

**AN ANALYSIS OF THE FEASIBILITY  
AND CONSEQUENCES OF PRIVATE SECTOR  
FERTILIZER IMPORTS INTO BANGLADESH**

REPORT BY  
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&  
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**CENTER FOR PRIVATIZATION**

2000 Pennsylvania Avenue, N.W.  
Washington, D.C. 20006

Project No. 87

January 1989

Prepared for the  
BUREAU FOR PRIVATE ENTERPRISE  
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

PN-ABC-484

2000-610 38

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This report was prepared by  
Public Administration Service under  
USAID Contract No. DPE-0008-C-00-5850-00  
between the U.S. Agency for International Development  
and Analysis Group, Inc.

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# AN ANALYSIS OF THE FEASIBILITY AND CONSEQUENCES OF PRIVATE SECTOR FERTILIZER IMPORTS INTO BANGLADESH

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## **Executive Summary**

### **An Analysis of the Feasibility and Consequences of Private Sector Fertilizer Imports Into Bangladesh**

#### **Study Purpose**

Since 1962 BADC has had exclusive responsibility for the procurement and distribution of fertilizers in Bangladesh. Beginning in 1978 USAID's FDI-I project has assisted BADC in instituting free market fertilizer retailing and wholesaling nationwide. The private sector now handles 99% of all fertilizer at the wholesale/retail level and operates in a competitive, efficient and responsive manner. This private sector could continue to grow into more of a national distribution system if the current constraints of fertilizer price subsidies, regional spot shortages of supplies, and lack of product diversification could be solved.

Despite rapid advances in domestic production capacity about one-third of total fertilizer requirements, including all potassium (MP) and two-thirds of all phosphates (TSP), are imported under concessional loans and grants from over a dozen donors. BADC supply procurement is a lengthy and costly process and regional availability of supplies is often a problem during seasonal high demand periods. In addition, Bangladesh does not currently have the product quality and diversification available in other sub-continent countries. The private sector seems eager and capable to expand its role in fertilizer procurement, distribution, and diversification.

As a pre-condition to further USAID assistance in fertilizer distribution improvements under FDI-II, the GOB and USAID agreed to examine the feasibility and consequences of private sector importation of fertilizers. This is an important but sensitive policy issue within the Bangladesh context since the GOB has only recently implemented significant denationalization and divestment of majority of the commercial and industrial sectors socialized after Liberation in 1971.

#### **Findings and Conclusions**

1. Bangladesh's critically important fertilizer sector has been under public control since 1962. Only recently has private wholesaling and retailing been introduced, over the vigorous opposition of BADC. Expansion of private sector involvement in fertilizer marketing to include importation would be a logical next step in the fertilizer distribution improvements introduced under FDI-I and would be consistent with general GOB privatization policies. However, within the historical context of Bangladesh, further privatization in the fertilizer sector can be considered one of the most challenging privatization tasks facing the GOB.

2. The current fertilizer marketing system is characterized by important constraints on overall supply and procurement, adequate and timely regional availability of product, and serious product quality problems.

3. There are at least twenty private sector firms in Bangladesh who are interested in importing fertilizers if the important policy issues of GOB fertilizer subsidies and access to

foreign exchange (or commodity donor payment rights) can be resolved. These firms seem to have the financial capital base and management experience to procure fertilizer in international markets. Minimally adequate bulk handling and associated services are available to private firms at Chittagong and Mongla ports but at very low discharge rates (1000 MT FWWD).

4. If significant free market fertilizer importation stimulates the development of competitive national-level private sector distribution systems for fertilizer, the following probable or potential impacts may be expected: Lower landed costs for imported fertilizers, lower internal movement and handling costs, improved seasonal availability and quality of fertilizers available in all regions, and expanded services to farmers. Larger firms in a competitive national market would introduce new fertilizers, change packaging and content formulations, and vigorously advertise and promote fertilizer use.

5. Improvements in the fertilizer sector should facilitate increases in both the efficiency and intensity of use of current and new fertilizers, resulting in a favorable impact on cereal grain yields and total output. Modest increases in efficiency (from 6.0 to 6.5 Kg grain per Kg nutrient) and a gradual increase in sales growth (from 9%/year to 11%/year) could increase total response by 900,000 MT/year which would be worth over \$175,000,000 at current farmgate prices.

6. The principal obstacles to expansion of the private sector into supply procurement are: (1) the Import Policy Order which permits only BADC to import the principal fertilizer nutrients and (2) fertilizer price subsidies which have grown in the last three years to over 2000 Taka/MT for TSP and nearly 1000 Taka/MT for MP (difference between ex-PDP and world prices).

7. If the private sector were allowed to play a larger role in the fertilizer sector, at least four technically feasible options exist which would permit step-wise expansion of private sector firms into fertilizer importation: (I) Joint BADC-private sector procurement; (II) Mechanically offload at TSPC with joint BADC-private sector lifting; (III) Private sector procurement with commodity donor payment rights (donor foreign exchange); and (IV) Private sector procurement with mechanical offloading and lifting.

### **Principal Recommendations**

1. Private sector firms should be allowed to import and distribute fertilizer raw materials and finished products on a "level playing field" basis with BADC by amending the Import Policy Order and resolving policy issues concerning price subsidies and private sector access to foreign exchange.

2. Transition to private sector importation should be a gradual and carefully planned four phase process designed to address the major issues and overcome the current constraints and BADC opposition:

Phase I: Expand the TDP concept to establish the ports and the TSPC as TDPs for private sector lifting of imported TSP, MP and other fertilizers at a 500 Tk/MT discount from ex-PDP prices.

Phase II: Initiate policy discussion between MOA, MOF, ERD, BCIC, BADC, and major donor-lender agencies regarding rationalizing fertilizer commodity policies, modifying the Import Policy Order, and alternatives for dealing with the fertilizer price subsidy issue.

Phase III: Assist the GOB and MOA in establishing a National Fertilizer Coordinating Committee to facilitate private sector participation in fertilizer policymaking and procurement planning which will eventually implement joint BADC-private sector importation of donor-assisted fertilizers.

Phase IV: Upon successful performance of the private sector in improving fertilizer availability and quality, permit public and private free market fertilizer importation with MOA monitoring.

3. The GOB Import Policy Order should be amended in sections 31.01, 31.02, 31.03 and 31.04 in order to allow for both BADC and private sector firms, as approved by the MOA, to import fertilizers on a free market basis (Options II & IV).

4. Phased reductions in the level of fertilizer prices subsidies through a ex-PDP price increases and/or transfer of the point-of-subsidy to BCIC or other GOB agency, subject to donor agency concurrence.

5. Establish a National Fertilizer Coordinating Committee to provide the institutional mechanism to allow more private sector input into fertilizer planning and policymaking. The Coordinating Committee would be chaired by the Secretaries of Agriculture and Industries with membership from BADC, BCIC, ERD, Bangladesh Bank, and private sector. The Committee would advise MOA and MOI on policy matters, work with donor agencies to make commodity donor payment rights more available to commercial firms, and monitor fertilizer supply and demand situations.

6. MOA, MOI and the private sector, through the National Fertilizer Coordinating Committee, should begin to negotiate with donor agencies for joint BADC-private sector importation on a "level playing field" basis (Options I & III) through private sector access to commodity donor payment rights and information on donor-assisted supplies.

7. As a part of the overall GOB assessment of the role of private and public institutions in the fertilizer sector, BADC's commercial role in fertilizer should be attenuated and its developmental role expanded. This might include systematic crop output reporting, monitoring of fertilizer supply and price situation in all regions, more dealer development training, and assessment of new economically viable crops. This will require the establishment within BADC of a computer data management and reporting capability and a well-trained field staff to conduct regular nation-wide surveys.

## **Study Consultants**

The Center for Privatization, Washington, D.C., provided two consultants from Public Administration Service to undertake this study: Dr. Craig L. Infanger, Team Leader and Policy Economist, and Dr. Milton Gertsch, Agribusiness Specialist. The Team engaged Mr. M.I.M. Howladar, a former general manager in BADC and currently a private consultant in Dhaka, to assist in data collection and research. GOB officials, private businessmen, and donor agency officers were interviewed regarding the constraints to private importation, procedures necessary to realize private importation and implications for the fertilizer sector and Bangladesh agriculture. Two field inspection trips were taken to examine port facilities and bulk material handling capabilities. Secondary data were collected from BADC, BCIC, IFDC/Dhaka, USAID/Dhaka, and other sources. The in-country portion of the study was completed during November and December, 1988.

## Acknowledgments

The Import Study Team would like to acknowledge the helpful assistance of several people. Dr. Ray Renfro, the USAID Project Officer for FDI-II, provided guidance and support including important assistance with analysis of the fertilizer subsidy situation. Dr. Charles Hash and Mr. Alan Hurdus of the USAID Food and Agriculture Office were supportive and helpful in reviewing preliminary drafts and formulating strategies. Mr. Ken Moots, Chief of Party for IFDC/Dhaka, kindly provided office space, access to computers, and made his staff available to the Team for data collection and discussions which proved invaluable. Mr. Bill Mattison, Credit Specialist for IFDC/Dhaka, kindly made his personal automobile available to the Team for local transportation. Mr. M.I.M. Howladar proved to be an eager and hardworking associate and was especially helpful in securing data and other information for the Team. And finally, Dr. Paul Stangel of IFDC took time from his busy schedule in Dhaka to review a draft of the study and provide insightful comments and criticisms.

Dr. Craig L. Infanger  
Dr. Milton E. Gertsch

January, 1989

## List of Abbreviations and Acronyms

ADB	Asian Development Bank
ADP	Annual Development Plan
BADC	Bangladesh Agricultural Development Corporation
BARC	Bangladesh Agricultural Research Council
BBS	Bangladesh Bureau of Statistics
BCIC	Bangladesh Chemical Industries Corporation
BIDS	Bangladesh Institute for Development Studies
BIRRI	Bangladesh Rice Research Institute
CIDA	Canadian International Development Agency
DAP	Diammonium Phosphate
EPADC	East Pakistan Agricultural Development Corporation
ERD	External Resources Division, GOB
FAO	Food and Agriculture Organization, United Nations
FDI-I	USAID Fertilizer Distribution Improvement Project-Phase One
FDI-II	USAID Fertilizer Distribution Improvement Project-Phase Two
FWWD	Fair Weather Working Day
FY	Fiscal Year (July 1-June 30 in Bangladesh)
GOB	Government of Bangladesh
GTSP	Granular Triple Superphosphate
HYV	High Yielding Variety
IFDC	International Fertilizer Development Center
IFDC/Dhaka	IFDC Technical Assistance Team, Dhaka
IMF	International Monetary Fund
LC	Letter of Credit
LCA	Letter of Credit Authorization
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MP	Muriate of Potash
MT	Metric Ton
NFDA	National Fertilizer Dealers Association
NFSP	National Fertilizer Storage Plan
NIP	New Industrial Policy
NMS	New (Fertilizer) Marketing System
NPK	Compound Fertilizer Containing Nitrogen, Phosphate, and Potash
OMS	Old (Fertilizer) Marketing System
PDP	Primary Distribution Point
PP	Project Paper
SEM	Secondary Exchange Market

TA	Technical Assistance
TCCA	Thana Central Cooperative Association
TDP	Transportation Discount Point
TSC	Thana Sales Center
TSP	Triple Superphosphate
TSPC	TSP Complex (Chittagong)
USAID	U.S. Agency for International Development
WES	Wage Earners Scheme

## Units of Measure

1 acre (ac)	= 0.405 hectare (ha)
1 kilogram (kg)	= 2.205 pounds (lb) = 1.07 seers (sr)
1 short ton (st)	= 2,000 lb = 0.907 metric ton (mt)
1 long ton (lt)	= 2,240 lb = 1.02 mt = 27.2 md
1 metric ton (MT)	= 1,000 kg = 26.8 maund
1 maund (md)	= 40 seers = 82.27 lb = 37.3 kg
1 seer (sr)	= 2.06 lb = 0.93 kg
1 Taka (Tk)	= \$0.0313
1 U.S. Dollar (US\$)	= 31.9 Taka (November, 1988)
1 lakh Taka	= 100,000 Taka

## PART I:

### INTRODUCTION

Since 1962 the Bangladesh Agricultural Development Corporation (BADC), a parastatal corporation under the Ministry of Agriculture, has had exclusive responsibility for the procurement and distribution of chemical fertilizers in Bangladesh. In the mid-1970s the downstream fertilizer retailing and wholesaling functions were gradually turned over to private sector businesses through the assistance of the Fertilizer Distribution Project-I (FDI-I), a USAID agricultural development project. Under FDI-I U.S. development assistance financed fertilizer imports, godown construction, and marketing policy in the fertilizer sector. Total U.S. assistance through 1988 under FDI-I amounted to \$222 million, \$190 million in grants and \$32 million in concessional loans.

During the life of FDI-I, a free market system of fertilizer marketing at the retail and wholesale level was slowly established. This "privatized" marketing system now handles 99% of all fertilizer at the wholesale and retail level and appears competitive, efficient, and responsive to farmers' demands for product and services. It seems fairly clear that free market retailing and wholesaling has improved fertilizer availability at competitive prices throughout the country. The transition to more private responsibility for retailing and wholesaling was accomplished despite considerable internal opposition from BADC management and from labor unions.

Under the successor project, FDI-II, USAID is sponsoring \$65 million in further grant and loan assistance to Bangladesh for improvements in the fertilizer marketing and distribution system, including possible expansion of the free market role through private sector access to fertilizer supplies direct from domestic factories and through importation. Important policy issues surround this question of extending private sector activity to include free market importation.

#### **Purpose of the Study**

One pre-condition to the disbursement of funds under FDI-II was the consent of the Government of Bangladesh (GOB) to a study of the procedures, effects and benefits from

allowing private sector firms to import fertilizer. Section 5.4 (d) of Amendment No. 2 to the FDI-II project agreement states: "A study will be undertaken to determine the procedural steps necessary to allow the private sector to import fertilizers and to determine the constraints to, and effects of, such private sector importation."

The purpose of this study is to fulfill that condition precedent by:

- (1) examining present GOB policies and regulations to determine the primary constraints to private sector importation;
- (2) determining some feasible options for private importation of fertilizers; and
- (3) determining the foreseen impacts and consequences of private sector imports on Bangladesh agriculture and the fertilizer sector.

The scope of work approved by the GOB and USAID/Dhaka for this study is included as Appendix A.

### **Study Consultants**

USAID/Dhaka engaged the Center for Privatization, Washington, D.C. to provide consultant services for undertaking this study. Two consultants from Public Administration Service were eventually engaged: Dr. Craig L. Infanger, Team Leader and Policy Economist, and Dr. Milton Gertsch, Agribusiness Specialist. Both consultants have experience working on fertilizer marketing issues in Third World countries and in-country experience in Bangladesh. The team was assisted by Mr. M.I.M. Howladar, a former general manager in BADC and currently a private consultant in Dhaka.

During the in-country period of the consultancy, numerous GOB officials, private businessmen, and donor agency representatives were interviewed regarding the constraints to private importation, procedures necessary to permit private importation, and the implications and consequences for Bangladesh's fertilizer sector and agriculture. Two field inspection trips were undertaken to port cities to evaluate port facilities, bulk material handling, and any potential for bulk blending or processing of fertilizer raw materials. Trip reports are included in Appendix B. Secondary data were collected from BADC, BCIC, IFDC/Dhaka, USAID/Dhaka, and other sources. The in-country portion of the consultancy was completed during November and December, 1988. A listing of professional contacts and information sources is included in Appendix B.

## Country Context

Bangladesh is a relatively small (55,000 square miles) and densely populated country with more than 110 million citizens, over 85% of whom live in rural areas. Per capita income is about \$160/year, making Bangladesh one of the world's poorest nations. The literacy rate is 26%, among the lowest in the world, resulting in a labor force lacking basic skills. The unemployment rate is estimated to be in excess of 30% and there is considerable underemployment. Bangladesh is still an essentially agrarian society in which agriculture generates 45% of the gross domestic product, a share which has been slowly declining, and provides about 60% of domestic employment.

Except for the Chittagong Hill Tracts, Bangladesh is essentially a large flood plain subject to heavy rainfall and severe flooding in the monsoon season. (A disastrous and widespread flood affected large parts of the country in September, 1988.) Although blessed with deep alluvial soils, agriculture remains a subsistence activity based predominantly on rice, wheat, and jute production.

With the recent diffusion of HYV seeds, irrigation expansion, and a fairly steady increase in fertilizer use, total foodgrain production has increased from 13.3 million MT in 1978 to an estimated 16.7 million MT in 1988. However, over the last four years a growing population has resulted in a per capita foodgrain production decline from a high of 166 Kg/capita in 1981 to 159 Kg/capita in 1987. As a consequence, Bangladesh is considered a food deficit country dependent on donor-assisted foodgrain imports.

With little potential for expansion of cultivable acreage and a cropping intensity now averaging over 150%, Bangladesh's soil resources are developing serious fertility problems. Widespread sulfur and zinc deficiencies have been identified. These problems are aggravated by the long-time practice of harvesting most crop residues for use as livestock fodder, fuel, and building materials. The increase in the use of modern inputs, especially chemical fertilizers, represents the best potential for assisting Bangladesh in meeting food needs. Thus, the efficiency of the fertilizer sector in delivering to farmers the appropriate nutrient materials at the proper time is of critical importance to agriculture and the overall Bangladesh economy.

## **Overview of Privatization Policy in Bangladesh**

"Privatization" describes an array of public policies which could include divestiture of a state-owned enterprise, partial divestiture of limited assets or functions, deregulating the public control over certain commercial functions, or the contracting or leasing of public enterprises to private sector firms. In this study the Team uses the term privatization to mean the extending or expanding of free market functions within the commercial sector of the Bangladesh economy.

The role of public versus private control over industries and commercial enterprises in Bangladesh has been the subject of considerable attention and some research in recent years. The most comprehensive review of the privatization is the study completed in 1988 for USAID by Clare E. Humphrey, "Privatization in Bangladesh". Another study was completed for the Canadian by H. H. Mansurul Ameen in 1987, "A Study of Divestment of Industries in Bangladesh". The following review of the background and current privatization policy situation draws upon both of these sources.

After a bloody and disruptive war of liberation in 1971, the new Government of the People's Republic of Bangladesh launched a vigorous and far-reaching socialization program. One objective of the new economic policies was to take control of the "commanding heights" of the economy through nationalization. Under the Abandoned Properties Ordinance, the GOB took control of hundreds of factories and commercial establishments formerly owned by West Pakistanis. The President's Orders No. 26 and 27 in 1972 effectively nationalized the banking, insurance, and industrial sectors, increasing the government's assets ownership from 34% to 92%. Under the guidance of the Planning Commission, state-controlled corporations assumed responsibility for supervision and management of much of the economy. Most of the important industries, including petrochemicals and fertilizers, were reserved specifically for the public sector.

By 1975 it was apparent that the economy of Bangladesh was not recovering from the civil war. Gross domestic output in 1975 was only 75% of the 1969 level and unemployment and inflation had worsened. The level of public subsidy to the state-controlled corporations was taking the bulk of the public budget.

After the end of the Sheikh Mujib government in 1975, the new government under General Zia re-oriented policies and began to gradually encourage private sector

participation in the economy through limited deregulation, denationalization, and privatization. The Revised Investment Policy of 1975 opened the way for joint ventures between public and private investors, increased the limits on private investment, and declared a moratorium on nationalization. Significant privatization was finally initiated with the return of some textile and jute mills to former owners. From 1975 to 1981 approximately 255 state-owned enterprises were divested, denationalized or privatized in one way or another.

The movement towards encouraging more free market development in the Bangladesh economy was accelerated when the current President, General Ershad, assumed office in 1982. Ershad's policies were designed to further enhance the role of the private sector by expediting the privatization begun by General Zia. Under the New Industrial Policy (NIP) of 1982, the list of industries reserved to the public sector was reduced to six (weapons, atomic energy, air transport, telecommunications, electrical generation and distribution, and mechanized forest extraction) while a new list of "concurrent" industries was announced which permitted joint ventures. This Concurrent List included petrochemicals.

A refined and amended New Industrial Policy was announced in 1986. This NIP broadened further the role of the private sector and is currently the general framework guiding current GOB policy. The reserved list was expanded to include currency printing and mining but the concurrent list was dropped and replaced by a statement that, "All industries not reserved for the public sector will be meant for the private sector." The NIP of 1986 also indicated the GOB's willingness to sell 49% of the stock in state-owned enterprises.

While the general trend in GOB public policy towards privatization has been fairly clearly articulated at the highest levels since 1975, the actual implementation has had a "start-and-stop" record. Considerable opposition has arisen at every point. Organized labor has generally viewed privatization as a threat, particularly since denationalization of the jute and textile industries seemingly endangered the jobs of thousands. Strikes and "hartals" (public demonstrations) have been called frequently to display labor's opposition to privatization. In addition, opposition political parties and management of state-owned enterprises have opposed privatization and frustrated GOB attempts to proceed with further

implementation of the 1986 NIP. Major sectors of the economy are still dominated by state owned enterprises.

Nonetheless, Bangladesh is considered one of the world's most notable examples of denationalization of a dominantly public sector controlled economy. Humphrey's research indicates that as many as 1,076 public enterprises have been privatized since 1975. However, the GOB has never really articulated what the role of the private sector should be and has never seriously considered privatization of the two parastatals involved in fertilizer production and procurement, BCIC and BADC.

In general terms, Humphrey's research does indicate that the success rate for privatized firms seems to be relatively greater when: (1) the industry was in private hands before nationalization; (2) the extent of regulatory controls exercised by the GOB was modest; and (3) where the industry focus was on exports with little import requirement. This is very significant for the issue of privatization in the fertilizer sector since both production and distribution were controlled by the government before and after Liberation, substantial subsidies have been incurred every year in production and through retail price subsidies, and the predominant source of supply for fertilizer materials have traditionally been donor-assisted imports. Thus within the historical context of Bangladesh, it is not an understatement to say that privatization of the fertilizer sector may be considered the most challenging privatization task facing the GOB.

## PART II:

### THE FERTILIZER SITUATION AND POLICY ISSUE OF FREE MARKET FERTILIZER IMPORTS

#### Current Fertilizer Use and Production Situation

**Fertilizer Use and Consumption**--Chemical fertilizers were introduced into Bangladesh in 1952-53, primarily for use in tea gardens and agricultural research. Early promotion of fertilizer use was done by the Directorate of Agriculture. Since 1961 BADC has, by ordinance, had exclusive responsibility for the procurement, distribution, and promotion of fertilizers. Fertilizer use really began to increase significantly in 1975/76 when 374,000 tons were imported and a total of 465,000 tons were sold to farmers.

Total fertilizer use has increased every year since 1974, excepting two one-year declines in 1981/82 and 1985/86, for an annual growth rate of over 9% (Table 1). By 1987/8 total use had grown to 1.52 million MT is being projected to be over 1.6 million MT in 1988/89.

Table 1: Annual Fertilizer Sales By Fiscal Year  
( '000 MT)

	Average 1977-80	1981	1982	1983	1984	1985	1986	1987	1988
Divisions:									
Rajshahi	208.5	268	252	304	391	404	389	454	511
Khulna	111.5	132	117	127	156	189	166	200	259
Dhaka	198.9	241	236	274	313	355	353	361	408
Chittagong	229.4	247	224	262	268	311	247	306	338
Bangladesh	799.8	875	829	968	1129	1260	1156	1321	1515

Source: BADC and USAID/Dhaka

On a per unit basis, fertilizer use is still low in Bangladesh. The UNDP agriculture sector review of 1988 indicates that farm survey data show a mean use rate of 46 Kg/ha of nutrients. World Bank estimates from their fertilizer sector review report a use rate of about 60 Kg/ha of plant nutrients. In either case, Bangladeshi farmers use rates are well

below the average for Asia (81 Kg/ha) and the world (85 Kg/ha) but are now slightly above use rates in India and Pakistan.

Urea, triple superphosphate (TSP), and muriate of potash (MP) constitute the three major sources of nutrients for Bangladesh agriculture. In 1986/87 urea constituted 69% of total fertilizer quantity, TSP accounted for 25%, and MP amounted to 5%. Zinc sulfate, ammonium sulfate and gypsum account for the remaining 1% of all nutrients. Gypsum is available as a by-product of the TSP Complex in Chittagong but zinc sulfate and ammonia sulfate are imported--about 11,000 MT in 1988 amounting to less than 1% of total sales.

During 1979-1984 imports of DAP were significant. Imports were officially discouraged on the basis of a technical agronomic concern about relative efficiency of basal nitrogen for rice versus top-dressed nitrogen applied after transplanting. In addition, after domestic urea supply capacity had increased it was then argued that it is not necessary to import nitrogen in the form of DAP when Bangladesh is a nitrogen exporter.

**Sources of Supply**--Due to limited natural resources and a slowly emerging domestic production capacity, Bangladesh has historically had an enormous fertilizer "supply gap". Donor-assisted imports have comprised a substantial share of total fertilizer supplies. A mid-term evaluation USAID's FDI-I project noted that "Bangladesh is operating on a razor's edge with fertilizer imports and production compared to sales and need for food production." Through expanded domestic production capacity and better import management, it is apparent that the overall supply situation has improved in the 1980s.

As recently as 1984/85 and 1985/86, imports totaled over 600,000 MT and constituted about 50% of total sales (Table 2). Import levels dropped to 151,000 MT in 1986/87 but increased to 293,000 MT in 1987/88.

Virtually all fertilizer imports are financed with grants, bilateral assistance and concessional loans from over a dozen major donors and lenders. A listing of imports by type, source, donor agency, and type of financing is included in Table 3. The major donor in terms of quantities supplied over the last ten years have been the Dutch, CIDA, USAID, the Saudis and the Asian Development Bank.

Table 2: Fertilizer Imports by Year and Type of Fertilizer, 1971-1987

Year	TYPE OF FERTILIZER					Total
	Urea	TSP	MP	DAP	Other	
----- ('000 MT) -----						
1970-71	107	151	2	-	-	260
1971-72	109	3	-	-	-	112
1972-73	126	118	-	-	-	244
1973-74	-	98	41	-	10	149
1974-75	142	48	7	-	36	233
1975-76	72	223	38	-	2	235
1976-77	11	21	9	-	-	41
1977-78	260	115	38	-	-	413
1978-79	348	103	77	84	11	623
1979-80	287	173	60	42	11	573
1980-81	64	194	42	36	20	356
1981-82	254	147	26	37	-	464
1982-83	43	135	44	72	9	303
1983-84	94	124	60	76	2	356
1984-85	171	408	75	-	13	667
1985-86	196	356	87	-	1	640
1986-87	0	93	47	-	11	151
1987-88	0	191	83	-	2	276

Source: BADC Newsletters and IFDC/Dhaka

Table 3: Donor Assisted Fertilizer Imports by BADC, 1978-88

Year	Type	Quantity '000 MT.	Source/ Origin	Donor	Type of Financing
-----	-----	-----	-----	-----	-----
1978-79	Urea	68.00	SAFCO	Saudi Arabia	Grant
		20.00	PAK	BDG	Cash FE
		68.80	Kuwait	Dutch	Grant
		14.20	Norway	NORAD	"
		92.50	USA	USAID	"
		6.60	SAFCO	SIDA	"
		32.90	Japan	Japanese	"
		44.70	SAFCO	Saudi Arabia	"
	TSP/DAP	19.00	Tunisia	Japan	5th Yr. Credit
		26.50	U.K.	U.K.	Commodity Asst.
		10.50	Tunisia	Dutch	Grant
		15.50	Tunisia	NORAD	Grant
		13.80	Morocco	Danish	Grant
		83.70	U.S.A.	USAID	Grant
		10.50	Belgian	Belgian	Credit
		7.50	Morocco	NORAD	Grant

Year	Type	Quantity '000 MT.	Source/ Origin	Donor	Type of Financing	
-----	-----	-----	-----	-----	-----	
1978-79	MP	62.40	Canada	CIDA	Grant	
		14.40	"	"	"	
1979-80	Urea	80.20	SAFCO	Saudi Arabia	Grant	
		7.84	SAFCO	"	Grant	
		17.00	FRG	FRG	Grant	
		20.50	Kuwait	Dutch	Grant	
		16.39	Bulgaria	Bulgarian	Barter	
		20.40	USA	OPEC	Spl. Loan	
		52.08	Indonesia	EEC	Grant	
		67.18	Qatar	IDA	Sector Credit	
		5.08	Japan	Japanese	Grant	
		TSP	11.45	Japan	Japan	6th Yen Credit
			16.30	Morocco	FRG	Grant
			45.75	Tunisia	Dutch	"
			20.00	Morocco	IDA	7th IMP Prog.
			10.50	Tunisia	EEC	Grant
	35.28		Morocco	IDA	Sector Credit	
	14.83		Morocco	DANIDA		
	42.23		USA	USAID	Grant	
	3.50		Turkey	NORAD	Grant	
	1.35		Belgium	Belgian	"	
	4.33		Japan	Japanese	"	
	9.90		Turkey	NORAD	"	
	MP		60.42	Canada	CIDA	Grant
		NPK	8.00		NORAD	"
	1980-81	Urea	45.10	SAFCO	Saudi Arabia	Grant
			18.84	Indonesia	EEC	Grant
		TSP	24.55	USA	IFAD	Loan
			8.80	USA	AUB	Loan
5.80			Tunisia	Dutch	Grant	
15.00			Tunisia	Dutch	Grant	
36.60			Morocco	IDA	Credit-1044	
9.00			Tunisia	IDA	"	
10.50			Lebanon	IDA	"	
9.50			Tunisia	IDA	Credit-944	
15.00			Denmark	DANISH	Grant	
31.50			USA	USAID	Grant	
16.91			Japan	Japanese	Grant	
10.50			Holland	Dutch	Spl. Grant	
DAP			21.00	USA	USAID	Grant
		15.18	USA	IDA	Credit-1044	
MP		42.34	Canada	CIDA	Grant	
NPK		8.50	Norway	NORAD	Grant	
		9.50	Finland	Finish	Grant	
ZnSO <sub>4</sub>		1.50	USA	USAID	"	
1981-82		Urea	10.10	Norway	Norway	Grant
			14.52	USA	IFAD	Loan
			19.95	USA	OPEC	Loan
			30.34	Qatar	"	"

Year	Type	Quantity '000 MT.	Source/ Origin	Donor	Type of Financing	
1981-82	Urea	30.75	Qatar	IDA	(10th IMP.Prog)Credit	
		74.75	SAFCO	Saudia Arabia	Grant	
		22.22	Bulgaria	Bulgarian	Barter	
		4.80	Qatar	IDA	Credit-1044	
		46.90	Kuwait	Dutch	Grant	
	TSP	13.65	Morocco	IDA	Credit-1044	
		1.47	Morocco	IDA	Credit-944	
		2.21	Morocco	OPEC	Loan	
		9.90	USA	ADB	Loan	
		5.78	Morocco	Dutch	Grant	
		45.55	Morocco	Dutch	Grant	
		21.00	Turkey	Dutch	Grant	
		15.50	Denmark	Danish	Grant	
		16.58	Morocco	FRG(KFW)	Grant	
		15.70	Turkey	NORAD	Grant	
		MP	13.09	USA	IFAD	Loan
	14.40		Korea	FRG(KFW)	Grant	
	9.40		Korea	NORAD	Grant	
	26.00		Canada	CIDA	Grant	
	1982-83	Urea	33.15	SAFCO	Saudi Arabia	Grant
			9.86	Japan	Japan	KR Grant
		TSP	64.20	Tunisia	Dutch	Grant
			40.10	Morocco	Danish	Grant
			8.81	Japan	Japanese	KR.Grant
			21.98	Bulgaria	Bulgarian	Barter
		DAP	71.69	USA	USAID	Grant
		NPK	9.40	Norway	NORAD	Grant
MP		44.00	Canada	CIDA	Grant	
1983-84		Urea	50.43	USA	USAID	Grant
			14.05	SAFCO	Saudi Arabia	Grant
	TSP	17.44	Tunisia	NORAD	Grant	
		5.00	U.K.	U.K.	Grant	
		8.58	USA	ADB	Loan	
		8.40	USA	IFAD	Loan	
		30.10	Tunisia	Dutch	Grant	
		45.25	Morocco	Danish	Grant	
		9.04	W.German	KFW	Grant	
	DAP	24.99	USA	USAID	Grant	
		24.55	Bulgaria	Bulgarian	Barter	
		20.99	Czech	Czechoslovakia	Barter	
		5.88	USA	NORAD	Grant	
	MP	60.00	Canada	CIDA	Grant	
	ZnSO <sub>4</sub>	1.56	USA	USAID	Grant	
	PS	1.00	Japan	Japan	10th Yen Credit	
	1984-85	Urea	25.79	Indonesia	BDG	Cash FE
106.34			USA	USAID	Grant	

Year	Type	Quantity '000 MT.	Source/ Origin	Donor	Type of Financing
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1984-85	Urea	12.60	Norway	NORAD	Grant
		26.11	Kuwait	Dutch	Grant
	TSP	13.97	USA	ADB	CIP-I Loan
		29.72	Bulgaria	Bulgarian	Barter
		15.00	USA	TCB	Com. Trade
		28.14	Rumania	Rumanian	Barter
		69.83	USA	ADB	CIP-III Loan
		9.00	W.German	KFW(FRG)	Grant
		48.50	Iraq	Dutch	Grant
		72.40	Tunisia	EEC	Grant
		27.30	USA	ADB	CIP-II Loan
		36.72	Morocco	Danish	Grant
	19.50	SAFCO	BDG	Cash FE	
	MP	75.00	Canada	CIDA	Grant
ZnSO <sub>4</sub>	11.53	USA	IFAD	Loan	
1985-86	Urea	23.50	Japan	Japan	KR Grant
		48.00	Pakistan	TCB/TCP	Jute Barter
		169.63	Pakistan	IDB	Loan
		14.51	FRG	FRG	Grant
	TSP	27.86	Korea	DPRK	Barter
		19.44	USA	ADB	CIP-III Loan
		32.71	Morocco	Danish	Grant
		101.99	Tunisia	Dutch	Grant
	MP	47.25	Canada	CIDA	Grant
		28.80	Jordan	SIDA	Grant
19.95		Tunisia	NORAD	Grant	
PS	1.00	Japan	Japan	Debt Relief	
1986-87	TSP	77.98	Tunisia	Dutch	Grant
		14.98	Tunisia	Japan	KR Grant
	MP	47.27	Canada	CIDA	Grant
	ZnSO <sub>4</sub>	2.00	Korea	TCB/SUKUB	Barter
	Ammonium Sulphate	6.32	Japan	Japan	KR Grant
1987-88	TSP	40.00	Iraq	Dutch	Grant
		35.00	Tunisia	Dutch	Grant
		25.00	USA	ADB	Loan
		18.00	Tunisia	NORAD	Grant
		15.00	USA	ADB	Loan
		75.00	USA	ADB	Loan
		25.00	USA	ADB	Loan
		22.00	Iraq	Dutch	Grant
	MP	30.00	Canada	CIDA	Grant
		30.00	Canada	CIDA	Grant
	Zinc	3.00	Korea	ADB	Loan
	NPK	11.53	NORAD		

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Source: BADC (incomplete data)

With the successful discovery and tapping of natural gas supplies, domestic fertilizer production was begun in 1961 with the Fenchuganj Urea Factory. Other urea factories have now come into production: Ghorasal (1970), Ashuganj (1984), Polash (1986), and just recently the Chittagong Urea Factory (1987). Phosphorous requirements are met through TSP or DAP imports and the TSP production complex in Chittagong. All BCIC factories currently have a combined production of 1.8 million tons (Table 4). Actual production performance has been well below capacity.

Table 4: BCIC Fertilizer Factory Production Performance

Plant	Capacity ( '000 MT)	-----Production ( '000 MT)-----					
		82/83	83/84	84/85	85/86	86/87	87/88
Fenchuganj	106	87	88	95	80	112	104
Ghorasal	340	283	257	232	307	318	312
Ashuganj	528	138	379	415	425	337	493
Polash	95	-	-	-	29	80	95
Chittagong TSP	152	69	81	55	101	136	113
Chittagong Urea	561	-	-	-	-	-	280

Source: BCIC

Domestic production of fertilizer was about 1.4 million tons in 1987/88. Now that the Chittagong urea facility is fully operational after commissioning in 1987, domestic urea supply should exceed 1.5 million MT per year. This results in urea production in excess of near-term nitrogen demands so Bangladesh has now become a modest urea exporter.

### Current Public and Private Sector Roles in Fertilizer Marketing

**Current Distribution System--**The public sector involvement in the promotion and provision of modern inputs to Bangladesh agriculture precedes the nationalization thrust of the early 1970s. In 1961 the East Pakistan Agricultural Development Corporation (EPADC) was formed and charged with the responsibilities of procuring and distributing seeds, fertilizer, and irrigation equipment to farmers at subsidized prices. After 1971 EPADC became the Bangladesh Agricultural Development Corporation and carried forward the same basic responsibilities. With the lone exception of gypsum, which has been

privately distributed in recent years from the TSPC, fertilizer distribution has always been a highly regulated public function.

The fertilizer distribution and marketing structure prior to 1978 has come to be known as the Old Marketing System (OMS). Under the OMS BADC had exclusive control of the procurement, distribution, and marketing of fertilizers. Marketing was accomplished by appointing local retail dealers to sell fertilizer to farmers. To supply stocks under the OMS, BADC delivered fertilizer to intermediate godowns, Thana Sales Centers (TSCs), and to Thana Central Cooperative Association (TCCA) godowns. Sales to the appointed dealers were made through TSCs. The dealer's gross commission was based on distance from the TSC. Retail sales price and territory were regulated by BADC.

As fertilizer use began to increase significantly in the 1970s--from 108,000 MT in 1965/66 to 465,000 MT in 1975/76--the heavily subsidized price created a serious budget problem for the GOB. By 1976/77 the fertilizer subsidy amounted to 59% of BADC total budget and 4% of total GOB expenditures, with the prospect of increasing to 6%. In addition, erratic and inadequate domestic fertilizer production, poorly programmed imports, chronic foreign exchange deficits, and limited national storage capacity, BADC could not hope to meet fertilizer demands without donor assistance.

It was in this context that the GOB and USAID began negotiations in 1977 on what was to become FDI-I. To achieve the stated purpose of increasing fertilizer use on an equitable basis, FDI-I also included institutional development and policy reform goals designed to privatize marketing by expanding the free market involvement in fertilizer distribution. Regarding this project Clare Humphrey noted that "USAID's fertilizer distribution project is the only long-term privatization program [in Bangladesh] carried out by a major donor agency" (pg. 206).

The Final Evaluation of the FDI-I project by Infanger, Samad and Hooker in mid-1988 concluded that a well-developed and seemingly competitive system of private wholesalers and dealers has emerged in the fertilizer sector. There are now over 8,000 wholesalers and dealers who lift from BADC Primary Distribution Points (PDPs) or Transportation Discount Points (TDPs) godowns. About 99% of the total volume of BADC fertilizer stocks now move directly through these wholesalers to an estimated 50,000 retail dealers located throughout Bangladesh.

Wholesale prices for fertilizers are currently determined by the GOB based on BCIC production costs or import costs, plus a markup for BADC overhead. Gross retail marketing margins (farmer's cost minus PDP price) are not regulated under the NMS and in 1987 averaged 8% of farmer price for urea and TSP and 15.5% for MP. Merchandise credit is commonly provided by wholesalers to dealers and by dealers to farmers, often at no interest cost, through delayed payment schemes.

The Secretary of Agriculture and other high GOB officials agree that free market retailing/wholesaling of fertilizer marketing has been beneficial to Bangladeshi farmers. The policy changes and institutional development stimulated by USAID's fertilizer projects resulted in the growth of a dynamic private sector wholesaler/dealer network. The impacts of these changes have improved availability of fertilizers at competitive prices for farmers throughout the country. **The private market is more responsive than BADC to shifts in demand and supply conditions. It seems logical to extend these benefits of commercial activity into the national bulk supply mechanisms. The private sector has performed reasonably well in procuring and marketing pesticides and is assuming more of a role in privately supplying pump for irrigation in competition with BADC.**

**Constraints on the Present Distribution System--**Although the NMS clearly represents an improvement over the OMS, there are still important constraints and problems including overall supply and procurement, regional availability of fertilizers at seasonal peak demand periods, and the quality of domestic phosphate and the condition of stored products:

1. **Overall Supply and Procurement--**The fertilizer supply gap of the 1970s has been closed and the GOB's buffer stock goals have been met (three month's supply of urea, five month's supply for TSP and MP) or exceeded in recent years. However, there remain overall supply and procurement problems. The donor agencies generally have significant restrictions on supply source, shipping requirements, and bidding procedures which lengthen the procurement process. BADC's procurement process is planned for 120-150 days but often takes longer, especially with donors having tied sources. The donor agencies often express frustration with BADC for slow procurement, complicated and costly tendering contract requirements, and poor scheduling of seasonal needs. The result is a cumbersome and inefficient procurement system which does not always meet overall supply needs in a timely

and cost effective manner. For example, the Team was informed that several shiploads of TSP were sitting at outer-anchorage at Mongla Port during November and December due to port congestion. These TSP supplies were not available for the high seasonal demand for phosphates on Boro season crops. Similarly, one donor agency indicated that the protracted BADC tendering process this year was increasing the costs of TSP to Bangladesh by \$40-60 MT over more streamlined procedures possible in the private sector.

**2. Regional Availability**--One of the important challenges for BADC fertilizer distribution is to meet the large seasonal and regional demands in a timely fashion. BADC has not always been successful in this regard. Fertilizer sales as a percent of storage capacity at PDPs have varied last year from 70% (Hatiya PDP) to 3981% (Joydebpur PDP). In addition, the regional PDP stock situation, expressed as a ratio of present stock (as of January 1, 1988) to the inventory goal, was:

Fertilizer	Average Ratio of Regional Stocks-to-Goal	Range of Regional Ratios of Stock-to-Goal
Urea	.55	.08-6.06
TSP	.51	.05-1.45
MP	.98	.30-4.81

Source: FDH Final Evaluation

The IFDC/Dhaka monitoring of regional supplies available through both the TDPs and the PDPs has identified problems with inadequate TDP stocks to meet wholesaler demands, refusal of the BADC to allow wholesalers to lift barge loads at TDPs though this represents cost savings to BADC, and collusion between BADC regional management and some local area wholesalers to restrict supplies available to nonlocal wholesalers.

These kinds of regional supply problems mean fertilizer product is not available in a timely and saleable condition for the regional wholesalers who must depend on BADC as their sole source of supply.

**3. Product Quality**--There is an acknowledged problem with the quality of TSP from the TSPC in Chittagong. Farmers prefer imported TSP if available in the market. In addition, the PDP and TDP inventories which are stored for any length of time deteriorate rapidly in the BADC godowns which lack humidity control. IFDC/Dhaka monitoring of quality of supplies sold to wholesalers reveals widespread problems with broken bags and lumpy or

caked product. In addition, there appears to be a systematic shortage of approximately 2-5 Kg/bag on product sold out of the PDPs and some of the product sold from the TDPs.

**In summary, there seems to be clear constraints on the current system of private sector wholesalers and dealers who depend on BADC for supplies. The current situation represents a bottleneck on the growth of the private sector. Without access to supplies from factories or overseas procurement and with the current price subsidies for TSP and MP, national distribution networks will not develop in Bangladesh. Some of the current problems may be solved if direct factory lifting, scheduled to be initiated in January, 1989, is successful and also if the private sector could expand the distribution channel to include private importation.**

### **The Policy Issue of Free Market Imports**

However, the development of the private sector has been limited to fertilizer marketing at the wholesale and retail level. There have been no proposals for the GOB to divest the BCIC production facilities. BADC maintains control over upstream fertilizer supply functions--all foreign procurement, lifting from factories, and movement to and inventory control at PDPs and TDPs. Now the issue is arising through the FDI-II project and the INTERPAKS study of BADC organization and management: "Should the BADC commercial functions of fertilizer procurement and distribution become private commercial activities?"

For Bangladesh the privatization of fertilizer imports is an important but sensitive policy issue. Public sector control of fertilizer procurement has been exercised through BADC since its inception as EPADC in 1961. The BADC corporate ordinance explains that the Corporation shall:

*(a) make suitable arrangements throughout Bangladesh, on a commercial basis, for the procurement, transport, storage and distribution to agriculturists of essentials supplies, such as seed, fertilizers, plant protection equipment, pesticides, and agricultural machinery and implements:*

*Provided that some or any of such supplies may be free or subsidized with the previous approval in writing of the Government...(BADC Ordinance, pg. 15, emphasis added)*

For fertilizers, BADC has had exclusive statutory authority to import and distribute supplies. This authority is based on Section III of the Imports and Exports Control Act of 1953 as articulated in the annual Import Policy Order published each July. Regarding restricted items which includes fertilizers, the import policy is:

Item Number	Item Description	Nature of Restriction
31.01	All items <sup>1</sup>	Importable by BADC only.
31.02	All items <sup>2</sup> except Ammonium Sulphate	Importable by BADC only.
31.02	Ammonium Sulphate	Importable by BADC. Also importable by Tea Industries subject to clearance by Tea Board.
31.03	All items <sup>3</sup>	Importable by BADC only.
31.04	All items <sup>4</sup>	Importable by BADC only.

Source: Import Policy Order, 1987-88

<sup>1</sup>Animal or vegetable fertilizers, whether or not mixed together or chemically treated

<sup>2</sup>Mineral or chemical fertilizers, nitrogenous including urea, ammonium nitrate, and calcium cyanamide

<sup>3</sup>Mineral or chemical fertilizers, phosphatic including superphosphates and basic slag

<sup>4</sup>Mineral or chemical fertilizers, potassic including carnallite, potassium chloride, potassium sulphate, and magnesium sulphate

Given the exclusive rights under GOB import policy and considerable quantities of donor-provided fertilizer, BADC has developed into a large, mature bureaucracy with about 2,500 employees in the Supply Wing (dealing with fertilizer). Donor agencies and management studies of BADC now indicate that perhaps the commercial function in fertilizer should be attenuated and overall operational efficiency substantially improved (see INTERPAKS). The introduction of gradual competition in the acquisition and distribution of fertilizer supplies could stimulate improved efficiency at BADC.

At times of proposed policy changes affecting BADC's role in fertilizer and other agricultural inputs, it is clear that BADC has been able to enlist considerable political support for its fertilizer marketing and other activities. BADC has vigorously opposed privatization of the downstream marketing functions under FDI-I and should be expected to oppose further expansion of the private sector role.

Since 1982 the GOB has clearly pursued an industrial policy of encouraging more private entrepreneurial involvement in the economy of Bangladesh. Although the GOB has vacillated in its commitment to implementation, interviews with top GOB officials in several Ministries during November and December 1988 confirmed the overall commitment of the GOB to the New Industrial Policy of 1986 which encourages further privatization. **Thus, it appears to the Team that a policy change on fertilizer importation is consistent with national privatization goals and policies.**

In general terms, Humphrey's research does indicate that the success rate for privatized firms seems to be relatively greater when:

- (1) the industry was in private hands before nationalization;
- (2) the extent of regulatory controls exercised by the GOB was modest; and
- (3) where the industry focus was on exports with little import requirement.

Of course none of these conditions apply in the case of the fertilizer sector. Fertilizers have historically been a donor-assisted import. Procurement and distribution have always been in parastatal hands. Domestic production has achieved self-sufficiency in urea and is now an export industry through the parastatal BCIC. And the degree of regulatory control has historically reached from procurement/production to retail price control. Thus, the challenge of movement towards a free market fertilizer sector is substantial given Humphrey's general conclusions.

A policy change to allow private fertilizer importation would not involve a complicated divestment of GOB assets or other financial arrangements commonly associated with privatization of parastatal corporations. **Thus, import privatization is an important but marginal change in overall GOB policy. It would appear to be a logical next step in the process of expanding competitive free marketing of fertilizer in Bangladesh which has been underway since 1978.**

Consistent with the overall GOB policy of privatization, the World Bank, USAID and a few other donor agencies have recently encouraged the GOB to examine the functional role of BADC. INTERPAKS, under the leadership of consultant Dr. John L. Woods has recently completed an extensive examination of this question. INTERPAKS directly addressed the issue of BADC involvement in fertilizer marketing and recommended:

*"It is recommended that a deregulation process be initiated that will encourage private sector organizations (commercial companies, cooperatives, NGO/PVOs, etc.) to provide on a commercial basis goods and services to farmers, initially hand in hand with public sector institutions. The situation where the public sector controls the wholesale function and private sector controls retailing, as has been the case since the beginning of BADC, does not provide the competition needed to ensure the effective delivery of goods and services to farmers." (pg. xii)*

Clearly, this policy recommendation to the GOB is supportive of private sector importation of fertilizers.

**Facilitating Private Sector Fertilizer Imports--**In order to encourage and facilitate further participation of the private sector in fertilizer importation, the GOB will have to effect two policy changes: (1) amend the charter ordinance of BADC to reflect the role of private organizations in fertilizer procurement and distribution and (2) modify the language in the import policy order to remove BADC as exclusive importer of fertilizers or add private sector firms as allowable importers. The power to amend the BADC ordinance appears to lie within the Ministry of Agriculture.

The import policy is reviewed annually by the Chief Controller of Imports and Exports and the Ministry of Commerce. This review begins in February and ends about the last week of June when the import and export policy changes are presented to the Cabinet. Final approval for any import policy change lies with the Cabinet (The Council of Ministers) and ultimately with President Ershad as Chief Executive. Modification of the "BADC only" language in the Import Policy Order has recently been proposed by the Ministry of Commerce but rejected by the Cabinet.

A revised import policy order on fertilizer could: (a) simply place nitrogen, phosphate, and potassium fertilizers on the "free list" making importation possible without restriction; (b) add language restricting import of any fertilizer to BADC and other public or private organizations; or (3) amend individual sections to allow free import of, for example, phosphates and potassium fertilizers but restricting nitrogen fertilizers to import only by BCIC (the domestic production unit). When pesticides were privatized in 1974, BADC was removed as the exclusive importer but they remained on the restricted list with this language: "Only the items which have been standardised and notified by Ministry of Agriculture shall be importable subject to prescribed condition" (Sec. 38.11).

**Benefits of Expanded Free Market Fertilizer Distribution**--Beyond being consistent with overall national policy, the rationale for privatization also involves some pragmatic issues about Bangladesh agriculture and the fertilizer sector. The development of private firms with national distribution systems through access to domestic urea supplies from the factory and direct importation of fertilizer materials has the potential to: (1) Lower the landed costs of fertilizers procured internationally, (2) Lower internal movement and handling costs, (3) Improve the seasonal availability of fertilizers in all regions, (4) Improve product quality, and (5) Expand services available to farmers using fertilizer.

1. **Lower Landed Costs**--It seems reasonable to expect private sector firms with the management and financial experience in the international procurement of pesticides, cement, and other commodities will be able to improve the cost efficiency of fertilizer importation. These cost reductions will come in the form of expedited negotiations, fewer contract restrictions, more rapid discharge at port, and reduced ex-gratia payments which are alleged to be a significant factor in current procurement procedures. The possibility of these cost savings were confirmed in the Team's interviews with both private firms and with donor agencies. Lower landed costs represent a benefit to the country but may not affect wholesale-retail prices so long as the GOB sets ex-PDP prices at subsidized levels.

2. **Lower Internal Movement and Handling Costs**--BADC estimates transportation and "incidental costs" and charges a standard 550 Tk/MT for internal movement, handling and storage costs for urea and 650 Tk/MT for TSP and MP (See Appendix C, Table C-1). IFDC/Dhaka has examined total BADC costs, to the extent their unconventional accounting system permits analysis, and has concluded BADC might be underestimating total distribution costs. A more realistic average cost is probably more than 750 Tk/MT, based on total BADC cost of supplies and distribution costs. The commercial sector can be expected to have lower riverine or land transport costs through the use of existing private facilities (e.g. private jetties, barges, and godowns owned by the petroleum companies) and continuous negotiation for efficient movement modes. Inventory management would probably improve and reduce regional overstocking. The Team estimates private firms may be able to move imported product from ports to up-country locations for 400-600 Tk/MT.

3. **Improve Seasonal Availability**--This is a critical need for farmers. Private firms would have a profit incentive to insure that peak demands were met in all regions. Firms with

national distribution networks and able to secure their own supplies would not have the ability to schedule procurement to meet customer seasonal needs. Currently, regional level wholesalers must depend on BADC for all supplies and are constrained in meeting seasonal peak demands.

**4. Improve Product Quality--**Private firms cannot improve the quality of domestically produced TSP. Private firms would be able to import the preferred quality product and possibly stimulate BCIC to improve quality. Private firms do have a profit incentive to **maintain** product quality as it moved through the distribution network from factory or port to dealer. This would be especially true if fertilizers bore brand names (as is the case in pesticides).

**5. Expand Services to Farmers--**One of the primary benefits of the NMS was the improved availability of in-kind credit to farmers from the dealers and to dealers from the wholesalers. In addition to credit, an expanded national distributor of fertilizers will attempt to supply other services such as better trained dealers who understand agronomic responses, custom blended fertilizers aimed at specific regions and/or crops, or transport for minimum quantity purchases.

Thus, privatization of imports would assist in the development of national distribution systems having important potential benefits to Bangladesh, especially to farmers. Free market importation holds part of the key to the development of these national-level systems. Just as FDI-I stimulated regional wholesaler-dealer systems which have proven beneficial, private sector imports allow firms to gain access to supplies and a profit incentive to manage these supplies efficiently.

In the current GOB thrust to increase foodgrain production and reduce reliance on food imports, it is argued by many in Bangladesh that the private sector would more vigorously promote fertilizers among farmers and thereby increase intensity and efficiency of use with consequent increases in total production (*ceteris paribus*). The INTERPAKS review of BADC concluded that the Supply Wing "is fully devoted to procurement and distribution and [has] almost no marketing approach" (Vol. 2, pg. ix). This impact would only occur if import privatization induced larger, integrated firms into the fertilizer sector and expanded promotion of fertilizer use and efficiency. Interviews conducted among private sector firms seem to indicate there is good reason to believe this will be the case.

Permitting private firms to import fertilizer need not totally or immediately replace BADC but would introduce an element of competition into fertilizer marketing which might induce some increased efficiency on the part of BADC. The Team could not identify any current incentive for BADC to lower procurement or movement costs beyond their general social responsibility to the people of Bangladesh. Accordingly, the Team believes that private sector importation on an equal basis with BADC would stimulate competition and give BADC a rationale for more efficient and cost effective procurement.

Finally, a change in import privatization policy would assist in the further growth and expansion of the private free market system of fertilizer marketing which has slowly developed since 1978. There are now large wholesalers operating throughout Bangladesh and BADC is not efficiently meeting their needs for timely supplies of appropriate fertilizers. Import privatization would stimulate fertilizer marketing companies to plan their own product mix, supply and distribution scheduling, and promotion schemes. This would improve the availability and quality of fertilizers and marketing services to the ultimate consumer--the farmer. In the final analysis it is the Bangladeshi farmer who bears the burdens of public or private inefficiency in fertilizer marketing.

**PART III:**  
**THE POLICY ISSUE MATRIX RELATED TO FREE MARKET IMPORTATION**

Moving towards private sector fertilizer importation can only be evaluated in the context of a matrix of closely related policy issues. Neither the GOB nor the donor agencies providing fertilizer assistance can adequately address the import privatization issues without also considering these other policy issues which arise in the context of fertilizer import privatization:

- (1) the question of fertilizer price subsidies;
- (2) the role of international donor assistance in providing foreign exchange and fertilizer supplies;
- (3) the employment issues related to BADC personnel who may become redundant and could be reassigned to more development oriented activities; and
- (4) the general question of meeting national phosphorous and potassium nutrient needs.

**Fertilizer Price Subsidies**

The single most vexing policy issue having a bearing on privatization of imports is the long-standing GOB policy of fertilizer price subsidization. Fertilizer prices have been heavily subsidized since introduction to Bangladesh in the 1950s. Although the GOB has been attempting to reduce these subsidies, the level of subsidy has recently increased for the imported fertilizers because world prices have been rising while domestic prices have remained constant.

The fertilizer subsidy policy has different implications for privatization of each of the major types of fertilizer. For urea, the ex-factory and ex-PDP prices are below world market levels and domestic supplies from BCIC factories are more than adequate. Thus, importation is not financially attractive to private firms. The urea situation can be summarized in this way to illustrate BADC's procurement terms, the economic conditions facing private firms importing at current world prices, and the possible situation of private firms lifting from BCIC factories at the same ex-factory price as BADC (a "level playing field" situation):

<u>UREA</u>	BADC Procurement Terms	Private Import at International Market Prices	Private Lifting at BCIC Ex-Factory Price ("Level Playing Field")
	-----Taka/MT-----		
Procurement <sup>1</sup> "Price"	4025	6272 <sup>2</sup>	4025
Ex-PDP Price	4575	4575	4575
Gross Margin	550	-1697	550
Movement & Incidental Costs	550-750 <sup>3</sup>	400-600 <sup>4</sup>	400-600 <sup>4</sup>
Net Margin	0/-200	-2097/-2297	150/-50
"Subsidy"	0 to -200 ( 0% to 4% of ex-PDP price)		

<sup>1</sup>Procurement "price" to BADC is an accounting convenience. For urea this price is set by the GOB and represents the uniform ex-factory price based on weighted average production costs from all BCIC factories.

<sup>2</sup>Based on bagged urea C&F international prices, Nov. 1988.

<sup>3</sup>BADC target for movement and incidental costs is 550 Taka per ton. Estimated costs are higher if estimated from FY88 total BADC transport and handling costs plus "incidental costs" (incl. salaries, operational expenses, working capital, interest, depreciation, godown rent, building maintenance, and other miscellaneous costs) divided by total quantity sold which is approximately 750 Taka per ton.

<sup>4</sup>Estimated range of probable private firm movement and handling costs from port to up-country godowns.

For domestically produced urea, there is a slight subsidy (4% of ex-PDP price) at current international prices if estimated BADC movement and incidental costs are in fact higher than the target level of 550 Tk/MT. Private firms have no financial incentive to import.

However, given a "level playing field" of access to direct lifted stocks from BCIC at the uniform ex-factory cost of 4025 Tk/MT, private firms may have a modest incentive to expand the privatized marketing channel to include large-scale factory lifting. The extent of private lifting will depend on the relative efficiencies of firms in movement and handling of urea from factory to wholesale customer. **Private firm direct lifting of BCIC urea at the**

same ex-factory price as BADC (in other words, private firms on a "level playing field") does introduce limited privatization and interjects a new level of competition into the marketing of the largest share of the fertilizer market.

For TSP the situation is very different. World market prices for phosphate fertilizer products have risen substantially in the last two years. The ex-factory price of 6619 Tk/MT is now competitive with international prices (FOB transport, Chittagong) for imported TSP. However, the uniform ex-PDP price of 4725 Tk/MT is substantially below world prices, resulting in a substantial price subsidy of more than 50% of the ex-PDP price. As illustrated below, private firms have no financial incentive to privately import, lift TSP on BADC terms, nor lift domestically produced TSP (under the "level playing field" concept):

<u>TSP</u>	BADC Procurement Terms	Private Import at International Market Prices	Private Lifting at BCIC Ex-Factory Price ("Level Playing Field")
	-----Taka/MT-----		
Procurement <sup>1</sup> "Price"	6619	6752 <sup>2</sup>	6619
Ex-PDP Price	4725	4725	4725
Gross Margin	-1894	-2027	-1894
Movement & Incidental Costs	650-750 <sup>3</sup>	400-600 <sup>4</sup>	400-600 <sup>4</sup>
Net Margin	-2544/-2644	-2447/-2647	-2294/-2494
"Subsidy"	-2544/-2644 (54% to 56% of ex-PDP price)		

<sup>1</sup>Procurement "price" to BADC is an accounting convenience. For TSP this is determined by the GOB and based on production costs at the TSP Complex in Chittagong. The same procurement cost is used for all TSP supplies.

<sup>2</sup>Based on C&F international prices, Nov. 1988.

<sup>3</sup>BADC target for movement and incidental costs is 650 Taka per ton. Estimated costs are higher if estimated from FY88 total BADC transport and handling costs plus "incidental costs" (incl. salaries, operational expenses, working capital, interest, depreciation, godown rent, building maintenance, and other miscellaneous costs) divided by total quantity sold which is approximately 750 Taka per ton.

<sup>4</sup>Estimated range of probable private firm movement and handling costs from port to up-country godowns.

For the other major fertilizer, MP, the subsidy level is much lower but there still remains a large disincentive for private importation:

MP	BADC Procurement Terms	Private Import at International Market Prices	Lifting From Port at BADC Procurement Price ("Level Playing Field")
	-----Taka/MT-----		
Procurement <sup>1</sup> "Price"	3395	4672 <sup>2</sup>	3395
Ex-PDP Price	3725	3725	3725
Gross Margin	330	-947	330
Movement & Incidental Costs	650-750 <sup>3</sup>	400-600 <sup>4</sup>	400-600 <sup>4</sup>
Net Margin	-320/-420	-1347/-1547	-70/-270
"Subsidy"	-320 to -420 (9% to 11% of ex-PDP price)		

<sup>1</sup>Procurement "price" to BADC is an accounting convenience. For MP this is determined by the GOB and based on average world prices.

<sup>2</sup>Based on C&F international prices, Nov. 1988.

<sup>3</sup>BADC target for movement and incidental costs is 650 Taka per ton. Estimated costs are higher if estimated from FY88 total BADC transport and handling costs plus "incidental costs" (incl. salaries, operational expenses, working capital, interest, depreciation, godown rent, building maintenance, and other miscellaneous costs) divided by total quantity sold which is approximately 750 Taka per ton.

<sup>4</sup>Estimated range of probable private firm movement and handling costs from port to up-country godowns.

Given the current level of international prices and the domestic fertilizer subsidy situation, there is no scope for private importation of any of the major fertilizers. The subsidy issue will probably be addressed before private importation policy can be implemented (since it is unlikely that world prices for TSP and MP will fall appreciably in the near term). This will require a close examination of the different dimensions of fertilizer subsidies in Bangladesh.

To adequately address the impact of price subsidies on import privatization will require a close look at not only the nominal subsidy differential (BADC invoice prices minus ex-PDP prices) but also some related or "hidden" aspects of fertilizer subsidization. From

1978 to 1986 the subsidy was direct and provided to BADC through the Annual Development Plan budget. These transfers averaged 780 million Tk/yr.(Table 5). Under pressure from major donors, the GOB has attenuated and finally eliminated the subsidy compensation to BADC which was allocated from the ADP budget. Apparently there has been no ADP budget provided to BADC for fertilizer subsidies for the last three years. In the face of high subsidies on TSP, this is creating a budgetary crisis for BADC which has caused the Board of Directors to appeal to the Ministry and GOB for relief in the form of restored ADP transfers.

Table 5: Estimated Indirect Fertilizer Subsidies to BADC  
(Million Taka)

FY	Estimated <sup>1</sup> Total Subsidy	Total Subsidy <sup>2</sup> Estimated by BADC	ADP Budget Support To BADC	Payments <sup>3</sup> Due BCIC	Total <sup>4</sup> Bank Debt
77	708.0	88.7	0.0		
78	1171.1	1125.8	677.3		
79	1212.1	1123.5	1180.0		
80	1502.9	1204.5	1179.4		
81	1131.4	1017.0	988.9		
82	906.5	1148.6	1040.5		
83	1134.9	1335.4	983.2		
84	1631.7	1318.2	872.0	119.6	
85	823.6	687.3	856.9	100.1	
86	1026.5	353.7	142.9	1775.7	
87	399.9	573.9	0.0	1247.9	
88	1371.9	413.0	0.0	828.5	51.0
89	n/a	n/a	0.0	1050.0*	n/a

Source: BADC and BCIC

\*First quarter of FY only.

<sup>1</sup>Total Estimated/Actual Subsidy is equal to total quantity sold times (procurement price plus marketing margin minus ex-PDP wholesale price).

<sup>2</sup>Amount of subsidy claimed by BADC in FY77 represents total claimed for all years, FY70-FY77.

<sup>3</sup>Total financial liability due BCIC for stocks lifted by BADC but not yet paid.

<sup>4</sup>Total reported outstanding debt in 1988 including 30 million Taka of loan principal and 21 million Taka in accumulated interest.

The GOB has also been attempting to reduce fertilizer subsidies since the early 1980s through price increases. Fertilizer wholesale prices have been progressively raised to eliminate some of the subsidy. Since 1978 urea prices have increased from 1492 Tk/MT to

4575 Tk/MT, TSP prices were raised from 1187 Tk/MT to 4725 Tk/MT, and MP prices have risen from 969 Tk/MT to 3725 Tk/MT. By 1987 price subsidies were negative for urea (i.e. ex-PDP price above world market prices), 28% for TSP and about zero for MP. However, the GOB has raised only urea prices once while holding TSP and MP prices constant in the last three years in the face of escalating rising world market prices. Now substantial price subsidies again exist for all three major types of fertilizer, especially for TSP where world market prices in November 1988 are now nearly twice ex-PDP prices.

With the elimination of the ADP budget in the face of rising subsidies caused by international price increases, current fertilizer price subsidies seem to be "indirect" through:

- (1) sales of domestic fertilizers from BCIC factories at less than production costs;
- (2) sales of imported fertilizers at less than procurement costs;
- (3) support of BADC overhead costs from the counterpart funds arising from donor-assisted imports; and
- (4) BADC's recent practice of long delays in payments for BCIC supplies and service payments on bank debt.

The BCIC ex-factory prices and the BADC ex-PDP prices are determined by the GOB and create a large indirect subsidy, especially on TSP. **It is unclear to the Team how BADC is able to continue to cover the major subsidies on TSP over the past three years.** The ultimate use of counterpart funds seems to provide some of the answer. However, the Team was unable to obtain exact information on this aspect of the subsidy. ERD informed the Team that the negotiated project agreements with most donors require BADC to remit the Taka collected from the PDP sales of fertilizers into a counterpart account at the Bangladesh Bank. BADC appears able to withdraw from these counterpart funds to cover a portion of estimated overhead costs. However, the exact nature of these withdrawals and the total amount of counterpart funding of BADC overhead costs are unknown.

It seems clear that in order to genuinely determine what would constitute a "level playing field" for private firms to import fertilizers under the same terms as BADC, information on the counterpart fund aspect of the subsidy would have to be examined closely.

More recently BADC may be financing the subsidy through a practice of delaying for long periods its payment of incurred liabilities for BCIC supplies (Table 5). These are substantial amounts: 1775 million Taka at the end of 1986 and 1050 million Taka for the

end of 1988. In addition, BADC has 51 million Taka in outstanding bank debt--30 million Taka in principal and 21 million Taka in accumulated interest.

### Donor Financing of Fertilizer Imports

**Donor Sources and Policies**--Virtually all of Bangladesh's fertilizer imports are donor assisted through various credit, grant, and barter programs provided over the years by more than a two dozen donors. Bangladesh has had a clear need for donor-provided imports, especially after the Liberation. Donor assistance peaked in 1978- 79 when 623 MT were imported worth over \$100 million. The magnitude of imports has decreased in recent years as urea production has finally exceeded domestic demand but nonetheless, donor-supplied fertilizer assistance has saved the GOB millions of dollars in scarce foreign exchange. The major fertilizer donors over the last ten years have been the Dutch, CIDA, USAID, the Saudis and the ADB (Table 6).

Table 6: Percent of Fertilizer Imports to Bangladesh  
By Donor, 1978-1988

Donor Source	Percent of Total Imports Over 1978-88
Dutch	17%
CIDA (Canada)	12
USAID	12
Saudi Arabia	8
Asian Development Bank	7
IDA (World Bank)	6
DANIDA (Denmark)	5
NORAD (Norway)	5
EEC	4
Japan	3
Bulgaria	3
West Germany (FRG)	2
IFAD	2
OPEC	1
All Others	15

Source: Estimated from incomplete BADC data

The Team interviewed several major donor agencies (Dutch, CIDA, USAID, ADB, World Bank, NORAD, and Japan) about current fertilizer assistance policies and importing procedures. It is apparent that these donors have established understandings and working relationships with ERD and MOA/BADC regarding fertilizer imports. There are substantive differences between donors regarding objectives, end user requirements, procurement procedures, and disposition of counterpart funds. For example, some donors require the fertilizer to reach the "poorest of the poor" and expressed doubt that for-profit firms could qualify for participation in commodity aid.

Most of the donor agencies expressed some frustration with current BADC fertilizer importing procedures and the planning and scheduling of shipments. Often times donor assistance is slowly utilized and contracting procedures seem cumbersome and result in higher shipment costs. It seems advisable for ERD and MOA to reconsider current policies and procurement procedures in order to rational the utilization of donor-assisted fertilizer.

There are other more general policy problems with the fertilizer donors. In general terms many of the donors have expressed support for the GOB policies of encouraging private sector performance but the support for increasing the free market role in the fertilizer sector is not particularly strong. In this policy arena USAID is clearly the leader. The other major donors did also express concern but do not have a strong (or indeed any) position on fertilizer price subsidies. As a result, it seems apparent that import privatization will require modification of donor program administration to encourage private sector participation or affect privatization policy.

In the 1990s Bangladesh will remain dependent on imports for about three-quarters of TSP and all MP and other minor fertilizers demanded by the market. Immediate and complete privatization of fertilizer imports (assuming no price subsidies) would mean the GOB would have to allocate about \$200 million in foreign exchange to private importers (given estimated imports of 410,000 MT at current international prices). It does not appear to the Team that the GOB considers this a wise nor politically feasible course of action at the current time. Not all the donor agencies would be enthusiastic about such an action either.

A more gradual approach to privatization could involve the donors in permitting and encouraging more private sector access to concessional imports. The 1988 DAI study of

commodity aid in Bangladesh has suggested just that: "More commodity donor payment rights must be made available to entrepreneurs. Biases in the current system against entrepreneurial use should be reduced or made consistent with the stated policy of the Government toward the private sector..." (Edward L. Auchter, et al, pg. viii)

Team interviews with some of the major donors indicate a willingness by some donors to fund private importation, if the subsidy question can be resolved. The ADB seems to have a clear policy mandate to assist the private sector and is in the last year of the current fertilizer loan assistance to the GOB. The Dutch also do not seem to have any policy impediment to supporting private importers through their substantial import assistance program.

**Allocation Process For Access to Foreign Exchange**--The GOB has an elaborate allocation process in place to ration foreign exchange among importing entities, private and public. Importers with legitimate LCAs can obtain foreign exchange from the SEM or Wage Earners Scheme (WES) at a current premium of 3%-4% over the official exchange rate. (Under pressure from the IMF and the World Bank, this premium is narrowing.) The other major source of foreign exchange are the commodity donor payment rights supplied generally as balance of payments support by donor agencies and international financial institutions--over two dozen in the case of fertilizer. Commodity donor payment rights are conditional and often specify eligible source, commodity specifications, limitations on end use, shipment method, tendering requirements, disposition of counterpart payments and other possible conditions.

With respect to fertilizers, donor-assisted procurement most often involves commodity donor payment rights as the source of foreign exchange. The Ministry of Finance oversees the allocation process but ERD conducts the negotiations which outline the basic terms and conditions in the agency or project agreement (and amendments). The foreign exchange budget prepared by the Ministry of Finance reflects the agreements reached by ERD and the donor agencies. Under the constraints of the overall budget plan, ERD allocates the proceeds of donor assistance to the various ministries, subject to the agreed conditions. Thus, fertilizer assistance is negotiated with ERD and falls under the commodity donor payment rights allocation of the Ministry of Agriculture and eventually flow to BADC.

Commodity donor payment rights can be given to private sector firms. In the foreign exchange allocation process, the private sector is represented by the Ministry of Commerce. Importers of items on the free or restricted lists lobby for foreign exchange allocations through the Ministry of Commerce. Once allocations are made, the Chief Controller of Imports and Exports divides the foreign exchange rights among the industrial and commercial users. Those firms not receiving a large enough allocation from the Chief Controller can then either buy what they need from another importer or go into the SEM to buy foreign exchange for further imports.

Thus, it would be technically possible to channel donor assistance (commodity donor payment rights) for fertilizer imports to the private sector. First, any potential private fertilizer importer would have to first meet all the requirements of formal GOB clearances and licenses in order to qualify as a registered importer and obtain an LCA from the Chief Controller of Imports and Exports. Secondly, ERD would have to negotiate agreements with donor agencies to qualify private sector firms as recipients of commodity donor payment rights and an allocation for fertilizer import would subsequently have to be made to the Ministry of Commerce in the GOB foreign exchange budget. Once commodity donor payment rights become available from the Chief Controller, private firms would then have to compete to receive an entitlement.

Channeling commodity donor payment rights to the private sector still has to deal with the conditions placed on this type of aid by the donor agencies and international financial institutions. With some donors like ADB and the Japanese the conditions are fairly minimal and the agencies are interested in funneling assistance to the private sector. With other agencies like NORAD where the goal for assistance is "poorest of the poor", the possibilities of channeling assistance to for-profit firms seems less likely.

### **Employment Issues Created By Privatization**

Full or partial free market fertilizer imports would continue the process of functional marginalization of BADC's Supply Wing which is devoted to fertilizer procurement and distribution. The recent study of BADC (INTERPAKS, May 1988) indicates that the Supply Wing recently has had about 2979 positions, 200 in the headquarters and the remainder (93%) in field locations. Although exact numbers are not available, it appears that actual

personnel employed is 15% below authorized levels. The INTERPAKS study and other sources of information indicate that at these personnel levels, BADC is overmanned.

If policies are changed which allow private importation of fertilizers and private imports reach significant levels, it is reasonable to expect that a significant portion of the field staff and headquarters administrators will become redundant **in the absence of an active policy of personnel needs assessment and reallocation of human resources.** How to address the issues of redundant field employees is an important policy issue in the privatization policy matrix.

Both the INTERPAKS management study of BADC and IFDC/Dhaka has reviewed personnel problems with BADC and suggested some alternatives for phased reorganization of the Supply Wing which would protect most jobs as the functions of the Supply Wing change over the next decade. **Donor agencies should continue to work with BADC to see that a personnel plan is implemented which addresses the personnel redundancy problems likely to arise with import privatization.** It would be beneficial if this reorganization were analyzed in the context of possible broader privatization within the fertilizer sector, including the divestment of fertilizer production facilities. In the absence of such studies and a plan of action for personnel redundancy, internal opposition to policy changes will only be exacerbated and policy reform delayed.

### **Meeting Phosphorous and Potassium Supply Needs**

Bangladesh imports all phosphate and potassium nutrient needs. Over recent years the domestic production of phosphate fertilizer has costs of production above world price levels. With demand for these nutrients growing at nearly 10% a year, there is a need to take a broader view of how the country can meet future demand levels in the most cost effective manner.

**Phosphorous--**All of the phosphate has been and must continue to be imported. The question is whether it should be: (a) DAP/MAP granular for bagging and direct sale; (b) rock phosphate, to feed the TSP Complex; (c) TSP granular for bagging and sale; or (d) TSP run-of-pile for processing into N-P-K complete fertilizer at perhaps the TSP Complex or a new processing ammoniator-granulator. (See Appendix E for details on these possibilities.)

Given current domestic TSP production levels, there is about 150,000 nutrient tons of phosphorous which must be imported annually. If this need is to be imported as finished product, then the choice should be MAP or DAP. It is acknowledged here that DAP/MAP importation results in nitrogen import at a time when the nation is also exporting nitrogen (as urea). However, such a system utilizes the advantages of economy of scale and cost of production of both, keeping the border cost of phosphorous low while also making available better  $P_2O_5$  from an agronomic viewpoint and a more uniformly granular product easily used by farmers. For the shortrun this is the most advantageous method for the meeting national requirement not fulfilled by production from the TSP Complex since cost per unit of imported plant nutrient is lower than domestic production costs.

Converting the TSP Complex to a bulk off-loading/bagging facility for MAP/DAP and MOP may well be more profitable than continued TSP manufacture. Convenient sources of supply would be the Philippines, Korea, or Singapore--all having lower freight rates than the U.S. Gulf (See Appendix D, Annex D-4 for details on such bulk port facilities and Appendix E for details on the TSP Complex bulk handling capability.)

Thus for the shortrun, the cost of Bangladesh supplying its phosphate requirement is seen as importing granular MAP/DAP, regardless of how it is off-loaded or where, while exporting slightly more urea to offset the imported nitrogen and perhaps ceasing TSP production. See Appendix E for capabilities.

Recently (November 1988) a very detailed draft study has been completed by IFDC/Muscle Shoals regarding the economic viability of alternative schemes for the TSP Complex. Unfortunately, despite all the detailed analysis and computations, the main point of comparison was primarily for imported TSP when it should have included: (1) Supplying national requirements of phosphorous with imported DAP/MAP and (2) Mechanizing the off-loading facility and using the bulk handling capability of the TSP Complex to efficiently receive bulk intermediates (or DAP and granular TSP) such as run-of-pile TSP and standard MOP for processing into N-P and N-P-K grades (all with sulfur). The focus of this particular study was somewhat too narrow (did not include enough options) to form a basis for deciding what the best potential utilization of the TSP Complex should be. Other options which appear viable include importation of run-of-pile TSP, standard MOP, and phosphoric

acid to be granulated-ammoniated into products not currently available in Bangladesh but still meeting cereal grain nutrient needs at lower costs.

**Potassium**--All of the potassium has been and will continue to be imported, primarily from Canada and the U.S. The only issue is whether or not the goods are bagged and sold as a sole nutrient fertilizer or whether potassium is bulk blended or processed to be incorporated into N-P-K complete fertilizers. If potassium is to be processed (See Appendix D, Annex D-3) then the imported product can be standard grade which is cheaper than screened material. In either case, if there is a fertilizer processing plant at one of the ports, the goods would be bulk off-loaded and processed/bagged or simply bagged. If there are no bulk off-loading facilities then the goods would be bagged on-ship or on the jetty and dispatched to the market area.

Given the current situation in Bangladesh for meeting phosphorous and potassium needs, there is a need to undertake a broader study of the most effective means for fulfilling national needs which includes an assessment of the role of the TSP Complex in the overall assessment. Such a study may conclude that it would be economically efficient to import DAP/MAP and change the functional role of the TSP Complex. If such a policy decision is undertaken, then a transition phase would be necessary to insure availability of national fertilizer needs on a long run basis. See Appendix E for details.

PART IV:  
IMPACTS AND CONSEQUENCES OF PRIVATE SECTOR  
FERTILIZER IMPORTS

**Impacts on the Fertilizer Sector**

The current fertilizer sector structure consists of public production of all nitrogen and about 25% of phosphate supplies (six BCIC factories), public import of TSP, MP, and minor other fertilizers (BADC), and private sector marketing through a nation-wide system of free market wholesalers (about 8,000) and retailers (as many as 50,000). Only three major fertilizers are produced and marketed in Bangladesh: urea, TSP, and MP (all other fertilizers account for less than 1% of total sales). Gypsum, used by farmers as a source of sulfur, is procured from the TSP Complex and marketed privately throughout most of Bangladesh.

The present sector structure will probably maintain its general characteristics so long as existing GOB policies continue. Removing the importation restriction on fertilizers, or implementing other phased policy changes which address the subsidy and supply issues, will stimulate the development of national distribution systems for fertilizers and change the type of products available to farmers. A few of the existing regional wholesalers will be able to expand their distribution network to reach from the ports and factories back to the regional wholesale-dealer supply outlets. Other firms, such as those in the National Fertilizer Dealers Association, who are already involved in nation-wide marketing of agricultural input supplies will be attracted into the fertilizer sector. In addition, there are indications that new firms will be organized to market fertilizer if the policy constraints are modified.

The development of national-level private sector marketing systems will have the following probable impacts and consequences:

A. **New Fertilizers Will Be Introduced**--Only three fertilizers--urea, TSP, and MP--constitute 99% of all product currently offered to farmers in Bangladesh. Judging from the experiences of the fertilizer sectors in other countries on the subcontinent (See Appendix F) and Asia there should be a demand for other fertilizer products. It could be expected that national-level

private sector firms will import and/or granulate and blend new fertilizers. DAP would probably be one of the first new products. There are strong indications that Bangladesh farmers prefer DAP, especially wheat producers, as the primary source of phosphate. (IFDC/Dhaka monitoring of fertilizer markets has observed DAP in some markets in the Rajshahi region, apparently smuggled into Bangladesh from India and/or Nepal.) Other blended and formulated fertilizers (i.e. N-P-K-S complete fertilizers) would also be introduced to address regional differences in nutrients deficiencies.

**B. Packaging and Content Changes**—Under increased private sector competition, the packaging of fertilizer will change towards multiple-sized packages (versus the current practice of marketing either in loose form or in 50 Kg. jute bags) which are brand-named and containing a variety of basic nutrient formulations.

**C. Advertising and Promotion of Fertilizers Will Increase**—Existing regional wholesalers are not large enough yet to be financially able to brand-name, advertise, and promote fertilizer products. Larger-scale private firms can be expected to aggressively promote their fertilizer products through advertising and other promotional schemes. This is what has happened in pesticide marketing over the past ten years. Aggressive promotion could enhance total annual consumption through increased intensity of use.

**D. New and Larger Firms Will Enter the Fertilizer Market**—It seems reasonable to expect larger multi-product firms to import and market fertilizer within their existing marketing structure for pesticides, petroleum products, and related inputs. Larger marketing organization would: (a) Develop region specific ratios and rates of N-P-K basal applications. (b) Develop region-specific top-dressing rates, schedules and techniques of application; (c) Arrange for the manufacture of simple, human operated fertilizer spreaders and application equipment; (d) Outline region specific needs for sulfur or zinc (or other nutrients); (e) Publish (and sell to participating dealers) posters and charts to be hung at dealer/retail shops; and (f) Publish fertilizer use manuals

for use by wholesaler sales personnel and warehouse operations manuals for operations personnel.

**E. Development of Fertilizer Processing--**A private firm or syndicate of firms might be expected to pursue fertilizer processing as a consequence of an expanded free market in fertilizer. This implies either bulk blending of such products as urea, DAP, and MOP, or the importation and processing (private) of intermediates as TSP, ammonia, nitrogen solution, sulfuric acid, phosphoric acid, MOP, sulfate of potash, and zinc sulfate to manufacture granulated N-P or N-P-K grades with or without sulfur and with or without zinc. Such a processing plant would make basal application N-P or N- P-K ratios specific for various soils/regions of the country. Also, all grades would probably contain some sulfur, but this could be increased to desired levels. Also, where needed, zinc could be included. With such good granular grades available in the market, the farmer would: (a) have the nutrient ratio suitable for his soil, (b) have zinc if it was needed, (c) have combined N-P which result in more efficient utilization of both nutrients, (d) have a good granular material convenient to handle and spread evenly.

There is always the fear that increased free market participation by private companies will lead to collusion and cartel arrangements for price-fixing and market sharing within the fertilizer sector. This fear has been expressed by the Secretary of Agriculture and other government officials. The concern is genuine and obvious given Bangladesh experience with salt, sugar and other commodities. However, a planned and carefully phased transition to more free market involvement with BADC maintaining a role in importation and distribution in the near term would minimize the possibility of cartelization.

The Team estimates there are over twenty different types of firms interested in fertilizer marketing--those in the National Fertilizer Dealers Association, oil companies, and new firms not currently involved in agricultural inputs. It would seem to be difficult to form and maintain cartel arrangements given this many participants, especially if BADC is structured to develop a price monitoring role and maintain minimum inventory levels.

## Impacts on Bangladesh Agriculture

If free market importation stimulates the development of a dynamic and aggressive fertilizer sector there would be favorable impacts on Bangladesh agriculture. A more efficient and profit-motivated fertilizer sector would provide new products, information, and services to Bangladesh farmers. This should have a positive effect on cereal grain farmers since there is room for improvement in fertilizer use efficiency. During 1985-86 actual use was only 29% of the agronomic potential--recommended level. Actual use (as % of estimated potential) was about 46% for urea, 20% for TSP, and 5% for MP. Agronomic potential, based on recommended levels and actual 1985-86 utilization are summarized here:

	Potential	Actual
	-----	-----
	-----MT-----	
Urea	4.05 million	795 thousand
TSP	1.49 million	297 thousand
MP	0.83 million	60 thousand

Also, the nutrient ratio was not optimum; the recommended ratio is 1:0.86:0.63 while actual is 1:0.40:0.1 for 1985-86.

Improvements in fertilizer products and use efficiency would encourage farmers to:

(1) Use the optimum combination of N-P-K (and perhaps sulfur) as the basal application at soil preparation (about one unit of nitrogen for each 3-4 units of phosphorus improves uptake and utilization of phosphorus);

(2) Apply multiple applications of nitrogen (urea) top dressings preferably cultivated into the soil or irrigated immediately after surface spreading and carefully timed (early) to foster grain, not straw, production in wheat or rice; and

(3) Apply adequate nutrients to minimize both profit and production, especially foodgrain. This implies rates in the range of 200 Kg of plant nutrients per cropped hectare (double or triple what is often used).

The overall benefits to Bangladesh agriculture for expanded and dynamic private sector involvement (which would necessarily include direct factory lifting of urea and TSP) would come primarily through increased fertilizer efficiency of use and a higher intensity of use per unit of cropped acreage. If in fact these factors will be influenced favorably by a privatized

fertilizer sector, then both of these factors would eventually increase total cereal grain output, other factors being equal (weather, prices, etc.). Table 7 contains the Team's estimate of the potential aggregate impact on food grain production of a gradual increase (from 9%/year to 11%/year) in use intensity as measured by fertilizer sales growth and a less than 10% increase (from 6.0 to 6.5 Kg grain per Kg nutrient) in use efficiency of fertilizer applied to cereal grains.

Table 7: Potential Effect of Enhanced Usage and Improved Fertilizer Efficiency on Cereal Grain Production

Year	Growth Rates <sup>a</sup> Without Privatization			Privatization Impact <sup>b</sup> on Fertilizer Sales and Use Intensity				
	Sales Growth	Nutrient Usage	Grain Pdn.	% increase in Sales	Sales Growth	Nutrient Usage	Efficiency Use increase	Grain Pdn.
		---'000 MT---				-'000MT-		-'000MT-
0	9.2	700	4200	0.0	9.2	700	0.0	4200
1	9.2	764	4584	0.25	9.45	766	0.1	4673
2	9.2	838	5028	0.75	9.95	842	0.2	5220
3	9.2	912	5472	1.25	10.45	930	0.3	5839
4	9.2	996	5976	1.75	10.95	1032	0.4	6605
5	9.2	1088	6528	2.00	11.20	1148	0.5	7462

<sup>a</sup>Assuming a continuation of fertilizer sales growth at present rates, about 9.2% per annum, applied to 700,000 nutrients (1,500,000 total fertilizer sales, and a average response of 6 kg grain per kg of nutrient.

<sup>b</sup>Two impacts are envisaged: (1) marginal increases in fertilizer sales growth rates (i.e. use intensity) arising from vigorous promotion: 0.25% first year and 0.50% per annum thereafter, to a 2.0% increase by the fifth year (added to the assumed current growth rate of 9.2% per annum); and (2) small incremental increases in the amount of grain produced per kg. nutrient, arising from both education and promotion; increases of 0.1 kg grain per kg nutrient, starting with 6.0 kg grain per kg nutrient.

The potential impact of enhanced private sector involvement in fertilizer marketing should increase both nutrient usage and efficiency resulting in an additional 934,000 tons of grain (assuming all plant nutrients used to produce grain) per year after five year's accumulated impact. In today's economic environment in Bangladesh, the economic value of this additional grain production would be approximately \$174 million (valued at nominal 1988 farmgate prices).

Thus, the Team believes expansion of the private sector into fertilizer importation and more aggressive marketing would make a significant contribution to closing the foodgrain

"supply gap" which has existed since Liberation and is projected to be more than two millions tons in the 1990s.

### **Impacts and Consequences on the GOB**

Introduction of free market fertilizer retailing and wholesaling has had beneficial impacts and these impacts have been generally recognized and accepted by the GOB and donor agencies. Expansion of the free market to include private sector importation in a phased and gradual process (in addition to direct factory lifting of urea) will further redefine the role of the GOB. The Team concludes that significant private sector importation is a logical next step in the New Industrial Policy of promoting and encouraging the private sector in Bangladesh and can be implemented in a gradual and non-disruptive manner.

Both the UNDP Agricultural Sector Review and the World Bank Bangladesh Fertilizer Sector also advocate that increased entrepreneurial activity be extended downstream in the fertilizer supply line. This would have the impact of establishing the lowest cost supplies to Bangladesh and make imperative improved efficiency by BADC.

The GOB will need to solicit the participation of the private sector in the policymaking and planning of fertilizer production and importation, pricing, quality control, and movement and storage of factory and imported inventories. This private sector input has been institutionalized in the case of pesticide importation but would represent a major change for the Ministry, BADC, and BCIC for the case of fertilizer. There is a high level of distrust and suspicion between the public and private actors in fertilizer and recognizing the private sector role in GOB policymaking would be a major consequence of fertilizer policy reform.

A more competitive private sector in fertilizer marketing should encourage better overall utilization of Bangladesh's resource base. For example, the soil resources will be utilized more efficiently and intensely through improved fertilizer use and production practices. Increased private sector employment should improve the overall utilization of human resources. There are available private infrastructure facilities (jetties, godowns, and transport) which are not currently available to the public sector but which would be utilized if private sector fertilizer marketing were expanded to include importation.

There are potential benefits to the GOB. Further marginalization of BADC's role in fertilizer supply will permit those GOB resources to be reallocated to more developmental

functions within the agriculture sector. A more rational and improved commodity aid policy which channels increased donor assistance through the SEM should not reduce overall foreign assistance and will simplify the accounting for counterpart funds and their utilization for the Annual Development Plan or other public functions.

PART V:  
FINDINGS AND RECOMMENDATIONS: TECHNICAL OPTIONS  
AND POLICY STRATEGIES FOR PRIVATE IMPORTATION OF FERTILIZERS

The private sector in Bangladesh has only recently emerged from dominance by the public sector and state owned enterprises as a result of policy reform like the New Industrial Policy of 1986 and the current government of President Ershad. Under these circumstances it is legitimate to ask whether or not private sector firms in Bangladesh are willing and able at this time to undertake free market importation of fertilizers. The Team interviewed several businessmen and company representatives as well as government officials in the Ministry of Commerce regarding this issue.

Team interviews and field trips to port facilities focused on examining the extent to which there may be technical obstacles (as opposed to policy impediments) to expand of free market importation of fertilizers. In particular the Team attempted to assess the current environment and situation regarding:

1. **Whether or not port bulk handling facilities and associated services are available for private importation of fertilizers.** A trip report and an evaluation of the bulk handling capabilities of the two major ports are included in Appendix B. The Team concludes that there may be minimally adequate port facilities and bulk management systems currently in place and available to private importers to meet free market potential fertilizer importation demands. These facilities are constrained by shallow draft which limits ship size for at-jetty offloading and by hand bagging rates which limits offloading rates to about 1000 MT FWWD. Currently excess bulk handling capacity exists in private hands (i.e. jetties, godowns, and transportation) at several locations and could be utilized for private importation. Investment in improved public and/or bulk management facilities could however increase the efficiency of importation by both BADC and the private sector.

2. **The extent to which private firms have access to foreign exchange and credit financing for importation of multi-million dollar shipments.** GOB officials, private firms, and multi-lateral bank personnel confirmed that foreign

exchange is available from the Bangladesh Bank's secondary exchange market and accessible through the WES at a 3-4% premium over the official exchange rate. Private businessmen indicated that letters of credit could be established by syndicates of existing firms in sufficient amounts to cover international purchases of ship-load quantities for fertilizer (if an LCA were permissible under the import policy regulations).

**3. Can private sector firms obtain the market information necessary for international negotiation and purchase of finished fertilizer products?**

Interviews with businesses currently importing pesticides, cement, computers, oil products, and other materials indicates that management expertise exists at a level which would permit competitive international negotiations.

**Technical Options for Private Importation**

Thus, it would appear that the private sector has the technical capacity to import fertilizer. The question here is what are the options that exist, or need to exist, for the private sector, the entrepreneurial venture capital, to engage in the overseas purchase, import and domestic sale of fertilizer. In assessing this question a few key issues are of paramount importance:

1. Merchant, or combination of merchants, with the managerial and financial capacity to import purchase and domestic sale dispose of an economic size of shipload.(15,000 MT).
2. Access to the foreign exchange to make the purchase.
3. Access to the import permission, the letter of credit authorization.
4. The material handling capability of importers to offload a shipload of goods and dispose of it through trade channels.

These points are discussed in some detail in Appendix D.

**Option I--Joint BADC-NFDA Procurement**

This option is mentioned as an option, which could be highly workable, and require minimum policy changes, and it is for the private sector to work with BADC in the procurement and port delivery of fertilizer, and both lifting part of the cargo when it arrives in port. Under these circumstances both BADC and NFDA would have to expose the fertilizer quotations of FOB vessel costs, freight costs and CIF port cost, and reach a joint decision on how to proceed. This would imply, if there were no hidden commissions, that

both parties would have the same fertilizer cost bagged, at port on transport. This would be equitable, the playing field level, more detail on this is given in Appendix D.

### Option II--Mechanically Offload at TSPC With Joint BADC-NFDA Lifting

This option involves the BCIC TSP complex at Chittagong (and could include a similar facility at Mongla Port). This would be essentially converting the TSP complex into a bulk handling terminal which would receive primarily TSP, sulfur, phosphoric acid, and perhaps MP. The complex process intermediates into N-P and N-P-K grades, (all containing sulfur, and the plant then delivers to the marketing system bagged granular complete/complex fertilizer, the marketing system probably being both national distributors and BADC. Details on some of the needed modifications are given in Appendix D.

### Option III--NFDA Procurement With Commodity Donor Payment Rights

Option III is to have GOB make LCA and foreign exchange (commodity donor payment rights) available on the same basis as BADC--in other words have a "level playing field" for all participants. It is expected that:

- (a) With their commercial flexibility that the NFDA or individual members may be able to purchase FOB port of export or CIF port of import at prices no higher than BADC pays, and perhaps marginally lower.
- (b) Ship offloading and bagging costs will be equivalent to those incurred by BADC and probably marginally lower.
- (c) Surface transport from import to sales destination no higher than BADC, and perhaps marginally lower.
- (d) Sales disposal by the ordering wholesaler rapidly and efficiently, minimizing interest and inventory cost.

At the time of this writing, Option-III would include primarily Muriate of Potash (MOP), Triple Super Phosphate (TSP) and perhaps Diammonium Phosphate (DAP).

There can be several variations from Option-III into a group of variants. The variants are somewhat procedural and differ primarily in that individual members doing some of the bidding, obtaining the LCA, and arranging for letters of credit authorization (LCA) instead of primarily NFDA. So while NFDA would be the forum for member commitment to make

ship cargo purchase economic, once such an agreement had been reached, individual members could, and probably would, solicit price offers from suppliers, (sometimes known to/by individual traders importers). From such offers/quotes, the decision to accept would be underwritten by either: (a) several orders to be consolidated into a single ship load or (b) an order placed by NFDA on behalf of its members. Also, individual members could and probably would, have their LCA/LC for the quantity they ordered, but it could be a consolidated LC. Likewise, associated with each order/LC, there could, and probably would be individual orders. Once the cargo reached import port, NFDA would probably be the entity which negotiated for discharge, bagging, surface freight, etc.

The difference between Option-III and the variants are that in Option-III NFDA negotiates price, LC, import license, etc. on behalf of its members whereas in the variants the individual members would obtain quotes, arrange for the LCA, and negotiate a LC. In both cases, however, NFDA would arrange offloading and bagging.

#### Option IV--NFDA Procurement With Mechanical Offloading and Lifting

This is essentially the same as Option III, except that once the bulk cargo reached Bangladesh port it would be mechanically offloaded, bagged, and dispatched on surface transport. The details of LCA, LC, commitments of NFDA, etc. would be essentially the same as Option-III. The difference would be the handling, once the goods reached port. Some additional detail on this is shown in Appendix D.

#### **Strategies for Phased Free Market Importation**

Although reasonable options exist for immediate free market importation and distribution of fertilizers, it is clear that private firms cannot undertake importation until the serious policy issues are addressed by the GOB, MOA, and the bi-lateral and multi-lateral donors and lenders. In addition, the feasibility of any strategies for introducing free market importation depends too on dealing with inherent mistrust of the private sector felt by high-level Ministry officials and others in policymaking positions. The Secretary of Agriculture made is quite clear to the Team that he doubted the private sector could be trusted to provide adequate national fertilizer supplies without government involvement in

procurement. In addition, substantial and vigorous BADC opposition to further expansion of private sector involvement in the fertilizer sector should be expected. Free market importation will further marginalize BADC's role, threaten employment levels, and attenuate the ex-gratia income which is alleged to accrue to some BADC officials (see the INTERPAKS commentary on these matters). Policy reform to date, which had introduced free market wholesaling and retailing, has taken ten years in the face of BADC opposition to virtually every change.

Since the policy issues are complex and vigorous opposition can be expected from BADC, a gradual phased transition strategy is the most feasible approach to moving towards increased private sector involvement in fertilizer procurement. A acceptable phased policy strategy must address all the major issues and involve all the major actors in the question of free market importation. The Team suggests the following policy strategy to accomplish this:

Phase I: Expand the TDP concept to establish the ports and the TSPC as TDPs for private sector lifting of imported TSP, MP and other fertilizers at a 500 Tk/MT discount from ex-PDP prices.

Phase II: Initiate policy discussion with the MOA, MOF, ERD, BCIC, BADC, and major donor-lender agencies about rationalizing fertilizer commodity policies, modifying the Import Policy Order, and alternatives for dealing with the fertilizer price subsidy issue.

Phase III: Assist the GOB and MOA in establishing a National Fertilizer Coordinating Committee to facilitate private sector participation in fertilizer policymaking and procurement planning which will eventually implement joint BADC-private sector importation of donor-assisted fertilizers.

Phase IV: Upon successful performance of the private sector in improving fertilizer availability and quality, permit public and private free market fertilizer importation with MOA monitoring.

Implementation of this strategy must be seen as a challenging policy reform and institutional change program which will require considerable patience and donor assistance to the Ministries involved in fertilizer procurement, production, and distribution in Bangladesh. The implementation process during FDI-I indicates that change is possible if given enough time, technical assistance and donor resources. In specific, the four phases of this strategy would involve:

**Phase I: Expand the TDP concept to establish the ports and the TSPC as TDPs for private sector lifting of imported TSP, MP and other fertilizers at a 500 Tk/MT discount from ex-PDP prices.**

The TDPs are an attempt to solve some of the internal inventory management constraints on BADC operations by permitting the private sector to lift large quantities at a discount from ex-PDP prices. TDPs have proven enormously popular with regional wholesalers and very successful when adequately supplied with stocks. The most gradual expansion of the private sector would be the extension of the TDP concept to include the ports and the TSP Complex as lifting points for domestic TSP and imported fertilizers. This requires a substantial price incentive to the private sector. Currently the TSPC is a TDP but the discount is too small to attract private lifting. Therefore, the Team recommends a TDP discount of 500 Tk/MT for port or TSPC lifting.

Since BADC's target cost for internal movement and handling is 550 Tk/MT, a 500 Tk/MT discount would allow BADC 50 Tk/MT to cover miscellaneous costs associated with procurement, record-keeping, and management. If the Team's estimate for private sector movement and handling costs, 400-600 Tk/MT, then a TDP with a 500 Tk/MT discount at the port and TSPC would provide enough financial incentive to attract some firms. This would be the first step towards stimulating the development of the national distribution networks for fertilizer.

Establishment of TDPs at ports and the TSPC for the lifting of phosphate, potash, and other fertilizers does not solve any of the major issues confronting the GOB relative to the further privatization of the fertilizer sector. It does however permit further growth in existing private operations while the policy issues and other constraints can be addressed.

**Phase II: Initiate policy discussion with the MOA, MOF, ERD, BCIC, BADC, and major donor-lender agencies about rationalizing fertilizer commodity policies, modifying the Import Policy Order, and alternatives for dealing with the fertilizer price subsidy issue.**

The GOB has an established policy of encouraging private sector participation in the economy. This policy has only been applied partially to the fertilizer sector--free market retailing and wholesaling. There is a need to rationalize GOB fertilizer procurement policies in all commodity aid (see the DAI report, "The Utilization of Commodity Aid in

Bangladesh) and in particular with fertilizer. Key elements in a more rational GOB fertilizer policy would include:

- a. More consistent and widely publicized procedures for working with the donor agencies on grant and soft loan procurements;
- b. Private sector participation with BADC and BCIC in regular fertilizer demand forecasting, monitoring of in-country stocks, and scheduling of procurements; or
- c. Making donor commodity payment rights more available to private sector firms wishing to secure imported fertilizer.

For the free market to ever eventually operate in the fertilizer sector, the GOB Import Policy Order would have to be amended to delete BADC as the exclusive importer. New language could be inserted restricting import of fertilizers to BADC and other public organizations (e.g. BCIC) and private firms approved by the Secretary of Agriculture. This would put fertilizer import policy on the same status as pesticide and irrigation equipment importation. It would also permit public or private import of new fertilizer products or materials to be blended or formulated in-country.

Private sector growth into international procurement of fertilizer products will not occur under existing price subsidy practices. USAID will have to take the lead in collaboration with other donor agencies to engage the GOB and MOA in intense discussion of alternatives methods of addressing the subsidy issue. At least three alternatives are apparent:

- a. Gradually raise ex-PDP prices for TSP and MP to bring wholesale prices in line with world market prices;
- b. Transfer the point of subsidy from BADC to BCIC and make all fertilizer supplies available to BADC and private firms on equal invoice terms; or
- c. Transfer the point of subsidy from BADC to the ERD and the Bangladesh Bank as a matter of negotiated project or program assistance from the donor agencies.

**Raising ex-PDP Fertilizer Prices**--Substantial increases in the price of TSP and modest increases in the price of MP will eliminate the subsidy, solve some of the current BADC financial problems, and create a financial "level playing field" for private firms. However,

price increases are probably not a pragmatic policy change in the current national environment, especially in the post-Flood period. In addition, farmers will respond to price increases by reducing quantities purchased and this will slow the growth rate for total fertilizer sales. The price elasticity of demand for fertilizer is probably  $-0.5$  to  $-0.6$  (see Infanger, et al, pg. 32) indicating that for every 10% rise in price, other factors held constant, results in a reduction in quantity purchased by 5% to 6%.

Closing the full gap of TSP prices at one time would have serious negative consequences on cereal grain production in the short term. Instead, a gradual change of 10% per year would reduce the magnitude of the subsidy. The GOB could then pursue a policy of keeping domestic prices near the world cycles in fertilizer prices.

**Transfer the Point of Subsidy From BADC to BCIC**--Over much of the last decade urea and TSP fertilizers are indirectly subsidized through below-cost-of-production ex-factory prices. Since the GOB seems inclined to maintain subsidies on TSP and MP for the near term, then transferring the point of subsidy from BADC to BCIC then both urea and TSP could be handled on a BCIC invoice basis with both BADC and private firms lifting on equal financial (BCIC invoice) terms.

If BCIC became the importer of TSP and MP, in addition to its current imports of raw materials and acid, then the TSPC could adjust its output to world economic conditions, i.e. manufacturing TSP when economically viable or directly importing finished product when prices decline. This type of subsidy arrangement would also allow BCIC to introduce DAP and N-P-K-S formulations as complements to the currently available products.

**Transfer the Subsidy From BADC to Another GOB Entity**--Currently ERD negotiates for fertilizer grant and soft loan support for fertilizer imports with over a dozen active donors. There is wide variance in the terms and conditions of these donor support agreements. ERD could amend current agreements and negotiate future agreements to provide for equal access to donor commodity payment rights by BADC and the private sector at specified and, possibly, subsidized ex-port prices. With the donor's agreement, the Bangladesh Bank would absorb the "losses" in the form of the reduced Taka counterpart payments received from BADC and the private sector firms. This would lift the subsidy burden from BADC, create a "level playing field" for all participants, allow the free market

to expand its role in the marketing channels, and still permit a gradual elimination of price subsidies.

Of course any solution to the price subsidy issue will take the collective collaboration of several GOB Ministries as well as the cooperation of the donors. It seems clear to the Team that USAID and possibly the World Bank will have to take leadership for engaging the GOB in policy discussions of the possible alternatives for addressing the subsidy issue. Unless the subsidy issue is addressed, especially for TSP, the possibility of free market fertilizer imports of TSP are problematic.

**Phase III: Assist the GOB and MOA in establishing a National Fertilizer Coordinating Committee to facilitate private sector participation in fertilizer policymaking and procurement planning which will eventually implement joint BADC-private sector importation of donor-assisted fertilizers.**

A more rational GOB policy of working with donor agencies on fertilizer would be most effective if more private sector input in fertilizer policymaking were possible through a quasi-public National Fertilizer Coordinating Committee established by the GOB and co-chaired by the Secretary of Agriculture and the Secretary of Industries. Membership should include the BADC Chairman, BCIC Chairman, ERD, the Bangladesh Bank, and private sector fertilizer firms and banks. Members could be equally divided between public and private members, providing a broader base of participation in fertilizer policymaking and planning.

The National Fertilizer Coordinating Committee would be charged with determining the broad outlines for fertilizer policy: production and importation decisions, allocation of available foreign exchange and commodity donor payment rights, and determination of the appropriate performance roles of BADC, BCIC, and the private sector. The Committee would decide where TDPs would be functional, who would lift, minimum lift quantities, financial requirements, and allocation of GOB fertilizer inventories and imports. The Committee would also have a technical role and responsibility for forecasting near-term demands, monitoring in-country and pipeline supplies; identifying prospective donor agencies and grant/loan terms and conditions most consistent with overall MOA policy; and managing GOB reserve stocks.

In order to function effectively, the Fertilizer Coordinating Committee would require a professionally trained and experienced staff to conduct the forecasting, monitoring, and survey functions necessary to support the decisionmaking of the Committee. This staff should function under the direction of an Executive Director appointed by the Secretary of Agriculture and would report directly to the Secretary and the Committee. There should be opportunities to employ experienced BADC staff from the Supply Wing as staff members of the National Fertilizer Coordinating Committee.

BADC's role would include importation to fill buffer stock needs, monitoring of national-level supplies and fertilizer quality, and monthly market surveys of the fertilizer price and supply situation in all regions.

After rationalizing GOB fertilizer policies and addressing the subsidy issues, the MOA would then be in a position to utilize the National Fertilizer Coordinating Committee to initiate joint BADC and private sector importation of fertilizer supplies which are donor-supported. Donor agencies like the ADB, USAID, and the Dutch indicate they would consider supporting joint BADC-private sector purchasing (or aid earmarked for the private sector) with grant/loan assistance.

The most likely fertilizer to be considered for joint importation would be MP since the current level of subsidy is modest and there are only two important donors (CIDA and USAID). Cooperative importation of TSP will involve more donors and depend to some extent on how the TSP Complex is operated in the future.

**Phase IV: Upon successful performance of the private sector in improving fertilizer availability and quality, permit public and private free market fertilizer importation with MOA monitoring.**

Throughout a phased transition towards privatization of fertilizer importing, the MOA (operating through the Coordinating Committee) should play a careful monitoring and facilitating role. The MOA would have to play the leadership role in implementing this phased strategy, including the enlisting of donor assistance. Upon successful performance of the private sector, BADC, and BCIC, in the final phase of a free market policy implementation for fertilizer imports, the major policy obstacles would have been solved including the question of the most efficient strategy for securing potassium and phosphorous supplies.

This type of phased policy implementation logically addresses the most important of the policy issues surrounding free market fertilizer imports and logically develops private and public sector cooperation in the shared responsibility for assuring adequate fertilizer supplies at competitive prices for Bangladesh's farmers.

Any transition towards a more free market oriented fertilizer sector must be viewed as a long-term policy reform strategy in which considerable human and financial resources must be brought to bear on the situation if progress is to be expected. This means USAID and the other donor agencies will have to examine their own agricultural and industrial development strategies to determine where the GOB can be assisted in each Phase and what influence can be exerted. A minimum of three to five years should be expected as a minimum reasonable implementation period.

## APPENDIX A:

## SCOPE OF WORK

STUDY TO DETERMINE PROCEDURES REQUIRED AND BENEFITS FROM  
ALLOWING PRIVATE SECTOR FIRMS TO IMPORT FERTILIZER

The objective of this study is to identify the benefits from private sector importation and describe procedural steps necessary to allow wholesale firms to directly import fertilizer materials. The consultant should identify and discuss policy options and procedural steps for the Government of Bangladesh to consider in deciding how to further assist wholesale firms in providing better services and fertilizer products to meet farmers' specific crop-fertilizer needs. This will ultimately provide for more employment opportunities for Bangladesh and create a net positive contribution to the agricultural economy. Specifically, this study should identify and address the possible constraints (legal, financial, banking, institutional, administrative, and technical) that will need to be removed in order to encourage and allow greater private sector participation in fertilizer importation and marketing.

This study will be conducted by a joint team of Bangladesh and U.S. consultants. The team will be responsible for carrying out the following tasks:

Task 1. Identify, through discussions with appropriate government officials, BDG objectives and policies related to further privatization of the fertilizer distribution and marketing sector. How do BDG objectives and policies relate to the improvement of fertilizer distribution and market efficiency?

Task 2. Review BDG privatization objectives and policies with USAID objectives in the fertilizer sector. How do USAID and other donor objectives interrelate with BDG privatization policies?

Task 3. Identify current Government policies and laws restricting private sector firms from importing fertilizer materials including the import policy orders, custom laws, regulations and schedules; banking laws and regulations; foreign exchange regulations; Chittagong and Chalna Port laws and regulations (i.e. regulations regarding the off-loading, bagging, storage, and transport of bulk commodities); labor and tax laws.

A review of current laws and regulations would include, at a minimum, an analytical review of the important policies, laws, and regulations, along with an evaluation of how they were implemented. These policies, laws, and regulations would include (but not limited to) the following:

- a. Import Policy Order, 1986-87, S.R.O. 276-L/86
- b. Import Control Schedule, S.R.O. L/85
- c. Companies Act of 1913
- d. Partnership Act of 1932
- e. Importers, Exporters, and Industries (Registration) Order, 1981
- f. New Industrial Policy, June 1, 1982 and Industrial Policy, June 1982
- g. Banking Companies Ordinance, 1962
- h. Bangladesh Bank Act and Regulations, and Bangladesh Bank Order, 1972
- i. Ministry of Industry Right of Refusal (ROR) regulations, and related non objection certificates (NOC) rules
- j. Regulations of the Chief Controller of Imports and Exports
- k. Imports and Exports (Control) Act, 1950
- l. Customs Act, 1969
- m. Finance Ordinance, 1986
- n. Foreign Exchange Regulations Act 1947 and Foreign Exchange Regulations

- o. Negotiable Instruments Act, 1981
- p. The Bangladesh Flag Vessels (Protection) Ordinance, 1982
- q. The Chittagong Port Authority Order/The Port of Chalna Authority Ordinance and Regulations
- r. The Carriage of Goods by Land (by Sea and by Air)
- s. The Railway Act/The Bangladesh Merchant Shipping Regulation Ordinance/Bangladesh Inland Water Transportation Ordinance/The Inland Shipping Ordinance

Task 4. Identify and describe the administrative, legal, and institutional procedures or changes required to permit private sector wholesale firms to import fertilizer materials for direct resale to retailers. The importation of pesticides, cement, and foodgrains by the private sector may serve as useful models.

Task 5. Assess the current fertilizer distribution, wholesale, and retail marketing system and identify infrastructural, institutional, and/or technical marketing constraints that may restrict private sector wholesale firms from importing and distributing fertilizer materials.

In the process of carrying out tasks 1-5, the following questions should be addressed:

- a) How will private sector firms obtain the needed foreign exchange?
- b) Are letters of credit readily available from Banks?
- c) Do private sector firms have adequate institutional capacity to import, lift from ports and factories, and store large quantities of fertilizer materials, and distribute such materials to wholesalers or retailers?
- d) Are credit resources available to private sector firms to finance large orders?
- e) Do private sector firms have or are they able to obtain necessary information to procure fertilizer materials on the international markets?
- f) What are the procedures and regulations used to allowing private sector firms to import food grains, cement, and pesticides?

Task 6. Estimate and discuss the impact of private sector fertilizer imports on the fertilizer industry. These should be discussed by type of fertilizer, such as urea, phosphates, potash, sulphur, zinc, etc. Should certain items be restricted from importation?

Task 7. Estimate both the social and private benefits to be obtained from allowing private sector firms to import, handle, store, and distribute fertilizer materials. This will probably require the development of a spread sheet model to estimate both aggregate and micro effects of allowing wholesale firms to import fertilizer.

Task 8. Estimate the short and long term effects of private sector fertilizer imports on wholesale and retail fertilizer prices, employment, use of fertilizer, and ultimately, domestic food production.

Task 9. Assess the effects of current TSP and MP pricing on private sector importation. Also examine the consequences of allowing the private sector to handle all or a portion of donor- assisted concessional imports.

Task 10. Recommend to the BDG the best policy option(s) that will allow further improvements in fertilizer importation, and the distribution and marketing system.

APPENDIX B:

TRIP REPORTS, PROFESSIONAL CONTACTS, AND INFORMATION SOURCES

TRIP REPORTS

Urea Plant: Chittagong  
November 1988

Export Jetty 175 meters long. About 2 meters to first rail and an additional 12 meters to 2nd rail. The rails carry the loaders both bulk and bagged. They deliver at a rate of 100 tons hour each or 200 tons per hour.

There would probably be ample space for a bulk off-loading belt. There could be enough space, running on the same tracks as the loaders, for two off-loading elevator arms: one between the two loaders and one at the end; provided the rails were extended.

Draft 32-35 ft., take ships of 15000 DWT. Baggers (8) at 25 ton per hour each give 200 ton per hour bagging for urea. Urea fed from 88,000 ton bulk storage at the plant to the bagging units. There is 12,000 tons bagged storage. For export, buyer supplies polypropylene bags and urea plant makes and inserts plastic liners. For domestic, heavy jute bags, about 1.4 kg net each and used, with liner.

There is a small jetty for domestic loading river craft. Urea for domestic markets bagged and placed in package storage. From package storage, trucks move the goods to the river jetty. Plans and budget proposal for conveyer belt from bagging to domestic pier.

Export jetty occupied less than 200-220 days year.

If product, TSP or DAP, was bulk off-loaded at the urea plant pier/jetty, then there would need to be a conveyer belt to:

1. the bagging units or
2. to an intermediate bulk storage.

The intermediate bulk storage could be useful:

- (a) It could feed a bulk blender or TSP to a granulation unit making N-P-K.
- (b) It could supply riverine traffic with a combination of fertilizers; phosphate and potash as well as nitrogen.

Deputy Maintenance--Md. Shamsul Haque Bhuiyan

Chittagong Port  
November 1988

Bulk Managers Inc. off-loading and bagging a 31,500 ton cargo of muriate of potash from Canada; 16,000 tons for Chittagong and 15,000 tons for Khulna. First bagged and off-loaded some 8,000 tons at outer anchorage. Bagging, per hold 6 scales, 6 sewers, for about 50 fillers. Done on a piece work basis. Sling loads 30 bags or 1.5 tons. off-load target 1000 tons per 24 hr. of 3 shifts; but operating at 800 tons. Lack of RR cars stated as reason. Demurrage a BADC cost. Private purchasers could function as BADC - contract off-load.

BADC Manager Shipping, Chittagong--Sultan Ahmed, Deputy Manager--Muatafizur Rahman

TSP Complex Ltd.: Chittagong  
November 1988

A rather corrosive operation. Have a jetty. Lighten load into liters and finally bulk ships berth at jetty and off-load ordinary dry sulfur and rock phosphate. Also import phosphoric acid.

TSP rated capacity 152,000 tons, output about 137,000 tons. Import belt capacity 250 tons of rock phosphate per hour or about 4800 tons per 24 hour. They import about 300,000 tons raw material, 40,000 tons sulfur, 200,000 tons rock phosphate and 40,000 tons phosphoric acid. Jetty occupied about 250 days per year. The incoming belt has two locations in it where imported TSP could be diverted. Granulation and plant sanitation is miserable.

S. N. Alam, Chief Chemist, TSP Factory

Mongla Port, Khulna  
November 1988.

Located on the Pasur river, on the east bank across the river from the metalled road. River normally has draft of 6.5 to 7.5 meters. Large ships off-load, by lightering or at Chittagong, part of the cargo before coming up river.

The ship APT Mariner, with 26,000 tons of TSP had first off-loaded some at Chittagong. Arrived at Mongla with 16,000 tons granular TSP from Florida, (very nice grey uniform hard granules). The ship was about 25 meters wide, 5 hatches, 4 large cranes-winchers of over 8 tons each. Bagging in hold. Crew 92 persons, including 6 sewing, 6 weighing and 12 on pull rope for scale. Rope sling only 4 x 5 bags or 1 ton. Said too much bag strain if more bags in rope. Cost about Tk.185 per ton plus bags for bagging and sling over to riverine carriers. Bagged goods just dumped, without stacking into riverine cargo holds (of perhaps 200 tons). This further strained bag seams. One hold had two crews (of 92 men) working to finish off-loading. Ship arrived 11 Nov and expected to be completely off-loaded 27 Nov or 16 days for 16,000 tons. Off-load supposed to be 200 tons per day (2 crews of 12 hours each) per hatch.

Anchorage in river is feasible perhaps 150 meters from shore. A bulk conveyer belt on stilts could be installed to move bulk cargoes (cement, fertilizer grain, coal and perhaps sugar) to a bulk terminal on shore. There seems to be ample unoccupied land for a bulk terminal on shore in the Mongla area would need a river jetty with mechanized bulk unloading; perhaps 2 units of 100 tons per hr. and a belt to shore of 250 tons per hr. At 4800 to 5000 tons per fair weather working day (estimated as 250 per year, would be about 1.2 million tons per annum.

BADC was having the granular TSP bagged and off-loaded in the river because they stated that berthing at the Mongla jetty cost too much. Bulk Management hoppers for on shore bagging were on the Mongla Port Authority jetty.

There is a new jetty, perhaps 4-5 years old, operated by the Mongla Port Authority. They have a few customs sheds and are rapidly building more. They seem to control most of the high ground around the port enclave. The pier has draft of about 6.5 to 7.5 meters adequate for 10,000 to 12,000 ton vessels. The pier has shore cranes capable of 5 tons, adequate to operate clam shells to bulk off-load fertilizer. There is also ample space for hoppers (movable) for filling trucks to move bulk fertilizer from the jetty to a bulk warehouse perhaps 0.5 to 1.0 k.m. from the actual jetty (the warehouse would have to be erected on land probably controlled by the Port Authority. Such as bulk off-loading facility, and the associated bulk storage could:

1) Receive and off-load in bulk granular TSP and screened MOP rapidly and efficiently into bulk storage and from this bulk storage bag the goods and dispatch it land or riverine freight. Off-loading and bagging

## Appendix B

is envisaged as on parity with current operations but speed of off-loading could save on demurrage charges. If a 16,000 ton cargo could be off-loaded within 4 days then would be a dispatch gain of 1 day versus about 10 days of demurrage at \$5,000 a day (50,000 or about \$3.25 per ton). If the tonnage is in the range of 200,000 tons, it becomes \$650,000 ( $3.25 \times 200,000$ ). Fertilizer stored in bulk maintains quality better than in bags; and it is lower cost per ton of goods.

Since much of the fertilizer consumption is in the North West, the Rajshahi Division, the supply of bagged fertilizer onto riverine transport would be advantageous, from a transit time and freight cost view point. A bulk handling facility could also accept bulk urea from Chittagong to be bagged and dispatched from a facility at or near Mongla/Khulna. Such a bulk handling facility could probably negotiate well for supplies of TSP and MOP from Singapore, and have a 10,000 ton bulk carrier occupied full time bringing goods to Mongla from Singapore, and probably back haul urea from Chittagong to Singapore, offering low cost freight both ways. While a large bulk storage at or near Mongla would cost several million dollars, the additional investment at the Mongla Port Authority Jetty would be nominal. Also the handling of perhaps 200-250 thousand tons per annum of fertilizer (and other goods) would be essentially guaranteed and so would the freight/demurrage margin, to almost guarantee a minimum gross volume and revenue.

2) Receive run-of-pile TSP and MOP and ammoniate and granulate (with nitrogen solution from the urea factory and sulfuric acid from the TSP Plant) to process into N-P or N-P-K grades (with sulfur). These could then be bagged and dispatched by land or river transport to the consumption area. Such facility would have a few marginal cost advantages:

- A) Run-of-pile (ROP) TSP is cheaper than granular TSP. Also standard MOP is cheaper than screened MOP. Nitrogen as ammonia in the nitrogen solution should be relatively inexpensive. So raw material should be marginally cheaper than the presently imported granular TSP and MOP.
- B) Bulk offloading and bagging would become two separate operations, and cost parity is envisaged.
- C) Bulk storage of inventory is cheaper than bagged storage.
- D) If supplies are routinely lifted from a supply terminal as Singapore, freight from ships within 7 meters of draft should be economic.

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## INFORMATION SOURCES

Antholt, Charles and E. Boyd Wennergren, "Fertilizer Marketing in Bangladesh: Toward Privatization", (mimeo), USAID/Dhaka, April 1983.

Auchter, Edmund L., Michael Loft, Abdul Mannan, and Dr. Rahim Talukdar, "The Utilization of Commodity Aid in Bangladesh-- Final Report", Development Alternatives, Inc. in collaboration with The Centre for Development Research, Dhaka, May 1988.

BADC, Fertilizer Newsletter (Monthly), MSS. Division, Dhaka (various issues).

Ameen, H.H. Mansurul, , A Study of Divestment of Industries in Bangladesh, Volume 1: Main Report, Canadian International Development Agency, Dhaka, March 1987.

Cowan, L. Gray, "Divestment and Privatization of the Public Sector--Case Studies of Five Countries", (mimeo) Economic Development Division, Bureau of Planning and Program Coordination, AID, December 1983.

FADINAP, Fertilizer Trade Information, Monthly Bulletin, Fertilizer Advisory, Development and Information Network for Asia and the Pacific, ESCAP, United Nations, Bangkok, October 1988.

Fertilizer International, Journal of the World Fertilizer Industry, London, November 1988.

Humphrey, Clare E., "Privatization in Bangladesh", a study submitted through the Center for Privatization for AID, Volume I, Main Report, August 1988.

IFDC, Assessment of Fertilizer Marketing From Bagharbari TDP, February and March, 1988, FDI-II Contract No. 388-0060-HCC- 8701-01, May 1988.

IFDC, Fertilizer Marketing in Bangladesh--The Past, Present and Future, June 1987.

IFDC and Management Systems International, Management Information System for the Bangladesh Fertilizer Sector, Final Report, March 1988.

IFPRI/Bangladesh Institute of Development Studies Fertilizer Pricing Policy Study Team, Fertilizer Pricing Policy and Foodgrain Production Strategy in Bangladesh, Volume 1 (Summary Report) and Volume 2 (Technical Report), IFPRI, Washington, D.C., March 11, 1985.

Infanger, Craig L., A. Samad, and Raymond W. Hooker, Final Evaluation--Bangladesh Fertilizer Improvement Project-I, July 1988.

INTERPAKS, A Study of the Role of BADC in Bangladesh Agricultural Development, Volume 1: Executive Summary and Main Report, in conjunction with Rahman Rahman Huq & Co., Dhaka, May 1988.

Moots, Kenneth L., Bangladesh Farmer Profile, IFDC/Dhaka, September, 1986.

Mudahar, Mohinder S., Fertilizer Price Deregulation and Public Policy: The Case of Bangladesh, IFDC, August 1984.

Mudahar, Mohinder S. and Edwin C. Kapusta, Fertilizer Marketing Systems and Policies in the Developing World, IFDC Technical Bulletin #33, April 1987.

Navin, Robert E. Jr. and Ibrahim Khalil, The Agricultural Sector in Bangladesh--A Database, USAID/Dhaka, June 1988.

## Appendix B

Quibria, M.G., The Role of Fertilizer Subsidies in Agricultural Production: A Review of Selected Issues Asian Development Bank Economic Paper No. 38, October 1987.

Sidhu, Surjit S., Carlos A. Baanante, and Ekramul Ahsan, Agricultural Production, Fertilizer Use, and Equity Considerations--Results and Analysis of Farm Survey Data, 1979/80, Bangladesh, IFDC/Muscle Shoals, April 1982.

Sidhu, Surjit S. Carlos A. Baanante, and Ekramul Ahsan, Agricultural Production, Fertilizer Use, and Equity Considerations--Results and Analysis of Farm Survey Data, 1980/82, Bangladesh, IFDC/Muscle Shoals, February 1984.

Study on Further Reduction of Primary Distribution Points and Opening of Transportation Discount Point Program, IFDC, April 1987.

UNDP, "Bangladesh Agriculture Sector Review, Crops: Performance and Policies, A Preliminary Report", United Nations Development Programme, Dhaka, March 24, 1988.

USAID, Project Paper, Bangladesh--Fertilizer Distribution Improvement I, (with Annexes) Washington, D.C. June 23, 1978.

USAID, Project Paper, Bangladesh Fertilizer Distribution Improvement II, Project No. 388-0060, Washington, D.C., August 1984.

Wennergren, E. Boyd, Charles H. Antholt, and Morris D. Whitaker, Agricultural Development in Bangladesh, Westview Press, 1984.

World Bank, Bangladesh Adjustment in the Eighties and Short-term Prospects, Vol. 1: Executive Summary and Main Report, Report N. 7105-BD, Washington, D.C., March 1988.

World Bank, Bangladesh Fertilizer Sector Review, Report No. 7145-BD, Technical Department, Asia Region, February 23, 1988.

World Bank, Bangladesh--Promoting Higher Growth and Human Development, A World Bank Country Study, Washington, D.C., October 1987.

## APPENDIX C:

## DATA TABLES AND SUPPORTING INFORMATION

Table C-1: BADC Estimated Fertilizer Costs, 1988-91

1988-89					
Type	FOR/CIP	Incidental	Total cost	Sale rates at PDP	Subsidy
Urea	4025	550	4575	4575	-
TSP	6880	650	7530	4725	2805
MP	3256	650	3906	3725	181
Gypsum	-	650	1050	600	600
Zinc	14688	650	15338	17250	(-) 0.9
1989-90					
Urea	4025	550	4575	4575	-
TSP	7040	650	7690	4725	2965
MP	3256	650	3906	3725	181
Gypsum	400	800	1200	600	600
Zinc	14688	800	15488	7744	7744
1990-91					
Urea	4025	550	4575	4575	-
TSP	7040	650	7690	4725	2965
MP	3256	650	3906	3725	181
Gypsum	400	800	1200	600	600
Zinc	15040	800	15840	7920	7920
1991-92					
Urea	4025	550	4575	4575	-
TSP	7200	650	7850	4725	3125
MP	3256	650	3906	3725	181
Gypsum	400	800	1200	600	600
Zinc	15040	800	15840	7920	7920

Source: BADC

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Table C-2: Fertilizer Demand Projection of BADC from 1988-92  
Based on National Food Production Plan of 20 Million  
MT by 1992.

Year -----	UREA -----	TSP ----	MP --	ZnSO <sub>4</sub> -----	Gypsum -----	Total -----
88-89 Sale target	1177	458	103	5	42	1785
Buffer stock	294	185	43	1	10	538
Total	1471	643	146	6	52	2323
<hr/>						
89-90 Sale target	1264	519	130	10	167	2090
Buffer stock	315	216	54	5	41	631
Total	1579	735	184	15	208	2721
<hr/>						
90-91 Sale target	1346	576	154	12	249	2337
Buffer stock	336	240	64	5	62	707
Total	1682	816	218	17	311	3044
<hr/>						
91-92 Sale target	1386	598	163	13	33.4	2492
Buffer stock	346	249	68	5	84	752
Total	1732	847	231	18	422.4	3244

Source: BADC

Table C-3: BADC PDP/TSC-WISE Godown Storage Capacity  
(in MT)

PDP/TSC	No. of Units	Capacity	PDP/TSC	No. of Units	Capacity
Mirkadim PDP	2	1400	Madaripur PDP	1	1000
Sirajdikhan PDP	1	1000	Gopalganj PDP	3	900
Manikganj PDP	1	1000	Takerhat PDP	1	2000
Norsingdi	2	900	Alamdanga	1	200
Joydebpur PDP	1	500	Palong	1	1000
Kaliganj PDP	1	400	Kashiani	1	200
Kapasias PDP	1	400	Kalughat	1	200
Savar	1	400	Kalkini	1	500
Dhamrai	1	200	Mymensingh PDP	3	5200
Kaliakair	1	200	Gaffargaon	1	1000
Sreepur	2	500	Shambuganj PDP	2	6000
Monohardi	1	200	Muktagacha	2	200
Shibpur	2	500	Fulpur	1	400
Roytura	1	400	Ful Bari	1	200
Bayddar Bazar	1	400	Full Bari	1	200
Rupganj	1	500	Valuka	1	200
Araihazar	1	500	Haluaghat	1	400
Tongi Bari	1	400	Tangail PDP	2	3000
Gozaria	1	200	Madhupur PDP	2	700
Shataria	1	200	Mirzapur	1	200
Shiblaya	1	200	Ghatail	1	200
Sreenagar	1	500	Nagarapur	1	200
Shingair	1	400	Kalihati	1	200
Ghior	1	200	Khishoreganj PDP	1	6000
Tepakhola PDP	1	600	Sararchar PDP	1	1000
Rajbari PDP	1	500	Kuliarchar PDP	2	2400
Bhairab PDP	3	4400	Khulna PDP	5	2500
Netrokona PDP	1	5000	Satkhira PDP	1	3500
Tarial	1	200	Bagherhat PDP	1	400
Karimganj	1	200	Fultola	1	200
Pakundia	1	200	Dumuria	1	200
Nikly	1	400	Paikgacha	1	400
Astogram	1	200	Baliaghata	1	200
Zaria	1	400	Termoda	1	200
Mohanganj	1	200	Kaliganj	1	400
Modon	1	200	Ashasuni	1	200
Kendua	1	400	Kalaroya	1	200
Atapara	1	400	Rampal	1	200
Purbadhola	1	400	Mollarhat	1	200
Durgapur	1	400	Fakirhat	1	200
Hossainpur	1	400	Sharankhola	1	400
Katiadi	1	400	Jessore (Sadar) PDP	4	6500
Jamalpur PDP	3	6500	Kaliganj PDP	3	5500
Sreepur PDP	1	200	Jhenaidah	1	500

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PDP/TSC	No. of Units	Capacity	PDP/TSC	No. of Units	Capacity
Malendah PDP	1	5200	Magura PDP	2	2200
Nalita Bari	1	200	Baghar Para	1	200
Sarisha Bari	1	200	Narial PDP	1	2000
Islampur	1	200	Monirampur	1	500
Madarganj	1	400	Ovay Nagar	1	200
Sreebardi	1	200	Kot Chandpur	1	200
Nakla	1	400	Noyapara	1	200
Keshabpur	2	200	Patharghata	1	400
Kushtia PDP	1	4000	Amtola	1	400
Chuadanga PDP	1	7000	Dewanhat PDP	4	4500
Meherpur PDP	1	400	Halishahar PDP	5	3500
Daulatpur	1	200	Dohazari PDP	2	2500
Veramara	1	200	Cox's Bazar PDP	2	2400
Mirpur	1	200	Chokaria	1	200
Kumarkhali	1	200	Sandwip PDP	2	2400
Khoksha	1	200	Mirersarai	1	200
Gangni	1	200	Sreekunda	1	200
Alamdanga	1	400	Rangania	1	200
Damurhuda	1	200	Shatkania	1	400
Jiban Nagar	1	200	Mazir Hat	1	400
Barisal PDP	3	7400	Hat Hazari	1	200
Bhola PDP	4	9900	Potiya	1	200
Kowkhali PDP	1	4000	Anowara	1	200
Bakerganj	1	200	Bashkhali	1	200
Nalcity	1	200	Bowalkhali	1	200
Goro Nadi	1	400	Teknaf	1	200
Babuganj	1	200	Uki	1	200
Jalokhati	1	200	Ramu	1	200
Lalmohon	1	400	Kutubdia	1	200
Mot Baria	1	400	Moheshkhalki	1	200
Patuakhali PDP	2	3500	Rangamati	1	400
Bargyba PDP	2	3200	Chandraghana	1	200
Khepupara	1	400	Longdu	1	1000
Kowkhali	1	200	Comilla PDP	3	10000
Meru	1	200	B. Baria PDP	2	8000
Khagrachari	1	1000	Chandpur PDP	3	5500
Mohalchari	1	200	Daudkandi PDP	2	4400
Ramghor	1	200	Laksam	2	1000
Manikchari	1	200	Borichang	1	200
Dhiginala	1	200	Chaddagram	1	400
Matiranga	1	200	Debidar	1	200
Panchari	1	200	Chandina	1	200
Bandarban	1	200	Borura	1	200
Ramu	1	200	Homna	1	200

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PDP/TSC	No. of Units	Capacity	PDP/TSC	No. of Units	Capacit
Lama	1	200	Sorail	1	200
Naikhanchari	1	200	Nachir Nagar	1	200
Alikadam	1	200	Bancharampur	1	200
Paithang	1	200	Kosba	1	200
Feni PDP	3	6500	Faridganj	1	400
Chaumuhani PDP	2	3500	Motlob	1	400
Luxmipur PDP	3	2400	Haziganj	1	400
Hatiya PDP	2	3400	Kachuya	1	200
Companiganj	2	600	Sylhet Sadar PDP	2	3000
Ramgoti	1	400	Maizgaon PDP	1	1000
Raipur	1	200	Sreemongal PDP	1	1000
Senbagh	1	200	Azmiriganj PDP	2	3200
Chagal Naiya	1	400	Kulaura PDP	1	400
Ramganj	1	200	Kanaighat	1	200
Poshuram	1	200	Gopalganj	1	200
Bishwanath	1	200	Manda	1	200
M. Bazar	1	200	Badalgacha	1	200
Bahubal	1	200	Niamatpur	1	400
Chunarughat	1	400	Mohadebpur	1	400
Chattak	1	200	Dinajpur PDP	3	7800
Baliachang	1	400	Shibganj PDP	4	12200
Monipur	1	400	Parbatipur PDP	6	10400
Sunamganj PDP	1	3000	Charkai PDP	3	7800
Saistaganj PDP	2	3000	Panchagar PDP	2	4200
Rajshahi PDP	3	9200	Khanshama	1	200
Natore PDP	2	7200	Cochganj	1	200
Atrai PDP	2	4000	Hakimpur	1	400
Noagaon PDP	2	2400	Fulbaria	1	400
Rohanpur PDP	1	4000	Rirol	1	200
Amnura	1	600	Telulia	1	200
Mohanganj	1	200	Thakurgaon	1	400
Nowabganj PDP	1	400	Bhoda	1	200
Durgapur	1	200	Atrai	1	200
Godagari	1	200	Rani Sangkail	1	200
Charghat	1	200	Pirgacha	1	200
Puthiya	1	200	Nababganj	1	400
Baghatipara	1	200	Ghoraghat	2	200
Lalpur	1	800	Birampur	1	200
Bat Bazar	1	200	Rangpur PDP	5	8700
Potnitola	1	400	Saidpur PDP	2	2400
Raninagar	1	200	M. Nagar PDP	1	12000
Kurigram PDP	2	2200	Shibganj	1	200
Gaibanda PDP	3	5600	Adamdigi	1	500
Kaliganj	1	200	Gabtoli	2	700
Patgram	1	200	Dhunot	1	400
Gangchora	1	200	Sariakandi	1	200
Hatibanda	1	200	Sherpur	1	400

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PDP/TSC	No. of		PDP/TSC	No. of	
	Units	Capacity		Units	Capacity
Mitapukur	1	200	Khatlal	1	400
Pirganj	1	200	Kahaloo	1	200
Kawnia	1	400	Panchbibi	1	200
Sunderganj	1	200	Dubchachia	1	200
Pirgacha	1	200	Kalai	1	400
Polashbari	1	400	Nandigram	1	500
Sadullapur	1	200	Pabna PDP	2	3200
Gobindaganj	1	200	Ishurdi	1	1000
Fulchari	1	200	Ullapara PDP	2	8000
Nageswari	1	200	Serajganj PDP	3	5500
Ulipur	1	200	Shajhadpur PDP	1	2000
Nilpamari	1	200	Raiganj	2	1200
Jaldhaka	1	200	Muladuli PDP	1	5000
Kishoreganj	1	400	Chatmohor	1	200
Saghata	1	400	Sujanagar	1	200
Lalmonirhat	1	400	Atgoria	1	400
Bogra PDP	3	14500	Faridpur	1	200
Santahar PDP	2	2500	Bera	1	200
Joypurhat PDP	2	2400	Shathia	1	200
Akkelpur	1	500	Kamarkanda	1	400
Kazipur	2	1000	Chittagong TG	3	25000
Khulna TG	4	23000	Baghabari TG	1	4000
Noagaon PDP	2	2400			

## APPENDIX D:

## TECHNICAL OPTIONS FOR PRIVATE IMPORT

Annex D-1

Given below is an elaboration of some of the prerequisites for private traders to import and distribute fertilizer.

1). Merchant Purchasing Capability

While there are importers and traders with adequate financial resources and managerial ability to purchase a shipload, of perhaps 25,000 to 30,000 MTs., costing about US\$ 7 to 10 million, until private sector import purchase and sale becomes somewhat established and routine, it is doubtful if a single firm will undertake import negotiations. There is however, a Bangladesh National Fertilizer Distributors' Association (NFDA) and some of these member firms are:

- (a) subsidiaries or affiliates of multinational fertilizer producers (ICI or Shell)
- (b) affiliated with firms who produce fertilizer (sometimes as agents or national distributors of such other inputs as pesticides) or
- (c) independent national agricultural input importers and marketers.

Discussions with the Association (NFDA) revealed that they were not only capable of, but eager to assemble and consolidate commitments from its members to reach the tonnage required for the economic import purchase of a shipload of perhaps 15 to 20 thousand tons. They seem constrained by such items as: (1) the absence of assurance of being able to purchase foreign exchange at the 'official' rate, (2) the ability to obtain the required import license and (3) legal or nuisance action which could arise from BADC which could interrupt the orderly discharge of the ship upon arrival.

So the aggregate of financial and management resources of the members, funneled through the Association (NFDA), provides the purchasing power capable of raising the US\$7 to 10 million required to purchase for import an economic size cargo of fertilizer. The Association is capable of, and willing to serve as the purchasing mechanism on behalf of its members. The Association would arrange the Letter of Credit (LC), import license, tender invitation, purchase order, and discharge arrangements.

2. Foreign Exchange

While foreign exchange could be purchased from the Wage Earners Scheme (WES), the cost is currently about 3% to 4% above the official exchange rate, a premium that private fertilizer purchase can not support. So the need is for foreign exchange at the official rate, or at least the rate of foreign exchange cost of BADC. Most, if not all, of the imported fertilizer has been purchased with foreign exchange available through loans and grants from donor nations. Sometimes the condition of the loan or grant is that the fertilizer goods be purchased from the donor nation (and sometimes shipped on donor ships), and this tends to increase C&F cost. However, some of the donor grant or loan funds permit purchase in the international market. Presently the funds made available from lenders and donors pays for most of the fertilizer imports. These funds are made available to BADC to purchase (a) FOB bulk plus shipping plus insurance, (b) CIF (or C&F) import port bulk or (c) shipped in bulk and bagged at import port so cost and purchased delivered in bags at port of import. Once sold, BADC remits to GOB the sales generated Taka minus their operating margin (this conceals the subsidy).

For private importers to be functionally competitive with BADC, they will need to have access to the foreign exchange at parity with BADC. As a precedent, reference is made to the import of plant protection materials - pesticides utilizing donor loan or grant funds. For this the Pesticide Dealers Association of Bangladesh, individual members outline their foreign exchange (based on specific quantities of specific products at known costs) requirements, and the pesticide Association requests access to foreign exchange,

including grants. The GOB, through the Ministry of Agriculture (MOA) and the Ministry of Commerce, divides the available grant and allocates to individual requesting members. With this allocation the member: (1) places the order for his specific goods on the supplier and (2) remits Taka to the bank to pay for the foreign exchange, at the official rate of exchange. So a precedent exists, and some US\$16 million of pesticides are imported annually via this financing mechanism. A similar strategy could be implemented for fertilizer purchase, and since many of the firms who presently handle pesticides would also handle fertilizer, they would be aware of the procedures.

It is noted here that the GOB manipulates the price BADC charges for fertilizer at PDPs and TDPs and the Taka recovery for these sales by BADC including their sales and distribution cost are less than the cost of the imported fertilizer (computed by converting the foreign exchange to Taka). So in effect there has been, and is, a "paper" subsidy on imported fertilizer. For private importers to have a fertilizer material cost parity with BADC the GOB could: (1) eliminate subsidy on fertilizer or (2) establish a mechanism to pay the private importers, upon import, the same Taka rate per ton as was available to BADC.

### 3. Import License

An import license as such is no longer required in Bangladesh. Linked with the access to foreign exchange is the need for private importers to have access to a Letter of Credit Authorization (LCA) and any other import documents. For this opportunity to arise, the exclusive access by BADC for fertilizer imports would need to be adjusted, perhaps by removing fertilizer from the list of items restricted to BADC, as is the case for the fertilizer. Again, the Fertilizer Association or large private importers are capable of, and would handle the documentation activity associated with each cargo purchase of imported fertilizer.

### 4. Ship Offloading - Material Handling

At Bangladesh ports there are firms who, for a fee, offload bulk cargo, bag the bulk material and load the bagged goods onto transport; riverine, rail or road. One operation is to manually fill bags to weight in the ship's hold, mechanically stitch the bags, and by sling transfer the goods from the ship's hold to along side where it is loaded onto conveyance. The alternative is to use buckets or slings to offload the bulk goods to hoppers along side the ship (on the pier) where it goes through mechanical (volumetric control) bagging and mechanical sewing, and the sewn bags are loaded directly onto conveyance.

From a bagging cost view point, with the abundance of inexpensive labor in Bangladesh, the cost of bagging is relatively low, costing about US\$6.00 for operations plus about 50 Cent a ton for plastic liner ties, thread, etc. and about US\$15.00 a ton for jute bags with plastic liners. What is costly is the relatively long time ship must remain in port for discharge (demurrage rates are often in the range of US\$5000 per day or more). One firm, Bulk Management (Bangladesh) Limited noted: (1) that on occasion they have offloaded 2200 tons per 24 hour period (3 shifts 8 hours each), (2) that 1500 tons per full working day was normal, and (3) they guarantee offloading and bagging of 1000 tons per 24 hour working period (fair weather working day). Private importers would have the same access to these unloading and bagging services as does BADC. As with BADC, the Fertilizer Association could and would, when a bulk cargo was scheduled to arrive: (1) purchase jute bags with the desired printing for each customer for his share and (2) contract for one of the handling firms to offload and bag and (3) arrange transport of the bagged goods to the destination specified by the member purchaser.

### Option I

### Annex D-2

This is perhaps a compromise of several components of the fertilizer supply and marketing scene into Option-I, namely:

- 1) Most of the fertilizer is purchased under a grant or loan scheme from donor nations. As such it is often only the donor nation as the source of supply, and this often means the competition is limited to the manufacturers in the supplying donor nations, and not the international supply network. As such prices are often nominally higher than could be obtained in the open international supply market. Presently BADC

purchases under this system, with the GOB having access to foreign exchange rights and then BADC using the foreign exchange payment rights to purchase the goods and pay the ocean freight and insurance. Once the goods are received, BADC accepts the goods and sells them for the price dictated by GOB and remits to GOB the Taka sales realization minus their operating margin of about of Tk.764 per metric ton. On 'paper' the sales realization is less than the stated 'paper' cost, but in reality there often was no cost because the foreign donor supplied the cash to purchase the goods. While many have computed the 'subsidy' based on the stated 'book' value of the imported fertilizer, but in reality under grant conditions, as is often the case, the C&F cost is nil. So yes, there is a subsidy on fertilizer not borne by BADC, but rather covered by the donor grants. Under these circumstances the 'book or paper' cost of grant financed fertilizer is of little importance and hardly a valid value to use in BADC subsidy computations. The GOB accepts these grants as a means of obtaining imported fertilizer and the stated 'book or paper' value is irrelevant; they look at the amount of plant nutrients supplied. To argue against continuing this practice is sort of like pushing a string, not much force or foreseen effect.

2) With the nation entirely dependent on external sources for the supplies of both phosphorus and potassium, with imports at a level of about 1,00,000 nutrient tons of  $P_2O_5$  and about 50,000 nutrient tons of  $K_2O$ , with access to domestically manufactured ammonia, urea, and sulfuric acid (and some imported phosphoric acid), it is likely that a study of the nations most economic and suitable approach for supplying farmers with their needed plant nutrients, will end up with a manufacturing or processing venture at or near a port, manufacturing N-P, N-P-K, N-P-K-S, and P-K grades. Such a facility would surely be designed to meet national requirement. When such a venture arises, it will basically be analogous to the Chittagong urea plant. If it is in BCIC, as is the urea plant at Chittagong, then it could and probably would supply finished bagged product to the fertilizer wholesalers presently operating in Bangladesh and in a position to lift directly from the Chittagong urea factory. Even if such a plant was privately owned, they would most probably dispose of the fertilizer through the network of private wholesalers and BADC, with some discounts based on volume lifted per season.

3) In view of the foregoing, imports of finished fertilizer such as DAP, NPK, MOP or TSP, regardless of whether it is by BADC or private firms, may well only have a functional life of a few years until the facility described in point 2 above is erected and put on stream. Therefore, a major step in fertilizer privatization could be, in addition to the entitlement to lift from the urea plants, to have BADC share cargoes purchased under concessionary terms (grants or loans), selling to wholesalers at or near BADC cost, with discount incentives. Such an alternative could be more palatable to BADC and more negotiable to GOB.

## Option II

### Annex D-3

Revamp the TSP jetty, conveyer belt, storage units and granulation system into a facility for importing fertilizer intermediates and producing in the plant good quality granulated N-P or N-P-K fertilizers, all containing sulfur. To accomplish this will require several steps:

- (1) Mechanize ship offloading at the jetty so it has the capability of high speed (200 to 250 tons per hr.) bulk ship discharge.
- (2) Import such fertilizer intermediates (perhaps from Singapore) as TSP, DAP, MAP, and MOP instead of Phosphate rock (continue to import phosphoric acid).
- (3) Convert the bulk phosphate rock storage into bulk storage of the intermediates noted above in item No.2.
- (4) Negotiate with the Chittagong urea factory for a supply of nitrogen solution containing urea and ammonia (the plant has spare ammonia).
- (5) Redesign the granulation unit so it is an ammoniator granulator, and install a 2nd new ammoniator-granulator.
- (6) Utilize TSP, DAP, MAP, MOP nitrogen solution, sulfuric acid and phosphoric acid - which go through the granulator - to manufacture uniform granular N-P and N-P-K grades of fertilizer, all containing sulfur and with the N-P and N-P-K ratios specific for the various soils of the nation.
- (7) Expand the bagging capacity and install additional outbound loading for riverine

## Appendix F

The heavy control/intervention by the governments of Pakistan and India are hardly models to follow, but rather offer some lessons; namely that significant government intervention: (a) dissuades the entrepreneurial sector which is capable of, and where profit opportunity exists, willing to provide the investment capital, technology and management, thereby depriving the nation of the benefits of efficient, competition-driven fertilizer production and distribution; (b) renders parastatal fertilizer industries financially nonviable, often requiring governmental subsidization also on production; and (c) forces the government to purchase imported finished fertilizer, usually well above domestic production cost: (1) at excessive foreign exchange drain and (2) requiring costly local currency subsidy.

transport, trucks and rail road.

(8) Negotiate a long term dry bulk ship charter, or purchase a ship, capable of berthing without lightering (e.g. 10,000-12,000 DWT).

(9) Negotiate both long term and short term supply contracts with the fertilizer brokers, traders and handlers so a steady stream of fertilizer intermediates flow in (perhaps a cargo every fortnight) from such supply points as Singapore.

(10) If possible, arrange to have the ship, item 8 above, back haul bulk urea to Singapore, on a payment basis with a trader based in Singapore.

The foregoing is rather involved, and all aspects, and the entire concept, requires more detailed analysis, but such a procedure could have several advantages:

(a) In bound shipping costs, with a round trip load for the ship, albeit perhaps a rather small bulk carrier (10,000-12,000 DWT), could be fairly low cost, efficient and predictable. As an example a 10,000 DWT ship could require 2 1/2 day loading Singapore, 2 1/2 day discharge Dhaka, 2 1/2 day loading urea Chittagong, 2 1/2 day discharge Singapore, or 10 days loading and discharge time plus about 5 days steaming time each direction or a round trip every 20 days with a cargo each way.

(b) With a planned schedule of lifting against a sizable long term contract (with escalation provisions) material cost should be predictable.

(c) Chittagong bulk urea may be able to command a better price out of Singapore where large cargoes could be supplied (above the 15,000 DWT ton limit which exists).

(d) It may be possible to pay for the fertilizer intermediates lifted at Singapore with (incremental) urea from the Chittagong urea factory (sort of a barter x tons of TSP for the delivery of y tons of urea).

(e) It could probably utilize the berth, conveyer belt, plant site and bulk storage capacity to become a profitable venture (perhaps it could and should be privatized on a lease or purchase basis).

(f) It could offer farmers in specific areas (soils) complete fertilizers for basal application with optimum N-P-K-S ratios.

Such an ammoniator-granulator as described here could and should produce: (a) less corrosive (than TSP) more handleable fertilizer, (b) a fertilizer containing some nitrogen along with the phosphorus (agronomically suitable), (c) a fertilizer, in addition to nitrogen and phosphorus, also containing potash for those soils needing potash and (d) with such supplemental nutrients as sulfur (it would automatically contain a nominal amount of sulfur), zinc, etc.

TSP as a fertilizer as manufactured by the TSPC usually contains a substantial amount of free acid which:

(1) is irritating to the skin, eyes and lungs of operators bagging it or those farmers spreading it;

(2) digests jute bags in about a month. Since the manual labor handling fertilizer use hand hooks most bags have one or more small holes in them, holes sufficiently large to permit a small amount of the TSP to dribble out. Once outside the bag the TSP literally digests the bag in about a month. So TSP held in bagged storage for about a month, especially when it is humid, usually will have damaged the jute fiber so it is no longer a handleable/saleable package.

The fertilizer made by ammoniating TSP results in an ammoniated phosphate fertilizer, and all uniform granules contain both N & P nutrients, which results in more effective uptake and more efficient nutrient utilization by most growing crops. Also it stores better than TSP both in bulk and in bags. Also, while TSP is very corrosive to bags, ammoniated-granulated is only slightly so, so it can be stored in bags or bulk for

## Appendix D

much longer periods of time. Also for the farmer, who spreads by hand, TSP is very irritating whereas if ammoniated it is less so (the ammonia neutralizes the available acid).

The existing TSP complex at Chittagong could purchase: (1) ammonia (gas), (2) urea or (3) a solution containing ammonia and urea and use it to ammoniate and granulate their TSP. Whether the TSP Complex granulator could be modified for this is not known. If goods went the other way, and the urea plant had the facility to bulk offload and store imported TSP and MOP, then liquid concentrated sulfuric and phosphoric acid could be moved across the river from the TSP plant to the urea plant in a mini tanker. Actually such a small tanker could move liquid fertilizer both ways: (1) concentrated sulfuric acid is not corrosive to mild steel, and can be handled in a steel tanker and stored in a steel tank, (2) nitrogen solution containing urea and ammonia is also not corrosive to mild steel, and can also be transported in a steel tanker and stored in a steel tank; (3) phosphoric acid would require rubber lining tanks on both the tanker and storage tank. A small tanker could be kept occupied efficiently moving: (a) acid from the TSP plant to a granulating plant at the Chittagong urea factory and perhaps another at or near Mangla and (b) nitrogen solution from the urea plant to the TSP complex and to a possible ammoniating/granulating unit at or near Khulna/Mangla (with easy access to the market in the northwest).

It is beyond the scope of this study to evaluate the feasibility of fertilizer ammoniator-granulator at either Chittagong, or Mangla, or both. However, should they arise, there could be 3 plants:

- BCIC Chittagong urea factory with N-P-K ammoniator granulator.
- TSP Chittagong (privatized) with a N-P-K ammoniator-granulator.
- Independent N-P-K ammoniator-granulator at or near Mongla.

Then there could be competing 3 plants importing TSP and MP as fertilizer intermediates and selling bagged finished N-P-K goods to national wholesalers. See Appendix E.

### Option IV

### Annex D-4

This is essentially the same as Option-III regarding foreign exchange and LCA; the difference being the bulk offloading of the fertilizer at the port of import. This means high speed mechanical unloading (with either elevator(s) inserted into the ships hold or crane operated clam shells) transferring the bulk goods from the ship to hoppers along side ships which feed either a conveyer belt or a stream of trucks. The bulk goods would move into bulk storage for: (1) bagging and surface transport or (2) bulk blending, bagging and surface transport.

The main Chittagong pier may not have space for such an arrangement, but at Chittagong there are two other usable sites.

A) TSP plant has a berth and a conveyer belt (with 200-250 ton per hour capacity) into the plant's bulk storage area. There are two points in the belt where imported fertilizer could be diverted onto a new belt into new bulk storage (the new belt and storage would need to be constructed). The bulk goods could be fed to the existing bagging lines or new ones installed. This alternative could be functional but handicapped by: (1) the relatively shallow river draft at the pier, necessitating somewhat small bulk carriers (10,000 to 12,000 DWT) or larger ones which may need to be lightened at the outer anchorage and (2) the absence of mechanical bulk unloading equipment (fertilizer raw material is bulk transferred from ship to bulk conveyer by hand).

B) Chittagong urea factory has a large sturdy pier for their bulk/bagged export loaders, and can accommodate 15,000 DWT cargo vessels. There is adequate space for installing an incoming conveyer belt. Also, with astute planning the pier should be able to accommodate two mechanical bulk unloaders; either elevator arms or clam shells. Intermediate bulk storage would need to be constructed, but there appears to be ample space for such a structure between the pier (jetty) and the urea plant's bagging lines. From such intermediate bulk storage the fertilizer could: (1) be bulk blended to N-P-K combinations and then to the bagging lines (urea plant's) or (2) go directly to the bagging lines. The Chittagong urea plant

## Appendix D

has the capacity to bag 200 tons per hour (8 lines at 25 tons per hour) and they plan to: (a) install 2 more bagging lines and (b) install a conveyer belt from the bagging lines to the domestic pier serving domestic riverine traffic. They have the capacity to store about 12,000 tons bagged goods and presently the product path primarily is: (1) bag, (2) to bagged storage, (3) from storage onto truck to domestic river pier, (4) onto riverine transport. The urea plant's management is aware that with time export sales will decline and domestic sales increase, so they are endeavoring to accommodate this shift with a planned delivery belt to the domestic pier. They also acknowledge that this reduces the time the export pier is occupied (currently reported as less than 200 days per year).

Since mechanical offloading is expected to be at the rate of 200 tons per hour, (4800 tons per day, the import of 400,000 tons of fertilizer goods would require less than 100 days, a quantity that seems workable. It is noted here that with manual bagging as currently done at Chittagong port, some 400 ship days of time are required ( $400,000/1,000=400$ ) whereas with mechanical unloading estimated time should be less than 100 ship days, or a reduction of 300 ship days. Since ships frequently cost about \$5000 or more per day, the dollar saving could be substantial.

Like Chittagong Port, Mongla/Khulna port is a site where fertilizer is offloaded. There are two possible sites where bulk could be handled:

A) The new pier at Mongla Port has cranes capable of offloading ships with clam shells into hoppers along side the ship. There is ample space for movable hoppers to fill trucks and ample room for trucks to take loads from these hoppers. Also beyond the immediate enclosed port area there is ample unoccupied land where bulk storage could be erected. Bulk truck movement from pier to bulk storage could be rapid and efficient. From this bulk storage fertilizer could be processed, bagged or bulk blended and bagged.

B) There is ample unoccupied land on both banks of the Passur river for a large bulk material (fertilizer, cement, grain, coal, sugar, etc.) warehouse. Needed would be a mechanized bulk unloader on stilts in the river, and a conveyer belt (also on stilts) to the warehouse. From the bulk warehouse the fertilizer could be processed (into N-P or N-P-K) bulk blended or bagged.

In both cases above, the bagged goods would probably be dispatched primarily by riverine freight. In addition to freight savings, there would be a few other marginal advantages to bulk handling:

- (a) Fertilizer stores better in bulk than in bags (it hardens during long storage in bags).
- (b) Bulk storage is less costly than bagged storage.
- (c) The rapid offloading/bagging provides the capability to have most goods arrive shortly before the demand/use season, reducing both interest and storage cost.
- (d) Bulk storage offers the opportunity to bulk blend to an N-P or N-P-K with or without sulfur.

It is acknowledged here that something like Option IV involves the participation of BCIC's Chittagong urea factory or TSP Complex and perhaps they could and should own and operate such a facility based on an assured throughput on a throughput or handling fee basis.

## APPENDIX E: FERTILIZER PROCESSING

## Annex E-1

Regarding fertilizer processing, the nation has several valuable assets/advantages.

–There is ample natural gas to not only assure adequate domestic supplies of ammonia (and ammonia processed into nitrogen fertilizer) but from time to time explorable surpluses.

–The Chittagong TSP complex has a sound jetty connected by a conveyor belt to a sizable high dry plant site, a site with substantial covered bulk storage capacity.

–The Chittagong TSP complex has substantial sulfuric acid manufacturing capacity, adequate to ammoniate-granulate a great deal of imported TSP.

–The Chittagong TSP complex has a sizable bulk storage tank for imported phosphoric acid, a tank large enough to: (1) permit economic cargo delivery and (2) supply the phosphoric acid for the granulation of a great deal of imported TSP.

For Bangladesh agriculture to shift into a higher rate of growth in output, especially of the food grains, implies substantial sophistication in how the crops paddy and wheat are managed, especially from the plant nutrient (fertilizer) and water (irrigation) aspects. Considering the exceedingly large number of farm families, (about 10 million) the area of land they each cultivate (average about 0.9 ha), the education level of most farmers, and the farmers fragile economic base, one can hardly expect him/her to: (1) purchase the optimum combination of fertilizer plant nutrients, as separate fertilizer components, (2) to buy them at the best time (he may be cash short), (3) to apply them at the optimum time for the crop plants' utilization, and (4) uniformly spread/apply them to minimize loss and maximize plant uptake. A significant step toward accomplishing a more appropriate balance/combination of nutrients for specific crops will be to:

A) Offer crop/area specific complete fertilizer with, nitrogen, phosphorus, potassium, sulfur and zinc. These would be suitable for the basal application done at the time of soil preparation prior to seeding or transplanting.

B) Along with the nitrogen fertilizer (urea) to be applied as the crops develop, provide farmers with instruction regarding both the time these nitrogen top dressings are to be made, and the technique of application.

C) Offer, on a hour/daily rental basis, simple muscle powered (human or animal) equipment for uniformly broadcasting/spreading seed and basal fertilizer applications.

D) Offer, on a hire basis, equipment to incorporate urea top dressings into the soil (avoids nitrogen/ammonia loss).

The above foregoing implies that instead of being offered MP, TSP, DAP, Zinc Sulfate, Gypsum, etc., farmers be supplied complete N-P-K-S fertilizers, with the phosphorus and potassium ratios be soil-area specific. Likewise zinc could and should be included where it is needed.

In view of the above, including of the current demand for about 200,000 m.t. of  $P_2O_5$  and 50,000 m.t. of  $K_2O$ , and nation should do an overall fertilizer demand evaluation and project future foreseen nutrient demand, for at least 5 to 10 years. With nitrogen fertilizer adequacy reasonably assured, the options for supplying phosphorus and potash to farmers which will accomplish crop output that is profitable to the farmer and economic for the nation need to be outlined. The stakes are too high to tinker with. Piecemeal attempts, such as the attempts to render the TSP complex profitable are not adequate. Phosphorus and

potassium fertilizers are needed in the areas served by both sea ports, Chittagong and Mongla. The kind and size of facilities to provide complete fertilizers to the command areas from these two centers merits careful illumination.

Annex E-2

**Details on Chittagong TSP Complex**

Physical Features

- Located about 2 miles south of Chittagong city on the west bank of the Karnaphuli River.
- Plant property 87 acres with about 47 acres for equipment and support facilities and about 30 acres for the gypsum pond.
- Plant about 500 ft. from the river bank and connected to the jetty by a suspended conveyer belt.
- Has its own riverside jetty about 550 ft. in length with a shipside conveyer belt.
- Elevation is estimated to be about 20 ft. above high tide. While monsoon precipitation does not flood the plant, but cyclone (hurricane) induced tidal waves have done damage.
- Summer weather is rainy hot and humid whereas it is warm and dry during the winter.

Raw materials unloading

The jetty is a single berth jetty with an overall length of about 550 ft. and width of about 40 ft. For maneuvering in the Karnaphuli River the vessel length is restricted to about 575 ft. The average draft at the TSP jetty is about 26 ft, which it allow it to receive ships with cargoes between 10,000 and 12,000 dead weight tons (DWT). Ships with larger cargoes-deeper draft need to be lightered at the outer anchorage.

The solid material conveyer belt from the jetty to bulk storage has a rated capacity of 250 tons per hour (TPH). Considering a 20 hour operating day (4 hr for maintenance and clean up) maximum daily unloading rates are 5000 tons of bulk dry goods. However, the offloading system from the ship, primarily a hand operation, is unable to feed the belt at that rate. Furthermore, the belt itself is plagued by poor quality belts and mechanical failures. Between all of these constraints, offloading rates of 900 to 1000 tons per day (TPD) have been achieved. When the goods is lightered from outer anchorage, offloading rates is about 750 TPD. Steps to upgrade the bulk unloading system have been studied (Ruble Cox under Netherlands Grant) and the remedial steps included: (1) the installation of some modern bulk offloading equipment and (2) dredging the Karnaphuli River to 30 ft. so 20,000 DWT ships could moor at the TSP jetty. This study estimated a freight saving of US\$6.00 per ton. It is believed here that most of this cost saving arises from the increased rate of discharge, and only a nominal part arising from 20,000 DWT versus 10,000 DWT cargo ships. It is noted here that for dry cargo bulk carriers, the cost of offloading is for the an account of the buyer - consignee.

Compared to the dry cargo system, which has several constraint points, the liquid system (which handles imported phosphoric acid) functions well; discharge rates of 5,000 TPD can be consistently attained. It is also noted here that liquid cargo tankers pump the cargo ashore, and this discharge cost is included in the freight rates.

There is a 12,000 ton storage tank (rubber lined) for holding imported phosphoric acid.

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\*Most of the detailed information given here was from the preliminary draft report Policy Options for the Government of Bangladesh TSP Complex, International Fertilizer Development Center, Muscle Shoals, Alabama, USA, November 1988.

Raw Material, Intermediate and Finish Product CapacityRaw Material, Intermediates and Product Storage at TSP Complex, Chittagong

<u>Commodity</u>	<u>Type of storage</u>	<u>M. Tons</u>	<u>Total</u>
Phosphate rock	Covered	20,000	
"	"	20,000	
"	"	12,000	
<b>Total</b>			<b>52,000</b>
Sulfur	Covered	19,000	
"	Open	8,000	
<b>Total</b>			<b>23,000</b>
Domestic acid (30% P <sub>2</sub> O <sub>5</sub> )	Tank	800	
Domestic acid (54% P <sub>2</sub> O <sub>5</sub> )	Tank	2,000	
Imported acid (54% P <sub>2</sub> O <sub>5</sub> )	Tank	12,000	
<b>Total</b>			<b>14,800</b>
TSP I curing pile (ROP)	Covered	3,000	
TSP II curing pile (ROP)	Covered	3,500	
TSP I & II Bulk granular	Covered	11,000	
<b>Total</b>			<b>18,000</b>
TSP Bagged	Covered	3,000	
Gypsum pond 30 acres	Open		

Equipment Capacity

When everything functions, especially both Phosphoric acid I and II, then TSP complex has a rated capacity of 152,000 tons per annum. The installed granulator and dryer have the capacity to handle this volume. Between the procedure for granulation and the inadequate recycle of the product, the granules produced at the TSP complex:

- Does not have the desired spherical shape.
- Does not have adequate granular strength; the granule breaks down between bagging and ultimate customer purchase.
- Does not have good market acceptance by farmers because of the high powder-dust content, arising primarily from the granulation procedure mentioned above.
- Does have the normal P<sub>2</sub>O<sub>5</sub> content of 45 to 46%.

There are plans to install another 110,000 TPA granular, dryer, cooler screens etc.

## APPENDIX F:

## THE FERTILIZER SITUATION ON THE INDIAN SUBCONTINENT

**Afghanistan**

About 1972 the Afghanistan government undertook to shift fertilizer distribution from entirely the public sector to entirely the private sector. They did so by establishing a company, Afghan Fertilizer Company, with shares owned by: (1) the Agriculture Development Bank and (2) private fertilizer wholesalers. It was funded by a \$20 million USAID loan which went through the Central Bank to the Agriculture Development Bank to the Afghan Fertilizer Company. The US \$20 million was earmarked for fertilizer purchase from abroad. In addition, the private wholesalers bought Entitlement Certificates, which gave them lifting rights. Pursuant to USAID tender rules, supplies of urea and DAP were purchased from abroad (chiefly USA). Afghan Fertilizer Company (AFC) arranged for ship offloading at Karachi port and dispatch by rail to railheads at Quetta and Peshwar (in Pakistan) where the goods was transferred to trucks (Part Pakistan and part Afghan) entitled to enter Afghanistan. AFC maintained major warehouse points within Afghanistan. From these stock points goods were offered at 2 prices:

- (1) A cost to wholesalers, this price was set by the Afghan Ministry of Agriculture (it was about 50% of landed cost, so there was a subsidy).
- (2) A price to private customers such as a dealer or a large farmer at 15% above the wholesaler cost, this was to prevent price grouping by wholesalers or dealers. Essentially no goods was sold via this channel.

USAID funded a Technical Assistance team to start up AFC including:

- (1) Take over government held fertilizer inventory;
- (2) Contract for import supplies;
- (3) Arrange for warehouses and stock points within the nation at strategic locations;
- (4) Nominate wholesalers.

Essentially all of the fertilizer moved through the wholesalers. Beyond the stock point cost they could add on freight and margin, but the margin was somewhat capped by the 15% previously mentioned. The wholesalers obtained stock on a consigned stock bases from:

- A) The dispatch points within Pakistan (at a discount for freight handling saving).
- B) The AFC main warehouses.

The wholesalers fed retailers from the truckloads noted above or from warehoused inventory they held in the larger markets. Monthly AFC checked the warehouses and invoiced the wholesalers for the goods that had disappeared (sold or consigned to dealers).

The nation had a population of perhaps 13 to 15 million, and about a dozen wholesalers serving about 600 retailers emerged.

About the mid 1970's a state owned, Russian operated urea plant began operations, and largely met national demand for urea, however it was transferred (sold) to AFC at a government controlled price.

With the deposition of the king and the tilt toward a communist system, several changes occurred:

- 1) The wholesalers were bought out of AFC by the Afghan government.
- 2) Wholesalers lost their marketing rights, AFC was instructed to sell directly to the retailers.
- 3) While urea supplies were of domestic origin, the nation became dependent on Russia for Phosphate fertilizer, which was not, and is not, an adequate nor dependable supply.

While AFC still exists, it only releases inventory to a retailer or customer if an official of the Ministry of Agriculture(MOA) provides the authorization order, and with the shortages that have arisen from the dislocations of war and inadequate import phosphate supply.

## Appendix F

- 1) The MOA official release is only obtainable upon the customer paying a very substantial bribe.
- 2) There is a roaring black market, about twice the official price for urea and triple for phosphate.

If prices are converted at the "official" exchange rate, fertilizer is heavily subsidized. However, if prices are converted at the "free market rate", then farmer costs nearly reflect world market values.

### Pakistan

In the 1960's private venture capital erected two urea plants and ran their own marketing. However, under the Bhutto government, new fertilizer capacity was under a parastate national corporation (National Fertilizer Co.). The Federal Directorate of Fertilizer Imports (FDI) import purchased phosphate (usually DAP) MOP and shortfall urea. From the port of entry, Karachi, the bagged goods were sent to 4 provincial agricultural input marketing organizations. These provincial entities:

- 1) Sold a substantial share to the domestic urea producers who sold both to their retailers.
- 2) Sold some to NFC to complement their line.
- 3) Sold some through a net work of warehouse and dealer outlets in their provinces.

There was substantial control all along the line:

- A) They transfer price to provincial agricultural input marketers was fixed by the Federal government(it was subsidized).
- B) Retailer cost prices and farmer cost prices were controlled, including retailer margin.
- C) Profits on equity of the manufacturing units was controlled.

The effect was a large surcharge on the private urea producers to subsidize the high production cost of national public sector (NFC) production.

In the early 1980's additional nitrogen fertilizer capacity was installed and for a few years Pakistan was a net exporter of urea and sold at about export parity. Pakistan continued large imports of phosphates, usually as DAP - which flowed through the mechanism described above. About 1986-87 price on urea was decontrolled. By 1987 the government anticipated that domestic nitrogen demand would absorb most if not all of the domestic nitrogen fertilizer production. Fearing that the national producers would increase prices to import parity, the federal government bought and imported 500,000 m.t. of urea (and dispatched it to the provincial agricultural inputs marketers. This flooded the market for not only 1987 but also 1988, depressing urea prices. So while urea price has been decontrolled, its price is heavily manipulated by the federal urea imports. All potash is imported. Also nearly all phosphate is imported, but some as rock is used to feed an N-P-K plant operated by NFC. The federal government controlled/manipulates phosphorus and potash fertilizer prices, at least as the cost to the urea producers who buy it to sell along with their urea. It is believed to still be subsidized.

When there was a surplus of nitrogen (primarily urea), with two sizable and one large private producer and one sizable and two large public plants(NFC), there was fierce competition, especially as price discounts.

### India

Much of India's fertilizer is manufactured domestically, albeit on such imported raw materials as phosphate rock, sulfur, MP, phosphoric acid and naphta (to make ammonia). There are numerous private plants, several cooperative plants as well as numerous provincial public plants and a few federally owned plants. There is a large fertilizer association which routinely tallies and publishes statistics on manufacturing capacity and production output. Most manufacturing units have a command marketing area. The fertilizer association and federal authorities ( National Fertilizer Pool-NFP) literally divide up the market among the producers, allocating each a market area/volume. Competition, if any, is only along the border areas. Federal authorities only intervene with a movement of goods from a domestic surplus area and or with

imports to cover normal demand. With numerous producers, both large and small, private and public, with competition in the borders of their allocated markets, prices are similar.

There is elaborate price control at plant gate manufacturers price, at intermediate warehouses and farmgate. There is also an elaborate scheme of control of margins for movement, storing and selling. Also there is profit control for manufacturers, and it is roughly 12% after tax return on paid up equity with the plant operating at least 80% of design capacity. The fertilizer association acknowledges that very few of the plants reach 80% capacity utilization, and the failure to do so is frequently outside of their control by such factors as: (1) power failure, (2) delayed allocation of foreign exchange, (3) failure of raw material delivery from their domestic suppliers who also suffered points 1 & 2 above, and (4) abnormal weather. Accordingly even though the federal government, in a series of 5 year plans, anticipated and projected substantial investments in and output from new fertilizer plants, relatively few new plants have been created during the past few decades, and very little of what has been erected and brought on stream has been in the private sector; large cooperatives financed a few plants and state (provincial) governments financed and erected a few.

While the tight discipline on price and profits have probably been convenient for farmers, the cost to the federal government has been high on two fronts:

1. Severe shortfall in domestic production forced massive imports of finished fertilizer. (India is second only to China in fertilizer imports).
2. Within the price and profit control there have been marginal earnings, but massive financial losses to pay the subsidy to price imported fertilizer on parity with domestic price control.

The federal government is heavily involved in fertilizer:

- A) They control prices and profits, which discourages investments in fertilizer manufacture.
- B) They distribute/allocate markets to the various producers, and arranges imports of finished goods to fulfill computed national requirement.
- C) The total supply, domestic production and imports is computed, not to satisfy demand, but to produce the quantity of foodgrain the nation needs to feed itself. The federal government diligently avoids importing any fertilizer that would produce exportable grain because they would be caught paying: (1) a high subsidy on the fertilizer that produced the unneeded grain and (2) a price support subsidy on the exportable surplus.

The subsidy cost in India represents a monumental financial drain.

In brief, for both India and Pakistan, the continuum of price and profit control has largely precluded the installation of financially viable fertilizer manufacturing capacity, thereby forcing both nations to continue massive finished product fertilizer imports (more foreign exchange drain) and high and expensive subsidies to keep the farmgate prices at the politically desired level (but at massive Rupee subsidy costs). Ironically, in both nations, efficient profitable domestic producers were heavily taxed (investment disincentive) to underwrite the cost of: (1) inefficient producers and (2) high subsidy on imports (which were needed because domestic outputs was inadequate).

While both India and Pakistan have wanted, needed, and planned for (in several 5 year plans) substantial expansion of domestic fertilizer manufacture, under the conditions of profit (and price) control for manufacture and price (and margin) control for marketing, the needed entrepreneurial investments (and accompanying technology and management) have not emerged. Even parastate ventures have been very inadequate and usually unprofitable (requiring subsidies to remain financially functional). This has forced both nations to continue large imports of finished goods, which required very costly subsidies to achieve farmgate price limits. The price profit manipulation was (and is) politically attractive but the economic cost was (and is) very high. Former USA Secretary of Agriculture Earl Butz noted that government interference in the form of process technology and product quality control monitoring was needed to protect the US farmer from wily sharp fertilizer producers and marketers, whereas on the Indian Sub Continent needed was some wily sharp producers and marketers to protect the farmers from onerous interference and manipulation by government.