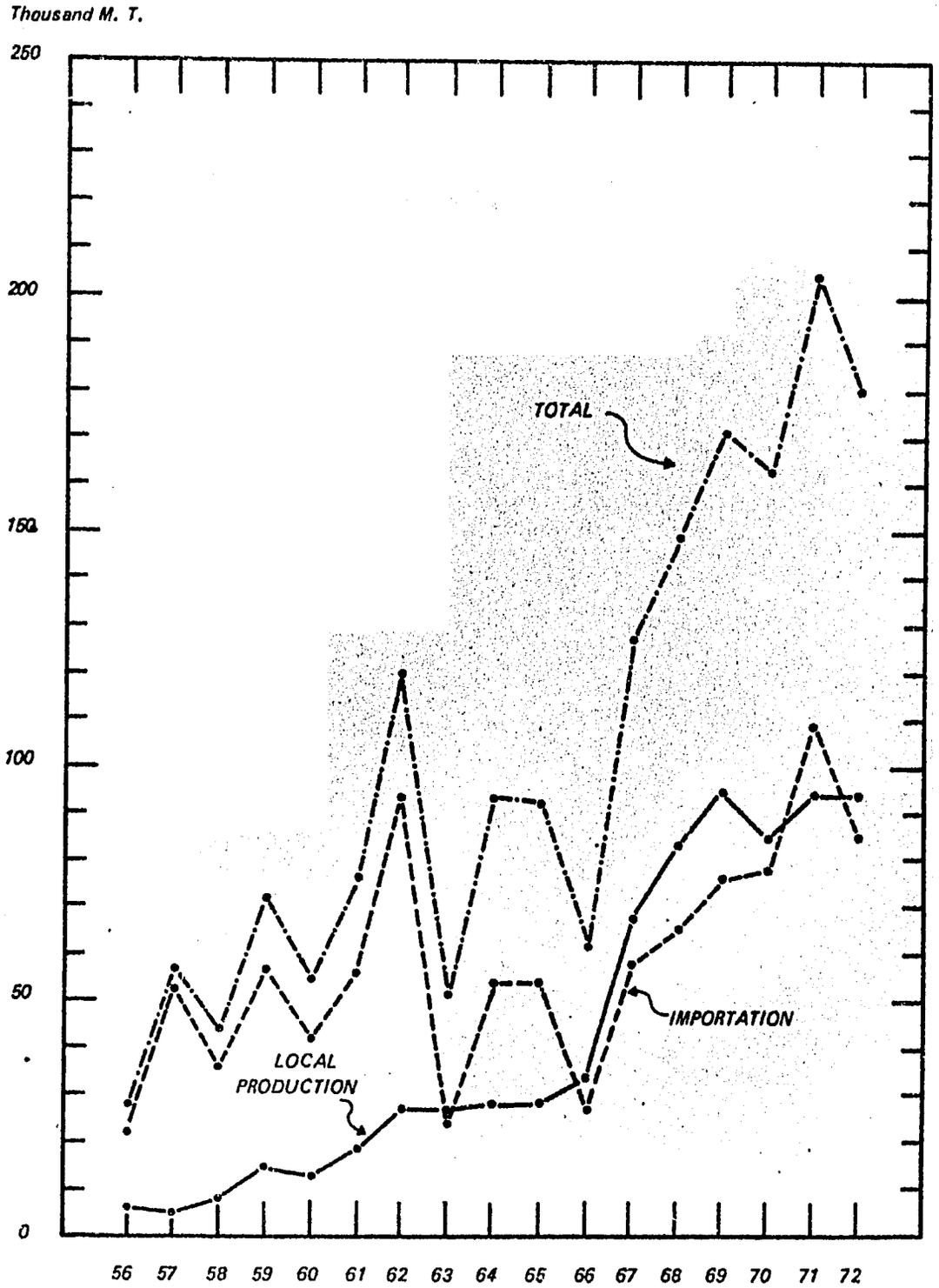


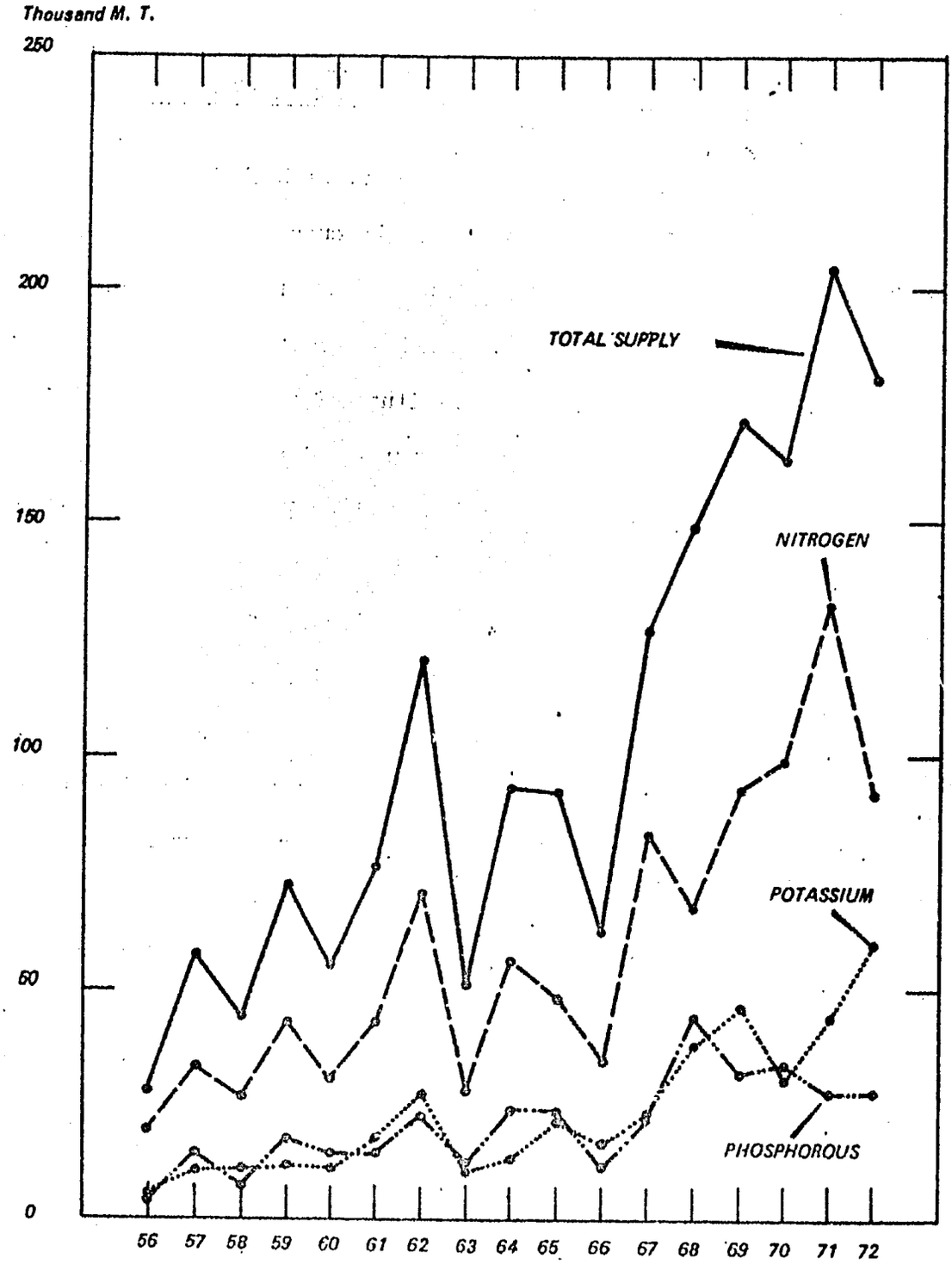
Figure 2. – AVAILABLE SUPPLY OF FERTILIZER, PHILIPPINES, 1956–1972

in terms of Nutrients



Source: Table 2

Figure 3. – BREAKDOWN OF FERTILIZER SUPPLY, BY TYPE OF NUTRIENT, 1956 – 1972



Source: Table 3

Importation. Fertilizer imports on the average compose about 58 percent of the total supply (Table 2). Domestic production exceeded importation from 1966 to 1971 but the difference was not significant. Considering this large percentage of importation over production, imports therefore play a significant role in the Philippines' fertilizer market especially in terms of pricing policy.

Nitrogenous fertilizer has accounted for most of the fertilizer imports. In earlier years, ammonium sulfate and other nitrogenous materials dominated the bulk of fertilizer imports. However, since 1969, urea (45-0-0) has become the most important source of nitrogen.

Japan and the Benelux countries in Europe are the main sources of fertilizer materials. The United Stages and to a lesser extent Taiwan, Israel, United Kingdom, Australia and Italy, are other sources.4/

Domestic fertilizer production. Domestic production of fertilizer is mainly attributed to four producers. These producers manufacture one or more of the following fertilizers: ammonium sulphate, urea, complex fertilizer, ammonium phosphate, superphosphate, and anhydrous ammonia. Table 4 shows a summary of domestic fertilizer production from 1960 to 1971.

Domestic production of all fertilizers increased from 26 thousand tons in 1957 to 283 thousand tons in 1971 (Table 1). From 1960 to 1967, there was a steady increase in the production of ammonium sulphate, except for the years 1966 to 1967 when production almost doubled from 42 thousand metric tons to 80 thousand metric tons. Since then except for 1968 when a strike at the Maria Cristina Fertilizer Corporation occurred, production has been near this level.

4/Central Bank.

For complex fertilizer, after a jump in production from 13 thousand metric tons in 1960 to 56 thousand metric tons in 1962, production declined slightly until 1966. In 1967, production began to pick up as shown by an increase from 47 thousand metric tons in 1966 to 78 thousand metric tons in 1967, or an increase of 31 percent. A remarkable performance was exhibited by complex fertilizer production when it increased to a high of 180 thousand metric tons in 1968, but production dropped in the following year to about 160 thousand metric tons. No trend in the production of superphosphate was indicated for the years under study. An increasing trend was shown for the other kinds of fertilizer, specifically urea, mixed fertilizer, aqua ammonia, ammonia and ammonium phosphate. Except for urea, domestic production figures for these kinds of fertilizers showed a steady increase. Urea production has been minor, ranging from 20 to 30 thousand tons in the last few years.

An analysis of the production of different kinds of fertilizer for each year of the 12-year period from 1960 to 1971 indicates that production of complex fertilizer accounted for a sizeable portion of total domestic fertilizer production (Table 4). Except in the years 1960, 1966, and 1967, complex fertilizer accounted for one-half of the domestic production of fertilizer. The highest increase in complex fertilizer production occurred in 1968 when it represented 74 percent of total domestic output. In the same year, ammonium sulphate accounted for only 18 percent of total production; a total of 0.8 percent went to the production of superphosphate, and the remaining 7 percent to urea production.

Superphosphate has accounted for a very low percentage of total domestic production since 1961 because Atlas, the only major producer, utilized most of its production import for complex fertilizer. Urea production has also shown an increase, notably in the years 1966-69 but still only accounted for 8.3 percent in 1971. This may be due to the effect of the 1970 devaluation of the peso.

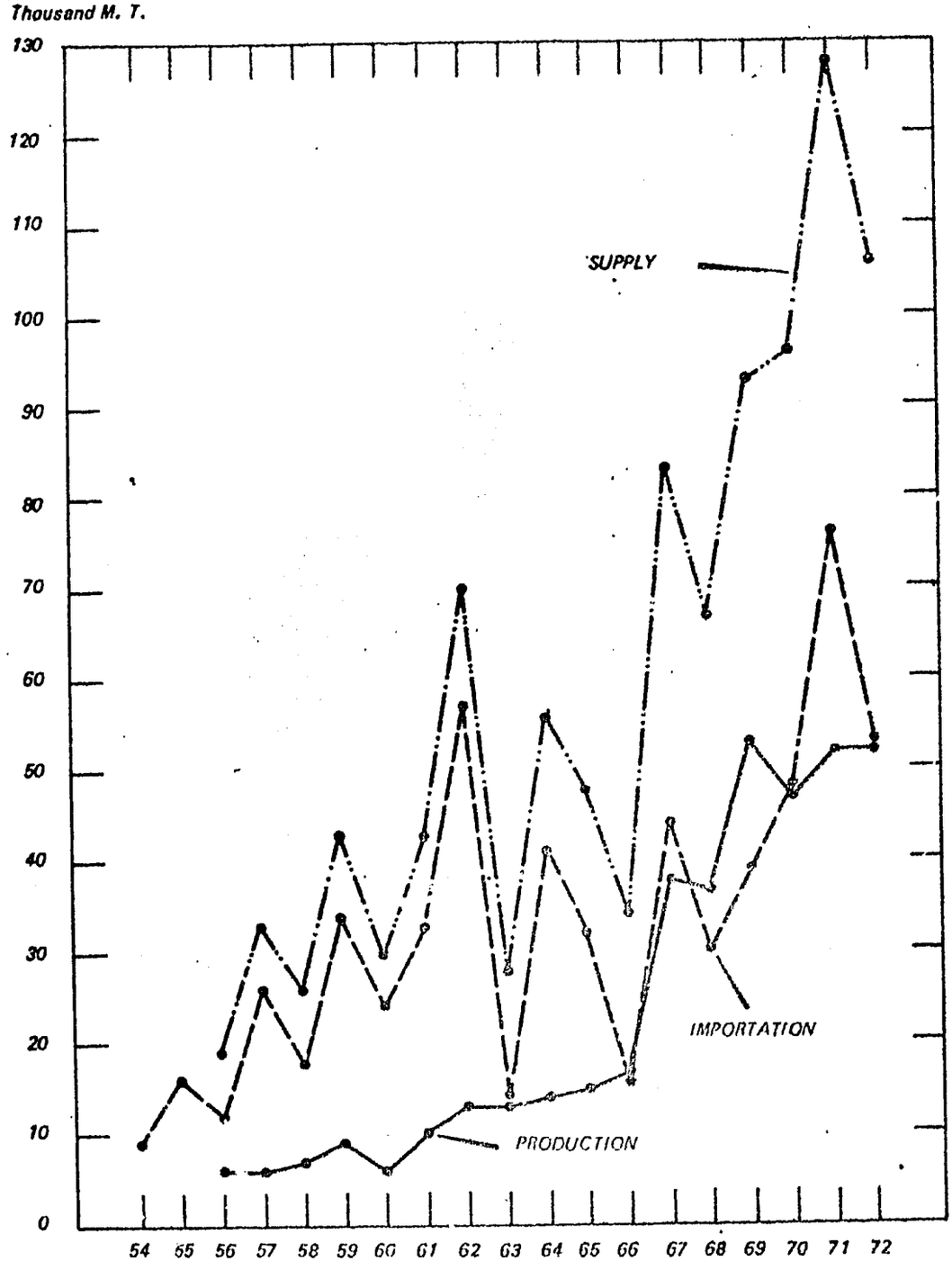
Total nitrogen supply. From 1956 to 1971, domestic production of nitrogen increased steadily from about 7 thousand tons to 52 thousand tons except in the years 1968 and 1970 when production levels dropped, although not in substantial proportions (Figure 4). Over this period, production of nitrogen expanded to more than eight times the 1960 level.

In contrast to the almost steady growth of nitrogen fertilizer production, importations of nitrogenous fertilizer fluctuated, particularly from 1960 to 1968, but have increased steadily since then. Imports of nitrogen in most cases have exceeded domestic production except in 1966, 1968 and 1969. Ammonium sulphate and other nitrogenous fertilizers - mostly urea - are the major types of imported nitrogen fertilizers.

Imports composed about 68 percent of the total nitrogen fertilizer supply in the country for the year 1965. The slight drop to 60 percent in 1971 may be explained by an increase in the domestic production from 32 percent to 40 percent during the same period (Table 5).

Total phosphate supply. Figure 5 shows that from 1960 to 1965 the Philippines relied heavily on importations for its supply of phosphate, as in the case of nitrogen. This situation was, however, reversed during the period 1966 to 1972. Import trends of phosphatic fertilizer

Figure 4. – TOTAL AVAILABLE SUPPLY OF ELEMENTAL NITROGEN, 1954 – 1972



Source: Table 5

have been erratic during the period studied, but generally at fairly low levels and have declined in recent years. The 1960-72 average supply was 21 thousand metric tons.

Not considering the period from 1954 to 1959, total phosphate supply was observed to be at its lowest level of about 11 thousand metric tons in 1963, immediately after the devaluation in 1962. The total supply of phosphates increased rapidly reaching a maximum of 45 thousand metric tons in 1968 as a result of expansion both in the imports and domestic production of phosphate. However, from 1968 to 1971, the total supply of phosphates exhibited a decreasing trend (Figure 5). Table 5 shows that while superphosphate production decreased in later years, the production of mixed or complete fertilizer in the same period increased. This fact may have had an influence on the decrease of imported phosphates.

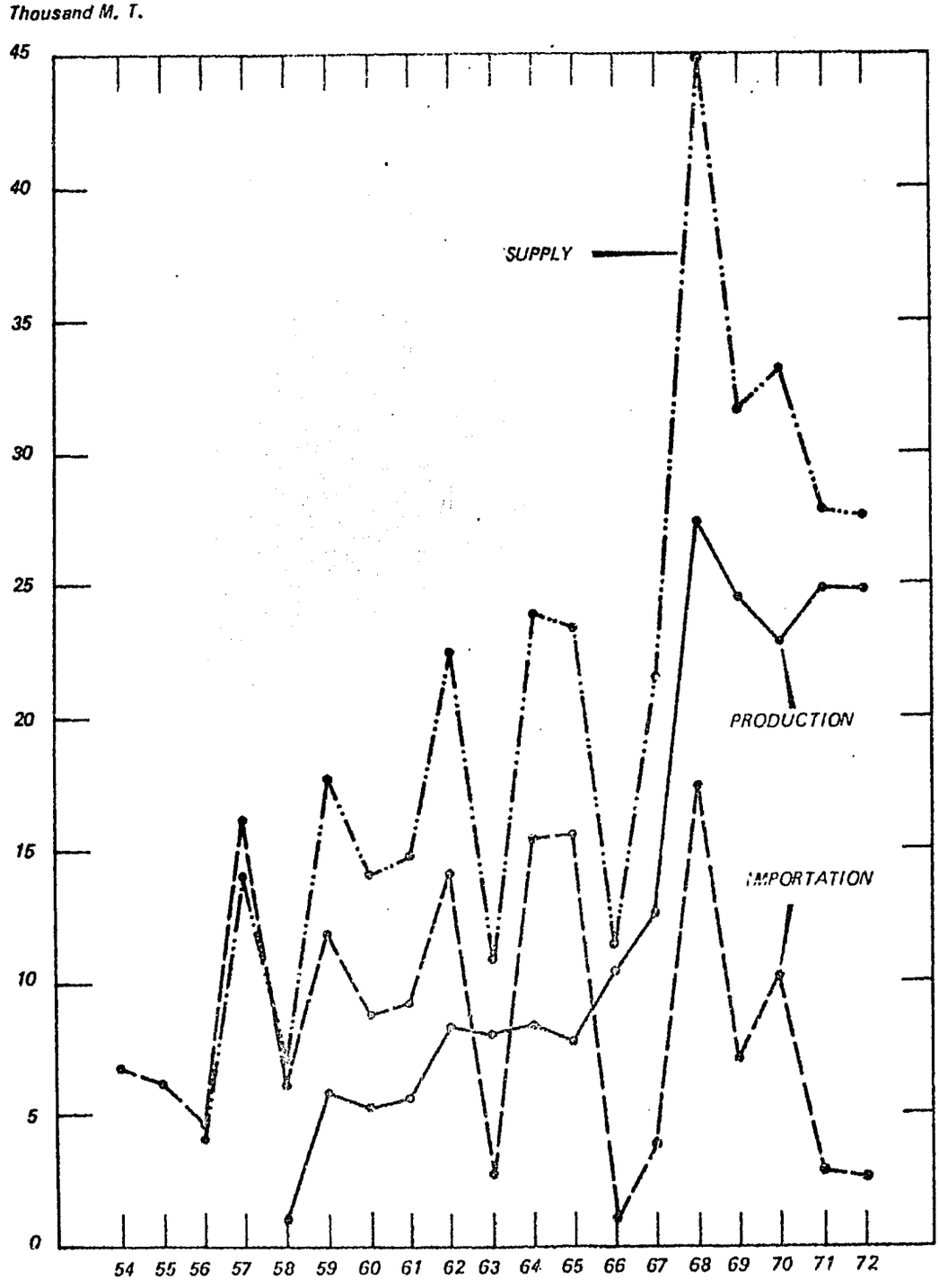
Total potassium supply. Imports are the source of most of the country's total supply of potassic fertilizers. During the period from 1956 to 1972, potash imports exceeded production except in 1967 and 1968, but the differences were insignificant.

Figure 6 shows that although there were some fluctuations, the general trend was for both production and imports to increase. A rapid increase was observed from 1966 to 1969 but a decrease was noted in 1970, after the peso devaluation.

II. Fertilizer Utilization

The information available on fertilizer use by crop and by region is limited, particularly for recent years. Existing data show that most fertilizers are used on sugarcane and rice with minor amounts

Figure 5. – TOTAL AVAILABLE SUPPLY OF PHOSPHOROUS, 1954 – 1972



Source: Table 5

used on corn, fruits, vegetable crops, and coconut. The most detailed data is available for 1964. In 1964, San Miguel Corporation (SMC)[5] estimated that 49 percent of all fertilizers were used on sugarcane, 27 percent on rice, 5 percent on corn and the remaining 19 percent on all other crops. In 1969, 44 percent or 41 thousand metric tons of N went to sugarcane[6] and 35 percent or 33 thousand metric tons were used on rice.[7] Since then, there has probably been a large increase in the use of fertilizer on rice.

The regions of the country varied greatly in the use of fertilizer. Southern Tagalog had the highest average consumption of N, P, K in 1966 (or 38 percent of all fertilizers). Next ranking regions were Western Visayas, with an estimated consumption of about 23 percent of the total and Central Luzon with 18 percent; while the least use of fertilizers were made in Bicol, the Cagayan Valley and Eastern Visayas (Table 8).

The Bicol region was the lowest fertilizer user among the regions in 1964. For all crops only 0.5 percent of the Philippines total was accounted for by Bicol. It was only slightly higher in 1966 at 1.3 percent.

A comparison of fertilizer use between 1964 and 1967 in terms of utilization of plant nutrients (Tables 7 and 8) shows that the same ma-

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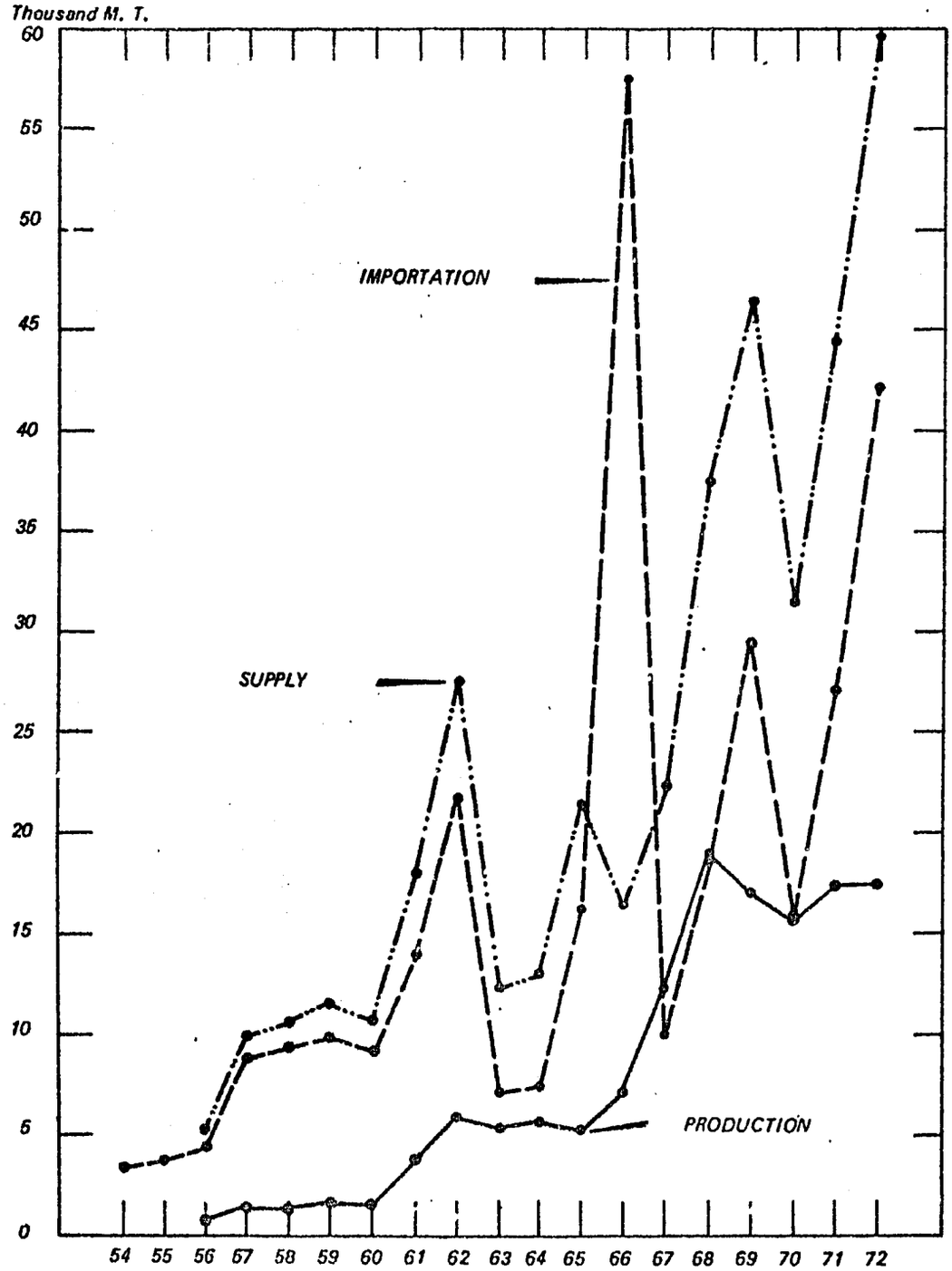
5/ San Miguel Corporation Research Department as reported in Terminal Reports (Table 7). The regional breakdown is based on a study done by the Central Bank in 1961.

6/ Philsugin. Report of Sub-Committee No. 1 ..., 1971.

7/ Based on an analysis of the 1969-70 IAS which showed the use of nitrogen to be on the average 16 kg/ha. on HYV irrigated, 12 kg/ha. on non-HYV irrigated and 11 kg/ha. on rainfed. These average rates were multiplied by harvested area for each crop for each category in 1969. Working Paper No. 2.

Figure 6. – TOTAL AVAILABLE SUPPLY OF POTASSIUM, 1954 – 1972



Source: Table 5

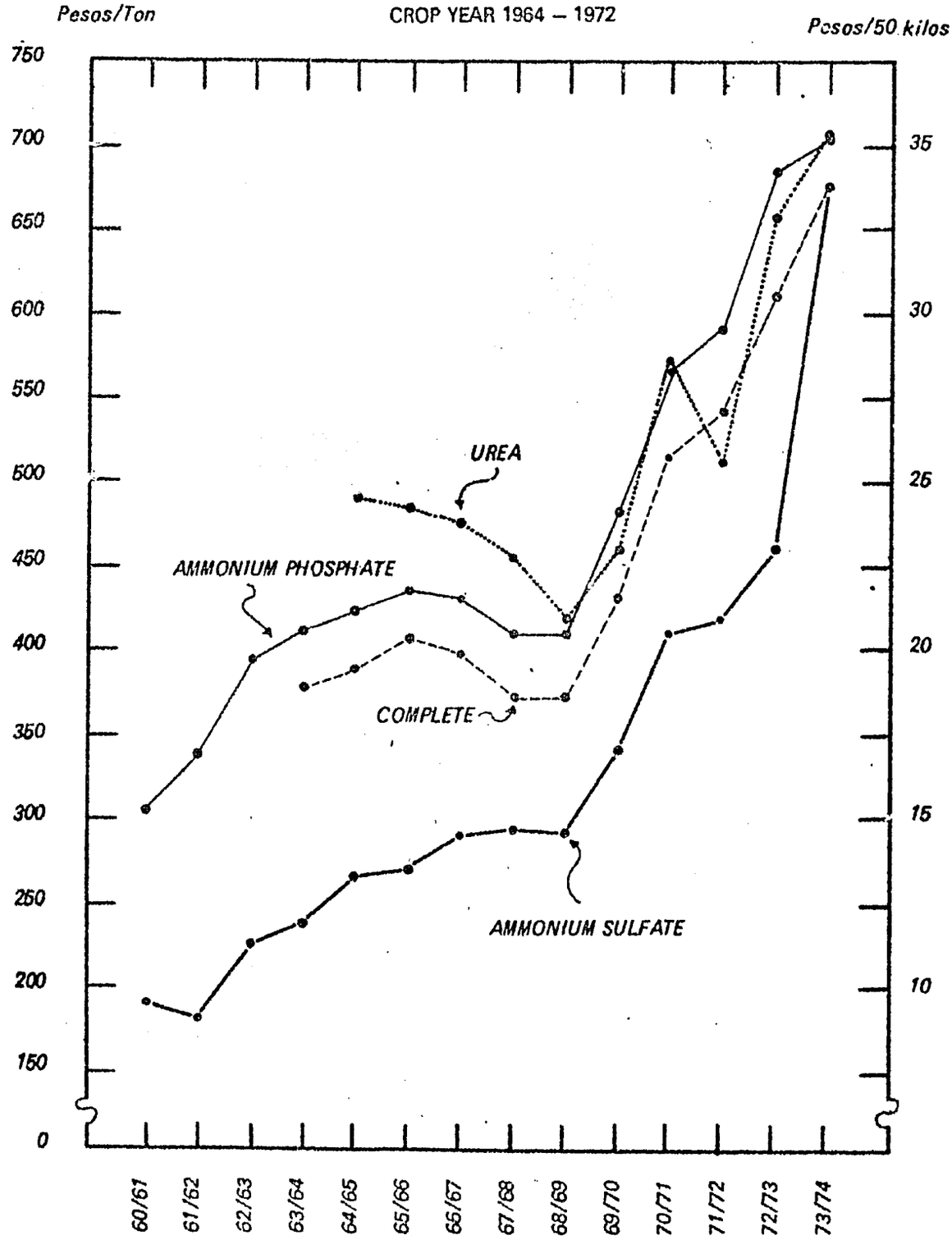
jor crops used most of the fertilizer. High fertilizer use in Southern Tagalog is accounted for by fertilization of fruit crops, sugarcane and rice. Much of the fertilizer consumed in Western Visayas went to sugarcane plantations where the major crop (sugarcane) is profitably fertilizer responsive (Tables 9 and 10). In Central Luzon, rice, sugarcane and vegetables were the main crops using fertilizer. On the other hand, other regions consume less fertilizer because of fewer distribution facilities and greater distances between markets thus making fertilizer less profitable to use because of the higher costs incurred and lower product prices.

III. Fertilizer Prices

Wholesale prices for the most important fertilizers (except urea) used in the Philippines moved in unison in the period 1960-69. The price of urea which has only become important since 1965 declined until 1969 (Figure 7). Since then prices for all fertilizers have risen and will probably double again in the near future due to the current energy crisis and resulting short supplies.

Fertilizer prices in constant terms declined from 1961 to 1969, except for ammonium sulphate which was nearly constant during the whole period (Figure 7). The profitability of the use of fertilizer is indicated by the fertilizer-product price ratio. Because data were available covering a longer period of time for imported fertilizer on a landed cost basis, these were used for obtaining a price index. This price index was then divided by the price index for major crops to obtain a fertilizer price-agricultural price ratio which is given in Table 11. In general, the ratio fluctuated around one from 1955 to

Figure 7. :- WHOLESALE PRICES FOR SELECTED FERTILIZERS,
CROP YEAR 1964 – 1972



Source: Table 9

1967 except for 1955 and 1962 when it was unfavorable at 1.2. From 1967 onwards, it was more favorable, declining to 0.57 before increasing in 1970.

A comparison of the price index of imported nitrogen and all fertilizers with the wholesale index of fertilizer prices showed that wholesale fertilizer prices usually rose sooner on the upswing and declined later on the downswing than the index based on landed costs. This is illustrated in Figure 9.

Prices of imported fertilizer. The Philippines generally imports the following nitrogenous fertilizers: urea, ammonium sulphate, ammonium phosphate, potassium sulphate. Because of the change in technology for producing nitrogenous fertilizer, urea has displaced ammonium sulphate as the cheapest source of nitrogen. This is shown by the decline in the wholesale price per kilogram of elemental N from urea, ₱1.10 in 1965 to ₱.88 in 1969. Prices have increased since then to ₱1.27 due to the peso devaluation and a tight supply situation. Comparable prices for elemental nitrogen from ammonium sulphate are ₱1.28/kg. in 1964-65; ₱1.39 in 1968-69 and ₱1.83 in 1971.

Prices of imported P_2O_5 and K_2O both show erratic fluctuations throughout the period under consideration (Table 11). However, both P and K prices increased in 1970 and 1971, although the price of phosphates decreased in 1972 from almost ₱116 per metric ton to less than ₱439 per metric ton. The reverse, however, was true for potassium during the 1971-72 period.

On the whole, however, imported fertilizers showed an increasing trend in price per metric ton from 1955 to 1972 with sudden drops in

1964 and 1969 (Figure 9). The price dip in 1969 was due to the lower cost of fertilizer in the world market which, on the average, was approximately ₱166 per metric ton as compared to ₱188 per metric ton in 1970 (Total landed costs basis). The decrease in price in 1964 was mainly caused by the drop in freight costs.

Fertilizer pricing practices. Fertilizer prices in the Philippines differ depending on whether it is marketed by the private or cooperatives sector. Domestic prices are related to import costs, especially for ammonium sulphate and urea. Because of the regulations on imports which allow cooperatives to import fertilizer tax-free, local manufacturers have established two sets of prices: one for their dealers and another for cooperatives. However, all import duties for fertilizer have been suspended from 1973 to the present.

A summary of average prices of selected fertilizers from 1968 to 1971 for the cooperative and private sector is wn in Table 14 and manifests the advantage of using urea. The price of urea was ₱24 per 50-kg.[8] bag or 1.17 per kg. of N for the private sector. Nonetheless, ammonium sulphate offers the least cost per bag with cooperatives prices of ₱17 per 50-kg. bag and ₱18 for the same weight for the private sector. In terms of nutrients, ammonium sulphate is more expensive at ₱1.22 and ₱1.32 per kg. of nitrogen for the two sectors, respectively.[9] The competitive advantage of the cooperatives sector results from its

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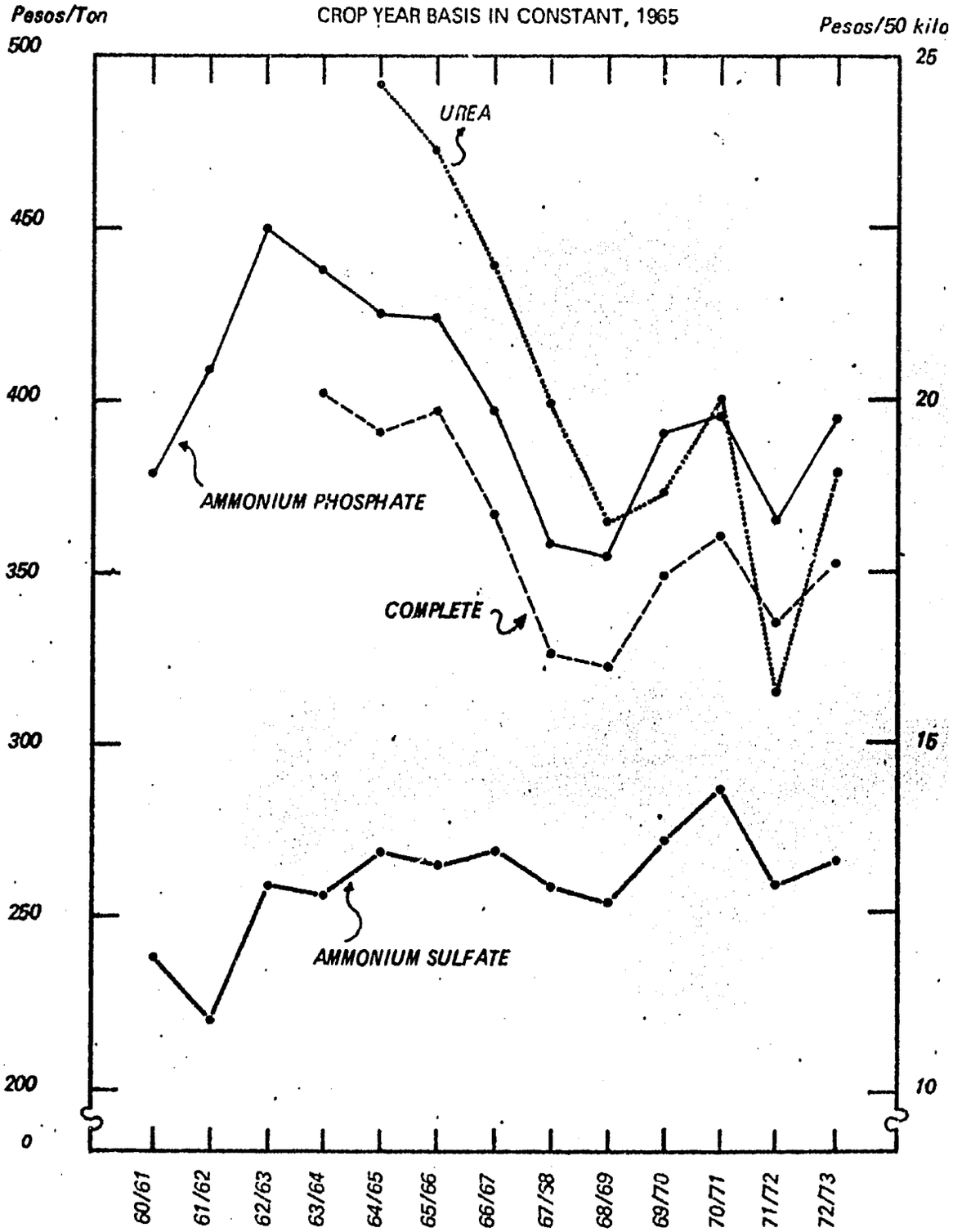
[8] Converted from units (in Table 14) to standard 50-kg. bags for ease of comparison.

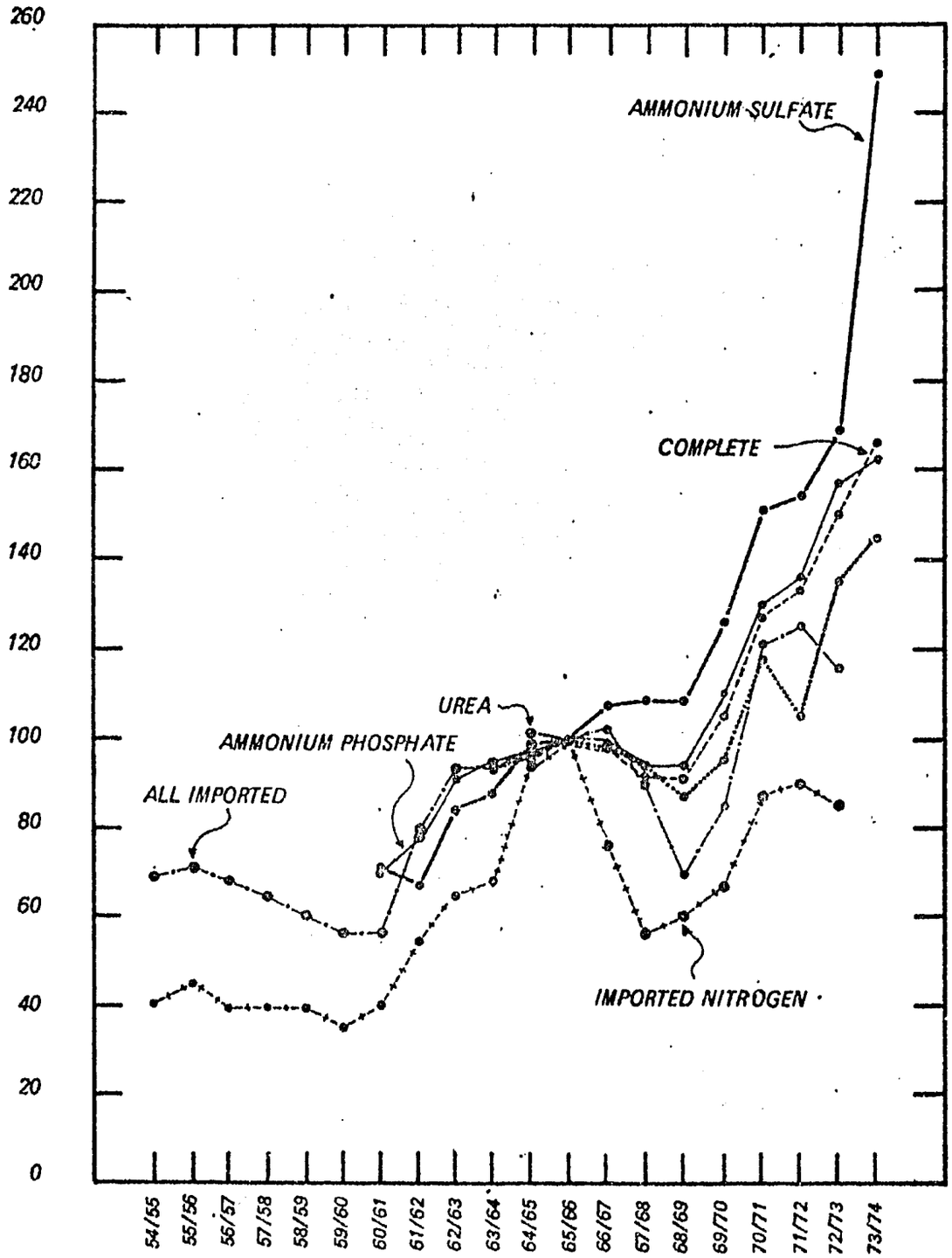
[9] Until recently ammonium sulphate had been sold in 45-kilo bags.

Figure 8. – DEFLATED WHOLESALE PRICES FOR SELECTED FERTILIZERS, CROP YEAR BASIS IN CONSTANT, 1965



Source: Table 10

Figure 9. — INDEX OF FERTILIZER PRICES
1965/66 = 100



ability to sell at a lower cost since it is able to buy without paying tariff. On the average, one has to pay ₱1.50 more per bag of ammonium sulphate when dealing with private dealers. For complete fertilizer (12-24-12), average retail prices in the cooperatives sector are lower by ₱5.00 per bag.

Pricing policies differ among the various entities making up the private sector. Some producers set prices for their private dealers while other manufacturers leave price determination entirely to the dealers. Dealers ordinarily sell fertilizers at cost plus a 10-12 percent mark-up which represents as much as 35 percent of the dealers' procurement prices.

The peso devaluation in 1962 and the adoption of the floating exchange rate in February 1970 also apparently affected the prices of selected fertilizers as domestic producers depend solely on some imported raw materials in their manufacturing operation. In the wake of higher procurement cost, producers are faced with no other alternative but to raise prices.

A comparison of the average prices of fertilizer for 1971 on a quarterly basis reveals that prices of two-thirds of the fertilizers under study reached their peak during the fourth quarter (October-December); in 1972, prices of 4 out of 7 brands of fertilizer reached the highest level during the third quarter (July-September), as indicated in Table 15.

Regional price differences. Data on a regional basis is available only from 1971 to 1973 and are illustrated in figures 10 to 12. For this period, prices were higher than the national average for all

fertilizers in Bicol, S.W. Mindanao and the Eastern Visayas regions. In Southern Luzon and the Western Visayas, prices were lower than the national average for most fertilizers due to the direct importation for use on sugar; and Southern Tagalog and Ilocos regions also usually had lower prices except for some types of fertilizers.

Fertilizer prices among regions have varied by as much as 30-40 percent reflecting the relative supply in each region as well as transportation costs. (These will be discussed in more detail in the next section). There may be less variation in pricing now because of government control of prices, with subsidized prices for fertilizer used on food crops.

IV. Fertilizer Distribution System

Basically three types of private enterprises are engaged in fertilizer distribution: local producers, trading firms, and cooperatives. A government agency, the Agricultural Credit Administration (ACA) has also been involved since the implementation of R.A. 1609 which provided ACA (then ACCFA) the authority to purchase and distribute fertilizers over a period of seven crop years. However, the methods employed by each company and by the government vary distinctly.

The individual marketing set-up of each company usually determines the distribution pattern adopted by each firm. Only one enterprise, the Maria Cristina Fertilizer Corporation (MCFC) has its fertilizer sales handled by a marketing corporation which distributes other products of the Marcelo group of enterprises (of which Maria Cristina is a subsidiary company). All other firms have their own marketing departments within their organization. Usually, these domestic producers

deal primarily with their dealers and distributors and enter directly into agreements with large consumers such as plantations, planters' associations and/or cooperatives. The distributors, on the other hand, sell to retail dealers who in turn sell to farmers.

Among the four large local manufacturers, Planters Products (which has the biggest fertilizer processing plant) is the only company whose marketing operations at the dealer level are highly standardized. A training program is conducted periodically by the parent company for its dealers. Moreover, the same company has a pre-implementation program of marketing strategies before it finally enters into any fertilizer distribution activity. In the case of the other local producers, provisions for market training and market research are inadequate if not totally absent from the system; simpler marketing strategies are usually evolved as sales problems are encountered in the process of implementation.

Distribution by cooperatives. The most active of the planters' cooperatives is the Sugar Producers' Cooperative Marketing Association (SPCMA). The association moves the largest tonnage of fertilizer to its affiliated associations and associated planter-members. Furthermore, the same cooperative, in earlier years, imported a considerable amount of fertilizer for the exclusive use of its affiliated members. Among the cooperative's facilities is a warehouse for initial storage of fertilizer for distribution to its member-associations.

Distribution by the ACA. The ACA system of distribution differs considerably from that of the local producers and planters' cooperatives.

ACA distributes fertilizer through its registered instrumentalities - the farmers' cooperatives (FC's) popularly known before as FACOMAS.

Three central depots, nine sub-terminals, and 275 local warehouses (155 local warehouses were reported in 1969, a figure which had increased by 54 percent in 1970) constitute the distribution system and facilities of ACA. As of 1971, there were 25 authorized distributors (FC's) and 311 designated outlets. One hundred twenty-five district fertilizer agents serve as liaison officers among the farmers-cooperatives, the outlets and warehouses. It is through these agents that fertilizers are sold to farmers by ACA.

The terminal warehouses of ACA are located in three strategic places: Iloilo (Western Visayas), Polo (near Manila), and in Cebu to serve the Visayas and Mindanao. These terminal warehouses serve as the sub-terminal or district warehouses within their respective spheres of operation.

Distribution Facilities

To enhance an efficient distribution system, local producers maintain warehouse facilities apart from those at factory sites. Interviews made with Planters Products officials disclosed that the company maintains (as of March 1973) 26 warehouses situated in different parts of the country, most of them located in the Visayas. Atlas and the Maria Cristina Fertilizer Corporation (MCFC), on the other hand, also have storage buildings in the vicinities of the two largest cities in the country: Manila in Luzon and Cebu in the Visayas. These two cities are the focal points of all major transportation routes. The MCFC plant, in addition to its warehouses in Cebu and Manila, has put

up a separate warehouse in the district of Negros to cope with the amount effectively demanded in the locality and nearby places.

Most of the companies hire barges for bulk-interisland shipments, or load on commercial boats, and/or enter into contract with trucking companies to have their outputs delivered from factories to piers, or from ports-of-call to warehouses. Beyond this, transportation becomes the problem of the distributors or dealers.

Only the MCFC has so far invested a sizeable amount on transportation. It has procured a cargo ship with a shipping capacity of 30,000 tons (about 1,360 metric tons) and a tanker with a capacity of up to 200 metric tons of liquid ammonia. Factors which precipitated this acquisition are the high cost of transporting by barge and the crowded shedules of interisland shipping lines.

Distribution by Fertilizer Dealers

Dealers of fertilizer are strategically distributed in various parts of the country. Of the four regions in Luzon in 1970-71, Central Luzon had 328 dealers or 26 percent spread out over six provinces. Southern Luzon and its surrounding islands had only 242 dealers located among its 9 jurisdictional provinces or 19 percent of the total dealers throughout the country. The six Bicol provinces have the lowest number of dealers in the country - 75 dealers or about 5 percent of the total (Table 16). Eastern Visayas had a total of 114 dealers and Southern Mindanao, 149, corresponding to about 9 to 12 percent, respectively.

Transport and Movement

The cost of moving a bag of fertilizer from the plant-site ware-

house or terminal warehouses to the farms makes up the bulk of the distribution costs. Each of the single processess adds to the costs of fertilizer to the farmer-consumer.

It takes a minimum of five loading and unloading activities to move one bag of fertilizer from the plant to the farm, besides hauling and piling during these series of movements. There may be other unrecorded and unobserved activities in the process of fertilizer movement.

The usual mode of transport utilized in the movement of fertilizer to the different islands of the country are barges and commercial interisland vessels or, in some cases, a combination of these two. Freight costs are lower by means of barges than by commercial interisland vessels in case of large shipments.

For inland movements, cargo trucks and jeeps are by far the most popular, with the former used by dealers to withdraw stocks from warehouses and the latter for small-volume withdrawals by the dealers or by big-time crop producers, or by cooperatives.

Railways are also employed but only in a few places of the country like the Bicol region and Panay. Fertilizer transportation by train is possible only for provinces or municipalities which are along the railway stations.

Generally, rates in a given region consider the demand for cargo space, competition among trucking companies, opportunity for backhaul arrangements, and other considerations.

Handling cost is another distribution cost incurred by producers, dealers or distributors. Handling cost occurs during the transfer of fertilizers from the barge, dock-side to truck, truck to destination, and warehouses for stock piling. These, however, vary from region to

region, with average rates ranging from ₱7.00 to ₱8.00 in 1969. As of March this year (1973), handling cost ranged from ₱4.00 to ₱20.00, or an average of ₱7.00 (Table 17) as compared to 1970-71 rates which ranged from ₱4.00 to ₱14.00 (Table 18).

Promotional costs are another activity which add to the total sum expended by fertilizer producers, dealers and distributors in the marketing of their products.[10/]

For the Visayas-Mindanao traffic, total freight costs (transport plus handling cost) averaged ₱19.00 per metric ton for shipment of fertilizers to Northern Mindanao while freight costs to Southern Mindanao were roughly ₱27.00. For the Luzon-Mindanao traffic, the same pattern is observed. Cost of transporting and handling fertilizers from Luzon to Southern Mindanao is higher than freight costs to Northern Mindanao by ₱8.32 per metric ton or 22 percent. Evidently this is due to the longer distance involved from the point of origin.

Savings that occur from lower transport costs are usually offset by high handling costs. The 15-centavo savings per metric ton to ship fertilizer directly from Manila to Mindanao are offset by higher handling costs so that, in the final analysis, the only advantage gained from using the direct route is that the products arrive earlier at the destination points.

For the Visayas-Mindanao route, average handling costs of fertilizer are more or less standardized in some parts especially in Northern and Southern Mindanao. These are offset by higher transport costs.

[10/] de Guia, Eric. 1970. Fertilizer distribution in the Philippines. Paris: Organization for Economic Cooperation and Development.

Transport costs constitute a high proportion of total freight cost from any point of origin to the point of destination (Table 18).

The proportion of transport costs to total freight costs from Cebu to Southern Mindanao is 71 percent; and 58 percent to Northern Mindanao. From Manila to Southern Mindanao it is 72 percent and 66 percent to Northern Mindanao.

A measure of the weight of handling costs relative to transport cost is the handling-transport ratio. For shorter distances, as in the Cebu to Mindanao routes, the handling-transport ratio ranges from 0.67 to 0.80 in Northern Mindanao as compared to the 0.41 average handling transport ratio for Southern Mindanao. From Manila, the ratio of handling cost to transport cost is further reduced, averaging 0.52 for Northern Mindanao and 0.38 to Southern Mindanao.

There are interrelationships among the distances covered, transport costs and handling costs such that the lesser the number of times fertilizers are handled the lower the handling costs and vice versa. Whenever possible, advantage is taken of lower transport costs using direct routes. However, handling of fertilizers only once is not practiced in this case because the retail outlets are scattered beyond the ports on the way to the farm. Consequently, high handling costs result.

<u>Differences in Handling Costs of Bagged Fertilizer</u>. Handling costs vary in the three main regions of the country. Handling charges per metric ton of fertilizer in Luzon and Visayas regions are roughly 60 percent and 50 percent of those in Mindanao. Between Luzon and Visayas, however, average handling cost in Visayas is lower by one peso per metric ton, or roughly 18 percent less than the handling charges

in Mindanao. That is, average cost of handling per 50-kilogram bag is ₱0.26, ₱0.22 and ₱0.44 in Luzon, Visayas, and Mindanao, respectively (Table 20).

The relatively low handling costs of bagged fertilizers in Visayas is a reflection of the significant role of cooperatives in contracting for lower rates. In the Visayas, the Sugar Producers' Cooperative Marketing Association (SPCMA) has distinctively played this role.

Cost disparities in handling costs infer that stevedoring companies in the Visayas and Mindanao have some degree of monopoly power. Some parts of Mindanao are young in terms of commercialization such that a semi-monopolistic set-up is prevalent, thereby enabling the stevedoring companies to possess control over the handling charges. In the Visayas, where the sugar industry has prospered, there is a proliferation of stevedoring companies which has consequently brought hauling and piling charges to low levels.

Within Mindanao itself, the effect of competition and better facilities is observed in relatively developed cities like Davao and Cotabato, where average handling charges per metric ton of fertilizer are ₱7.30 and ₱7.15, respectively. However, for less developed cities like Dadiangas and Cagayan de Oro, handling costs per metric ton of fertilizer are ₱9.60 and ₱12.00 per metric ton, respectively (Table 20).

Commercial freight rates for fertilizers in Luzon. Within Manila and its suburbs, the commercial freight rate charged for fertilizer is ₱9.00 per ton (Table 21). From Manila to any point in Luzon, the average cost of transporting fertilizer by land is ₱0.19 per ton per kilometer as compared to ₱0.15 per ton per kilometer in the Visayas and

₱0.21 per ton per kilometer in Mindanao. The cost of transporting fertilizers by land in Luzon is more or less standardized; this is not true for the Visayas or Mindanao regions.

Considering all the provinces in Luzon, commercial freight rates from Manila to Mountain Province (Bontoc and Benguet) are highest at ₱0.21 per ton per kilometer. From Manila, the lowest commercial freight rate of ₱0.18 per ton per kilometer is registered in Bulacan, Pampanga (in Central Luzon) Rizal, Laguna and Cavite (in Southern Tagalog).

By region, the cost of transporting fertilizers overland is highest if they originate from Manila to the Ilocos and Cagayan Valley regions at an average of ₱0.20 per ton per kilometer. The lowest is in the Southern Tagalog region, averaging ₱0.18 per ton per kilometer. This is mainly due to geographical factors, Within Central Luzon, the highest commercial freight rate is ₱0.20 per ton per kilometer from Manila to Nueva Ecija. The Ilocos Region and Mountain Province (Bontoc and Benguet) both have the highest commercial freight rates of ₱0.21 per ton per kilometer for fertilizer originating from Manila. Among all regions studied, transport costs of fertilizers by truck are standardized at ₱0.21 per ton per kilometer in the Central Valley region. Going to Southern Tagalog, the highest commercial freight rate is registered in Quezon and Batangas, at ₱0.19 per ton per kilometer (Table 22).

Trucking rates. A general inference which can be drawn from Table 22 is that trucking rates of fertilizers vary with the distance covered, which is as expected. The longer the distance covered, the higher the trucking rate for fertilizers. Exceptions occur, as in the Cagayan de Oro - Iligan route which has a relatively lower trucking

cost. The Davao-Dansalan route which covers a distance of only 76 kilometers has a trucking cost of only ₱13.00 per metric ton or ₱9.22 less than the average rates. It is also interesting to compare the Toledo - Cebu and Iloilo routes which cover the same distance of 50 kilometers. Trucking rates per metric ton amount to ₱6.60 for the former and ₱12.00 for the latter, showing a difference of ₱5.40 or 82 percent more for the Iloilo average dealer route.

For routes more than 70 kilometers, trucking rates of fertilizers in Mindanao are higher by ₱4.11 over those in the Visayas. For routes less than 70 kilometers, it costs ₱1.92 more to transport fertilizers by land in Mindanao.

For an in-depth analysis of the trucking rates of fertilizers, a supporting table has been constructed (Table 23). The first and second columns show the changes in distances and in rates, respectively. The third column shows the average peso change for every one kilometer change in distance. The Davao-Nintal and Davao-Calinan routes registered the highest rate of 30 centavos increase per kilometer increase in distance. The Davao-Dansalan and Davao-Tirapanan routes have the lowest average increase of 4 centavos per kilometer increase in distance. For the Davao-Dansalan and the Cagayan de Oro-Iligan roads, however, there is a decrease in freight rate of 38 centavos per metric ton despite an increase in the distance travelled.

Also interesting is the comparison between the percentage change in rates and the percentage change in distances. For the Visayas, it can be said that for routes more than 70 kilometers, the percentage change in rate is higher than the percentage change in distance. This implies that trucking rates increase faster than the change in distance.

For routes in the same region which are less than 70 kilometers, the percentage change in rate is generally lower than the percentage change in distance with the exception of the Bacolod-Silay route and the average routes travelled by Iloilo dealers. In Mindanao, the percentage change in rates was generally lower than the percentage change in distance for routes less than 70 kilometers.

Sea transport. Generally, sea transport price per metric ton of fertilizers is directly related to the distance in nautical miles, i.e., the longer the distance covered the higher sea transport cost of fertilizer. The exception is the Cebu-Davao route which covers more distance but has a comparatively low rate of ₱1.64 per metric ton. It is also possible to take advantage of lower per unit costs of large shipments. The sea transport cost per metric ton is reduced from ₱18.00 on commercial interisland vessels to ₱14.00 via barges between Manila and Cebu. The relatively higher cost of using commercial interisland vessels is again seen in the Cebu-Iligan route. For the same distance covered, it costs about ₱2.00 more per metric ton to move fertilizer from Cebu to Iligan than from Cebu to Cagayan de Oro (Table 24).

Cargo rates of liners are highest for the Luzon-Mindanao route at a weighted average of ₱27.80 and lowest for routes within the Visayas at ₱11.00. Moreover, it is economical to ship fertilizers using direct routes from Luzon to Mindanao. When an indirect route is used, cargo rates rise to an average of ₱33.02, higher by ₱5.22, or 18.78 percent, than the direct route.

Fertilizer cargo rates of liners from Cebu to Northern Mindanao average ₱11.00 per metric ton, while fertilizer shipments to Southern

Mindanao average ₱19.39. This means that a shipment from Cebu to Southern Mindanao is higher by ₱8.39 per metric ton or 76.7 percent over the charges from Cebu to Northern Mindanao. For intra-island shipment, moving fertilizer within the Visayas costs less than within Luzon by ₱2.29 per metric ton. This lower sea transport cost for the Visayas can be explained partly by the bargaining position of cooperatives (notably of the SFCMA).

Average peso changes in sea transport cost per unit change in distance range from 10 centavos to one centavo (Table 25). Maximum changes in cargo rates per unit change in distance are registered by the Manila-Bacolod and the Manila-Cebu (commercial) routes. The Greater Manila-Manila Bay and the Manila-San Fernando routes register the minimum change in cargo rate per unit change in distance, respectively. Within the region itself, average changes in rates over the changes in distance are more or less similar with the exception of the Cebu-Davao route. From the same point of reference (using the Cebu-Cagayan de Oro route), average change in sea transport cost per change in unit distance is only half that of the Cebu-Dadiangas route. This relationship can also be explained by the fact that while percentage change in distance of the Cebu-Dadiangas route in relation to Cebu-Cagayan de Oro route is 130.77, the percentage change in rate is 110. For the Cebu-Davao route when distance covered is more than doubled, percentage change in sea transport cost is only 93.6 percent more. It is also noted that the rate of change in sea transport cost as distance increases is generally less than the rate of change for distance covered. Apparently, there is an advantage of lower costs afforded by longer routes and large shipments via barges as well.

When compared with trucking rates of fertilizers, bulk movement over water at first glance involves lower costs per metric ton for similar distances overland. A limitation to the comparison is that sea transport costs are in terms of 1968 prices while trucking rates are for 1970-71. However, it is assumed that sea transport costs were more or less constant from 1968 to 1971.

V. Government Agencies and Activities Affecting Fertilizer Demand

The government has been deeply involved in activities to step-up the use of fertilizers in the country, and has therefore created or appointed agencies to take charge of, supervise, and/or assist the private sector, farmers and others through technical and financial assistance.

The following agencies have helped influence fertilizer demand and, likewise, the supply of fertilizer in the country.

1. The National Food and Agriculture Council (formerly the Rice and Corn Production Coordination Council) is the agency responsible for implementing and coordinating the food productivity campaign of the government which extends over the region down to the rural area. The Council has also concentrated its efforts on numerous priority provinces. It gives incentives and aids to the farmers through extension work and subsidized prices and thereby promotes the use of fertilizer to increase farm output.

   For instance, the program popularly called "Masagana 99" is being executed by the NFAC thru the existing field organizations of the Department of Agriculture and Natural Resources.

Most important is that it coordinates with different agencies, government and private sectors alike, towards the success of this particular program. Agencies involved in this program are the Bureau of Plant Industry, National Grains Authority (formerly RCA), Rural Banks, the Fertilizer Industry Authority (FIA) and others.

2. The Agricultural Credit Administration (ACA) is a government agency entrusted with the task of extending loans to farmers or agriculturists for use in the purchase of fertilizers and other inputs. This credit extension is designed to help the small farmers avail of fertilizer for their use in the farm and to accelerate the adoption of fertilizer practices. ACA is also designated to handle the fertilizer that enters the country in the form of aid, donations, or reparations. Therefore, ACA is closely in contact with the farmers or producers in their distribution activities. An example of these donations is the fertilizer donated by the Government of the Republic of Germany in 1971.

3. The Agricultural Guarantee Loan Fund (now shortened to Agricultural Loan Fund) is handled by the Rural Banks under the supervision of the Department of Rural Banks, Central Bank of the Philippines (DRB-CB). Loans are extended to small farmers, purposely for the purchase of inputs such as fertilizers.

4. The Cooperatives Administration Office (CAO), on the one hand, encourages the formation of cooperatives for the benefit of non-farmers.

5. The Development Bank of the Philippines (DBP) also extends crop loans covering other farm inputs and perhaps for subsistence, but is only limited to specific crops under the Special Financing Plan.
6. The Philippine National Bank of the Philippines (PNB), which is a semi-government entity also extends financial assistance to crop producers who are members of the Sugar Producers' Co-operative Marketing Association (SPCMA).
7. In March 1973, the Fertilizer Industry Authority (FIA) was created by virtue of a Presidential decree. The authority, headed by the Secretary of Agriculture himself, aims to regulate, control and develop the fertilizer industry with the end in view of assuring the agricultural sector with an adequate supply of fertilizer at the lowest possible cost. Moreover, the agency has the power to coordinate the activities of both private and government segments that are of relevance to the fertilizer industry.

The aim to accelerate fertilizer adoption among farmers prompted the government to approve bills that affected fertilizer distribution. Under Republic Act No. 1609, the Agricultural Credit Administration (then ACCFA) appropriated ₱45.5 million for the purchase and distribution of fertilizer over a period of seven crop years (1956-57 to 1962-63). Under this act, the government purchased fertilizer from domestic manufacturers for distribution at subsidized prices through the farmers' cooperatives. The price subsidy represented more than 50 percent of the commercial retail prices.

On the other hand, Republic Act No. 2084, also a purchase and subsidy act, is concerned with the distribution of fertilizer, specifically to rice and corn farmers, also at 50 percent subsidy. In 1964, ACI terminated its fertilizer subsidy program but it continued to sell fertilizers through cooperatives at rates slightly below the current commercial rates. The passage of Republic Act No. 3050 in June 1961 removed import duties on fertilizer cooperatives. This tariff which amounts to 20 percent of the cost and freight value to the Philippines was, however, revised in 1965 to help cooperatives, but imports by cooperatives are currently exempted from the seven percent advanced sales tax required of all private importation and domestic production.

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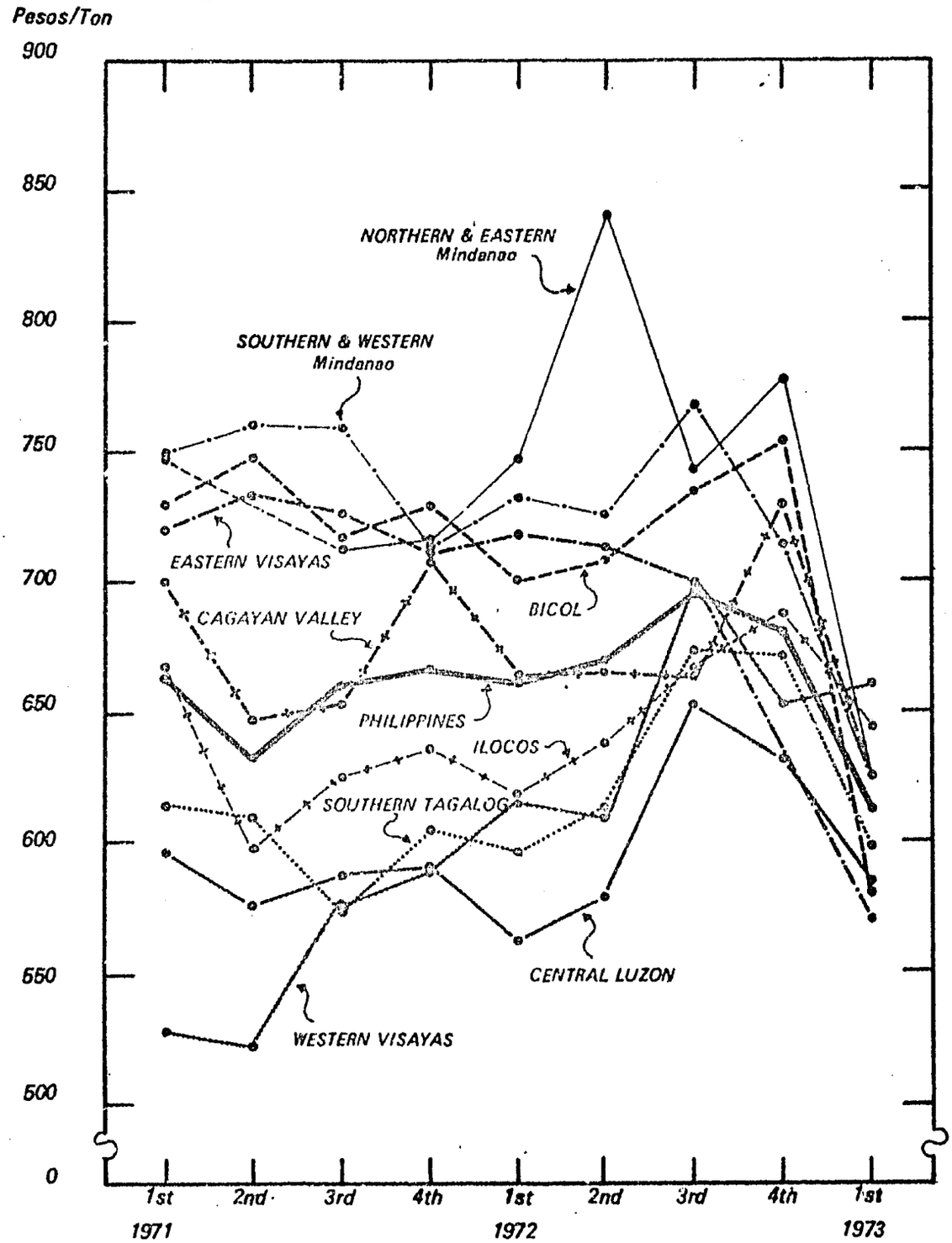
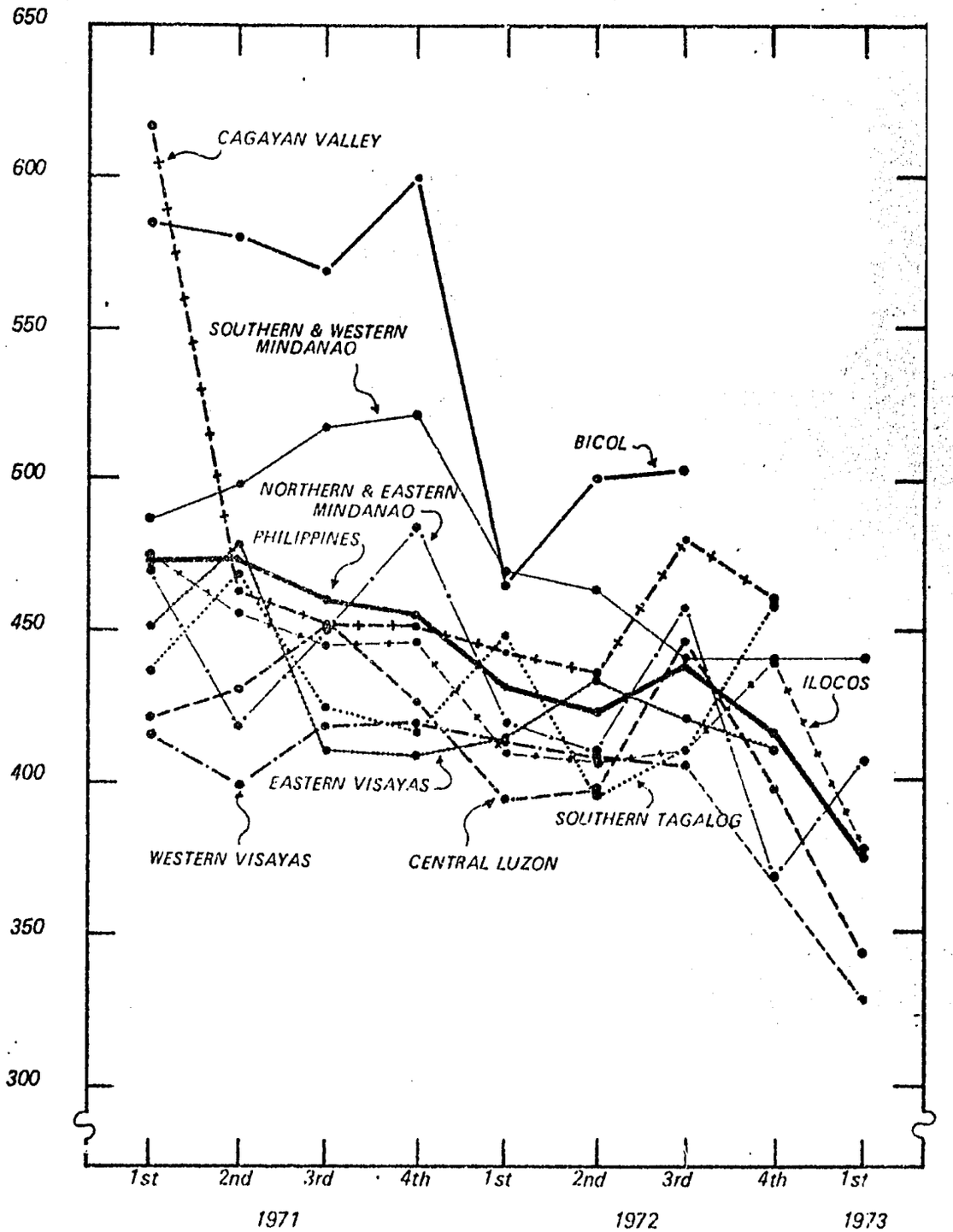
Figure 10 – DEALER PRICES OF UREA (45–0–0), BY REGION, 1971–73



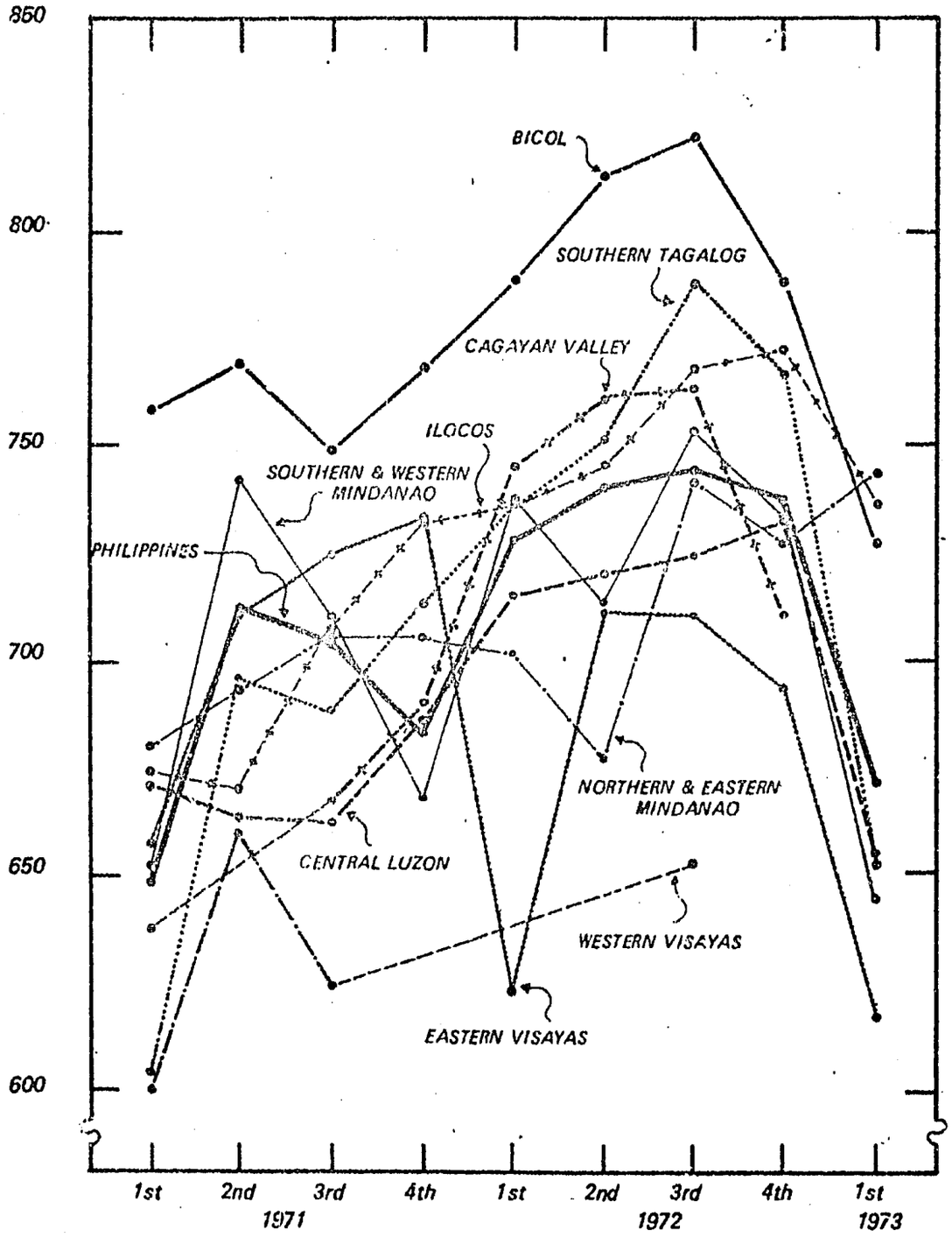
Source: BAECON

Figure 11. – DEALER FERTILIZER (AMMONIUM SULFATE) PRICES, BY REGION, 1971–1973



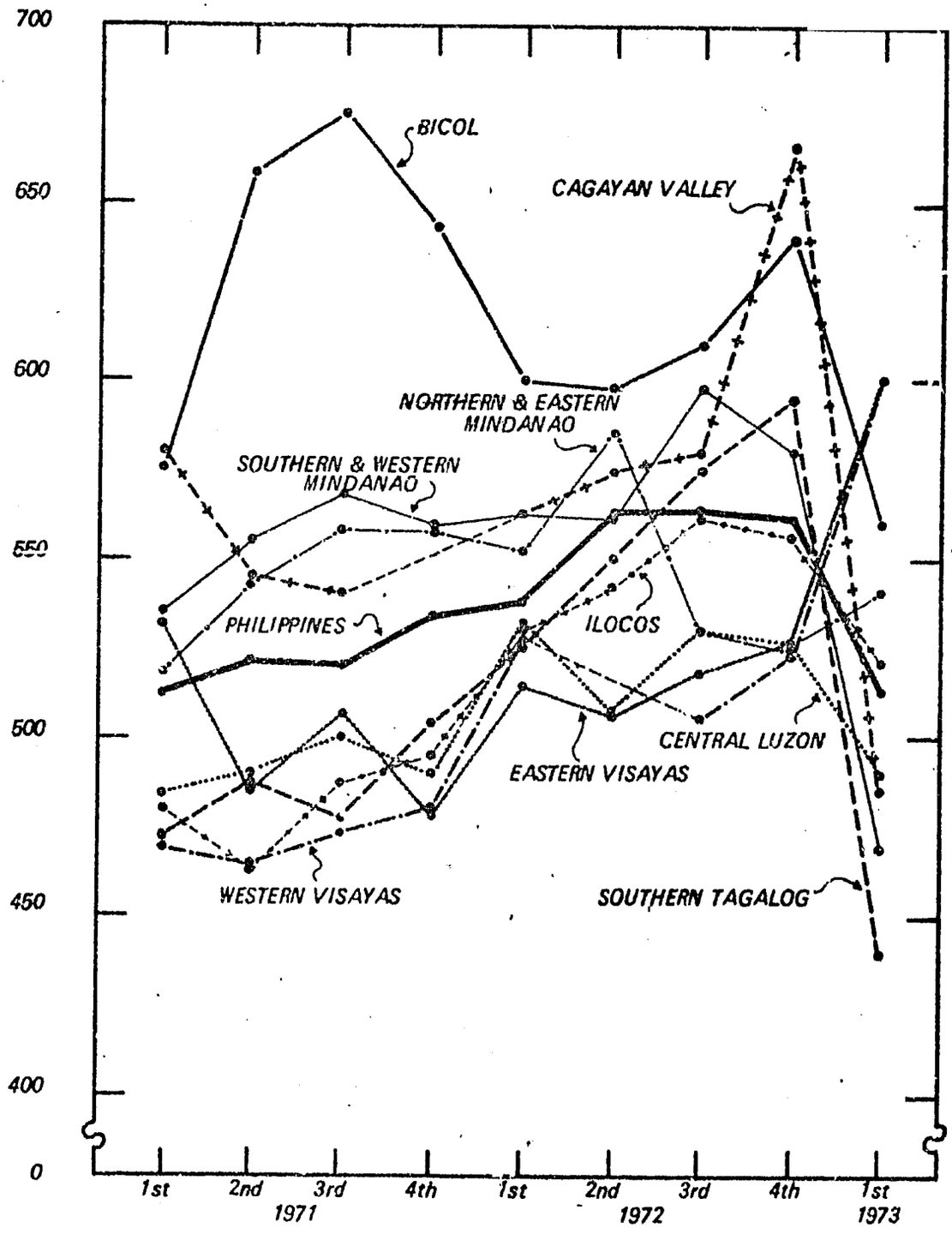
Source: BAECON

Figure 12. – DEALER FERTILIZER (COMPLETE, 12–24–12), PRICES, BY REGION, 1971–1973



Source: BAECON

Figure 13. -- DEALER PRICES OF 12–12–12, BY REGION, 1971–73



Source: BAECON

T A B L E S

Table 1. Total available supply of fertilizer
(in thousand metric tons)

YEAR	PRODUCTION	IMPORTATION	SUPPLY
1955	-	91.2	91.2
1956	-	61.1	61.1
1957	26.4	129.9	156.3
1958	76.7	83.2	159.9
1959	83.4	154.5	237.9
1960	54.8	124.0	178.8
1961	67.6	162.7	230.3
1962	91.8	262.8	354.6
1963	92.4	150.5	242.9
1964	97.1	197.7	294.8
1965	100.2	189.5	289.7
1966	114.2	79.2	193.4
1967	216.5	185.6	402.1
1968	243.7	174.9	418.6
1969	281.9	192.8	474.7
1970	259.6	186.0	445.6
1971	283.3	276.5	559.8
1972	283.0	252.8	535.8
1973			652.1
Total	2,372.6	2,954.9	5,979.6
Average	148.3	164.2	314.72
Percent	45.0	55.0	100.0

Note: Data on Domestic Production (1957 to 1959) were taken from the Economic Monitor, II (12), April 10, 1967. Those for all other years were taken from the Central Bank (Department of Economic Research).

Table 2. Total supply of available fertilizers (Nitrogen (N), Phosphorous (P_2O_5), Potasium (K_2O)) for the Philippines, 1954-1972.

(Quantity in metric tons)

YEAR	TOTAL				
	Production	Percent	Importation	Percent	Total
1954	NA	-	19,760	100.00	19,760
1955	NA	-	26,486	100.00	26,486
1956	7,486	25.9	21,407	74.1	28,893
1957	7,976	13.4	51,764	86.6	59,740
1958	10,110	22.7	34,338	77.3	44,448
1959	16,529	22.9	55,770	77.1	72,299
1960	13,433	24.1	42,236	75.9	55,669
1961	19,894	26.1	56,358	73.9	76,252
1962	27,927	23.1	93,027	76.9	120,954
1963	27,266	52.9	24,284	47.1	51,550
1964	28,778	30.8	64,612	69.2	93,390
1965	28,709	30.9	64,187	69.1	92,896
1966	34,937	56.1	27,334	43.9	62,271
1967	68,566	53.9	58,582	46.1	127,148
1968	83,423	55.7	66,322	44.3	149,745
1969	95,041	55.4	76,360	44.6	171,401
1970	86,495	53.8	74,171	46.2	160,666
1971	94,681	47.2	106,109	52.8	200,790
1972	94,681	48.9	98,873	51.1	193,554
TOTAL	745,932	41.3	1,061,980	58.7	1,807,912
AVERAGE	43,878		55,894		95,153

Note: Basic data from 1954 to 1972 were obtained from the Department of Economic Research (CB) and derived from Table A-5. Data from 1956 to 1959 are from the Terminal Report (Fertilizer Institute of the Philippines). For lack of data, 1972 production was assumed to be the same as that of 1971.

Table 3. Breakdown of the available supply of fertilizer nutrients (1956-1972, in metric tons)

YEAR	TOTAL AVAILABLE SUPPLY	N	P	K	PERCENTAGE OF TOTAL		
					N	P	K
1956	28,893	19,020	4,632	5,241	65.8	16.0	18.1
1957	59,740	33,582	16,100	10,058	56.2	27.0	16.8
1958	44,448	26,653	7,117	10,678	60.0	16.0	24.0
1959	72,299	43,161	17,733	11,405	59.7	24.5	15.8
1960	55,669	30,953	14,114	10,602	55.6	25.4	19.0
1961	76,252	43,475	14,949	17,828	57.0	19.6	23.4
1962	120,954	70,940	22,585	27,429	58.7	18.7	22.7
1963	51,550	28,302	10,895	12,353	54.9	21.1	24.0
1964	93,390	56,418	23,914	13,058	60.4	25.6	14.0
1965	92,896	48,237	23,418	21,241	51.9	25.2	22.9
1966	62,271	34,511	11,434	16,326	55.4	18.4	26.2
1967	127,147	83,317	21,551	22,279	65.5	16.9	17.5
1968	149,745	67,387	44,908	37,450	45.0	30.0	25.0
1969	171,401	93,437	31,614	46,350	54.5	18.4	27.0
1970	160,666	96,143	33,130	31,393	59.8	20.6	19.5
1971	200,790	128,481	27,868	44,441	64.0	13.9	22.1
1972	193,554	106,260	27,654	59,640	54.9	14.3	30.8
TOTAL	1,761,665	1,010,277	353,616	397,772	57.3	20.1	22.6
AVERAGE	103,627	59,428	20,801	23,398	57.3	20.1	22.6

Source: Fertilizer Institute of the Philippines

Table 4. Summary of domestic fertilizer production by kind, Philippines, 1960-1971
(Quantity in 000 MT)

YEAR	AMMONIUM SULPHATE	COMPLEX FERTILIZER	SUPER-PHOSPHATE 2/	UREA	MIXED FERTILIZER	AQUA AMMONIUM	AMMONIA	AMMONIUM PHOSPHATE	TOTAL
1960	24.5	13.5	16.8	-	-	-	-	-	54.8
1961	30.1	36.8	0.7	-	-	-	-	-	67.6
1962	35.5	55.8	0.5	-	-	-	-	-	91.8
1963	39.1	50.8	2.5	-	-	-	-	-	92.4
1964	41.2	54.1	1.8	-	-	-	-	-	97.1
1965	48.6	49.6	2.0	-	-	-	-	-	100.2
1966	42.4	46.6	2.4	3.0	19.8	-	-	-	114.2
1967	80.4	77.8	1.0	10.2	38.7	8.4	-	-	216.5
1968	43.6 1/	180.2	2.0	17.9	-	3/	-	-	243.7
1969	77.4	161.2	2.0	27.0	-	14.3	-	-	281.9
1970	77.1	143.4	2.1	21.6	-	-	10.7	4.7	259.6
1971	81.3	165.6	0.6	21.6	-	-	14.2	-	283.3

1/ Low production due to prolonged strike at Maria Cristina.
2/ Atlas Production of other superphosphate utilized in complex fertilizers.
3/ Used in Ammonium sulphate.

Source: Fertilizer Institute of the Philippines

Table 5a. Total supply of available Nitrogen (N) for the Philippines, 1954-1972 1/

(Quantity in Metric Tons)

YEAR	NITROGEN (N)				
	Production	Percent	Importation	Percent	Total
1954	NA	NA	9,621	NA	NA
1955	NA	NA	16,605	NA	NA
1956	6,740	35.4	12,280	64.6	19,020
1957	6,669	19.9	26,913	80.1	33,582
1958	7,893	29.6	18,760	70.4	26,653
1959	9,154	21.2	34,007	78.8	43,161
1960	6,623	21.4	24,330	78.6	30,953
1961	10,374	23.9	33,101	76.1	43,475
1962	13,600	19.2	57,340	80.8	70,940
1963	13,809	48.8	14,493	51.2	28,302
1964	14,614	25.9	41,804	74.1	56,418
1965	15,668	32.5	32,569	67.5	48,237
1966	17,555	50.9	16,956	49.1	34,511
1967	38,658	46.4	44,659	53.6	83,317
1968	37,058	55.0	30,329	45.0	67,387
1969	53,530	57.3	39,907	42.7	93,437
1970	47,962	48.9	48,181	50.1	96,143
1971	52,330	40.7	76,151	59.3	128,481
1972 2/	52,330	49.2	53,930	50.8	106,260

1/ Computed using basic data on imports and production from Table A-10.

2/ Production 1972 was assumed to be the same as that of 1971.

Table 5b. Total supply of available Phosphorous (P_2O_5) for the Philippines, 1954-1972 1/

(Quantity in Metric Tons)

YEAR	PHOSPHOROUS (P_2O_5)				
	Production	Percent	Importation	Percent	Total
1954	NA	NA	6,799	NA	NA
1955	NA	NA	6,156	NA	NA
1956	0	0.0	4,632	100.0	4,632
1957	0	0.0	16,100	100.00	16,100
1958	1,013	14.2	6,104	85.8	7,117
1959	5,875	33.1	11,858	66.9	17,733
1960	5,378	38.1	8,736	61.9	14,114
1961	5,658	37.8	9,291	62.2	14,949
1962	8,469	37.5	14,116	62.5	22,585
1963	8,122	74.5	2,773	25.5	10,895
1964	8,480	35.5	15,434	64.5	23,914
1965	7,836	33.5	15,582	66.5	23,418
1966	10,422	91.1	1,012	8.9	11,434
1967	17,675	82.0	3,876	18.0	21,551
1968	27,438	61.1	17,470	38.9	44,908
1969	24,580	77.8	7,034	22.2	31,614
1970	22,877	69.1	10,253	30.9	33,130
1971	24,966	89.6	2,902	10.4	27,868
1972 2/	24,966	90.3	2,688	9.7	27,654

1/ Computed using basic data on imports and production from Table A-10.

2/ Production 1972 was assumed to be the same as that of 1971.

Table 5c. Total supply of available Potassium (K_2O) for the Philippines, 1954-1972 1/

(Quantity in Metric Tons)

YEAR	POTASSIUM (K_2O)				
	Production	Percent	Importation	Percent	Total
1954	-	-	3,340	-	-
1955	-	-	3,725	-	-
1956	746	14.2	4,495	85.8	5,241
1957	1,307	13.0	8,751	87.0	10,058
1958	1,204	11.3	9,474	88.7	10,678
1959	1,500	13.2	9,905	86.8	11,405
1960	1,432	13.5	9,170	86.5	10,602
1961	3,862	21.7	13,966	78.3	17,828
1962	5,858	21.4	21,571	78.6	27,429
1963	5,335	43.2	7,018	56.8	12,353
1964	5,684	43.5	7,374	56.4	13,058
1965	5,205	24.5	16,036	75.5	21,241
1966	6,960	42.6	9,366	57.4	16,326
1967	12,233	54.9	10,046	45.1	22,279
1968	18,927	50.5	18,523	49.5	37,450
1969	16,931	36.5	29,419	63.5	46,350
1970	15,656	49.9	15,737	50.1	31,393
1971	17,385	39.1	27,056	60.9	44,441
1972 2/	17,385	29.1	42,255	70.9	59,640

1/ Computed using basic data on imports and production from Table A-10.

2/ Production 1972 was assumed to be the same as that of 1971.

Table 6. Total nutrients used by crops, Philippines, 1967 (in metric tons)

CROP	NUTRIENTS						ALL FERTILIZER	
	Nitrogen (N)		Phosphorous (P_2O_5)		Potassium (K_2O)			
	Metric Ton	Percent	Metric Ton	Percent	Metric Ton	Percent	Metric Ton	Percent
Rice	23,528	29.6	6,724	22.7	4,179	19.7	34,429	26.4
Corn	3,396	4.3	515	1.7	252	1.2	4,163	3.2
Sugar	37,829	47.6	17,033	57.4	12,570	59.2	67,432	51.7
Tobacco	1,724	2.2	410	1.4	361	1.7	2,495	1.9
Coconut	1,380	1.7	803	2.7	492	2.3	2,675	2.1
Vegetables	2,301	2.9	1,140	3.8	858	4.0	4,299	3.3
Citrus	1,742	2.2	1,092	3.7	686	3.2	3,520	2.7
Pineapples	3,038	3.8	131	0.4	737	3.5	3,906	3.0
Other Crops	4,543	5.7	1,811	6.2	1,106	5.2	7,460	5.7
TOTAL	79,481	100.0	29,657	100.0	21,241	100.0	130,379	100.0

Source: Study conducted for ESFAC by Sycip, Corres, Velayo and Co., Inc., 1968 as reported in the Terminal Report of the Presidential Fertilizer Commission, 1971.

Table 7. Breakdown of 1964 fertilizer consumption by area and by crop (in metric tons)

REGION	SUGARCANE		RICE		CORN		TOBACCO		VEGETABLES	
	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent
Ilocos	63	0.3	7,921	35.2	376	1.7	6,585	29.3	5,063	22.5
Cagayan Valley	-	-	3,731	87.9	68	1.6	337	7.9	25	0.6
Central Luzon	12,507	31.6	24,042	60.7	237	0.6	461	1.2	2,028	5.1
Southern Tagalog	7,102	20.9	12,726	37.5	4,494	13.2	1	-	325	1.0
Bicol	-	-	851	61.7	13	0.9	-	-	67	4.9
Western Visayas	106,926	84.2	14,175	11.2	337	0.3	-	-	3	-
Eastern Visayas	17,404	64.8	3,922	14.6	284	1.0	23	0.1	2,963	11.0
Southern and Western Mindanao	-	-	2,979	30.1	397	4.0	-	-	63	0.6
Northern and Eastern Mindanao	65	0.2	9,016	31.1	7,707	26.6	-	-	122	0.4
TOTAL: PHILIPPINES	143,977	48.9	79,363	27.0	13,913	4.7	7,407	2.5	10,659	3.6
PERCENT OF TOTAL		49.0		27.0		4.7		2.5		3.6

Source: San Miguel Corporation, Market Research Department as reported in the Terminal Report of the Presidential Fertilizer Commission, 1971.

Table 7. Breakdown of 1964 fertilizer consumption by area and by crop (Cont'd)
(in metric tons)

REGION	PINEAPPLE		CITRUS		OTHER CROPS		ALL OTHER CROPS	
	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent
Ilocos	-	-	-	-	2,463	11.0	22,471	7.6
Cagayan Valley	-	-	-	-	86	2.0	4,247	1.4
Central Luzon	-	-	-	-	319	0.8	39,594	13.5
Southern Tagalog	398	1.2	8,452	24.9	449	1.3	33,947	11.5
Bicol	-	-	232	16.8	216	15.7	1,379	0.5
Western Visayas	-	-	279	0.2	5,255	4.1	126,975	43.1
Eastern Visayas	-	-	-	-	2,259	8.4	26,855	9.1
Southern and Western Mindanao	-	-	214	2.2	6,248	63.1	9,901	3.4
Northern and Eastern Mindanao	7,000	24.1	71	0.2	5,027	17.3	29,008	9.9
TOTAL: PHILIPPINES	7,398	2.5	9,248	3.1	22,322	7.6	294,287	100.00
PERCENT OF TOTAL		2.5		3.1		7.6		100.00

Source: San Miguel Corporation, Market Research Department as reported in the Terminal Report of the Presidential Fertilizer Commission, 1971.

Table 8. Estimated fertilizer consumption by region from 1966 to 1969

(In metric tons)

REGION	Estimated Percent Distribution	1966			1967		
		Nitrogen (N)	Phosphorous (P_2O_5)	Potassium (K_2O)	Nitrogen (N)	Phosphorous (P_2O_5)	Potassium (K_2O)
Ilocos Region	8.4	2,186	865	654	4,952	1,105	966
Cagayan Vallaey Mt. Province	2.2	573	227	171	1,296	290	253
Central Luzon	17.9	4,659	1,844	1,393	10,545	2,355	2,059
Southern Tagalog	38.0	9,891	3,915	2,957	22,385	5,004	4,372
Bicol Region	1.3	339	134	101	7,658	171	150
Eastern Visayas	2.9	755	299	226	1,708	382	334
Western Visayas	22.8	5,935	2,349	1,774	13,431	3,000	2,623
Northern and Eastern Mindanao	3.0	781	309	233	1,767	395	345
Southern and Western Mindanao	3.5	911	361	272	2,062	460	403
PHILIPPINES		26,029	10,303	7,782	65,805	13,163	11,505

Source: Report of Sub-Committee No. 1, The Technical Working Committee, Presidential Fertilizer Commission, NEC, April 16, 1971.

Table 8. Estimated fertilizer consumption by region from 1966 to 1969 (Cont'd)

(In metric tons)

REGION	1968			1969		
	Nitrogen (N)	Phosphorous (P_2O_5)	Potassium (K_2O)	Nitrogen (N)	Phosphorous (P_2O_5)	Potassium (K_2O)
Ilocos Region	9,136	2,359	878	6,485	2,151	1,896
Cagayan Valley Mt. Province	2,440	618	492	1,698	563	497
Central Luzon	19,852	5,029	4,002	13,320	4,584	4,041
Southern Tagalog	42,146	10,675	8,498	29,338	9,731	8,578
Bicol Region	1,442	365	291	1,004	333	293
Eastern Visayas	3,216	815	648	2,239	743	646
Western Visayas	25,287	6,405	5,098	17,703	5,839	5,147
Northern and Eastern Mindanao	3,327	843	671	2,316	768	667
Southern and Western Mindanao	3,882	983	783	2,701	896	790
PHILIPPINES	110,729	28,093	21,362	76,799	25,603	22,556

Source: Report of Sub-Committee No. 1, the Technical Working Committee, Presidential Fertilizer Commission, NEC, April 16, 1971

Table 9. Average wholesale prices for selected fertilizers, Manila, crop year basis

YEAR	UREA 1/ 45-0-0	AMMONIUM SULFATE b/ 21-0-0	AMMONIUM PHOSPHATE b/ 16-20-0	COMPLETE 2/ 12-12-12
	PESOS/METRICTON			
1960-/61		192	305	
1961/62		182	338	
1962/63		227	394	
1963/64		240	411	378
1964/65	490	267	423	389
1965/66	485	271	435	407
1966/67	475	290	430	398
1967/68	455	294	408	372
1968/69	420	292	408	372
1969/70	460	341	482	431
1970/71	573	410	566	515
1971/72	511	418	592	543
1972/73	657	460	684	610
1973/74	707 a/	676 a/	705 a/	676 a/

1/ Source: Central Bank, refers to imported fertilizers, 1964-69 average of calendar year.

2/ Source: Bureau of Commerce, refer to domestically produced. See Appendex Tables A to for monthly price figures.

a/ July to October only 1973

Table 10. Deflated wholesale prices, Manila, for selected fertilizer, crop year basis

YEAR	UREA	AMMONIUM SULFATE	AMMONIUM PHOSPHATE	COMPLETE	CPI 1965=100
		1965 PESOS / METRIC TON			
1960/61		238	379		80.5
1961/62		220	409		82.6
1962/63		259	450		87.5
1963/64		256	438	402	93.8
1964/65	492	268	425	391	99.6
1965/66	473	264	424	397	102.5
1966/67	439	268	397	367	108.3
1967/68	399	258	358	326	113.9
1968/69	364	253	354	322	115.4
1969/70	373	276	390	349	123.4
1970/71	400	286	395	360	143.2
1971/72	315	258	365	335	162.3
1972/73	379	265	394	352	173.4

Table 11. Per unit value (CIF) and price indices of plant nutrients, Philippines, 1955-72

YEAR	NITROGEN	PHOSPHOROUS	POTASSIUM	ALL NUTRIENTS
	Price per metric ton	Price per metric ton	Price per metric ton	Price per metric ton
	Pesos	Pesos	Pesos	Pesos
1954	423	542	557	487
1955	593	458	532	553
1956	518	545	501	520
1957	432	513	663	496
1958	517	386	408	464
1959	440	402	449	433
1960	432	361	324	394
1961	563	641	348	523
1962	754	677	505	684
1963	845	767	428	716
1964	830	548	279	700
1965	1,054	556	379	765
1966	966	457	388	649
1967	891	574	386	788
1968	814	384	346	570
1969	656	362	271	481
1970	995	428	477	807
1971	1,179	565	638	1,024
1972	1,053	439	669	872

Base year: Average of 1960 and 1965 prices.
Source: Table A-10.

Table 12. Imported fertilizer price index relationships 1967=100

YEAR	PRICE INDEX OF MAJOR AGRICULTURAL COMMODITIES	IMPORTED FERTILIZER PRICE INDEX	FERTILIZER PRICE AGRICULTURAL PRICE RATIO
1955	58.1	70	120.5
1956	60.8	67	110.2
1957	65.1	63	96.8
1958	56.1	59	105.2
1959	57.3	55	96.0
1960	65.8	50	76.0
1961	66.3	67	101.1
1962	73.7	88	119.4
1963	83.0	91	109.6
1964	83.5	89	106.6
1965	93.2	97	104.1
1966	100.7	95	94.3
1967	100.0	100	100.0
1968	97.1	73	75.2
1969	106.1	61	57.5
1970	131.5	101	78.3
1971	-	130	-
1972	-	111	-

Table 13. Index of selected fertilizer prices
1965/66 = 100

YEAR	ALL 1/ IMPORTED	IMPORTED 1/ NITROGEN	UREA 2/ 45-0-0	AMMONIUM 2/ SULFATE 21-0-0	AMMONIUM 2/ PHOSPHATE 16-20	COMPLETE 2/ 12-24-12
1954/54	69	40				
1955/56	71	45				
1956/57	68	39				
1957/58	64	39				
1958/59	60	39				
1959/60	56	35				
1960/61	56	40		71	70	
1961/62	80	54		67	78	
1962/63	93	65		84	91	
1963/64	93	68		88	94	93
1964/65	97	95	101	99	97	96
1965/66	100	100	100	100	100	100
1966/67	102	76	98	107	99	98
1967/68	90	56	94	108	94	91
1968/69	70	60	87	108	94	91
1969/70	85	67	95	126	110	105
1970/71	121	87	118	151	130	127
1971/72	125	90	105	154	136	133
1972/73	115 3/	85 3/	135	169	157	150
1973/74			145 4/	249 4/	162 4/	166 4/

1/ Average of Calendar Year index of landed cost from Table 12
2/ Crop Year basis (year ending June 30)
3/ July-December 1972 only
4/ July-October only

Table 14. Average retail prices of selected fertilizers, Luzon, 1965-1971 1/

CALENDAR YEAR	AMMONIUM SULFATE		COMPLETE (12-12-12)		COMPLETE (12-24-12)		UREA (45-0-0)	
	Coop	Private	Coop	Private	Coop	Private	Coop	Private
1965	₱12.00	₱13.25	₱18.80	₱19.95	₱19.95	₱21.00	NA	NA
1966	12.00	13.00	16.50	18.00	19.95	21.00	NA	NA
1967	14.00	14.75	15.00	17.00	19.95	20.75	NA	NA
1968	12.50	13.50	15.00	17.25	19.95	21.75	19.25	22.50
1969	13.00	14.25	NA	NA	NA	NA	19.50	23.50
1970 2/	17.00	18.25	NA	21.25	NA	29.00	27.70	28.75
1971	18.25	19.50	NA	25.00	NA	32.00	29.75	31.00

1/ Source: Shields, John T. and Robert C. Gray, "The Fertilizer Industry in the Philippines"

2/ Peso devaluation February 1970 with the establishment of a floating rate

NOTE: All prices are expressed as pesos per 45 kg. bag with exception of urea (50 kg. bag).

Table 15. Dealer fertilizer prices by kind, Philippines, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE			POTASH 0-0-60
				12-24-12	12-12-12	14-14-14	
1971							
1st	663	473	NA	648	512	262	NA
2nd	632	473	NA	712	521	644	NA
3rd	660	460	NA	704	520	649	NA
4th	666	455	NA	683	534	667	NA
1972							
1st	661	431	622	728	538	676	NA
2nd	669	422	650	740	562	678	NA
3rd	694	438	683	744	563	688	NA
4th	680	415	657	737	561	670	NA
1973							
1st	611	374	602	671	513	661	593
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 15a. Dealer fertilizer prices by kind, Region I
Ilocos Region, 1971-1973

(Pesos per mteric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 17-14-14	POTASH 0-0-60
1971							
1st	668	474	NA	674	480	NA	-
2nd	598	455	NA	670	463	582	-
3rd	625	445	NA	707	487	628	-
4th	626	446	NA	732	495	630	-
1972							
1st	618	409	634	736	529	640	-
2nd	638	406	653	745	542	650	-
3rd	666	410	672	768	561	673	-
4th	687	439	654	772	556	663	-
1973							
1st	644	376	615	736	521	660	-
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon, Statistics Division.

Table 15b. Dealer fertilizer prices by kind, Region II
Cagayan Valley, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 14-14-14	POTASH 0-0-60
1971							
1st	700	616	NA	638	580	626	-
2nd	648	462	NA	NA	545	666	-
3rd	653	451	NA	667	540	604	-
4th	707	451	NA	690	NA	NA	-
1972							
1st	663	442	645	745	NA	720	-
2nd	665	435	660	760	574	695	-
3rd	663	480	NA	763	580	667	-
4th	729	460	685	710	666	641	-
1973							
1st	625	NA	712	NA	485	NA	-
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 15c. Dealer fertilizer prices by kind, Region III Central Luzon, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 14-14-14	POTASH 0-0-60
1971							
1st	596	421	NA	671	484	605	-
2nd	576	430	NA	664	490	578	-
3rd	587	451	NA	662	500	580	-
4th	590	426	NA	686	490	624	-
1972							
1st	562	394	616	715	532	630	-
2nd	579	397	628	720	507	636	-
3rd	653	446	643	724	530	653	-
4th	631	397	607	732	526	618	-
1973							
1st	584	343	519	654	490	660	-
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 15d. Dealer fertilizer prices by kind, Region IV - Southern Tagalog, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 14-14-14	POTASH 0-0-60
1971							
1st	614	437	NA	604	472	589	-
2nd	609	468	NA	696	487	626	-
3rd	574	429	NA	688	477	603	-
4th	604	416	NA	713	504	626	-
1972							
1st	596	448	621	736	525	704	-
2nd	613	396	658	751	550	658	-
3rd	673	410	735	788	575	687	-
4th	671	458	667	766	595	692	-
1973							
1st	598	NA	545	652	440	660	-
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 15a. Dealer fertilizer prices by kind, Region V - Bicol Region, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 14-14-14	POTASH 0-0-60
1971							
1st	730	585	NA	758	575	708	-
2nd	748	580	NA	769	658	704	-
3rd	717	569	NA	749	675	702	-
4th	729	600	NA	768	643	727	-
1972							
1st	700	469	699	789	600	719	-
2nd	707	500	701	813	598	721	-
3rd	734	503	720	822	610	715	-
4th	753	NA	NA	738	640	711	-
1973							
1st	580	NA	NA	727	560	NA	670
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: B/Econ Statistics Division

Table 15f. Dealer fertilizer prices by kind, Region VI - Eastern Visayas, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 14-14-14	POTASH 0-0-60
1971							
1st	720	451	NA	657	518	647	-
2nd	733	478	NA	711	543	700	-
3rd	726	410	NA	725	557	710	-
4th	710	408	NA	733	557	710	-
1972							
1st	717	414	549	623	552	684	-
2nd	712	433	627	711	585	701	-
3rd	699	420	680	710	530	724	-
4th	-	410	-	693	525	709	-
1973							
1st	570	NA	611	617	600	600	-
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 15g. Dealer fertilizer prices by kind, Region VII - Western Visayas, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 14-14-14	POTASH 0-0-60
1971							
1st	528	415	NA	600	469	574	-
2nd	522	399	NA	660	464	572	-
3rd	575	418	NA	624	473	584	-
4th	589	419	NA	NA	480	636	-
1972							
1st	615	413	591	NA	527	634	-
2nd	609	407	622	NA	NA	672	-
3rd	699	405	638	652	505	665	-
4th	653	NA	644	NA	523	663	-
1973							
1st	660	328	NA	NA	600	667	560
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 15h. Dealer fertilizer price by kind, Region VIII - Northern and Eastern Mindanao, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE			POTASH 0-0-60
				12-24-12	12-12-12	14-14-14	
1971							
1st	748	470	NA	680	532	610	-
2nd	-	418	NA	693	485	650	-
3rd	712	450	NA	705	506	735	-
4th	715	484	NA	705	479	677	-
1972							
1st	747	419	617	701	514	664	-
2nd	840	409	615	677	506	670	-
3rd	743	457	667	741	518	685	-
4th	777	368	678	727	526	692	-
1973							
1st	625	406	620	743	541	600	660
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 15i. Dealer fertilizer prices by kind, Region IX - Southern and Western Mindanao, 1971-1973

(Pesos per metric ton)

YEAR	UREA 45-0-0	AMMONIUM SULFATE 21-0-0	AMMONIUM PHOSPHATE 16-20	COMPLETE 12-24-12	COMPLETE 12-12-12	COMPLETE 14-14-14	POTASH 0-0-60
1971							
1st	750	486	NA	652	535	626	-
2nd	760	498	NA	742	555	627	-
3rd	759	517	NA	710	567	637	-
4th	713	521	NA	668	559	652	-
1972							
1st	732	469	670	737	562	696	-
2nd	725	463	677	713	561	705	-
3rd	767	440	733	753	598	733	-
4th	713	440	705	733	580	700	-
1973							
1st	625	440	605	644	469	720	-
2nd	-	-	-	-	-	-	-
3rd	-	-	-	-	-	-	-
4th	-	-	-	-	-	-	-

Source: BAEcon Statistics Division

Table 16. Allocation of fertilizer dealers by regional districts, Philippines, 1970-1971 1/

ISLAND GROUP/REGION	NUMBER OF PROVINCES	NUMBER OF DEALERS	PERCENT OF TOTAL NUMBER
LUZON			
Ilocos and Cagayan Valley	9	117	9.70
Central Luzon	6	328	27.20
Southern Tagalog	9	242	20.07
Bicol Region	6	75	6.22
VISAYAS			
Western Visayas	7	95	7.88
Eastern Visayas	5	114	9.45
MINDANAO			
Northeastern Mindanao	8	86	7.13
Southeastern Mindanao	5	149	12.35
TOTAL	55	1,206	100.00

1/ Source: Terminal Report, July 1970 to December 1971, Fertilizer Institute of the Philippines.

Table 17. Handling and trucking cost per metric ton (20 bags of 50 kgs. of fertilizer) from Planter's Products warehouse to the dealers warehouse, 1972

SITE OF WAREHOUSE (ORIGIN)	DESTINATION	HANDLING COST	TRUCKING COST
Pasig, Rizal	Manila	4.00	16.00
	Rizal	4.00	16.00
	Cavite	4.00	16.00
	Laguna	4.00	16.00
	Batangas	4.00	16.00
	Quezon	4.00	20.00
	Palawan	10.00	40.00
	Mindoro	10.00	40.00
	Masbate	10.00	40.00
	Isabela	4.00	40.00
	Cagayan Valley	4.00	40.00
	Nueva Viscaya	4.00	30.00
San Simon, Pampanga	Zambales	4.00	30.00
	Bataan	4.00	16.00
	Pampanga	4.00	10.00
	Bulacan	4.00	10.00
	Tarlac	4.00	12.00
Cabanatuan City	Nueva Ecija	4.00	16.00
Poro Point, San Fernando, La Union	Ilocos	4.00	20.00
	Baguio	4.00	20.00
	La Union	4.00	12.00
Urdaneta, Pangasinan	Pangasinan	4.00	16.00
Legaspi City	Albay	4.00	16.00
	Camarines Sur	4.00	20.00
	Camarines Norte	4.00	20.00
Cebu City	Cebu City	14.00	30.00
	Bohol	14.00	16.00
	Cebu Province	4.00	10.00
	Lanao Sur and Norte	20.00	16.00
	Zamboanga del Norte	22.00	16.00
	Zamboanga del Sur	20.00	22.00
	Misamis Occidental	20.00	20.00
	Southern Leyte	14.00	18.00

Table 17. Handling and trucking cost per metric ton (20 bags of 50 kgs. of fertilizer) from Plant r's Products warehouse to the dealers warehouse, 1972 (Cont'd)

SITE OF WAREHOUSE (ORIGIN)	DESTINATION	HANDLING COST	TRUCKING COST
Cagayan de Oro City	Cagayan de Oro	4.00	6.00
	Misamis Oriental	4.00	20.00
	Bukidnon	4.00	20.00
Ormoc City	Ormoc	12.00	4.00
	Northern Leyte	10.00	30.00
Bogo	Bogo	4.00	4.00
Davao City	Davao City	4.00	16.00
	Davao del Sur	4.00	20.00
	Davao del Norte	4.00	16.00
	Cotabato	6.00	24.00
General Santos City	South Cotabato	6.00	24.00
	General Santos City	4.00	10.00
Iloilo City	Iloilo City	8.00	4.00
	Iloilo Province (A)	8.00	10.00
	Iloilo Sub-Prov. (B)	8.00	30.00
	Antique	8.00	20.00
Roxas City	Roxas City	8.00	10.00
	Capiz	8.00	12.00
	Aklan	8.00	16.00
Silay City	Bacolod	6.00	6.00
Baie	Dumaguete	6.00	10.00

NOTE: As per interview, it was reported that Planters Products had as of 1973 26 warehouses located in several cities and provinces. Location of the remaining ten warehouses, were however, not reported.

SOURCE: Planters Products

Table 18. Transport and handling costs of fertilizers, Philippines, 1970-1971 1/

	TRANSPORT ₱/MT	HANDLING ₱/MT	TOTAL
LUZON - VISAYAS			
Manila - Cebu	13.99	4.51	18.50
VISAYAS - MINDANAO			
Cebu - Cotabato	17.61	7.99	25.60
Cebu - Davao	19.37	7.99	27.36
Cebu - Iligan	12.00	8.00	20.00
Cebu - Dadiangas	21.00	8.00	29.00
Cebu - Cagayan de Oro	9.99	8.01	18.00
LUZON - MINDANAO			
Manila - Cotabato	31.62	12.48	44.10
Manila - Davao	33.25	12.61	45.86
Manila - Iligan	25.33	13.71	39.04
Manila - Dadiangas	34.96	12.54	47.50
Manila - Cagayan de Oro	23.98	12.52	36.50
SUMMARY AVERAGES			
Cebu - Northern Mindanao	11.00	8.00	19.00
Cebu - Southern Mindanao	19.33	7.99	27.32
Manila - Northern Mindanao	24.66	12.84	37.50
Manila - Southern Mindanao	33.28	12.54	45.82

1/ Source: Terminal Report, July 1970 to December 1971, Fertilizer Insitute of the Philippines

2/ Includes unloading from vessels, loading to trucks, hauling to warehouses and stock piling.

Table 19. Handling-transport ratio, fertilizer, 1970

	PERCENT TRANSPORT	PERCENT HANDLING	HANDLING TRANSPORT RATIO
LUZON - VISAYAS			
Manila - Cebu	75.62	24.38	1:0.32
VISAYAS - MINDANAO			
Cebu - Cotabato	68.79	31.21	1:0.45
Cebu - Davao	70.80	29.20	1:0.41
Cebu - Iligan	60.00	40.00	1:0.67
Cebu - Dadiangas	72.41	27.59	1:0.38
Cebu - Cagayan de Oro	55.50	44.50	1:0.80
LUZON - MINDANAO			
Manila - Cotabato	71.70	28.30	1:0.39
Manila - Davao	72.50	27.30	1:0.38
Manila - Iligan	64.88	34.21	1:0.54
Manila - Dadiangas	73.60	26.40	1:0.36
Manila - Cagayan de Oro	65.70	34.30	1:.52
SUMMARY AVERAGES			
Cebu - Northern Mindanao 1/	57.89	42.45	1:0.73
Cebu - Southern Mindanao 2/	70.75	29.33	1:0.41
Manila - Northern Mindanao	65.76	34.26	1:0.52
Manila - Southern Mindanao	72.63	27.40	1:0.38

1/ Includes Iligan and Cagayan de Oro
2/ Includes Cotabato, Davao, and Dadiangas

Source: Terminal Report, July 1970 - December 1971. NSDB Assisted Project No. 2.216, FIF.

Table 20. Differences in handling costs of bagged fertilizers at major ports1/

PORT	AVERAGE HANDLING CHARGES PER M.T. (₱)	AVERAGE COST PER 50-KG. BAG (₱)
LUZON	5.50	0.26
Manila	7.00	0.32
Legaspi	4.00	0.20
VISAYAS	4.50	0.22
Bacolod	4.00	0.20
Iloilo	5.00	0.24
MINDANAO	9.00	0.44
Davao	7.30	0.34
Cotabato	7.15	0.32
Dadiangas	9.60	0.48
Cagayan de Oro	12.00	0.60

1/ Source: Terminal Report, July 1970 to December 1971, Fertilizer Institute of the Philippines.

Table 21. Commercial freight rates of fertilizers in Luzon, April 1971 1/

	Pesos
Manila and Suburbs	9.00/ton
Manila to:	
Bulacan	0.18/ton/km.
Pampanga	0.18/ton/km.
Rizal	0.18/ton/km.
Laguna	0.18/ton/km.
Cavite	0.18/ton/km.
Manila to:	
Quezon	0.19/ton/km.
Batangas	0.19/ton/km.
Tarlac	0.19/ton/km.
Bataan	0.19/ton/km.
Zambales	0.19/ton/km.
Manila to:	
Nueva Ecija	0.20/ton/km.
Nueva Viscaya	0.20/ton/km.
Cagayan, Isabela	0.20/ton/km.
Manila to:	
Pangasinan	0.19/ton/km.
La Union	0.19/ton/km.
Abra	0.19/ton/km.
Ilocos Sur	0.19/ton/km.
Ilocos Norte	0.19/ton/km.
Mt. Province (Bontoc)	0.21/ton/km.
Benguet	0.21/ton/km.

1/ Source: Shields, John T. and Robert C. Gray, "The Fertilizer Industry in the Philippines, 1971."

Table 22. Trucking rates of fertilizers, Philippines, 1970-1971/

ROUTE	DISTANCE (KM.)	₱/M.T.
VISAYAS		
More than 70 kms.		
Iloilo - Roxas	120	22.00
Bacolod - Sagay	200	30.00
Bacolod - Binalbagan	88	11.44
Bacolod - Davao	75	9.75
Less than 70 kms.		
Iloilo - average dealer	50	12.00
Pulupandan - average plantation	30	4.40
Toledo - Cebu	50	6.60
Bacolod - Victorias	33	4.56
Bacolod - La Carlota	46	6.12
Bacolod - Silay	18	2.76
MINDANAO		
More than 70 kms.		
Davao - Cotabato	215	32.00
Davao - Tinapanan	173	26.40
Davao - Bansalan	76	22.22
Cagayan de Oro - Iligan	100	13.00
Less than 70 kms.		
Davao - Calinan	30	8.80
Davao - Nintal	17	4.84
Cotabato - Midsayap	50	10.00

1/ Source: Terminal Report, July 1970 to December 1971, Fertilizer Institute of the Philippines.

Table 23. Trucking rates per change in distance covered, Philippines, 1970-1971

		Δ d (Kilometer)	Δ r (₱/m.t.)	Δ r/Δ d (₱/m.t./km)	Δ d/d (%)	Δ r/r (%)
Visayas						
> 70 kms.						
Bacolod - Davao ⟶	Bacolod - Binalbagan	13	1.69	0.13	17.33	17.33
⟶	Iloilo - Roxas	45	12.25	0.27	60.00	125.64
⟶	Bacolod - Sagay	125	20.25	0.16	166.67	207.69
< 70 kms.						
Bacolod - Silay ⟶	Pulupandan - average plantation	12	1.64	0.14	66.67	59.42
⟶	Bacolod - Victorias	15	1.80	0.12	83.33	65.22
⟶	Bacolod - La Carlota	28	3.36	0.12	155.56	121.74
⟶	Toledo - Cebu	32	3.84	0.12	177.78	139.13
⟶	Iloilo - average dealer	32	9.24	0.29	177.78	334.78
Mindanao						
> 70 kms.						
Davao - Bansalan ⟶	Cagayan de Oro - Iligan	24	(9.22)	(38)	31.58	41.49
⟶	Davao - Tinapanan	97	4.18	0.04	127.63	18.81
⟶	Davao - Cotabato	139	9.78	0.07	182.89	44.01
< 70 kms.						
Davao - Nintal ⟶	Davao - Calinan	13	3.96	0.30	76.47	81.82
⟶	Cotabato - Midsayap	33	5.14	0.15	194.12	106.20

< > Source of basic data: Terminal Report, July 1970 - Dec. 1971. NSDB Assisted Project No. 2.216, FIP

Table 24. Sea transport costs of fertilizer, Philippines, 1968 1/

ROUTE	DISTANCE (NAUTICAL MILES)	PRICE/M.T.
INTRA-LUZON		
Manila - Legaspi	353	15.00
Manila - San Fernando	200	11.00
Manila - Manila Bay Area	30	8.50
LUZON - MINDANAO		
Manila - Iligan	521	21.00
Manila - Cotabato	650	28.00
Manila - Davao	814	32.00
LUZON - VISAYAS		
Manila - Cebu	390	14.00
Manila - Cebu (commercial)	390	18.00
Manila - Bacolod	348	14.00
VISAYAS - MINDANAO		
Cebu - Iligan (commercial)	130	12.00
Cebu - Cagayan de Oro	130	10.00
Cebu - Cotabato	260	17.60
Cebu - Dadiangas	300	21.00
Cebu - Davao	424	19.36
INTRA - VISAYAS		
Bacolod - Iloilo		8.00
Iloilo - Ormoc		14.00

1/ Source: Terminal Report, July 1970 to December 1971, Fertilizer Institute of the Philippines.

Table 25. Freight rates per nautical miles, Philippines 1970-1971

		Δd (Nautical Miles)	Δr (₱/m.t.)	Δr/Δd (₱/m.t./n.m.)	Δd/d (%)	Δr/r (%)
Luzon - Luzon						
Manila - Manila Bay Area	→ Manila - San Fernando	170	2.50	0.01	56.67	29.41
	→ Manila - Legaspi	323	6.50	0.02	107.67	76.47
Luzon - Mindanao						
Manila - Iligan	→ Manila - Cotabato	129	7.00	0.05	24.76	33.33
	→ Manila - Davao	293	11.00	0.04	56.24	52.38
Luzon - Visayas						
Manila - Bacolod	→ Manila - Cebu	42	0	-	12.06	-
	→ Manila - Cebu (Commercial)	42	4.00	0.10	12.06	28.57
Visayas - Mindanao						
Cebu - Cagayan de Oro	→ Cebu - Iligan (Commercial)	0	2.00	-	-	20
	→ Cebu - Cotabato	130	7.60	0.06	100	76
	→ Cebu - Dadiangas	170	11.00	0.06	130.77	110
	→ Cebu - Davao	294	9.36	0.03	226.15	93.6

Table 26. Weighted average of sea transport costs of fertilizers, 1970-1971

Intra - Luzon	13.29
Luzon - Mindanao	27.80
Luzon - Visayas	15.38
Visayas - Mindanao	17.64
Visayas - Northern Mindanao	11.00
Visayas - Southern Mindanao	19.39
Intra - Visayas	11.00*

*Simple average in lieu of weighted average which cannot be computed.

APPENDIX TABLES

Appendix Table 1: Exchange rate of Philippine pesos to U. S. Dollar, 1960-1972.

	Selling or Importation Rate
1960	2.00
1961	2.72
1962	3.816
1963	3.908
1964	3.907
1965	3.907
1966	3.905
1967	3.927
1968	3.932
1969	3.932
1970	5.907
1971	6.481
1972	6.726

Source: Central Bank of the Philippines

Appendix Table 2. Kilograms of N; P_2O_5; K_2O in fertilizers commonly sold in the market 1/.

Kind	Analysis Printed on the Bags (Percent) (N - P - K)	Kilograms/bag N	P	K
Ammonium sulfate	21 - 0 - 0	11	+ 0	+ 0
Urea	45 - 0 - 0	22.5	+ 0	+ 0
Superphosphate	0 - 20 - 0	0	+ 9	+ 0 2/
Nutriate of Potash	0 - 0 - 60	0	+ 0	+ 27 2/
Di-Ammonium phosphate	18 - 46 - 0	9	+ 23	+ 0
Ammonium phosphate	16 - 20 - 0	8	+ 10	+ 0
Complete	12 - 12 - 12	6	+ 6	+ 6
	12 - 24 - 12	6	+ 12	+ 6
	14 - 14 - 14	7	+ 7	+ 7
	6 - 10 - 4	3	+ 5	+ 2
Anhydrous Ammonia	82 - 0 - 0	41	+ 0	+ 0
Ammonium nitrate	45 - 0 - 0	22.5	+ 0	+ 0
Ammonium sulfate nitrate	34 - 0 - 0	17	+ 0	+ 0
Ammonium chloride	25 - 0 - 0	12.5	+ 0	+ 0
Aqua Ammonium	21 - 0 - 0	10.5	+ 0	+ 0
Potassium nitrate	13 - 0 - 44	6.5	+ 0	+ 22
Nitrate of soda	16 - 0 - 0-26Na	8	+ 0	+ 0 + 13Na
Potassium sulfate	0 - 0 - 50	0	+ 0	+ 25
Tri-super phosphate	0 - 45 - 0	0	+ 22.5	+ 0
Potassium phosphate	0 - 52 - 35	0	+ 26	+ 16.5
Potassium chloride	0 - 0 - 60	0	+ 0	+ 30

1/ Source: Engro Bulletin, No. 20. 1st Quarter, 1969 and "Proper Soil Management Means More Food For the People". Bureau of Soils, DANR, 1961.

2/ Computed at 45 kg. per bag; others at 50.

Appendix Table 3. Summary of domestic fertilizer production in per cent, by kind, Philippines, 1960-1971.

YEAR	Ammonium Sulphate	Complex Fertilizer	Superphosphate	Urea	Mixed Fertilizer	Aqua Ammonium	Ammonia	Ammonium Phosphate	Total
1960	44.7	24.6	30.7	-	-	-	-	-	100.0
1961	44.6	54.4	1.0	-	-	-	-	-	100.0
1962	38.7	60.8	0.5	-	-	-	-	-	100.0
1963	42.3	55.0	2.7	-	-	-	-	-	100.0
1964	42.4	55.7	1.8	-	-	-	-	-	100.0
1965	48.5	49.5	2.0	-	-	-	-	-	100.0
1966	37.2	40.8	2.1	2.6	17.3	-	-	-	100.0
1967	37.1	35.9	0.5	4.7	17.9	3.9	-	-	100.0
1968	17.9	73.9	0.8	7.4	-	-	-	-	100.0
1969	27.5	57.2	0.7	9.6	-	5.1	-	-	100.0
1970	29.7	55.2	0.8	8.3	-	-	4.1	1.8	100.0
1971	28.7	58.4	0.2	7.6	-	-	5.0	-	100.0

Appendix Table 4. Summary of increase (decrease) in domestic fertilizer production, by kind, Philippines, 1960-1971.
(Quantity in 000 MT)

YEAR	Ammonium Sulphate	Complex Fertilizer	Superphosphate	Urea	Mixed Fertilizer	Aqua Ammonia	Ammonia	Ammonium Phosphate
1961	5.6	23.3	(16.1)	-	-	-	-	-
1962	5.4	19.0	2	-	-	-	-	-
1963	3.6	(5.0)	2.0	-	-	-	-	-
1964	2.9	3.3	(7)	-	-	-	-	-
1965	7.4	(4.6)	2	-	-	-	-	-
1966	(6.2)	(3.0)	4	3.0	19.8	-	-	-
1967	38.0	31.2	(1.4)	7.2	19.0	8.4	-	-
1968	(36.8)	102.4	1.0	7.7	(38.7)	(8.4)	-	-
1969	33.9	(19.0)	(3)	9.1	-	14.3	-	-
1970	(4)	(17.8)	.2	(5.4)	-	(14.2)	10.7	4.7
1971	4.2	22.2	(1.5)	0	-	-	2.5	(4.7)

Appendix Table 5. Percentage rated capacity of fertilizer. Manufactured domestically, 1960-1971.
(Quantity in 000 MT)

YEAR	AMMONIUM SULFATE			COMPLEX FERTILIZER			SUPERPHOSPHATE		
	Rated Capacity	Actual	Percent	Rated Capacity	Actual	Percent	Rated Capacity	Actual	Percent 1/
1960	59.4	24.5	41.2	105.4	13.5	12.8	42.2	16.8	39.8
1961	59.4	30.1	50.7	105.4	36.8	34.9	42.2	0.7	1.7
1962	59.4	35.5	59.8	105.4	55.8	52.9	42.2	0.5	1.2
1963	59.4	39.1	65.9	105.4	50.8	48.2	42.2	2.5	5.9
1964	59.4	41.2	69.4	105.4	54.1	51.3	42.2	1.8	4.3
1965	89.4	48.6	54.4	105.4	49.5	47.0	42.2	2.0	4.7
1966	150.0	42.4	28.3	242.0	46.6	19.2	42.0	2.4	5.7
1967	174.0	80.4	46.2	242.0	77.8	32.1	42.0	1.0	2.4
1968	174.0	43.6 2/	25.0	242.0	180.3	74.5	42.0	2.0	4.8
1969	174.0	77.4	44.5	371.0	161.2	43.5	42.0	2.0	4.7
1970	174.0	77.1	44.3	371.0	143.4	38.6	42.0	2.1	5.1
1971	174.0	81.3	46.7	371.0	165.6	44.6	42.0	0.6	1.5

Source: Fertilizer Institute of the Philippines

1/ Atlas production of other superphosphate were utilized in complex fertilizer.
2/ Low production due to prolonged strike of Maria Cristina.

Appendix Table 5. Percentage rated capacity of fertilizer Manufactured domestically, 1960-1971. (cont'd.)
(Quantity in 000 MT)

YEAR	UREA			MIXED FERTILIZER			AQUA AMMONIA		
	Rated Capacity	Actual	Percent	Rated Capacity	Actual	Percent	Rated Capacity	Actual	Percent
1960	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-
1966	60.0	3.0	5.0	165.0	19.7	11.9	-	-	-
1967	60.0	10.2	17.0	165.0	38.7	23.5	36.6	8.4	23.0
1968	60.0	17.9	29.9	165.0	-	-	36.6	3/	-
1969	67.5	27.0	40.1	-	-	-	36.6	14.3	39.0
1970	67.5	21.6	32.1	-	-	-	-	-	-
1971	67.5	21.6	32.1	-	-	-	-	-	-

3/ Used in Ammonium sulphate

Appendix Table 6. Quantity of produced plant nutrients by kind, Philippines, 1960-1971.
(Quantity in metric tons)

YEAR	AMMONIUM SULPHATE (21-0-10)	AMMONIUM PHOSPHATE (16-20-0)		OTHER N FERTILIZER (51.5+0-0)	UREA (45-0-0)	SUPER PO4 (0-60-0)	N P K or MIXED (11 - 15 - 10.5)			TOTAL		
	N	N	P_2O_5	N	N	P_2O_5	N	P_2O_5	K_2O	N	P_2O_5	K_2O
1960	5,142	-	-	-	-	3,359	1,481	2,019	1,432	6,623	5,378	1,432
1961	6,328	-	-	-	-	140	4,046	5,518	3,862	10,374	5,658	3,862
1962	7,463	-	-	-	-	100	6,137	8,369	5,858	13,600	8,469	5,858
1963	8,220	-	-	-	-	500	5,589	7,622	5,335	13,809	8,122	5,335
1964	8,660	-	-	-	-	360	5,955	8,120	5,684	14,614	8,480	5,684
1965	10,215	-	-	-	-	400	5,454	7,436	5,205	15,668	7,836	5,205
1966	8,914	-	-	-	1,350	480	7,291	9,942	6,960	17,555	10,422	6,960
1967	16,889	-	-	4,350	4,603	200	12,815	17,475	12,233	38,658	17,675	12,233
1968	9,153	-	-	-	8,079	400	19,828	27,038	18,927	37,058	27,438	18,927
1969	16,264	-	-	7,359	12,170	393	17,737	24,187	16,931	53,530	24,580	16,931
1970	16,183	751	939	5,514	9,741	429	15,773	21,508	15,656	47,962	22,877	15,656
1971	17,070	-	-	7,305	9,741	130	18,213	24,836	17,385	52,330	24,966	17,385

Source of basic data: Fertilizer Institute of the Philippines

Appendix Table 7. SUMMARY. Quantity and total landed cost of imported fertilizers, Philippines, 1954-1972.
(Quantity in M. tons, Value in 1,000 pesos)

YEAR	Quantity	Total landed cost	₱/M. ton
1954	53,289	8,042	151.00
1955	91,197	13,348	146.00
1956	61,072	9,377	154.00
1957	129,946	20,148	155.00
1958	83,204	13,490	162.00
1959	154,479	19,920	129.00
1960	124,004	20,676	167.00
1961	162,719	28,818	177.00
1962	262,766	60,450	230.00
1963	150,538	17,414	116.00
1964	197,703	45,956	232.00
1965	189,477	49,353	260.00
1966	79,232	20,847	263.00
1967	185,561	47,443	256.00
1968	174,925	38,400	220.00
1969	192,835	37,158	193.00
1970	186,009	60,260	324.00
1971	276,525	108,821	394.00
1972	252,836	88,203	349.00

Appendix Table 7a. Quantity and total landed cost[1/] of imported fertilizers, by kind, Philippines, 1954-1972[2/].
(Quantity in M. Tons, Value in 1,000 Pesos)

YEAR	AMMONIUM SULPHATE				AMMONIUM PHOSPHATE				OTHER NITROGENOUS			
	Quantity	TLC	₱/m. ton	₱/bag	Quantity	TLC	₱/m. ton	₱/bag	Quantity	TLC	₱/m. ton	₱/bag
1954	25,477	3,197	125	5.44	18,484	3,560	193	8.64	663	129	195	8.73
1955	63,886	8,998	141	6.30	10,662	1,983	186	8.32	1,681	417	248	11.16
1956	35,085	4,784	136	6.12	11,272	2,083	185	9.20	4,886	1,055	216	9.67
1957	57,831	6,674	115	5.17	36,897	7,046	191	8.59	14,165	3,247	229	10.30
1958	31,475	4,123	131	5.89	6,339	1,341	212	9.49	23,265	5,137	221	9.85
1959	91,591	9,920	108	4.86	19,713	3,264	166	7.42	20,923	3,923	187	8.41
1960	58,296	5,472	94	4.05	21,730	3,721	171	7.65	17,825	3,307	186	8.10
1961	60,554	7,922	131	5.85	25,914	6,650	257	11.70	36,698	8,018	218	9.90
1962	105,812	18,352	173	7.65	41,072	11,862	289	13.05	65,221	19,394	297	13.50
1963	38,487	6,612	172	7.65	9,321	3,037	326	14.40	11,521	4,252	369	16.65
1964	91,951	17,710	193	8.55	22,002	7,168	326	14.40	45,737	14,772	323	14.40
1965	85,028	21,711	255	11.25	26,138	8,589	329	14.85	23,656	8,720	369	16.65
1966	34,689	7,453	215	9.45	47	38	809	36.45	22,677	8,932	394	17.55
1967	96,763	21,290	220	9.90	5,948	1,749	294	13.05	56,415	18,372	326	14.40
1968	53,743	10,400	194	8.55	4,038	1,076	266	12.15	44,116	13,945	316	14.40
1969	43,922	8,720	199	9.00	4,709	1,264	268	12.15	69,994	16,688	238	10.80
1970	30,235	7,292	241	10.80	226	80	354	15.75	101,832	40,424	397	18.00
1971	60,896	15,862	260	11.70	11,115	6,564	591	26.10	146,564	68,622	468	21.15
1972	61,051	15,845	260	11.70	4,063	2,364	582	26.55	95,533	40,798	427	18.20

1/ Includes FOB, Insurance, Freight
2/ Source: Department of Economic Research, Central Bank of the Philippines

Appendix Table 7a. Quantity and total landed cost[1] of imported fertilizers, by kind, Philippines, 1954-1972[2]. (cont'd.)
(Quantity in M. Tons, Value in 1,000 Pesos)

YEAR	NITRATE OF POTASH				NITRATE OF SODA				SUPERPHOSPHATE			
	Quantity	TLC	₱/m. ton	₱/bag	Quantity	TLC	₱/m. ton	₱/bag	Quantity	TLC	₱/m. ton	₱/bag
1954	1,331	140	105	4.72	4	-	-	9.18	2,168	217	100	4.50
1955	299	40	134	5.94	71	14	197	8.73	2,691	491	182	8.19
1956	1,556	214	138	6.16	5	2	400	18.94	1,200	163	136	6.07
1957	119	23	193	8.77	-	-	-	-	2,758	448	162	7.29
1958	253	74	292	13.09	-	-	-	-	901	140	155	6.97
1959	47	14	298	14.80	-	-	-	-	1,868	263	141	6.30
1960	60	24	400	17.55	145	26	179	8.10	3,041	500	164	7.20
1961	110	41	373	16.65	3,030	544	179	8.10	203	100	493	22.05
1962	1,250	515	412	18.45	76	22	289	13.05	1,647	501	304	13.50
1963	595	154	259	11.70	5	1	200	13.05	900	295	328	14.85
1964	105	40	381	17.10	35	10	286	12.50	508	176	346	15.30
1965	4,050	959	237	10.80	445	106	238	10.80	1,733	372	215	9.45
1966	2,102	460	219	13.50	-	-	-	-	-	-	-	-
1967	105	26	248	14.40	51	18	353	16.20	495	164	331	14.85
1968	1,009	207	205	9.45	12	4	333	16.65	1,250	407	326	14.40
1969	4,013	824	205	9.45	-	-	-	-	993	349	351	15.75
1970	2,025	565	279	12.60	5	2	400	22.50	1,766	594	336	15.30
1971	1	-	294	13.05	-	-	-	-	1,011	476	471	21.15
1972	201	82	408	18.45	-	-	-	-	750	462	616	27.75

1/ Includes FOB, Insurance, Freight
2/ Source: Department of Economic Research, Central Bank of the Philippines

Appendix Table 7a. Quantity and total landed cost[1] of imported fertilizers, by kind Philippines, 1954-1972[2]. (cont'd.)
(Quantity in M. Tons, Value in 1,000 Pesos)

YEAR	POTASSIUM SULPHATE				OTHER PHOSPHATIC FERTILIZER				OTHER POTASSIC			
	Quantity	TLC	₱/m. ton	₱/bag	Quantity	TLC	₱/m. ton	₱/bag	Quantity	TLC	₱/m. ton	₱/bag
1954	-	-	-	-	1,108	248	224	10.03	4,054	551	136	6.07
1955	45	8	17	7.56	2,896	476	164	7.38	6,025	921	153	6.84
1956	443	68	153	6.88	937	160	171	7.69	5,688	848	149	6.70
1957	1,021	153	150	6.70	6,160	1,092	177	7.96	11,015	1,465	133	5.98
1958	1,924	285	148	6.66	4,720	729	154	6.93	14,327	1,661	116	5.22
1959	959	134	140	6.25	5,711	1,095	192	8.59	13,667	1,307	96	4.27
1960	1,034	128	124	5.40	1,914	178	93	4.05	19,959	1,848	93	4.05
1961	1,050	186	177	8.10	8,065	1,347	167	7.65	27,095	4,010	148	6.75
1962	1,575	392	249	11.25	6,274	1,208	193	8.55	39,839	8,212	206	9.45
1963	1,951	488	250	11.25	532	134	252	11.25	12,007	2,441	203	9.00
1964	1,813	463	255	11.70	22,065	4,006	182	8.10	13,487	1,611	119	5.40
1965	2,159	589	273	12.15	18,813	3,313	176	8.10	27,455	4,994	182	8.10
1966	2,041	544	267	12.15	2,059	438	212	9.45	15,617	2,982	191	8.55
1967	2,780	779	280	12.60	4,899	1,087	222	9.90	18,105	3,958	219	8.10
1968	3,335	1,027	308	13.95	32,809	5,871	179	8.10	34,613	5,463	158	7.20
1969	5,530	1,424	257	11.70	11,301	1,407	124	5.40	52,373	6,482	124	5.40
1970	2,497	1,055	423	18.90	18,823	3,837	204	9.00	28,600	6,411	224	9.90
1971	750	310	413	18.45	73	38	521	22.95	56,115	16,949	302	13.50
1972	1,610	865	537	24.30	2,911	453	156	7.20	86,717	27,334	315	18.90

1/ Includes FOB, Insurance, Freight
2/ Source: Department of Economic Research, Central Bank of the Philippines

Appendix Table 8. SUMMARY. Total landed cost of imported manufactured fertilizer Philippines, 1954-1972.
(Values in 1,000 pesos*)

YEAR	TOTAL IMPORTATION			
	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/
1954	8,023	8	1,553	9,584
1955	11,408	50	3,262	14,720
1956	8,027	38	2,874	10,939
1957	19,998	216	5,526	25,740
1958	13,400	84	2,498	15,982
1959	20,869	172	3,192	24,233
1960	13,551	95	3,550	17,196
1961	24,680	127	5,850	30,657
1962	54,373	448	11,436	66,257
1963	15,586	178	3,076	18,840
1964	45,458	435	6,545	52,438
1965	46,009	386	9,291	55,686
1966	12,360	236	3,779	16,375
1967	41,300	168	6,575	48,043
1968	33,787	180	5,814	39,781
1969	34,323	189	5,462	39,974
1970	53,357	291	8,404	62,052
1971	93,251	282	15,404	108,937
1972	77,151	271	11,179	88,601

* Values in Dollar converted to pesos using the prevailing exchange rate for each year, CB rate.
a/ Includes FOB values insurance and freight rates.
b/ As reported by the Fertilizer Institute of the Philippines.
c/ Estimated values using 1966 and 1968 figures
d/ Estimated values using 1961 and 1962 figures.
e/ Estimated values using 1969 and 1971 figures.
f/ Total quantity and values of imported NPK mixed fertilizer and the mixed or composite fertilizer.
g/ Less than a metric ton.
h/ Estimated values using 1970 and 1971 figures.
i/ Estimated values using 1972 and 1973 figures.

Source of Basic Data: Department of Agricultural Economic Research, Central Bank of the Philippines.
Fertilizer Institute of the Philippines.

Appendix Table 8a. Total landed cost of imported manufactured fertilizer, Philippines, 1954-1972.
(Values in 1,000 pesos*)

YEAR	AMMONIUM SULPHATE				AMMONIUM PHOSPHATE			
	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost(₱)a/	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost(₱)a/
1954	2,458	1	638	3,097	3,043	7	511	3,561
1955	6,777	41	2,180	8,998	1,523	5	454	1,982
1956	3,277	25	1,481	4,783	1,613	5	465	2,083
1957	4,923	29	1,722	6,674	5,455	47	1,545	7,047
1958	3,515	30	578	4,123	1,113	11	216	1,340
1959	8,348	68	1,505	9,921	2,796	21	448	3,265
1960	4,446	32	994	5,472	2,760	22	940	3,722
1961	5,972	59	1,891	7,922	5,565	40	1,045	6,650
1962	14,705	125	3,522	18,352	10,394	56	1,412	11,862
1963	5,486	60	1,066	6,612	2,624	33	380	3,637
1964	15,204	158	2,347	17,709	6,398	61	709	7,168
1965	17,950	152	3,608	21,710	7,371	76	1,142	8,589
1966	6,242	61	1,149	7,452	32	-	5	37
1967	18,256	45	2,990c/	21,291	1,381	6	362	1,749
1968	8,798	62	1,540	10,400	882	4	190	1,076
1969	6,728	60	1,932	8,720	972	10	282	1,264
1970	6,103	37	1,152	7,292	80	-	16d/	96
1971	12,772	53	3,037	15,862	5,562	46	897	6,505
1972	13,389	44	2,412	15,845	2,282	-	81	2,363

Appendix Table 8a. Total landed cost of imported manufactured fertilizer, Philippines, 1954-1972. (cont'd.)
(Values in 1,000 pesos*)

YEAR	OTHER NITROGENOUS				NITRATE OF POTASH			
	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/
1954	110	b/	17	127	110	b/	30	140
1955	369	1	46	416	33	b/	7	40
1956	835	1	218	1,054	148	1	64	213
1957	2,667	23	556	3,246	19	b/	4	23
1958	4,504	23	611	5,138	46	b/	27	73
1959	3,486	28	409	3,923	12	b/	2	14
1960	2,466	17	821	3,304	19a/	e/	5e/	24
1961	6,469	53	1,496	8,018	31	-	9	40
1962	15,604	171	3,618	19,393	424	5	86	515
1963	3,504	44	703	4,251	123	-	30	153
1964	13,147	106	1,519	14,772	36	1	2	39
1965	7,327	67	1,326	8,720	726	6	226	958
1966	7,690	38	1,204	8,932	278	4	178	460
1967	16,537	63	1,772	18,372	25	1	8c/	34
1968	12,776	56	1,113	13,945	144	-	62	206
1969	16,482	54	152	16,688	629	6	190	825
1970	35,409	191	4,824	40,424	535	3	27	565
1971	59,922	209	8,492	68,623	2	-	-	2
1972	35,391	150	5,257	40,798	49	-	31	80

Appendix Table 8a. Total landed cost of imported manufactured fertilizer, Philippines, 1954-1972.(cont'd.)
(Values in 1,000 pesos*)

YEAR	OTHER POTASSIC EXCEPT CRUDE SALTS				N P K MIXED			
	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/
1954	446	b/	104	550	1,468	b/	176	1,644
1955	747	1	173	921	1,125	b/	249	1,374
1956	647	3	198	848	1,226	2	337	1,565
1957	1,117	7	340	1,464	4,496	97	1,002	5,595
1958	1,216	4	441	1,661	2,105	12	379	2,496
1959	967	8	331	1,306	3,988	37	288	4,313
1960	1,472	9	368	1,849	1,672	9	214	1,895
1961	3,140	42	828	4,010	1,110	7	108	1,225
1962	6,799	43	1,370	8,212	3,027	12	713	3,752
1963	1,961	18	461	2,440	223	1d/	19	243
1964	1,961	13	636	1,610	67	-	7	74
1965	3,978	13	1,002	4,993	293	-	37	332
1966	2,320	44	617	2,981	8	-	-	8
1967	2,563	26	669	3,258	25	-	4e/	29
1968	4,271	22	1,190	5,483	-	-	-	-
1969	4,838	19	1,625	6,482	28	-	8	36
1970	5,105	32	1,274	6,411	71	f/	25	96
1971	14,093	62	2,794	16,949	238	f/	33	271
1972	24,502	53	2,780	27,335	36	2	11	49

Appendix Table 8a. Total landed cost of imported manufactured fertilizer, Philippines, 1954-1972. (cont'd.)
(Values in 1,000 pesos*)

YEAR	NITRATE OF SODA				SUPERPHOSPHATE			
	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/
1954	b/	b/	b/	b/	166	b/	51	217
1955	12	b/	2	14	418	1	72	491
1956	2	b/	b/	2	110	b/	53	163
1957	-	-	-	-	342	3	103	448
1958	-	-	-	-	122	b/	17	139
1959	-	-	-	-	216	b/	46	262
1960	25e/	e/	1e/	26	402	2	96	500
1961	526	2	16	544	82		17	99
1962	17		4	21	435	3	63	501
1963				1	246	2	49	297
1964	9		2	11	146	1	34	181
1965	95	2	9	106	285	2	84	371
1966					-	-	-	-
1967	8		10	18	150	1	12	163
1968	3		1	4	316	2	88	406
1969	-	-	-	-	278	3	68	349
1970	1		1	2	509	3	82	594
1971	-	-	-	-	386	9	81	476
1972	-	-	-	-	367	5	90	462

Appendix Table 8a. Total landed cost of imported manufactured fertilizer, Philippines, 1954-1972. (cont'd.)
(Values in 1,000 pesos*)

YEAR	OTHER PHOSPHATIC				POTASSIUM SULPHATE			
	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱)a/
1954	222	b/	26	248	-	-	-	-
1955	398	1	77	476	6	b/	2	8
1956	120	1	39	160	49	b/	19	68
1957	863	10	218	1,091	116	b/	36	152
1958	582	3	143	728	197	1	86	284
1959	943	9	143	1,095	113	1	20	134
1960	125	1	52	178	97	1	29	127
1961	1,100	8	234	1,342	133	2	50	185
1962	969	10	229	1,208	322	3	67	392
1963	98	1	34	133	361	4	123	488
1964	3,767	36	203	4,006	337	3	123	463
1965	2,528	16	710	3,254	418	4	168	590
1966	210	66	161	437	789	4	131	924
1967	798	7	282	1,087	578	6	195c/	779
1968	4,728	20	1,128	5,876	765	6	255	1,026
1969	940	5	462	1,407	1,042	12	370	1,424
1970	3,234	5	598	3,837	899	10	146	1,055
1971	22	-	15	37	209	2	99	310
1972	212	1	239i/	452	789	7	760	1,556

Appendix Table 8a. Total landed cost of imported manufactured fertilizer, Philippines, 1960-1972. (cont'd.)
(Values in 1,000 pesos*)

YEAR	FERTILIZER OF ALL KINDS OF TABLETS				OTHER FERTILIZER NES			
	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱) a/	FOB Value (₱)	Insurance (₱)	Freight (₱)	Total landed cost (₱) a/
1960	-	-	-	-	67	-	32	99
1961	-	-	-	-	551	3	153	707
1962	-	9	47	-	1,670	20	351	2,041
1963	-	1	7	-	956	14	209	1,179
1964	15	175	652	842	4,376	54	962	5,392
1965	9	156	2	167	5,028	45	918	5,991
1966	344	5	28	377	1,363	12	304	1,679
1967	59	2	6	67	920	12	264	1,196
1968	6	-	-	6	1,102	6	245	1,353
1969	-	-	-	-	2,387	18	373	2,778
1970	81	1	10	92	1,330	8	250	1,588
1971	-	-	-	-	45	-	11	56
1972	54	26	5	85	2,363	7	284	2,654

Appendix Table 9. Total quantity, value and per unit value of imported plant nutrients, Philippines, 1954-1972.

YEAR	NITROGEN			PHOSPHORUS			POTASSIUM			ALL NUTRIENTS		
	Quantity	Value	₱/m. ton	Quantity	Value	₱/m. ton	Quantity	Value	₱/m. ton	Quantity	Value	₱/m. ton
1954	9,621	4,071	423	6,799	3,683	542	3,340	1,861	557	19,760	9,615	487
1955	16,605	9,841	593	6,156	2,819	458	3,725	1,980	532	26,486	14,640	553
1956	12,280	6,367	518	4,632	2,523	545	4,495	2,252	501	21,407	11,142	520
1957	26,913	11,616	432	16,100	8,259	513	8,751	5,798	663	51,764	25,673	496
1958	18,760	9,698	517	6,104	2,357	386	9,474	3,867	408	34,338	15,922	464
1959	34,007	14,947	440	11,858	4,770	402	9,905	4,417	449	55,770	24,134	433
1960	24,330	10,520	432	8,736	3,153	361	9,170	2,968	324	42,236	16,641	394
1961	33,102	18,644	563	9,291	5,956	641	13,966	4,859	348	56,359	29,459	523
1962	57,340	43,228	754	14,116	9,557	677	21,571	10,888	505	93,027	63,673	684
1963	14,493	12,253	845	2,773	2,128	767	7,018	3,004	428	24,284	17,385	716
1964	41,805	34,700	830	15,434	8,456	548	7,374	2,057	279	64,613	45,213	700
1965	32,569	34,344	1,054	15,582	8,670	556	16,036	6,070	379	64,187	49,084	765
1966	16,956	16,376	966	1,012	462	457	9,366	3,634	388	27,334	20,472	749
1967	44,660	40,078	891	3,876	2,226	574	10,046	3,876	386	58,582	46,180	788
1968	30,329	24,698	814	17,470	6,709	384	18,523	6,404	346	66,322	37,811	570
1969	39,907	26,191	656	7,034	2,549	362	29,419	7,982	271	76,360	36,722	481
1970	48,181	47,937	995	10,253	4,388	428	15,737	7,510	477	74,171	59,835	807
1971	76,151	89,753	1,179	2,902	1,639	565	27,056	17,249	638	106,109	108,641	1,024
1972	53,930	56,814	1,053	2,688	1,180	439	42,255	28,264	669	98,873	86,258	872

Appendix Table 10. Quantity and value of imported plant nutrients, by kind, Philippines, 1954-1972 1/.
(Quantity in M Tons, Value in 1,000 Pesos)

YEAR	AMMONIUM SULPHATE		AMMONIUM PHOSPHATE				OTHER NITROGENOUS 2/	
	Quantity N	Value	Quantity N	Value	Quantity P	Value	Quantity N	Value
1954	5,350	3,082	2,957	659	3,779	2,955	274	128
1955	13,416	8,948	1,706	280	2,132	1,691	696	417
1956	7,368	4,774	1,804	310	2,254	1,995	2,023	1,050
1957	12,140	6,640	5,904	1,045	7,379	5,999	5,864	3,243
1958	6,610	4,118	1,014	156	1,268	1,180	9,632	5,095
1959	19,234	9,886	3,154	602	3,943	2,650	8,662	3,906
1960	12,242	5,264	3,477	1,530	4,346	2,173	7,380	3,173
1961	12,716	7,884	4,146	2,188	5,183	4,461	15,193	8,016
1962	22,221	17,997	6,572	4,731	8,214	7,146	27,001	19,387
1963	8,072	6,538	1,491	1,327	1,864	1,640	4,770	4,245
1964	19,310	17,379	3,520	2,711	4,400	4,312	18,935	14,580
1965	17,856	21,248	4,182	3,722	5,228	4,862	9,794	8,716
1966	7,285	7,285	8	7	9	31	9,388	8,825
1967	20,320	21,336	952	733	1,190	987	23,356	17,984
1968	11,286	10,157	646	493	808	583	18,264	13,944
1969	9,224	8,762	753	434	942	830	29,398	16,686
1970	6,350	7,238	36	35	45	44	42,517	40,391
1971	12,788	15,857	1,778	5,299	2,223	1,089	61,557	68,328
1972	12,821	15,842	650	2,104	818	261	40,423	38,806

1/ Source: Department of Economic Research, Central Bank of the Philippines
2/ Includes Anhydrous Ammonia, Ammonium Nitrate, Ammonium Sulfate Nitrate, Ammonium Chloride, Aqua Ammonia, 1969 to 1972 includes urea.

Appendix Table 10. Quantity abd value of imported plant nutrients, by kind, Philippines, 1954-1972[1/]. (cont'd.)
(Quantity in M Tons, Value in 1,000 Pesos)

YEAR	POTASSIUM NITRATE		T		NITRATE OF SODA				SUPERPHOSPHATE	
	Quantity N	Value	Quantity N	Value	Quantity N	Value	Quantity N	Value	Quantity N	Value
1954	173	34	586	106	-	-	1	-	1,301	217
1955	39	10	132	30	11	3	18	11	1,615	489
1956	202	43	685	170	-	-	1	1	720	162
1957	15	3	52	20	-	-	-	-	1,655	447
1958	33	7	111	66	-	-	-	-	541	140
1959	6	1	21	14	-	-	-	-	1,121	261
1960	8	3	26	20	23	10	38	16	1,825	493
1961	14	8	48	33	485	258	788	284	122	100
1962	162	117	550	396	12	9	20	13	988	494
1963	77	69	262	85	*	*	*	*	540	295
1964	14	10	46	29	6	4	9	6	305	295
1965	526	469	1,782	490	71	63	116	43	1,040	364
1966	273	257	925	203	-	-	-	-	-	-
1967	14	11	46	15	8	6	13	12	297	163
1968	131	101	444	111	2	1	3	3	750	398
1969	527	302	1,766	547	-	-	-	-	596	346
1970	263	252	891	312	*	7	1	2	1,060	593
1971	*	*	*	*	-	-	-	-	601	473
1972	26	23	88	159	-	-	-	-	450	462

1/ Source: Department of Economic Research, Central Bank of the Philippines
* Less than 1 metric ton.

Appendix Table 10. Quantity and value of imported plant nutrients, by kind, Philippines, 1954-1972 1/. (cont'd.)
(Quantity in M Tons, Value in 1,000 Pesos)

YEAR	OTHER PHOSPHATIC3/		POTASSIUM SULPHATE		N P K OR MIXED					
	Quantity P	Value	Quantity K	Value	Quantity N	Value	Quantity P	Value	Quantity K	Value
1954	537	247	-	-	867	168	1,182	264	828	1,208
1955	1,404	474	27	8	737	183	1,005	165	704	1,026
1956	454	160	266	68	883	190	1,204	206	842	1,168
1957	2,988	1,091	613	152	2,990	685	4,078	722	2,854	4,161
1958	2,289	728	1,154	285	1,471	322	2,006	309	1,404	1,856
1959	2,770	1,091	575	133	2,951	552	4,024	768	2,817	2,972
1960	928	176	517	103	1,201	540	1,637	311	1,146	1,043
1961	3,912	1,369	525	158	547	290	74	25	522	677
1962	3,043	1,187	788	331	1,372	985	1,870	729	1,309	2,024
1963	258	134	976	410	82	73	111	58	78	114
1964	10,702	3,960	906	390	204	16	28	10	15	37
1965	9,124	3,376	1,079	486	1,401	125	191	69	134	1,390
1966	999	429	1,020	459	3	3	4	2	3	5
1967	2,376	1,069	1,390	663	10	8	14	6	9	16
1968	15,912	5,728	1,668	867	-	-	-	-	-	-
1969	5,481	1,370	2,765	1,189	11	6	15	4	11	26
1970	9,129	3,743	1,248	874	14	13	19	8	13	75
1971	35	37	375	255	27	31	37	39	26	201
1972	1,412	453	966	865	10	38	14	4	10	6

1/Source: Department of Economic Research, Central Bank of the Philippines
3/Includes Tri-superphosphate and Potassium Phosphate

Appendix Table 10. Quantity and value of imported plant nutrients, by kind, Philippines, 1954-1972 1/. (cont'd.)
(Quantity in M. Tons, Value in 1,000 Pesos)

YEAR	OTHER POTASSIC 4/		T O T A L					
	Quantity K	Value	Quantity N	Value	Quantity P_2O_5	Value	Quantity K_2O	Value
1954	1,926	547	9,621	4,071	6,799	3,683	3,340	1,861
1955	2,862	916	16,605	9,841	6,156	2,819	3,725	1,980
1956	2,702	846	12,280	6,367	4,632	2,523	4,495	2,252
1957	5,232	1,465	26,913	11,616	16,100	8,259	8,751	5,798
1958	6,805	1,660	18,760	9,698	6,104	2,357	9,474	3,867
1959	6,492	1,298	34,007	14,947	11,858	4,770	9,905	4,417
1960	9,481	1,801	24,331	10,520	8,736	3,153	9,170	2,968
1961	12,870	3,990	33,101	18,644	9,291	5,956	13,966	4,859
1962	18,924	8,137	57,340	43,228	14,116	9,557	21,571	10,888
1963	5,703	2,395	14,492	12,253	2,773	2,128	7,018	3,004
1964	6,406	1,602	41,805	34,700	15,434	8,456	7,374	2,057
1965	13,041	4,956	32,569	34,344	15,582	8,670	16,036	6,070
1966	7,418	2,967	16,956	16,376	1,012	462	9,366	3,634
1967	8,600	3,182	44,660	40,078	3,876	2,226	10,045	3,876
1968	16,441	5,426	30,329	24,698	17,470	6,709	18,523	6,404
1969	24,877	6,219	39,907	26,191	7,034	2,549	29,419	7,982
1970	13,585	6,244	48,181	47,937	10,253	4,388	15,737	7,510
1971	26,655	16,792	76,151	89,753	2,902	1,639	27,056	17,249
1972	41,191	27,334	53,930	56,814	2,688	1,180	42,255	28,264

1/ Source: Department of Economic Research, Central Bank of the Philippines
4/ Includes Potassium phosphate and Potassium chloride.

Appendix Table 11. Per unit value and price indices (P.I.) of plant nutrients, by kind of fertilizer, Philippines, 1954-1972.

YEAR	AMMONIUM PHOSPHATE				POTASSIUM NITRATE				NITRATE OF SODA			
	N (₱/ton)	P.I.	P (₱/ton)	P.I.	N (₱/ton)	P.I.	K (₱/ton)	P.I.	N (₱/ton)	P.I.	Na (₱/ton)	P.I.
1954	222.86	34	781.95	109	196.53	30	180.89	35	-	-	-	-
1955	164.13	25	793.15	111	256.41	39	227.27	44	272.73	41	611.11	154
1956	171.84	26	885.09	124	212.87	32	248.18	48	-	-	1,000.00	251
1957	177.00	27	812.98	114	200.00	30	384.62	74	-	-	-	-
1958	153.85	23	930.60	130	212.12	32	594.59	114	-	-	-	-
1959	190.87	29	672.08	94	166.67	25	666.67	128	-	-	-	-
1960	440.00	69	500.00	69	375.00	65	769.23	146	434.78	65	421.05	105
1961	523.74	80	860.70	121	571.43	80	687.50	131	531.96	80	360.41	90
1962	720.00	109	869.98	121	722.22	109	720.00	138	750.00	109	650.00	167
1963	890.01	135	879.83	122	896.10	135	324.43	63	-	135	.56	140
1964	770.10	117	980.00	136	714.29	117	630.43	121	666.67	118	666.67	167
1965	890.00	135	929.99	129	891.63	135	274.97	54	887.32	135	370.69	92
1966	875.00	144	3,444.44	454	941.39	142	219.46	42	-	-	-	-
1967	769.96	177	829.41	115	785.71	120	326.09	63	750.00	117	923.08	227
1968	763.16	117	721.53	101	770.99	117	250.00	48	500.00	117	1,000.00	237
1969	576.36	88	881.10	124	573.06	88	309.74	60	-	-	-	-
1970	972.22	147	977.78	136	958.17	145	350.17	67	-	145	2,000.00	332
1971	2,980.00	171	490.00	276	-	171	320.00	61	-	-	-	-
1972	3,236.55	153	319.07	297	884.62	153	663.60	119	-	-	-	-

Appendix Table 11. Per unit value and price indices (P.I.) of plant nutrients, by kind of fertilizer, Philippines, 1954-1972.

YEAR	AMMONIUM SULPHATE		OTHER NITROGENOUS		SUPERPHOSPHATE		OTHER PHOSPHATIC		POTASSIUM SULPHATE		OTHER POTASSIC	
	Price/m. ton N	P.I.	Price/m. ton N	P.I.	Price/m. ton P	P.I.	Price/m. ton P	P.I.	Price/m. ton K	P.I.	Price/m. ton K	P.I.
1954	576.07	71	467.15	71	166.79	54	459.96	164	-	-	284.01	100
1955	666.96	82	599.14	91	302.79	98	337.61	120	296.30	91	320.06	112
1956	647.94	80	519.03	79	225.00	73	352.42	126	255.64	79	313.10	110
1957	546.95	68	553.04	84	270.09	87	365.13	130	247.96	76	280.01	98
1958	623.00	77	528.97	80	258.78	84	318.04	114	246.97	76	243.94	86
1959	513.99	63	450.94	68	232.83	75	393.86	141	231.30	71	199.94	70
1960	430.00	53	429.95	65	270.14	87	189.66	63	199.23	62	189.96	68
1961	620.01	76	527.61	80	819.67	264	349.95	125	300.95	94	310.02	114
1962	809.91	100	718.01	109	500.00	161	390.08	139	420.05	131	429.98	157
1963	809.96	100	889.94	135	546.30	177	519.38	186	420.08	131	419.95	150
1964	900.00	111	770.00	117	967.21	184	370.02	132	430.46	134	250.08	89
1965	1,189.96	147	889.93	135	350.00	113	370.01	132	450.42	141	380.03	136
1966	1,000.00	123	940.03	142	-	177	429.43	154	450.00	141	399.97	143
1967	1,050.00	130	769.99	117	548.82	177	449.92	161	476.98	147	370.00	132
1968	899.96	111	763.47	117	530.67	171	359.98	128	519.78	162	330.03	132
1969	949.91	117	567.59	88	580.54	187	249.95	89	430.02	134	249.99	89
1970	1,139.84	141	950.00	147	559.43	184	410.01	146	700.32	219	459.62	164
1971	1,239.99	153	1,110.00	171	787.02	252	1,057.14	375	680.00	212	629.98	225
1972	1,235.63	152	960.00	153	1,026.67	322	320.82	257	895.45	281	663.59	232

Appendix Table 11. Per unit value and price indices (P.I.) of plant nutrients, by kind of fertilizer, Philippines, 1954-1972.

YEAR	N P K OR MIXED						TOTAL					
	Price/m. ton N	P. I.	Price/m. ton P	P. I.	Price/m. ton K	P.I.	Price/m. ton N	P.I.	Price/m. ton P	P.I.	Price/m. ton K	P.I.
1954	193.77	72	223.35	81	1,458.94	150	423.14	57	541.70	118	557.19	159
1955	248.30	92	164.18	60	1,457.39	150	592.65	80	457.93	100	531.54	151
1956	215.18	80	171.10	62	1,387.17	142	518.49	70	544.69	119	501.00	143
1957	229.10	85	177.05	64	1,457.95	150	431.61	58	512.98	112	662.55	189
1958	218.90	81	154.04	56	1,321.94	136	516.95	70	386.14	84	408.17	116
1959	187.06	69	190.85	69	1,055.02	108	439.53	59	402.26	88	445.94	127
1960	449.63	67	189.98	70	910.12	93	432.39	58	360.92	78	323.66	91
1961	530.16	79	337.84	126	1,296.93	134	563.23	76	641.05	139	347.92	100
1962	717.93	107	3[illegible].84	148	1,546.22	160	753.89	101	677.03	148	504.75	143
1963	890.24	133	522.52	192	1,461.54	150	845.44	114	767.40	167	428.04	123
1964	78.43	116	357.14	137	2,466.67	255	830.04	112	547.88	122	278.95	80
1965	89.22	133	361.26	133	10,373.13	106	1,054.50	142	556.41	122	378.52	108
1966	1,000.00	142	500.00	163	1,666.67	182	965.79	130	456.52	100	388.00	111
1967	800.00	118	428.57	170	1,777.78	171	897.42	122	574.30	124	385.83	108
1968	-	-	-	-	-	-	814.34	109	384.03	83	345.73	97
1969	545.45	85	266.67	96	2,363.64	252	656.30	89	362.38	78	271.32	77
1970	928.57	143	421.05	156	5,769.23	588	994.94	131	427.97	93	477.22	137
1971	1,148.15	169	1,054.05	392	7,730.77	796	1,179.00	153	565.00	372	637.53	183
1972	3,600.00	152	285.71	274	600.00	311	1,053.48	142	438.99	96	668.89	191

Note: Base Yeas - Average of 1960 and 1965 prices.

Appendix Table 12. Urea Prices
C.I.F. Philippines.

YEAR	$/MT
1966	101.00
1967	97.00
1968	74.50
1969	74.50
1970	65.00
1971	62.50
1972	70.50
March	62.50
April	67.50
May	68.00
June	68.50
August	71.50
October	75.50
December	79.50
1973	
January	79.50
March	95.00
April	106.20
May	106.20

Source: 1966 - 1967 figures from SPCMI importations

1968 - 1973 figures from Planters Products importations

Appendix Table 13. Wholesale prices of domestically produced fertilizer, by kind, Manila, FY 1960-61 - 1973-74.

(in pesos per metric ton)

F-YEAR	Atlas Vita-Gro (12-24-12)	Atlas Best-Gro (12 - 12 - 12)	Atlas Super-Gro (16 - 20 - 0)	Sulfate of Ammo	Atlas Solophos (0 - 20 - 0)
1960-61	339	-	305	192	136
1961-62	404	-	338	182	170
1962-63	448	-	394	227	198
1963-64	464	378	411	240	204
1964-65	470	389	423	267	217
1965-66	474	407	435	271	216
1966-67	471	398	430	290	216
1967-68	457	372	408	294	216
1968-69	457	372	408	292	216
1969-70	543	431	482	341	254
1970-71	660	515	566	410	308
1971-72	660	543	592	418	325
1972-73	A.a	610	684	460	366
1973-74	A.a	676 a/	705 a/	574 a/	

a/ July - October only

Source: Bureau of Commerce

Appendix Table 14. Wholesale prices of domestically produced fertilizer, by kind, Manila, Calendar Year 1960-73.

(in pesos per metric ton)

C - YEAR	Atlas Vita-Gro (12 - 24 - 12)	Atlas Best-Gro (12 - 12 - 12)	Atlas Super-Gro (16 - 20 - 0)	Sulfate of Amo	Atlas Solophos (0 - 20 - 0)
1960	308	-	279	192	130
1961	374	-	321	182	136
1962	431	-	368	204	173
1963	455	369	400	227	198
1964	468	386	420	260	204
1965	472	398	429	268	216
1966	474	407	435	277	216
1967	462	380	416	297	216
1968	457	372	408	292	216
1969	457	372	408	292	216
1970	644	501	552	397	254
1971	660	518	571	416	311
1972	NA	569	646	427	345
1973	NA	655 a/	693 a/	529 a/	379 b/

a/ January - October only
b/ January - May only

Source: Bureau of Commerce

Appendix Table 15. Monthly wholesale prices of Atlas Vita-Gro, Manila, (12-24-12),

(in pesos per metric ton)

F-Year	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Average
1960-61	330	330	330	330	330	330	330	330	330	330	373	399	339
1961-62	399	399	399	399	399	399	399	399	399	399	399	447	404
1962-63	447	447	447	447	447	447	447	447	447	447	447	461	448
1963-64	461	461	461	461	461	461	461	461	470	470	470	470	464
1964-65	470	470	470	470	470	470	470	470	470	470	470	470	470
1965-66	474	474	474	474	474	474	474	474	474	474	474	474	474
1966-67	474	474	474	474	474	474	474	474	474	472	457	457	471
1967-68	457	457	457	457	457	457	457	457	457	457	457	457	457
1968-69	457	457	457	457	457	457	457	457	457	457	457	457	457
1969-70	457	457	457	457	457	457	468	660	660	660	660	660	543
1970-71	660	660	660	660	660	660	660	660	660	660	660	660	660
1971-72	660	660	660	660	660	660	-	-	-	-	-	-	-

Source: Bureau of Commerce

Prices have not been collected after December 31, 1971.

Appendix Table 16. Monthly wholesale prices of Atlas Best-Gro, Manila, (12-12-12).

(in pesos per metric ton)

F-Year	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Average
1960-61													
1961-62													
1962-63													
1963-64	374	374	374	374	374	374	374	374	389	389	389	389	378
1964-65	389	389	389	389	389	389	389	389	389	389	389	389	389
1965-66	407	407	407	407	407	407	407	407	407	407	407	407	407
1966-67	407	407	407	407	407	407	407	407	407	372	372	372	398
1967-68	372	372	372	372	372	372	372	372	372	372	372	372	372
1968-69	372	372	372	372	372	372	372	372	372	372	372	372	372
1969-70	372	372	372	372	372	372	383	512	512	512	512	512	431
1970-71	512	512	512	512	512	512	512	518	518	518	518	518	515
1971-72	518	518	518	518	518	559	559	559	559	559	559	577	543
1972-73	557	557	557	557	557	557	642	642	642	642	642	642	610
1973-74	642	642	709	709									

Source: Bureau of Commerce

Appendix Table 17. Wholesale prices of Sulfate of Ammonia, Manila (Domestic).

(in pesos per metric ton)

F-Year	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	FY-Ave	CY-Average
1960-61	192	204	204	204	204	204	182	182	182	182	182	182	192	192
1961-62	182	182	182	182	182	182	182	182	182	182	182	182	182	182
1962-63	227	227	227	227	227	227	227	227	227	227	227	227	227	204
1963-64	227	227	227	227	227	227	231	231	261	264	267	267	240	227
1964-65	267	267	267	267	267	267	267	267	267	267	267	267	267	260
1965-66	271	271	271	271	271	271	271	271	271	271	271	271	271	268
1966-67	271	271	271	297	297	297	297	297	297	297	297	297	290	277
1967-68	297	297	297	297	297	297	292	292	292	292	292	292	294	297
1968-69	292	292	292	292	292	292	292	292	292	292	292	292	292	292
1969-70	292	292	292	292	292	292	324	404	404	404	404	404	341	292
1970-71	404	404	404	404	404	404	416	416	416	416	416	416	410	397
1971-72	416	416	416	416	416	416	416	416	416	416	416	435	418	416
1972-73	435	435	435	435	435	435	484	484	484	484	484	574	460	427
1973-74	574	574	574	574									574	529 a/

a/ January - October only
Source: Bureau of Commerce

Appendix Table 16. Monthly wholesale prices of Atlas Solophos, (0 - 20 - 0).

(in pesos per metric ton)

F-Year	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	FY-Ave	CY-Average
1960-61	129	129	129	129	129	129	129	129	129	129	170	170	136	130
1961-62	170	170	170	170	170	170	170	170	170	170	170	198	170	136
1962-63	198	198	198	198	198	198	198	198	198	198	198	204	198	173
1963-64	204	198	198	198	198	198	198	198	216	216	216	216	204	198
1964-65	216	216	216	217	217	217	217	217	217	217	217	217	217	204
1965-66	217	216	216	216	216	216	216	216	216	216	216	216	216	216
1966-67	216	216	216	216	216	216	216	216	216	216	216	216	216	216
1967-68	216	216	216	216	216	216	216	216	216	216	216	216	216	216
1968-69	216	216	216	216	216	216	216	216	216	216	216	216	216	216
1969-70	216	216	216	216	216	216	227	306	306	306	306	306	254	216
1970-71	306	306	306	306	306	306	309	309	309	309	309	309	308	254
1971-72	309	309	309	309	309	333	333	333	333	333	333	355	325	311
1972-73	355	355	355	355	355	355	355	355	395	395	395		366	345
1973-74														379 b/

b/ January - May only
Source: Bureau of Commerce

Appendix Table 19. Monthly wholesale prices of Atlas Super-Gro, Manila (16-20-0).

(in pesos per metric ton)

F-Year	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	FY-Ave	CY-Average
1960-61	301	301	301	301	301	301	301	301	301	301	321	333	305	279
1961-62	333	333	333	333	333	333	333	333	333	333	333	393	338	321
1962-63	393	393	393	393	393	393	393	393	393	393	393	405	394	368
1963-64	405	405	405	405	405	405	405	405	423	423	423	423	411	400
1964-65	423	423	423	423	423	423	423	423	423	423	423	423	423	420
1965-66	428	436	436	436	436	436	436	436	436	436	436	436	435	429
1966-67	436	436	436	436	436	436	436	436	436	424	408	408	430	435
1967-68	408	408	408	408	408	408	408	408	408	408	408	408	408	416
1968-69	408	408	408	408	408	408	408	408	408	408	408	408	408	408
1969-70	408	408	408	408	408	408	419	583	563	563	563	563	482	408
1970-71	563	563	563	563	563	563	568	568	568	568	568	568	566	552
1971-72	568	568	568	568	568	610	610	610	610	610	610	610	592	571
1972-73	682	682	682	682	682	682	682	682	682	682	682	705	684	646
1973-74	705	705	705	705									705	693 1/

1/ January - October only
Source: Bureau of Commerce

Appendix Table 20. Monthly wholesale prices of Urea Fertilizer Manila (imported per metric ton, FY 1969-70 - 1973-74.

(in pesos per metric ton)

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	CY	Fiscal Year
1964/65													490	490*
1965/66													485	483*
1966/67													480	475*
1967/68													470	465*
1968/69													440	420*
1969/70	400	400	400	400	400	400	360	360	600	600	600	600	400	460
1970/71	600	600	600	600	600	600	560	560	560	540	540	520	560	573
1971/72	520	520	500	490	490	490	500	500	500	500	500	620	524	510
1972/73	620	640	640	640	640	640	630	630	630	705	707	707	578	657
1973-74	707	707	707										681	707

* Average of Calendar Year
Source: Central Bank of the Philippines

Appendix Table 21. Monthly wholesale prices of Sulfate of Ammonia, Manila (Imported).

(pesos per metric ton)

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	FY-Ave	CY - Average
1954-55	207	207	207	207	207	207	207	207	207	207	207	207	207	
1955-56	216	210	210	209	209	209	209	209	209	209	209	209	209	
1956-57	209	209	209	209	209	209	209	209	209	209	233	233	213	
1957-58	242	233	233	233	233	233	233	233	233	233	233	233	234	
1958-59	233	233	233	233	233	233	233	233	233	233	233	233	233	
1959-60	233	233	233	233	233	233	233	233	233	233	233	233	233	
1960-61	233	233	233	233	233	233	209	209	209	220	220	220	224	
1961-62	220	220	220	220	220	220	220	231	231	220	220	220	222	
1962-63	220	220	220	220	220	220	209	209	209	209	209	209	215	
1963-64	220	220	220	220	220	220	220	220	220	220	220	220	220	
1964-65	220	220	220	220	220	220	220	220	220	264	264	264	231	
1965-66	330	330	330	330	330	330	330	330	330	330	330	330	330	
1966-67	330	330	330	330	330	330	330	330	330	330	330	330	330	
1967-68	330	330	330	330	330	330	330	330	330	330	330	330	330	
1968-69	330	330	330	330	330	330	330	330	330	330	330	330	330	
1969-70	330	330	330	330	330	330	330	352	352	352	352	352	337	
1970-71	363	363	363	363	363	363	385	385	385	385	385	385	374	
1971-72	385	385	385	385	385	385							385	

Prices no longer collected after December 71.
Source: Central Bank of the Philippines

Appendix Table 22. Monthly wholesale prices of Phosphate of Ammonia (Imported), Manila.

(pesos per metric ton)

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	FY-Ave	CY- Average
1954-55	247	236	275	275	275	275	275	275	275	275	275	275	269	
1955-56	275	275	275	275	275	275	275	275	275	275	275	275	275	
1956-57	275	275	275	275	275	275	279	281	282	283	294	294	280	
1957-58	319	319	319	319	319	319	319	319	319	319	319	319	319	
1958-59	319	319	319	319	319	319	319	319	319	319	319	319	319	
1959-60	319	319	319	319	319	319	319	319	319	319	319	319	319	
1960-61	319	319	319	319	319	319	363	363	407	407	407	407	396	
1961-62	407	407	407	407	407	407	407	407	407	407	407	407	407	
1962-63	407	407	407	407	407	407	385	385	385	385	385	385	396	
1963-64	385	374	374	374	374	374	374	374	374	374	374	374	375	
1964-65	374	374	374	374	374	374	374	374	374	374	374	374	374	
1965-66	374	374	374	374	374	374	374	374	374	374	374	374	374	
1966-67	374	374	374	374	374	374	374	374	374	374	374	374	374	
1967-68	374	374	374	374	374	374	374	374	374	374	374	374	374	
1968-69	374	374	374	374	374	374	374	374	374	374	374	374	374	
1969-70	374	374	374	374	374	374	374	374	396	440	440	440	392	
1970-71	462	462	462	462	462	462	462	462	462	462	462	462	462	
1971-72	462	462	462	462	462	462							462	

Prices no longer collected after December '71
Source: Central Bank of the Philippines

APPENDIX II

Explanatory Note on Computation and Analysis of Materials Gathered

The supply of fertilizer is made up of both imports and domestic production. Import data (including the quantity, cost, freight and insurance) were provided by the Department of Economic Research, Central Bank of the Philippines. Domestic production figures in metric tons come from the Fertilizer Institute of the Philippines (FIP) which also supplied some information on importation. The quantity of imports which were originally expressed in kilograms was converted into metric tons and added to the domestic production to complete a time series of the physical supply of fertilizer. This procedure is rather rough since it weighs different kinds of fertilizer according to physical weight or tonnage rather than the peso value of fertilizer. Fertilizer potential varies considerably among different kinds of fertilizer. However, to lessen the degree of roughness in estimation of fertilizer consumption, the amount of plant nutrients or available nitrogen (N), phosphorus (P_2O_5), and potassium (K_2O) were calculated by multiplying the quantity of each kind of fertilizer by its corresponding analysis. In cases of unspecified grouping such as other nitrogenous, other phosphatic, and other potassic fertilizer except crude salts, etc., representative fertilizer materials were taken into consideration. For example, the assumed fertilizer falling under other nitrogenous sources were anhydrous ammonia, aqua ammonia, ammonium nitrate, ammonium sulfate-nitrate and ammonium chloride. Individual analyzes for these fertilizers were added and averages obtained which

were then used to multiply with the quantity of other nitrogenous fertilizer: this gives the available N for this grouping. (The chemical analyzes of fertilizer were obtained from Planters' Products, which also supplied some information on handling and transporting, and prices at retail and dealers' levels). The same calculating procedures were followed for phosphorous and potassium. From these estimations, total N, P, and K were concoursed. Following the same steps for domestic production figures, total N, P, and K produced were also obtained, These two calculations were totalled and these give us the total supply of plant nutrients or consumption in raucous presumption.

The price per kilogram of imported fertilizer for individual fertilizer was obtained by dividing total landed cost (TIC), which was estimated by adding the FOB value, freight and insurance values (Appendix I), by the quantity series. It was also assumed that there are 45 kilograms in a bag and the price for this was likewise estimated.

To solve for the prices of N, P, and K per kilogram in a bag the formula below was used:

$$Pb = WnVn + WpVp + WkVk,$$

where:

Pb = price per bag

Wn = weight of nitrogen per bag

Vn = value of nitrogen per bag

Wp = weight of phosphorous per bag

Vp = value of phosphorous per bag

Wk = weight of potassium per bag

Vk = value of potassium per bag

To find unknowns using the above formula assumed values for any of the two unknown were first plugged-in in the equation and later substituted. Rechecking was inevitable. Assumed values used were: price per kilogram of other nitrogenous for N, price per kilogram of other phosphate and other potassic fertilizer for P and K, respectively. An annual figure of prices, at CIF level was thus estimated. Price indices at 1965 constant prices were also determined for both the plant nutrients and the fertilizer compounds.

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