FERTILIZER MARKETING AND DISTRIBUTION IN INDONESIA: A Case Study

Analysis Of Private Sector Fertilizer Marketing And Distribution

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Preface

This report is one of five prepared for the Agency for International Development under Contract Number OTR-0091-C-00-2331-00. Harvey A. Lerner served as Principal Investigator; Carter P. Brandon as Agricultural Economist, and Laurie R. O'Reilly as Research Assistant. These reports included case studies of the fertilizer marketing and distribution in the Yemen Arab Republic, Kenya, and Indonesia; a Summary of Lessons Learned and an Executive Summary.

The views and interpretations expressed in this report are those of their authors and should not be attributed to the Agency for International Development.

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ABBREVIATIONS

ASN	Ammonium Sulphate Nitrate
BIMAS	Bimbingan Massal Swa Sembada Bahan Makanan - "Mass Guidance for Self-Sufficiency in Foodstuffs," a farm input credit program
BULOG	Badan Urusan Logistik, "National Logistics Body" or rice procurement agency
DAP	Di-ammonium phosphate
FADINAP	Fertilizer Advisory, Development, and Information Network for Asia and the Pacific
IFDC	International Fertilizer Development Center, Muscle Shoals, Alabama
INMAS	Intensifikasi Massal or "Mass Intensification," a noncredit farm input program
INSUS	Intensifikas Khusus, or "Special Intensification," an input program based on farmer groups
KALTIM	P.T. Pupuk Kalimantan Timur
KCL	Muriate of potash (potassium chloride)
KUD	Koperasi Unit Desa, village cooperative
MoA	Ministry of Agriculture
MoF	Ministry of Finance
MOTC	Ministry of Trade and Cooperatives
NFB	National Fertilizer Board
NPK	Nitrogen-Phosphorous-Potassium
PJKA	Perusahan Jawatan Kereta Api, the state railway corporation
PPK	Pusat Pelayanan Koperasi or Cooperative Service Center
PUSKUD	Pusat Koperasi Unit Desa - Central Office of Village Unit Cooperative
PUSRI	P.T. Pupuk Sriwidjaja Indonesia
TSP	Triple superphosphate
TVA	Tennessee Valley Authority
UPP	Fertilizer bulk reception and bagging station
ZA	Ammonium sulphate

CURRENCY EQUIVALENT

U.S. $ 1.00 = Rupiah 680 (December 1982)

Rupiah 100 = U.S. $ 0.15

Executive Summary

The Indonesian government has always dominated the fertilizer distribution system, but over the past 20 years its policies have favored, at different times, state monopolies, state-owned trading companies, private trading companies, government cooperatives, and private retailers. This period of policy experimentation took place during a time when fertilizer use soared (an annual growth rate of 19% between 1971 and 1981), government subsidies covered up to 95% of the market, domestic production rose from 100,000 to over 3 million tons per year, and one parastatal company, P.T. PUSRI invested over $200 million in fertilizer distribution facilities.

The history of the fertilizer distribution system is that of the steady growth and market domination of P.T. PUSRI. PUSRI assumed, by 1979, sole responsibility for distributing all subsidized fertilizers. In doing so, it eliminated major market shares for other state-owned and private import/distribution companies. By any standards, PUSRI is a dynamic and successful public corporation that is run like a vertically-integrated private manufacturing and sales corporation. Its very success, however, has put it in a monopoly position that makes it increasingly susceptible to government control.

The history of the fertilizer distribution system for all government subsidized fertilizers -- which include urea, triple superphosphate, ammonium sulphate, and muriate of potash -- can be summarized into the following five periods:

1. Pre-1969

P.N. Pertani, a state company with a monopoly on fertilizer and pesticide distribution, failed. In order to meet agricultural production targets, the government turned to independent - both private and state-owned - distributors.

2. 1969-1973

Private importer/distributors handled increasing amounts of fertilizer, and nitrogen consumption jumped from 5.3% annual growth in the previous period to 26.6%. PUSRI maneuvered to guarantee markets for its own urea production, and started to develop a network of private distributors. Both PUSRI and Pertamina, the national oil company, wanted to dominate the market and began competing for market shares.

Also during this time an experiment was undertaken to allow foreign suppliers to distribute fertilizer and pesticides directly to farmers. The government was interested in tapping the marketing and distribution know-how of the foreign companies. It was a failure due to poor planning and implementation, but little blame is placed directly on the foreign companies.

3. 1973-1976

The government increased its control of the market by a) promoting government cooperatives as local retailers, b) licensing fertilizer importer/distributors and reducing their number from thirty to nine, and c) driving Pertamina out of the market.

4. 1976-1979

The end of the government's experimentation with an 'unmanaged' system. The importer/distributors lost their market share to PUSRI, which was supported by a World Bank loan. Regulations concerning government cooperatives were relaxed. Increased supplies, more favorable weather, and stabilized prices led to a large jump in fertilizer use.

5. 1979-Present

PUSRI gained sole responsibility for all fertilizer distribution down to the local level. In 1981, PUSRI handled three million tons of fertilizer, or 95% of all consumption. Now, local distributors and retailers compete for cash sales and cooperatives sell fertilizer mostly on government credit. All imports of subsidized fertilizers must be handled by state, not private, trading companies.

The growth and success of PUSRI is due to three factors: a) it was efficient, and proved itself in the early 1970s; b) it had an independent financial base, both from its production activities and from strong World Bank support; and c) the government had an unwieldy task and wanted to give the entire responsibility for it over to somebody else.

The government's gradual elimination of the private distributors was ascribed to their lacking capital, long-range planning ability, and reliability. These purported shortcomings are related, however, to government controls on the market, as well as uncertainties created by government intervention.

Government distrust of the private sector is both a product of the conviction that profits should be very strictly controlled in the case of all basic commodities, and the social tension that has long existed between the government and the Chinese ethnic minority. Government efforts to counterbalance the presence of Chinese merchants is likely to continue as long as this distrust remains unresolved.

Historically, Indonesian companies have shown an ability to be flexible in changing market and political environments, but they have done so by remaining small, relying on short-term profits, and making few long-term investments. Their behavior is best called 'defensive': in the 1970s they served a demand for fertilizer that was growing rapidly through no real effort of their own, but simply because the Indonesian farmer was ready to accept its use.

Today the fertilizer market is qualitatively changing. The potential for fertilizer marketing,, in the sense of activities designed to promote products and stimulate demand, as opposed to mere physical distribution, is growing rapidly. Farmers on Java, in particular, are increasingly able to determine their own requirements, and to diversify those requirements if necessary. For the first time, perhaps, farmers are testing the limits of the expertise of the local distributors and retailers that are currently handling the four types of subsidized fertilizer handled by PUSRI. Interviews with private companies showed that they were aware of the growing complexity of the market, but are wary of extensive government controls and possible future invention.

The key issues and potential policy changes vary between the

subsidized and non-subsidized sectors of the fertilizer market. In the subsidized market, three key issues arise:

1. PUSRI runs the risk of becoming a complacent state monopoly. Reduced PUSRI control of the local level would encourage greater regional distribution efficiency and greater role for the private sector.
2. Excluding private trading companies from bidding on government fertilizer import procurements is uneconomic; decontrol of these procedures would lead to lower prices.
3. PUSRI control of all fertilizer distribution through to the local level is necessary in 'young' markets, but is inefficient in mature markets.

In the largely unregulated non-subsidized fertilizer market, private sector involvement is limited by uncertainty over future subsidy levels and import licensing procedures. The subsidy level is the single greatest determinant of demand for the non-subsidized fertilizers. The licensing requirement is probably unnecessary.

The government could take certain steps to encourage private distribution companies to grow in both markets, even while it retained the price control features of the current subsidized fertilizer market. Although private sector initiatives cannot be well defined until present policy uncertainties are resolved, potential projects include:

1. <u>Regional Marketing</u>. If PUSRI's control over the local distribution of subsidized fertilizers and/or the fertilizer subsidy were reduced, the potential for private sector distribution would be enhanced. Private distributors could

coordinate regional sales of subsidized fertilizer with a sales program for all other types of agricultural inputs. Profits would be controlled on the subsidized fertilizers, as they are now, but the combination of achieving greater handling efficiencies than PUSRI and higher profits on the specialized agricultural inputs would provide the distributor with resources necessary for expansion.

Although several private distributors currently offer a varied line of agricultural inputs, it is doubtful that many of these companies have developed a real understanding of grass-roots level fertilizer marketing. Only one company that was interviewed employed staff agronomists to do site visits and provide technical assistance to customers. In order to service the diverse food crop sector, aggressive distribution organizations will need to invest in manpower and materials to provide technical assistance. They will need to devise strategies to overcome the inefficiency of working with small farmers such as working through cooperatives and advertising by radio. Finally, they will need to conduct and publicize demonstration plots in the field.

2. Transport and Storage. The expansion of private distributors networks would require new facilities. PUSRI now turns to private sector transport and warehousing companies to fill some of its regional and local requirements. Similarly, private distributors requiring new facilities could either finance their own, or, in order to reduce long-term risk, contract out to

other private companies for transport and warehousing services in the fashion of PUSRI.

3. Local manufacturing. At least one company is constructing a plant to manufacture blended compound fertilizers for the estate market. If it proves profitable, this company has the resources to build more, and other companies may also consider doing the same. Blending plants are the direct response to a growing domestic market for compound fertilizers, a demand which would be further stimulated by the policy changes recommended above.

   Another potential private sector manufacturing project is to build bagging stations, which would allow farmers to buy fertilizers in a wider range of bag sizes. Prepackaging fertilizer mixes for different crops is also possible.

Certain fertilizer markets in Indonesia are growing faster than PUSRI can effectively serve. The private sector can find new market opportunities in this complex market without having to undercut the market presence of the dominant parastatal corporation.

Chapter I - Introduction

In Indonesia, the government dominates the fertilizer marketing and distribution system. Over the past 20 years its control has been exercised through a large number of departments, agencies, state trading companies, and government-owned production, transportation, and distribution companies. The history of the fertilizer marketing and distribution system is the history of change -- growth and decline -- in these many state organizations, and of fairly flexible public policies that have sometimes encouraged limited competition between agencies, sometimes chosen between agencies, and alternately helped and hindered the private sector.

This process of change and experimentation in the fertilizer distribution system has not gone on, however, during a time of relative stability in the agricultural sector. Quite the opposite: during the 1970's, fertilizer use in Indonesia soared from 600,000 tons in 1971 to over 3 million tons in 1981, a five-fold increase in ten years. Indonesian policy-makers were struggling with a demand for fertilizer that was growing at 19% a year and spread over a vast archipelago of islands; a poor transportation system, involving ships, rail and trucks; uncertain sources of supply; and, at times, uncertain pricing policies affecting both fertilizer prices and the prices for agricultural outputs. The present distribution system is a result of government attempts to control and accommodate these uncertainties.

The present fertilizer distribution system dates to 1979, and has changed little over the past four years. The system is dominated by a large parastatal corporation, P. T. PUSRI, which distributes 95% of all fertilizer used in Indonesia. In the government there is emerging sense of control, a sense that a workable configuration of the fertilizer distribution system has finally been reached -- and that remaining problems are more problems of system growth and "fine-tuneing" rather than problems requiring sweeping changes. The government is becoming less worried about being able to guarantee fertilizer supplies to all farmers than concerned about increasing the overall efficiency of the system. In this sense, now is a good time to review the Indonesian fertilizer distribution system.

There is another sense in which now is a good time to review the Indonesian fertilizer distribution system: the market for fertilizer in Indonesia, especially on Java, is maturing. The need to educate and provide basic extension to farmers is diminishing, and the farmers' desire to do their own experimentation and make their own choices is increasing. The market, therefore, is qualitatively changing. Since farmers no longer need to be simply convinced to use fertilizers, fertilizer marketing must now aim at more sophisticated buyers. Government involvements in a mature market raises different questions from government involvement in an unproved market, and these questions will be raised in the course of this review.

From most points of view, the rise of P. T. PUSRI from being a small fertilizer producer to being the largest domestic producer and

a monopoly fertilizer distributor is a story of success. During this period PUSRI behaved much like an aggressive private corporation trying to prove its ability to function well in hitherto unorganized and inefficient markets. The fertilizer distribution market was -- and is -- seen in Indonesia as vital to the well-being and growth of the national economy, and the Indonesian government naturally turned to and supported PUSRI when it showed that it could be relied upon. PUSRI has been able to adapt efficiently to a rapidly growing market, and to remain responsive to the government's service objectives.

The Indonesian private sector is less sanguine than the government about the evolution of the fertilizer distribution system. Although the private sector in Indonesia has never had a large role in the fertilizer sector -- prior to 1969 the distribution system was completely in the hands of the government -- it has been pushed out of certain market areas that it found for itself during the 1970's. Government policies concerning fertilizer imports and fertilizer subsidies have favored state trading corporations and PUSRI at the expense of importers and distributors. Other policies have favored government cooperatives at the expense of private retailers. One Indonesian entrepreneur described the government's attitude towards businessmen as one towards "second class citizens," and it is certainly true that government policies throughout the 1970's have wavered tremendously on the role of the private sector.

The Indonesian private sector's task in fertilizer distribution will be to secure an expanding role in a growing and increasingly

complex market. Fortunately, it is the very growth, complexity, and maturity of the market that can make new room for the private sector without undercutting PUSRI's very established market position.

It is noted here that throughout the text, references are made to Lines I, II, III, and IV in the Indonesian fertilizer distribution system. These references signify 1) the fertilizer point of origin within the distribution system (factory or port), 2) the provincial level distribution point, 3) the county (or "kabupaten") distribution point, and 4) the village level retailer. See Chapter III, and Figure 3.1 in particular, for details.

Chapter II - The History of Fertilizer Distribution in Indonesia

A. Introduction

P. T. PUSRI, a government-owned company started its operation as a urea fertilizer producer in 1963. Now it is both the largest fertilizer producer in Indonesia and the sole distributor of all subsidized fertilizers. PUSRI is and has been the best-run parastatal corporation in Indonesia, and is also seen as a very successful state-run corporation by the World Bank, its principal creditor. PUSRI's success in assuming, by 1979, sole responsibility for distributing fertilizer in Indonesia eliminated major market shares for other state and private companies.

PUSRI's ability to target, plan for, invest in, and eventually operate the national fertilizer distribution system is an achievement that will be analyzed in some depth. The question of what lessons can be learned from this successful parastatal will also be addressed.

Fertilizer distribution in Indonesia over the past twenty years can be broken up into five main periods. Tables 2.1 and 2.2 show fertilizer use and growth rates during each of these periods. The overall use of fertilizer increased over five-fold between 1971 and 1981, but the rate of increase has not been uniform. Factors which have affected the rate of increase fertilizer use include the rate of farmer acceptance, the weather, the prices of fertilizer and crops, the availability of fertilizer, and the government programs

tied to the use of fertilizer, such as extension, credit, and farm subsidy programs. Although all of these factors are important, we are most interested here in the correlation between the realized growth rate and the distribution system in operating during each period. In particular, this means looking at the effect of the distribution system on the availability of fertilizer, on the effective price to the farmer, and on the links between the distribution system and other government programs.

It is significant that the periods of very low growth, i.e., during the 1960s and between 1974 and 1976, are periods during which very real constraints in the availability of fertilizer were observed. Very generally, this shows how important the changes made in the distribution system were to the overall goal of increased fertilizer use. It also shows how after more than a decade of experimentation and growth, Indonesia is in a position where fertilizer availability is no longer a widespread problem.

Table 2.1: Fertilizer Consumption in Indonesia (000 mt nutrients)

	Foodcrop Section		Estate Crop Section		Total
	N	NPK	N	NPK	NPK
Period 1 (1963-1968)					
1963	58.1	70.8	20.0*	30.0*	100.8
1964	87.6	105.4	20.6	34.5	139.9
1965	58.9	90.3	31.1	59.0	149.3
1966	61.0	80.0	34.9	47.1	127.1
1967	43.0	48.8	24.2	34.2	83.0
1978	95.0	119.4	6.2	25.4	144.8
Period 2 (1969-1973)					
1969	155.2	192.5	16.1	33.3	225.8
1970	162.1	197.3	21.8	50.2	247.5
1971	179.2	210.4	17.7	38.9	249.3
1972	228.0	251.4	27.3	76.7	328.0
1973	312.0	379.2	16.9	38.3	417.5
Period 3 (1974-1976)					
1974	290.8	393.3	25.6	36.7	430.0
1975	311.3	422.6	27.5	62.2	484.7
1976	313.3	415.6	39.0	70.0	485.6
Period 4 (1977 -1979)					
1977	443.4	557.8	43.3	91.5	649.4
1978	478.9	617.6	70.1	146.1	763.7
1979	550.9	698.7	69.5	157.2	855.9
Period 5 (1980-1982)					
1980	797.9	1,019.2	53.1	152.9	1,172.1
1981	946.0	1,260.1	51.1	158.8	1,418.9
1982	n.a.	n.a.	n.a.	n.a.	1,450.0*

Note: *estimate. Source: Directrate General of Foodcrops

Table 2.2 Growth in Fertilizer Consumption in Indonesia

	Annual Growth Rate	
	(N)	(NPK)
Period 1:		
1963-1968	5.3%	7.5%
Period 2:		
1969-1973	26.6	23.6
Period 3:		
1974-1976	2.3	5.2
Period 4:		
1977-1979	20.8	20.8
Period 5:		
1980-1982	n.a.	19.2

Source: Table 3.1

B. Period 1: Pre-1969

1. The Failure Of a Parastatal Monopoly

P.N. Pertani, a state-owned agency for the importation, marketing, and distribution of fertilizer and pesticides, was established in 1960. Through a system of government stores, called kiosks, Pertani monopolized all fertilizer sales (for the foodcrop sector) through 1967, but by 1968 Pertani saw its monopoly position erode as the government began to invite other distribution companies into the market.

Pertani is probably a typical example of a very inefficient parastatal corporation that failed to fulfill its function. Pertani was unable to move and sell its stocks , to promote fertilizer use, to coordinate procurements with fertilizer demand, to control rapidly growing inventories, and to remain a reliable customer of the domestic fertilizer producer PUSRI which was, incidentally, allowed no other customers. One study stated that "due to a number of institutional and managerial problems, P. N. Pertani often acted as stock maximizer rather than a sales maximizer."(1)

Work on the first Five Year Plan began in 1968, and self-sufficiency in rice became its leading priority. Pertani's poor performance was clearly a barrier to the government's rice intensification program BIMAS. PUSRI started to find its own distribution and retail outlets as a means of reducing its unsold stocks, and Pertani's excess stocks were made available to private distributors. Table 2.3 , which shows data for just one province in

Java, suggests just how stagnant the Pertani distribution system had become and the amount of latent demand the private distributors were able to serve. Within four years, the private distributors in Jogjakarta Province were selling more fertilizer than Pertani. 1968 was the beginning of a trend towards private retailers competing with government retailers in all parts of Indonesia.

Although the decline of P. N. Pertani was already apparent during this period, one study finds that "It must be strongly emphasized that it was (Pertani) that was largely responsible for opening up the fertilizer market in Java. Without this prior market development private distribution companies would not have found it to be profitable to engage themselves....In the future, a similar pioneering role must be performed in outer islands."(2) This theme was recurrent throughout the 1970s, and has helped shape government policy up to the present.

Table 2.3: Fertilizer Consumption in Jogjakarta Province 1967-1971
(tons nutrients)

Year	P. N. Pertani		Private Dealers	
	N	P_2O_5	N	P_2O_5
1967	1892	30	-	-
1968	1861	63	615	21
1969	912	36	1239	145
1970	2459	44	1705	138
1971	2439	481	3023	900

Source: FAO, 1973

2. The Philosophy of Government Intervention

Government control of agriculture is a legacy of the Dutch era in Indonesia, and the fertilizer sector has always been part and parcel of this control. C. Peter Timmer argues how the Dutch installed in Indonesia's "rice economy" a network of government controlled rice milling, transportation, and communication facilities, and developed the legal and institutional tools required to enforce regulations concerning all aspects of rice trade. "In addition, and perhaps most importantly, a philosophy was established. It argued that rice was too important to be left alone and that the proper government response was direct intervention in the marketplace, frequently with trade barriers, price ceilings and floors, and an ultimate reliance on cheap foreign imports to maintain stability."(3) In the fertilizer sector Pertani was the instrument of government intervention, and was responsible for maintaining ceiling prices and for importing sufficient amounts of fertilizer to keep the ceiling prices low.

Timmer goes on to describe problems that arose in the rice sector due to the government's "penchant for intervention." The government prevented rice mills from operating except on government accounts; pricing policies were impossible to enforce due to inhabilities to match seasonal and regional price differences to costs of storage and transportation; attempts of BULOG to meet its procurement quotas necessitated bringing out the army; and by favoring government coorperatives over private retailers, rice procurement and marketing efforts were undermined. The government's

approach to direct control of the fertilizer market through Pertani was part of the same philosophy and achieved the same rough order of success.

C. Period 2: 1969-1973

1. Involvement of the Indonesian Private Sector

The fertilizer distribution network became rapidly oriented to private sector distributors and retailers during the period 1969-1973. There was no alternative. PUSRI became interested in distribution and began to maneuver to guarantee sales of its own urea production by developing a network of private distributors; a number of private and state trading companies were importing various kinds of fertilizers and selling them through their own distribution systems; and the market for BIMAS fertilizer sold on government credit, which had once been the sole province of Pertani, was being licensed out to private distributors. During this period, also, the government started to subsidize urea. Total fertilizer sales jumped from a yearly growth rate of 7.5% (5.3% for nitrogen) between 1963 and 1968, to 23.6% (26.6% for nitrogen) between 1968 and 1973.

Domestic fertilizer production during this period was limited to 100,000 tons of urea and most fertilizers were imported. A Ministerial decree in 1967 recognized that the current level of imports was insufficient, and that import policy needed to be relaxed. By freeing up the marketing of imported fertilizers,(4) this decree paved the way for the establishment of several parallel

and competing distribution systems, managed and supplied by trading companies. Although the larger trading companies involved in this market were state-owned, a greater number of smaller private importer/distributors also became involved. (The state trading companies were naturally larger, because they were the nationalized legacy of the large Dutch trading companies.) By 1972 the Ministry of Trade and Cooperatives had licensed more than thirty fertilizer importers, but was starting to favor companies who seemed most sincerely interested in development a fully mature marketing system.

During this period, however, there were government regulations which limited how far the independent distributors could cut into the Pertani distribution system. First, in some areas government cooperatives were given priority over private retailers in the handling of BIMAS fertilizers. In addition, these cooperatives were supplied through government channels, i.e., Pertani, and not by private distributors. Second, both Pertani and the cooperatives received favorable interest rates. Third, the government fixed through the bank system the price of BIMAS fertilizer, thus creating uniform margins that gave private traders little incentive to market fertilizers outside of limited areas. Furthermore, uncertainties in government pricing policies created the constant threat of a drop in price, excess supplies, and costly inventories. This left the private traders with no recourse but to follow "a marketing policy characterized by high profit, quick turnover of capital, and long term investments in personnel or distribution facilities kept to a minimum."(5)

In the Indonesian economy, the parastatal companies wield greater economic and political power than any private sector manufacturing or trading company. It was inevitable that Indonesian parastatals start to struggle over the market vacated by Pertani. Due to the high cost of marketing fertilizer in relatively new and uncertain markets, only a parastatal with an independent source of income could compete. (In fact, one of Pertani's problems had always been that it relied on the generosity of government officials to cover its distribution losses.) It was clear by 1972 that both Pertamina, the national oil company, and PUSRI were both interested in dominating fertilizer sales. The state trading companies were too small to play a major role.

Pertamina was the single largest industrial organization in Indonesia, and by 1970, when it was appointed a BIMAS distributor, it had shown signs of entering the market in a large way. As a major importer it achieved a dominant position in various markets, including East Java. By the end of 1972, Pertamina was expected to announce plans to construct a urea plant in Java, thus guaranteeing its own supplies in the Javanese market.

PUSRI, in 1972, was moving rapidly to expand its urea production facilities in Palembang, and decided that no importer -- i.e., none of its competitor distributors -- could sell PUSRI urea. PUSRI had already formalized its own distribution system, and had done so at low cost: by entering into distribution contract with large, existing private sector companies it managed to avoid financing the distribution network up front. At this time, and throughout most of the 1970s, PUSRI's distributors operated from the

provincial level down to the farmer. Only later would PUSRI expand its control down to the local level, thus reducing the terrain of the private distributors.

2. BIMAS Gotong Rojong - A Private Sector Experiment

During the 1969-1973 period there was also an innovative and unprecedented experiment to reach out to the private sector of developed countries for help in areas where Pertani had failed. Since this multi-national experiment was interesting, but basically removed from the main trends of the period, it is mentioned only separately here.

BIMAS, the national agricultural development program, required adequate fertilizer supplies and credit to succeed, and it was apparent by 1968 that there were problems on both counts. In an innovative but hasty manner, the government of Indonesia started a program called BIMAS Gotong Rojong (Mutual Self-Help) whereby it turned to several foreign companies to provide to certain rice areas, on credit, fertilizer and pesticides. (The companies included CIBA Geigy, AHT, Hoescht, Mitsubishi, and Mitsui.) The contractors also agreed to deliver seed and cash allowances to farmers, and to provide equipment and advice to the extension workers. The Indonesian government, therefore, was interested not only in obtaining necessary input supplies, it was interested in tapping the marketing and distribution know-how of the foreign companies.

The program was to be paid for by farmers giving one sixth of their harvest to the government. The government would then pay the contractors a fixed price per hectare at the end of the year. By delaying payment on inputs, the government also endeavored to reduce its immediate foreign exchange demands.

The program was daring in that it gave a large degree of autonomy to the foreign companies to distribute agricultural inputs. Unfortunately, the program was judged to be both a production and financial failure, and was discontinued after two years.

Although there were many reasons for the program's failure, the Indonesian government does not directly blame the foreign companies. Rather, it seems to blame its own ill-preparedness and its naivete' concerning the ability of the multinationals to work at the local level. For example:

1. the foreign company would deliver the fertilizer to the village leader, who was instructed by the government to simply give it away. No real arrangements were made for subsequent payment, and as a result later attempts to collect from the farmers were largely unsuccessful.
2. pesticides were often applied indiscriminately, even by aerial spraying. Farmers who had no choice in the sprayings were reluctant to pay, and rarely did. Also, fish and livestock sometimes suffered from indiscriminate spraying, and the foreign companies used products of their own manufacture irregardless of their relevance to Indonesian agriculture.
3. rigid input packages were sometimes inappropriate for local use, causing farmers to sell off unwanted inputs at cut rates.

4. the problems in collecting payment from farmers meant that the government ended up covering program costs from general revenues. Also, "farmers became used to not repaying credits."

Due to its ill-planned implementation, it was inevitable that BIMAS Gotong Rojong fail. One lesson learned, however, was that it was the lack of planning, and not the failure if private sector to perform agreed upon duties, that was responsible for the failure.

D. Period 3: 1973-1976

Three changes occurred during this period that changed the configuration of the fertilizer distribution system: one was definitive -- Pertamina got out of the fertilizer business -- and two proved to be temporary. These were: 1) the number of licensed importer/distributors of subsidized fertilizers was reduced to eight; and 2) the village cooperatives (KUDs) were formally assigned the task of selling BIMAS fertilizer. Also during this time the oil crisis drive the price of urea up and the government moved to increase its control over fertilizer planning procurement producers. (By this time the National Fertilizer Board was active.) The net effect of all these factors was to increase government involvement in the fertilizer sector, and to reduce the number of independent actors.

In 1973, the government revoked Pertamina's license as a BIMAS fertilizer distributor, and Pertamina left the fertilizer market altogether (except to retain ownership of one bagging station in

East Java). Although it was a combination of factors that led the government to rule against Pertamina, the most basic was that it was unsatisfied with Pertamina's performance as a BIMAS distributor. The list of complaints levelled against Pertamina sound strikingly like those that were levelled against Pertani five years earlier: a) credit was often unavailable, and Pertamina required cash payments; b) it didn't distribute the fertilizer at locations convenient to farmers, and supplies were frequently unavailable when farmers needed them; c) Pertamina kept excess stocks which led, in turn, to excess deteriorations; and d) Pertamina had little contact with farmers and no real understanding of the fertilizer market. When Pertamina had declared its interest in selling fertilizer, it had seemed that it had the resources and power to do whatever it wanted. Apparently, however, it exceeded its area of influence by developing a rigid distribution system that gave the government an excuse to restrict its activities.

A World Bank financed study completed in 1972 recommended that the number of importer/distributors involved in selling subsidized fertilizers be drastically reduced. Although its arguments were vague,(6) it pleased a government that was moving to control the expansion of the private sector. When the number of importers was reduced from thirty to nine, the value of each license soared -- leading to corruption in the granting of import licenses. The restrictions on fertilizer imports undoubtedly raised the final cost to the government and it helped PUSRI become the largest importer (as well as being the largest producer).

On the retail level, which by this time had become an almost entirely free market, the government moved to reinstate the KUDs as the preferred retailer of BIMAS fertilizer. The KUDs were not equipped to take on this role, and this regulation is partially to blame for the marked decline in the availability of fertilizer (see Table 2.2). The decline in the fertilizer consumption growth rate was so great, in fact, that the regulations were relaxed in 1976.

Throughout this period, the estates were not eligible to buy fertilizers at subsidized prices. If an estate wished to buy a fertilizer that was being subsidized for small farmers, it would have to buy through the government-approved channels, but would pay higher prices. This two-tiered price system led to a predictable amount of "leakage". The market for non-subsidized fertilizers was not government controlled, however, and the import restrictions did not apply.

E. Period 4: 1977-1979

In retrospect, this period was the end of a trial period during which the government assessed the wisdom of having nine separate importer/distributors competing in the main fertilizer markets. This period proved to be the end of a distribution system that was, in the government's eyes, 'unmanaged'.

Table 2.4 shows the market shares of the nine import/distribution companies in 1976/1977, and Table 2.5 shows the 1976 distribution of storage facilities. Two facts are immediately apparent: first, that PUSRI dominated the market, by volume, and

second, none of the companies had a national distribution network. Even PUSRI with only six provincial-level storage facilities had concentrated its marketing efforts on the more developed markets. Two other state-owned companies, Pertani and P.T. Pantja Niaga, had the broadest investments in distribution facilities, while none of the private distributors had any warehouses outside of Java.

In spite of problems in reaching the outer markets, fertilizer sales during this period soared; this period's growth rate was 20.8% compared to a growth rate of 2.3-5.2% during the previous three years (see Table 2.2). Reasons for this included a) relaxation of the rules restricting BIMAS sales to the KUDs, b) elimination of the two-tiered pricing system for food and estate crop buyers, and c) increased supplies, due to the coming on-stream of two new PUSRI urea plants and the settling down of the world-wide oil price shocks.

Table 2.4: Urea Sales by Importer/Distributor; 1976/1977
(metric tons)

Importer/Districtor	Ownership	Sales, 1976/77 Wet Season	Percent of Total
1. P.T. PUSRI	state	382,152	60.7
2. P.T. Pertani	state	142,414	22.6
3. P.T. Pantja Niaga	state	23,203	3.7
4. P.T. Aneka Niaga	state	12,579	2.0
5. P.T. Cipta Niaga	state	12,506	1.9
6. P.T. Intrada	private	20,021	3.2
7. P.T. Lamtoro Agung	private	13,302	2.0
8. C.V. Jaya Niaga	private	18,117	3.0
9. C.V. Kertopaten	private	5,835	0.9

Source: FADINAP/FAO, 1978

Table 2.5: Distribution of Fertilizer Storage Facilities, 1976

Province	Total Facilities	By Distributor PUSRI	Pertaini	State	Private
West Java	8	1	1	3	3
Central Java	7	1	1	2	3
Yogyakarta	3	-	1	1	1
East Java	7	1	1	2	3
North Sumatra	3	1	1	1	-
West Sumatra	3	1	1	1	-
Lampung	2	-	1	1	-
South Sumatra	2	-	1	1	-
Central Kalimantan	1	-	-	1	-
South Sulawesi	2	1	1	-	-
Central Sulawesi	1	-	-	1	-
North Sulawesi	2	-	1	1	-
Total	41	6	10	15	10

Source: National Fertilizer and Pesticide Distribution Study, Resource Planing Consultants, 1977.

The main problem during this period was adequate supplies to the outer islands. Although the government tended to blame the shortcomings of the private sector, there are at least two key reasons why there was poor marketing in the outer islands, neither of which related directly to the faults of the distributors themselves:

1. Since the demand for both nitrogen and phosphates was increasing by over 20% per year and distributors had little difficulty disposing of supplies, they had little incentive to a) engage in aggressive marketing, or b) reach out into higher cost, lower volume markets.
2. Government-approved margins were too low and too rigid to encourage marketing in the outer islands. The government understood that it could not expect nor pressure private distributors to expand into these remote markets. Rather, it chose to pressure the state-owned companies to work in unprofitable market areas.

At the end of 1976 a World Bank-financed study was released that recommended that PUSRI become the sole distributor for subsidized fertilizers -- an idea that World Bank officials had been supporting as far back as 1971. By arguing that the need for rational and coordinated planning of the physical aspects of fertilizer distribution was pre-eminent, the study concluded that there was a need to develop a "single organization with a national distribution responsibility." The study appeared at a time when PUSRI was planning a $130 million investment in shipping, bulk receiving and storage facilities, and internal storage depots, and

it argued that such a large investment required that PUSRI control all inter-regional fertilizer distribution. Significantly, however, the study argued that this recommendation did not mean that PUSRI should take over all existing and proposed facilities for land distribution from the port area (Line II) onwards. All land-based distribution, it said, could continue to be fulfilled by private sector distributors, wholesalers, and retailers.

Whether the study was influential or simply a product of prevailing sentiments is not important. Its recommendations were, however, implemented over the next three years. The government had decided that when faced with the option of trying to encourage one of several state distribution companies into remote markets, or of simply commanding PUSRI to be the 'distributor of last resort', it preferred the latter route.

By 1979, the fertilizer distribution system had been consolidated as foreseen by the World Bank study, but with one key, and perhaps inevitable difference: PUSRI did not allow its private distributors to assume control at Line II, the provincial point of entry, but only at the county-level Line III. Under the World Bank loan, PUSRI was building warehouses at the district level, and it began to monopolize the transport of fertilizer to Line III. Pertani had complained at the time that it had idle warehouse space in some of PUSRI's kabupaten locations, but PUSRI proceeded nevertheless with its own plans. Although PUSRI did continue to contract private sector transport companies do the physical Line II-Line III hauling, the Line III destination was always a PUSRI-operated godown.

The difference between a private sector distributor operating between Line II and the farmer and between Line III and the farmer is great. In one case, the distributor has the freedom to plan for a province-wide market: in the other, the distributor is strictly a local company. What PUSRI gained by taking over the next level of the market was greater control, greater accountability, and -- as will be discussed below -- an additional level of handling, cost, and potential inefficiency.

F. Conclusions: The Success of a Parastatal Monopoly

1. The Success of a Parastatal Monopoly

In 1975, the World Bank wrote that "PUSRI is one of Indonesia's best-managed large industrial enterprises...PUSRI is the only fertilizer distributor in Indonesia with a competent and experienced fertilizer marketing organization."(7) Seven years later it wrote; "PUSRI's excellent record... and growing expertise in marketing its own and imported fertilizers have made it the key Indonesian organization in the marketing and production of fertilizers. PUSRI's marketing abilities made it a logical choice for undertaking the marketing of all fertilizers in Indonesia when the Government faced the problem of how to market a growing output of fertilizers produced at different prices by different companies."(8)

These quotes tell most of the story behind the successful growth of PUSRI: 1) it was in fact efficient and competent; 2) it had its own financial base, both from the revenue from its production activities and from two $60 million World Bank loans,

which gave it the freedom to plan its own investments; 3) the Government had a problem that it couldn't manage, and it wanted to turn the entire problem over to somebody else -- somebody, that is, who could handle it but also be controllable.

The most interesting question raised here is; why was PUSRI effective? Once PUSRI's special skills are understood, then it is much easier to understand why both the World Bank and the Indonesian government turned to it to take responsibility for solving their problems and needs.

Various factors have been mentioned:

1. From the beginning, PUSRI got, valued, and kept skilled people in both management and production; it was a dynamic venture that not only attracted quality personnel, it inspired nationalistic feelings. (For example, stories are told of the lengths to which PUSRI personnel went to keep the factories going during the years of turmoil between 1965 and 1967).

2. The engineers of the first PUSRI plant, the American firm of Morris and Knudsen, helped instill high technical and organizational skills from the beginning. Also, PUSRI's key personnel were drawn from the army, Indonesian's largest reservoir at the time of organized and imaginative people.

3. An effective work ethic was created by its strong executive, General Hasan Kasim, throughout the 1960s and 1970s. Work incentives were provided: PUSRI during this time developed an effective training program for junior staff, which led into a lucrative career path. Also, PUSRI junior managers were given broad

experience by being "lent out" to the other, smaller, fertilizer producers, before returning to more senior positions at PUSRI.

4. PUSRI's financial autonomy gave it an early freedom from direct government control. It is clear that PUSRI was run from the very beginning like a private corporation, and was both responsible and aggressive. Also, it was never happy simply relying on the government as its sole customer, as was the case in the 1960s. As soon as Pertani could not guarantee sales for all of PUSRI's product, PUSRI moved to find its own outlets. As its production capacity continued to expand in the 1970s, PUSRI felt more responsible than anyone else to develop a distribution system capable of handling that expanding production.

5. PUSRI saw itself as different--a successful corporation in an era when Indonesia was full of less capable organization. It led in planning for new developments and growth in the capacity of the fertilizer distribution system, if only because if it hadn't, nobody would have.

A parastatal corporation serves two masters: it must work in the marketplace, and it must satisfy its overseer, the government. It can be argued that in order for a parastatal to become an independent, viable corporation, it must be protected from excess government intervention during its growth period. This protective umbrella, or shield, gives that parastatal a sufficient grace period to develop a new market approach, a management system, and an identity.

PUSRI's protective shield came in two forms: 1) a strong military leadership, which gave it a separate identity from the

government, and 2) starting in 1971, the interest and endorsement of the World Bank. Both increased PUSRI's credibility as an autonomous corporation. In the early 1970s PUSRI expanded not because, like a government-controlled parastatal, the government was ever thrusting new tasks upon it, but because like a quasi-private corporation, it wanted to expand vertically in order to better push its product line.

By the mid-1970s PUSRI had taken corporate risks, and succeeded in the new market of fertilizer distribution. It was not until this time that the government began to directly rely upon PUSRI to solve its fertilizer distribution problems. The trial period, during which PUSRI had competed with a variety of state-owned and private distribution companies was over. PUSRI became both the major producer and the major distributor, and also, before too long, the major importer of fertilizer. (For a period in the late 1970s, it even became the only licensed importer.)

2. The Failure of the Independent Distributors

In 1972 over thirty companies had imported subsidized fertilizers, most of which was distributed by the importing company itself. By 1976, the number of importer/distributors had been reduced to nine, and three years later, PUSRI was the only one. The previous section emphasized PUSRI's successful drive to dominate the market, and the government's eagerness to embrace PUSRI once that dominance was achieved. But in order to complete the story, one

must also look at the limitations of the smaller distribution companies:

1. lack of capital; as relatively small companies, they could not invest in new market areas, or take the risk associated with endeavoring to `create' a market for fertilizer in undeveloped market areas.

2. lack of facilities; with few physical assets with which to distribute fertilizer, the smaller distribution companies could not guarantee supplies and/or prices. Local supplies were particularly unreliable since there were almost no local warehousing facilities.

3. lacking of planning; the demand for fertilizer was rising steadily, and the smaller distributors did not have to plan ahead as to how they could sell the relatively small amounts of fertilizer they were equpped to handle: on Java, which was the only area in which most of them worked, there was a ready market.

4. lack of reliability; some of the distributors were not interested in long-term activities, but only in quick profits through one or two deals.

For these and other reasons, the government gradually eliminated the private distributors from the fertilizer distribution system. The causes of these shortcomings are not simply inherent faults of the Indonesian private sector. These shortcomings are -- as is to be expected -- tied up with the market effects of government policies, such as:

1. lack of profitability; for several reasons the distributors found fertilizer distribution to be unprofitable, and therefore with limited potential for expansion. First, many thought the government controlled margins too low; second, the processing of government controlled paperwork, such as the payment of handling fees for BIMAS fertilizer, took up to ten months, a delay which the distributor would have to finance out of working capital; third, the consignment system led to great difficulties for the distributors getting paid by the retailers; and fourth, the consignment system together with the shortage of retail storage facilities led to a situation where losses, due to both deterioration and theft, were extremely high, and for which the distributors were responsible.

2. market uncertainty; changing government pricing and market licensing policies made it risky for any company to make long-term investments. Much of this uncertainty was fueled by the fact that the most able businessmen in Indonesia are ethnic Chinese. There is a strong social and cultural resentment of the economic prominence of the Chinese minority, and periodic actions are taken against Chinese business interests in favor of the Indonesian-Malay ethnic majority. The Chinese-owned firms, then, are behaving rationally when they limit investments to those with short-term gains and which are in market areas relatively free of government intervention.

For these reasons, the private sector distribution companies were not interested in the risk and cost of market development. The government felt, at the same time, that until the market development

costs were absorbed, it could not create free market incentives both sufficiently high and publicly acceptable enough to involve the smaller distribution companies nationwide.

In sum, the private distribution companies in Indonesia were simply too small, and the market was too uncertain, for them to undertake the task of distributing fertilizer at controlled prices throughout the archipelago. Both PUSRI and the World Bank recognized this fact and moved in to fill the void. In the process, they took over areas of the market where the private distributors were established and competing very effectively. After the current fertilizer distribution system is described in more detail, the possibility of returning some of PUSRI's monopoly control to the independent distributors will be discussed.

Notes to Chapter II

1. S. Afiff and C. P. Timmer, "Rice Policy in Indonesia," Food Research Institute Studies, 1971, pg. 141.

2. Agrar and Hydrotechnik GMBH, "National Fertilizer Study," Annex III, 1972.

3. Timmer, C. P., "The Political Economy of Rice in Asia: Indonesia," Food Research Institute Studies, 1975, pg. 208.

4. "Every enterprise which has importing license can participate in assisting Government. . .in the imports of fertilizers. The fertilizers can be freely marketed." Ministry of Agriculture Decree, 13.2.1967.

5. Paul Stangel, "An Analysis of some Factors Influencing the Orderly Development of a Private Distribution System in Indonesia," TVA/USAID, Dec. 1972.

6. "The current system hinders coordinated planning; in a number of cases the appointed importers were not sufficiently viable financially and had insufficient capacity to properly distribute fertilizers." (Agrar and Hydrotechnik GMBH, "National Fertilizer Study," Annex III, Oct. 1972.) It is not clear why those companies themselves were not the sole victims of their poor planning.

7. IBRD, "Indonesia Appraisal of a Fertilizer Distribution Project," 1975.

8. World Bank Appraisal Report, "National Fertilizer Distribution Project," 1982.

Chapter III: A Profile of the Distribution System Today

A. Overview

The previous chapter has emphasized the theme of how the Indonesian government has gained increased control over all aspects of fertilizer marketing and distribution. Between the time of Pertani's failure in the late sixties and today, neither government objectives -- to increase the use of fertilizer as fast as possible -- nor government attitudes -- that fertilizer is a strategic, and not a commercial commodity -- have changed.

Government control over the distribution of the four subsidized fertilizers -- urea, ammonium sulphate (ZA), triple superphosphate (TSP), and muriate of potash (KCL) -- includes:

a. control of domestic production through the ownership of the fertilizer production companies, and through authorization of new construction and/or expansion;

b. control of imports of subsidized fertilizers through government tenders, restrictions that allow only state-owned trading companies to respond to the tenders, and a process of `negotiated tenders' that allows for further negotiations and changes <u>after</u> bids are submitted;

c. control of imports of non-subsidized fertilizers through the granting of imports licenses;

d. control over setting the producer prices for domestic production;

e. control over fertilizer pricing policies (subsidies) and

establishing all intermediate prices and distribution margins;

f. to control over all inter-island and inter-regional transport of fertilizer (Line I to Line III), which is the sole responsibility of P.T. PUSRI;

g. authorizing both private and state-owned companies to act as 'expeditors' (i.e., transport companies) and local distributors under contract with P.T. PUSRI;

h. allocating market areas to authorized distribution companies, and appointing special distributors and retailers (usually to handle the sale of fertilizer on credit under the BIMAS program);

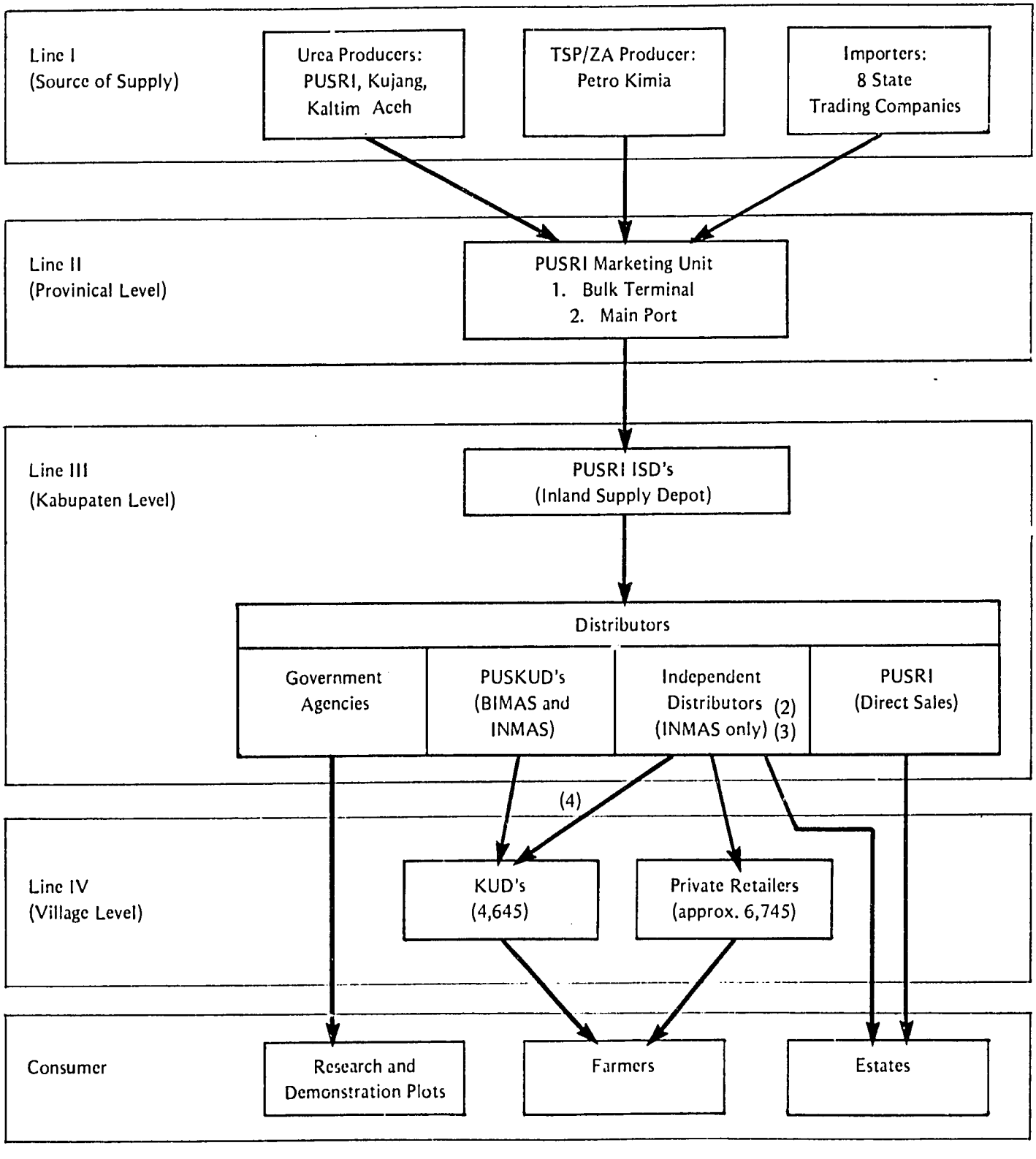
i. provision of credit and packaged inputs to small farmers;

j. establishing farm cooperatives and regional and provincial level cooperative support agencies to handle, among other things, the retail sale of subsidized fertilizers;

k. handling special transportation subsidies to encourage fertilizer distribution in areas where high local transport costs exceed the allowable margins.

An overview of the present-day distribution system is shown in Figures 3.1 and 3.2. The PUSRI Marketing Unit is responsible for distributing the four subsidized fertilizers from Line I (the point of production or importation) through Line III (the kabupaten or county level). Either a local distributor or village cooperative is responsible for selling fertilizer to the farmer at Line IV.

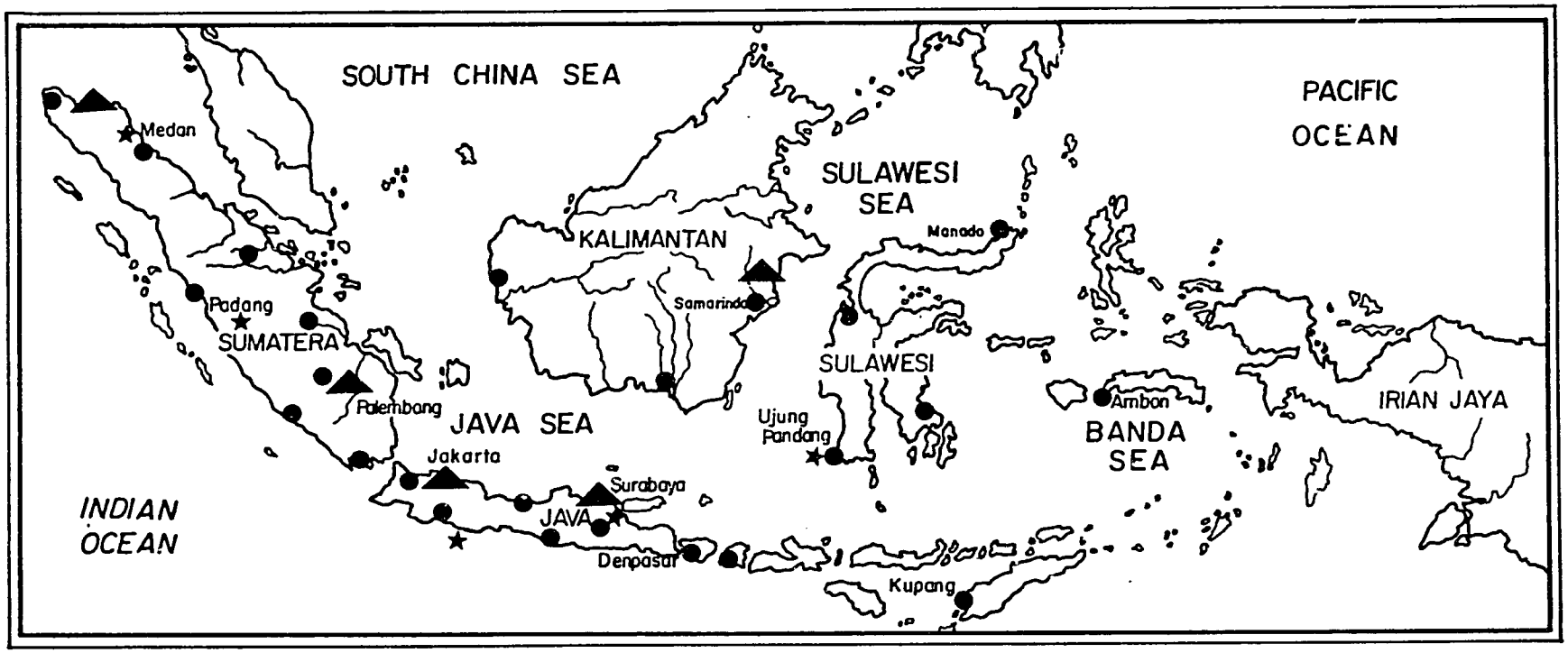
FIGURE 3.1 Flow of Subsidised Fertilizers (1) 1982



Note:
(1) Subsidized fertilizers are Urea, ZA, TSP, and KCL.
(2) Includes both state-owned and private distribution companies.
(3) A private retailer may sell BIMAS fertilizer if no functioning KUD in the area.
(4) A KUD may be supplied by a non-PUSKUD distributor if no functioning PUSKUD in the area.

FIGURE 3.2

FERTILIZER PRODUCTION AND DISTRIBUTION CENTERS
1981



★ Bagging Stations

● Marketing and Representative Offices

▲ Plant (existing or under construction)

B. The Role of the Private Sector

In sum, government control of the fertilizer distribution system has led to a system where PUSRI handles all subsidized fertilizer between the point of production or importation and the local dealer. The only possible role for the private sector is at either end of the system, i.e., in either the area of imports or of retail marketing. Since the four subsidized fertilizers together account for an increasing share of all fertilizers used -- the share has risen from about 85% to 95% in the past four years (see Table 3.1) -- and since the government may continue to increase the number of fertilizers that it subsidizes --the most recent subsidy, that for KCL, began in 1979 -- the potential for fertilizer distribution and sales outside of government channels is limited.

The three areas in which the private sector can play and has played a role namely fertilizer imports, local distribution, and the non-subsidized market, are discussed in greater detail below.

Table 3.1: Total Consumption of Subsidized and Non-Subsidized Fertilizers, 1976-1981 (MT)

	1976	1977	1978	1979	1980	1981
Subsidized Fertilizers	1,018,905	1,309.950	1,440,367,	1,825,142	2,572,295	3,095,104
Percent of Total	(89.1)	(86.3)	(82.9)	(91.5)	(92.7)	(94.6)
Non-Subsidized Fertilizers	124.730	208,793	297,643	170,407	202,585	178,337
Percent of Total	(10.9)	(13.7)	(17.1)	(8.5)	(7.3)	(5.4)
Total Tons	1,143,635	1,518,743	1,738,010	1,995,549	2,774,880	3,273,441

Source: Directorate General of Foodcrops

1. Fertilizer Imports

Imports of the four subsidized fertilizers in Indonesia -- the importation of which accounted for 80% of all fertilizer imports in 1981 -- is arranged, financed, and executed by the government and government companies. This was not always the case: prior to 1973 there were few import licensing procedures that restricted the private sector, and up to 1979, four private trading companies were licensed along with five state trading companies to import subsidized fertilizers. Since 1979, only state-owned companies have been 'invited' to submit tenders on government procurements.

The issue of who is allowed to import fertilizer is important simply because the volume of imports is rising dramatically. Table 3.2 shows the two basic trends: 1) that the total amount of imports is increasing at a steady rate of 40-50% per year; and 2) the rate of increase in subsidized fertilizer imports is even higher, averaging some 75% per year.(1) As a result, the area that is closed to the private sector is by far the most dominant and most rapidly growing area of imports.

Table 3.2: Fertilizer Imports, 1977-1981 (mt)

	1977	1978	1979	1980	1981
A. Subsidized Fertilizer Imports					
Volume	80,000	315,000	177,058	588,929	728,433
% of Total Imports	(31.7)	(57.1)	(51.0)	(74.4)	(80.5)
B. Non-subsidized Fertilizer Imports					
Volume	172,468	236,416	170,407	202,585	176,678
% of Total Imports	(68.3)	(42.9)	(49.0)	(25.6)	(19.5)
C. Total Imports					
Volume	252,468	551,416	347,465	791,514	905,111
% of Total Consumption	(16.9)	(31.7)	(17.4)	(28.5)	(27.7)

Source: Directorate General of Foodcrops

The regulations which allowed only state trading companies to negotiate with the government led to a situation where the foreign suppliers had to reconsider their business associations in Indonesia. Prior to 1979, the foreign suppliers' agents could have been either private or public: after 1979, the state agents had an obvious advantage. A foreign supplier could either abandon its private agent and start working with a state company (as in the case of Mitsubishi described in the Intrada profile below), or it could retain its private agent as a 'sleeping' agent, and work with both a private and a state agent (as in the case of Canpotex, described in the Bitaragana profile below). The foreign supplier's choice would hinge on the solidity of its ties with its private agent, the services provided by both the private and state agents, and its perception of the difficulty of doing business in Indonesia. (One American supplier said that he works with two agents, one private and one state (the actual importer) because "to do business in Indonesia, I need all the help I can get.")

The key policy issue, raised in the next chapter, is the cost to the government of protecting the role of the state trading companies in the fertilizer import market.

2. Local Distribution

At present, PUSRI has distribution contracts with ninety different distributors, 21 of which are state-owned and 69 of which are private distribution companies. In Java, the number of active private distributors (48) outnumbers the state distributors by a

factor of three. In the more remote parts of the country, such as the islands east of Java, Bali, and Sumatra, the reverse is true: there are 27 state-owned compared to only 9 private distributors. Throughout the 1970s, the government directed the state trading companies to expand into the less lucrative markets.

The average state distribution company is bigger than the average private company: the state companies work in an average of eleven provinces and have an average of 70 local offices, while most private distributors work in only two or three provinces with less than ten local offices.

PUSRI sells fertilizer at its Line III warehouses to all distributors, earmarking which supplies are meant for purchase on government credit (BIMAS) and which will go onto the cash market. BIMAS fertilizer is mostly sold through the PUSKUD/KUD network, and private distributors handle BIMAS sales only when there is no functioning PUSKUD or KUD. The cash sales are dominated by the private distributors, and once the fertilizer leaves the PUSRI warehouse, few regulations apply. Among the few regulations which do apply are a) ceiling prices for all subsidized fertilizers, currently set at 90 rp/kg, and b) minimum stocking requirements. The government currently has no established method for either monitoring or enforcing compliance with these regulations. (See Appendix B for details on the stocking requirements and Appendix C for details on the ceiling prices and compliance procedures.)

Part of the rationale for PUSRI's handling all fertilizer up to Line III is to ensure local stocks and to be able to push added supplies on the market if private distributors try to bid prices up

above the ceiling level. The government does not trust private distributors to stock fertilizers themselves or to be able to ensure supplies when needed by farmers. Conversely, the private distribution companies, knowing that PUSRI is obligated by law to keep local stocks, have had no incentive to invest in storage facilities.

The current market configuration means, by definition, that all distributors private are strictly local companies. This has several implications:

1. Handling efficiency: with the current system, there is no possibility for a more efficient delivery of fertilizer truckloads directly from Line II to a distributor's warehouse or retailer. All supplies must be unloaded at the PUSRI Line III warehouse and then redispatched.

2. Investment: approved margins for local distributors are very small, and are intentionally kept at only one third the level of the retailer margins (see Appendix C). The government's philosophy is that the distributor's job of transporting fertilizer from Line III to the Line IV retailer is low risk, and requires little investment. It does not even require that the distributor have its own warehouse. Distributors are currently given no incentive to expand their role beyond the tight limits imposed by the PUSRI system.

3. Marketing: government margins favor the retailer over the distributor because it feels the retailers are more directly involved with selling fertilizer than are the distributors. However, it is widely recognized that retailers lack the information

and knowledge to engage in active marketing efforts.(2) It is more likely that retail `marketing' as currently practiced in Indonesia consists of little more than marginal price-cutting -- a practice which probably has a greater effect on the relative sales volume of competing shops than it does on the overall level of demand.

In sum, it can be said that the fixed margins for distributors limit their role to one of handling and logistics, and that retailers are not expected to do much marketing or stocking anyway. The system has been designed for PUSRI to make most of the necessary Line III investments in the form of ISDs, and for the KUDs to supply, through government grant money, most of the necessary Line IV storage facilities.

The role of the private sector distributors and retailers has been carefully delimited. Even though many of the distributors are national companies with offices in adjoining kabupatens and provinces, they have no incentive to develop an integrated marketing and distribution network. It can even be more strongly stated that recent history would discourage almost any private company from making any sizeable investment in fertilizer distribution. Twice in the past ten years private sector involvement has been severely restricted, and most private companies are wary that future policies will do so again. In particular, it is widely thought that the government will continue to promote and protect the cooperative system at the expense of private enterprise.

3. The Non-Subsidized Fertilizer Market

The use of non-subsidized fertilizers accounted for about 5% of total fertilizer use in 1981. The market share has been steadily declining because both the number of subsidized fertilizers and the ratio of eligible to ineligible users of subsidized fertilizers have increased. The single greatest factor shaping the market for non-subsidized fertilizers is the level of the subsidy on the four subsidized fertilizers.

The non-subsidized fertilizer market is dominated by private import/distribution companies, and except for import license requirements, the market is unregulated. Most of the companies in this market are different from the PUSRI-licensed distributors of subsidized fertilizers: since PUSRI has a policy of selling directly to the large estates, and since the large estates are the main buyers of the non-subsidized fertilizers, PUSRI's local distributors do not often deal with those buyers who form the main market for the non-subsidized fertilizers.

In the main plantation areas such as North Sumatra, the large estates can turn to several competing distributors for bids. At least one company is currently constructing a fertilizer blending plant in Sumatra for the purpose of focusing on the compound fertilizer market.

As the market grows, it will probably become more competitive.(3) There are a large number of companies who can begin distributing small amounts of fertilizer as farmers in both the foodcrop and small estate sectors experiment with new types. The

financial barriers of entry into this market are low, and PUSRI's expertise does not lie in this market.

C. Company Profiles

1. P.T. PUSRI

PUSRI was established in 1959 in Palembang as a government-owned fertilizer production company. As Indonesia's largest fertilizer producer, its yearly output of urea has expanded from 100,000 tons in 1964 to 1.6 million tons in 1981. In 1981 it distributed more than 3 million tons of fertilizer. PUSRI, however, sees itself as more than just a large fertilizer manufacturer and distributor: it sees itself as the focus of all of fertilizer-related activities in the country, including development planning and training.(4)

PUSRI has a two-tiered management structure, with a Board of Commissioners made up of various government representatives, and a Management Board consisting of the President-Director and five Directors: Directors of Production, Technology, Finance, Development, and Marketing. The company has traditionally had well-qualified executives who have also learned to use outside expert advice when necessary.

PUSRI is also the largest importer of government-procured fertilizers. When PUSRI imports fertilizer for the government, three divisions are involved. The first is the Agencies Division which acts as a local agent for foreign suppliers, and negotiates

the tender contract with the suppliers and SECNEG. The second is the Import Division, which acts as the government's receiving agent for fertilizer imports. The third is the Technical Unit, which is responsible for bagging and shipping all subsidized fertilizers to their Line II destination.

The Marketing Unit, which is responsible for all regional movement and marketing, picks up where the Technical Unit leaves off. It has twelve regional Marketing Offices and nine Representative Offices which plan local supplies, manage local stocking requirements, and sell to local distributors. They give virtually no marketing support or technical information to local distributors. The first priority for the regional marketing staff is simply to gather better market intelligence concerning prices, availability and needs.

In recent years, PUSRI's Marketing Unit has consistently registered losses, which means that its costs exceed the distribution margins approved by the Ministry of Finance. There is no way for this survey to determine whether the approved margins are unrealistically small or whether PUSRI Marketing is too inefficient to match them.

The losses by the Marketing Unit are fully reimbursed by the government, so at the end of each year its books show no net profit or loss. These reimbursements have averaged 15 billion rupiahs per year, or $35 million, between the years 1976-1980. Whether the government will continue to match these losses (which it continues to do as of Feb. 1983) is a current topic of discussion in the government and PUSRI.

2. The State Trading Companies

Pantja Niaga

The largest of the state trading companies, Pantja Niaga started in 1948 as a small company serving the Indonesian army. It was nationalized and merged with two large Dutch trading companies in the 1950s. Now it has 30 branches in 13 provinces. Its business interests include extensive import, export, and domestic trading as well as some local engineering, manufacturing, and contrating services. Its merchandise trade is organized into the following departments:

1. Paper and Stationary Department.
2. Chemical and Pharmaceutials Department.

   Including urea, TSP, ZA, KCL, and compound fertilizers;
3. General Merchandise Department.

   Textiles, yarns, glassware, watches;
4. Machinery Department.

   Tractors, construction equipment;
5. Technical Department.

   Building materials;
6. Project Department.

   Special government procurement (fire fighting equipment, taxi meters, aerial navigation) ;
7. Produce Department.

   Coffee, copra, spices, batik, rattan, etc.

Pantja Niaga has distributed fertilizer since the late 1960s and has consistantly lost money doing so. In the mid-1970s they lost money due to problems of collection were related to the consignment system then in effect. They continue to lose money now, both because they feel the margins are too low and because they have trouble collecting on some of their loans to farmers. These loans are different from BIMAS credits, and are offered by Pantja Niaga itself at about 5% per month. (BIMAS credit rates are 1% per month.) In spite of these consisent losses, the company stays in the fertilizer distribution market because they have a government mandate to do so.

Prior to 1979 Pantja Niaga was an integrated importer/distributor. Now it imports fertilizer that is distributed by PUSRI, and works as a local (Line III-IV) distributor for PUSRI. The amount of compound (non-subsidized) fertilizers it imports and distributes on its own is small.

Dharma Niaga

Starting from a small trading company specializing in machinery, in 1976 Dharma Niaga became an importer and distributor of general household merchandise. They now have an established network of wholesalers and retailers which they serve through 31 branch offices. Both the markets they work in and the retailers they work through are often determined by government order. (They are instructed to seek out weak, Indonesian-owned retail outlets as opposed to successful Chines-owned outlets.) It is understood that

they are to engage in some "non-commercial" activities on which they take losses.

Dharma Niaga began importing fertilizer in 1980 following the most recent changes in government procurement procedures. They claim that due to the negotiated tender process, they do not earn any profit by importing fertilizer, nor do they earn a profit importing a similar vital commodity, cement. They feel that the government, by forcing them to work at cost, gets the lowest possible price for these imports.

Although the company has only imported fertilizer for two years, they feel they have rapidly gained expertise. They compete with the other state trading companies in becoming agents for the established overseas fertilizers suppliers. Since they are all state-owned companies, they all have equal access to state financing: but Dharma Niaga feels the experts come to them because of their better government contacts and broader range of services.

The company does not distribute fertilizer.

3. Private Companies

P.T. Rolimex

The Chairman of P.T. Rolimex, A. Djalil, is respectfully called the 'King' of fertilizer in Indonesia by some private sector colleagues. Unlike many trading companies, Rolimex has restricted itself to only one market and uses an agro-systems approach.

Its business interests fall into three categories: fertilizers, pesticides, and agricultural equipment. The Fertilizer Division has changed substantially since the rules restricting the role of private traders in importing fertilizers were promulgated. Prior to 1980 Rolimex imported a variety of subsidized fertilizers on either its own or the government's account, including Nitrex-brand urea and ammonium sulphate from Saudi Arabia, and TSP and muriate of potash from France and Germany. Since 1980, Rolimex hasn't imported any of these fertilizer types, although once it attempted to bid on a government tender through a state-trading company (with unsatisfactory results). In the non-subsidized market, it has yearly imports of 40,000-50,000 tons of sulphate of maganesia (about 80% of the total market) and 20,000-30,000 tons of compound fertilizers (about 50% of the market), both from West Germany. Rolimex is currently constructing a blending plant for NPK fertilizers in Sumatra.

Like the Fertilizer Division, the Pesticide Division in both importer/distributor and manufacturer. Rolimex is the sole agent for both Union Carbide and Dupont pesticides, and has formed a manufacturing joint venture with Union Carbide, called P.T. Agrocarb, in Surabaya. Agrocarb formulates pesticides using imported active ingredients, a final processing stage comparable to fertilizer blending.

The third division, the Equipment Division, imports and distributes agricultural equipment and sprayers. Its volume is small.

Fertilizers are distributed through five branch offices (in Medan, Lampung, Bandung, Semarang, and Surabaya), whereas other inputs are sold both through the both branch offices and non-exclusive dealers and agents. They prefer selling to wholesalers who distribute to retailers who are specializing in agricultural inputs, although this isn't always possible.

About 70% of Rolimex's fertilizer customers are large estates, most of which are government-owned. (The rest of its customers are small holders.) Rolimex lost many of its estate customers to PUSRI when it lost the right to distribute TSP and potash, although in a few cases, Rolimex has acted as a local distributor of subsidized fertilizers between PUSRI and the estates. It does this less for potential profits - which it considers to be small - then because it wants to be able to offer a full range of fertilizers to the estates when necessary.

Rolimex is pessimistic about the future: it predicts that the government distribution system will continue to absorb more different types of fertilizers, thus removing them from the private market, and that the government cooperatives will soon be given greater control over retail sales to small farmers. Rolimex's own business strategy might be best called 'defensive adaptation.'(5) As shown by its blending plant project, it is willing to invest in areas where the risks appear acceptable.

P.T. Bitaragana

Bitaragana is an importing agent and trading company, and it represents Canpotex (Canadian Potash Exporters) and IMC (the International Mineral Corporation of Chicago) in Indonesia. Bitaragana only imports potash fertilizer, and feels that over the years it has developed a strong working relationship with Canpotex. This relationship is constantly being tested, since Canpotex could decide at any moment to bypass Bitaragana and deal directly with a state trading company. To date, however, Canpotex has not done so, and has worked with Bitaragana and a state trading company when it has bid on potash tenders issued by the Indonesian government. Bitaragana feels that the reason for this is that the state trading companies are more domestically-oriented and don't understand the foreign suppliers as well as the more efficient private trading companies.

Bitaragana imported 91,000 tons of potash fertilizer in 1982 which it sold to the government. Prior to 1980, it would sell its imports to wholesalers, but had no distribution system of its own.

Although Bitaragana complains about the cumbersome procedures for importing subsidized fertilizers -- especially the negotiated tender process and the counter-trade requirements -- it has not lost interest in the potash market. On the contrary, it feels that since the import requirements continue to rise, there will always be room for the qualified private trading companies. In fact, the negotiated tender process tends to `spread the wealth' among most of the bidding parties, ensuring that no one importer gets awarded the

entire tender. (The Indonesian system, it was noted somewhat wryly, "has generally accommodated the middle-men.") Of course as a trading company, Bitaragagna does not have to decide now to commit itself to the future potash import market by making large investments up-front.

P.T. Intrada

Intrada has been involved in fertilizer imports and distribution longer than any other private company in Indonesia. It began handling fertilizer in 1968, at the beginning of the decline of Pertani, and expanded its business steadily through 1975. As a fertilizer importer, it would sell some of its imports to the government, and it would distribute some of it itself. As a distributor, it would handle fertilizer down to the kabupaten level, at which point it would sell to local retailers. In 1975 it was the largest private sector distributor: over the eleven years ending in 1979, it had sold a total of 942,000 tons of fertilizer.

Between 1973 and 1975 the Indonesian government, concerned about the oil crisis and rising fertilizer prices, imported as much fertilizer as possible. Intrada's business thrived until huge stocks accumulated and nationwide sales dropped off, and in 1975 it started to decline and debts began to accumulate. The company cites several reasons for this:

a. in 1975 it was under great pressure from the government to sell fertilizer, even at a loss. The sales push was too

great, and the resulting disorganization, theft, loss, and deterioration were uncontrollable.

b. the consignment system, which was in effect through the 1970s, was a disaster; the payments would not get passed along from retailer to distributor, and Intrada would be responsible for the debt with PUSRI.

c. government regulations hurt the company, especially the approval process for market areas, delays in reimbursing the BIMAS credit coupons, and the allowable distributor margins.

All of the reasons that Intrada cites for its business losses relate to government controls and government pressure. The company feels victimized by the government, and treated as `second class citizens'. Its indignation culminated in the loss of its import/distribution business and relegation to being a local PUSRI distributor.

From the government's point of view, however, there is little doubt that Intrada was not an efficient distributor. Intrada worked only on Java, the prime area, and even there the company could not perform well. It can be argued that this company's poor performance was part of the reason that the government sought more complete control over all distribution activities.

Intrada is still a PUSRI distributor in 28 kabupatens in Java, and in 1980 it sold about 100,000 tons of fertilizer. By 1980, it had accumulated a $1.5 billion rupiah ($3 million) debt with PUSRI, which it has since renegotiated. PUSRI has 'invited' Intrada to step down as a PUSRI distributor -- since it has lost so much

money -- but Intrada is not yet willing to do so.(6) Although on the defensive it still seems to want to prove itself: even if it is not making money now, it feels that it can only make money in the future if it stays "where the money is."

During the 1970s Intrada was the domestic agent for one of Indonesia's major fertilizer suppliers, Mitsubishi. Since the new importation regulations came into effect, however, Mitsubishi has abandoned Intrada in favor of a state agent. Unlike Bitaragana, who has retained its ties with Canpotex, Intrada failed to prove its usefullness under the new procedures.

4. A Foreign Supplier: Woodward and Dickerson

A large international trading company based in the United States, Woodward and Dickerson (W&D) has only recently gotten involved in the Indonesian fertilizer market. It is proceeding cautiously as it learns about the local market, its potential, and the problems of doing business there.

W&D has recently supplied urea and potash to Indonesia, both supplied by a Russian manufacturer. Indonesia used to deal directly with the Russian supplier on a government-to-government basis, but the Russians found the shipping and importing arrangements made by the Indonesian state trading company Cipta Niaga to be unsatisfactory. The Russians brought in W&D to act as its agent, and W&D had no choice from the very beginning but to continue working with Cipta Niaga on the Indonesian end. W&D buys the fertilizer F.O.B. in the Baltic sea, ships the fertilizer itself to

Indonesia, and sells it C&F at the designated Indonesian port. The role of Cipta Niaga, therefore, has been reduced to one of opening a letter of credit and serving as a conduit for government funds.

W&D has assumed a cautious attitude towards the Indonesian fertilizer market because of the high cost of doing business there. They were forced to stay in Jakarta for three months last year to negotiate one fertilizer import deal, and upcoming procedures promise to be even more complicated.(7) Problems of corruption in Indonesia also worry W&D since they have to protect an international reputation as well as try to show a profit in its Indonesian operations.

W&D is a highly diversified trading company that does not stop at importing and exporting: they have invested in fertilizer warehouses, blending plants, and distribution systems in several other countries. They are not now considering doing so in Indonesia, however, since the fertilizer market is too government-controlled and uncertain. They have not yet even set up an office in Jakarta, preferring to operate out of Singapore.

5. Local Retailers and Cooperatives

The PUSRI fertilizer distribution system leads to three types of retail outlets. The first are retail outlets of the Line III distributors which are mainly located in the Kabupaten town centers, the second are small family-run retail shops on the village level, and the third are government cooperatives (KUDs). In most areas, the prices offered by each of these types of outlets are

progressively higher: in Java, for example, where a distributor outlet might sell urea for 85 Rp/kg, the retailer might sell it for 87 Rp/kg, and the KUD for 90Rp/kg. These prices are a true reflection of the relative efficiency and costs of business of each outlet type.

The Indonesian government has committed itself to the proposition that natural resources are to be managed by state enterprises, that the basic needs for the people are to be managed by cooperatives, and that the private sector is to operate in the remainder of the economy. The `basic needs' that would ideally be distributed through the cooperatives include not only fertilizer and rice, but other foodstuffs, kerosene, and in some cases, rural electrification.

Although cooperatives are ideally developed and managed from the bottom up, the KUD movement has been organized from above by the government. (One study reported in 1981 that fewer than 20% of all KUDs reported ever having an annual members meeting.) The KUDs are meant to support themselves through the procurement of rice and sugar, as well as through sale of fertilizer, but few KUDs are actually able to do so. Most KUD managers are paid by the government and do not rely on revenue generated by the KUD for their salaries. Many KUD managers have found it easier to supplement their incomes by illegally 'contracting out' legitimate KUD work to private merchants rather than having the KUD do it itself.

Several spokesmen within the Indonesian government have said that the KUDs have often been a hindrance to the efficient functioning of rural markets. While certainly not disapproving of

the cooperative concept, they assert that KUDs should not be given monopoly control over certain markets. Another study found that "Unless ways can be found to improve the efficiency of the KUD, the prospects are that they will remain relatively high-cost purchasing and distribution agents for BULOG and PUSRI without the ability to compete with traders."(8)

Notes to Chapter III

1. Imports of subsized fertilizers will continue to grow rapidly even though several new urea plants are scheduled to come on line in the mid-1980s. Projected domestic nitrogen supply deficits are shown in Appendix A.

2. This problem is the focus of a dealer training project under study by ESCAP/FADINAP. The project would train government workers to give short courses on fertilizer handling, storage, and use to cooperatives and retailers. The project goal is to improve the dissemination of technical information to farmers through the commercial as well as extension channels.

3. Competition between distributors does not necessarily mean that buyers are paying the lowest possible price for these fertilizers. Corruption in both import licensing and government estate procurements may push up prices -- see Appendix B.

4. PUSRI has helped the government plan and train personnel for the Iskandar Muda and ASEAN urea plants in Aceh; is doing feasibility studies on various chemical and energy-related topics for the government; and trains foreign fertilizer plant operators at its facilities. Also, executives trained at PUSRI currently operate most of Indonesia's other fertilizer plants.

5. The rules it must adapt to are not always clear. Although Indonesia does not officially ban imports from Israel, they do not sanction large shipments. Rolimex tried to import a large shipment of Israeli potash last year only to have it rejected by customs. Once it became a public issue, it became clear that the fertilizer had to be returned and Rolimex took a large loss.

6. It should be asked why the government allows Intrada to stay on as a fertilizer distributor at all. Part of the reason is that PUSRI does hope to eventually recover some of Intrada's large debt. Another reason is that Intrada is an Indonesian -- as opposed to an ethnic Chinese -- company, and as such is favored by government policies. Other possibilities concerning who has profited from Intrada's official debts cannot be discounted.

Notes to Chapter III - Continued

7. Last year the government was ironing out the counter-purchase requirements. This year it is proposing regulations that would require all imports to be carried on Indonesian flag ships -- a regulation which nobody yet understands in detail.

8. Dick, H., Bulletin of Indonesian Economic Studies, March, 1979, pg. 39.

Chapter IV - Key Issues and Potential Policy Changes

A. Introduction

The two fertilizer distribution systems in Indonesia -- subsidized and non-subsidized -- must be considered separately. Each has reached a different stage of market development, and each promises a different potential role for the private sector.

In the subsidized distribution system PUSRI has made, and is continuing to make, large investments in fertilizer distribution facilities. Only recently has PUSRI consolidated its control over and planning for the nationwide distribution of subsidized fertilizers, and it has not yet caught up with the construction of facilities that it requires. The point to make is that the government's lot is cast with PUSRI, and few foreseeable changes will be made in PUSRI's responsibilities. This does not preclude, however, a discussion of the future role of the private sector under the PUSRI umbrella, and changes that can be made in the short term to favor the private sector.

In the non-subsidized system there are also changes in government policy that can lead to increased private sector activity. Furthermore, underlying trends in the fertilizer market are leading to the long term possibility that the distinction between the two markets will become more blurred.

B. The Subsidized Fertilizer Market

The first and biggest question concerns the future of PUSRI: now that it has won a protected monopoly, what steps can be taken to preserve its efficiency, aggressiveness, and flexibility? Concurrently, what steps can be taken to enhance the role of the private sector within the PUSRI system.

These questions lead to three areas of discussion: 1) policies concerning PUSRI itself; 2) policies concerning the importation of subsidized fertilizers, and the role of state and private trading companies; and 3) policies concerning local distributors and retailers. The discussion here is confined to policy matters, because any immediate changes within the PUSRI distribution system are necessarily policy changes and not specific private sector projects.

1. PUSRI: Organizational Changes?

PUSRI has gotten so big that voices of concern over its ability to remain efficient are being raised. These concerns seem to be based on two trends: 1) that in a protected market PUSRI has lost the competitive drive to be efficient, and 2) that increased government control has meant that it is losing its "private sector" character and autonomy. Both are true, and both are important.

Most important, of course, is the fact that in the distribution of fertilizer from Line I to Line III, PUSRI has no competition. There is no way of accurately measuring PUSRI's efficiency, just as

there is no way of comparing PUSRI's distribution system with alternative approaches. As explained in Appendix B, PUSRI is paid a fixed margin for each ton of fertilizer that it handles, margins which represent average costs worked out by the Ministry of Finance. PUSRI's Marketing Unit has consistently registered losses, however, which suggest that either the Ministry of Finance margins are unrealistically small or that PUSRI is too inefficient to meet them. There is no basis for this survey to analyze which possibility is most likely.

Since the losses incurred by the Marketing Unit are fully reimbursed by the government, a) the government's fixed margins don't really mean much for PUSRI, and b) PUSRI had no direct corperate incentive to cut their losses and work for a higher rate of return. Of course the government has no choice but to cover losses, because it is interested in guaranteeing that PURSI remain active in the more remote, less profitable markets.

PUSRI officials are not satisfied with the present arrangement, and would prefer a different agreement between the Marketing Unit and the government. There are a few possibilities being discussed, all of which would serve to give the Marketing Unit a greater corporate and financial autonomy:

1. put the PURSI Marketing Unit on a profit-making basis, and cease automatically compensating for losses. This could be done by renegotiating the approved margins to be more in line with PUSRI's real costs and then sticking with them, or by renegotiating the price PUSRI is paid for its own urea

production, with sufficient extra allowances to allow a cross-subsidy of its distribution activities;

2. reorganize PUSRI into at least two separate parastatal corporations, one for fertilizer production and one for distribution.

Although both of these options might have some marginal effect on PUSRI's distribution efficiency, neither would alter PUSRI's monopoly position. In either case, then, PUSRI's achieved level of efficiency could still only be ascribed to the commitment and achievements of its management and personnel, and not to outside incentives.

2. Importation Policy Changes

Two aspects of the current importation procedures for subsidized fertilizers can be singled out as being controversial: the exclusion of private trading companies from the negotiated bid process, and the counterpurchases requirements. Changes in the first area - government importation practices which involve only state-owned trading companies - offer a potential for increased private sector involvement.

The private sector's view is one of bitterness and cynicism, prompted by the fact that since taking effect in 1979, this government policy has driven some of them out of a major area of activity. The cynicism is based on a widespread feeling that the private sector has been excluded not because of its shortcomings, inability to deliver, or poor performance, but because the

government is chronically suspicious of private sector involvement in all kinds of government business. Private businessmen feel that the government's interest in working exclusively with the state-owned trading companies is simply because the government has to keep those companies busy -- and that in a competitive market, the state trading companies couldn't successfully compete. It is also suspected that government officials often have a personal interest in funnelling work to the state companies with which they are affiliated.

The government's defense of their policy to exclude the private trading companies turns, predictably enough, on the issue of control. The government has complete access to the books of the state trading companies, and has complete control over personnel. Not only are state-owned companies felt to be more reliable -- they are managed by ethnic Indonesians, not Chinese - they have no possibility of going bankrupt.

Further government concerns focus on the extent of the government's recourse in case a private trading company fails to comply with the terms of a contract. A common attitude was that the value to the country of adequate and timely fertilizer supplies exceeded the resources of the trading companies charged with providing those supplies. Thus, if a private trading company failed to deliver, the company's ability to compensate wouldn't be comensurate with the perceived damages. Furthermore, the government would have to work through the legal system, with all the delays and uncertainties that implies.

In the case of a state-owned company, the government has direct control: the legal system is never involved. In fact, when a state trading company works for the government, a contract is not even drawn up: there is just an `agreement' of services to be performed. The informality of relations between the government and the state-owned companies also means that in the event of a default, the government would not demand compensation from a state company as it would from a private one --a difference which underscores the inconsistency of some of the government's arguments against the private sector.

The government in Indonesia, in effect, has traditionally worked through the state-owned trading companies, and the private sector is the relative newcomer to fertilizer imports. As a result, most of the private trading companies are fairly small, a limitation which has led to the above government fears about private sector reliability and lack of resources. On the other hand, the government has not been interested in developing ways, such as performance bonds, for private companies to guarantee their performance. The tradition of mistrust and a practice of favoritism towards the state-owned trading companies are barriers to developments in this direction.

Nevertheless, policy recommendations can be made for the loosening of regulations concerning fertilizer imports. The current configuration drives up the cost to the government, and is instable: the foreign suppliers who would prefer a longer-term "partnership" with its local agent are given no incentive to develop long-term commitments. They may choose to work with both importing agencies

or they may eventually bypass the private agent, but both are compromise solutions. Costs are driven up by the inefficiencies created by extra middlemen and the increased risk perceived by the supplier.

A policy allowing private trading companies to compete with state trading companies would both lower costs and stabilize the market. The likelihood of this policy recommendation being enacted depends on the depth of the government's commitment to the state trading companies. Arguments concerning the small size and reliability risks of the private companies could all be resolved through appropriate contractural and financial controls.

The second issue raised in this section concerned the counter-trade requirements. Since the counter-trade requirements essentially double the amount of trading done by the foreign supplier, they place even more demands upon the supplier's working relationship with its domestic agent. Restrictions on which agents a foreign supplier may work with only add to the already high cost of the counter-trade requirements,(1) and reduces the willingness of foreign suppliers to compete in the Indonesian market.

3. Local vs. Regional Distributors

Although the 1976 World Bank financed fertilizer distribution study recommended that PUSRI be given sole responsibility for the more capital intensive task of handling fertilizer up to Line II, by 1979 PUSRI had consolidated its network of ISDs and assumed control

of all distribution to Line III. Now, as opposed to in the 1970s, private distributors only work between Line III and the farmer.

The differences between the two systems are great. In the current PUSRI system, local distributors are just that: local. Distributors have no incentive to coordinate transport, sales, and marketing efforts in areas any larger than a kabupaten. In the recommended system there is a greater and more flexible role for the private sector.

A move from strictly local PUSRI distributors to regional distributors is both desirable and possible. Three factors should be remembered.

First, private distributors are only interested in expanding into established market areas. There is no doubt that in the more remote areas, PUSRI is performing an absolutely necessary function by being distributor of last resort.

Second, distributors are not going to plan large and risky marketing efforts on the basis of subsidized fertilizers alone: subsidized fertilizers are controlled by the government, and no private company in Indonesia will commit extend itself very far in a government controlled market. The feeling is there that if the government saw profits being made in selling subsidized fertilizers, it would alter the approved margins to reduce those profits. One entrepreneur summed up his feelings as follows: "Fertilizer is a contolled business. The government controls all of it, and subsidizes most of it. If I had money to invest, I wouldn't invest in selling fertilizer."

Third, it should be noted that the most successful entreprenuers serving the market for non-subsidized fertilizers also handle a wide range of agricultural inputs, tools, and equipment. These suppliers are able to diversify because the market they serve, the estate market, has created a diversified demand. In the more developed foodcrop areas, farmers are developing a similar wide range of input requirements. A result IFDC study found that on Java the "agronomic nitrogen potential" is rapidly being reached, and that urea -- the main subsidized fertilizer -- should not be promoted as it has been in the past. "Differentiation of product demand is likely to intensify on Java as new, more productive cropping systems are introduced."(2)

These three points lead to the argument that changes should be made in the mature market areas where a PUSRI distribution monopoly is unnecessary and restrictive. Two policies would have to be worked out by the Indonesian government: one for the mature markets where the task of stimulating marketing demand is no longer a major government undertaking, and a second for the new markets, such as the outer islands, where the government is still in the early stages of promoting fertilizer use.

The relaxation of the PUSRI distribution monopoly in the mature market areas would require two main policy changes at the Line II and Line III levels. First, the kabupaten-level BIMAS committee that licenses local distributors would have to be weakened and the licensing function moved up to the provincial level. This would not mean that local distributors could not continue to work in only one or two kabupaten. It only means that those distributors interested

in working in larger market areas could coordinate their planning at the provincial level. Second, PUSRI would have to agree to sell subsidized fertilizers out of their Line II warehouses as well as out of their Line III ISDs. This would allow distributor to plan fertilizer handling from the provincial center, and would allow them to compete with PUSRI in the handling of fertilizer from Line II to Line III.

These changes could potentially be in the interest of all parties involved:

a. the distributors would have the incentive to expand into a growing market for agricultural inputs. Although it is accepted that the margins for the subsidized fertilizers will remain controlled, the distributors would handle them as the basis for a more complete product line.

b. the government would expect to benefit from lower handling costs, which would lead to lower subsidies. Lower costs would arise from two sources: 1) competition among distributors and with PUSRI, and 2) elimination of the mandatory unloading and storage of fertilizer at PUSRI's Line III ISDs. Distributors, including PUSRI, could arrange to deliver fertilizer direct from Line II to the local level distributors or retailers.

c. farmers would benefit from increased competition and lower prices. To the extent that distributors take an interest in actively marketing a full range of agricultural inputs, farmers would benefit from improved suppliers and improved access to information.

d. PUSRI would be forced to focus on the handling of bulk fertilizers up to Line II, and on the handling of fertilizer in the more remote markets. PUSRI is equipped to do this: most of PUSRI's recent ISD construction has been located on the outer island where PUSRI recognizes that it alone is responsible for fertilizer shortages. Also, PUSRI's regional marketing staff on the outer island has been increased in order to provide PUSRI with greater information on shortages and bottlenecks. The bottlenecks almost never occur on Java.

These proposed policy changes rely on the ability of the distributors and retailers to take on a more sophisticated marketing role. Although Indonesian entrepreneurs are very skillful in identifying and serving expanding markets, the very success of the Chinese minority in business has created large tensions in the society. It is recognized that these policy recommendations touch upon, in a fundamental way, the government's attitudes towards Chinese domination of the commercial sector and its hope for a counter-balancing influence of the cooperative movement. The policy recommendations made here, which effectively favor private sector distributors and retailers over parastatal monopolies and government cooperatives are made for economic, not social reasons.

C. Potential Growth in the Non-Subsidized Fertilizer Market

The market for non-subsidized fertilizers is largely unregulated, but is nevertheless contrained by government policies. Changes in these policies would reduce the cost of marketing

non-subsidized fertilizers, reduce the risk of investment, and make the market for non-subsidized fertilizers more competitive with the subsidized market. Three policy recommendations are:

1. Changes in the import licensing procedure. The current import licensing procedure has the effect of bidding up fertilizer prices, since not all companies interested in importing are allowed to do so. The import license itself, then, has value, and both importers and government officals work to protect that value.

It can be argued that no import licenses for fertilizer should be required at all. The reasons commonly given for the licenses are the government's need to review: a) fertilizer imports to determine their appropriateness to national needs, b) foreign exchange requirements, and c) the financial viability of the importer. None of these reasons are compelling, however: the market, and not the government, is well-equipped to perform all three of the above functions. If a private importer/distributor can finance the importation and sale of a fertilizer, it is hard to imagine that the fertilizer would be inappropriate to the nation's needs. If he cannot sell the product, then it is the loss of he and his financial backers, but not of the government. As suggested above, the real reason for the licensing procedure may be its potential for corruption, and the removal of that potential would be an economic gain.

2. Reduction in the subsidy level of the subsidized fertilizers. Of the many factors which shape government subsidy

policies, the impact of the subsidy on the non-subsidized market is little considered. But its long-term impact is not negligible, both on those importer/distributors now serving the non-subsidized market, and on those distributors handling PUSRI fertilizers at Line III who seek to diversify their product line as per the discussion in the previous section.

3. Government guarantees concerning its policies towards the non-subsidized sector. Private sector investment has been discouraged over the past decade by government policies which have cut into their market. For example, where only urea was initially subsidized in 1968, now four main types of fertilizer are subsidized: those distributors who once imported muriate of potash lost their right to import and distribute it in 1979. Entrepreneurs are worried that the government will gradually assume the responsibility for the importation and distribution of even more different types of fertilizer to keep pace with its soil research, extension work, and recommendations to the small farmers. Some entrepreneurs will not invest in developing non-subsidized fertilizer markets for fear that they will lose out on the long-run benefits of that investment. Others will only handle fertilizers if they can guarantee a short-term profit, which means higher prices. For entrepreneurs to make long-term investments, they need to overcome the suspicion that they will be swallowed up by government intervention.

These three recommendations cannot realistically be expected to be acted upon in the short-term. Rather, they are stated here to emphasize the distrust between a government that has repeatedly cut

into private markets and a private sector that will be slow in rebounding.

Notes to Chapter IV

1. Countertrade requirements add 10% on the average to the cost of a country's imports, which represents the premium placed on the extra risk involved. Obviously, Indonesia is willing to bear this price for reasons completely unrelated to fertilizer.

2. IFDC, "Kujang II Ammonia Urea Complex: A Prefeasibility Study," 1981, pg. 145.

Chapter V - Potentially Implementable Private Sector Projects

After twenty years of rapid growth, the fertilizer market is qualitatively changing in the more developed areas of Indonesia. The potential for marketing as opposed to simply distributing fertilizer is growing rapidly. The flexibility and efficiency of the Indonesian private sector will allow it to play an important role in the diversification of the fertilizer market. Private distribution companies up to the present have remained small, relied on short term profits, and made a few long-term investments. The policy measures described above would encourage the distribution companies to grow by marketing in larger market areas, but would also retain the price control features of the current subsidized fertilizer market.

Private investment is currently hindered by a distrust of the government and a fear of future government intervention. Private sector initiatives will not be undertaken until present policy uncertainties are resolved. Once they are, however, potential projects include:

1. Marketing. If PUSRI control over the local distribution of subsidized fertilizers and/or the fertilizer subsidy were reduced, the potential for private distribution would be enhanced. Private distributors could coordinate regional sales of subsidized fertilizer with a sales program for all other types of agricultural inputs. Profits would be controlled on the subsidized fertilizers, as they are now, but the combination of achieving greater handling efficiencies than PUSRI and higher

profits on specialized agricultural inputs would provide the distributor with the resources necessary for expansion.

The leading proponent of agro-systems marketing in Indonesia, P.T. Rolimex, employs an agronomic staff to work with larger customers. While not equipped to do applied research or to finance test plots, the staff agronomists channel technical information to customers and do site visits. In order to service the foodcrop sector, as well as the estate sector, an organization of this type would be required. In order to overcome the inefficiency of working with relatively small farmer/customers, an innovative supplier could work through either village cooperatives or INSUS farm groups to reach larger audiences. It could also employ radio and television advertising, both of which are now widely available in rural Indonesia.

One relevant question is how many private distribution companies in Indonesia have developed -- like P.T. Rolimex -- an understanding of grass-roots level fertilizer marketing. The state trading companies have not, nor has P.T. Intrada, a large but debt-ridden private distribution company. This kind of business concept, and the willingness to make the necessary kind of long-term commitment, will have to evolve as market oportunities unfold. These oportunities will only appear when all kinds of inputs, subsidized and non-subsidized, can be marketed more competitively, and when private companies feel they have greater market control.

2. Transport and Storage. The expansion of private distribution networks would require new facilities. PUSRI now turns to private sector transport and warehousing companies to fill some of its Line II and III requirements. Similarly, private distributors requiring new facilities or services could either finance their own, or, in order to reduce long-term risk, contract out for transport and warehousing services in the fashion of PUSRI.
3. Local manufacturing. At least one company is constructing a plant to manufacture blended compound fertilizers for the estate market. If it proves profitable, this company has the resources to build more, and other companies may also consider doing the same. Blending plants are the direct response to a growing domestic market for compound fertilizers, a demand which would be further stimulated by the policy changes recommended above.

   Another potential private sector manufacturing project is to build bagging stations, which would allow farmers to buy fertilizers in a wider range of bag sizes. Prepackaging fertilizer mixes for different crops is also possible, and could be coordinated with the Ministry of Agriculture.

Certain fertilizer markets in Indonesia are growing faster than PUSRI can effectively serve. The private sector can find market opportunities in a complex market without having to undercut the market presence of the dominant parastatal corporation.

Chapter VI - Conclusions and Lessons Learned

A. The Role of the Parastatal

Indonesia was not only a large underserved fertilizer market in the early 1970's, it was a market with an extremely high development cost. The country is an archipelageo, and its infrastructure has been characterized by many small and inefficient ports, few internal roads, and a poor communications network. The physical distribution problems at that time were enormous, demand was uncertain, and govenrment pressures to keep fertilizer prices low were strong. In the 1970s, PUSRI invested $200 million to improve its own distribution infrastructure. The investment required to meet a rising demand at that time could not have been marshalled by private sector interests, nor managed without international concessionary financing.

The high development cost of the Indonesian fertilizer distribution system far exceeded that of other Asian countries, such as Thailand and Korea, where smaller private companies and cooperative distributors dominate the market. It also far exceeded the investment costs of the other two countries in this study, Kenya and North Yemen, which are both smaller and more integrated countries. Whereas the economics of fertilizer distribution in Kenya and Yemen has been, at least for some period of time, the economics of private sector competition, in Indonesia it has always

been the economics of a public good organized and controlled by state interests.

In particular, it can be argued that in the Indonesian context, only a parastatal organization could have combined the business outlook, public accountability, and government backing in the event of losses, that were all necessary for PUSRI to undertake a major investment in distribution facilities.

B. The Limits of a Parastatal

PUSRI played a crucial role in developing basic infrastructure, but to what point must it continue to control all aspects of the fertilizer distribution system? This paper has argued that once the umbrella parastatal corporation solved the problem of satisfying basic demand, the private sector can find ways to expand into a growing and diversifying market without having to undercut the market presence of that corporation.

The limit, therefore, of the parastatal's interest is to guarantee market supplies and reasonable prices. Care should be taken that the parastatal, under the impression that only it can serve the small farmer, does not simply eliminate private competition, hold a monopoly position, and fall into public-sector inefficiency.

C. The Success of a Parastatal

Parastatal corporations dominate almost every non-agricultural sector of the Indonesian economy. Their power is based on the philosophy of the government that created them, and their longevity is based on their revenue-generating capacity. It is no accident that the most successful parastatal in the fertilizer market started out as a manufacturer, and that the others--a dozen import, trade and distribution companies--lacked the resource base to tackle the market. In addition to having greater financial independence, the manufacturer has a direct interest in guaranteeing its markets. No trading company will narrow its distribution efforts down to one product, as did PUSRI, especially when that product is bulky, has low margins, and yields little profit.

A variety of reasons for PUSRI's success were discussed in Chapter III, but many of them came down to a discussion of why PUSRI started out and remained "different". The key factor seems to be that it adopted the style of the army, tempered by western management consultants, more than it adopted the style of government. Its early manufacturing success bred a type of empire-building based on market performance that was more characteristic of a private than a public corporation. These two factors--a manufacturing base and early outside management influences -- contributed to PUSRI's success.

In any parastatal, management efficiency needs to be nurtured, and an early independence from direct government control is essential. The private sector can help impart the necessary

technical skills to a parastatal, and it can also impart, by example, a sense of efficiency and management control.

D. Market Competition and the Duplication of Effort

A parastatal organization will naturally be identified, as PUSRI was in Indonesia, as distributor of last resort in the more remote areas. In the more developed market areas, parastatals should face competition. One question in Indonesia is: given PUSRI's prior investment in an integrated distribution system, how much private investment can be made without duplicating existing channels?

The most feasibile private sector expansion strategy is from serving as local Line III - Line IV distributors to becoming more regionally-oriented distributors. This would minimize the investment required by parallel and competing distribution systems. The large scale movement of subsidized fertilizers from the point of origin to the provincial point of entry would still be managed by PUSRI. The national-level movement of higher value-per-weight items, such as pesticides, seeds, and compound fertilizers, would be managed by the distributors themselves. The intra-provincial distribution of all fertilizers, however, would be the responsibility of the regional distributors: PUSRI has no need to compete in the land transport of goods, since it is neither subject to economies of scale nor requires national level coordination.

E. Competition in any Form?

There is little likelihood that PUSRI management of fertilizer transport from Line I to Line II will face private sector competition in the foreseeable future, simply because the PUSRI distribution system has been designed to serve the entire national market. But there are virtually no other market areas that would not benefit from open market competition.

Recent policy initiatives in Indonesia concerning import procedures and the role of village-level cooperatives are moving away from competition. Imports should be opened up to private sector trading companies, and cooperatives should be promoted so that they can serve their memberships efficiently, but not in an overly protected retail market. Recent reductions in the overall fertilizer subsidy, however, favor competition, and from that point of view is a policy move in the right direction. A lower subsidy level encourages private distributors to promote non-subsidized fertilizers in markets in which they were hither to completely non-competitive.

F. Demand Push and the Pull of the Large Users

"Demand push" refers to distributors and marketing agents promoting fertilizer use through such incentives as technical assistance and price discounts. In a competitive market, push efforts supplement the "pull" efforts of the government extension service. As the fertilizer market in Indonesia becomes more

sophisticated, and farmers experiment with fertilizers other than the subsidized types, the dealer "push" element will become more important.

This transition from a government "pull" market to a private sector "push" market takes place naturally as a market matures. Parts of the Indonesian market are entering the stage where this transition may be possible, given appropriate public policies.

One important part of the fertilizer market is made up of the large users, typically large estates. In Indonesia, the estate sector is served by the private sector even though the rest of the market is controlled by the government. The estate sector, then, gives private distributors valuable experience handling and promoting fertilizer that they could not get elsewhere. In a sense, the large users "underwrite" the startup and learning costs of fertilizer distributors -- the same distributors who could later expand into the foodcrop sector.

G. Implementable Private Sector Projects

There is a long-established distrust between the Indonesian government and that large part of the private sector which is dominated by the ethnic-Chinese minority. As a product of this tension, and of the policies that this tension has bred, private distribution companies have remained small, relied on short term profits, and made few long-term investments. This pattern will continue until fundamental tensions are reduced.

It makes little sense to blame either side or to point to

short-sightedness. But the fact remains that current Indonesian policies are moving away from the private sector, and that until the pendulum swings back ere will be little major private investment in the fertilizer market. Until then, the private sector will invest in other sectors which are less government controlled and in which future policies are less uncertain.

Appendix A: Fertilizer Supply and Demand in Indonesia

One of the primary objectives of the Government of Indonesia has consistently been to attain self-sufficiency in food supply. The promotion of fertilizer use over the past fifteen years has been an integral part of the government's agricultural, industrial, and financial planning.

Fertilizer use grew at the very high rate of 16.3% between 1972 and 1981 (see Table A.1). This steady increase can be attributed to a) the government's policies and programs designed to promote food production, b) favorable pricing policies of fertilizer and paddy rice, c) improvements in the distribution system and general relaxation of supply constraints, d) improvement in irrigation schemes, and e) the fast spread of certain high-yielding and pest-resistant rice varieties which require increased fertilizer application for optimum yields. Also, Indonesian farmers are highly skilled, and have responded quickly to the introduction of new technologies and potentials for higher yields.

Agriculture production has increased over the past decade at a rate that exceeds the population growth rate, but the country has not yet become entirely self-sufficient in food staples. The major staple is rice (see Table A.2), and the key government programs that work to promote agricultural production and fertilizer use focus on rice. It is estimated that 85% of all urea consumed is used on rice. In addition to producer-oriented rice policies, which are outlined below, the government also carefully controls rice retail prices. The procurement, import, distribution, and pricing policies for rice are implemented through BULOG, the National Food Logistic Board. BULOG works not only to guarantee adequate supplies at low prices to consumers but to protect farmers from sudden movements in the rice price.

For small farmers, there are three main programs designed to increase agricultural productivity and output, which are:

1. BIMAS, or Mass Guidance, which dates back to 1966, and whose major component is a package of rice technology, subsidized inputs (including fertilizer), and credit. The BIMAS package is generally fixed for all farmers in a given areas, and the terms of credit are 1% interest per month for six months. In the early 1970s, almost all fertilizer in the foodcrop sector was sold under the BIMAS program but the percentage has dropped steadily to under 40% in 1982 (see Table A.3).

Table A.1: Fertilizer Consumption in Indonesia (mt)

	Urea	TSP	Others	Total
1972	485,112	38,886	325,223	849,221
1973	669,002	135,569	150,346	954,917
1974	604,086	193,335	262,665	1,060,086
1975	676,006	234,769	215,898	1,123,673
1976	686,003	210,708	246,924	1,143,635
1977	962,499	182,617	348,862	1,493,978
1978	1,080,284	205,083	452,643	1,738,010
1979	1,239,506	267,675	488,368	1,995,549
1980	1,679,995	439,310	655,575	2,774,880
1981	2,020,891	643,817	608,733	3,273,441
Annual growth rate:*	(15.7%)	(26.1%)	(13.0%)	(16.3%)

Note: *Based on averages of 1972-1973 and 1980-1981.

Source: Directorate General of Foodcrops

Table A.2: Major Crops Area, and Production, 1981

	Harvested Area (1000 hectares)	Production (1000 mt)
A. Foodcrops		
Rice	9,466	22,300
Corn	2,945	4,300
Cassava	1,476	14,500
Sweet Potatoes	274	2,100
Soybeans	842	800
Mung Beans	253	140
Peanuts	533	520
B. Estate Crops		
Coconuts	1,830	1,817
Oil palm	218	716
Sugar cane	189	1,240
Tobacco	191	120
Coffee	509	295
Tea	88	109
Cocoa	30	11
Pepper	59	39
Clove	195	41
Cotton	10	7
Rubber	1,781	1,043

Source: Department of Agriculture

Table A.3: Subsidized Fertilizer Consumption by Government Program, 1976-1982. (Mt of urea, TSP, ZA, and KCL)

Wet/Dry Season	BIMAS Sales	Non-BIMAS Sales	BIMAS sale, as % of Total
1975/76	516,775	29,963	94.5%
1976	265,122	61,167	81.3%
1976/77	477,570	171,907	73.5%
1977	244,594	243,882	50.1%
1977/78	408,947	320,038	56.1%
1978	267,277	245,379	52.1%
1978/79	378,300	378,151	50.0%
1979	471,489	199,001	70.3%
1979/80	739,073	480,175	60.6%
1980	419,981	482,537	46.5%
1980/81	695,930	849,286	45.0%
1981	390,352	710,012	35.5%
1981/82	712,440*	1,063,915*	40.1%
1982	544,605*	849,933*	39.1%

Note: *Estimate, based on government allocations and preliminary sales figures.

Source: Directorate General of Foodcrops, 1982

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The two main reasons for the decline in BIMAS are a) farmers defaulting on their loans, after which they are ineligible for further BIMAS credit, and b) farmer incomes rising, at which point they often prefer buying buying agricultural inputs for cash and in non pre-determined amounts.

2. INMAS, or Mass Intensification, which is the provision of subsidized agricultural inputs to farmers but with no provision for agricultural credit. Since any farmer, large or small, food or estate crop, can buy subsized fertilizers in Indonesia, INMAS sales are essentially equivalent to cash sales.

3. INSUS, or Special Intensification, which is similar to BIMAS program, but with the difference that agricultural credit is provided to groups of farms, not to individuals. INSUS, begun in 1979, has been very successful, and is partly responsible for the dramatic increases in fertilizer use in recent years.

The National Fertilizer Board (NFB) is the coordinating body which is responsible for all policy issues concerning fertilizer planning, production, imports, distribution, and pricing. The NFB is chaired by the Minister of Agriculture, and represented are the Ministries of Finance, Trade, Chemical Industries, and Sea Communications; the Bank of Indonesia; BULOG; the National Planning Board (BAPPENAS); and the head of the BIMAS program. The NFB has played a crucial role during the 1970s in coordinating the planning of fertilizer supplies, requirements, and distribution. The high-level representation on the NFB emphasizes the governmental attitude that fertilizer is a vital national commodity, and one that is essential to the basic economic objectives of the Five Year Plans.

On the production side, Indonesia is a low-cost urea producer, and has invested heavily throughout the 1970s and 1980s to expand domestic production capacities. There are six fully operating factories located in three different natural gas fields, and new plants in two additional areas are scheduled to come on-stream over the next four years. Almost all domestic production is of urea, with one company -- P.T. Petrokimia -- equipped to also produce certain phosphate and compound fertilizers.

Domestic production of urea has risen from 100,000 tons per year during the period 1963-1972, to 2,011,782 tons in 1981 (see Table A.4). Several large plants already under construction in East Kalimantan and in Aceh (North Sumatra) will increase the total domestic urea production capacity to 4,508,000 tons per year by the end of 1987 (see Table A.5).

Table A.4: Domestic Fertilizer Production 1972-1981 (mt)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Urea*	116,727	122,163	207,075	396,952	366,200	819,048	1,449,897	1,828,316	2,001,158	2,011,782
Ammonium Sulphate	29,388	120,374	121,767	118,760	74,916	92,317	129,005	152,449	180,443	195,346
TSP	-	-	-	-	-	-	-	114,365	465,017	559,151
DAP	-	-	-	-	-	-	-	2,863	-	-
NPK	-	-	-	-	-	-	-	8,477	-	-
Total	146,115	242,537	328,842	515,712	441,116	909,590	1,578,902	2,106,470	2,646,618	2,766,279

*Urea produced by P.T PUSRI, P.T. Kujang, and P.T. Petrokimia. All other fertilizer types produced only by P.T. Petro Kimia.

Table A.5: Fertilizer Plants in Indonesia, Operational and Under Construction

Company/Plant	Completion Date	Design Capacity Urea	Design Capacity Ammonium Sulphate	Design Capacity TSP, DAP, NPK
A. In operation				
PUSRI I	1963	99,000		
PUSRI II	1974	379,500		
PUSRI III	1976	569,250		
PUSRI IV	1977	569,250		
Petrokimia I	1972	44,880	148,500	
Petrokimia II	1979			460,000
Pupuk Kujang	1978	569,250		
Subtotal	-	2,231,130	148,500	460,000
B. New Plants Under Construction				
Petro Kimia II Expansion	1983-84			460,000
Kaltim I	1983	569,250		
Kaltim II	1987	569,250		
Aceh I*	1984	569,250		
Aceh II*	1986	569,250		
Subtotal	-	2,277,000	-	-
Total, Indonesia	-	4,508,130	148,500	920,000

*Aceh urea production will be 40% for Indonesia and 60% for export to other ASEAN countries.

Although Indonesia's total projected domestic production capacity for urea, TSP, ammonium sulphate, and DAP will be over 5 million tons per year by 1986-1987, domestic demand will continue to outstrip domestic suppliers. Fertilizer imports, which currently account for about 28% of total consumption (see Table A.6) will probably increase.

Projections of fertilizer demand, supply, and import requirements over the remainder of this decade vary widely: different recent studies show overall projected consumption growth rates ranging from an average of 6% to 12%.(*) A fairly conservative projection of the increase in domestic demand for nitrogen is shown in Table A.7. Given that fertilizer prices were suddenly increased by 30% in December 1982, and that further increases may be likely during the coming period of budgetary austerity, it is unlikely that overall fertilizer demand will increase as rapidly during the next few years as it has during the past few years.

*Three recent studies include: 1) a 1982 study by the P. T. PUSRI Marketing Unit, which took into account not only past trends but current government promotion efforts in both the food and estate crop sectors. This study projected for the years 1982-1990 an average increase of 11% for urea, 12% for TSP/DAP, 8% for ammonium sulphate, and 22% for KCL; 2) a 1981 study by the IFDC for P. T. Kujang estimated an overall increase of 8.6% per year for nitrogen between 1980 and 1990; and 3) a 1982 World Bank Appraisal Report for the National Fertilizer Distribution Project estimated growth rates of 11.1% for urea, 13.3% for TSP/DAP/NPK, and 7.0% for ammonium sulphate for the years 1980-1985. The projection shown in Table A.7 estimates a period of low growth (5%) for nitrogen during the years of price adjustments (1982-1984) and a higher growth rate of 10% from 1985 to 1990.

Table A.6: Fertilizer Imports for Food and Estate Crops, 1976-1981

	1976	1977	1978	1979	1980	1981
A. Subsidized						
1. Urea	-	-	-	-	210,000	150,000
2. Am. Sulphate	-	-	45,000	25,000	82,400	205,000
3. TSP	-	80,000	270,000	30,000	160,000	125,000
4. KCL	-	-	-	122,058	136,529	248,433
Subtotal	-	80,000	315,000	177,058	588,929	728,433
Percent of Total	(0.0)	(31.7)	(57.1)	(51.0)	(74.4)	(80.5)
B. Non-Subsidized						
1. KCL	36,686	69,420	108,998	-	-	
2. Rock Phosphate	18,277	17,977	29,795	64,281	70,876	56,929
3. Sulphate of Mag.	15,114	25,181	32,984	35,382	50,308	52,540
4. Compound NPK's	22,017	24,446	43,284	42,031	50,007	36,112
5. Other	30,717	35,444	21,355	28,713	31,394	31,097
Subtotal	122,811	172,468	236,416	170,407	202,585	176,678
Percent of Total	(100.0)	(68.3)	(42.9)	(49.0)	(25.6)	(19.5)
Total Tons Imported:	122,811	252,468	551,416	347,465	791,514	905,111
Percent of Total Use:	(10.9)	(16.9)	(31.7)	(17.4)	(28.5)	(27.7)

Source: Directorate General of Foodcrops

Table A.7: Projected Nitrogen Fertilizer[1] Supply and Demand, 1980-1990 (000 mt)

	1980	1981	1982	1983[2]	1984[3]	1985	1986[4]	1987	19898	1989	1990
N production	972.0	976.2	976.2	1041.7	1238.1	1306.2	1332.4	1466.0	1636.2	1636.2	1636.2
N demand	858.5	1003.0	1053.2	1105.9	1161.2	1248.2	1373.1	1510.4	1661.5	1827.6	2010.4
Surplus (deficit)	113.5	(26.8)	(77.0)	(64.2)	76.9	58.0	(40.7)	(44.4)	(25.3)	(191.4)	(374.2)
Urea equivalent	2146.7	(58.3)	(167.4)	(139.5)	167.2	126.1	(88.5)	(96.5)	(55.0)	(416.1)	(813.5)

Notes:
1. Includes urea and ammonium sulphate.
2. Assumes Kaltim I operates at 25% capacity, 90% thereafter.
3. Same assumption for Aceh I. Only 40% of the plant's production is for Indonesian Use
4. Same assumption for Aceh II.
5. Same assumption for Kaltim II. Production figures 1987-1990 do not include the planned facilities PUSRI V or Kaltim III.

Appendix B: The Organization of Fertilizer Distribution in Indonesia

A. Introduction

The present day fertilizer distribution system is shown in Figures 3.1 and 3.2 in the main body of this report. The PUSRI Marketing Unit is responsible for the distribution of subsidized fertilizers from Line I (the point of production or import) to Line III (the kabupaten, or county level). The four subsidized fertilizers, which the government has determined are vital to the agricultural development of the country, are urea, ammonium sulphate, triple superphosphate (TSP), and muriate of potash (KCL). These four fertilizers together accounted for 98.8% of all fertilizer used on foodcrops in 1981, and 94.6% of all fertilizer used in Indonesia. The only fertilizers that are sold outside of government channels are specialty fertilizers sold at non-subsidized prices to large farms and estates.

The bulk of this Appendix will describe in detail the subsidized fertilizer distribution system. At the end appears a short description of the non-subsidized market.

B. Line I: Domestic Production and Importation

1. Domestic Production

The five domestic plant locations (see Appendix A) are, by definition, Line I locations in the national distribution system. PUSRI, as sole distributor of domestically produced fertilizers, takes responsibility for these products "free on truck" at each plant site. Because of the national fertilizer subsidies, however, PUSRI Marketing does not take full ownership of the fertilizer. Rather, the producers are paid full price for their production by the government, which then resells it to PUSRI Marketing at a subsidized Line I distribution price (see Appendix C). Due to this procedure, the financial accounting of PUSRI's marketing division is completely separate from its production division.

2. Fertilizer Imports

In 1979, Indonesia changed its procedures for importing subsidized (i.e., government procured) fertilizers. The new procedures entail a high degree of government control. Since the volume of fertilizer imports is rising dramatically, the importance of current import procedures is increasing for both private and public sector importers.

Fertilizer demand estimates and projected import requirements are made each year by the Ministry of Agriculture and submitted to the Ministry of Trade and Cooperatives (MoTC). The MoTC is responsible for all government fertilizer procurements. In preparation for any actual tender, the MoTC gives three-year

licenses to approved importing agencies, which are currently only eight state trading companies.*

The MoTC will then issue the tender documents, usually twice a year, specifying all fertilizers that are required during the forthcoming season. One tender document, therefore, may list several different fertilizer types, and will indicate any number of ports of call to which the product is to be delivered. The magnitude of recent fertilizer imports is such that it is inconceivable that any one company or consortium could deliver on all the requirements: in its bid, each importer is free to choose which tasks it wishes to bid on.

Once the tender documents are published, the eight state trading companies are invited to prepare bids in association with overseas suppliers. Although addressed to the MoTC, they are submitted to the Secretariat to the Ministry of Internal Affairs (SECNEG), a special high-level coordinating body which in 1979 was given responsibility for controlling government procurements of 'vital' goods, such as fertilizer. The responsibility of the SECNEG committee, which includes representatives from the Ministries of State, Finance, Trade and Agriculture, is to negotiate a final import agreement in the government's best interest. In practice, this means that after studying all bids, SECNEG will call the various importers and suppliers in to negotiate, with the government using one bid against another to try to force down all prices. The process is open-ended and indeterminate, often leading to lengthy delays. Much more importantly, however, it allows the government to exercise flexibility in making the final awards, and allows the government to award small pieces of work to most, if not all, of the state trading companies who submitted valid bids, regardless of their initial bid prices.

*The eight companies are Pantja Niaga, Cipta Niaga, Kerta Niaga, Dharma Niaga, Aneka Niaga, Mega Eltra, Pertani, and PUSRI's Agencies Division.

In 1982 by special decree all government procurements valued over 50 million rupiah, or about $750,000, became subject to counterpurchase requirements. This meant that the supplier of the imported goods would sign an agreement to export an equal amount of Indonesian goods, "over and above" its traditional level of exports of those same goods. The government publishes a list of commodities which are eligible to satisfy the counterpurchase agreements; this list includes most Indonesian agricultural exports (such as coffee, rubber, pepper and tobacco) as well as certain industrial or processed goods (sawn timber and plywood, textiles, paper, basketry, and processed foods). The penalty for non-compliance, as stated in the letter of undertaking that the supplier must sign, is a full 50% of the value of the contract.

The effect on the importation procedures of the new counterpurchase requirements are several. First, by introducing significant uncertainties in the tender negotiations, delays are incurred and costs rise. The uncertainties are mainly related to the exact definition of terms in the counterpurchase agreement, the still untested government policy on non-compliance, and assessment of risks involved in all aspects of the counterpurchase trade. Second, whole new parties are brought into the importation proceedings. The main new party to get involved is the agent, or foreign trading company, that will assume the task of exporting and selling the counterpurchase commodities. (The traditional foreign fertilizer suppliers are not interested in marketing rubber or textiles). Also involved are banks and other brokers who help the suppliers assume the increase risk of the counterpurchase agreement. The additional fees paid to these brokers, and the fees associated with the increased risk, also serve to push up the price of fertilizer to the Indonesian government.

Both of the above two complications in fertilizer import procedures -- the negotiated tender process, involving only state-owned trading companies, and the counterpurchase requirements -- are controversial. Given that the magnitude of fertilizer imports is projected to rise, the controversy will gain in economic importance.

C. Line II: Inter-Island Shipping, Bagging and Storage

Line II is the provincial level bagging and/or storage station from which bagged fertilizer is trucked to kabupaten-level Inland Storage Depots. All transportation from Line I via Line II to Line III warehouses is managed by P.T. PUSRI, and P. T. PUSRI is solely responsible. The main government rationale for this is that fertilizer distribution requires centralized planning and coordination, and that any investment in fertilizer distribution infrastructure and facilities must also be centrally coordinated. PUSRI received two World Bank loans for fertilizer distribution projects during the seventies, and gradually gained control over all inter-regional fertilizer transport.

PUSRI investment in Line II facilities over the past six years includes investment in bulk carrier ships, trucks, rail locomotives

and rolling stock, bagging stations, warehouse facilities, and wharf improvements. PUSRI's comprehensive approach to the strategic planning of fertilizer handling in all key fertilizer market areas, combined with government support of its infrastructure investments, made it impossible for any other organization, public or private, to invest in any storage or transport facilities on the provincial level.

There are six bulk storage terminals and bagging plants in Indonesia: three in Java, two in Sumatra, and one in Ujung Pandang, South Sulawesi (see Figure 3.2). Although the bagging stations are mostly engaged in bagging domestically-produced urea, occasionally fertilizers imported in bulk are delivered at one of the Line II bagging stations as well.

The second World Bank-financed National Fertilizer Distribution Project, which began in mid-1982, includes funds to improve all aspects of the PUSRI Line II handling, storage, and transportation facilities. This loan provides for the construction of a new, or seventh, bagging station and the improvement of an existing one; improvement of additional port unloading facilities; procurement of the additional self-unloading bulk urea ships and one refrigerated ammonia carrier; investment in railway line improvements and 200 new railway cars; and additional consultant services for master planning and detailed studies of eleven ports, with all related unloading, bagging, and storage areas. This World Bank project is directly related to the physical movement of fertilizer from existing and new plants now under construction, and forms part of the larger expansion of PUSRI distribution facilities on all levels.

The trend has been for PUSRI to own and operate an increasing share of all required fertilizer distribution facilities. It is important to note, for example, that the World Bank loans provide for PUSRI to own its own railroad cars rather than let the National rail company, PJKA, own and operate them for PUSRI. Critics of PUSRI say that this has led to many idle and empty boxcars that could be used more efficiently -- especially on return trips -- by PJKA. Similarly, PUSRI owns and operates its own expanding fleet of ships, rather than work with PELNI, the national shipping company for domestic shipping. In this case, however, the argument for PUSRI's ownership is clearer: the special technology of the bulk fertilizer carriers and the refrigerated ammonia carriers render them much less suitable for general cargo use. Also, experience has shown self-ownership to be PUSRI's cheaper and more responsive option.

The transport of fertilizer by truck is less dominated by PUSRI-owned equipment than is the case for ship and rail transport. Rather than own its own extensive fleet of trucks, PUSRI contracts private trucking companies, called expeditors, to carry the bagged fertilizer from Line II to Line III warehouses. These contracts are generally for 1-year terms, with rates set by the government. (Although the government sets the ceiling rates, often on Java and Bali the ceiling rates are undercut.) PUSRI entered into about 40-45 transport contracts in 1982, about 25 of which were on Java.

PUSRI also contracts with private companies at the Line II level to provide warehousing facilities. Almost 90% of the 500,000 tons of Line II warehouse space is owned privately and rented to PUSRI. The average size of the private warehouse is about 3,000 tons, as opposed to an average size of PUSRI warehouses of 6,000 tons (see Table B.1).

Table B.1: Line II Storage Facilities, December 1982

	PUSRI-owned		Privately-owned	
	#	Tonnage	#	Tonnage
West Java*	1	16,000	6	43,600
Central Java	-	-	3	14,700
Jogjakarta	-	-	-	-
East Java	-	-	17	73,050
Bali	-	-	6	13,100
Aceh	2	10,000	14	16,200
North Sumatra	1	5,000	27	103,850
West Sumatra	1	7,500	10	33,800
Riau	-	-	-	-
Jambi	-	-	3	3,450
S. Sumatra	-	-	6	14,000
Bengkulu	-	-	-	-
Lampung	-	-	6	22,225
West Kalimantan	1	3,000	4	8,450
Central Kalimantan	-	-	-	-
South Kalimantan	1	3,000	4	12,100
East Kalimantan	-	-	-	-
North Sulawesi	-	-	9	22,000
Central Sulawesi	-	-	1	400
South Sulawesi	1	5,000	16	49,400
SE. Sulawesi	-	-	2	2,300
W. Nusa Tanggara	1	5,000	-	-
E. Nusa Tanggara	-	-	7	4,850
Maluku	-	-	4	3,350
Irian Jaya	-	-	-	-
East Timur	-	-	-	-
Total	9	54,500	145	442,725
Average Size	-	6,056	-	3,053

Note: *Includes DKI Jakarta

Source: P.T. PUSRI, Jan. 1983.

In summary, PUSRI is interested in owning most large facilities such as railroad cars and locomotives, ships, and large warehouses that it needs to handle fertilizer at the Line II level. PUSRI is not willing to rely on other government corporations, such as PJKA and PELNI, or other private shipping companies, to provide Line II transport services. In the case of lower cost, smaller scale services such as trucking and smaller warehousing, PUSRI will contract the private sector. As PUSRI is content with its contracts with Line II "expeditors" -- the expeditors are rarely changed from year to year -- there is little pressure for change in the Line II system.

D. Line III: Local Distribution

On the level of the kabupaten, which is an administrative area roughly comparable in size to a county in the United States, PUSRI sells all its fertilizer to local distributors. The distributors, then, either sell directly to farmers through their own offices and outlets, or distribute to local retailers, cooperatives, and/or shops. PUSRI sells fertilizer to the final user only in the case of the larger estates, most of which are government-owned.

The most interesting aspect of the local distribution system is the configuration of the local distributorships, i.e., the types of companies who are distributors, the market areas in which they operate, and their respective market shares. Although PUSRI is not entirely free to pick its own distributors and sub-distributors, it has managed to preserve a system that fosters some distributor competition, PUSRI has consistently, since it first began selling fertilizer fifteen years ago, encouraged competitive local markets.

At present, PUSRI has distribution contracts with ninety different distributors, 21 of which are state-owned entities and 69 of which are private trading or distribution companies (see Table B.2). The twenty-one state distributors include 17 PUSKUD agencies, the provincial-level office of the village cooperatives (KUD's), and four large state trading companies. Whereas each of the PUSKUD's are located in one province only, the four state trading companies each operate in several provinces. In the private sector, the largest private distributors operate in several provinces, while the smaller ones operate in one province, or even in only one kabupaten.

Table B.2: Fertilizer Distributors by Province - 1982

	# State-owned Distributors	# Private-owned Distributors	Total
West Java	4	14	18
Central Java	4	15	19
Jogjakarta	4	2	6
East Java	4	17	21
Bali	2	2	4
Aceh	2	3	5
North Sumatra	4	13	17
West Sumatra	3	6	9
Riau	-	3	3
Jambi	1	3	4
South Sumatra	2	8	10
Bengkulu	2	-	2
Lampung	3	3	6
West Kalimantan	3	1	4
Central Kalimantan	1	-	1
South Kalimantan	4	1	5
East Kalimantan	1	-	1
N. Sulawesi	3	-	3
Central Sulawesi	4	-	4
South Sulawesi	4	3	7
SE Sulawesi	1	1	2
W. Nusa Tenggara	2	1	3
E. Nusa Tenggara	2	-	2
Maluku	2	-	2
Irian Jaya	-	2	2
East Timur	-	-	-
Total # of Distributorships	62	98	160
Total # of Separate Companies	21[1]	69[2]	90

Notes: 1. Includes 17 PUSKUD's and 4 state trading companies.
2. Includes 15 national-level private trading companies, 38 provincial-level private distributros, and 16 local distributors.
Source: P.T. PUSRI

Table B.2 gives additional information on the location of the state and private distributors across the country. In Java, the most developed and lucrative of all Indonesian fertilizer markets, the number of active private distributors (48) outnumbers the number of state distributors (16) by a factor of three. In the more remote parts of the country, such as in the islands of Java, Bali, and Sumatra, the reverse is true: in the thirteen provinces east of Java and Sumatra, there are 27 state-owned provincial level distributors, while there are only 9 private distributors. Throughout the seventies, the government directed the state trading companies into the less lucrative, more remote markets.

In general, the four state trading companies reach out to a greater number of provinces than do the large private distributors (see Table B.3). On the average, the state trading companies work in eleven provinces each, and each has 69 local kabupaten-level offices in addition to its provincial office. The national-level private distributors work, on the average, in only 3 provinces each, and each has 18 local offices. Of the fifteen private national-level distributors, only six work outside of the prime agricultural areas in Java and Bali.

Table B.4 focuses more directly on the location of the local offices of the various kinds of distributors. The last column, a ratio of the number of local distribution offices to the number of kabupatens in each province, gives an indication of how many distributors are competing in each market area. It can be seen that in the three main provinces of Java, the number of distributor offices per kabupatens is much higher than for the rest of the country. This fact reinforces the statement that PUSRI has been able to foster distributor competition in those areas with a well-developed market. It is also clear that in the less established market areas, the role of the state trading companies is crucial -- whether or not this is because no private company would undertake the distribution task in those areas, or simply because they have been given no incentive to do so.

Table B.3: National-Level Fertilizer Distributors - 1982

Distributor	Sector	# Provinces	# Kabupaten Offices
1. P.T. Pertani	State	20	153
2. P.T. Pantja Niaga	State	13	68
3. P.T. Tjipta Niaga	State	4	29
4. P.T. Kerta Niaga	State	7	26
5. C.V. Tulus Karya	Private	4	52
6. Fa. Taman Sari	Private	7	79
7. P.T. Intrada	Private	3	28
8. P.T. Sahid & Co.	Private	2	6
9. C.V. Tiga Daya	Private	2	25
10. P.T. Inahovtraco	Private	3	30
11. P.T. Tawison Int.	Private	8	17
12. P.T. P.D. Andalas	Private	2	6
13. C.V. Mustakin	Private	3	6
14. C.V. Tokosriwidjaya	Private	2	3
15. C.V. Tani Subur	Private	2	-
16. P.T. Sri Ayu Intan	Private	2	10
17. P.T. Kramat Agung	Private	2	11
18. P.T. Theodore Mahkota	Private	2	-
19. P.T. Anang Djuhri	Private	1	2
Average, state company		11	69
Average, private company		3	18

Source: P.T. PUSRI

Table B.4: Number and Location of Local Officies by Type of Distributor - 1982

	# Kabupaten	# PUSKUD Offices	# State Offices	# Private Offices	Total Offices Per Kabupaten
1. West Java	20	20	38	81	7.0
2. Central Java	29	18	68	111	6.8
3. Jogjakarta	4	1	6	2	2.3
4. East Java	29	20	59	198	9.6
5. Bali	8	8	8	15	3.9
6. Aceh	8	4	4	13	2.6
7. North Sumatra	11	6	12	33	4.6
8. West Sumatra	8	6	12	13	3.9
9. Riau	5	-	-	4	0.8
10. Jambi	5	-	3	10	2.6
11. South Sumatra	8	5	5	15	3.1
12. Bengkulu	3	-	6	-	2.0
13. Lampung	3	1	6	6	4.3
14. West Kalimantan	6	2	4	1	1.2
15. Central Kalimantan	9	-	1	-	0.1
16. South Kalimantan	9	2	8	3	1.4
17. East Kalimantan	4	-	3	-	0.8
18. North Sulawesi	4	4	7	-	2.8
19. Central Sulawesi	4	1	9	-	2.5
20. South Sulawesi	21	23	38	38	4.7
21. Southeast Sulawesi	4	-	1	3	1.0
22. W. Nusa Tenggara	6	6	6	5	2.8
23. E. Nusa Tenggara	12	-	10	-	0.8
24. Maluku	4	-	2	-	0.5
25. Irian Janja	9	-	-	-	0.9
26. East Timur	13	-	-	-	0.0

Source: P.T. PUSRI

PUSRI does not pick and license its own distributors. This is done instead by the BIMAS committee, an inter-ministerial committee under the Ministries of Agricultural and Internal Affairs. The BIMAS committee has traditionally had this role because of the importance of fertilizer supplies to the success of the early BIMAS program.

Locally, the BIMAS committee is under the supervision of the Bupati, the government-appointed administrator of each kabupaten. Although not elected, the Bupati's job is highly political, and gives a political bent to the appointment of fertilizer distributorships.

The BIMAS committee arranges, within each kabupaten, the areas to be served by each distributor. It also arranges which distributors are authorized to handle BIMAS fertilizer and which handle INMAS fertilizer. As a practical matter, the BIMAS committee has a greater control over BIMAS distributors: first, government policies specifically instruct KUDs to distribute BIMAS fertilizer wherever they are organized to do so, and second, farmers pay for BIMAS fertilizer with a special coupon which a distributor must bring back to the government for reimbursement (see Appendix C). Conversely, the BIMAS committee has less control over INMAS sales, since the government is not directly involved in the cash transaction. For INMAS fertilizer, a distributor will simply pay for the fertilizer at the PUSRI Line III warehouse, and the government has no further control.

The BIMAS committee divides each kabupaten into smaller areas, called rayons, and assigns one BIMAS distributor to each rayon. The distributor in each rayon is responsible for fertilizer deliveries to each active KUD in that rayon. If there is an active kabupaten level office (PPK) of the provincial PUSKUD, then that office will automatically become the BIMAS distributor in that rayon. If the PUSKUD office is not active, then a private distributor may be appointed.

The BIMAS committee also appoints INMAS distributors for each rayon, although the correspondence between the rayons and the distributors is less clear. The practice of the BIMAS committees varies depending on the characteristics of each kabupaten. In a well-developed market area, for example, the BIMAS committee would probably pay no attention to the rayon divisions. The several distributors, which may be both private and public sector, would compete wherever they wanted.

As the Indonesian fertilizer market develops, the regulatory function of the BIMAS committee will continue to decline. This is for two main reasons. First, the need for market regulation will become less in more and more kabupatens. The need to attempt to guarantee supplies in the market will disappear as increasing levels of demand ensures supplies. Second, the BIMAS program is shrinking in importance relative to INMAS. It is widely recognized that market forces, i.e., fertilizer demand and distributor margins, and not the BIMAS committee, are what determine the distributors interest in fertilizer cash sales.

A fertilizer distributor, once approved by the BIMAS committee, then enters into a distribution contract with PUSRI. PUSRI, using the Ministry of Agriculture projections of total fertilizer demand, and the record of each distributor's past performance in each area, will set each distributor's yearly allocation. This allocation is not a contract requirement, but merely a contract guideline which can be used to judge a distributor's performance. If a distributor exceeds his allocation, he will not have a problem buying more supplies from PUSRI, providing PUSRI has additional supplies in stock.* If a distributor significantly undersells his quota, and PUSRI feels the low record is simply due to poor performance, that distributor could theoretically risk having his `license' cancelled. In reality, however, this never happens. PUSRI's normal inclination in a case like this would be to allow more distributors to work in the area, and increase the local competition.

Concerning the physical handling of fertilizer, PUSRI operates a network of 346 Inland Storage Depots (ISD's) at the Line III level, from which it sells to distributors. All invoicing is done at the ISD's. As is the case for PUSRI's Line II storage facilities, PUSRI actually owns only a small number of the warehouses: as shown in Table B.5, 288 of the 346 ISD's are rented to PUSRI. The average size of these rented warehouses, however, is only 1460 tons compared to PUSRI's own warehouses, which average over 5,000 tons.

PUSRI operates over 700,000 tons of Line III storage capacity, which is roughly equal to 25% of one year's throughput of subsidized fertilizers. PUSRI maintains such a large storage capacity not by choice, but due to government regulations that it feels are excessive. The government stocking requirements are shown in Table B.6.

*PUSRI is required by law to have from two to four months of stocks at Line III, depending on the region. See below.

Table B.5: Line III Storage Facilities, December 2982

	(Inland Storage Depots)			
	PURSI-owned		Privately-owned	
	#	Tonnage	#	Tonnage
West Java	13	69,250	30	65,500
Central Java	16	85,550	31	70,300
Jogjakarta	1	7,500	5	9,150
East Java	15	87,350	45	117,850
Bali	-	-	10	3,750
Aceh	-	-	10	2,000
North Sumatra	4	16,000	18	28,775
West Sumatra	2	3,800	20	15,700
Riau	1	3,000	2	1,500
Jambi	1	3,000	2	2,400
South Sumatra	-	-	9	13,300
Bengkulu	-	-	9	8,800
Lampung	2	13,000	4	10,350
West Kalimantan	1	3,000	3	3,500
Central Kalimantan	-	-	3	2,100
South Kalimantan	-	-	9	5,000
East Kalimantan	-	-	3	2,050
North Sulawesi	-	-	1	250
Central Sulawesi	-	-	7	4,100
South Sulawesi	6	6,000	31	17,950
Southeast Sulawesi	-	-	-	-
West Nusa Tenggara	-	-	12	10,050
East Nusa Tenggara	-	-	19	8,375
Maluku	-	-	-	-
Irian Jaya	-	-	5	2,100
East Timur	-	-	-	-
Total	58	297,450	288	404,900
Average Size	-	5,128	-	1,406

Source: P.T. PUSRI

Table B.6: Government Fertilizer Stocking Requirements

Region	At Line III	At Line IV
A. Java, Bali	2 months	1 week
B. North Sumatra West Sumatra, Lampung, Lombok	2 months	2 weeks
C. West Nusa Tenggara (ex. Lombok), South Sumatra, Aceh, North Sulawesi, South Sulawesi	3 months	1 month
D. Jambi, Riau, Bengkulu, Cental Sulawesi, Southeast Sulawesi, Kalimantan, East Nusa Tenggare, Maluku, Irian Jaya	4 months	2 months

Source: Ministry of Internal Affairs Decree, March 26, 1980.

These high stocking requirements are particularly interesting in what they say about government attitudes to the problem of distributing fertilizers, the government's ability to plan, and the ability of local distributors to share the burden of local stocks. First, it emphasizes the governments's classification of fertilizer as a strategic commodity, one for which it is willing to absorb high costs in order to guarantee supplies. Second, the government wants PUSRI to be responsible for maintaining adequate stocks. This is probably because PUSRI, which is fully reimbursed by the government, is able to cover the high storage costs while many local distributors are not. Storage quality control may also be easier at PUSRI than it would be at local distributors. Finally, the government realizes that it has no real way to impose stocking requirements on local distributors. It is tacitly assumed that no private distributor would be able to compensate the government for the real cost of fertilizer shortages, if such shortages are found to be due to a local distributor's lack of stocks.

One of the real but incalculable costs of the PUSRI Line III stocking requirements derives from fact that all fertilizer deliveries from Line II must necessarily be unloaded and stored at Line III. With the current system organization, there is no possibility for a more efficient delivery of fertilizer truckloads directly from Line II to either a distributor's warehouse or to a Line IV retailer. It is this limitation that underscores the fact that all PUSRI distributors are simply local distributors. Although it was noted above how many distributors are national companies, etc., even more important to note that a distributor's regional offices have nothing to do with each other when it comes to fertilizer handling and sales. Since PUSRI exercises complete control over fertilizer handling down to the local level, no distributor with offices in adjoining kabupatens and provinces is encouraged to find its own most efficient way of transporting fertilizer to those offices.

E. Line IV: Retailing

At present, PUSRI has contracts with ninety Line III distributors who are responsible for all local wholesaling and deliveries to local retailers in the outlying areas of each kabupaten. PUSRI has no contact, in most cases, with the retailers.* The ninety distributors serve some 11,390 retailers, of which about 4,645 are village cooperatives (KUDs) and about 6,745 are private shops (see Table B.7).

Table B.7: Number of Fertilizer Retailers, by Region, 1982

Province	KUD	Non-KUD
West Java	925	782
Central Java	976	2,040
Jogjakarta	61	50
East Java	716	1,928
Bali	68	108
Aceh	114	209
North Sumatra	316	310
West Sumatra	238	347
Riau	54	37
Jambi	98	129
South Sumatra	129	98
Bengkulu	63	7
Lampung	117	120
West Kalimantan	137	6
Central Kalimantan	49	n.a.
South Kalimantan	117	n.a.
East Kalimantan	27	32
North Sulawesi	90	43
Central Sulawesi	90	14
South Sulawesi	372	144
Southeast Sulawesi	88	1
West Nusa Tenggara	100	224
East Nusa Tenggara	42	99
Maluku	24	7
Irian Jaya	34	n.a.
East Timur	-	-
Total	4,645	6,745

Source: P. T. PUSRI

The government designates the retail outlets for BIMAS sales, which are normally KUDs. Given the government's desire to promote the role of the KUDs, and given the government's ability to control the BIMAS market, it is logical that the KUDs be given the BIMAS market.

In the INMAS, or cash market, there are virtually no rules as to how a distributor picks and works with his retailers. Most private retailers are simply small, family-run shops that sell most kinds of basic goods. Fertilizer is only one part of a stock that ranges from household supplies to clothes to agricultural tools. Some retailers may handle a variety of fertilizer types, and be supplied by several fertilizer distributors: others may handle only one type, and only occasionally.

There is a long and ongoing controversy in Indonesia concerning the relative effectiveness of KUD vs. private retailers. The President of Indonesia has continually supported the KUDs, and would make of them a model of rural marketing and distribution. Critics of this viewpoint argue that KUDs, at best, lack the incentives of a private retailer to compete in the marketplace, and usually lack the management and organizational skills to operate efficiently. The KUDs have not performed well in Indonesia, and would have very limited operations were they not given sole rights to the BIMAS market.

Basic data concerning fertilizer sales are given in Tables B.8 and B.9. The first table shows the sales of urea, by province, in the most recent dry season (April-September, 1982). It is seen that in the main market area, Region A, the KUDs account for about 20% of all sales; each KUD handled an average of 42 tons, or half the average volume of each shop. In the three more remote regions, the statistics show that the KUDs handled more than half of the total market. For the nation as a whole, the KUDs handled less than one third (27%) and the private retailer sold more than two thirds (73%)

*The main exception is when a distributor is also a retailer, which only means that once a distributor buys fertilizer from PUSRI he can do whatever he wants with it. Another special case is when a remote retailer, usually a KUD, arranges its own transportation from the PUSRI Line III warehouse to its Line IV kiosk. Here, the KUD is clearly acting as its own distributor.

Table B.8: Urea Sales and Market Share by Type of Retailer, for 1982 Dry Season (mt)

Region	KUD Total Sales	KUD Average Sales Per KUD	Non-KUD Total Sales	Non-KUD Average Sales Per Shop
A. Java	87,911		382,921	
Bali	11,481		9,031	
Subtotal	99,392	42.4	391,952	79.9
Percent of Regional Total	(20.2%)	-	(79.8%)	-
B. North Sumatra	20,644		19,247	
West Sumatra	2,650		2,915	
Lampung	1,437		5,560	
West Nusa Tenggara	3,610		8,097	
Subtotal	28,341	36.8	35,819	35.8
Percent of Regional Total	(44.2%)	-	(55.8%)	-
C. Aceh	120		3,308	
South Sulawesi	1,139		2,038	
South Sulawesi	23,697		4,516	
North Sulawesi	1,321		1,708	
Subtotal	26,277	37.3	11,570	23.4
Percent of Regional Total	(69.4%)		(30.6%)	-
D. Jambi	35		194	
Riau	36		25	
Bengkulu	235		34	
Central Sulawesi	380		209	
SE Sulawesi	637		n.a.	
Kalimantan	2,143		627	
East Nusa Tenggara	5,677		4,684	
Maluku	90		197	
Irian Jaya	n.a.		n.a.	
Subtotal	9,233	11.2	5,970	16.2
Percent of Regional Total	(60.7%)	-	(39.3%)	-
Total	165,377	35.6	445,411	66.0

Note: N.A. = not available

Source: P. T. PUSRI

Table B.9: Fertilizer Distribution to Line IV Dealers, by Type 1980-1982

	KUD	Non-KUD	KUD Sales as % of Total
1980/81 Wet Season			
Urea	388,072	699,908	
TSP	128,107	320,685	
ZA	-	-	
KCL	-	-	
Subtotal	516,179	1,020,593	33.6%
1981 Dry Season			
Urea	227,594	508,830	
TSP	67,965	178,705	
ZA	20,690	31,810	
KCL	100	1,150	
Subtotal	316,349	720,495	30.5%
1981/82 Wet Season			
Urea	347,736	647,926	
TSP	118,537	195,472	
ZA	26,136	54,696	
KCL	9,878	8,731	
Subtotal	502,287	906,825	35.6%
1982 Dry Season *			
Urea	110,176	322,280	
TSP	42,099	83,447	
ZA	23,694	37,419	
KCL	4,496	6,478	
Subtotal	180,465	449,624	28.6%

Note: *Through July 31, not September 31, the normal end of the agricultural year.

Source: P. T. PUSRI

of all subsidized fertilizer. The average private retailer handled nearly twice the amount of fertilizer as the average KUD (66 as opposed to 36 tons) during the 1982 dry season.*

The second table, Table B.9 shows that the KUD market share has been declining slightly over the past few years. This is directly attributable to increased competition of the private retailers and to the slow decline in the BIMAS program. The reasons as to why private retailers can undercut the KUDs in most markets are discussed in the next chapter on pricing.

Table B.6 above showed government regulations concerning fertilizer storage facilities on Line IV. It was stated that although the government has set minimum storage requirements, that it really has no way of imposing these requirements on the retailers, or of monitoring retailer stocks. Most retailers have no formal fertilizer storage space at all -- fertilizer is simply stacked alongside other merchandise in any available areas. In addition, given the season demand for fertilizer in most parts of Indonesia, some retailers do not store any fertilizer in certain months, much less the government minimum.

In its effort to guarantee retail stocks, the government has turned to that part of the retail sector that it can control and assist: the KUDs. Just as the government insists that PUSRI maintain large stocks on Line III -- and is willing to pay the high costs--the government is actively building fertilizer warehouse facilities for the KUDs on Line IV. The government is committed to building, over the next few years, a small fertilizer warehouse for every KUD,** along with a general warehouse for foodcrops, and a rice drying floor.

*Furthermore, it is often argued that official statistics exagerate the role of the KUDs. Since many KUDs are ill-equiped to actually sell fertilizer -- the Ministry of Trade and Cooperatives estimate that about 2,849 of the 4,635 existing KUDs actually sold fertilizer in 1982 -- they may simply sell their fertilizer quotas to private retailers. The private retailer can buy for a small price (1 or 2 rupiah per kilogram) the KUD vouchers, and take that himself to the PUSRI Line III warehouse. The private retailer then sells the fertilizer and the KUD gets official credit.

** Most can hold approximately 30 tons of bagged fertilizer.

F. Fertilizer Marketing

The promotion of fertilizer use is almost entirely the activity of the government: neither PUSRI nor the local distributors engage in many promotional or marketing activities. Government agricultural extension workers, demonstration plots, and farmers' organizations are all organized through the Department of Agriculture. Donor agency projects that promote fertilizer use -such as the FAO Secondary Crop Intensification Project -- do so through traditional extension, and non-commercial, means. PUSRI supports government extension work through fertilizer donations, but has never had a farm-level program of its own: it never had much incentive to promote fertilizer use simply because providing adequate supplies, and not stimulating demand, has been its highest priority.

Through 1979, small profit margins and the consignment system gave little incentive for local distributors and retailers to actively market fertilizer. New government price margins favor the retailer over the distributor: it is the government's philosophy that the local dealer is more involved with sales and with the farmer than are the distributors. (Retail handling fees are three times the distributor handling fees, not including transportation costs.) Retailers lack information and knowledge, however, to take an active marketing role.* It is more likely that retail 'marketing' as it is practiced now is essentially retail price cutting, and has a greater effect on which retailers get the sales than it does on the overall level of demand.

An effective marketing system does more than sell; it also is an information-gathering system on what farmers are using, want to use, and will buy in the future. As currently configured in Indonesia, the PUSRI distribution system performs little of this function, and fertilizer demand information is not channelled from the retailer/distributors back up to PUSRI. The PUSRI Marketing Unit is

*This problem is the focus of a dealer training project under development by ESCAP/FADINAP. The project would give training to government workers who would then give short courses on fertilizer handling, storage and use to cooperatives and private retailers. The project goal is to improve the dissemination of technical information to farmers through the commercial as well as extension channels.

more concerned about the physical aspects of fertilizer distribution than information-gathering.

PUSRI and the government do not currently have timely information about fertilizer availability, prices, and application rates, especially in the more remote areas. Merely gathering this information will be the first step towards establishing a marketing potential.

G. The Distribution of Non-Subsidized Fertilizers

Non-subdsidized fertilizers accounted for approximately 5%, by volume, of all fertilizers used in 1981. The market share of non-subsidized fertilizers has been steadily dropping, because both the number of subsidized fertilizers and the number of eligible subsidized buyers have increased. A breakdown of non-subsidized fertilizer usage is given in Table B.10.

The non-subsidized market supplies, almost exclusively, the estate sector. Other than an import license requirement, the distribution system is unregulated, and both state and private import/distributors compete. In the larger plantation areas such as North Sumatra, there are large and well-known fertilizer distributors which compete for the business of the large estates such as Goodyear and Uniroyal. And at least one private importer/distributor is constructing a fertilizer blending plant in Sumatra for the purpose of focusing on the non-subsidized compound fertilizer market.

In general, the distributors of non-subsidized fertilizers are distinct from the PUSRI-licensed distributors of subsidized urea, TSP, ZA, KCL. Since PUSRI has a policy of selling directly to the large estates, PUSRI's local distributors do not generally deal with those buyers who form the main market for the non-subsidized fertilizers.

Although the market is unregulated and competitive, non-subsidized fertilizers are probably not sold as cheaply as possible. The reasons given for this are two:

1. Government regulations require local import licenses. The high value associated with an import license can lead to abuses in the granting of approvals and the setting of quotas.

Table B.10: Non-Subsidized Fertilizer Usage, 1976-1981

Type	1976	1977	1978	1979	1980	1981
1. KCL*	24,285	69,420	108,998	-	-	-
2. Compound NP's	5,785	48,425	64,728	7,250	1,000	7,000
3. Compound NPK's	43,485	24,446	43,284	47,281	77,482	37,719
4. Rock Phosphate	15,333	16,977	26,795	54,281	47,876	38,838
5. Sulphate of Magnesia	15,024	25,181	32,984	35,382	50,318	52,540
6. Other	20,818	24,344	20,854	26,213	25,919	42,240
Total Tons	124,730	208,793	297,643	170,407	202,585	178,337

Note: *KCL subsidies began in 1979
Source: Directorate General of Foodcrops.

2. Most estates in Indonesia are owned by the government, and these government estates exercise a monopsony power in the market for non-subsidized fertilizers. The prices paid by the government customers -- customers, that is, who have no incentive to push for the lowest possible prices, and who may even add in extra margins -- become accepted market prices. The smaller buyers are price-takers.

Since the market for non-subsidized fertilizers is very close to being unregulated, it will probably become more competitive as the market grows. There are a large number of trading companies who can deal in small amounts as farmers across the country experiment with new types of fertilizers, and as small estate crop holdings continue to increase in number. The cost of entry for these trading companies is low. For the larger distributors, stories of collusion and corruption are not unique to the fertilizer sector, and it cannot be expected that the evolution of business practices in the fertilizer sector will differ from that in the country as a whole.

Appendix C: Fertilizer Pricing, Credit, and Sales

A. Fertilizer Prices and Subsidies

The Indonesian government controls both the prices of fertilizer and rice, and recognizes the important policy relationship between prices and national food production targets. Prices for urea, TSP, and DAP were fixed between 1976 and late 1982, resulting in steadily increasing subsidies for all three types of fertilizer. Government decisions to absorb the increasing costs of production, transport, and storage meant that fertilizer became increasingly profitable for the farmer to use. (Table C.1 shows the relative prices of fertilizers and rice over recent years.) There is no question that government pricing policies had a dramatic effect on increasing fertilizer use over the past several years.

The fertilizer subsidies are absorbed completely by the government and do not affect any other agencies involved in fertilizer distribution. The subsidy is the difference between the higher price the Ministry of Finance pays to the supplier of the fertilizer and the lower price it receives when it resells it to the PUSRI Marketing Unit at Line I or II.

A domestic producer receives a non-subsidized, or 'fair' price for its production. A fair price in this case is obviously not a market price, but a regulated price set by the government that allows each producer to earn a profit. Urea prices paid to different producers are not identical, however, because different producers face different costs, especially in the long-term agreements with Pertamina concerning the delivery price of natural gas feedstock. In the case of imported fertilizer, the subsidy is the difference between the price paid to the importer and the Line II distribution price. Since the import price of fertilizers vary by type, origin, and place of delivery, the subsidy levels also vary with the circumstances of each shipment.

Between 1976 and November 1982, the price of all subsidized fertilizers was fixed at 70 Rp/kg, or about US $105/ton. In December, 1982 the price was raised by 30% to 90 Rp/kg, or $132/ton. Although high, this increase does not nearly cover the effect of inflation over the same period.

As shown in Tables C.2 and C.3, the effective subsidy for urea varied from $58 to $88 per ton in 1982,or 35% to 45% of the production and distribution cost. The subsidies for TSP were a much higher $291 to $348 in 1981, or 72% to 76% of the total cost. The subsidies for ammonium sulphate and KCL ranged from $170 to $220 per ton in 1981, or 60-66% of the total cost of each fertilizer. Between 1981 and 1982, as the import prices of TSP, ZA, and KCL fertilizers and the distribution cost of all fertilizers rose, the subsidy rate rose even higher.

Table C.1: Relative Rice and Fertilizer Prices, 1973-1981

Year	Price Ratio (Paddy Rice/Urea)
1973	1:1
1974	1:1
1975	0.97:1
1976	0.86:1
1977	1:1
1978	1.07:1
1979	1.21:1
1980	1.50:1
1981	1.71:1

Source: Directorate General of Foodcrops

Table C.2: Fertilizer Subsidies for Urea and TSP (US$/ton)

	Urea[1]		TSP[2]	
	Region A	Region D	Region A	Region D
1. Ex-factory price[3]	128.39	128.39	357.25	357.256
2. Distributor cost[3]	36.08	65.95	45.76	102.74
3. "Real" retail price	164.47	194.34	403.01	459.99
4. Price to farmers (70 Rp/kp)	106.06	106.68	112.00	112.00
5. Subsidy (3-4)	58.41	88.28	291.01	347.99
6. Percentage (5 / 3)	35.5%	45.4%	72.2%	75.7%

Note: 1. 1982 prices, US$ = Rp660. Urea produced at P. T. PUSRI.
2. 1981 prices, US$ = Rp625. TSP produced at P. T. Petro Kimia.
3. Prices set by the government.

Since the retail price of the subsidized fertilizers did not change between 1976 and 1982, the gross amount of the fertilizer subsidy soared: between Fiscal years 1977/78 and 198/81 it rose from 31.8 to 283.7 billion rupiahs, an annual growth rate of 107%. In US dollars, $500 million was budgeted in 1981/82, which increased by $215 million to $715 million in 1982/83. The recent price rise will reduce the gross subsidy cost somewhat, but budgetary pressures for further reductions will continue.

The figures quoted above and in Tables C.2 and C.3 show, however, only the direct subsidy. A comparison of the economic cost of domestic urea production with its "official" cost, and a comparison of the economic cost of domestic TSP production with world prices, show that other sizeable subsidies are indirectly built into the fertilizer sector (see Table C.4). In the case of urea, Indonesia is one of the world's lowest cost producers; the economic cost of domestic urea is only two thirds to three quarters of the world price. By selling urea at less than half the world price to farmers, Indonesia is effectively transferring its oil wealth to farmers, and, indirectly, to all rice consumers.

Table C.3: Fertilizer Subsidies for Ammonium Sulphate and KCL (US $/ton)

	Ammonium Sulphate[1]		KCL[1]	
	Region A	Region B	Region A	Region D
1. C&F at port	269.00	262.50	217.00	233.00
2. Distribution cost	63.65	71.31	63.65	94.27
3. "Real" retail price	332.65	333.81	280.65	327.27
4. Price to farmers (70 Rp/kg)	112.00	112.00	112.00	112.00
5. Subsidy (3-4)	220.65	221.81	168.65	215.27
6. Percentage (5 / 3)	66.3%	66.4%	60.1%	65.8%

Note: 1. 1981 Import data, US $ = Rp625. Region A deliveries at Tanjung Priok, Jakarta; Region B deliveries at Belawan/Medan, North Sumatra; and Region D deliveries at Ujung Pandang, South Sulawesi.

Source: Ministry of Finance.

Table C.4: Indonesian and World Fertilizer Prices Compared, 1981
(US $/ton)

	Urea	TSP
Domestic Production [1]		
1. Ex-factory price	$128	$357
2. Economic cost [2]	169-211	357
3. Retail price to farmers [1]	112	112
World Exports		
4. F.O.B. Europe/Gulf	270	210
5. EST. C.I.F. Indonesia	300	240
Price Comparison		
6. "Official" price (1) as a percent of world price (3)	47%	170%
7. Economic cost (2) as a percent of world price (3)	63-78%	170%
8. Retail price (3) as a percent of world price (4)	41%	53%
9. Economic cost (2) as a percent of world price (4)	56-70%	149%

Notes: 1. Fixed prices set by the government.

2. Low and high assumptions concerning the opportunity cost of natural gas feedstocks.

Source: IBRD, National Fertilizer Distribution Project, Annex 5, 1982.

On the other hand, Indonesia is a very high cost TSP producer: domestic production averages 70% were expensive than the world price, and 49% more expensive than the Indonesian import price. The fact, then, that Indonesia now pays a 75% subsidy on domestically-produced TSP indicates a higher subsidy than economically necessary.

Although many analysts predict that these high fertilizer subsidies may have to be cut again in the relatively near future, the level of the subsidies does not directly affect any of the findings of this study. That is because the subsidies do not affect the economics or incentives of any of the companies or agencies involved in fertilizer importation, transportation, or distribution. Only if they were to be eliminated altogether, thus bringing domestic fertilizer prices in line with world prices, would the pressures for wide and fundamental changes in the fertilizer distribution system become real.

B. Distribution Margins and Fertilizer Supplies

The price of each of the subsidized fertilizers and the allowable distribution margins of each fertilizer are set by the Ministry of Finance. These prices are uniform retail prices, applicable to all small farmers and estates throughout the country.

In order to adjust allowable margins to the variable distribution cost faced in different regions of the country, the government has divided the country into four main regions* and issued specific margins for each region. Furthermore, specific margins are set depending on the type and source of the fertilizer, and on whether it shipped from the plant in bulk or in bags. Three current sets of prices are shown in Tables C.5 through C.7: they are, respectively, the costs of distributing bagged urea produced at the P.T. Kujang plant in nearby West Java; the costs of distributing bagged urea from the P. T. PUSRI plant to all regions of the country; and the cost of distributing all four kinds of imported bulk fertilizers to all regions of the country. Table C.5 also shows a percentage breakdown of the distribution costs, and the equivalent costs in US dollars.

*Shown in Table B.6.

Table C.5: Fertilizer Price of Urea Produced at P.T. Kujang, West Java, and Distributed in Bags -- effective December 1982

Price	Rp/ton	US$/ton((2)	% of Retail
Delivery price f.o.t.(1) at plant gate	62,678.57	92.17	69.6%
Distribution cost Line II-III, inc. transport, loss, handling fees, bank interest, etc.	15,741.43	23.15	17.55
Delivery price f.o.t.(1) Line III	78,420	115.32	87.1%
Distribution cost Line III-IV, inc. handling fees, loss, warehousing, interest, etc.	5,580	8.21	6.2%
Delivery price Line IV	84,000	123.53	93.3%
Retailer handling fee, inc. reconditioning and loss	6,000	8.82	6.7%
Retail price to farmers	90,000	132.35	100.0%

Note: 1. free on truck
2. US $1 = Rp680 in December, 1982

Source: Ministry of Finance

Table C.6: Fertilizer Prices of Urea Produced at P. T. PUSRI, Palembang, and shipped in bags - effective December, 1982 (Rupiah/Metric ton)

	Region A	Region B	Region C	Region D
Delivery price, f.o.t.* at Line II warehouse	63,362.08	59,349.22	47,864.58	39,690.64
Distribution cost Line II-III, inc. transport, loss, handing fees, and bank interest, inc.	15,057.92	17,070.78	28,055.42	35,229.36
Delivery price f.o.t. Line III	78,420	76,420	75,920	74,920
Distributioncost Line III-IV, inc. handling fees, los, warehousing, interest, etc.	5,580	7,580	8,080	9,080
Delivery price at Line IV	84,000	84,000	84,000	84,000
Retail handling fee, inc. rconditioning and loss	6,000	6,000	6,000	6,000
Retail price to farmers	90,000	90,000	90,000	90,000

Note: *free on truck

Source: Ministry of Finance

Table C.7: Fertilizer Prices of Imported Urea/TSP/ZA/KCL (In Bulk) effective December, 1982 (Rp/mt)

	Region A	Region B	Region C	Region D
Bulk delivery price at port	44,413.49	41,082.08	33,351.35	23,416.31
Bagging, handling fees, and transport to warehouse	18,804.34	18,686.41	18,412.81	18,061.04
Delivery price f.o.t.* Line II	63,217.83	59,768.49	51,764.16	41,477.35
Distribution cost Line II-III, inc. transport, loss, handling fees, bank interest, etc.	15,202.17	16,651.51	24,155.84	33,442.65
Delivery price f.o.t. Line III	78,420	76,420	75,920	74,920
Distribution cost Line III-IV, inc. handling loss, interest, and warehouseing, etc.	5,580	7,580	8,080	9,080
Delivery price Line IV	84,000	84,000	84,000	84,000
Retail handling fee, inc. loss and reconditioning	6,000	6,000	6,000	6,000
Retail price to farmers	90,000	90,000	90,000	90,000

Note: *free on truck

Source: Ministry of Finance

Even within each region, however, the fixed distribution margins represent average costs, at best, and obviously cannot be tailored to the actual costs found in any given smaller area. The effect of this average pricing procedure is very different on each of the three distribution levels, Lines II, III and IV.

Between Lines II and III, the use of fixed margins is valid, since all of these distribution costs are born by PUSRI. The fixed margins can be considered to be correctly calculated if the high cost areas are offset by low cost areas, and PUSRI's overall costs are covered.

Between Lines III and IV, no local distributor is willing to balance the low and high cost areas. As a result, three things have happened. First, many high cost areas are under-served, or not served at all. Second, the government has instructed the state-owned distribution companies to serve high cost areas, even if it means operating at a loss. Third, the government has introduced a Special Transportation Subsidy designed to help all distributors working in verifiably high-cost areas. (The workings of this special subsidy are described below.) By introducing this special subsidy, the government has introduced an ad hoc and inefficient method of dealing with the rigidities of a price-regulated system.

Finally, on Line IV, all retailers are allowed a fixed 6 Rp/kg margin, which is to cover losses and rebagging expenses, as well as overhead and profit. The government has recognized that this margin is insufficient to encourage most retailers to invest in facilities (warehouses and/or trucks) and marketing efforts to expand fertilizer sales, but it has also argued that most small retailers wouldn't do so anyway, even with higher allowable margins. This is due to low costs of entry, and often-observed competition between retailers that reduces their margins below the ceiling levels. In general, it can be said that in the well-developed market areas, the fixed margins for retailers do not limit competition; and that in the less developed market areas, the fixed margins for distributors, much more than for retailers, affect the availability of suppliers to farmers.

Data on the actual prices charged for subsidized fertilizers, by province, is shown in Table C.8. In 1981, half of the provinces show urea prices at or below the subsidized price of 70 Rp/kg, and half show prices higher than the ceiling price. The same pattern is true for TSP. Predictably, the highest prices are recorded in the more remote provinces such as Jambi, Kalimantan, and Sulawesi.* Average prices for West and East Java are slightly less than the ceiling prices.

*Actual prices are reportedly higher than shown in offical data.

Table C.8: Fertilizer Retail Prices,* by Region, 1980-1981
(Rp/kg)

	Urea		TSP	
	1980	1981	1980	1981
West Java	69	69	70	70
Central Java	70	70	70	70
Yogyakarta	73	73	72	74
East Java	70	69	71	69
Bali	73	74	72	71
Aceh	69	62	69	62
North Sumatra	71	75	71	75
West Sumatra	72	74	71	76
Riau	74	70	74	70
Jambi	85	89	85	86
South Sumatra	78	96	78	96
Lampung	74	75	70	70
Bengkulu	74	70	75	75
West Kalimantan	102	88	73	84
Central Kalimantan	-	250	70	-
South Kalimantan	-	76	-	76
East Kalimantan	70	70	-	-
North Sulawesi	70	70	70	70
Central Sulawesi	70	70	70	70
South Sulawesi	72	78	72	78
Southeast Sulawesi	70	70	70	70
West Nusa Tenggara	78	-	-	-
East Nusa Tenggara	-	-	-	-
Maluku	76	70	76	70

Note: *Ceiling price in effect was 70 Rp/kg.

Source: Directorate General Foodcrops

Low prices are found in areas with good transport facilities, in areas near to ports, and in areas near to the PUSRI Line III warehouses. Significantly, the benefits of lower prices are only passed on to the farmers in the case of INMAS, or cash, sales. For BIMAS sales, the prices of fertilizer is fixed. The farmer pays for the fertilizer with a coupon, and the distributor, regardless of his location, is reimbursed at the set price. This fact has affected the market in two ways. First, in the more devevoped areas such as Java, INMAS sales are much more significant than BIMAS sales, and in the more remote areas the reverse is true.* Second, in the low cost areas, the distribution of BIMAS fertilizer is highly profitable, because typical transport costs are lower than the fixed margins. This fact, is reflected in the governments's policy to give to the KUD's the right to sell BIMAS fertilizer.

In the smaller, more remote markets, the government has no established method of either monitoring fertilizer retail prices or of enforcing the ceiling price. As shown in Table C.8, prices in those areas showing high prices in 1980 were raised even higher in 1981 more often than they were decreased through government action.

Government control of retail prices is exercised through the BIMAS committee and through PUSRI. When high prices are reported, the government and PUSRI respond in the following ways:

a. PUSRI can increase total supplies in the area by pushing increased supplies on distributors. Although this is PUSRI's most common reaction to high fertilizer prices, it is only applicable to cases where prices are bid up by supply shortages, not by high transport costs.

b. both the BIMAS committee and PUSRI can give warnings to a distributor who they feel is charging excessive amounts, although this has been done rarely;

c. the BIMAS committee can revoke the license of a local distributor, and put him on 'inactive status'. This has happened only once in recent years, in 1979;

*This is not, however, the only reason why the BIMAS program is less important in the more developed areas. BIMAS is an aging and widely criticized program which will probably be altered in the near future. The Ministry of Finance is undertaking a comprehensive study of the BIMAS program, which is scheduled for release in a few months.

d. PUSRI and the BIMAS committee can move to add to the number of distributors working in the area, hoping to increase competition and lower prices:

e. PUSRI can pressure the Ministry of Finance to try and improve the working of the Special Transport Subsidy to distributors, although the Ministry is more interested, at the moment, in phasing out all subsidies.

In spite of these five strategies, the government does not have effective means to enforce fixed prices in remote areas. This emphasizes, once again, why in the Indonesian system the government often prefers to promote state-owned companies and cooperatives over private companies. Rather than having to rely on market and price signals, the government can simply tell state-owned distributors to sell fertilizer at the fixed price, and balance its losses, if necessary, with other earnings. It is the less market-sensitive, more direct form of government control.

C. Transport Costs and Special Transport Subsidies

The largest component of the distribution costs between Lines I and IV are transportation costs. Transport costs (excluding handling fees) range from 15% of the final retail price in th case of P. T. Kujang urea being distributed in nearby West Java to almost 40% in the case of Petro Kimia fertilizers being shipped to Region D. Most of these costs -- up to 70% in extreme cases -- are incurred between Lines II and III, and are thus paid for by PUSRI.

For transportation from Line III to Line IV, the fixed transportation allowances are 3,750 Rp/ton in Region A, 5,500 Rp/ton in Region B, 6,000 Rp/ton in Region C, and 7,000 Rp/ton in Region D. When these fixed margins are compared with the range of transport costs found in various provinces (see Table C.9), it is clear that special provisions are necessary for high cost areas.

The Special Transport Subsidy is meant to assist distributors facing high Line III to Line IV costs. The steps involved are:

a. the BIMAS committee approves a distributor's request for the special subsidy. The distributor submits documentation of all his incurred expenses over an entire growing season (i.e., six months);

Table C.9: Transport Margins and Costs, by Province, 1982

Region		Transport Margin1 Line III-Line IV	Average2 Tariffs
A.	Java	3,750	46.95
	Bali	3,750	61.69
B.	North Sumatra	5,500	63.26
	West Sumatra	5,500	77.07
	Lampung	5,500	78.73
C.	Aceh	6,000	73.85
	South Sumatra	6,000	53.16
	West Nusa Tenggara	6,000	75.64
D.	Riau	7,000	164.39
	Jambi	7,000	77.68
	South Kalimantan	7,000	85.00

Notes: 1. Includes transport cost, warehouse rent, interest, and loss. The Ministry of Finance does not breakdown the calculation of this margin.

2. Land transport tariffs set by the Ministry of Finance, March 20, 1982.

Source: Ministry of Finance.

b. upon approval, PUSRI pays the full amount of the excess transportation costs incurred to the distributor, and files a claim with the Ministry of Finance for reimbursement. Before December, 1982, PUSRI would only advance 50% of the amount due to the distributor, and would pay the remainder upon payment by the Ministry of Finance. Since the delays involved were on the order of 6-12 months, it was found that the subsidy was not effective.

c. PUSRI gets reimbursed by the Ministry of Finance, and absorbs the cost of the interim `loan' to the distributor.

Although PURSI considers this subsidy to be a small budgetary item, it is essential to the solvency of the distributors involved. (One example is the case of a cooperative distributor in South Sulawesi that is forced to pay three to four items the approved margin for the transport of fertilizer over one hundred kilometers of dirt roads.) The size of the subsidy is increasing from year to year, for two reasons: 1) the amount of tonnage involved is rising, and 2) transport costs are rising, especially due to recent increases fuel prices, faster than the approved margins. Only in the longer term, as roads are improved in the outer islands, will average transport prices level out or start to fall.

D. Cash and Credit: The Functioning of the System

Prior to 1980, PUSRI sold fertilizer to its distributors on a consignment basis, a system which led to long delays for both PUSRI and the distributors in getting paid by the retailers. The consignment system also led to unacceptably high loss rates (estimates run from 2 to 30%), since it did not encourage distributors and retailers to take responsibility for losses. PUSRI changed its sales program in 1980 to the current system, which entails both credit and a cash payment programs.

The credit system is operated through PUSRI's provincial-level Regional Marketing Offices, which must approve the credit rating of each distribution company. The amount of credit available is based on the distributor's yearly sales contract with PUSRI. The credit terms are 25% cash paid on delivery of the fertilizer, and the remaining 75% paid, with no interest, within four months. At the time of delivery, the distributor must give PUSRI a post-dated check for the 75% balance, as well as a bank guarantee. The arrangements between a distributor and his retailers vary according to whatever agreements are made between them, but often payment is made on the same basis as payment between the distributor and PUSRI.

If a distributor makes a full cash payment upon delivery, PUSRI will discount the price of fertilizer slightly. In Java, the discount is 1.4 Rp/kg, or about 1.7%, and 1.5 Rp/kg for large estate purchases. By allowing dealers a slight discount for cash purchases PUSRI is encouraging slightly lower prices to farmers who can also pay cash. This adjustment is probably a slight factor in the

increase of fertilizer consumption in general, and the increase of INMAS over BIMAS sales in particular.

The dealer credit system is essentially the same for BIMAS sales as for INMAS sales, although the actual flow of money tends to be slower for BIMAS sales. Since the KUDs are the designated retailers for BIMAS sales, the entire governmental network that supports the KUD system is brought into play. The PUSKUD is the provincial-level office that deals directly with the PUSRI Regional Marketing Office to register requests for delivery, secure credit, and handle payments. When a delivery is to be made, the PUSKUD will make the 25% cash payment to PUSRI, drawing on either its own reserves, borrowing from the state bank BRI (Bank Rakyat Indonesia) or borrowing from the new Cooperative Development Corporation. The PUSKUD will organize with the kabupaten-level office of the cooperative system, the PPK (Pusat Pelayanan Koperasi, or Cooperative Service Center) to take delivery on behalf of the local KUDs. The PPK, then, is operating as the local distributor, but only in terms of the physical handling of the fertilizer and not in terms of the flow of money or credit. When the PPK delivers the fertilizer to the KUDs, the KUD may or may not have to pay a 25% cash payment to the PUSKUD. Government policy encourages the PUSKUDs to require a cash payment, in order to pressure the KUDs into more active marketing. In some areas, however, the KUD's are still given the fertilizer on consignment, under the understanding that they should sell it within three months.*

When the KUD sells BIMAS fertilizer, it receives a coupon, called SPPB, from the farmer. The SPPB is sent back to the PUSKUD office, who takes it to the BRI for reimbursement. The PUSKUD receives the full value of the coupon (90Rp/kg of fertilizer), and is responsible for splitting it up between PUSRI, itself, the PPK, and the KUD, according to the standard margins.

*One PUSKUD that was interviewed operated on this three-month consignment rule. Happily, it said that it received more repayment prior to the three month deadline than it was forced to cover after the three month deadline. That money, then, the PUSKUD was free to use during the time remaining before having to pay PUSRI.

In the Indonesian rural economy, access to low-cost funds is a valuable asset. Farmers, faced with a wide spread between government approved (BIMAS) and local money-lending rates, act rationally: there is 'significant' reselling of BIMAS fertilizer by farmers, which is paid for by a six-month loan at 1% a month,* and relending of the money at local rates of 2-10% a month. This can obviously become highly profitable for a farmer, even if he has to take an initial loss of 3-4 Rp/kg on the resale value of the fertilizer.

For farmers not enrolled in the BIMAS program, and who may not be able to pay cash for all their fertilizer needs, local distributors may offer short-term farmer credit. This local credit market is completely unregulated. One state trading company generally charged 5% a month for fertilizer credit, which compares rather severely to that same state trading company's borrowing rate of 1 1/4 to 1 1/2% from state banks. It is likely that private distributors, if they offer credit at all (which they did not in the few areas recently spot-checked), would charge comparable or even higher rates.

The KUDs also have access to low-cost government credit, either through the BRI, the Ministry of Trade and Cooperatives, or through the Cooperative Development Corporation. This access is both a blessing and a bane. It is a blessing because it gives the KUDs a financial competitive edge over the private retailers which they can put to use in constructing facilities, buying trucks, or in marketing efforts. However, few KUDs are organized or managed well enough to exploit this advantage. It is a bane because it leads to corruption and distortions in government programs. There is, for example, a black capital market caused by the difference in interest rates available to KUDs and private merchants. A KUD that 'sells' money to a local merchant is acting similarly to other KUDs who sell their fertilizer delivery orders, as described above, to local

*BIMAS loans have been traditionally had a 4-6 month terms at a lending rate of 1% per month. However, a more recent program, called the "two seasons one cycle" program, lends money over an entire year, with an interest ceiling rate of only 6% per annum. This program will only increase farmers incentives to cash in on low-cost government credit.

merchants. In both cases, the KUD makes profit by doing nothing. The fact that the cooperatives have this priviledged status means that the government, or PUSRI, has little leverage over them if their performance is poor.*

The role of the KUDs in the rural economy is a very current and controversial topic in Indonesia, and it involves much more than just fertilizer sales. On January 17, 1983, the President called for the government to take whatever steps necessary to ensure that the cooperatives become "a complement of economic power in addition to the state and private economic sectors." As long as the government remains committed to the cooperative principle, it must follow that course, which is to try to make them sound and financially viable entities, something which now they are not.

*Three PPK's in Central Java have run up large debts with the Central Java PUSKUD and with PUSRI because it cannot collect from some local KUDs on those KUD's cash sales. Neither PUSRI nor the PUSKUD have any real recourse, and PUSRI will probably end up absorbing the loss.

Appendix D: List of Interviews for Indonesian Case Study

I. State-owned Companies

a. P. T. PUSRI

Dalil Hasan, Commercial Director
Entol Soeparman, Research Director
Sudharyono Mustafa, Market Research
Abdul Wahab, Market Research
Kadarko Soetomo, Chief of Land Transportatin Division

b. P. T. Pertani

Rusli Yahya, President Director

c. P. T. Dharma Niaga, Ltd. (state trading company)

Ir. D. Ardisasmita, Director

d. P. T. Pantja Niaga, Ltd. (state trading company)

Drs. J. M. Foeh, Director of Chemical and Pharmaceutical Division

e. PUSPEDA, in Klaten, Central Java (Kabupaten-level Farmer Service Center)

Fitriadi, Manager

f. KUD, Kecamatan Karangnangko, Kabupaten Klaten, Central Java (Villiage-level cooperative)

Pramono, Manager

II. Private Companies

a. P. T. Rolimex (fertilizer and pesticide importer, distributor and manufacturer)

A. Djalil, Chairman of Board of Supervisors

Hadimoeljo Padmodisastro, Director of Agriculture

b. P. T. Intrada (fertilizer importer and distributor)

Rustam, President Director

c. P. T. Bitaragana (fertilizer importer)

Ir. Adi Muhardi, Manager of Fertilizer Department

d. P. T. Tualang Raya Makmur (importer of fertilizer raw materials)

Bambang Trihandojo, President Director

e. P. T. Parama Bina Tani (pesticide manufacturer and distributor)

Koesoemawardhi

f. P. T. Curah Niaga, Ltd. (fertilizer importer)

S. M. Pardede, President Director

g. Woodward & Dickerson (World-wide trading company)
F. James Sweeney, Managing Director
Lourdes R. Tanco, Business Development Manager (Singapore office)

h. P. T. Goodyear Sumatra Plantation Company, Ltd.
R. C. Fassnacht, Vice President and Managing Director

i. ICEC, Inc. (New York-based trading company)

Rudy Ries

j. Indonesian Chamber of Commerce

Bugie Iskandar, Chairman of Agriculture and Foodcrops Department

III. Indonesian Government Officials

a. Ministry of Agriculture

S. Wardoyo, Director General of Foodcrops
Achmad Saubari, Director of Foodcrop Economics

b. Ministry of Finance

Ir. Humuntar L. Gaol, Director of the Department of Non-Taxable commodities

c. Ministry of Trade and Cooperatives

Wahyu Sukotjo, Secretariat of the Junior Minister for Cooperatives
Achmad Mustain, Directorate of Cooperatives

IV. Autonomous Organizations - Indonesia and Thailand

a. FAO/Secondary Crop Intensification Project, Jakarta

Sigfried Lampe, Team Leader
Alain Vaes, Agricultural Economist

b. FAO/Bangkok

C.Y. Lee

c. Economic Research Center, Gadjah Mada University

Dr. Dibyo Prabowo, Director

d. FADINAP/ESCAP (Fertilizer Advisory, Development, and Information Network for Asia and the Pacific) Fertilizer Dealer Training Program, Banjkok

Luc Maene, Team Leader
Theo Widdershoven
Kees Van Ardenne

e. RMI, Inc., Advisors to the Director General for Regional Development, funded by USAID

Dick Patten

f. Harvard Institute for International Development, Advisors to the Ministry of Finance

Don Snodgrass, Team Leader
Marguerite Robinson, Anthropologist

g. CLUSA (Cooperative League USA), funded by USAID

Ed, Fox, Team leader

h. World Bank, Jakarta Office

James Mullan, Senior Loan Officer

V. US Embassy and USAID

a. USAID

Bill Fuller, Mission Director
Walter Tappan
Ernesto Lucas
Dave Straley
Dick Silk
Joe Stepanek
Bob Dakan

b. Commerical Section

Charles Mast

c. Office of the Agricultural Counselor

George Pope
I. G. N. Exawirya

VI. Autonomous Organizations, USA

a. International Fertilizer Development Center (IFDC)

Dr. Paul Stangel
Dr. Ted Clayton
Dr. Dennis Parish
Mohinder Mudahar
Ted Kaddar
Lou Williams

b. Food Research Institute, Stanford University

Dr. Walter Falcon
Dr. Fred Roche

c. Harvard Business School

Dr. C. Peter Timmer