

**FERTILIZER MARKETING AND
DISTRIBUTION IN THE
YEMEN ARAB REPUBLIC
A Case Study**

**Analysis Of Private Sector
Fertilizer Marketing And Distribution**

Prepared For U.S. Agency For
International Development

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PREFACE

This case study of fertilizer marketing and distribution in the Yemen Arab Republic (North Yemen) 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. Field work in North Yemen was carried out in January of 1983. Other countries for which Berger prepared case studies were Indonesia and Kenya.

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ABBREVIATIONS

ACB	Agricultural Credit Bank (1975 - 1982)
ASN	Ammonium Sulphate Nitrate
CACB	Cooperative and Agricultural Credit Bank (est. 1975)
CARS	Central Agricultural Research Service
CPO	Central Planning Organization
FADINAP	Fertilizer Advisory, Development, and Information Network for Asia and the Pacific
IFDC	International Fertilizer Development Center
LDA	Local Development Associations
MoA	Ministry of Agriculture and Fisheries
TDA	Tihama Development Authority
TSP	Triple Superphosphate
UNDP	United Nations Development Program

CURRENCY EQUIVALENT

U.S.\$ 1.00 = Yemeni Rial 4.50 (fixed since 1973)

Yemeni Rial 1.00 = U.S.\$ 0.22

Executive Summary

The Yemen Arab Republic, or North Yemen, was chosen as a case study in this series because it represented a young fertilizer market that had in its short history been dominated, at different times, by single private and public sector distribution organizations. In the market's early years, the private sector failed to distribute fertilizer in a manner acceptable to the government and to international agencies interested in Yemeni agricultural development. The story of how the private sector was displaced, how a financial institution became the leading fertilizer distributor, and the limitations of the current market configuration, provide insights into how private and public sector interests can be balanced in a small market like Yemen.

Prior to 1976, two private companies, in cooperation, were able to supply almost the entire Yemeni market. Little information was available on fertilizer supplies, prices, or potential demand, and the market was a young and opportunistic one. The two suppliers earned what were probably substantial profits, and were able to maintain their dominant position due to achieving economies of scale, having an exclusive agreement with a Kuwaiti urea supplier, and owning the largest established retailing network in the country.

By 1975-76, the government -- with the support of the World Bank, which was helping establish the Agricultural Credit Bank -- moved to undercut the private suppliers. They apparently felt that a more controllable and cheaper source of supply was needed for

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agricultural development project areas in the Southern Uplands and Tihama Regions. The government was able to enter the market itself mainly because in 1976 outside organizations gave it the mechanism (the Agricultural Credit Bank) and the resources (Saudi Arabian urea donations) to do so.

After the government intervened the market balance swung perhaps too far towards a public sector monopoly. The Agricultural Credit Bank was able to guarantee supplies of urea to farmers in the main production areas, but it has had a very uncertain policy towards non-urea fertilizers, and it has not 'marketed' its fertilizer in the more remote areas.

Only recently, in the third phase of this short history, have the Bank and the government agreed that there should be an increasing role for the private sector in fertilizer marketing and distribution. The private sector can help serve the government's interest in selling urea, and it can help the longer-term interest of the agricultural development projects and the farmers themselves by promoting a more balanced mix of fertilizers and/or compound fertilizers.

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

1. Importing and distributing fertilizers other than urea, especially ammonium sulphate nitrate and compound fertilizers. Sales are based entirely in the main cities, and rural marketing is based on radio advertising and word of mouth.
2. Buying Saudi-donated urea directly from the Ministry of Agriculture and selling it through the same city stores.

Private merchants pay the same price as does the Agricultural Credit Bank, but underprice the Bank on the cash market.

3. Rural shops becoming retail agents for the Agricultural Credit Bank, and receiving a commission (averaging 5%) on all fertilizer sold. Out of this margin, rural agents are asked to store large amounts of Bank-owned inventories, often in excess of a year's needs.

Although very little data is available, the total amount of fertilizer handled by the private sector through all three of these channels is probably less than half of the total market, which is about 20,000 tons per year.

Since the Agricultural Credit Bank entered the fertilizer market in the late 1970's, the fertilizer market has been affected in several ways:

1. Lower urea prices -- which are possible because most of the supplies are donations. The current ceiling price of 70 rials/bag (\$310/ton) is about 20-30% below a free market retail price. The revenues from the sale of the free urea accrue to the Ministry of Agriculture.
2. Little improvement in the supply of fertilizer in remote areas. The Agricultural Credit Bank is not equipped -- nor does it have any financial incentive--to develop markets in areas where there is little commercial activity, little potential demand for credit, and high costs of distributing fertilizer.
3. Uncertainty in the responsibility for extension work. There is still a lack of basic soils research and information.

from fertilizer trials in Yemen, and the existing extension service is inadequate to fill this gap. Both the private sector and the international aid organizations recognize that there is a lack of leadership in promoting fertilizer use, and both see ways that they can be more actively involved.

4. Uncertainty in future Agricultural Credit Bank policies. The private sector is wary of the Bank's market role, ever since the Bank's initial market entry in 1976. Current uncertainties include: a) the Bank's unpredictable procurement policies, which may or may not include non-urea fertilizers from year to year; b) the Bank's unpredictable pricing policies for these non-urea fertilizers; and c) the Bank's unpredictable sales policy, especially concerning existing inventories that it can dump at any time. These uncertainties hinder the private sector's willingness to assume risks, especially in the market for non-urea fertilizers.

There is no question that the private fertilizer distributors in Yemen are eager and sophisticated traders. They are also willing to commit themselves to sizeable investments that imply more than quick turnover and high profits. (Several of the Hodeidah-based merchants have several season's worth of fertilizer stocks which are the result of a probable over-eagerness to capitalize on new markets.) Several of the trading companies profiled here are trying to offer a full range of agricultural inputs, and are all experimenting with ways to reach a poorly defined and unsophisticated rural market. None of the merchants, however, have yet developed a retail network in the rural areas.

There are few, if any, immediately available private sector opportunities that have not already been pursued. Future 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 projects promote and supply non-urea fertilizers. This effort could include sponsoring applied research, improving the extension service, or increasing efforts to reduce other production constraints, such as water availability and land tenure arrangements that discourage the use of purchased inputs.
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 agents to encourage their assuming a more active rural marketing role.
5. Clarifying the uncertainties in the Bank's future activities in the fertilizer market, as described above.

The first four items would open up definite new markets for the private sector. Items (1) - (3) are aimed at importers/traders based in the main cities, and item (4) would encourage retail-level marketing in the rural areas. Item (5) would significantly reduce

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the risk perceived by private companies of entering into the non-urea markets.

Assuming progress is made on the above policy initiatives, three implementable projects are described below.

1. BASF A Foreign Supplier's Partnership with Local Distributors

BASF, a West German supplier of agricultural inputs, is prepared to commit itself to promoting 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 the only way" to promote fertilizers. BASF would provide free of charge the fertilizers used on trial plots -- up to 50 tons a year -- and perhaps share the cost of hiring additional agronomists.

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, BASF's agent, is the largest company active in fertilizer sales in Yemen, and it is positioned better than anyone else to promote a new market. BASF's reservations are focussed on the strength of the government's interest in preserving the status quo: it suggested that USAID, together with the FAO and UNDP projects in Yemen, encourage the government to take the necessary steps to free up the non-urea markets.

2. The Hodeidah Merchants: A Plan to Expand into the
Agricultural Credit Bank Market

Item (3) above, which would allow loan recipients to buy fertilizer at non-Bank outlets, would enhance the Hodeidah merchants' ability to sell urea. It would also directly link the long-term interest of the merchants with those of the farmers and the FAO/UNDP Tihama Project, i.e. the increased use of non-urea fertilizers. The Tihama Project is creating a demand for potassium and phosphate that they would like to package in standard assistance packages -- packages that include, where necessary, Bank credit. The Bank has not proven its ability to supply these fertilizers. The packaging and sale of standardized fertilizer inputs is a task ideally suited to the Hodeidah merchants. Ceiling prices could be agreed upon by the participants, and the Bank, if necessary, could draw down upon its existing stocks to enforce these ceilings.

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3. The Agricultural Credit Bank Agents; A Marketing Response to Increased Margins

An increase in the margins paid to the Bank's rural agents would obviously increase their incentive to sell. The agents could be encouraged to market in the following ways:

- a. direct salesmanship and providing technical information,
- b. helping farmers get Bank credit with a fertilizer component,
- c. conducting and publicizing trials on their own land.

Agents can be assisted in all of these ways by public sector assistance of the type offered by FADINAP/ESCAP in Asia and by FAO in selected countries: dealer training programs. Also, there is no reason why private merchants shouldn't compete with the Bank for business links to the rural agents -- especially if, and when, the commercial involvement of the Bank in the rural market gives way to more private sector competition.

Chapter I - Introduction

The Yemeni economy has undergone fundamental changes over the past 15 years, during which time the country has emerged from a state of civil war to that of a rapidly growing young economy. Yemen is traditionally a country of traders, and the entrepreneurial spirit is very strong. Government intervention in the largely open economy is kept to a minimum, but in recent years it has attempted to control prices for some basic commodities, including fertilizer.

The first part of the story of fertilizer distribution in Yemen concerns the early market for fertilizer, the control of that market by a few traders, and the reason why the government -- supported by the World Bank -- felt compelled to intervene. The private sector was perceived to have failed during this period: the government felt that too much market power concentrated in the hands of too few distributors led to high prices and limited supplies. This 'failure', however occurred when the fertilizer market in Yemen was particularly young and underdeveloped. In the early 1970's very little fertilizer was being used, and the market was a completely opportunistic one in which neither many merchants nor many farmers knew much about fertilizer use or its fair price.

The second part of the Yemen story starts when the Agricultural Credit Bank, supported by the World Bank, entered the fertilizer market and undercut the private distributors. Aside from the issue of whether a bank should be involved in the physical

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handling of agricultural inputs as well as credit, the Bank pursued a pricing policy that eliminated most other private sector distributors. (This pricing policy was made possible by fertilizer grants from donor countries, especially Saudi Arabia.)

Only recently, in the third phase of the story, have both the Agricultural Credit Bank and the government agreed that the private sector can play a stronger role in fertilizer marketing and distribution. The fertilizer market has developed to an extent that free competition is now possible, in certain areas, and farmers would benefit by both private and public marketing efforts.

The balance between the role of the parastatal organization (the Agricultural Credit Bank) and the private sector has yet to be fully resolved. This story has parallels in many developing countries.

Future growth in the Yemeni fertilizer market will require that the government adopt more flexible policies concerning private and public sector roles. Adoption of appropriate policies will require overcoming strong vested interests in the status quo -- including those of the government itself.

Another theme to emerge from the Yemen case study is the relationship between private sector risk taking in promoting new or little-used types of fertilizer and public sector efforts in soil testing, fertilizer trials, and farm extension. Also discussed is the potential for fertilizer use objectives to clarify the interests and responsibility of the public and private sectors in marketing new inputs. A fourth theme is a clarification of the

public sector's long-term interest in being commercially involved in either prime or remote market areas.

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Chapter II - The History of Fertilizer Marketing and Distribution in Yemen

A. Overview of Fertilizer Demand and Supply

Although a great surge in the Yemeni economy has taken place over the past ten years due to the high level of repatriated earnings from Saudi Arabia and the Gulf states, the Yemen domestic economy remains highly rural. Agriculture accounts for more than 40% of the gross domestic product, employs three quarters of the domestic labor force, and is still the main sector of the economy. Due to a variety of factors, agriculture is under pressure to modernize traditional cultivation techniques and develop higher value crops. These factors include: a) labor shortages brought about by large-scale labor migration to neighboring oil countries; b) high and rising wages; c) relatively easy access to capital; d) new markets; and e) changing consumer tastes.

In spite of all these pressures, fertilizer use in Yemen is still very low. Reasons for this include: a) the marginal benefit of fertilizer use is small in many areas where other factors, such as water supply and weed control, are more critical production constraints than fertilizer use; b) the level of soils research is so low that neither the government nor the extension workers know what fertilizers and application procedures should be recommended; c) the extent of the extension system is very small, being restricted

largely to the prime agricultural areas; and d) farm tenancy arrangements in many areas discourage fertilizer use by the tenant farmer, since he is asked to pay the full cost of the fertilizer and share in only a small percentage of the benefits. Each of these constraints -- the availability of water, soil research extension services, and the traditional farm tenancy practices -- will have to be relaxed before the demand for fertilizer can be expected to increase rapidly.

The use of fertilizer has increased from an estimated 100 tons in 1971 to an estimated 20,000 tons in 1982. The little data that is available is shown in Table 2.i. Since there is no domestic production in Yemen, all fertilizer is imported. Imports are made through two kinds of imports: 1) government-to-government gifts, which come almost from Saudi Arabia, and 2) private sector imports, which are made in the open market. Although import data by fertilizer type is not available, most grant fertilizer has been urea, and most privately imported fertilizer has been either ammonium sulphate nitrate or compound fertilizers. Urea donations have averaged 10,000 tons a year between 1977 and 1982. Area donations have averaged 10,000 tons a year between 1977 and 1982. The fact that fertilizer gifts have almost exclusively been urea has had major effects on fertilizer use, availability, and pricing in Yemen, not always to the long-term benefit of the farmer.

Table 2.1 Fertilizer Supplies, 1971-1981

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Nutrient tons:(1)	100	300	710	1,015	980	5,072	2,123	2,739	9,900	13,300	9,900
Total tons:(2)	3,153	4,046	1,799	4,256	3,869	7,932	-	-	-	-	-
Value of Recorded non-Government Imports:(3)											
millions of rials	-	-	-	1.3	6.6	6.8	3.5	17.6	25.1	-	-

Sources: 1. International Fertilizer Development Center
 2. Central Planning Organization (Yemeni National Accounts)
 3. World Bank, Yemen Country Profile

B. 1969-1976: The Introduction of Fertilizer

Prior to 1970 there was virtually no fertilizer used in Yemen: Yemen's contacts with the outside world were slight, government institutions were few and undeveloped, and the government there did not involve itself in farm extension. Rural poverty was high and agriculture almost completely traditional.

A German aid project begun in Sana'a in 1970 was the first to introduce fertilizers into Yemen. The program conducted fertilizer trials, and it distributed free samples to willing farmers near Sana'a and Ibb. Once a farmer exhausted his free sample, he turned to private merchants for subsequent supplies. The only dedicated fertilizer storage space in the country was at the German farm project site near Sana'a.

When the fertilizer component of the German aid project came to an end in 1974, fertilizer importing, distribution, and sales were completely handled by the private sector. Most fertilizer sold was handled by two of the largest trading companies in Yemen, El Soffary and Sons, and Hayel Saeed Aram and Company, Ltd., who were the exclusive agents for urea imports from Kuwait. One of these companies reported that urea imports reached a level of 5,000 tons per year by 1975/1976, which was when the Agricultural Credit Bank entered the fertilizer market for the first time. As shown in Table 2.1, 5,000 tons is approximately the total amount of yearly imports during the early half of the decade -- a fact which seems to confirm later assertions that the fertilizer market was dominated by a few firms with near-monopoly power.

Fertilizer distribution posed no special problems for either company, since both had large established wholesaling-retailing networks in the major cities through which they distributed a wide variety of goods. As far as can be determined, the commercial needs of the agricultural sector were still sufficiently small that neither company was committed to developing a long-term market strategy. Having taken a fairly speculative risk by jumping into the fertilizer market, it was to be expected that both companies geared their pricing policy for maximum short-term profit.

C. 1977-1980: Intervention of the Agricultural Credit Bank (ACB)

The First Yemeni Five Year Plan (1977-1981) was initiated in 1977, and it established an overall goal of food self-sufficiency. As part of the plan new extension services were created, a central research station was built, training programs were developed, and the Agricultural Credit Bank (ACB) was established. The sense that an overall planning and policy coordination ability was needed was new to the Yemeni agricultural sector.

In 1975 and 1976, the World Bank was interested in developing an independent and cheaper source of fertilizer supplies for its agricultural development projects in the Tihama and Southern Uplands regions. It suggested that the ACB assume this role. At the same time, Saudi Arabia gave its first yearly donation of urea to Yemen. That ACB became the conduit for this fertilizer was only natural -- it kept public goods in the hands of public entities until its final delivery.

When the ACB began selling urea in the prime agricultural areas -- which were the only areas in which the private merchants were active at that time -- the retail price fell to about one half of the original private sector price level (i.e., from a reported price of 120-200 Rials/bag to 70-90 Rials/bag). As a result, most merchants got out of the fertilizer business altogether. Although the ACB supplied only urea, the market for the other fertilizers such as ASN, which was very small to begin with, collapsed.

The ACB started operations in 1976-1977 in the Southern Upland Region around Ibb and Taiz, mainly due to the presence there of the ongoing World Bank Financed Southern Uplands SURDP I project. It also began working in part of the Tihama region where the Tihama Development I project had been underway since 1973. Not until 1978 did the ACB begin supplying credit and farm inputs in non-project areas. Significant improvements in the land transportation and communication networks in the late 1970's helped improve the availability to remote farmers of both fertilizer in particular and agricultural information in general.

D. 1980- Present: Renewed Private Sector Interest

As the overall demand for fertilizer grew slowly during the early 1980's, the level of Saudi Arabian urea donations were raised to meet the demand. As a result, the room for private sector involvement in the fertilizer market was restricted to:

- a) Importing and distributing fertilizers other than urea, especially ASN;

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- b) buying Saudi-donated urea directly from the government and selling it through its own distribution channels. Merchants can buy urea at the same price as the ACB, and they typically sell it on the cash market at a small discount below the Bank ceiling price;
 - c) rural shops becoming retail agents for the ACB, receiving a fixed commission on all fertilizer sold for cash or credit.

The private sector has pursued all of these possibilities, but still handles less than half of the total market.

The ACB has begun to institute fertilizers other than urea, but there is little agreement on the quantities involved. In 1982, it appears that the Bank had total stocks on the order of 5,000 tons of other types of fertilizers (such as ammonium sulphate, potassium sulphate, nitro-phosphate, super-phosphate, and compound fertilizers 15-15-15 and 20-20-0), but it had no consistent marketing or pricing policy. It is likely that these represented the accumulation of small donations and procurements over the years that the Bank had not sold.

The current retail price for urea is 70 Rials per 50 kilogram bag, or about \$310 per ton. Although this retail price is about 30% higher than the current urea world wholesale price (f.o.b.), it is 20-30% lower than what the free market retail price would be. The urea price is not so much below world prices, however, that merchants can't offer other fertilizers in competition with government imported urea. The volume of non-urea fertilizer sold is not known, but is probably less than 2,000 tons per year.

E. Conclusions

Since it began selling fertilizer in the late 1970's, the ACR has affected the fertilizer market in several ways:

1. Improved supplies and lower prices in the key market areas:

The current ceiling price for urea is much lower than the free market price in 1975, but this is to be expected. It is difficult to compare today's price of donated fertilizer to the price of small quantities of urea imported at the height of the 1973-75 oil shock. Bank involvement has also improved the availability of urea in the main agricultural areas. Ironically one reason that the Bank has improved fertilizer availability in these areas is due to its poor inventory control and chronic overstocking. (The reasons for overstocking include poor planning, little marketing, and foreign grants that may exceed market demand. See Chapter 4.)

2. Little improvement in supplies to remote areas:

The Bank has succeeded in the task of introducing the use of fertilizer to the more remote farmers of Yemen little more than have the Ministry of Agriculture or the private merchants. The Bank has not 'marketed' its loan packages in the remote areas, and recognizes that only the most entrepreneurial of the small farmers in the remote areas come into its branch offices

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for credit. The Bank is not equipped -- nor does it have any incentive -- to develop markets in areas where there is little commercial activity, little potential credit demand, and high costs of distributing fertilizer.

3. Uncertainty in the responsibility for extension work and fertilizer promotion:

Although all the actors in the fertilizer distribution system i.e., the Bank agents, cooperatives, merchants, and the farmers themselves, instinctively turn to the government extension service for information on fertilizer types and use, the extension service is poorly equipped to fulfill this function. Problems range from a lack of basic research and information concerning the appropriate use and long-term effects of various fertilizers to a lack of credibility with the farmers themselves. Alternatives and complements to the extension service are appearing: 1) the Bank wants its agents, who may be farmers themselves, to become stronger information sources and for promoters of fertilizer use, 2) the cooperatives are trying to consolidate the experience of their member farmers in order to improve the use of inputs, and 3) private merchants are weighing the cost of starting their own demonstration plots and associating with rural agents.

4. Uncertainty in Future Bank Policy;

As a result of losing the fertilizer market to the Bank in the late 1970's, private merchants are suspicious of future Bank policies. In particular, private merchants worry about: a) the Bank's unpredictable procurement policy, which is dependent on yearly grants; b) the Bank's unpredictable pricing policy for fertilizers other than urea; and c) the Bank's unpredictable sales policy, especially concerning existing inventories that it may decide to dump at any time. These uncertainties all hinder the private sector's propensity to take risks, to invest, and to compete with the Bank for an expanded market share.

Three of the four above points suggest problems in the present fertilizer marketing system. Since the Bank took over the urea market, farmers in the prime agricultural areas have benefited. Both those farmers and farmers in the more remote areas may benefit further if problems raised in points (2) through (4) are resolved.

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Chapter III - A Profile of the Private Sector

A. Introduction

The following business profiles range from the largest company in Yemen with some 3,000 employees, to one-man shops in the heart of the old market-places. Even relatively small merchants have telex machines in the corner and are quick to initiate overseas deals. Although much was learned about their eagerness to exploit new ideas or opportunities, they were reluctant to discuss actual investment plans or their expected level of return.

The first two of the six profiles in the following section are the two largest trading companies to ever have distributed fertilizer in Yemen; the Hayel Saeed Anam & Company, which has since left the fertilizer market altogether, and El Soffary and Sons, which now operates fertilizer marketing and distribution system in Yemen. Other profiles describe merchants, including the Agricultural Development Stores, Mohamed Hayel Ahmed, and Ali Othman Sudam & Sons, who all try to offer a full range of agricultural inputs, and who are all direct competitors in Hodeidah and Sana'a. None of the merchants have yet developed a retail network serving the more remote areas, although some have started name recognition and brand-name advertising by radio.

B. Private Sector Profiles

1. Hayel Saeed Anam & Company, Ltd.

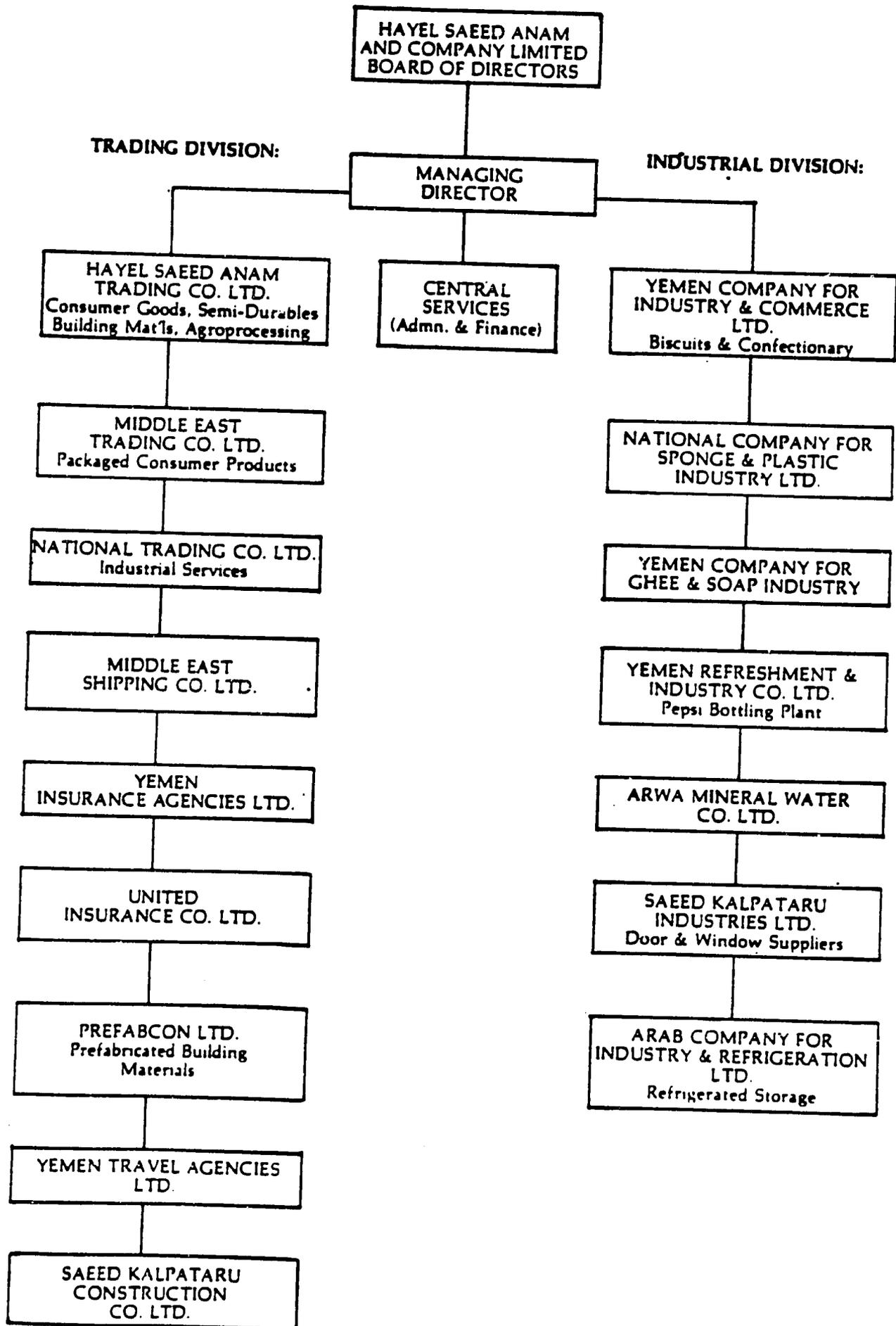
The Hayel Saeed Anam Group of companies is the largest private enterprise in Yemen. Starting as a small retail outlet in Aden, South Yemen, it has grown into both a manufacturing and trading enterprise based in Taiz. The Group is divided into a Trading and an Industrial Division, employs 3,000 people, and has representative offices in all the Gulf States as well as in the United Kingdom. The corporate structure is shown in Figure 3.1.

Hayel Saeed Anam was one of the two companies that imported Kuwaiti fertilizer in the early 1970's and dominated the market. Yearly sales amounted to approximately 5,000 tons before government actions undercut their market. They had been able to secure a dominant position due to; a) an exclusive agreement with Kuwait, one of the nearest fertilizer suppliers; b) an economy of scale that no other importer could duplicate, given the small overall domestic market; and c) the largest distribution and retailing network existing in the country at that time.

Once Hayel Saeed Anam lost its market to the CACB, it lost its interest altogether in fertilizer. They currently have no involvement in fertilizer, and consider a potential market of 5,000 tons per year the minimum required to reactivate their interest.

Hayel Saeed Anam & Co. Ltd.
and Affiliated Group of Companies

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2. El Soffary and Sons, Ltd.

Along with Hayel Saeed Anam, El Soffary is one of Yemen's "big five" trading companies, and is the only one with a current strong interest in fertilizer. The company's five main divisions are:

1. Automobile sales agencies, including Mercedes Benz and Porsche;
2. Engineering and construction;
3. Communications and electronics;
4. Pharmaceutical agencies for 22 foreign suppliers;
5. Agricultural inputs, especially BASF fertilizers and pesticides.

El Soffary has sold agricultural inputs since the early 1970's when it linked up with BASF, a West German supplier, to supply fertilizer to the German Farm Project. It has remained BASF's exclusive agent in Yemen ever since.

The company has remained committed to the agricultural sector -- unlike Hayel Saeed Anam -- and foresees long-term growth. The Chairman of the Board mentioned that the current high level of public investment in rural roads favors his business interests.

Rather than sell urea bought from government shipments in Hodeidah, El Soffary prefers to sell only BASF's competing product ammonium sulphate nitrate (ASN). It sells about 500 tons of ASN a year, and about 200 tons of other types of BASF fertilizers. El Soffary reports that it sells no urea at all because it wants to develop a market for ASN. The Manager of the Agricultural Products

Department feels that although ASN has a lower nitrogen content than urea, it has other characteristics (including its sulphur content) which make it superior for conditions in Yemen. Since ASN sells at 80-85 rials per bag, or 10-15 rials more than urea, the company has to convince farmers that ASN is worth a 20% premium. It is very possible that the company promotes ASN over urea not only because of its belief in ASN's technical merits, but because of the importance it attaches to promoting the complete BASF supply line.

The ties between El Soffary and the supplier BASF are unusually strong for Yemen -- it is logical that the largest trading company in the country involved in selling fertilizer should have better relations with its supplier than would the smaller importers in Hodeidah. El Soffary employs two agronomists to market the BASF line, and BASF is urging it to market compound fertilizers aggressively. BASF is convinced, based on its experience in Saudi Arabia, that compound fertilizers are technically superior for Yemeni soils to urea or ASN, and BASF is willing to share the cost of launching an a promotional program with El Soffary. This possibility is discussed at length in the chapter on implementable private sector projects.

3. Agricultural Development Stores

The two Agricultural Development Stores in Yemen, in Sana'a and Hodeidah, are branches of a trading company based in Saudi Arabia (where it has 20 branches). The Sana'a store sells urea, BASF compound fertilizers, and a popular liquid fertilizer that is used

on qat trees and vegetables. By value, urea is the biggest seller, liquid fertilizer is second, and compound fertilizers third. The stores also sell pesticides, seeds, herbicides, small farm machines, and sprayers. Although the Yemeni store receives help in making purchases from the Saudi organization, they are also free to place their own international orders.

The Agricultural Development Stores have been selling fertilizer since before the CACB became involved. The store manager claims that the margin on urea is small, too small for a retailer to afford storage facilities in Sana'a. Obviously he preferred the old free market system for urea, but still continues to handle it because urea is the single most popular fertilizer in Yemen. He can't afford not to sell it, since it draws customers in who may buy other products as well. He also noted that it is easy to compete with the Bank because he gives credit on small purchases more easily than the Bank does.

The manager of the Sana'a store, a Jordanian who has also worked in Saudi Arabia, has wide experience selling fertilizer. He engages in little marketing because he believes that fertilizers have to sell themselves: farmers only buy what they know about and what they've seen used in previous applications. He thinks BASF's plan to promote compound fertilizers will require further research, instruction, and on-farm experience.

However, a farmer did come into the Sana'a store during this interview to buy compound fertilizer. He commented: "It is good but expensive. Urea not good. Compound is good. Good crops. But expensive. Where is the gain?"

4. Ali Othman Sudam & Sons

The head of a merchant family whose offices are buried deep in the Hodeidah souq, Mr. Othman imports and sells a full range of agricultural inputs, including fertilizers, seeds, pesticides, and agricultural equipment. Last year was the first year he bought urea from the Ministry of Agriculture -- 5,000 bags total -and didn't sell any. He found that he bought the urea too late to sell in Hodeidah, and that his normal network of ten retail outlets were not interested in selling it at the controlled price of 70 rials per bag.

Mr. Othman feels that in spite of the ACB controls on urea, the Bank is not able to knowledgeably supply the full range of inputs required by farmers -- or that it ever will be . He feels that there will always be a market share for merchants, and that his task is to seek out opportunity: Given his substantial line of bank credit, financing a marketing effort is not a constraint. He would even be willing to help his distributors and retailers finance warehouse facilities if it could be shown to be in his interest. His only real constraint is determining the potential market demand for a given agricultural product, and its profitability.

5. Yenia Abdo Alloran & Sons

The interview with Yenya Abdo Alloran, a merchant of the old school, served to emphasize now recent a phenomena government

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intervention is in Yemen. Yemen's modern government was formed late in Mr. Allonah's life, and not surprisingly, he has not welcomed government intervention in his traditional markets.

Mr. Allonah was one of the first merchants in Hodeidah to import fertilizer nearly twenty years ago, and he said that the costs to him of trying to create a new market were extremely high. Since no farmers then knew how to apply fertilizer, he undertook special efforts to explain, demonstrate, and promote its use. At about the time that the market became profitable and self-sustaining, the government introduced subsidized urea and his market disappeared.

Mr. Allonah said that government intervention has not only been very costly for him, but that it has nearly eliminated his desire to take risks in the fertilizer market. He has re-entered the fertilizer market only recently: in early 1982 he purchased 20,000 bags of urea from the government which over the year he neither successfully marketed nor sold.

Mr. Allonah conveyed several messages. First, he believes little in long-term planning, and he would undertake no venture that did not promise very short-term rewards. Second, that he, unlike some of the younger merchants, has little interest in handling a complete line of agricultural inputs as an 'agrosystems' business strategy. His strategy is to stock and sell those goods that can carry themselves. Third, that he expects a substantial return on investment. He has achieved high returns in the past, and is not interested in present-day investments that promise any less.

6. Mohamed Hayel Ahmed

Mr. Ahmed, an occasional partner with Mr. Allonah, forms a dramatic contrast with his older colleague. Mr. Ahmed is young and less resentful than Mr. Allonah about the government's role in the fertilizer market. Quite the opposite: Mr. Ahmed is interested in earning market recognition as a complete supplier of agricultural inputs, and is willing to supply several kinds of fertilizer even though some, such as price-controlled urea, have low margins. To counter the high carrying costs of urea and ASN, he earns higher profits on non-subsidized herbicides and fungicides.

Mr. Ahmed recognizes that due to the competition between the many merchants in Hodeidah importing and distributing competing agricultural inputs, no one merchant has the incentive to undertake a costly marketing development effort. He does not, therefore, do marketing himself. He shares, however, with his colleagues Ali Othman Sudam, El Soffary, and Agricultural Development Stores, a long-term view of the agricultural market potential.

C. Monopoly or Free Competition?

The government justifies the 1976 entry of the ACB into the fertilizer market by charging the private sector with creating artificial shortages and bidding up prices. It is probably true that two firms enjoyed a near-monopoly position. One government spokesman described the private sector's ability to withhold supplies for speculative gain common to several markets, including

food, sugar, and building materials, as well as fertilizer. The government has moved to stabilize prices in all of these markets.

Market concentration in 1976, however, cannot be immediately translated to 1983. No company or group of companies could so easily secure a monopoly position today because of changes in the market structure, the greater availability of information, a more developed distribution system, a higher level of demand, and a greater number of fertilizer dealers with experience importing and selling fertilizer.

Several merchants described the current private sector portion of the fertilizer market as highly competitive, and characterized by a high degree of mutual distrust. Rather than speaking of a tendency to collude, they spoke of a 'follow-the-leader' psychology, as any number of merchants pursue some currently vogue idea of a profitable opportunity. This leads to somewhat irrational group behavior in buying 'hot items' and dumping those which come to be regarded as 'losers'. Market variabilities, which may be related to such unknowns as the weather or agricultural prices as well as to the group behavior of fertilizer importers, lead to buying and selling movements en masse.

The long-term solution to this kind of group behavior -- which is not collusive, but on the contrary, inherently market destabilizing -- is the slow improvement in the quality and availability of market information, demand projections, and assessment of technical requirements. Increased fertilizer use will both result from and lead to better information. Given the current

number of distributors involved in importing and sell fertilizer, it will also lead to greater diversity and greater stability.

A. The Ministry of Agriculture

The Ministry of Agriculture (MoA) has four key functions in the fertilizer distribution system: 1) it is responsible for overall planning of fertilizer needs, 2) it solicits and expedites foreign fertilizer and donations, which to date are almost entirely in the form of urea from Saudi Arabia, 3) it sets prices for government-procured fertilizers, and 4) it is responsible for extension services. The Ministry's execution of each of these tasks is commented upon below.

1. Planning of Fertilizer Requirements

The planning of national fertilizer requirements has at least two aspects, neither of which the MoA is currently overseeing. These are a) the assessment of needs based on historical trends, and b) the assessment of needs through research, trial plots and regional experimentation. The lack of technical data on appropriate fertilizer use has contributed to the slow rate of increase in fertilizer demand.

Projections of future fertilizer needs, which are used to guide government fertilizer procurements, are currently made in an ad hoc fashion. It can be argued, however, that most procurements are so small, i.e., on the order of a single boat-load, that it is

inevitable that they be made in "lump sums" which are only roughly correct.

2. Handling of Foreign Donations

Since 1977 Saudi Arabia has donated a more than adequate amount of urea to Yemen, and although not officially stated, it appears that in the past five years domestic stocks have never been fully depleted. Yearly donations have risen from about 10,000 tons in 1977 to 20,000 per year in more recent years.

Saudi Arabia pays the full shipping cost to Yemen. The MoA doesn't handle the cargo, but merely arranges for either the CACB or a private distributor to take delivery at the port. Fertilizer imports other than urea are picked up by either the government research program for which it is destined, or by the CACB, which is paid a handling fee for storing and distributing government procurements.

3. Pricing Policy

The urea used in Yemen could theoretically be sold at any price between the average transport and handling cost (about 20 rials per bag) to the free market price (about 100 rials per bag). The means by which the MoA arrived at a ceiling retail price of 70 rials per bag is clear.

The MoA actually sets two prices: first, the 'wholesale' price by which it sells urea off the boat to the distributor, and the

ceiling retail price. The wholesale price is the most important price. Not only does it directly determine the retail price, because average margins can be easily calculated, it determines the level of 'profit' accruing to the MoA through the sale of a free commodity. The current wholesale price is apparently set as rough compromise between: a) desire to price urea below the free market price in order to transfer some of the benefit of the gift to farmers; b) a desire to price urea high enough to prevent a sudden increase in demand over past levels; and c) a desire to price urea high to maximize revenues flowing to the Ministry of Agriculture. There is currently no policy linking the expenditure of MoA fertilizer revenues to programs related to fertilizer use, research, or demonstrations, although such a policy would theoretically be an appropriate use of such funds.

The ceiling price for urea has not been changed in recent years; the MoA does not use prices to regulate demand, or to maintain an optimal ratio between fertilizer and output prices.

4. Extension Services

In most developing countries, responsibility for the promotion of fertilizer use falls upon the extension services. Currently, extension services in Yemen are very weak, suffer from a lack of credibility with farmers, and are only located in the prime agricultural areas as part of internationally financed development projects. The government has made no budgetary commitment to expand

future extension services, and there are few foreseeable improvements.

The future promotion of fertilizer will require the simultaneous improvement in the amount of technical information available to extension workers and the training of the extension workers themselves. A search for new ways to reach farmers, such as radio or TV, and for ways to gain credibility, such as increased emphasis on demonstrations, will be necessary.

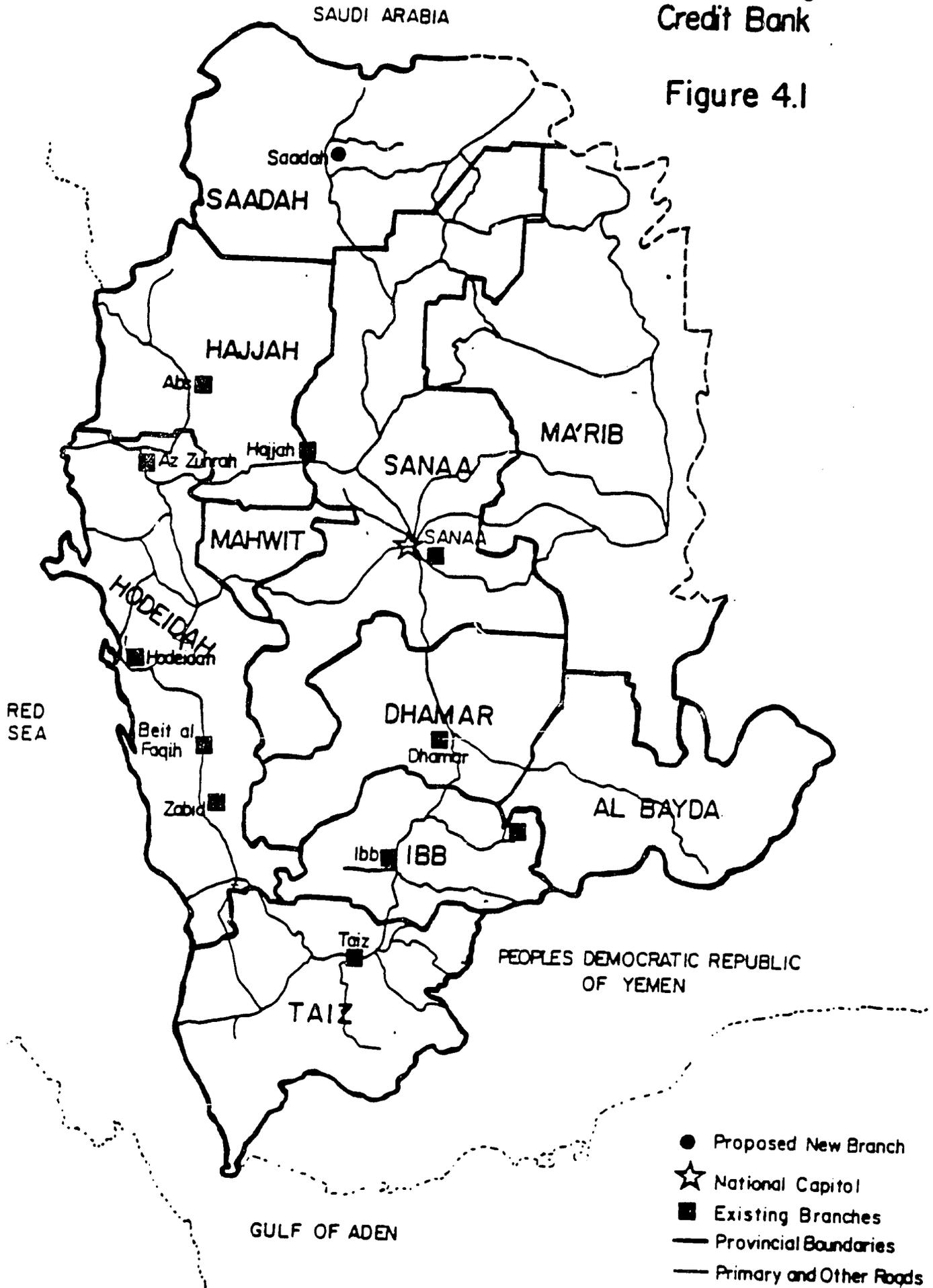
B. The Cooperative and Agricultural Credit Bank (CACB)

The Cooperative and Agriculture Credit Bank (CACB) was established in January 1982 as the single government-owned bank engaged in financing projects in the rural sector. It incorporates two previously independent banks, the Agricultural Credit Bank and the National Cooperative Development Bank. Government efforts to serve the credit needs of farmers date back to 1974 when the Agricultural Credit Fund was first established, and which was later merged with the Agricultural Credit Bank, established in 1975.

The CACB is financed through a combination of foreign grants and loans, government grants, and deposits received from rural sources. The CACB extends loans both in cash and in kind, and has a very high loan repayment record (90-95%) due to tough collection policies.(1) Most of its loans are to individual farmers as opposed to Local Development Associations, cooperatives, or corporations, and the thrust of its credit in the future is expected to be in the same direction.

Cooperative And Agricultural Credit Bank

Figure 4.1



Data on the bank's operations is limited, and at times is contradictory. Of particular interest here is the question of how important is the provision of fertilizer as measured by its share of total agricultural credit extended. Tables 4.1 and 4.2, derived from the Agricultural Credit Bank Second Five Year Plan, show fertilizer allocations to be an average of 16.5% of all agricultural inputs, and 4.9% of total Bank credit allocations. These numbers may be slightly high. The Bank manager in Hodeidah estimated that a small farmer would apply for a credit package averaging 10,000 rials, of which only a few hundred rials would go towards fertilizer. (Most of it would go towards hired labor.) This rough order of magnitude was supported by the Bank manager in Ibb who said that few small farmers buy more than five bags of fertilizer (350 rials).

In terms of the volume of agricultural inputs that are physically handled by the Bank, fertilizer is by far the greatest. Table 4.3 shows the cumulative amount of inputs distributed by the Bank between 1976, when it started operations, and 1980. This list is incomplete because since 1980 the Bank has gotten very involved in importing farm machinery, especially tractors and pumps.(2)

Table 4.1: Cooperative and Agricultural Credit Bank Allocation of Funds
in the Second Five Year Plan

<u>Short-Term Loans</u>	<u>(000's rials)</u>	<u>(million U.S.\$)</u>
Fertilizer	6,680	
Improved Seeds	6,500	1.5
Insecticides & Sprayers	2,750	1.4
Poultry/Livestock Feed	4,500	0.6
Tools and Equipment	3,000	1.0
Operations (Hired Labor)	17,040	0.7
Subtotal Agridulture	40,470	3.8
Other Projects	9,000	9.0
Total Short-Term	49,470	2.0
		11.0
<u>Medium-Term Loans</u>		
Agricultural Tractors	9,500	
Harvesters	750	2.1
Livestock Projects	3,900	0.2
Poultry Projects	8,500	0.9
Irrigation Projects	14,500	1.9
Land Reclamation	9,470	3.2
Ag. Storage Facilities	500	2.1
Ag. Transport Equipment	500	0.1
Ag. Cooperatives	10,000	0.1
Subtotal Agriculture	57,620	2.2
Other Projects	28,600	12.8
Total Medium-Term	86,200	5.4
		19.2
<u>Total</u>	135,690	30.2

Source: IBRD, Nov. 18, 1982, Annex 1

Note: 1. Education, Health, Fisheries, Road, Water Supply, Electricity, and Handicraft Cooperative Projects.

2. Tree planting and Machinery procurement projects in addition to those in note (1).

Table 4.2: Fertilizer Credits As A Percentage of CACB Lending
Fertilizer Credits As
A Percent Of :

	<u>1982</u>
Agricultural inputs (short-term loans)	16.5%
Total short-term loans	13.5%
Agricultural projects (short and medium term)	6.8%
Total Projects	4.9%

Source: Table 4.1

Table 4.3: Agricultural Inputs Distributed by the CACB, 1976-1980

<u>Input</u>	<u># Farmers</u>	<u>Sales</u>	<u>% of Total</u>
Fertilizers	122,796	28,327,932	90.2
Insecticides	22,826	550,889	1.7
Seeds	9,972	615,517	.2.0
Sprayers	14,362	1,917,598	6.1
Livestock	1,911	9,555	0.03
Total	171,867	31,421,581	100.0

Source: CACB

Assuming a retail sales figure of 70 rials per bag, fertilizer sales for the 1976-1980 period total about 400,000 bags, or 20,000 tons. In 1981 the bank bought 5,000 tons (100,000 bags) of urea from the Ministry of Agriculture, and bought over 10,000 tons of urea in 1982. There is almost no data available on recent Bank sales or inventories, although Table 4.4 gives an impression of residual stocks. (Most Bank inventories are actually stored by the agents. It is unclear whether Table 4.4 does or does not include agent stocks.)

The CACB assumes responsibility for the physical handling of fertilizer from the port of delivery, where it takes delivery from the Ministry of Agriculture, to the farmer. Its distribution network consists of ten branch banks, all of which sell fertilizer directly to farmers, and over sixty rural agents, which are usually small family-run shops (see below). The network of agents is a fairly recent development in the CACB's distribution system, and one that was influenced by foreign donors. Although its immediate impact was to reduce the involvement of the Bank in actual retailing, in the longer run it is hoped that the agent system will improve the availability of fertilizer in the more remote areas.

Four aspects of the Bank's involvement in fertilizer distribution -- planning, direct sales, storage, and agency sales -- are described in greater detail below.

Table 4.4: CACB Fertilizer Storage, 1981

	<u>Bags in Storage at Branch Offices</u>
Urea	53,077
Super Phosphate	5,307
Nitro Phosphate	11,807
ASN	4
NPK (15-15-15)	8,156
Potassium Sulphate	5,785
Total (bags)	84,136

Note: 1. Does not include the Beit Al Faqih branch.

Source: Cooperative and Agricultural Credit Bank

1. Planning

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The Bank does little advance planning of its fertilizer requirements from one year to the next. As a result, even though the amounts of fertilizer sold by the Bank are fairly small, the cost of its excess supplies, inappropriate supplies, and excess storage can be high.

Bank policy is to request each branch to make yearly demand forecasts. In reality, however, the Bank buys and distributes fertilizer in a more ad hoc manner. An additional planning problem is that the Bank handles not only urea, but a variety of other fertilizers that are sporadically donated to the Ministry of Agriculture. The Bank's knowledge of regional fertilizer needs is inadequate for it to be able to effectively distribute these fertilizers to the appropriate areas.

2. Direct Sales

Until the development of the agent system, all Bank sales and supplies of fertilizer were distributed through the branch offices. Since the agent system is still incomplete and, at times, unreliable, all of the branch offices still distribute fertilizer themselves. (In Hodeidan, more fertilizer is sold by the Bank than through its agents.) A farmer pays the same price at the Bank office that he would at an agent, and in addition has to bear all transport costs back to his farm.

Two interesting questions emerge. First, why would a farmer buy direct from the Bank and not from a more conveniently located agent? One reason would be that no Bank agent close to his farm has adequate supplies; another is that he is suspicious of the quality of fertilizer stored by the agent. Secondly, why would a farmer travelling to a main city buy from a Bank office and not from a private merchant for a slight discount? (Of course if he is buying on credit he has no choice, but Bank cash sales are more important than credit sales.) It would appear that either merchants have done insufficient advertising, or farmers prefer Bank-issued fertilizer for notions of quality control.

3. Storage

The Bank does not have a "national level" storage facility, nor have the branch offices invested in fertilizer warehouses. Instead, the branch offices contract out for storage space when required, and they allocate supplies directly to their agents as soon as possible. The agents receive no special assistance from the Bank for assuming storage costs, but are expected to finance these costs out of their standard commission.

In spite of these ad hoc storage arrangements, the storage requirements have been very high. The branch office in Zabid reported that in 1982 their eleven agents took delivery of 18,000 bags of fertilizer, an average of eighty tons each. During that year only 8,000 bags were sold, leaving 10,000 bags or forty-five tons per agent, in storage until the next growing season. The Bank

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branch office in Ibb reported that the agents take delivery in November for a growing season that doesn't end until the following September. In 1982, each of the Ibb area agents was left with an average surplus of over 50 tons at the end of the growing season.

From one angle, the Bank saves having to invest in storage facilities by pushing as much inventory onto the agents as possible. But this approach also has its hidden costs. Since this fertilizer is being supplied on consignment, the Bank is paying the financial carrying costs of high inventories. If agents paid for fertilizer up front (or on credit), they might have greater incentive to sell it, and hence reduce the Bank's carrying cost. Of course, the agents would only be willing to take delivery on much less tonnage.

4. Agency Sales

The CACB began supplying rural agents to sell Bank fertilizer on consignment several years ago, and has now built up a network of over sixty agents (see Table 4.5). "Agents" are usually rural shopkeepers selling general merchandise. The Bank pays all transport costs up to and including handling costs at the agent's store, and requires no advance payment. The fee retained by the agents for fertilizer sold varies slightly from 4% in the Ibb subdistrict to 5% in the Tihama.

Bank agents can sell their supplies for cash, or they can accept letters of credit from the Bank branch office. In the case of cash sales, agents are expected to sell fertilizer at the bank-approved price, but in times of shortage it is inevitable that

prices rise in areas where there is no Bank control. Although it was impossible during the course of this study to determine how often agents charge higher prices, it was reported that cash sales were more common than credit sales. This is probably because most farmers buy small amounts of fertilizer -- only a few bags at a time -- and it is not worth it for them to go through the procedure of taking out a Bank loan.

Table 4.5: Location of CACB Agents, 1981

	<u>Regular Agents</u>	<u>Cooperatives</u>	<u>Total</u>
Sana'a	6	0	6
Beit Al'Feki	4	0	4
Zabid*	6	3	9
Maiz	17	0	17
Ibb	20	0	20
Dhamar	7	1	8
Zura (new)	1	0	1
Abs (new)	<u>1</u>	<u>0</u>	<u>1</u>
	62	4	66

Note: * There were 11 Zabid agents in Jan. 1983, but there were no cooperative agents. The cooperative agents were discontinued in 1982.

Source: Cooperative and Agricultural Credit Bank.

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The Bank is generally satisfied with the agent system, and is tightening up its policies concerning the selection and dismissal of agents. The Zabid branch, for example, had engaged three farm cooperatives as agents in the late 1970s, but found that they lacked the incentive to push sales. (A typical Bank official comment was "They tend to close their doors at noon and not open up again.") As a result, the Zabid branch now only works through private sector agents whose salaries depend more directly on the volume of fertilizer sales.

An important issue being discussed by Bank officials concerning the agents is the optimum commission. There is evidence that at the current level the agents are fairly passive and lack the incentive to promote fertilizer use. Some Bank officials argue that commissions should be raised, because:

1. fertilizer would get sold faster, rather than sitting around for months in substandard storage facilities;
2. agents would be encouraged to promote fertilizer use, either by a) sharing technical information, b) creating trial plots on their own land, c) promoting the Bank credit programs, i.e., doing basic marketing for the CACB, or d) making deliveries to the farms of farmers otherwise unwilling to buy;
3. agents in the more humid mountains would be reimbursed for storage costs which are higher than in the drier tinama region.

Some Bank officials suggest the commission should be raised to about 7%, while others feel that only the more successful agents should earn as a reward the higher commission of around 6%.

The Bank's current retail system through appointed agents still does not reach the more remote areas. Since the Bank covers all costs of transporting fertilizers to the agents, all agents have the same costs and incentives. One characteristic of the Bank distribution system is that it is, fundamentally, tied to a financial institution. The Bank has little incentive to pursue fertilizer distribution in remote areas, where it can expect to either break even or actually lose money, when there is little potential for extending credit.

Notes for Chapter IV

1. "It is worth noting that the CACB proceeds against delinquent borrowers who are small-scale farmers by having the Governor directly send troops, bypassing the courts."
(IBRD, "Mobilization of Domestic Financial Resources in the Yemen Arab Republic," Jan. 6, 1982, pg. 56.)

2. The CACB negotiated in 1980 a purchase of 50 tractors from Massey Ferguson Ltd. of U.K., 800 Yamaha and Mitsubishi pump engines, and 250 Alta brand irrigation pumps. The World Bank has encouraged the CACB to reduce its commercial activities. It has received assurances that the CACB will only intervene in equipment markets to stabilize prices, and that it will cease its commercial equipment sales when its existing stocks expire. (IBRD, "Agricultural Credit Project, Staff Appraisal Report, Yemen Arab Republic," Nov. 18, 1982, pgs. 21-22.)

Chapter V - The Market Impact of Public Policies

The Yemeni fertilizer marketing and distribution system has evolved into a market configuration that is certainly not unique to Yemen. In fact, a system where:

- the private sector has minimized its expenses by locating in cities only;
- the private and public sectors compete for sales in the cities and in nearby areas;
- the public sector has stabilized prices of the one most common fertilizer, but has an uncertain policy on the others;
- in spite of an initial objective of reaching out to remote markets, the public sector has made little progress in that direction; and
- the remote markets remain unserved;

is fairly common. In Yemen, this market configuration is the direct outcome of low fertilizer demand, little technical knowledge, inadequate extension and fertilizer promotion services, and large amounts (relative to total demand) of foreign fertilizer donations.

Partially because these characteristics are typical of a young and under-developed fertilizer market, several interesting policy issues are raised. These include:

1. Natural Divisions in the Fertilizer Market Areas

Fertilizer market areas fall into one of two general categories: 1) "A" areas, characterized by high agricultural production and access to some mode of transportation; and 2) "B" areas, characterized by

remoteness from transportation infrastructure and/or low agricultural potential. In Yemen, the "A" areas are served by both city-based private merchants and outlying Bank agents, and the "B" areas are not served.

Each market area suggests a different policy approach. In the "A" areas, the main government concern is to stabilize prices, ensure timely supplies, and maintain quality standards. It can be argued that this is being fairly well done in Yemen in the case of urea. In the "B" areas, the main concern is to perform the necessary technical and promotional work to encourage fertilizer demand. Little of this work is being done, as neither the CACB nor the private sector has the incentive to do so.

The government is pursuing a uniform-price policy for urea, but has not addressed the issue of who pays the extra costs of distributing to remote areas. It has not declared that it fully expects the CACB to absorb those costs, although the CACB is now doing so to a limited extent.

Farmers in the "A" areas have benefitted by the recent inroads made by private merchants into the Bank monopoly. It is unreasonable to hope for similar "B" area open market competition in the near future. Here, the private sector in Yemen feels that the government has to take the lead in developing the market -- a task which is linked to several other themes raised below.

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2. Short vs. Long-term Interests of the Farmers. The promotion of fertilizer use in Yemen has followed the path of least resistance; urea is the most commonly applied fertilizer simply because it has been donated. Farmers have gotten accustomed to using urea because of its favorable pricing and ready availability, not because of its technical appropriateness. The sole use of nitrogen in Yemen's sandy soils over a period of years is not recommended, yet the FAO and others have found the Yemeni government resistant to suggestions that its extension workers promote a more balanced approach.

Furthermore, it appears that Yemeni farmers have a long-standing belief that in spite of fertilizer's immediate production benefits, its use leaves the soil in a worse condition afterwards. The exclusive use of urea has probably reinforced this belief. The longer, then, that urea is predominantly used, the more negative local bias will have to be overcome by promoters of other fertilizer types.

The long-term interests of the farmers require that a more balanced mix of nutrients be promoted and sold. Some argue that a compound fertilizer should not be promoted until more soils research is completed: others argue that in the absence of technical data, a compound blend such as 15-15-15 is more appropriate than straight nitrogen. It turns out that the resolution of this issue -- what long-term focus government fertilizer policies should have

-- has immediate impact on the role of the private sector.

3. Short vs. Long-term Interests of the Private Sector.

Although quick to pursue opportunity, the Yemeni private traders are willing to commit themselves to sizeable investments that imply more than quick turnover and high profits. In fact, merchants' investments often seem to lack a certain hard-nosed business sense in their eagerness to capitalize on new markets.(1)

What is most interesting in Yemen is that a "new generation" of agriculturally-oriented merchants is appearing. Four entrepreneurs interviewed, Ali Othman Sudam, El Soffary and Sons, Agricultural Development Stores, and Mohamed Hayel Ahmed, all spoke thoughtfully about the long-term prospects of the agricultural input market, and their interest in being 'full-line' suppliers. (In contrast, this business strategy was not so clearly articulated by entrepreneurs in Indonesia.) The older merchants, such as Yehia Abdo Allonah, did not subscribe to this particular marketing approach, and seemed more interested in ensuring an equally high return on each product handled. Mr. Allonah retains more of a strict 'trader' psychology than the newer generation of merchants.

4. The Disposition of Foreign Fertilizer Donations. The benefits of foreign fertilizer donations are obvious, but such donations pose certain policy problems. The first is the question of whether the donations skew national supplies too much in favor of one particular type of fertilizer; the second is the question of pricing.

The recipient country exercises limited control over the types of fertilizer donations it may receive. Yemen has virtually no control at the moment, since its only donations are from Saudi Arabia, and urea is the only fertilizer which Saudi Arabia manufactures. Short of asking for cash grants instead, Yemen has every incentive to accept Saudi urea. (The Yemeni government, in particular, accepts the gift because it is an easy revenue source for the Ministry of Agriculture.)

The long-term solution to the problem fertilizer supplies skewed in favor of urea is a government commitment to a more diverse pattern of demand. This commitment could be financed by urea-generated revenues.

Although the demand for urea has been 'supply-led', i.e., created by ready supplies and price incentives, the demand for compound fertilizers will have to be 'demand-led'. The long-term goal of these policies would be to incorporate the urea donations in supplies for a much larger total demand.(2)

5. Government Approach to Business Malpractice. In 1976, the CACB directly intervened in a private sector oligopoly market, and within a year had created a virtual public sector monopoly. There are other more flexible public sector responses to evidences of free market failure, market volatility, and/or inadequate market coverage by private sector distributors. These methods include: a) market regulation, such as commodity ceiling prices and quality control; b) limited public sector involvement, including market representation in 'fringe' areas where private sector competition cannot be assumed; and c) anti-trust legislation and legal enforcement.

Of these three approaches, the second seems the most complete and flexible response for Yemen. It is arguable that only by establishing a market presence, as in (b), can the ceiling price and quality standards suggested in (a) be enforced.

6. The Role of the Large Fertilizer User. In most developing countries there is a sub-sector of the fertilizer market devoted to large farms or estates. These large users typically form the backbone of the private sector interest in fertilizer marketing. In Yemen, however, there are virtually no large farms. (The main exception is the Surdud Farm, a government owned farm in the Tinama built by the Russians but recently reorganized under a contract with an American management company.)

The fact that private merchants must depend entirely on small farmers has the effect of a) driving up marketing costs due to a more disperse clientele, and b) making merchants more vulnerable to changes in public policies. This second factor is the more important: since small farmers are the focus of public sector interest in agriculture, private distributors have no buffer between their business interests and the effects of public sector policies. This adds weight to the argument that the future interest of the Bank in non-urea fertilizers should be clarified.

In sum, the long-term interests of both the farmers and the private sector lie in:

- open competition between merchants and the Bank;
- a government commitment to promoting a more balanced use of fertilizers, even at the expense of future increases in its urea revenues;
- a government commitment to maintaining market flexibility in response to allegations of private sector collusion and CACB hoarding of stocks.

Government commitments pointing in this direction will encourage new private sector initiatives, such as those outlined in the next chapter.

Notes to Chapter V

1. Evidence of this abounds. El Soffary bought 10,000 bags of ASN in 1980 and has sold only 4,000; Ali Othman Sudan bought 5,000 bags of urea in 1982 and said he hasn't sold any; and Mohamed Hayel Ahmed and Yehia Abdo Allonah together bought 20,000 bags of urea last year and have sold very little.

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Chapter VI - Implementable Private Sector Projects

The Yemeni fertilizer market is relatively small, and there are few, if any, immediately apparent private sector investment opportunities. Future initiatives will require that at least one of the following developments take place:

1. a rationalization of the price structure that will favor a more balanced pattern of fertilizer use. Depending on the government's propensity to subsidize fertilizer, either the price of urea could be slowly raised to free market levels, or the prices of certain compound fertilizers could be cross-subsidized with urea-generated revenues;
2. a commitment by the government to assist the internationally financed agricultural development projects in a) undertaking basic soils research and fertilizer trials, b) promoting less urea-dependent fertilizer usage, and c) combining fertilizer promotional efforts with efforts to simultaneously reduce other production constraints, especially water availability and land tenure arrangements that discourage the use of modern inputs;
3. changing CACB procedures to allow farmers to use bank credit (issued for the purpose of buying fertilizer) to buy fertilizer at non-bank outlets;

4. raising the margins paid by the CACB to its agents to encourage their assuming a more active rural market role;
5. a clarification of the uncertainty surrounding the CACB and MOA's plans concerning future supply and pricing of non-urea fertilizers.

Items (1) through (4) will open up definite new markets for the private sector: items (1)-(3) are aimed at the importer/traders based in the main cities, and item (4) would encourage retail-level marketing in the rural areas. Item (5) would reduce the risk perceived by the private trading companies in entering into the young non-urea markets.

Assuming progress is made in these directions, three implementable projects are described below.

1. BASF: A Foreign Supplier's Partnership with Local Distributors

BASF, a West-German supplier of agricultural inputs, has called urea Yemen's "devil": the devil for BASF as a supplier because it is given free to the country, and a devil for the country because it does not give long-term benefit to marginal soils. Once the government's one-sided commitment to urea is tempered, BASF is prepared to invest in promoting compound fertilizers in Yemen.

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BASF did not specify exactly what steps the government would have to take to trigger a commitment. It did, however, say that: first, domestic prices would have to be rationalized as described in point (1) above. BASF compound fertilizer currently sells in Yemen for 30-40% more than urea. BASF indicated that a 20% premium for compound fertilizers was common on the world market, and would be acceptable in Yemen. This translates into a relatively small 15-20% increase in the domestic retail price of urea. Second, some kind of government commitment to non-urea fertilizers. BASF recognizes that given the lack of long-term experience with fertilizer, Yemeni farmers are prone to heresay when making fertilizer-use decisions. Before launching its own compound fertilizer initiative, BASF would like to know that its recommendations are going to be supported by government extension workers, or at least not contradicted.

Assuming that the current status of urea is downgraded by some combination of the above two steps, BASF's marketing program would consist of:

- a. working with its main agent, El Sofriary, and its sub-agent, Agricultural Development Stores, to promote compound fertilizers. Since there is little technical information on fertilizer response in Yemen, BASF would supplement its technical back-stopping with data from and experience in Saudi Arabia. Agricultural Development Stores, a Saudi-based company, also has first hand experience promoting compound fertilizers in Saudi Arabia.

b. underwriting an extensive program of trial plots and demonstrations. BASF feels that such forms of direct proof "are the only way to promote fertilizer." Its approach would be to send agronomists out to the fields and convince farmers to put aside a part of their fields -- 10 to 100 square meters -- for the purpose of trying compound fertilizers. The fertilizer would, of course, be applied free of charge, and would even be applied, if necessary, for two years running to show the longer-term benefits of potassium and phosphate nutrients. BASF indicated that it would donate all the requisite demonstration fertilizer -- up to 50 tons per year -- and work with the agent's agronomists doing the demonstration work. El Soffary already has two staff agronomists devoted to the BASF product line, and the staff of Agricultural Development Stores is even more committed, if anything, to a long-term marketing strategy.

Technically, BASF has no doubt that compound fertilizers are what Yemen needs, and that they could "conquer the country technically in two years." Given basic market developments as described above, BASF, El Soffary, and Agricultural Development Stores all agree there is a substantial market for compound fertilizers, and they are better positioned than anyone else in Yemen to pursue it. BASF's main concerns, however, are that the government's interest in the status quo is such that these market developments may not be immediately forthcoming. USAID, it was suggested, could join with the FAO, UNDP, and the World Bank in trying to convince the government to encourage the supply of non-urea fertilizers.

2. The Hodeidah Merchants: A Plan to Expand into CACB Market

Currently, when a farmer wishes to apply part of his CACB agricultural credit to purchasing fertilizer, the Bank voucher is good only at Bank branch offices and agencies. If Bank fertilizer credits were good anywhere, private merchants could more directly compete with Bank outlets. The Bank itself would become less a public sector monopoly than a market stabilizing influence.

The Hodeidah merchants, many of which are vastly overstocked with urea, would welcome this plan. But more interesting than the impact on inventories is the likely consequence of this plan on the non-urea markets.

The FAO/UNDP Tihama Project is trying to create a demand for potassium and phosphate that they recommend become part of standard Bank agricultural assistance packages in that area. The idea for this package is tied in with the Project's introduction of new seed varieties. These standardized input packages have not been promoted by the CACB or the extension service, and it was felt that the Bank lacked interest in either stocking these new fertilizer types or guaranteeing timely supplies. Supply delays have been frequently cited.

Packaging and sales of standardized input packages is a task ideally suited to the Hodeidan merchants. Ceiling prices could be agreed upon by the participants, and the Bank, if necessary could maintain small stocks (as it has now) to use to enforce these ceilings.

The benefits of allowing farmers to use Bank-issued credit anywhere are:

- a. farmers would benefit by lower prices for all fertilizers, including urea;
- b. the interests and marketing skills of the private merchants would be allied with the interests of the FAO/UNDP Tihama project, and with the farmers' long-term needs;
- c. the supply of non-urea fertilizers in the FAO/UNDP recommended packages would not be dependent solely on the Bank's ability to plan, import, and distribute, which is demonstrably poor;
- d. the CACB could rededicate itself to being a financial institution.

In addition, this policy change requires no government or CACB expenditure. Nor would it represent a loss of income accruing to earlier investments, since the CACB has invested to date in virtually no warehousing or other facilities for distributing fertilizer.

The chief risk of this proposal is that Bank credit issued for fertilizer could be spent otherwise. Given the small proportion of Bank credit going to fertilizer, and the large percentage of Bank loans currently being granted in cash (as opposed to any sort of in-kind credits), this risk is slight. If necessary, verification of fertilizer purchases could be made through site visits by either Bank or extension officials.

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3. CACB Agents: A Marketing Response to Increased Margins

An increase in margins to the Bank's rural agents would obviously increase their incentive to sell. Bank officials described ways in which the agents would be likely to go about expanding sales:

- a. direct salesmanship and the provision of technical information;
- b. helping farmers get CACB credit with a fertilizer component;
- c. conducting and publicizing trials and demonstrations on their own land;
- d. making on-farm deliveries.

The CACB agents can be assisted in all of these approaches by public sector assistance of the type offered by FADINAP/ESCAP in Asia and by FAO in selected countries worldwide: dealer training programs. Short courses designed to improve the ability of private dealers to act as adjunct extension workers would be beneficial to themselves, the Bank, and farmers. Also, if the Bank reduces its fertilizer distribution role in Yemen's "A" areas, as discussed in the previous chapter, its rural agents could become affiliated with the city-based merchants. The Bank and the merchants should compete openly for rural agents.

VII. Conclusions and Lessons Learned

North Yemen was chosen as a case study in this series because it represented a young fertilizer market that had in its short history been dominated by both private and public sector distribution monopolies. In the market's early years, the private sector failed to distribute fertilizer in a manner acceptable to the government and to international donor agencies. The story of how private sector interests were destroyed, how a financial institution became the leading fertilizer distributor, and the limitations of the current market configuration, provide insights into how private and public sector interests can be balanced in a small market like Yemen.

The private sector was able to charge high prices for fertilizer in the mid-1970's simply because of the very newness of the market. Early entrants capitalized on taking an early risk, as little information was available on fertilizer supplies, prices, application techniques, or expected returns. The government became able to intervene mainly because outside influences gave it the mechanism (the Agricultural Credit Bank) and the means (Saudi urea donations) to undercut the private market. Had these outside forces not converged at the same moment (1976), government intervention would certainly have been delayed, and would probably have also taken a very different form.

After the government intervened, however, the market balance swung too far towards a public sector monopoly. As in many

countries, the need for public sector intervention, especially when supported by outside public sector aid programs, came to be interpreted as the need for public sector control. The 'cost' of this shift in market control in Yemen was slight, simply because the market was so small that the private sector had made little investment. In another country, however, the cost to the private sector could have been much higher, and the resulting private sector resentment correspondingly greater.

The optimal balance between private and public sector roles in distributing agricultural inputs in Yemen has not yet been struck. Now, however, the basic tension in this balance is not between the private sector's interest in maintaining price ceilings: rather, the tension is between the private sector's interest in an expanded, more diverse fertilizer market and the government's interest in accepting and selling Saudi Arabian urea donations. The current urea market configuration has allowed the Ministry of Agriculture to skew the fertilizer market for its own purposes, which are argueably not the long-term interests of the farmers.

A combined public and private sector marketing push for the adoption of a more balanced set of fertilizer inputs, as described in detail in the previous chapter, would require only marginal changes in government pricing policy, in Agricultural Credit Bank procedures, and in the cooperation between the government and international agricultural development programs. But where is the incentive for change in this direction? Experience in Yemen and elsewhere points in four directions:

1. The private sector itself. In Yemen, there is virtually no cultural, racial or political gap between the country's commercial sector and the government, as there is in Indonesia and, to a lesser extent, in Kenya. The private sector should voice its interest in distributing fertilizer, especially when accompanied by concrete marketing plans such as those developed by El Soffary and BASF.
2. International agricultural development programs. The FAO/UNDP project in the Tihama and the World Bank funded Central Agricultural Research Service in Taiz are interested in improving supplies of non-urea fertilizers. To date, however, they have found the government resistant. The upcoming FAO "Fertilizer Use Development Program" should support them in promoting changes in the fertilizer distribution system.
3. The foreign fertilizer donor. Donors often attach conditions to their donations; in recent years, donor organizations have often required that recipient countries take steps in the direction of market liberalization. In the case of Yemen, it is doubtful that Saudi Arabia will impose any market conditions on its urea donations. If Yemen, however, began soliciting and receiving donations of other fertilizers from other sources, this source of policy incentive could be explored.
4. The government itself. In the short term, the interests of other government offices may differ from those of the Ministry of Agriculture. Only the government can decide, however, to encourage private sector investments by taking the steps laid out in the previous chapter. The government's interest in

promoting the private sector--ranging from reduced public sector expenditures to marshalling private sector assistance in publicly desirable marketing efforts -- have hopefully been spelled out above.

Since Yemen is so close to being a free market economy, it is not surprising that several of the lessons learned in Yemen reinforce free markets. A relatively small change in the price of urea would trigger a marketing effort to alter the pattern of demand. It would encourage competition; competition that in almost any form is desirable.

Another lesson learned in Yemen is that in a young fertilizer market, the establishment of fertilizer consumption objectives can be useful. These objectives can be in the form of standardized packages for farmers or of national consumption targets. In either case, the objectives help ensure that fertilizer use is planned for, and not completely subject to short-term economics. The government's short term interest in selling urea, for example, is not tied in with its long-term goal of food self-sufficiency. Fertilizer use objectives would help the government pursue the type of foreign assistance grants it needs the most. Also, they would reinforce the idea that fertilizer is rarely purchased and applied apart from other necessary inputs. Fertilizer is best promoted, sold, and applied as part of a system, and fertilizer use objectives can be coordinated with the overall needs and constraints of the system.

A final lesson emerges from the fact that Yemen is still a small fertilizer market, and neither the public nor private sectors

have yet invested large amounts in fertilizer marketing and distribution. The CACB has performed a valuable job of stabilizing the market in its early days. Fortunately, in the most accessible agricultural regions--the "A" areas--this job is no longer necessary.

The Bank's most valuable commercial role, as supposed to a financial role lies in the "B" areas. By focusing on its role as market stabilizer, not monopoly supplier, a parastatal organization can perform its most valuable economic function without an ever increasing commercial responsibility or an ever growing investment in distribution facilities. On the contrary, as a young market matures the commercial role of the parastatal becomes less vital.