

PN-ANR-697

3777

EXECUTIVE SUMMARY

Analysis Of Private Sector Fertilizer Marketing And Distribution

**Prepared For U.S. Agency For
International Development**

Louis Berger International, Inc.

April 1983

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.

EXECUTIVE SUMMARY

Table of Contents

	<u>Page</u>
A. Introduction	1
B. North Yemen Case Study	1 - 4
C. Kenya Case Study	5 - 6
D. Indonesia Case Study	6 - 9
E. Lessons Learned	9 - 10
Exhibit I - Historical Fertilizer Consumption and Production	2

EXECUTIVE SUMMARY

A. INTRODUCTION

This executive summary is submitted in accordance with the provisions of Contract Number OTR-0091-C-00-2331-00 between the United States Agency for International Development and Louis Berger International, Inc., under which Berger conducted an analysis of private sector marketing and distribution of fertilizer in developing countries. The objective of the analysis is to identify the steps necessary to improve fertilizer marketing and distribution in AID's host countries by increasing the involvement of the private sector.

Three countries were selected for case studies — Yemen Arab Republic (North Yemen), Kenya, and Indonesia. These countries represent the Middle East, Africa, and Asia; a range of climatological and agronomic conditions; and differing orders of magnitude in volumes of fertilizer distributed. Historical data on fertilizer consumption and production for these three countries are shown in Exhibit I on the following page.

Louis Berger International, Inc. carried out field work in Yemen, Kenya, and Indonesia in January and February, 1983. The case studies, summarized here, describe private sector successes and failures, conceivably implementable projects, and related requirements for policy changes. Lessons learned, which are applicable to other AID host countries, were identified in a separate report, which also is summarized here.

B. NORTH YEMEN CASE STUDY

North Yemen is a country in which effective central government is relatively new, and fertilization is relatively underdeveloped. In the short history of the evolution of the market in Yemen, fertilizer distribution has been dominated in turn by collaborative arrangements between two private companies and a Government-owned agricultural credit institution.

During the period 1974 to 1976, two private companies, acting together, dominated the Yemen market. At the same time, little information was available on fertilizer sources of supply, prices, and domestic demand. The two suppliers simply ventured into an uncertain domestic market at a time when fertilizer supplies and prices in world markets were very volatile. They sold fertilizer at prices that were very high by comparison with those which had been charged to farmers earlier. They earned what were probably very substantial trading profits. They were able to maintain their dominant position by taking advantage of economies of scale, having an exclusive agreement with a nearby supplier (in Kuwait), and owning the largest retail networks in the country at that time.

EXHIBIT I

HISTORICAL FERTILIZER CONSUMPTION AND PRODUCTION
1971 - 1981 (Metric Tons Total Nutrients)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
A. <u>Yemen</u>											
Consumption	100	300	710	1,015	980	5,072	2,123	2,739	9,900	13,300	9,900
Imports	100	300	710	1,015	980	5,072	2,123	2,739	9,900	13,300	9,900
Supply	100	300	710	1,015	980	5,072	2,123	2,739	9,900	13,300	9,900
B. <u>Kenya</u>											
Consumption	49,300	47,100	53,189	50,862	52,700	44,494	53,896	51,522	51,002	38,300	59,700
Imports	51,800	49,600	53,189	49,062	58,101	50,410	53,341	51,522	51,002	38,300	59,700
Supply	51,800	49,600	53,189	49,062	58,101	50,410	53,341	51,522	51,002	38,300	59,700
C. <u>Indonesia</u>											
Consumption	237,193	224,114	444,164	475,300	492,100	483,400	488,000	608,500	754,446	836,548	1,210,225
Production	45,267	48,185	59,856	85,200	165,900	207,500	184,200	396,100	694,044	930,032	1,200,200
Exports	0	0	0	0	0	0	0	184,090	106,013	137,678	74,700
Imports	123,909	241,002	370,935	418,300	992,200	254,300	48,300	78,979	227,219	176,382	288,225
Supply	169,176	289,187	430,791	503,500	1,158,100	461,800	232,500	290,989	815,250	968,736	1,413,725

Source: TVA/NFDC Marketing and Distribution Economics Section, Division of Agricultural Development, Muscle Shoals, Alabama, 1982.

By 1976, the Government, with the support of the World Bank which was helping to set up the Agricultural Credit Bank, established that institution in the fertilizer trade. It was felt that the new parastatal credit institution would provide a more reliable, more geographically dispersed, and less expensive source of supply -- particularly in those areas targeted for agricultural development projects financed by the World Bank and other donors. The government was able to set up an institution to compete directly with the private sector, as contrasted with intervening through price controls or other forms of regulation. In 1976 outside organizations gave it the mechanism (the Agricultural Credit Bank), and the resources (Saudi Arabian urea donations) to enter the market.

The price of Bank-distributed urea was established by the Ministry of Agriculture at a level somewhat below the free market price. The private sector market for nitrogen and most other fertilizer imports contrasted sharply. In fact, the Bank has been able to guarantee supplies of urea to farmers in the main production areas, but it has not promoted its fertilizer in the more remote areas.

The private sector is currently involved in the market in three ways:

1. Importing and distributing non-urea fertilizers, especially ammonium sulphate nitrate. Sales are based entirely in the main cities, and rural marketing is based on radio advertising.
2. Buying Saudi-donated urea from the Ministry of Agriculture. Merchants pay the same price as the Agricultural Credit Bank, and are able to undercut the Bank on the cash market.
3. Becoming retail agents for the Bank, and receiving a fixed commission (averaging 5%) on sales. Agents are generally small stores, selling general merchandise in rural areas.

Future private sector initiatives will require that at least one of the following developments take place:

1. A rationalization of the price structure to favor a more balanced pattern of fertilizer use. Either the price of urea could be raised 20-25% to free market levels, or the prices of certain compound fertilizers could be cross-subsidized with the government's urea-generated revenues.
2. A commitment by the government to assist the internationally financed agricultural projects in promoting and supplying non-urea fertilizers.
3. Changing the Agricultural Credit Bank procedures to allow farmers to use bank credit (issued for the purpose of buying fertilizer) to buy fertilizer at non-bank outlets.
4. Raising margins paid by the Bank to its rural agents to encourage their assuming a more active rural marketing role.
5. Clarifying the uncertainties in the Bank's involvement in the

non-urea markets. These uncertainties include the Bank's procurement, pricing, and sales policies concerning non-urea fertilizers, especially concerning existing inventories that it can place on the market at any time.

Assuming progress is made on such policy initiatives, new private sector involvement is possible. Three conceivably implementable projects are promotion of compound fertilizers by a combination of foreign suppliers and local distributors; preparation of standard fertilizer packages for the Hudaydah market; and an incentive marketing program for agents of the Agricultural Credit Bank.

1. BASF, a West German supplier of agricultural inputs, will promote compound fertilizers in Yemen if a) the domestic price of urea is increased by 15-20%, and b) the government gives evidence that it is willing to forego some of its current high market share of urea. BASF's marketing program would consist of:

-- working with its main agent, El Soffary, and its sub-agent, Agricultural Development Stores, to promote compound fertilizers. BASF would provide materials and technical support, much of it drawn from its experience in Saudi Arabia.

-- underwriting an extensive program of trial plots and demonstrations. BASF feels that such forms of direct proof are a very important way to promote fertilizers. BASF would provide the fertilizers used on the trial plots -- up to 50 tons per year -- free of charge, and perhaps share the cost of hiring additional agronomists. (El Soffary already has two agronomists on staff.)

Technically, BASF has no doubt that compound fertilizers are what Yemen needs and that they could "conquer the country technically in two years." El Soffary is the largest company active in fertilizer sales in Yemen, and is positioned better than anyone else to promote a new market. BASF's reservations are focused on the strength of the Government's interest in preserving the status quo. Conceivably USAID, together with the FAO and UNDP projects in Yemen, could encourage the government to take the necessary steps to free up the non-urea market.

2. Permitting recipients of Bank loans to buy fertilizer at non-Bank outlets, would enhance the Hodeidah merchants' ability to sell urea to farmers and projects located near this port city. It would also directly link the long-term interests of these merchants with those of the farmers and the FAO/UNDP Tihama Project.

3. An increase in the margins paid to the Bank's rural agents would obviously increase their incentive to sell fertilizer. With training, the agents could conduct and publicize fertilizer trials on their own land, help farmers to get credit for buying fertilizer, and provide them with technical information on fertilizer.

Private merchants should be free to compete with the Bank for business links to the rural agents as the commercial involvement of the Bank in the rural markets gives way to more private sector competition.

C. KENYA CASE STUDY

In 1970, Kenya's fertilizer distribution trade appeared to be on the doorstep of a golden age. Use of fertilizer nutrients had more than quadrupled in the decade of the 1960's. There was vigorous competition among fertilizer distributors in the prosperous farming areas, and the two principal distributors were building up retail networks to serve small holders.

Fertilizer distributors had developed stable working relationships with European suppliers with established subsidiaries in Kenya. In essence, they formed competing three-player teams. The European parent companies provided supplies and technical experts to the distributors (who used the experts to provide field advice to farmers); their Kenyan subsidiaries handled the ordering and importation of fertilizers; the distributors transported, stored, and sold the fertilizers in Kenya. The leading distributor, with 35% of the market, was the Kenya Farmers Association (KFA), an organization chartered as both a private firm and a cooperative. Mackenzie Dalgetty, a private firm had twenty-five percent of the market. A number of other smaller private and parastatal importers held the remaining sixty percent of the market.

The golden age of the 1970's never arrived. Fertilizer imports were lower at the end of the decade than they were in 1970, and consumption rose only 35% over the entire decade as compared with more than 400% in the previous decade. Several organizations entered the trade with strong government support only to lose a great deal of money and drop out. The second largest distribution network was dismantled and sold off in pieces. The teamwork between European suppliers, their subsidiaries, and fertilizer distributors in Kenya broke down. Purchasing sophistication and knowledge of world markets declined. Meanwhile, KFA increased its market share from 35 percent to 74 percent, and became increasingly tied to Government programs. The share of private firms operating on a strictly commercial basis contracted sharply.

There were six principal causes for the decline of the private sector. First, the rapid growth and spread in the use of agricultural inputs in the Sixties brought in its wake concerns about the structure of the systems which delivered them. It was thought that the cost of fertilizer was too high, particularly to smallholders; that there were too few competitors in the trade and too much collaboration among them; that requirements for firms entering the trade to demonstrate technical and distribution capabilities were unnecessary; that the established practice of providing technical advice to farmers was paternalistic and added unnecessarily to cost; that the Government had become too subservient to the wishes of the larger distributors; and that the distributors were not serving the interests of the farmer. These beliefs, along with other considerations, led the Government to intervene in ways that produced results opposite to those intended.

Second, starting in 1973-1974, fertilizer shortages and rapid price increases followed in the wake of the oil embargo. These conditions further increased suspicion of the private companies,

particularly of European companies thought to be associated with the Nitrex cartel. Pressures for Africanization and other forms of change were intensified.

The third cause of deterioration of the private sector's position was Government support of joint venture initiatives intended to develop a fertilizer plant at the Port of Mombasa. It was expected that such a venture, linking foreign technical capabilities with the Government's majority ownership, would provide Kenya with an assured supply for the bulk of the country's fertilizer needs. Disagreements with partners ensued, and the plant has not been built. In the meantime, the potential for domination of the country's fertilizer distribution system by a prospective parastatal venture served as a disincentive to private sector initiatives.

The fourth influence on the private sector's decline was the Government's use of persuasion, controls, and other powers to encourage new organizations to enter the trade, and to change the ownership of others.

The fifth cause was the design and implementation of government controls — particularly price controls and import licensing. These controls distorted the functioning of Kenya's distribution system.

A final cause of the deterioration of the private sector marketing and distribution of fertilizer in Kenya was foreign aid. There were two branches of foreign aid, one in the mid-seventies and one in the late seventies and early eighties, both designed to help Kenya deal with foreign exchange problems. The government at first tried to use foreign aid fertilizer to build up new distribution organizations. These efforts failed. It then appointed KFA as its exclusive agent to handle all aid fertilizers, and KFA's position was further entrenched.

At the beginning of the Eighties, private sector organizations competing with KFA were in turn bruised, cautious, and hopeful. Clearly the talent and experience exists within Kenya to rebuild a fertilizer distribution structure that is efficient, professional, competitive, and locally owned. But changes in the ways the Government designs and implements its policies are required in order to enable the release of local energies and initiatives.

The fertilizer market in Kenya is sufficiently large to permit the creation of at least one distribution network of sufficient size to compete with KFA. Private investment in such a network will require changes in the distribution arrangements for foreign aid fertilizer. Other policy changes, such as changes in price controls, and import licensing procedures, are advisable. A variety of projects for bagging fertilizer at Mombasa or at existing facilities at Nakuru are also conceivable.

D. INDONESIA CASE STUDY

The history of the fertilizer distribution system is that of the success of P.T. PUSRI. PUSRI began as a fertilizer manufacturer but entered the distribution field in order to guarantee a market for its

products. Its distribution activities grew steadily in the 1970's, and by 1979 it had assumed sole responsibility for distributing all subsidized fertilizer. The four types of subsidized fertilizers are urea, ammonium sulphate, triple superphosphate, and muriate of potash, and they accounted for 95% of the 3.3 million tons of fertilizer consumed in 1981.

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 and public sector inefficiency.

The history of the fertilizer distribution system in Indonesia can be divided into five periods:

1. Until 1969, a state-owned distribution company had a monopoly on fertilizer and pesticide distribution. When the company failed, due to problems ranging from huge inventories to an inability to sell, the Government turned to independent -- both private and state-owned -- distributors.

2. Between 1969 and 1973, the growth of fertilizer use jumped from 5% to 27% per year, and the independent distributors competed for market shares and distribution channels. Competitors included PUSRI and Pertamina, the national oil company -- Indonesia's two largest parastatals.

3. By 1976, the government had begun exercising greater control over licensing distributors (reducing their number from 30 to 9) and promoting government cooperatives as local retailers. Both of these measures reduced the role and scope of private sector competition. The government also drove Pertamina out of the market.

4. 1979 marked the end of the government's experimentation with an 'unmanaged' distribution system. The independent distributors lost their markets to PUSRI, which was supported by a World Bank loan for distribution facilities.

5. The present system is characterized by PUSRI handling all fertilizer from the point of origin (domestic manufacture or import) to the local level. Local distributors and retailers buy from PUSRI and compete locally. Local distributors engage in virtually no marketing, which is the responsibility of government extension services and PUSRI, but are concerned only with the physical aspects of distribution. All imports of subsidized fertilizers must be handled by state, not private, trading companies.

This history raises several questions. First, why was PUSRI successful? There were at least three factors: 1) it was efficient from the very beginning, and adopted the management style of the army, tempered by western management consultants, more than it adopted the style of government; 2) it had an independent financial base, both from its production activities and strong World Bank support; and 3) the

government turned to PUSRI to structure an underdeveloped and underserved market. In the Indonesian setting, only a parastatal could have combined the business outlook, public accountability, and government backing necessary to undertake major investments in fertilizer distribution.

Second, why did the private sector fail? The government's gradual elimination of private distributors and importers was ascribed to their lacking capital, long-range planning ability, and financial capacity to reimburse the government in the event of non-compliance with contractual duties. These shortcomings are related, however, to government controls on the market, uncertainties created by government intervention, and policies which favor state-owned companies.

Third, what role remains for the private sector today? Indonesia's fertilizer market is now undergoing a qualitative change. Farmers in the more mature markets, such as Java, are educated in fertilizer use, increasingly able to determine their own requirements, and are acquiring the experience to diversify those requirements if necessary. Farmers are testing the limits of the expertise of PUSRI's local distributors. The potential for the private sector fertilizer marketing, in the sense of promoting products and stimulating demand, as opposed to mere physical distribution, is growing rapidly.

Specific policy steps outlined in the case study would encourage private distribution companies to grow in both markets, even while price controls and subsidies were retained. Although specific private sector initiatives cannot be described until present policy uncertainties are resolved, potential projects include:

1. Regional marketing: Private distributors could coordinate regional sales of subsidized fertilizers 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 inputs would provide the distributor with the resources necessary for expansion.

2. Transport and storage: 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, in order to reduce long-term risk, contract out to other private companies for transport and warehousing services.

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 plants, and other companies may also consider doing the same. Blending plants are the direct response to a growing market for compound fertilizers, a demand which would be further stimulated by the policy changes recommended above. A related initiative would be to prepackage fertilizer mixes for specific crops.

These project initiatives are based on the idea that the very growth of the Indonesian fertilizer market is creating complexities

that exceed PUSRI's abilities. PUSRI is clearly the best vehicle for distributing fertilizer in the more remote market areas, since these areas will not be profitable for some time. But the mature market areas can make new room for the private sector without undercutting PUSRI's very firmly entrenched market position.

E. LESSONS LEARNED

Principal lessons learned which are applicable to other host countries may be summarized as follows:

1. A developing country can be very well served by competition between two or more distributors who possess extensive physical distribution networks, adequate financing, and ready access to agronomic and international procurement skills. However, effective competition may not survive where a dominating national distributor is arrayed against many small firms. The efficiency and cost-effectiveness of the system can suffer even though some small competitors stay in business and entry to the trade remains open to some small firms.

2. Aggressive and efficient medium-sized firms can prosper in the face of virtual fertilizer distribution monopolies. One strategy is to distribute several agricultural inputs and to concentrate on high-volume markets. A related strategy is to price below established list prices.

3. Competition in any form, whether it is between or among private firms, cooperatives, parastatals or other organizations, is to be preferred to a lack of competition.

4. Village-level retailers provide distribution points for both public and private networks and are of great potential importance. Often retailers are leading farmers in their areas who have a good understanding of local conditions. However, government price control schemes typically squeeze retail margins, limiting retailers' incentives to stock and promote the use of fertilizers.

5. The most successful parastatal organizations in fertilizer distribution are those which have been forced to perform in a competitive environment for a length of time. The problem with these organizations is that, once they have proved themselves, they may be isolated from competition, and their performance can deteriorate.

6. Some fertilizer distribution parastatals have successfully adopted Western management methods. Usually there has been a past history of Western involvement in internal management and/or highly collaborative relationships with foreign firms. In at least one case, management adopted a policy of taking the advice of Western management consultants very seriously. This policy, together with institutional values favoring efficiency, produced impressive results.

7. When governments intervene in fertilizer distribution, complex consequences are set in motion. Price controls, import controls, subsidies, and foreign aid all distort marketplace results. Price controls, ostensibly intended to benefit farmers, often restrict both

levels of service and the geographic areas served. Import controls can have profoundly negative impacts on industry structure. Subsidies tend to erode the independence of the private sector and lead toward parastatal solutions. If large amounts of foreign aid fertilizer are funnelled through an exclusive distributor, competition can be destroyed. AID should ensure that the arrangements it makes to provide fertilizer either have a neutral effect on industry organization or positively encourage the development of the private sector.

8. Foreign suppliers and distribution organizations can work effectively with local personnel to provide the mix of skills and facilities needed to operate an efficient distribution system. Collaboration can also transfer technical skills to local managers and entrepreneurs. It is in the long term interest of foreign suppliers to transfer skills in importing, international trade, and procurement, especially when changes in the structure of the industry are in prospect.

9. There is a widely prevailing lack of understanding of how complex an effective nationwide fertilizer distribution system in a developing country really is. This lack of understanding takes many forms, from beliefs that the middleman function is unnecessary; to naivete concerning transportation, storage and financial costs; to oversimplified explanations of supply failures. Government officials, in particular, may have an imperfect understanding of system costs and unrealistic expectations concerning attainable levels of prices and services in remote areas.

10. National fertilizer distribution organizations should pay attention to public relations. Management personnel should explain the characteristics, strengths, and limitations of the systems they operate to key groups within their societies so as to shape reasonable public expectations. They also should convey to the public an understanding of those areas in which the service they have rendered has been of particularly high quality or of special benefit to farmers. Finally, they must be prepared to strike a reasonable balance between their own profit objectives and those public expectations which they cannot moderate.