UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

PROJECT PAPER

BANGLADESH

FERTILIZER DISTRIBUTION IMPROVEMENT II

PROJECT NO. 388-0060

AUGUST 1984

PDAAP 884

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A = Add, C = Change, D = Delete — [A] — Amendment Number: _____ — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: BANGLADESH

3. PROJECT NUMBER: 388-0060

4. BUREAU/OFFICE: ASIA [04]

5. PROJECT TITLE (maximum 40 characters): Fertilizer Distribution Improvement II

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 09 DD 30 YY 89

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY 84 B. Quarter 3 C. Final FY 88

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 84 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	1,000	13,000	14,000	11,700	53,300	65,000
(Grant)	(-)	(-)	(-)	(12,000)	(40,000)	(52,000)
(Loan)	(1,000)	(12,000)	(13,000)	(1,000)	(12,000)	(13,000)
Other U.S. 1.						
Other U.S. 2.						
Host Country	-	120,000	120,000	-	600,000	600,000
Other Donor(s)	90,000	-	90,000	450,000	-	450,000
TOTALS	91,000	133,000	224,000	461,700	653,300	1,115,000

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) FN	134	011	011	-	-	1	13	52	13
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 021

11. SECONDARY PURPOSE CODE:

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	DEL	BS
B. Amount	100,000	100,000

13. PROJECT PURPOSE (maximum 480 characters)

To increase the growth rate in aggregate fertilizer consumption.

14. SCHEDULED EVALUATIONS: Interim MM 01 YY 86 — Final MM 09 YY 88

15. SOURCE/ORIGIN OF GOODS AND SERVICES: ☐ 000 ☐ 941 ☐ Local ☐ Other (Specify): _____

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

Ra DeBruce
Raymond A. DeBruce Date: 2-17-84
CONTROLLER

17. APPROVED BY
Signature: James A. Norris
Title: Director USAID/Dhaka
Date Signed: MM 02 DD 17 YY 84

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1350-4 (8-79)

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D C 20523

PROJECT AUTHORIZATION

BANGLADESH

Fertilizer Distribution
Improvement II (FDI)
Project No. 388-0060
A.I.D. Loan No. 388-T-

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Fertilizer Distribution Improvement II Project for the People's Republic of Bangladesh (the "Cooperating Country") involving planned obligations of not to exceed Sixty-Five Million United States Dollars ($65,000,000) in loan and grant funds over a five year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of the project is approximately five and one-quarter years from the date of initial obligation, ending on September 30, 1989.

2. The Project goal is to increase agricultural production by increasing fertilizer consumption through more responsive and cost-effective distribution of adequate supplies of fertilizer throughout the Cooperating Country. A.I.D. will support changes in the distribution system increasing the participation of the private sector by furnishing assistance for a fertilizer wholesaler and retailer credit program, technical assistance and training, and infrastructural improvements to ease physical constraints in the fertilizer wholesaler distribution network. A.I.D. funding also may be used to finance the import of fertilizer for the Cooperating Country.

3. The Project Agreement(s) which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the Loan to A.I.D. in U.S. Dollars within forty (40) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to A.I.D. in U.S. Dollars interest from the date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Commodities, Nationality of Services

Commodities financed by A.I.D. under the project shall have their source and origin in the Cooperating Country or in countries included in A.I.D. Geographic Code 941 except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or countries included in A.I.D. Geographic Code 941 as their place of nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States or the Cooperating Country.

c. Condition Precedent to Initial Disbursement

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish to A.I.D., in form and substance satisfactory to A.I.D., documentary evidence that private fertilizer distributors are permitted under the laws and regulations of the Cooperating Country to purchase fertilizer at depots and at prices satisfactory to the Cooperating Country and to A.I.D.

d. Covenants

1. The Cooperating Country agrees to continue to undertake the legal, administrative and procedural actions necessary to permit private distributors of fertilizer to operate effectively and freely.

2. The Cooperating Country shall not permit the fertilizer subsidy to increase and shall continue to phase out this subsidy.

3. The Cooperating Country shall continue to maintain national fertilizer stocks at appropriate levels.

4. The Cooperating Country shall ensure that credit is made available for the fertilizer dealer credit program over the life of this project in amounts and on terms satisfactory to the Cooperating Country and A.I.D.

Signature Frank B. Kimball
for M. Peter McPherson
Administrator

Aug 2, 1984
Date

Clearances:	Date	Initial
Charles W. Greenleaf, AA/ASIA	7/25	7/20/84
Richard A. Derham, AA/PPC	7/30	DV
Howard M. Fry, GC	7/30/84	

GC/ASIA:STisa:hp:4/24/84

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IX. Annexes

Abbreviations and Terms

A & E	Architecture and Engineering
Ac	Acre
AID	Agency for International Development, Washington, D.C.
Aman	Rice (paddy) planted before or during the monsoon rains (which begin in June) and harvested in November-January
Aus	Rice (paddy) planted during March-April and harvested during June-September
BADC	Bangladesh Agricultural Development Corporation
BCIC	Bangladesh Chemical Industries Corporation
BKB	Bangladesh Krishi Bank
Boro	Rice (paddy) planted in November-January and harvested during April-June
CDSS	Country Development Strategy Statement
C.I.F.	Cost, Insurance, and Freight
COP	Chief of Party
CY	Calendar Year
DAP	Diammonium Phosphate
DD&T	Dealer Development and Training
FDI-I	Fertilizer Distribution Improvement I
FDI-II	Fertilizer Distribution Improvement II
F.O.B.	Free on Board
FRLC	Fixed Reimbursement Letter of Committment
FY	Fiscal Year
GOB	Government of People's Republic of Bangladesh
Godown	Warehouse
HGC	Host Government Contract
HYV	High Yielding Variety
IFDC	International Fertilizer Development Center
IQC	Indefinite Quantity Contract
IPVO	International Private Volunteer Organization
K	Potassium (elemental)
Lbs.	Pounds
LDC	Less Developed Country
Md.	Maund (1 Md = 82.27 pounds)
MI&C	Ministry of Industries and Commerce
MOA	Ministry of Agriculture and Forests
MOC	Ministry of Communications
MP	Muriate of Potash (Potassium Chloride)
MSS	BADC's fertilizer movement, storage, and sales dept.
MT	Metric Ton
N	Nitrogen (elemental)
NCB	National Commercial Bank
NFDA	National Fertilizer Distributors' Association
NGO	Non-Government Organization

NMS	National Marketing System
OMS	Old Marketing System
P	Phosphorus (elemental)
PACD	Project Assistance Competion Date
Paddy	Unhulled rice
PC	Prime Contractor
PDP	Prime distribution point
PID	Project Identification Document
PIL	Project Implementation Letter
PL 480	U.S. Public Law 480
PP	Project Paper
PRE	Bureau for Private Enterprise
PSC	Personal Services Contract
PVO	Private Volunteer Organization
SFYP	Second Five Year Plan
TA	Technical Assistance
TCCA	Thana Central Cooperative Association
Thana	Administrative Unit Comprising several villages
Tk.	Taka (1 U.S. dollar = 25 taka)
TSC	Thana Sales Center
TSP	Triple Superphosphate
UPR	Uniform Price Regime
USAID	United States Agency for International Development (overseas)
VPR	Variable Price Regime

I. PROJECT SUMMARY

1.01 The goal of the Fertilizer Distribution Improvement II (FDI-II) Project is to increase agricultural production by increasing fertilizer consumption through more responsive and cost-effective distribution of fertilizers while simultaneously continuing assurance of adequate supplies of fertilizers nationwide. FDI-II will continue the process of developing a significant private sector* involvement in the distribution of fertilizer which in 1978 began with the introduction of the New Marketing System (NMS) under FDI-I. FDI-II will carry the initiatives of the NMS one step further by developing large scale private wholesalers (distributors) with a potential for nationwide distribution and sales of fertilizer. USAID's contribution to FDI-II will total $65 million in grant ($52 million) and loan ($13 million) financing (subject to A.I.D.'s availability of grant and loan funds) over a five year period commencing in FY 84. USAID plans to finance FDI-II in five annual obligations. The first year's obligation will consist of $13 million in loan financing and $1 million in grant financing. These grant funds will be used to provide technical assistance. The second year's obligation is expected to consist of $12 million in grant financing and subsequent years to consist of $13 million annual obligations in grant financing. The major component of the project is commercial credit intended to enable private individuals and firms to enter private sector large scale wholesaling of fertilizers. Project funds will be used for the following: 1) a fertilizer wholesaler and retailer credit program and/or fertilizer imports ($52 million), 2) technical assistance and training ($6 million), and 3) infrastructural improvements to ease physical constraints in the distribution network of fertilizer wholesalers ($7 million).

1.02 FDI-II is a policy reform project with a focus on entry of the private sector into large scale fertilizer wholesaling, rationalization of fertilizer prices, and fertilizer dealer development and sales promotion. A necessary first step under FDI-II will be for the Government to offer to wholesalers large lots of fertilizers at wholesale discount prices from Government sales outlets located at centralized depots, factories, and ports. This use of private sector capabilities in the Government's development efforts is expected to increase efficiency in fertilizer distribution and marketing. Amounts of wholesale discounts will be based on estimates of the costs of operations that the government system will be relieved of and that the private wholesalers will be likely to incur. These wholesalers will be allowed to sell their fertilizers anywhere in the country at any price. It is anticipated that within a reasonable time period, competition will result in fertilizer pricing that is more in alignment with distribution costs than is presently the case. As nearby markets become saturated, competition will encourage private wholesalers to transport fertilizers in large quantities further away from the depots, factories, and ports.

*Throughout this project paper, Bangladesh's cooperative system is considered part of Bangladesh's private sector.

1.03 During at least the initial phase of FDI-II, the Bangladesh Agricultural Development Corporation (BADC), a government corporation, will continue to fulfill its traditional warehousing role for fertilizers and will continue to be the nation's fertilizer importer. With FDI-II assistance, BADC's Dealer Development and Training Program will continue to promote fertilizer use and to transfer fertilizer use technology to fertilizer retailers and farmers. These activities will continue to be linked with the nation's agricultural research system and its extension services. BADC is not in the fertilizer manufacturing business; however, domestic fertilizer production is in the public sector under the Bangladesh Chemical Industries Corporation and is likely to remain there throughout FDI-II.

1.04 The national fertilizer marketing system under FDI-II is summarized by Table II-1 (page 11). This system will be closely monitored. The minimum lifting quantities by wholesalers will be periodically adjusted, if needed, to keep the private sector fertilizer distribution and marketing system operating competitively with sufficient numbers of wholesalers. A formal evaluation of the national fertilizer distribution system and FDI-II will be conducted near the end of the second year of the project. This assessment is expected to identify constraints on the operations of distributors and, if necessary, to recommend system adjustments that will allow these wholesalers to operate competitively nationwide. These adjustments might involve changing BADC's selling prices and/or terms at PDPs, depots, factories, and ports.

1.05 The recent (August 1983) Assessment of the Agricultural Sector in Bangladesh, by Dr. E. Boyd Wennergren of Utah State University, concludes the following: "The Mission's (USAID/Bangladesh) commitment to fertilizer development was well-founded, especially the emphasis given to policy reform which has led to development of the new marketing system and movement towards privatization of the distribution process. Continuation of a program to guarantee the institutionalization of a fertilizer production and distribution system is appropriate and should be supported to its successful conclusion."

1.06. By building upon the foundation set by FDI-I, FDI-II is aimed at the successful conclusion of reducing the resource burden that the Bangladesh Government presently incurs from executing its fertilizer distribution function and from importing foodgrains. The ultimate beneficiaries of FDI-II will be the nation's farmers and the Bangladeshi society in general. Because of the Government's more efficient use of resources, society as a whole will be able to have more goods and services with the same amount of resources. For the farmer, the project will improve fertilizer availability and the farmers' knowledge of fertilizer use. Because of the project, the number of farmers using fertilizer shall increase as shall the amount of the fertilizer used per unit of cropped area. This will result from promotion of fertilizers by private distributors, increased competition in fertilizer distribution and marketing, and enhanced fertilizer availabilities. FDI-II is viewed as the final phase of the long range program to the privatization of fertilizer distribution.

II. PROJECT RATIONALE AND DESCRIPTION

A. Project Rationale

1. Project Background

a. General Conditions

2.01 Bangladesh's economy is basically agricultural. Over 85% of the country's population live in rural areas. Most are poor. Bangladesh is a food deficit country which has nearly all productive land under cultivation. The increased food production required to achieve self-sufficiency, even at a relatively low nutritional level, will have to come mainly from higher output per unit of land. Attainment of the needed growth rate in fertilizer consumption will require additional working capital for fertilizer purchases, adequate fertilizer supplies, improved farm cultivation techniques, and changes in the present fertilizer distribution and marketing system.

2.02 Since a high percentage of cultivable land is intensively cultivated, Bangladesh's soil is being depleted of nutrients. This is aggravated by the farmers' practice of harvesting the straw for animal feed and fuel. Although more than a quarter of the cultivated land area is seasonally submerged, only farms along river banks receive limited amounts of organic matter brought in by floods. Green manuring is not practiced because of the pressure of the large population (now approaching 100 million) on the limited land resources. Other organic fertilizers such as animal manure and compost are applied, but the amount is not sufficient to effect any significant overall yield increases.

2.03 Although the use of chemical fertilizers in Bangladesh was introduced as early as 1951, it was only after 1960 that fertilizer consumption in the country reached a significant level. Annual fertilizer consumption is now approaching one million tons. An estimated 95 percent of all fertilizers are applied on foodgrain crops. Urea, TSP, DAP and MP are the most commonly available fertilizers in the market. Urea, a nitrogen fertilizer, accounted for over 60 percent of the total sale in 1982/83. Limited quantities of zinc sulphate, gypsum, N-P-K (15-15-15), ammonium sulphate and potassium sulphate are also available for specific purposes. Fertilizers used in Bangladesh come from both domestic production and imports. In 1982/83, total BADC factory liftings of urea and TSP combined, amounted to 51 percent of total fertilizer sales; the remainder was imported through grants and loans by various donor agencies.

2.04 Although nationwide studies of fertilizer response indicate that the potential returns from fertilizer use are high, fertilizer use

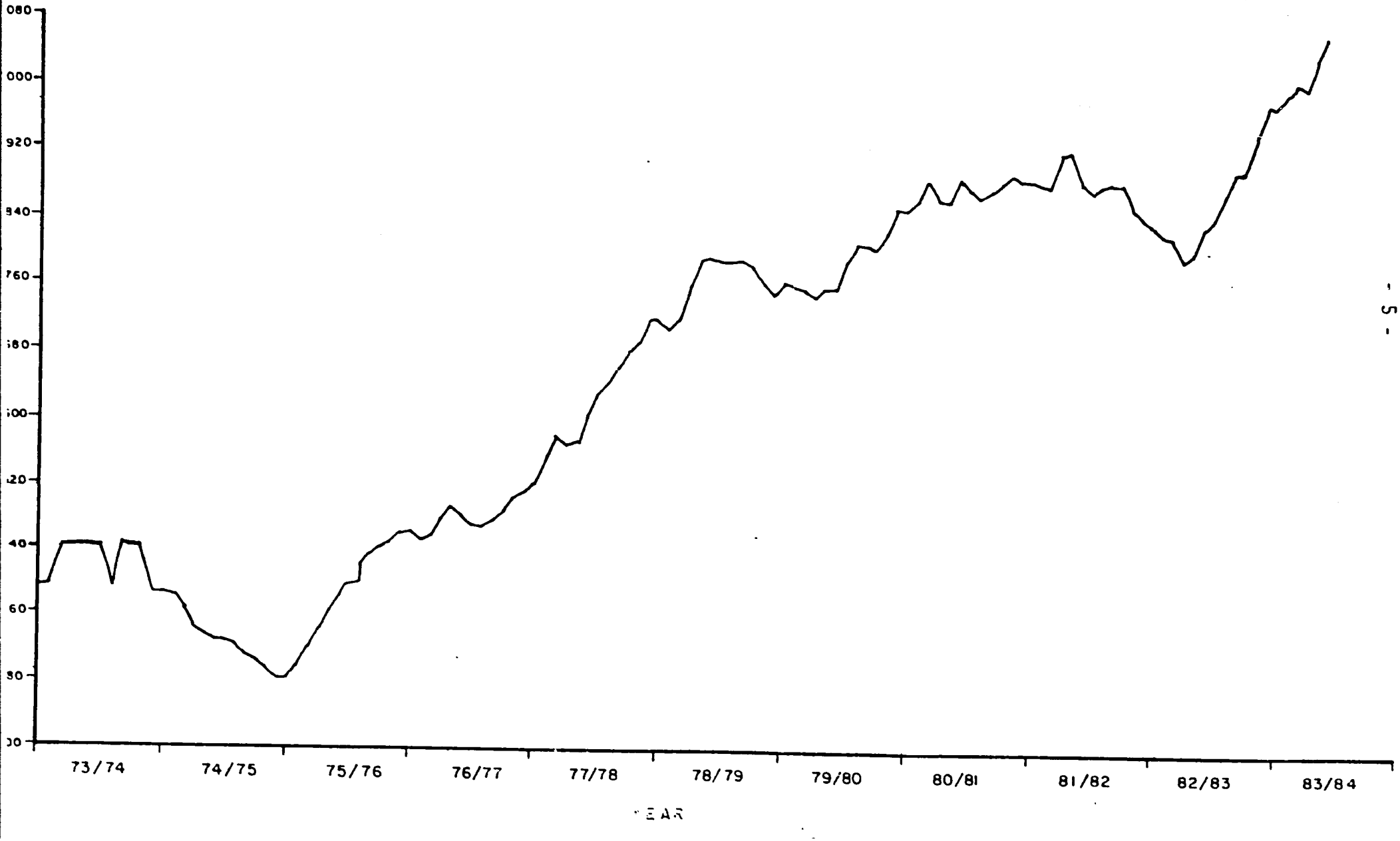
levels in Bangladesh are low compared to most countries in Asia (31 lbs. of nutrients per acre in 1982/83*) and are constrained by both agro-climatic and socio-economic factors. Less than two thirds of the nation's farmers use any chemical fertilizers, and of the farmers using fertilizers, on average, these farmers apply less than one half the current recommended amount. Factors affecting the use of fertilizers by Bangladeshi farmers are: 1) availability of working capital, either from savings and/or credit, 2) use of complementary inputs (e.g. irrigation water, HYV, and pesticides), 3) profitability from fertilizer use (crop response to fertilizers coupled with the ratio of crop output price to fertilizer price), 4) level of fertilizer use knowledge, 5) fertilizer availability, 6) type of land tenancy arrangement, 7) availability of farm labor, and 8) agro-climatic conditions, including soil factors and weather.

2.05 FDI-II will directly improve farmers' knowledge of fertilizer use and the availability of fertilizers. Furthermore, the project is expected to indirectly improve farmers access to credit and may improve the profitability of fertilizer use through fertilizer price rationalization. Other USAID projects also address factors influencing fertilizer use. For example, the Rural Finance Project is increasing the availability of credit to farmers and the availability of working capital through increased levels of savings. With its emphasis on cropping systems and crop diversification to include cash crops, the Agricultural Research II Project is improving the quality of information available regarding efficient farm management techniques and is leading to increased farmer incomes and availability of working capital from the development of improved crop varieties and from improved recommendations regarding proper use of agricultural inputs (i.e., fertilizers, irrigation water, HYV, and pesticides). USAID's PL 480 Title III program requires that the GOB announce public procurement prices before planting begins, so that farmers will know the minimum price they can expect to receive for their foodgrain crops before they purchase agricultural inputs. Furthermore, Title III promotes the spread of irrigation through the reprogramming of the taka generated through sales of PL 480 agricultural commodities. In 1982/83, $45 million of these taka financed the local currency portions of tubewell, low lift pump, and flood control projects. PL 480 Title II activities are improving the availability of fertilizers in remote areas through the feeder roads constructed by the Food for Work program.

2.06 In the Project Paper Amendment for Fertilizer Distribution Improvement I (FDI-I), constraints on the supply of fertilizer and the demand for fertilizer were discussed in detail on pages 14-24. Some of these constraints persist today. Nevertheless, fertilizer use is increasing (see FIGURE II-1).

*Fertilizer use (in lbs. of nutrients/acre): Korea, 333; Malaysia, 91; Sri Lanka, 68; Indonesia, 56; Pakistan, 44.

FIGURE II-1 : Fertilizer Sales by 12-month Moving Totals, 1973/74 - 1983/84



2.07 Regarding the mitigation of constraints to increased fertilizer use, two items are noteworthy. First, the GOB continues to lack the ability to finance its needed fertilizer imports. When the country's largest urea factory at Ashuganj overcomes its startup difficulties, import needs will be limited primarily to non-nitrogen fertilizers which represent less than 40 percent of fertilizers used in Bangladesh. The GOB has indicated that other donors and lenders have agreed to finance Bangladesh's future import needs without engaging FDI-II funds except on a stand-by basis. Secondly, by the end of FDI-I, BADC's owned fertilizer storage capacity is expected to meet the nation's requirements until, with the expansion of private sector marketing, the private distributors determine that it is economically beneficial to construct more.

b. The Old Marketing System.

2.08 The Bangladesh Agricultural Development Corporation (BADC) is presently responsible for importing and distributing all the country's fertilizers except gypsum and ammonium sulphate which are distributed by the private sector and which represent less than 3 percent of the total fertilizer sold in 1982/83. The distribution system as it was before FDI-I is referred to as the old marketing system (OMS). Under the OMS, BADC delivered fertilizers to intermediate godowns (warehouses), thana sales centers (TSCs) and Thana Central Cooperative Association (TCCA) godowns. The intermediate godowns were located at commercial centers and served as supply depots for the TSCs and TCCAs. Sales to fertilizer dealers were made only from the TSCs and TCCAs. All dealers were appointed by BADC only after approval by a thana committee composed of BADC's thana inspector, the thana extension officer, the local union council chairman and an officer representing the deputy commissioner at the thana level. On approval of this committee, a memorandum of agreement between the dealer and BADC was drawn up. The dealer could purchase fertilizers only from the TSC or TCCA at which he was registered and could sell his fertilizer (at retail rates fixed by the Government) only in his specified union. Dealers' gross commission was based on the distance of the dealer's registered shop from the TSC or TCCA warehouses. Under the OMS, TCCAs enjoyed a monopoly position in fertilizer distribution in the areas assigned to them. Fertilizer was delivered to them at BADC's expense, and they were given credit and a wholesale discount that permitted them to make a profit while selling fertilizers to dealers at the same prices as BADC's TSC prices.

c. The New Marketing System

2.09 In 1977 and early 1978, BADC officers held meetings with USAID on how to improve the marketing system for fertilizer. As a result of these discussions, BADC, with the approval of the Bangladesh Government and with USAID assistance, decided to try a new system of distribution for up to one year in the Chittagong Division. If it proved successful, it was to be extended to the other three divisions. USAID provided assistance in this endeavor through the FDI-I grant with the purpose of increasing fertilizer use throughout the country.

2.10 The principal focus of the New Marketing System (NMS) was on the mitigation of fertilizer market related constraints. The original concepts of the NMS were as follows: a) allow any person, group, or organization to register as a dealer and buy from BADC without restrictive requirements, b) provide quantity discounts to attract and create wholesalers, c) develop dealer incentives, d) remove location restrictions and permit any individual or group to buy, sell, or transport fertilizers anywhere in the country, except the border area, and e) encourage institutional dealer/farmer credit programs. In addition, there was a commitment that BADC was to 1) develop a new staffing pattern and organizational structure which would complement the NMS, and 2) develop and implement a dealer training program. Further, as a project convenant, the GOB agreed to deregulate retail prices nationwide in phases and to consolidate its sales outlets to roughly 100 major commercial centers, primary distribution points (PDPs), rather than having BADC provide fertilizers to each of the 418 agricultural thanas in the country through TSCs and TCCAs. TSCs were to be (and have been) retained only in those areas that could not be effectively supplied by dealers from the PDPs because of remoteness. Criteria were developed for closing TSCs. BADC was to sell fertilizer to wholesalers and retailers only from PDPs, except in remote areas where TSCs were retained. Currently, more than 90 percent of BADC's fertilizer is sold at PDPs. (The status of the implementation of the NMS is discussed in detail in the Joint Bangladesh and US Government Evaluation of the Fertilizer Distribution Improvement I Project, November 1982.)

2.11 The NMS was introduced in the Chittagong division on December 1, 1978. Since the NMS was found to be an improvement over the OMS, it was later introduced in the Dhaka and Khulna Divisions on January 1, 1980 and in the Rajshahi Division on July 1, 1980. Under the NMS uniform commissions for dealers were established at PDPs, and minimum lifting levels were imposed. A uniform but smaller commission was established at remaining TSCs. TCCAs lost the preferential (subsidized) treatment accorded them under the OMS. Under the NMS there were no quantity discounts until the thana wholesaler program was introduced in April 1982, when private fertilizer wholesalers were first officially sanctioned and permitted a very small two tier discount as shown in Table II-1. At the same time the retail prices of fertilizers were also deregulated in the Chittagong Division. One year later, fertilizer retail price decontrol went into effect nationwide.

2.12 Presently, the Bangladesh Agricultural Development Corporation, a government corporation, still maintains a monopoly in the distribution of fertilizers from factories and ports to the primary distribution points. At the PDPs, BADC sells fertilizers to private small scale wholesalers and retailers. BADC has no competition in this commercial activity.

2. Project's Relationship to Planning Strategies and Evaluations

a. GOB Policy

2.13 The GOB has recently revised its Second Five Year Plan (SFYP) to better reflect the difficult economic conditions that the country is experiencing. In discussing the reasons for the revision, it is noted in the Plan that a significant change has taken place in the investment policy of the country. It was felt that energies and initiatives of individuals should be given greater opportunity to flourish and contribute to economic development of the nation. A more structured policy of encouraging the private sector is being adopted by the Government.

2.14 FDI-II will emphasize the role of the private sector in fertilizer distribution and marketing and will advocate the creation of an environment which permits the private sector to contribute more to economic development. These objectives support GOB goals.

2.15 A principal objective of the SFYP is "To reach self-sufficiency in foodgrain in the shortest possible time." The Government seeks to achieve a rapid growth in agricultural production. The Plan states that "The centerpiece of the agricultural and rural development programs will be rapid expansion of irrigation water-fertilizer-seed technology." The Plan stresses the need to increase the use of fertilizer which is the purpose of FDI-II.

b. USAID Strategy

2.16 USAID also places a high priority on increased agricultural production in Bangladesh. The Mission's FY 86 Country Development Strategy Statement (CDSS) lists limited access to agricultural inputs as one of the five principal constraints to agricultural growth and specifically identifies fertilizer distribution as an area of emphasis. The Mission strategy also encourages private sector participation as a cost effective means to more rapid economic growth. FDI-II complements the Mission's other projects in agriculture and rural development. (FDI-II's relationship to A.I.D. policy is discussed below in the Public Policy Analysis section.)

c. Evaluation Lessons

2.17 FDI-I's most significant contribution to development of the fertilizer sector has been the introduction of the NMS. The development of an expanded, proficient, and competitive private dealer network is a cornerstone of the NMS. Both the Joint Bangladesh and U.S. Government Evaluation of the Fertilizer Distribution Improvement Project I, November 1982, and the IFDC Third Evaluation of the NMS, March 1982, have concluded that under the NMS, Bangladesh's private sector has successfully demonstrated the potential for marketing fertilizers at the local retail level and that private dealers have established a reliable

marketing network that can be utilized by large scale wholesalers. The reformed fertilizer marketing system under FDI-II is founded on the firm belief that if given the opportunity, the private sector will be just as successful at the national wholesale level as it has been at the local retail level.

2.18 The effectiveness of the NMS has depended upon its ability to make fertilizer available to all categories of farmers on an equitable basis. A previously USAID-funded study* of four crop seasons indicated that the proportion of small farmers (less than 2.5 acres) using fertilizer was approximately the same as that of the larger farmers, and that small farmers used slightly more fertilizer per acre and obtained higher output per unit of fertilizer than larger farmers. This is indicative of the relative equity of fertilizer use in Bangladesh.

2.19 On BADC's own initiative and using its own funds, BADC recently hired Engineering and Planning Consultants, a local firm, to evaluate the New Marketing System for fertilizer. The following is a quote from the firm's draft final report, dated June 1983. "Given the reliability of data collected and the method used by us, three conclusions stand out: First by and large, the NMS seems to have ensured relatively lower prices to the farmers. Second, the remote farmers are not relatively worse off because of the NMS. Third, the effects of price deregulation in Chittagong Division have been more or less similar to those of price regulation in the Rajshahi Division." Since FDI-II should result in the existing network of over 20,000 fertilizer retailers being served by private wholesalers instead of or in some cases in addition to BADC, the past achievements of the NMS are expected to remain in effect and to be augmented by this new project.

B. Project Description

1. Project Elements

a. Project Design and Central Concept

2.20 The FDI-II project design has been greatly influenced by consultations with GOB officials, private businessmen, other donors and TCCA officials. The GOB and TCCA officials as well as other donors represented a wide range of interests. The private businessmen were fertilizer dealers and other individuals indicating an interest in becoming large scale fertilizer wholesalers. These individuals included pesticide and petroleum distributors, bankers and people in transportation.

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*IFDC, "Agricultural Production, Fertilizer Use and Equity Considerations (Results and Analysis of Farm Survey Data)". Bangladesh 1982.

2.21 FDI-II will allow the development of large scale wholesalers. When the project commences, BADC will begin for the first time to sell fertilizers from factories, ports, and depots. BADC will continue to maintain the adequacy of national fertilizer reserve stocks and to operate its network of PDPs with the PDP selling price for each type of fertilizer the same at all PDPs (as it is today). Presently, fertilizer wholesalers are offered a quantity discount of Tk. 30 ($1.20) per ton at PDPs when lifting between 15 and 25 tons and a discount of Tk. 40 ($1.60) per ton for lifting 25 tons or more. Approximately 2,000 dealers (small scale wholesalers) are now taking advantage of these quantity discounts. As shown in Table II-1, FDI-II will add depots and factories/ports as two new types of BADC fertilizer sales outlets. Fertilizer purchasers will be permitted to lift from all three types of BADC sales outlets (PDPs, depots, and factories/ports) and will be permitted to sell their fertilizers anywhere in the country at any price. Under the FDI-II marketing system, small scale fertilizer wholesalers will be augmented by the emergence of large scale and middle size wholesalers. For descriptive purposes in this project paper, wholesalers who purchase only at PDPs will be termed small scale; wholesalers purchasing at PDPs and depots will be middle size, and wholesalers lifting from factories and/or ports will be classified as large scale wholesalers or fertilizer distributors.

2.22 The fertilizer lifting price at factories and ports will be discounted below BADC's ex-PDP price to reflect the costs of operations that the private distributors will have to cover. The exact amount of this discount is under review by the GOB and USAID but is expected be in the range of Tk. 450 to Tk. 550 per metric ton. It is shown as Tk. 500/MT in Table II-1. To the extent that this reformed distribution system will cause BADC's operations to shift to areas with higher distribution costs and, as a result, will increase BADC's average transportation costs on a per ton basis, the GOB will offset any increase in these costs by increasing BADC's PDP selling price and/or by decreasing BADC's fixed operational costs. This is discussed further under the Wholesale Prices section of the Public Policy Analysis below.

2.23 Depots are presently PDPs that under FDI-II will be designated as BADC sales outlets that will offer wholesale discounts which are substantially larger than wholesale discounts at PDPs. Currently, there are nearly one hundred PDPs. Under FDI-II, five or six of these will be designated as depots. The selection of these depots is underway and is based on amount of current storage capacity, BADC's re-stocking costs which are to be kept to a minimum, and accessibility to major transportation systems which are likely to be used by wholesalers as well

TABLE II - 1 : FERTILIZER MARKETING UNDER FDI-II*

Type of BADC Sales Outlet	Type of Fertilizer	Minimum Lifting Quantity (in MT)	Wholesaler's Quantity Discount (Tk/MT)	BADC's Sales Revenue (Tk/MT)	BADC's Sales Revenue (Tk/Md)	Average Estimated Retail Price*** (Tk/MT)	Average Estimated Retail Price*** (Tk/Md)
PDP	Urea	3	--	3,695	138	3,970	148
PDP	TSP	3	--	3,475	130	3,750	140
PDP	DAP	3	--	3,695	138	3,970	148
PDP	MP	3	--	2,675	100	2,950	110
PDP	Urea	15	30	3,665	137	3,970	148
PDP	TSP	15	30	3,445	129	3,750	140
PDP	DAP	15	30	3,665	137	3,970	148
PDP	MP	15	30	2,645	99	2,950	110
PDP	Urea	25	40	3,655	136	3,970	148
PDP	TSP	25	40	3,435	128	3,750	140
PDP	DAP	25	40	3,655	136	3,970	148
PDP	MP	25	40	2,635	98	2,950	110
Depot**	Urea	150	350	3,345	125	--	--
Depot	TSP	150	350	3,125	117	--	--
Depot	DAP	150	350	3,345	125	--	--
Depot	MP	150	350	2,325	87	--	--
Factory or Port	Urea	500	500	3,195	119	--	--
Factory or Port	TSP	500	500	2,975	111	--	--
Port	DAP	500	500	3,195	119	--	--
Port	MP	500	500	2,175	81	--	--

* Minimum lifting quantities, discounts, and revenues at PDPs will remain unchanged during the initial stages of FDI-II while depots and factories/ports will be added as two new types of sales outlets.

** Depots are presently PDPs located at Chittagong, Khulna, Narayanganj, Bhairab, Chandpur and Shahjadpur.

*** Estimates are based on current IFDC price surveys. Retail prices of fertilizers sold by BADC at depots, factories, and ports have not been estimated, but they should be at and below retail prices near PDPs.

as BADC. For BADC, the depots will mean, over time, retrenchment to a more manageable network of outlets. To wholesalers, depots will offer an opportunity for retailers and small scale wholesalers to enlarge their scope of operation to become medium sized wholesalers. Because BADC will incur distribution costs in supplying depots, the wholesaler's lifting price at depots will be determined by reducing the factory/port discount by BADC's average per ton distribution cost of servicing the depots. In Table II-1, the depot discount is shown as Tk. 350/MT meaning that for the given network of depots,* BADC's average distribution cost would be Tk. 150/MT (Tk. 500 - Tk. 350 = Tk. 150). Under FDI-II, the initial national fertilizer distribution system as described in the preceding paragraphs is considered a transition phase and is expected to lead to a final system which is either dominated by the private sector or is transformed into mixed public and private sector system with these sectors competing directly as described briefly in paragraph 2.43 and in detail in Public Policy Analysis starting with paragraph 6.06.

b. Credit and/or Fertilizer

2.24 In discussing FDI-II with the local business community, USAID found general concern about the availability of credit funds. During the life of FDI-II, fertilizer retailers and wholesalers of all sizes will need short-term commercial credit. A major portion of FDI-II funds are, therefore, designated to be allocated to the Bangladesh Bank for use as refinance funds. The estimation of lending for fertilizer distribution that might occur under FDI-II involved making a series of assumptions regarding seven interrelated variables as follows: (1) fertilizer sales are projected to grow at 8 percent per year beginning with 968,000 MT in 1982/83 as the base year, (2) the average nominal cost of fertilizer per MT (ex-factory and ex-port) is projected to grow at 5 percent per year starting at $200/MT in 1983/84, (3) during the first year of FDI-II, private wholesalers are expected to purchase 30 percent of BADC's fertilizer at the ports and factories and this share is expected to grow in 10 percent increments annually, (4) the annual rate of inventory turnover for the distributors lifting at the ports and factories, is expected to be 4 times per year initially increasing to 5 times per year over the life of FDI-II, (5) distributor requirements for working capital for purchasing inventories is expected to be 25 percent greater during the peak fertilizer offtake months of September through December, (6) distributors will be expected to provide the standard 50 percent equity against loans as required for other lines of credit, and (7) 75 percent of the value of loans to distributors is expected to be refinanced from the Bangladesh Bank with FDI-II project funds. With the above considerations, the Bangladesh Bank's annual disbursements of refinance funds for fertilizer purchases over the years 1983/84 through 1987/88 are estimated at (in millions of U.S. dollars) 8, 10, 14, 19, and 24, respectively, for a total of $75 million for the life of project.

2.25 The FDI-II credit funds will be used to support the central bank's refinance activities related to the expanding and developing national fertilizer distribution business. Annual disbursements to the central bank will be equal to the peak quarter requirements. Since the

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*These proposed depots are presently PDPs located at Chittagong, Khulna, Narayanganj, Bhairab, Chandpur and Shahjadpur.

central bank's projected disbursements for fertilizer refinancing total $75 million over the project and FDI-II's credit funds total $52 million the central bank will provide from its own resources the additional refinancing funds needed by the reformed national fertilizer distribution system.

2.26 FDI-II's credit funds will be utilized for trade financing only. This 3 month short-term commercial credit is different than agricultural credit which is supported through USAID's Rural Finance Project. In the Bangladesh financial system, the limited amount of trade finance credit that is currently available has been provided primarily to the larger, less risky commercial enterprises. Agricultural credit is available to farmers for production loans and to small businessmen. The provision of FDI-II's funding will serve to expand trade credit availabilities exclusively for fertilizer.

Many of the businessmen that will seek fertilizer loans already are bank customers because of their existing activities of selling gasoline, petroleum products, and chemicals, e.g. fertilizers and pesticides. Therefore, the information costs of making these loans will be reduced and the banks will consider the borrowers to be reasonable risks. Some wholesalers will sell fertilizer on credit to retailers so not all retailers will need to borrow directly from banks. Furthermore, retailers will provide fertilizer on time purchases to farmers and this will facilitate farmer use. In view of this, a special refinance program will be developed to operate similar to the refinance mechanism for agricultural credit. The national commercial banks (NCBs), and the Bangladesh Krishi Bank (BKB) will be authorized to rediscount loans made to retailers and wholesalers for the purchase of fertilizer. The interest rate charged to the borrowers will be set at levels similar to agricultural credit (currently 13% plus a 3% service charge). Loan terms, minimum collateral and margin requirements, etc., for these loans will be specified by the Bangladesh Bank. Periodically the NCBs and BKB will apply to the Bangladesh Bank for rediscount of loans made. A sliding scale formula will be used to determine the interest rate charged for refinance. Currently the charge for refinance of agricultural loans is a minimum of 6% when 50% or less refinance funds are obtained up to a maximum of 10.5% for 100% refinance. This formula will provide incentives for the banks to mobilize deposits rather than refinance the total value of fertilizer loans made. A resident consultant will be made available to the banks that administer the FDI-II credit.

Using domestic natural gas as raw material, Bangladesh will be self-sufficient in urea as soon as the new factory at Ashuganj overcomes its many startup problems. The fertilizer factory at Ghorasal exploded in 1975 and disrupted fertilizer supplies for nearly one year. Recent history at both the Ashuganj and Ghorasal factories indicates that there may be future interruptions in domestic fertilizer production. Therefore, if the need arises, FDI-II funds may be transferred from credit to fertilizer imports.

c. Sales Promotion and Dealer Development

2.27 As in most countries, Bangladeshi fertilizer retailers are or potentially are in a good position to advise and influence farmers on important decisions such as determining the best types of fertilizer to use, and the quantity, method, and time of application. In addition, many of these retailers grant credit to reliable customers. BADC's Dealer Development and Training (DD&T) Program has found that farmers take or try to take advice regarding proper fertilizer use from retailers if extension services have been unable to provide such assistance. The nation's extension services have been hard pressed and unable to advisethe nation's 12 million farms regarding fertilizer use. The DD&T Program began to function in October 1982 through much encouragement from FDI-I activities. FDI-I has provided this program with training and promotional materials as well as a resident consultant from the International Fertilizer Development Center. The programs' objectives have been to increase fertilizer sales by 2 to 3 percent annually and to augment the technical skills of fertilizer retailers in order to make them better advisers to their farmer-customers as well as efficient suppliers of fertilizers and active promoters of proper fertilizer use.

2.28 Since BADC's DD&T Office was created in April 1982, there have been three, one to two week, training courses (September 1982, March 1983, and October 1983) for BADC's trainers who have been conducting the retailer training courses throughout the country. Each district has two assigned trainers, one, a BADC Subdivisional Manager and the other his assistant, a BADC Thana Inspector. On average, these trainers together as a two-man team are presently expected to conduct three retailer training courses per month. These two-day courses are held at district headquarters. Attendance has been by invitation with roughly 90 percent participation. The class size is usually 25. BADC with its own funds pays each participant Tk.75/day ($3) to help defray expenses for lodging, meals, and transportation. As of January 1, 1984, over 10,000 retailers had attended the courses. BADC's goal is to eventually conduct enough courses so that all active fertilizer dealers (estimated at 21,000) will have an opportunity to attend twice a year. Plans also call for establishing fertilizer demonstration plots. It is envisaged that in cooperation with dealers each trainer and each assistant trainer will develop three fertilizer demonstration plots per season. The DD&T office has developed a demonstration plot format along with procedures. The fertilizer is to be provided by the dealer who will be given credit for the fertilizer if he follows the provided guidelines. Farmer field days are also planned as a means of diffusing technology and promoting fertilizer use.

2.29 Many of the constraints to the development of fertilizer use are related to the activities and levels of knowledge of retailers and farmers. On the retailers' side, these constraints often include: (i) inability to advise farmers due to retailers' lack of knowledge regarding

proper fertilizer use even though many fertilizer retailers are or have been farmers, (ii) lack of knowledge regarding mechanisms of obtaining, granting, and administering institutional credit for farmers, (iii) insufficient knowledge of store and book-keeping, (iv) difficulties with sales projections and over and understocking, and (v) insufficient promotional materials and demonstrations. On the farmers' side, constraints are often: (i) lack of information about fertilizer types and their suitability for specific crops, (ii) lack of knowledge of improved farm management techniques, and (iii) lack of working capital and knowledge of how to obtain institutional credit.

2.30. In Bangladesh today, the activities of fertilizer retailers are just beginning to be strengthened by the DD&T's training courses which are aimed at alleviating the above constraints. These courses were postulated on the following: a) one of the first persons being asked how to use fertilizer is the seller (retailer). The better the seller's knowledge, the better the product is likely to be used; b) if a core ofwell-trained retailers is created, they can contribute significantly to the country's agricultural development; c) if a group of trainers is institutionalized, training courses for retailers may continue in future years after donor assistance has been phased out; d) the image of profit making retailers as a source of reliable extension advice can and should be improved; e) current losses of fertilizer through inadequate knowledge of its proper handling, storing, and field application can be reduced; f) the amount of sales promotional material (manuals, radio announcements, press releases, flip charts, posters, pamphlets, movies, and slides) which is presently being circulated is grossly insufficient; and g) there is a need to avail small farmers of improved extension services through fertilizer retailers. Under FDI-II, the DD&T Program is expected to develop upon the foundation which was set under FDI-I. FDI-II funds will provide a resident consultant to continue to assist and develop the Program's effectiveness.

2.31 BADC's DD&T activities are and will continue to be linked with the nation's agricultural research system and its extension services. The fertilizer use information which is given to retailers through the DD&T courses comes directly from the research community through its publications and the fact that its researchers provide much of the training given to BADC's trainers. Extension agents are regularly called upon to be guest speakers (trainers) for DD&T courses. Extension agents may also assist fertilizer retailers in preparing fertilizer demonstration plots in farmers' fields.

d. Infrastructural Improvements

2.32 The objectives of the FDI-II infrastructural improvements are to increase wholesaler access to government sales outlets, namely depots, factories, and ports, and to ease physical constraints in the distribution network of wholesalers nationwide. The need for infrastructural improvements at various locations will be evident only

after private fertilizer wholesalers are lifting large quantities from depots, factories, and ports, and traffic patterns are established. Presently, transport modes and patterns of fertilizer movement by private distributors are subject to speculation. It is thought that the private distributors may rely more on truck transport and less on rail than is presently practiced by BADC. This shift in transport modes, however, may not occur. Similarly, shifts in transport patterns are uncertain at the present time.

2.33 The types of infrastructural improvements which are expected to be needed under the reformed marketing system of FDI-II include improving truck access to the factories and ports by upgrading roads and widening factory doors and railway underpasses. Access roads and barge wharfs at the designated depots may also need upgrading to facilitate the increased volume of sales anticipated at these outlets. After private wholesalers have been lifting fertilizers from the depots, factories, and ports for one year, a survey and evaluation will be conducted to determine (i) what, if any, physical constraints exist in the distribution network of private fertilizer wholesalers and (ii) what infrastructural improvements (with cost estimates) would remove or lessen these constraints.

2.34 This assessment of the physical constraints in the distribution network of wholesalers will be conducted with external assistance from a team hired by the project's prime contractor. (This prime contractor is described in the next section below.) This team will be composed of individuals with expertise in civil engineering, transport planning and economics, and commodity logistics and distribution. Improvements for inclusion in FDI-II will be selected based on an assessment of the increases in efficiency in movement and physical handling combined with the reductions in transport costs that the proposed improvements would yield. Once appropriate improvements have been identified by the consultant team and selected by the GOB and USAID for FDI-II inclusion, an A&E firm will be charged with preparation of design plans, specifications, estimates, and construction supervision. The total cost of these improvements to include the A&E firm is estimated to be $7 million though it may be more or less.

2.35 By the end of FDI-I, USAID will have financed the construction of warehouses at 35 PDPs. From this construction and that financed by the GOB and other donors, the nation will have fulfilled its public needs for fertilizer storage capacity. Under FDI-II, BADC's PDPs near depots, factories, and ports may have their sales greatly reduced. If necessary, the GOB will develop alternative arrangements (e.g. renting these facilities at commercial rates* to distributors of fertilizers and agricultural commodities) for the continued utilization of these PDP facilities. During the early stages of transition to private sector large scale fertilizer wholesaling, these facilities may function as intermediate warehouses contributing the maintenance of the nation's

*These rates will be competitive enough to insure full utilization of the facilities.

fertilizer buffer stocks. If after the twenty-month evaluation (paragraph 2.42), the Government introduces a variable price regime thoughout its PDP network, then depots would revert to PDPs, and PDPs near former depots, ports, and factories would undoubtedly have their sales increased. (This is discussed further in paragraphs 6.07 through 6.09.)

e. Technical Assistance Element

2.36 In addition to the A&E firm hired to design and supervise the construction of all FDI-II infrastructural improvements, a technical assistance team composed of 3 resident consultants will be provided to the Ministry of Agriculture (MOA) to help monitor and implement the reformed national fertilizer distribution system and related FDI-II components, especially the credit and dealer development programs. Certain portions of the assistance managed by this team will include advisory services, production and distribution of sales promotional material, training, and equipment, all financed with FDI-II funds. Costs of the technical assistance team are estimated at $6 million of which $1 million will be allocated out of the first year's grant obligation. Allocations in subsequent years may be increased or decreased depending upon reviews.

2.37 The MOA will contract with a management consulting firm for this technical assistance. The selected firm will function as a "prime contractor" obtaining and administering the wide variety of advisory services and activities required for the successful implementation of FDI-II. The MOA will prequalify firms before requesting technical proposals. Nationality of eligible firms will be U.S. The firm selected for the prime contract may subcontract with firms and/or individuals from countries included in Code 941 and Bangladesh.

2.38 The prime contractor's chief of party (COP) with expertise in fertilizer distribution and marketing may have an office in the MOA's (Agricultural) Inputs Cell. The COP's direct counterpart will be the Joint Secretary of the Inputs Cell. The COP will (i) administer the prime consultancy contract including all subcontracts, (ii) supervise resident and short-time consultants to include the team that will identify potential FDI-II infrastructural improvements, (iii) regularly advise the MOA and USAID regarding progress of FDI-II implementation and government policies and practices affecting its implementation, and (iv) supervise monthly surveys of fertilizer availabilities and farmer prices as presently conducted by IFDC. (This surveying will continue to engage a local firm to perform the computer analysis of the field data.)

2.39 In addition to the resident COP, a resident consultant may be located in the Bank Control Department of the Bangladesh Bank and another may have an office in BADC's Dealer Development and Training Department. The consultant to the Dealer Development and Training Program will supervise a local firm which will be hired to conduct multimedia advertising campaigns for fertilizer use. After FDI-II has been underway

for at least one year, the MOA may want the prime contractor to provide short-term technical assistance in order to assess the need for fertilizer quality control legislation and enforcement. Fertilizer adulteration is not anticipated to be a significant problem; however, the practice of selling short-weight bags is becoming a problem. If needed, the prime contractor would assist the MOA in establishing a fertilizer quality control unit, perhaps in the Agricultural Marketing Department of the MOA. This unit would undoubtedly concentrate on assuring wholesalers, retailers, and farmers that fertilizers were sold in the exact weights specified by the seller. To further insure the integrity of fertilizer sales, perhaps this unit would also conduct rudimentary chemical testing in the field. FDI-II funds could be used to finance some initial equipment needed for starting this unit.

2.40 In anticipation of the national fertilizer distribution system under FDI-II, which was first discussed with local businessmen when USAID was preparing the FDI-II PID, potential large scale fertilizer wholesalers formed an ad hoc group in late 1982. This group, named the National Fertilizer Distributors' Association (NFDA), has recently submitted to the GOB its Articles of Association. Once NFDA is sanctioned as an official trade association of Bangladesh, FDI-II project funds may help to provide the NFDA with technical assistance and training. Fifty percent of the cost of this assistance and training will be financed by NFDA and the remainder with FDI-II funds. In order to develop a strong private sector, the asociation may request USAID to authorize the prime contractor to provide appropriate technical services in such areas as marketing and advertising, distribution and handling, inventory control, financial accounting, bulk blending, quality control, and dealer training. FDI-II may also help to finance short-term participant training for NFDA staff and members as requested by NFDA and approved by USAID. This training could take place in Bangladesh, other Asian countries and the United States.

2.41 Technical assistance for the twenty-month evaluation (described immediately below) will be provided from outside the prime contract which will be, in part, subject to the evaluation. This technical assistance will be financed through AID direct contracts.

f. Twenty-month Evaluation

2.42 USAID's support for FDI-II beyond the first two year period will depend upon the ability of the private fertilizer wholesalers to operate freely and effectively from depots, factories, and ports. A formal evaluation of both the national fertilizer distribution system and FDI-II will be conducted after private wholesalers have been purchasing fertilizers from the factories and ports for four crops seasons (roughly 16 months) which is estimated to follow the Project Agreement signing by approximately twenty months. The primary objectives of this evaluation will be to determine 1) does BADC responsibly service wholesalers who

lift from depots, factories, and ports, 2) do wholesalers responsibly service retailers and farmers, 3) have national, regional, and local fertilizer stocks been adequate, 4) is FDI-II achieving or likely to achieve its objectives, and 5) do project components, e.g. the credit/fertilizer import program, need realignment. If the evaluation identifies problems with the national fertilizer distribution system or FDI-II project components, it will suggest solutions to these problems. The evaluation will include a section on system and project components to be evaluated in the future and will describe what, when, and how these items should be evaluated. FDI-II funds will support a team of experts, who with GOB and USAID assistance will conduct the evaluation.

2.43 This critical twenty-month evaluation point could result in numerous system and project changes. For example, the Government may choose to introduce non-uniform pricing (to reflect actual transportation and procurement costs rather than the current system of averaged equalized costs) throughout BADC's PDP network. For the first time, this alternative system would permit competition on an equal basis in fertilizer distribution between BADC and the private fertilizer distributors. Under this alternative national fertilizer distribution system, both BADC and the private distributors could lift fertilizers from factories and ports (depots would revert to PDPs) at the same pooled lifting price, and both could be expected to fully cover their costs from their sales revenue. (In the Public Policy Analysis paragraph 6.06 below, this alternative system is contrasted with the one described above in paragraphs 2.21 through 2.24). If BADC's PDP pricing remains uniform, then subsequent to the evaluation there may be system changes, such as increasing the discounts to wholesalers at depots, factories, and ports and/or adjusting the minimum lifting requirements. If the actions taken by the GOB as a result of this evaluation are perceived by the private sector as long-term commitments by the GOB to assure the success of large scale fertilizer wholesalers, then these wholesalers might begin the following: 1) buying or leasing BADC fertilizer warehouses at competitive commercial rates, 2) internationally procuring (non-nitrogen) fertilizers, 3) procuring fertilizers directly from factories instead of through BADC, 4) bulk blending fertilizers, and/or 5) branding and bagging fertilizers.

g. Donor Response

2.44 FDI-II was designed not only in consultation with other donors but with design team members financed and supplied by the Governments of the Netherlands and Denmark. In addition, resident officials from Canada and Norway attended and contributed to design team meetings. The World Bank and the Asian Development Bank were also informed as the project components developed.

2.45 The fertilizer marketing reforms embodied in FDI-II have the support of the major foreign exchange contributors to Bangladesh's fertilizer sector. Other donor project agreements are already including

language consistent with the objectives of FDI-II, e.g. by 1985 the private sector will be expected to lift fertilizers from factories and ports.

2.46 In the two and one half years since the FDI-I PP Amendment was prepared, donor funded activities (described on pages 9 and 10 of the PP Amendment) have changed little. Presently and throughout the life of FDI-II, the needs for donor financing for the fertilizer sector are and will have shifted since FDI-I from increasing the government's fertilizer storage capacity and importing large quantities of nitrogen fertilizers to alleviating limited availability of fertilizer credit and further increasing efficiency of resource allocation. Thoughout FDI-II, international donors and lenders will continue to meet Bangladesh's foreign exchange needs for the importation of non-nitrogen fertilizers. However, in the event of an unexpected national shortage, FDI-II funds will be needed and used for the importation of fertilizers (nitrogen or non-nitrogen).

2. Project Objectives

2.47 The Project Goal is to increase agricultural production. (See Log Frame, Annex C.) The target is an average growth rate in agricultural production of at least 4 percent annually over the life of the project. An important assumption for achieving this goal is that there will be a favorable agricultural price policy environment and adequate growth in inputs (irrigation water, improved seed, and pesticides) complementary to fertilizer. Recent performance and GOB priorities indicate that this is a reasonable assumption.

2.48 The Project Purpose by which the goal will be reached is increased use of fertilizer. The target is an average annual growth in aggregate fertilizer consumption of at least 8 percent over the life of the project. This represents a marginal increase of about 3 percent over the average annual consumption of the past 5 years.

2.49 Project Outputs intended to achieve the project purpose are: 1) assured fertilizer supplies, 2) a wholesaler and retailer credit program exclusively for fertilizer purchases, 3) competing large scale and middle size fertilizer wholesalers, 4) increased efficiency in fertilizer distribution and marketing, 5) active fertilizer dealer development and sales promotion programs, and 6) improved access to fertilizer sales outlets.

3. Project Inputs

2.50 USAID's contribution to FDI-II ($65 million) will be used for financing a fertilizer credit program and/or fertilizer imports, technical assistance and training, and infrastructural improvements. Eighty percent of the project funds may be disbursed by local banks as

taka to support a credit program for the purchase of fertilizer by wholesalers and retailers; however, in the event that national fertilizer stocks become inadequate these project funds may be used to finance fertilizer imports. In addition to credit and/or fertilizer, nearly ten percent ($6 million) of project funds may be used to provide equipment, technical assistance and training for the Ministry of Agriculture, the banks administering the project's credit program, and the National Fertilizer Distributors' Association. An estimated ten percent ($7 million) of the project funds may be used to provide infrastructural improvements to increase the accessibility of BADC sales outlets to fertilizer wholesalers.

2.51 In addition to the issuance and execution of policies, regulations, directives, and implementing instructions required for the successful implementation of FDI-II, the GOB's total project contributions to FDI-II will include $600 million of fertilizer and logistical support for fertilizer. Beyond conditioning project agreements in accordance with the objectives of FDI-II, other donors will indirectly contribute an estimated $450 million worth of fertilizer and logistical support to FDI-II.

4. Project Beneficiaries

2.52 Beneficiaries will include the recipients of the project's technical assistance, training, and commodities. The ultimate beneficiaries will be the nation's farmers and the Bangladeshi society in general. Farmers will benefit from reliable and timely fertilizer supplies. Fertilizer dealers and distributors will benefit by the improved access to sales outlets and from policy reforms which will increase competition in fertilizer distribution and marketing at the national level. The project will, in the long term, reduce the resource burden that the GOB incurs from executing its fertilizer distribution function and from importing foodgrains. Because of its more efficient use of resources, society as a whole will be able to have more goods and services with the same amount of resources. Because of the project, the number of farmers using fertilizer shall increase as shall the amount of the fertilizer used per unit of cropped area. This will result from promotion of fertilizers by private distributors, increased competition in fertilizer distribution and marketing, and enhanced fertilizer availabilities. We expect an equitable distribution of benefits over a very large number of beneficiaries.

III. COST ESTIMATE AND FINANCIAL PLAN

A. TABLE III-1: Summary Cost Estimate a/ and Financial Plan
(Thousand of U.S. $)

Project Elements/ Inputs	USAID FX	USAID LC	GOB LC	OTHERS FX	TOTAL
Credit/Fertilizer	0	44,000 b/	598,900	450,000	1,092,900
Construction	5,000	950	900	0	6,850
Technical Assistance	4,000 c/	125	50	0	4,175
Training	300	50	50	0	400
Equipment	250	100	50	0	400
Surveys, Evaluations, Audits	400	75	50	0	525
Contingency (15%)	1,750	8,000	0	0	9,750
TOTAL	11,700	53,300	600,000	450,000	1,115,000

a/ Includes 10% annual inflation

b/ $13 million of this $44 million will be loan financing with remainder in grant financing

c/ The T.A. will be provided in grant financing

B. TABLE III-2: Projection of AID Expenditures by Fiscal Year
(Millions of U.S.$)

U.S. Fiscal Year	Grant Funds	Loan Funds	Total	Total Cumulative Expenditures
1984	1	8	9	9
1985	5	5	10	19
1986	16	0	16	35
1987	11	0	11	46
1988	11	0	11	57
1989	8	0	8	65

C. TABLE III-3: Methods of Financing Project Elements/Inputs

Project Elements/ Project Inputs	Method of Contracting (Implementation)	a/	Method of Financing	Amount $ Total (000)
Credit	PRO-AG/PIL	No	Direct Payment	44000
or (Fertilizer Imports)	or (Formal AID's Contracting)	or (Yes)	or Direct L/Comm)	
Construction				5950
A&E Services	Direct AID Contract	Yes	Direct Payment	850
Actual Construction	Host Country Contract	"	Direct L/Commitment	5100
Technical Assistance				4125
TA for Banks	Host Country Contract*	Yes	Direct L/Commitment	940
TA for BADC DD&T Project	" " "	"	" "	940
TA for MOA	" " "	"	" "	1000
Local Support to Prime Con.	" " "	"	" "	295
Multi-Media Advertising Svc.	" " "	"	" "	950
Training				350
Fertilizer Quality Control	Host Country Contract*	Yes	Direct L/Commitment	150
NFDA	" " "	"	" "	200
Equipment				350
MOA	Host Country Contract*	Yes	Direct L/Commitment	150
Banks	" " "	"	" "	100
BADC DD&T	" " "	"	" "	100
Surveys, Evaluations, Audits				475
Infrastructure Imp. Surv.	Host Country Contract*	Yes	Direct L/Commitment	100
Quality Control Unit Eval.	" " "	"	" "	75
20 Month Project Eval.	Direct AID Contract	"	Direct Payment	150
Final Project Eval.	" " "	"	" "	100
Audit Review	" " "	"	" "	50
Contingency	N/A	N/A	N/A	9750
Total Project (USAID Funded)				65000

a/ This column answers the question: Is this project element a potential area for involvement by organizations covered by the Gray Amendment and small businesses? (See paragraph 3.12 for explanation)

* With a profit

D. Assessment of Project Implementation Methods Used by USAID/Dhaka:

3.01 The USAID/Dhaka annual general assessment of methods of implementation and financing is currently being compiled and should be referred to for further information on the specific topics discussed in paragraphs 3.02 to 3.11. The annual general assessment will be pouched under separate cover.

3.02 The majority of Host Country Contract (HCC) and Direct AID Contracts involve professional ex-patriate organizations as the contractor. The contractors operate under their own managerial and financial systems in performing the scopes of work described in the contracts. Of particular note is that many scopes of work of the ex-patriate contractors include technical assistance aimed toward improving the financial systems of the Host Government and monitoring project funded commodities utilized by the Host Government. The managerial and financial systems of the ex-patriate organizations have been found to be adequate. For Host Government contracts, the Host Government has been given the financial monitoring and approval role over contract expenditures. These functions by the Host Government are supplemented through (a) the project officer's administrative approval of claims and (b) the certifying officers review of documentation (if any) submitted with the claims. In addition, project funds can be allocated to provide for independent audit coverage of these contracts as an added measure of control -- especially in circumstances when the HCC is between the Host Government and local NGO's.

3.03 The Mission neither has the authorized direct hire staff levels nor an operating budget of sufficient magnitude to obtain the additional positions required to perform in-house, payment verifications and all financial monitoring for all activities financed under all projects. In order to develop institutional expertise in project management and finance, and from necessity, there exist project activities performed by Host Government organizations under PILS to which USAID has delegated a significant responsibility over payment verification and financial monitoring. In these cases the Host Government permits financial audits by (a) USAID or its authorized representatives and (b) the internal audit staff (if available) of the Host Government. The Mission strives to keep the dollar value involved in these cases to a minimum. In addition, the financial analyst staff of the USAID controller's office performs financial reviews of these activities on a selected basis. These reviews have proven extremely helpful and of great value to USAID and the Host Government in preventing and/or correcting financial system problems. In special circumstances, USAID has enlisted the assistance of Host Government internal audit staffs.

3.04 PILs and Grant letters (conforming to the requirements of Handbook #13) are used as the implementation mechanisms for a number of NGO's and IPVO's. The NGO's and IPVO's are delegated significant payment verification and financial monitoring responsibilities over the funds provided to them. In these cases, however, project funds can be used to provide for NGO & IPVO accounting staffs, and for independent audit reviews.

Many NGO's and IPVO's already have chartered accountants who review their financial activities. In many cases these CPA's are funded from NGO and IPVO funds, thus conserving project funds. The financial analyst staff of the USAID controller's office reviews NGO and IPVO financial systems on a selected basis.

3.05 AID Direct Contracts are used when AID has determined that firm USAID control is required in order to assure desired performance and quality output (i.e., PSC's, project evaluations, special project TA activities where independence of the contractor is of paramount importance).

E. FDI-II Project Implementation and Financing Methods

3.06 The implementation methods for FDI-II (see TABLE III-3) will consist of (1) Host Country Contracts with an ex-patriate prime contractor, (2) sub-contracts under the Host Country contract with the ex-patriate prime contractor, (3) Host country contracts with construction firms, (4) Direct AID contracts, and (5) PILs. Financing methods (TABLE III-3) will involve the use of (1) Direct Payment, and (2) Direct L/Comm's. Under all implementation methods (except for the project's credit element) identification of the potential opportunities for small, minority, and women-owned enterprises to participate in the inputs funded by this project will be made and maximum consideration will be given towards utilizing the enterprises so identified.

3.07 Mission management considers the use of a direct payment to the Bangladesh Bank 7/ as the most appropriate method for financing the credit element of this project in order to assure that the policy changes (see paragraphs 6.01 to 6.09) envisioned by the project are made. The implementation method will be by PIL. The PIL will (1) establish conditions for release of each tranche of credit funds to the designated recipient (2) define the monitoring responsibilities of the Host Government, and USAID over the credit funds and (3) reference pertinent Project Agreement provisions and AID regulations assigning fiscal responsibility over the proper use and management of the credit funds. Once the conditions specified in the PIL are met, a direct Taka payment to the Bangladesh national bank will be made for the purpose of assisting in the refinancing of credit extended by local banks to the fertilizer dealers.

3.08 Direct letters of Commitment (L/Comm's) will be used to finance the procurement of fertilizer should the need arise. The Host Government's procurement and contracting procedures are adequate while payment verification and financial monitoring are sometimes weak. The use of Direct L/Comm's permits USAID to obtain and examine documentary evidence showing purchase, shipment, receipt, inspection, compliance with Cargo preference regulations, and compliance with source and origin regulations regarding the commodity before payment is made to the supplier. Furthermore, prior to issuance of the L/Comm's, USAID is heavily involved in monitoring and giving approval at all levels of the bidding and award process. In addition, USAID envisions that the prime contractor will be given responsibilities for monitoring the use of the delivered fertilizer. These procedures and the method of financing are expected to strengthen the financial monitoring and payment verification controls relating to commodities financed by this project.

3.09 In order to further strengthen the financial monitoring over project inputs, the independent chartered accountants budgeted for under the Surveys, Evaluations, Audit element will be charged with conducting reviews of the construction, commodity, and training activities of the project.

3.10 Under a Host Country Contract, the prime contractor will be responsible for arranging and providing all financial assistance, training, and MOA, Bank, and BADC DD&T equipment inputs. Direct L/Comm's will be issued as the payment mechanism for the prime contractor since the Host Government does not have the financial resources to make payment and then seek daily reimbursement from AID. For the same reason, direct L/Comms will be used as the payment mechanism for construction firms. The FAR method will not be used for actual construction since the construction work would be implemented through a host country cost reimbursement contract based on fixed unit prices for units of completed work. The final price will be based on a measurement of completed works as certified by the A&E firm. The type of contract to be used will be a standard Federation International Des Ingenieurs - Conseils (FIDC) international construction contract.

3.11 Direct payment is generally considered an excellent payment mechanism to be used for AID Direct Contracts since AID management is so closely involved with the control of the services being rendered and in assuring the outputs as specified in the contract are achieved. Direct payment will be used for the AID Direct Contracts for the (a) 20 month evaluation (b) final evaluation (c) audit services and (d) the A&E firm hired to monitor the actual construction involved with infrastructural improvement (see paragraph 4.01).

F. Gray Amendment Considerations

3.12 The design phase of FDI-II has included the consideration and identification of potential opportunities for (i) minority and women-owned enterprises, (ii) historically black college and universities, (iii) minority private volunteer organizations, and (iv) small businesses to participate to the maximum extent possible in this project's implementation and evaluation. Table III-4 (see, footnote) indicates the potential for participation in FDI-II by groups or individuals covered under the Gray Amendment and small business in general. FDI-II's prime contractor will be engaged on a host country contract in order to maximize the GOB's involvement with project activities and potential problem areas during project implementation. Nevertheless, the GOB will be encouraged to fully consider minority and women-owned organizations as well as small businesses that have been identified by the PRE/OBR as appropriately qualified to be FDI-II's prime contractor. Throughout FDI-II, AID direct contracts will be used when AID has determined that maximum USAID involvement is appropriate to assure desired performance for such activities as project evaluations, A&E services, and supplemental audits. With these AID direct contracts, the scopes of work will be matched with OBR's resource information in order to assure maximum consideration of appropriate sources of technical assistance from small, minority, and women-owned enterprises.

IV. IMPLEMENTATION PLAN

A. Project Financial Documention Schedule

Date		
March, 1984	1.	Project Authorized by AID/W
April, 1984	2.	Project Agreement signed and FY 1984 funds obligated
July, 1984	3.	Conditions Precedent to initial disbursement of funds satisfied
February, 1985	4.	FY 1985 funds obligated
February, 1986	5.	FY 1986 funds obligated
February, 1987	6.	FY 1987 funds obligated
February, 1988	7.	FY 1988 funds obligated
September, 1989	8.	Project Assistance Completion Date

B. Schedule of Major Activities and Implementing Agencies

Date Action Begins		Action	Responsible Agency
July, 1984	1.	Private wholesalers permitted to lift from depots, factories, and ports	MOA*
July, 1984	2.	Disbursing FDI-II's fertilizer credit funds	Bangladesh Bank
July, 1984	3.	Importing fertilizer (if needed)	BADC
September, 1984	4.	Prime Contractor Technical Proposals requested from prequalified consultants	MOA

*MOA: Ministry of Agriculture

Date Action Begins		Action	Responsible Agency
January, 1985	5.	Prime Contractor (PC) hired	MOA
February, 1985	6.	Prime Contractor's Chief of Party (COP) and Bangladesh Bank's resident consultant arrive Dhaka	MOA
March, 1985	7.	Prime Contractor's COP evaluates monthly fertilizer price and availability survey	MOA
April, 1985	8.	Prime Contractor's DD&T resident consultant arrives Dhaka	MOA
May, 1985	9.	COP begins supervising monthly fertilizer price and availability survey	MOA
May, 1985	10.	BADC's DD&T Program evaluated	MOA/USAID
July, 1985	11.	FDI-I's PACD; IFDC consultancy terminates	USAID
July, 1985	12.	Potential infrastructural improvements surveyed	MOA/PC
September, 1985	13.	Infrastructural improvements selected and A&E Consultant prequalification notice issued	MOA/USAID
December, 1985	14.	A&E Firm selected and begins designing infrastructural improvements	MOA/USAID
January, 1986	15.	Twenty-month Evaluation	MOA/USAID
September, 1986	16.	Construction of infrastructural improvements begins	MOA/USAID
September, 1988	17.	Infrastructural improvements completed	MOA
September, 1988	18.	Final project evaluation	MOA/USAID
September, 1989	19.	FDI-II's PACD; Prime Contractor's consultancy terminates	MOA

C. Procurement Activities

1. Commodities

4.01 Procurement of fertilizer, if it is needed, will be based upon the successful procedures developed under FDI-I and described below in paragraph 6.33. Using a procurement services agent, the prime contractor will procure project's office and transportation equipment. The A&E firm, again using a procurement services agent, will provide any specialized equipment necessary for infrastructural improvements (i.e. conveyers, etc). The actual construction firms will be expected to furnish the necessary equipment and materials to construct the infrastructural improvements. The A&E firm will monitor the commodities used by the construction firms to insure that source and origin requirements are met.

2. Technical Assistance and Training.

4.02 As described above (paragraphs 2.36 through 2.41), the MOA will engage the project's prime contractor who will provide the project's technical assistance and short-term training except for the assistance needed for the infrastructural improvements and project evaluations. The firm(s) constructing the infrastructural improvements will be hired on host country contract(s). The A&E firm hired for construction design and supervision will be on an AID-direct contract if the construction involves more than one GOB (construction) implementing agency. If only Government agency is responsible the construction of the infrastructural improvements, the A&E firm will be retained by that agency on a host country contract. Assistance for evaluations will be acquired primarily through AID-direct contracts in the form of PSCs and IQCs.

4.03 While BADC has not been receptive to management development training which was available under FDI-I, the private sector (NFDA) may be. If this turns out to be the case, FDI-II will provide such training. USAID believes that there are a number of areas in which it would be productive to help with the provision of training to the private sector during the project life. Some such areas are accounting, product movement, procurement procedures, bulk blending, quality control, and warehousing. The prime contractor's Chief of Party will assess such opportunities, the demand for particular training courses, the usefulness of them, and completely arrange for the financing and logistics involved in furnishing the courses. The offering of such courses will be subject to USAID approval, and the NFDA must finance 50 percent of the costs of these courses.

4.04 In the above schedule of major activities, there is a planned minimum overlapping of FDI-I's prime contractor, the International Fertilizer Development Center (IFDC), and FDI-II's prime contractor. The IFDC's consultancy team, located in BADC, consists of three resident consultants with expertise and responsibilities in the following areas: (1) fertilizer distribution, (2) fertilizer marketing, and (3) fertilizer dealer training and development. This IFDC team is expected to

sufficiently cover FDI-II's early monitoring and implementation and to make it possible (without endangering project implementation) for FDI-II's prime consultancy team* to arrive in country more than six months after private wholesalers have been permitted to lift from factories and ports.

4.05 One of the first assignments of the prime contractor's Chief of Party will be to participate in an evaluation of the IFDC fertilizer price/availability survey. Following this evaluation the FDI-II prime contractor's Chief of Party will be charged with conducting this monthly survey. The first assignment of FDI-II's DD&T resident consultant will be to participate in the evaluation of the DD&T Program (see, paragraph 8.02).

3. Construction

4.06 The construction of FDI-II's infrastructural improvements is estimated to cost $6 million while the associated A&E service is expected to cost up to $1 million. Construction design, site engineering plans, construction IFB's and bills of quantities will be prepared by the A&E consulting engineer and submitted for approval to the GOB and USAID's Office of Engineering. The consulting engineer will also evaluate bids and recommend that the implementing GOB agency negotiate a contract with the lowest responsive bidder among construction contractors bidding on the construction programs. Regarding section 611(e) of the Foreign Assistance Act of 1961, as amended, FDI-II has the Mission Director's certification which is provided in Annex F. Section 611(a) will be met since FDI-II will be incrementally funded and since the actual construction of the infrastructural improvements will be financed only out of the third year's obligation (FY 1986) through a Project Agreement Amendment.

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*Note that IFDC will be eligible to bid for the FDI-II prime consultancy along with other organizations to include small, minority, and women-owned enterprises.

V. PROJECT MONITORING

5.01 Project monitoring will be performed by GOB officials, USAID staff and project funded consultants. Two of the GOB's major concerns with the future privatization of fertilizer distribution and marketing are (i) fertilizer prices paid by farmers and (ii) fertilizer availability/accessibility to farmers. The project's Prime Contractor will address these concerns through a continuous monitoring system. Essentially the same procedures that are now being used by IFDC to monitor farm fertilizer prices and availabilities will be used under FDI-II. The survey will monitor fertilizer prices paid by farmers, crop prices received by farmers, and the availability of appropriate fertilizers at the right time and in adequate amounts. Method of payment, credit availability, and credit terms will also be included in the survey. Starting in April 1985, the Prime Contractor's Chief of Party in the Inputs Cell of the Ministry of Agriculture will be responsible for the execution of this monitoring. Until that time, this monitoring will continue to be the responsibility of the IFDC resident marketing advisor to BADC. In addition, it is envisioned that independent chartered accountants will be charged with conducting reviews of the credit, construction, commodity, and training activities under the project.

5.02 Monthly progress reports will be required of project advisors. Reports will also be required from the Bangladesh Bank on a quarterly basis and formats will be described in a Project Implementation Letter to be issued shortly after signing of the loan and grant agreements. The Bank's Control Department will prepare these reports which will include progress and financial information as pertinent.

5.03 The project calls for, and will require, substantial technical assistance. By working with and through the project advisors, the time required of USAID to monitor/manage FDI-II will be greatly reduced. With the advisors, USAID will have the capacity to adequately monitor/manage the project with current staffing. Without the consultants, USAID could not do so. USAID's Food and Agriculture Office will have the overall FDI-II monitoring responsibilities; however, the Engineers of the Project Development & Engineering Office will monitor FDI-II's infrastructural improvement component.

VI. PROJECT ANALYSES

A. Public Policy Analysis

1. Free Enterprise and Competitive Markets

6.01 This project continues a process, initiated in 1978, of transferring fertilizer distribution and marketing from the public to the private sector. In its larger context, the project is part of a broad GOB policy to revitalize the private sector in Bangladesh and to allow greater reliance on the market pricing mechanism. This trend began in the mid-1970s when the government began relaxing controls on private sector economic activity that had been imposed in the chaotic aftermath of the 1971 War of Liberation. Private sector roles in the marketing of pesticides and irrigation equipment, for example, were broadened in subsequent years. But the greatest single leap toward reducing public control of the economy occurred in 1982, when, in a flurry of policy reforms, the newly installed (March 1982) Martial Law Administration returned one third of the jute and textile industry to private hands, reduced costly subsidies on important commodities, developed realistic, priority-based budgeting, and adopted a more liberal industrial policy directed at encouraging both domestic and foreign private investment. More recently, the GOB has begun a reform of financial sector policies aimed at mobilizing rural savings and allocating agricultural credit by moving interest rates toward market levels. Privatization of fertilizer marketing is a step in the GOB's long march toward a more freely operating market economy.

6.02 Within the fertilizer sub-sector itself, the decontrol mechanisms of FDI-II are also part of a logical policy continuum. Removal of restrictions on dealers under the OMS has been described in paragraph 2.10 above. Under FDI-I local and regional distribution of fertilizer has been transferred from public to private sector. With the creation of large private wholesalers distributing from ports and factories, FDI-II will transfer national level fertilizer wholesaling from public to private hands. Once that is accomplished, the only step left for the Government to take would be to divest itself of responsibility for manufacturing and importing fertilizer.

6.03 A privatization policy cannot work in the absence of competition. In order for the benefits of increased marketing efficiency to be passed to the consumer, fertilizer wholesalers must be in competition with one another. To act as a check against the reformed system, BADC's PDP network will be operating nationwide during the initial stages of FDI-II. It should be noted that IFDC's monthly price surveys have revealed that at the retail level private dealers often sell fertilizer at prices below BADC's former official retail prices, due to the competitive nature of the market.

2. Pricing Policies

a. Retail Prices

6.04 Under FDI-I, the GOB decontrolled retail fertilizer prices. This policy will remain in effect under FDI-II. Retail prices will be established by fertilizer dealers in accordance with their wholesale costs, their operating costs, and the profits they can command in a competitive market.

b. Wholesale Prices

6.05 As long as the Government controls fertilizer production and importation, it will continue to control wholesale price levels, at least at the ex-port and ex-factory level. The prices at which national-level distributors then sell to regional wholesalers will be left to the market. As long as BADC stays in the fertilizer distribution business, however, it will have a strong effect on the wholesale price structures adopted by private distributors with whom it competes.

6.06 An important policy issue is whether BADC will adopt a variable or a uniform pricing regime in its PDP network throughout Bangladesh. Economic efficiency argues for the former, political concerns regarding equity for the latter. Much of the FDI-II policy dialogue has revolved around this issue. Based on political considerations, the GOB has opted to maintain its uniform pricing regime at least during the initial two years of the project.

6.07 Under the uniform pricing regime (UPR), BADC will continue to maintain a single sales price for each type of fertilizer at all PDPs, irrespective of transportation costs. It costs BADC considerably more to sell urea to dealers in the town of Domar, in the remote northwest, than it does at the factory in Ashuganj. But in the interests of equity, BADC sells fertilizer at the same price (procurement price plus average distribution/operating cost) in both places. In effect, the farmers of Ashuganj are subsidizing those of Domar under the government's UPR. Private distributors, however, are not likely to adopt a UPR. The private distributors are likely to sell fertilizer at prices reflecting their actual distribution costs which will be higher than BADC's prices in Domar and lower in Ashuganj. Consequently, the private distributors are likely to outcompete BADC in the markets closer to ports, factories, and depots, where actual transport costs are below BADC's average transport costs. On the other hand, BADC will be able to undersell private distributors in the more distant sales territories where its PDP prices, based on average distribution cost, are lower than the actual distribution costs incurred by the private sector. Therefore, under the public sector UPR, BADC and the private distributors will divide the market, BADC maintaining remote sales

territories and the private distributors winning markets nearer to ports, factories, and depots. The public (BADC) and private distributors will compete only in areas where transport costs are near the national average. It is important to note that as BADC loses markets close to supply sources, its average distribution costs per ton will increase. The GOB is expected to raise BADC's PDP selling price and/or reduce BADC's fixed operating costs in order to cover these higher average distribution costs.

6.08 After the UPR has been in operation under FDI-II for approximately 20 months (to demonstrate the private sector's reliability in national level fertilizer distribution) and evaluated as described above in paragraph 2.42, a government decision will be needed in order to determine the most appropriate next step in the reform of the national fertilizer distribution system. One alternative would be to increase the discount at factories and ports by an amount sufficient to completely eliminate the area served by BADC. This may be accomplished by annually raising BADC's PDP selling price (which would also help to cover BADC's progressively higher average distribution costs), thus enabling the private sector to outcompete BADC in a larger share of the market each year. Another alternative would be for the Government to adopt a variable pricing regime throughout its PDP network. Under a variable price regime (VPR), BADC would sell fertilizer to dealers at PDPs at varying prices covering actual transport costs. In this scenario, BADC and the private distributors would compete directly nationwide - in both remote areas and those near supply points. Since transport costs are considerably less than wholesale procurement costs, BADC's variation in PDP prices under a VPR would only be about 15 percent.

6.09 By starting FDI-II with uniform PDP prices, the Government may continue with the promulgation that farmers nationwide have equal price access to fertilizers. In practice, however, once FDI-II starts BADC will have non-uniform prices among it's different sales outlets, i.e. TSCs, PDPs, depots, and factories/ports. Furthermore, the areas served by private distributors will have a variable pricing regime. If, as expected, the reformed marketing system under FDI-II is found after 20 months to be an improvement over the present system, then after the twenty-month evaluation, it may be politically more acceptable for the Government to adopt a variable pricing regime throughout its PDP network than it is presently or than it would be to completely eliminate the areas served by BADC. If the Government elects to introduce a VPR, then the depots would revert to PDPs, and PDPs near former depots, factories, and ports would have their sales greatly increased if BADC's PDP prices were to become competitive with the private distributors.

3. Subsidies

6.10 The GOB has subsidized fertilizer use heavily since independence in 1971. The intent of the subsidy has been to encourage fertilizer use in order to boost agricultural production while maintaining relatively low costs of farm production. The results have been increased fertilizer use, a costly drain on public revenues, and a small redistribution of income from non-fertilizer users to fertilizer users. The GOB has reduced the per unit fertilizer subsidy significantly over the last five years and reduced the total subsidy slightly in nominal terms.* The average per unit subsidy (weighted average among various fertilizer products) has fallen from 50 percent in 1978/79 to a projected 19 percent in 1983/84. The total subsidy has fallen from 7.4 percent of the government's annual development budget in 1978/79 to 2.9 percent (about $40 million) in 1983/84. The GOB's plans call for eliminating the fertilizer subsidy completely by 1984/85. USAID fully supports these plans since farm level analyses indicate that most Bangladeshi farmers will still have significant incentives to increase fertilizer use despite substantial price increases. Presently, the paddy/fertilizer price ratio in Bangladesh is nearly twice that of India, Thailand, and the Philippines. An analysis of FDI-II's potential affects on subsidies is presented in the economic and financial analyses, Annex D.

6.11 Under FDI-II, Bangladesh's cooperative system will be expected to continue in the fertilizer distribution and marketing system without subsidies. The cooperatives will continue to compete on equal terms with other wholesalers and retailers.

4. A.I.D. Policy

6.12 A.I.D.'s policy paper on Private Enterprise Development calls for improving the functioning of LDC markets, primarily through encouraging policies that favor free markets and private investments as well as by strengthening institutions which serve the private sector. In this regard, FDI-II promotes and protects a favorable policy climate through: (1) consistent market-oriented pricing policies, and (2) a legal and regulatory framework which promotes competitive market structures, administrative stability, and reliable public services.

6.13 As noted, BADC has a monopoly position in the national level distribution of fertilizer in Bangladesh. Under FDI-II, the GOB will permit private fertilizer wholesalers to compete by lifting from factories and ports for the first time. This policy measure will permit private wholesalers to become national in scope and will increase efficiency in fertilizer distribution and marketing.

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*Official retail fertilizer prices were increased by 29 percent in August 1979, followed by a 28 percent increase in November 1980, 21 percent in December 1981, and 14 percent in July 1982.

6.14 A.I.D. Policy, as set forth in A.I.D.'s policy paper on Food and Agricultural Development, encourages countries to become self-reliant in food, assure food security to their populations, and contribute to broadly-based economic growth. A.I.D. emphasizes four major, inter-related elements to accomplish food and agricultural development objectives: 1) improve country policies to remove constraints to food and agricultural production, marketing, and consumption, 2) develop human resources and institutional capabilities, 3) expand the role of developing country private sectors in agricultural and rural development, and 4) employ all available assistance instruments in an integrated manner and in a way that contributes to the other three strategy elements as well as meeting food security and nutritional needs. FDI-II conforms to these A.I.D. Policies.

B. Social Soundness Analysis

1. Introduction

6.15 This social soundness assessment examines the potential direct and indirect impacts of the project. Assessment is based on the experiences gathered during implementation of FDI-I; fertilizer equity studies commissioned as part of the predecessor project; and other documentary sources.

2. Social Organization and Agriculture

6.16 Rural society in Bangladesh is based upon subsistence rice farming. The household and homestead form basic production and consumption units. Most farms are small, with nearly two-thirds comprising less than 2.5 acres. Holdings are highly fragmented. Small plot sizes and a farming strategy which minimizes risk result in highly complex tenure patterns, with some plots owned and self-cultivated, others leased, and still others managed through hired labor. This complicated pattern of farm enterprise management nonetheless allows for innovation. Changes in cropping patterns toward use of fertilizer-responsive varieties, especially during the winter cropping season, have increased. Use of inputs complementary to these varieties, including irrigation, pesticides, and most importantly fertilizer, has also increased. Weather conditions, and shortage of working capital for input purchases, continue to limit these changes, however.

3. Sociocultural Compatibility

6.17 Fertilizer Distribution Improvement II is intended to accomplish two major policy goals, following up advances made under its predecessor project. First, private wholesaling of fertilizer will increasingly displace public. Secondly, full variable pricing of fertilizer is expected to eventually replace the present system, allowing for more flexibility and in the end more effective outreach to end-users of fertilizers. Benefits thus accrue at system level, to the economy of Bangladesh, and at the level of individual farmers.

6.18 Compatibility of the proposed project with the existing socio-economic patterns in agriculture is high. The project elements follow naturally and logically from its predecessor, and continue the dialogue with the Bangladesh Government in this important sector of the economy. At the national level, there are important benefits which are described in detail in the economic analysis to this project paper. For farmers, there are a number of important direct benefits which, on the strength of experience with the previous project, are likely to emerge.

6.19 First, the establishment of a set of large and medium scale private wholesalers, whose operations reach from ports and factories down to local retailers' level, will result in better service and more competitive prices for fertilizer distribution for local farmers. Second, it should increase prospects for timely availability of fertilizers to farmers, evening out hitches in supply over time and enabling farmers to plan ahead more efficiently for purchase and use of a wider range of fertilizers in more complicated cropping strategies. Third, opening up wholesaling of fertilizer will create productive employment not only for rural entrepreneurs and petty capitalists, who will have access to the credit required to operate businesses, but also to large numbers of workers who may be employed in transport, stocking, and sales in market towns as well as in larger cities.

6.20 In addition to the creation of private large scale wholesaling in fertilizer, the project will continue to provide training to retail fertilizer dealers. Assessment of the effectiveness of this training, and of the functioning of retailers in a quasi-extension role, has yet to be done systematically. However, observations indicate that farmers depend on local dealers for advice and information. It is assumed that providing dealers with more reliable information, and more effective means for communicating it, will encourage diffusion of knowledge of fertilizer technology to farmers, and from farmer to farmer indirectly, at relatively low cost.

4. Equity Issues

6.22 Farm level constraints to demand for agricultural inputs must also be understood and coped with, along with adjustment of agronomic practices which lead to increased efficiency of fertilizer use and profitability of operation. The second (1981/82) Fertilizer Equity Study (chap.8,p.3 of draft) indicates that farmers of all size categories and in all localities obtain their fertilizer for similar prices. The study also notes that price differentials between the more preferred local varieties of crops and fertilizer responsive varieties have narrowed substantially since the 1979/80 Fertilizer Equity Study, implying an increasing acceptability of the new varieties. Two-thirds of all farmers surveyed by the Fertilizer Equity Study used fertilizer over the crop year. However, this does not mean there is a core of one-third who are non-users; but rather that fertilizer use is related to strategies and circumstances. A given farmer may use fertilizer one season and not the next, depending on a variety of factors.

6.23 Sixty-two percent of the farmers reporting fertilizer use owned less than 2.5 acres of land. These smaller farmers used comparatively more fertilizer per acre during the boro (dry) season than larger farmers, implying that smaller farmers are placing increasing reliance on the productivity of the newer, fertilizer responsive crops in what was formerly a less important crop season, and are benefiting from this new pattern. Regional variations in fertilizer use were noted in the Fertilizer Equity Study. Discrepancies between years in a given region are perhaps accounted for by local shortages and/or environmental factors, by changing agronomic practices, and possibly by the continuing inefficiencies of the public sector's wholesaling mechanism.

6.24 The project will permit establishment of large and medium scale fertilizer wholesalers. Present small scale wholesalers now lifting fertilizer from BADC's PDP warehouses will be able to expand their operations under the new procedures proposed for this project by lifting from depots, factories, and ports. However, there is some possibility that at the ports and factories, they will be placed at a competitive disadvantage by the entrance of large scale, better financed, better connected enterprises. This may, however, be alleviated to some extent if credit facilities are made accessible to present small scale fertilizer wholesalers.

6.25 It is likely that, during the early stages of transition to private sector large scale wholesaling, areas distant from outlets may be served less by private distributors than those closer to ports and factories. Over time, as markets near outlets are saturated, this disparity should diminish. And, during this period, BADC will continue to assure adequate supplies to all regions of the country, including distant ones.

6.26 As part of the new project, prices of fertilizer, and its availability, will be monitored on a monthly basis to assist in evening out distribution. Where deficiencies are identified, efforts may be made to correct them and thus reduce the potential for development of black markets in local areas.

5. Spread Effects

6.27 As in its predecessor project, identification of indirect or "spread" effects of this project is difficult. Fertilizer is a key agricultural input, which properly used can have a significant impact upon productivity, and thus upon profitability of farm enterprises. It can create demand for agricultural labor, and may also generate jobs for agricultural processing workers, transporters, and a host of other related activities. Timely and adequate supplies of fertilizer allow farmers to plan for more sophisticated cropping mixes, and to use modern agricultural technology more efficiently. In a primarily subsistence-oriented, risk-averting agricultural economy, a developed, and efficient, fertilizer distribution system can become a key element in effecting major change.

6.28 By creating an extensive network of private sector wholesalers, the fertilizer distribution project will contribute to acceleration of the process of privatization now part of the GOB's official policy. It will do so by providing incentives to enter this market, negotiating the policy changes on the part of the GOB to allow wholesaling firms to function properly, and making commercial credit more readily available for merchants engaged in fertilizer wholesaling and retailing through the banking system. More broadly, implementation of this privatization initiative in the fertilizer sector may offer a model for similar initiatives in other industries in Bangladesh.

6.29 In the course of development of this project, more businessmen, dealing directly with fertilizer and indirectly with a variety of other products which support agriculture, may be expected to appear. Rural prosperity, measured by increased agricultural productivity and employment, accompanies the shift to HYV technology. This is, in turn, dependent in part on the timely availability and effective use of fertilizer. Putting the private sector wholesaling link in place will complete the system in its essentials. Refinements to meet special needs, or to reach specific areas can be made as required. The result of this project should be an efficient set of organizations and processes reaching from the port through wholesale and retail levels to allow farmers to use fertilizer technology more productively.

C. Administrative Analysis

1. Implementing Agencies

6.30 The GOB's principal implementing agency for FDI-II will be the Ministry of Agriculture and specifically the Ministry's (Agricultural) Inputs Cell and the Bangladesh Agricultural Development Corporation (BADC). The project's fertilizer distribution credit will be administered by the Bangladesh Bank, a semi-autonomous government agency. The GOB's implementing agencies for the project's infrastructural improvements may include the Bangladesh Chemical Industries Corporation, BADC, and the Road, Port, and Railway Divisions of the Ministry of Communications. The USAID Project Officer, Engineers, and project funded consultants will have regular contact with these implementing agencies and will work with the top officials responsible for the implementation of the various FDI-II project components.

2. Prime Contractor

6.31 As described above (paragraphs 2.36 through 2.41), the project's Prime Contractor will be hired by the Inputs Cell of the MOA. In terms of organizational arrangements, directly under the Minister of Agriculture is the Secretary of Agriculture and one Additional Secretary. Below the Additional Secretary, the Ministry is divided into three cells, Inputs, Planning & Policy, and Extension & Research, each headed by a Joint Secretary. BADC, a semi-autonomous government corporation, is headed by a chairman who is responsible to the Secretary of Agriculture. FDI-II was designed in collaboration with each of the above government officials but in particular with the Joint Secretary of Inputs who will be the direct counterpart to the Prime Contractor's Chief of Party.

3. FDI-II's Credit Program

6.32 The implementation agency for FDI-II's credit program will be the Bangladesh Bank which is the central bank of Bangladesh and is currently the implementing agency for USAID's Rural Finance Project (388-0037). The Bangladesh Bank's organizational chart is shown in Annex I of the Rural Finance Project Paper. The Bank's department entitled, Bank Control, will manage FDI-II's credit program.

4. Fertilizer Imports

6.33 Implementation of this aspect of the project will be based upon the successful procedures developed under FDI-I. Calculations of fertilizer import requirements will be made within the Supply (MSS) Division of BADC, based upon projections of sales, domestic production, and stock levels, as presented in the Monthly Fertilizer Newsletter. A request to import fertilizer with FDI-II funds will

be made to USAID by BADC. Once USAID and BADC are in agreement as to the terms of the procurement, BADC's Purchase Division will cable the specifications to the Bangladesh Embassy in Washington. The Embassy will issue the IFBs in accordance with AID procurement regulations. USAID will cable AID/W with BADC's request to purchase fertilizer along with the terms and conditions of both product and freight IFBs including the desired arrival date. SER/COM in AID/W will contact the Bangladesh Embassy and will assist them in issuing the IFBs and awarding the contracts. BADC will be the consignee for these imports.

5. Dealer Development

6.34 FDI-II's Dealer Development Program will be implemented by BADC through its Dealer Development and Training (DD&T) Office which is in BADC's MSS (fertilizer movement, storage, and sales) Division and is headed by a Manager (DD&T) who reports to the General Manager (Supply). BADC's organizational chart is shown on page 46 of the FDI-I PP Amendment. The dealer training program as conceived and (partially) implemented under FDI-I seems to be not only administratively feasible but an exceptionally cost effective approach to the transfer and diffusion of productivity-boosting technology in fertilizer use at the farm level. Consequently, FDI-II will continue basically the same dealer training program which will be aimed specifically at retail fertilizer dealers. It will be refined and updated over time to better meet the needs of trainers, dealers, and farmers. More emphasis will be placed on the promotion of well planned, managed, and monitored farmer demonstration plots and field days.

6. Infrastructural Improvement

6.35 Since the infrastructural improvements may involve as many as three Ministries (MOA, MI&C, and MOC), the A&E firm selected to design and supervise construction of the improvements will be on an AID-direct contract while the firm(s) performing the construction will be on contract with the appropriate government agency. If the improvements involve only one ministry, USAID will consider using a host country contract for the A&E services.

D. Technical Analysis Description

6.36 The Technical Analysis, presented in Annex B, concentrates on agricultural production and the fertilizer sector in Bangladesh.

E. Summary of Financial and Economic Analyses

6.37 This analysis presents findings on the net benefits accruing to farmers and merchants in Bangladesh due to the project. The principal difference between the financial and economic analyses (Annex D) is in the determination of what set of prices is to be used. Both types of analysis must be used. The project must present a positive discounted net value to the society under both sets of prices. Financial prices are those currently prevailing in the markets for goods and services including all distortions. Economic prices attempt to subtract the effect of policy induced distortions such as tariffs, duties, import quotas, restrictions, and subsidies. Normally one expects to find many manufactured goods' prices in a country such as Bangladesh to be higher than the world market price due to the protective nature of the trade barriers imposed. However, in the case of the two commodity groups of greatest interest in Bangladesh one finds the opposite to be true. Both fertilizer and foodgrain prices are suppressed below their international or border price levels. Border prices for exportables will always be lower than border prices for importables because of the size of international transportation costs. In our calculations border prices are always least cost C & F prices for Chittagong since both foodgrains and fertilizers are imported.

6.38 Financial analysis examines costs and benefits first in domestic Taka costs and then converts at the prevailing exchange rate of 24.7 Taka per dollar. Economic analysis is conducted in US dollar border price terms. In the economic analysis there is no neccessity for consideration of non-tradeables which would require construction of an entire set of appropriate shadow prices (economic or accounting prices.)

6.39 Benefits deriving from this project are of three kinds: (1) More imaginative and responsive wholesale marketing of fertilizer will enable Bangladesh to regain an accelerated rate of growth in fertilizer sales. Bangladesh will not be able to recapture its early success of 15% growth in sales per year, but should be able to overcome the relatively slower growth of recent years. The best estimates indicate that a sales growth rate of 8 percent is both possible and desireable; the difference between 8 percent and 5 percent growth, or an additional 3 percent per year will be converted into grain (and to a minor extent horticultural products) whose values can be estimated and compared to project costs.

6.40 (2) For the level of fertilizer already being marketed in the country, there will be cost reduction in the areas near source points as private distributors capture markets and underprice BADC. The BADC has estimated that soon after project initiation

about 2/3 of the urea market and about 2/5 of the non-urea fertilizer markets will be taken over by private distributors. This will result in cost reduction to the purchasers of fertilizer, known in economic language as increases in Consumers' Surplus. (Almost all will accrue to consumers, not suppliers given the nature of the supply and demand relationships.)

6.41 The financial evaluation of this cost reduction is straightforward; the savings can and have been estimated. An equivalent economic evaluation is considerably more difficult because of the nature of the subsidies involved and the lack of a consistent set of subsidy estimates from the BADC. Nonetheless the best estimates available indicate that the reformed national fertilizer distribution system under FDI-II will have no significant effect on the subsidy.

6.42 (3) To the extent that USAID supplied project inputs are directly used to finance required fertilizer imports, benefits can be attributed to the fertilizer used in producing additional agricultural crops. The benefits from this incremental production can be compared to the cost of project supplied fertilizer, both in financial and economic prices.

6.43 The three sets of project benefits may all occur if the project is successful in reforming wholesale fertilizer marketing; they are not mutually exclusive alternatives. In relative magnitudes of values the largest net benefit stream occurs because of (1) above, namely an increase in fertilizer consumption growth rate from 5 percent per year to 8 percent per year. The second largest set of benefits are from additional grain produced directly attributable to project supplied imported fertilizer (3).

6.44 In relative terms the smallest set of project benefits derives from cost reduction (2) but it must be made clear that these are net benefits.

6.45 Table VI-1 gives summary estimates of benefits deriving from the project and evaluated at three level of discount rates, 20, 24, and 28 percent per year. The table indicates benefit streams which are considerably larger than the cost stream. The principal reason for their being so much larger than the cost stream is the increase in demand growth target from 5 percent to 8 percent. This item alone accounts for about 60 percent of all benefits. While 8 percent annual growth certainly should be an achievable target growth rate of consumption, the project does not rise or fall on the achievement of this target. The sum of the other two benefit streams, (2) Cost Reducton and (3) Incremental Grain Production from project supplied imported fertilizer alone justify the project and exceed the present value of the cost stream.

TABLE VI-1: PROJECT BENEFIT STREAMS, IN BOTH FINANCIAL AND ECONOMIC TERMS, DISCOUNTED. (in '000 $)

Item	Discount Rate	Financial	Economic
(1)	Increasd Demand for Fertilizer (from 5% to 8% growth/year)		
	20%	145,045	134,919
	24%	118,624	110,343
	28%	98,328	91,464
(2)	Cost Reduction: Increase in Consumers' Surplus for fertilizer currently marketed		
	20%	30,020	*
	24%	26,065	*
	28%	22,902	*
3)	Incremental Grain Produced with project supplied imported fertilizer		
	20%	49,634	59,074
	24%	45,564	54,229
	28%	42,023	50,015
Total Benefits: (sum of above)			
	20%	224,699	193,993*
	24%	190,253	164,572*
	28%	163,253	141,479*
Project Costs: (assuming equal annual costs of $13 million)			
	20%	38,878	38,878
	24%	35,690	35,690
	28%	32,916	32,916

* Cost Reduction in an economic evaluation means BADC subsidy reduction and is exceedingly difficult to evaluate with the information at hand. See Annex D for a discussion of the nature and size of subsidy and probable subsidy levels with and without project under various assumptions.

VII. CONDITIONS AND COVENANTS

A. Conditions Precedent to Initial Disbursement

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish in form and substance satisfactory to A.I.D. documentary evidence that private fertilizer distributors are permitted under Bangladesh Government laws and regulations to purchase fertilizers from ports and factories at prices satisfactory to the Bangladesh Government and to A.I.D.

B. Special Covenants

1. Once the lifting prices of fertilizers are established at the factories and ports and until the results of the Twenty-month Evaluation are known, the Government of Bangladesh (GOB) will maintain a constant discount for wholesalers at the factories and ports.

2. The Government will continue to take those legal, administrative, and procedural steps required to allow the private distributors to operate effectively and freely.

3. Starting in GOB FY 1985/86 and throughout the remainder of this project, the Government will establish annual budgetary allocations as necessary to cover the customs, duties, and taxes of consultants and commodities financed under this project.

4. The Government will provide evidence and assurance that the GOB is executing a maintenance program, acceptable to USAID, for all warehouses constructed with AID funds.

5. The Government will continue to maintain national fertilizer stocks at appropriate levels.

6. The Government will report monthly fertilizer sales by type of sales outlets, e.g. PDP, depot, factory, or port, and the location of the sales outlet, e.g. Chalna port or Zia factory.

7. The Government shall continue to undertake a series of discussions with A.I.D. on means of improving the distribution of fertilizers nationwide.

8. The Government will prevent the fertilizer subsidy from increasing and will continue to phase out this subsidy.

VIII. EVALUATION ARRANGEMENTS

A. Twenty-month Evaluation

8.01 A key element in implementation of FDI-II will be an evaluation of the reformed marketing system's performance four crop seasons after the critical Condition Precedent (enabling private wholesalers to lift fertilizer from factories and ports) has been met by the GOB. An evaluation team will assess functioning of the linkages between the public and private sectors, between wholesale and retailing levels, and between the distributors and the farmer. The efficiency of the overall system, compared to the previous distribution system managed by the GOB, will be determined. Constraints on operation of the distribution system will be identified, and recommendations for improvement in project implementation will be made. This evaluation (see, paragraph 2.42) will establish the framework for further negotiations with the GOB concerning the extent of continuing USAID participation in fertilizer project activities. This evaluation will contain recommendations for future system and project component evaluations.

B. Dealer Development & Training Program

8.02 Since this program began functioning in late CY 1982, its procedural elements have been subject to continuous auto-evaluation on the basis of the following criteria: (i) amount of training material produced and its apparent appropriateness for dealers and farmers, (ii) number of trainers trained, (iii) number of retailers trained, and (iv) evaluation by participants (retailers) on the impact of the training in improving their knowledge. During the spring of CY 1985, the DD&T program will be evaluated by an external contractor under the project's prime technical assistance contract. The purpose of the evaluation will be to determine (a) the quality and quantity of information that the BADC trainers are providing to the dealers, (b) the level of technical competence of the dealers, i.e. their capacity to provide quality technical advice to farmers, (c) the quality and quantity of information that dealers are providing to farmers, (d) the extent to which farmers are putting the advice to use, and (e) what measures can improve the performance and effectiveness of the program.

C. Infrastructural Improvements

8.03 An evaluation of the distribution networks of private large scale wholesalers will be carried out by an external evaluation team hired by the prime contractor. This evaluation will take place after private wholesalers have been lifting fertilizers from factories and ports for one year. The purpose will be to identify physical constraints which hamper wholesalers' procurement and movement of fertilizers nationwide and to identify infrastructural improvements for

ANNEX - A

GOB REQUEST FOR ASSISTANCE

(RESERVED)

B. TECHNICAL ANALYSIS

(A) Agricultural Production

1. Foodgrain Production

As noted above, Bangladesh is a food deficit country with nearly all productive land under cultivation. Cropping intensity is about 155 percent. Increased food production required to achieve self-sufficiency, even at a relatively low nutritional level, must come mainly from higher agricultural production output per unit of land. This will require increased and complementary use of inputs such as fertilizers, irrigation, improved seed varieties, pesticides and improved farm management techniques.

The major constraints to agricultural production have been the scarcity of arable land, climatic hazards (cyclones, droughts, and floods), inadequate facilities for irrigation, drainage and flood control, weak agricultural support services, small and highly fragmented landholdings, and inadequate supply of key production inputs such as improved seeds and fertilizers.

Rice is the country's staple food and the production of this grain dominates land use, accounting for almost 80 percent of the cropped area. Wheat, next in importance, has only recently been introduced and is now grown on 5 percent of the area cropped with 1982/83 production over one million tons (TABLE B-1).

Despite adverse weather during the last three of the past five years, there has been increased foodgrain production. During this period, rice production grew an average of 2.2 percent annually with wheat production growth almost 26 percent and an overall foodgrain increase of 3.1 percent. This increase for all grains compares with a growth rate of only 2.0 percent annually between the years, 1960/61 and 1982/83 (TABLE B-1).

All growth in rice production over the last five years was due to the increased production of boro rice which amounted to 11.2 percent annually, roughly one half attributable to higher yields and one half to increased acreage (TABLE B-2). During this period, production and yield trends of both aus and aman rice crops were either flat or drifting downward while wheat yields rose rapidly as improved varieties were introduced. In the preceding five years this improvement in foodgrain production has been selective. It occurred during the dry (boro) season and was accompanied by a rapid expansion in irrigation. Areas utilizing modern irrigation methods increased during this period by an average of 313,000 acres annually compared to only 92,000 acres in the prior five years (TABLE B-3).

Nearly all boro rice is irrigated and roughly one half of the wheat. Most wheat is an improved variety. Over two-thirds of boro rice acreage is planted with HYVs while less than one-fifth of aus and aman rice acreage is under HYVs.

2. Production of Non-foodgrains

With regard to other crops, production of pulses, oilseed and spices drifted downward over the past five years, and jute (which presently occupies about 5 percent of the area cropped) and fodder crops fell sharply. However, sugarcane and fruit production increased moderately. Output of potatoes and vegetables moved up sharply.

3. Food Imports

Wheat and rice imports totalled 8.53 million tons during the last five years, 1978/79 - 82/83, and totalled 7.96 million during the preceding five years (TABLE B-4). Thus, during this period while foodgrain production increased at a growth rate of 3.1 percent per year, foodgrain imports increased at 1.4 percent annually. As noted above, oilseed production has been drifting downward over the past five years. Imports of edible oil during that period were more than double those of the preceding five years.

4. Food Supply and Demand

The foodgrain deficit from domestic production for 1982/83 is estimated to be 1.27 million tons.* With a population growth rate of 2.5 percent annually, not until 1989/90 will domestic foodgrain production be greater than consumption requirements if foodgrain production grows by 4 percent annually. If foodgrain production were to grow by 4.5 percent annully, production would first exceed consumption requirements in 1987/88.

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* This assumes a population of 93.6 million in 1982/83 (World Bank); a foodgrain requirement of 15.5 oz/capita/day; a population growth rate of 2.5 percent per year.

5. The Goal of FDI-II

During the past five years while foodgrain production increased at 3 percent per year (TABLE B-1), fertilizer consumption grew at 5 percent per year (TABLE B-3). The goal of FDI-II is to increase agricultural production (primary food production) over the next five years at a rate of 4 percent annually as a result in part from an annual growth rate in fertilizer sales of at least 8 percent. Projection of the anticipated fertilizer sales (discussed in the next section below) is made based on two key parameters, namely (i) rate of increase in area planted to HYV and (ii) rate of increase in irrigated area. For the period covered by FDI-II, with a 3.5 crop response ratio* (crop to fertilizer, on a product weight basis) which is based on current cropping patterns, farming practices, and degree of water control, fertilizer alone is expected to contribute up to 50 percent each year to the 4 percent annual increases in agricultural production. During GOB FY 1982/83 with weather conditions roughly normal, foodgrain production increased 5 percent while fertilizer consumption, the area under HYV, and the area under irrigation increased 14, 10, and 22 percent, respectively (TABLE B-3).

* ADB, "Third Crop Intensification Program," Project Paper, Appendix 4, November 1983.

TABLE B-1: Foodgrain Production Figures and Past Trends
('000 Long Tons)

Year	Aus	Aman	Boro	All Rice	Wheat	All Grain
1978/79	3288	7429	1929	12,464	480	13,132
1979/80	2809	7303	2427	12,539	810	13,349
1980/81	3237	7837	2589	13,663	1075	14,738
1981/82	3218	7095	3102	13,415	952	14,367
1982/83	3018	7483	3490	13,991	1078	15,069
Annual Growth Rates (Percent)						
1982-83	-(6.2)	5.5	12.5	4.3	13.2	4.9
1978-83	-(0.2)	-(0.1)	11.2	2.2	25.5	3.1
1973-83	2.0	2.4	4.3	2.7	32.7	3.5
1961-83	1.2	0.5	9.6	1.7	18.3	2.0

Source: USAID/Dhaka, Food and Agriculture Office.

TABLE B-2: Yields and Acreage under Rice and Wheat, 1978/79-1982/83

Year	Rice Aus	Rice Aman	Rice Boro	Total Rice	Wheat	Total Foodgrain
Acreage ('000 Ac)						
1978/79	7995	14347	2625	24992	654	25646
1979/80	7505	14762	2839	25106	1071	26177
1980/81	7689	14918	2868	25478	1461	26935
1981/82	7774	14854	3218	25846	1320	27166
1982/83	7805	14800	3545	26150	1550	27700
Yields (kg/ha)						
1978/79	1009	1271	1788	1242	1825	1258
1979/80	918	1214	2099	1226	1857	1252
1980/81	1034	1289	2217	1317	1807	1343
1981/82	1017	1173	2367	1275	1771	1299
1982/83	949	1236	2391	1307	1822	1336

Source: Bangladesh Bureau of Statistics.

TABLE B-3: HYV Foodgrain Acreage, Fertilizer Use, and Area Irrigated by Modern Methods, 1973/74 - 1982/83

GOB Fiscal Year	HYV Foodgrain Acreage a/ ('000 Ac)	Fertilizer Nutrient Consumption b/ ('000 MT)	Area Irrigated By Modern Methods c/ ('000 Ac)
1973/74	3,869	181	1,499
1974/75	3,648	132	1,538
1975/76	4,051	216	1,607
1976/77	3,572	242	1,402
1977/78	4,189	341	2,026
1978/79	4,982	359	2,230
1979/80	5,950	405	2,533
1980/81	6,832	422	2,634
1981/82	7,015	403	2,943
1982/83	7,728	461	3,590

Sources: a/ BBS (Rice & Wheat) b/ BADC c/ BWDB.

TABLE B-4: Imports of Foodgrains and Edible Oil
('000 MT)

Year	Wheat	Rice	Wheat Plus Rice	Vegetable Oil
1973/74	1,534	82	1,616	17
1974/75	2,202	266	2,468	49
1975/76	1,040	396	1,436	61
1976/77	603	192	795	41
1977/78	1,314	304	1,645	71
1978/79	1,119	55	1,174	70
1979/80	2,070	712	2,782	78
1980/81	975	82	1,057	141
1981/82	1,094	142	1,236	109
1982/83	1,943	335	2,278	120
TOTALS				
1973/74 - 77/78	6,720	1,240	7,960	239
78/79 - 82/83	7,201	1,326	8,527	518

Source: World Bank, Report No. 4277, dated March 4, 1983.

(B) The Fertilizer Sector

1. Fertilizer Projections

Table B-5 below presents consumption projections for the primary fertilizers over the life of FDI-II. Compounded, average, annual demands for the nutrients, N, P_2O_5, and K_2O, are projected to grow at 8 percent, 9 percent, and 9 percent, respectively (TABLE B-6). These growth rates were formulated along the lines of the IFDC calculations presented in Chapter VI, "Bangladesh Policy Options for the Development of the Fertilizer Sector," May 1983. Table B-6 indicates the fertilizer nutrient supplies (domestic production and imports) required to meet the projected consumption of nutrients. Domestic production projections and import projections, on a product basis, are shown in Table B-5.

In terms of urea, TSP, DAP, and MP, the projected import requirements over the life of FDI-II total 63,000, 949,000, 516,000, and 329,000 tons, respectively, or a total of 1.857 million product tons. This assumes that DAP will meet annually 27 percent of the nation's P_2O_5 requirements which will also contribute 4.6 percent annually to the nation's N requirements. The total CIF value of these projected imports is estimated at $421 million (urea, $215/MT; TSP, $220/MT; DAP, $275/MT; and MP, $170/MT).

2. Fertilizer Sales

Over the past decade and a half fertilizer consumption grew an average of 11 percent annually compounded increasing from 108,000 nutrient metric tons in 1968/69 to 461,000 in 1982/83 (TABLE B-7). Consumption of P_2O_5 grew 13 percent annually compared with 10 percent for N and 11 percent for K_2O. During this 15-year period, there was a sharp shift in the linear growth trend. This occured in 1977/78, when fertilizer sales increased 41 percent from the previous year. Since then, growth has averaged a modest 4.9 percent annually. A number of factors have contributed to this decreased rate. These include unfavorable weather conditions which adversely affected fertilizer sales in three out of the last five years. During this period, the main exports, jute and jute goods, were affected by weak demand in world markets during the international recession. The growers' price of raw jute, farmers' most important cash crop, decreased from Tk. 142/maund in 1978/79 to Tk.114 and Tk.102, respectively, in the following two years. This price recovered to Tk.133/maund in 1981/82 and was above Tk.140 during most of 1982/83. Jute acreage and jute production were decreasing during this period.

3. Fertilizer Prices

From the end of 1977/78 to the beginning of 1982/83, the retail price of urea has increased 147 percent. The corresponding increases

for MP and TSP were 175 and 192 percent, respectively (Table B-8). These price increases, instituted by the GOB to contain the soaring fertilizer subsidy, were much greater than the growth in farm output prices. As a result, the ratio of paddy procurement prices to urea prices has been falling from 1.40 in 1977/78 to 0.91 in 1982/83 but is still nearly twice that of the Philippines, India, and Thailand.

4. Application Rates

Bangladeshi farmers apply only one third of the amount of fertilizer nutrients applied per acre in Malaysia and China and about one half the amount of fertilizers applied per acre in Sri Lanka and Indonesia. In Bangladesh, 95 percent of the fertilizers are applied on foodgrains. Fertilizer nutrients applied to all cropped land averaged 24.1 lbs/ac in 1977/78, increasing to 30.9 lbs/ac in 1982/83, an average growth of 1.4 lbs/ac (or 5 percent) annually (TABLE B-9). On average Bangladeshi farmers apply approximately 4 times as much P_2O_5 as K_2O, roughly 9 times as much N as K_2O, and nearly 2 and one half times as much N as P_2O_5. The N/P_2O_5 ratio has been slowly declining during the past decade. The ratio was 2.4:1 in 1982/83. This ratio is expected to continue to decline during the project life but at a very slow rate. Growth in the use of K_2O has been very slow, and over the project life the P_2O_5/K_2O ratio is not expected to change much from its current level. Data show Bangladesh's gross cropping area growing at an average rate of one percent or 332 thousand acres annually, 1977/78 - 82/83 (TABLE B-9).

5. Agronomic Considerations

Typical Bangladeshi farmer practices of broadcasting urea on soil or in flood water lead to large losses of ammonia by volatilization. While seedlings need some N, simply reducing the amount of N in the basal application (and increasing the amount in top dressings later when plants and roots are more developed) could do much to reduce N losses. In this regard, DAP has been suggested as an ideal fertilizer for basal application. While fertilizer response trials often show high responses to applications of potassic fertilizer to rice, it is difficult to generalize from these trials. In particular the plot selection criteria are seldom identified. The very slow growth in potassic fertilizer consumption over the past five years (TABLE B-7) suggests that farmers themselves do not generally realize the response that might be inferred from the above trials. The evidence seems to be that for rather large areas of the country, the soils contain adequate potassium for most crops and that the currently recommended application rates are not demonstrating a profitable response.

To a lessor extent the same also applies to phosphates. An indication of this is the very slow growth in TSP consumption (but fairly rapid growth in DAP) over the past 5 years (TABLE B-7). The

official recommendations for all crops and at all locations always contain both phosphatic and potassic applications. These recommendations lack credibility with some farmers. During the next five years, intensive cropping is, however, expected to increase the need for both P_2O_5 and K_2O applications.

Fertilizer response trials indicate that sulfur (S) deficient soils exist over a rather large portion of the country. Response to other nutrients is limited by this deficiency and rather spectacular yield increases have been obtained by the addition of sulfur when other nutrients were present. As cropping intensities continue to increase, sulfur deficient soils will become more widespread. It was recently determined by a USAID financed IFDC consultant that the gypsum produced at the Chittagong TSP plant is a suitable source of agricultural sulfur. Two tons of gypsum, which is about 17 percent S, are produced with each ton of TSP. If the Chittagong plant produces 176,000 tons of TSP annually, 152,000 tons of gypsum would be produced annually. At the factory there is presently a stockpile of gypsum estimated at 250,000 tons. In the past, about 10,000 tons of this gypsum were used annually for commercial purposes and the remainder was considered a waste. Farmer groups and dealers have begun transporting this gypsum (nearly 7,000 tons in 1982/83) from the factory by truck and rail for their own use, and BADC has also begun on a small scale (1,600 tons in 1982/83) to stock this gypsum at some of its PDPs.

There are widely ranging estimates of Bangladesh's annual sulfur agronomic "needs". It appears that the present supply of gypsum will be adequate for a number of years to come. Response trials indicate that with the application of 100 lbs of gypsum per acre, costing the farmer Tk. 60-65, yields can be increased as much as 200 percent in severly dificient soils. Sulfur deficient soils are estimated at about 3 million acres.*

Response trials to zinc have indicated that about 12 percent of the soils are deficient in this element, representing about 4 million acres. Zinc sulphate supplied by USAID is being distributed and sold at full cost (no subsidy) in areas identified as having this problem. Assuming even a modest increase in yields of 20 percent, on only half of the zinc deficient area, would result in an immediate increase in production for one year of about 350,000 tons of rice, with further gains to be made as the practice spreads.

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*Estimates of sulfur and zinc deficient acreage and yield responses used in this section come from the "Report of BRRI Review Mission" (November 14-23, 1982), Bangladesh Rice Research Institute, Bangladesh.

6. Participation in Fertilizer Use

The average farm size in Bangladesh is about 2.5 acres with 80 percent of farms under 5 acres. Farms are often fragmented into as many as 5 to 10 separate plots. Sample data indicate that slightly over 60 percent of the nation's farmers use fertilizer and that a slightly larger proportion of the larger farmers (farm holding of more than 2.5 acres) use fertilizer than do smaller farmers (TABLE B-10). The latter, however, apply more fertilizer per unit of land than do the larger farmers. The data also indicate that the smaller farmer is not discriminated against with respect to the purchase price of fertilizer.

With respect to tenure (owner-operated, sharecropped and cash rented land), a larger proportion of farmers with cash rented land use fertilizer than do the other two categories. They also use more fertilzer per unit of land (TABLE B-11). There is little difference between the owner-operated and sharecropped categories with respect to the proportion of users or the amount used.

7. Domestic Fertilizer Production

BCIC, a government corporation, owns and operates four fertilizer manufacturing plants which produce urea, TSP and ammonium sulphate (AS). Combined installed production capacity is 1,017,500 MT/year of urea, 152,000 MT/year TSP and 13,200 MT/year AS (TABLE B-12). As Table B-12 indicates, these factories have not been producing at their installed capacities. Construction of the large urea plant at Ashuganj with an installed capacity of 528,000 MT/year has only recently been completed. However, this factory, named the Zia Fertilizer Company Ltd. (ZFCL), continues to have severe startup problems. It produced only 62,000 tons of urea in 1981/82, its first year of operation, and 118,000 tons during 1982/83, and the plant has yet to meet its performance test. BCIC is adding new plant facilities, the Polash Urea Fertilizer Project, at Ghorasal for the production of 100,000 MT/year of urea. Technical and financial assistance is being provided by the People's Republic of China. The plant is expected to begin operating in early FY 1984/85. With ADB assistance, BCIC has began construction of another large fertiizer plant at Chittagong which is to have an installed capacity of 561,000 MT/year of urea. This plant is expected to be in operation by mid CY 1986. With the completion of these projects, Bangladesh will have an installed production capacity of 1.63 million MT/year of urea.

As reported by the urea factories, domestic production costs, both economic and financial, per unit ton of urea have been held below international prices (F.O.B., Northern Europe). The Government has maintained the price of natural gas, used by these

factories to produce the urea below world market prices. Production costs at the Chittagong TSP complex have been (about $240/MT in 1982/83) higher than CIF import costs (about $220/MT) of TSP. All sulphur and rock phosphate have to be imported and these inputs account for approximately two-thirds of production costs. As noted, it has recently been established that there are fairly large areas in the country which are sulfur deficient and that the gypsum produced at the TSP plant in Chittagong is a good agricultural sulfur source. The S in a ton of gypsum (approximately 170 kgs) is worth $25 when valued at the CIF import price of S ($145/MT). Since two tons of gypsum are produced for every ton of TSP, this makes the economics of domestic production of TSP more attractive.

8. Fertilizer Imports

The country's fertilizer imports averaged 229 thousand (product) tons annually 1973/74-77/78, and 466 thousand tons, 1978/79-82/83, and are expected to average 378 thousand tons, annually over the 5 year life of FDI-II (TABLE B-13). Over the past three years, domestic production of urea has grown faster than consumption. The import trend of N has, therefore, been downward. The trend of domestic production of TSP, however, has been flat while the import trend for P_2O_5 has been rising. During the past three years, the import trend of MP (K_2O) has been declining as surplus inventory is being consumed. In recent years, Bangladesh has relied entirely on loan and grant assistance to finance its fertilzer imports. The country has been receiving this assistance from a large number of donors as evident in Table B-14. During the 12 year period 1971/72 to 1982/83, 27 national and international agencies provided grants or loans for the importation of 3.5 million tons of fertilizer. The GOB's fertilizer importation purchases using its own funds amounted to only about 4 percent of the total purchases during this period. The largest contributor during this period has been USAID which provided approximately 21 percent of aggregate imports, followed by the Netherlands (13 percent), Canada (11 percent), Saudi Arabia (10 percent), IDA (6 percent), and Norway (5 percent).

In 1979/80, USAID financed the importation of the first bulk fertilizer (34,000 MT) on a trial basis. Since then, the volume of bulk imports has increased rapidly reaching nearly 240,000 MT (79 percent of all imports) in 1982/83. This shift to bulk imports is expected to continue due to potential cost savings of $30 to 40/MT.

9. Fertilizer Exports

In both 1981/82 and 1982/83, Bangladesh exported urea fertilizer (about 40,000 tons in the prior year and 72,000 in the latter). The export agreements were arranged on the assumption that the performance of the new Ashuganj plant would be better than it has been.

10. Fertilizer Storage Capacity

Storage of fertilizers by BADC is currently done at three levels: (i) at transit godowns located in 11 warehouses in Chittagong, Khulna, and Narayanganj (TABLE B-15); (ii) at Primary Distribution Points (PDP), numbering about 100 at present and generally located in major towns nationwide; and (iii) in about 120 Thana Sales Centers (TSC) considered to be too remote to be served by private dealers.* As of December 1, 1983, BADC's fertilizer warehouse capacity totalled 435,000 tons (TABLE B-15). Capacity under construction is about 194,500 tons and assistance has been arranged for an additional 75,500 tons capacity. Assistance is being provided by the Netherlands, USAID, IFAD, the World Bank and ADB. Based on projections of growth in fertilizer consumption, BADC will have adequate quality storage capacity by 1986 with the full implementation of the national fertilizer storage plan.

Table B-15 shows that BADC continues to lease more warehouses than it owns: 640 versus 232. Many of these leases will soon be terminated as the warehouses under construction are completed. BADC has transit godowns located at Chittagong and Khulna ports and Narayanganj. Transit storage capacity totals 39,000 tons (5 godowns owned with a capacity of 36,000 tons and 6 rented with acapacity of 3,000 tons). Data for the 12-month period July 1982-August 1983, show average monthly transit storage utilization at both ports as 36,000 tons.

In addition to BADC's storage, there is also factory storage. For the currently producing factories, the rated storage capacity is 139,500 product tons (TABLE B-16). Over the 12-month period July 1982-August 1983, monthly stocks at all factories averaged a total 58,000 tons. The range was from a low of 17,000 tons to a high of 109,000 tons.

11. Stock Management and Reserves

GOB has set targets for in-country fertilizer stocks which BADC tries to maintain. For urea, the target is to maintain stocks (exclusive of the factories' stock) which are equal to three months

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* At the launching of NMS, there were 423 TSC in the whole country, mostly rented by BADC. Over 300 of these are being phased out (closed down or the rental arrangements terminated) in favor of private sector distribution in the area heretofore served by these TSCs. BADC is expected to service the remote thanas at least over the short term or until the private sector takes on such function. Presently, sales from TSCs amount to less than 7 percent of BADC's fertilizer sales.

of projected sales or roughly 25 percent of the annual projected sales. The target stock level for the other major fertilizers is a five months supply or about 40 percent of anticipated annual sales. As documented in the November FDI-I Joint Government Evaluation, BADC has not been very successful in maintaining these 3 and 5 month buffer stock levels.

Table B-17 shows annual BADC procurement (domestic and imports) minus sales over the 13-year period, 1969/70 - 1981/82. These data indicate that while BADC's average annual buffer or reserve stocks grew by an average of 15,000 tons annually (196 divided by 13), there were very wide swings in BADC's reserves (from a draw-down of 158,500 tons in 1976/77 to a build-up of 206,200 tons in 1978/79). Reserve stock management can be improved through better planning, integration of functions and quicker adjustments to departures from projections.

Under FDI-II, the maintenance of adequate national reserve stocks is not anticipated to be a problem. As noted above, the currently producing fertilizer plants have a storage capacity of 139,500 tons. The urea factories ordinarily maintain a combined average monthly stock of 30,000 - 40,000 tons. The Chittagong TSP Plant ordinarily maintains 10,000 - 15,000 tons of stock. Typically, at any one time 35,000 - 45,000 tons are in transit, and in addition 30,000 - 40,000 tons are in the transit warehouses. Under FDI-II, private distributors are expected to promote more storing of fertilizers by local dealers which could add an additional 25,000 - 30,000 tons to the regional stocks. All of the above combined with what BADC and the private distributors will store should adequately meet the nation's needs for reserve stocks.

12. Fertilizer Transport

BADC has only very limited transport facilities and accordingly relies on private and public transport concerns that move fertilizer from ports or factories to BADC warehouses and sales centers. Fertilizer is transported in-country by rail, water and road. In 1981, excluding intra-district movement, 34 percent of the fertilizer that moved from factories and ports was transported by rail; 23 percent was by truck and 43 percent by water transport. BADC contracts, through competitive bidding, for water and road transportation. The rail is exclusively government owned and operated. The substantial private sector capacity in both water and road transport is expected, under FDI-II, to adequately meet the needs of private national fertilizer wholesalers and to permit them to deal with transport requirements by themselves, possibly at lower costs than when undertaken by BADC.

13. Agricultural Support Services

Agricultural extension has had limited effectiveness in Bangladesh. Training of extension agents has been poor. Subject matter support and regular in-service training have been minimal. Consequently, extension agents often have very little to teach farmers which adversely affects agents' self-confidence, morale, and job-interest. Inadequate travel allowances for extension agent supervisors has inhibited mobility and adquate field supervision. A recent appraisal notes that extension agents "have limited their contact to a few large farmers. Most farmers have not been contacted by any extension agent inspite of the multiplicity of such (extension) agencies." Agricultural Extension is receiving major assistance from the World Bank and should be improving.

Bangladesh has an extensive agricultural research system. Although its performance has been mixed, it has developed a sound foundation upon which to build. More advanced training is needed for the system's researchers. Regional adaptive and farming systems research has been neglected, and due to the large number of research organizations, there has been duplication of effort. The World Bank and USAID are providing major assistance in order to eliminate the system's shortcomings and build on the foundation which has been carefully set.

14. Farmer Production Loans

As for farmers' credit, while the Government in recent years has been encouraging and increasing the availability of institutional credit to the agricultural sector, non-institutional credit sources still provide as much as 85 percent of the total credit requirements in rural Bangladesh, at interest rates of 50 to 200 percent per year. The Government's agricultural credit program is carried out through the Bangladesh Bank (the central bank) which channels funds to the Bangladesh Krishi Bank, the Bangladesh Jatiya Samabaya Bank Limited, the four nationalized commercial banks (Sonali, Janata, Agrani, and Pubali) and the TCCA/KSS cooperatives for lending to farmers. Farmer production loans* from these sources are given at an interest rate of 17.5 percent per year from cooperatives and 16 percent per year (recently raised from 12 percent) from the banks with a penalty of 6 percent per year on overdues. The credit alloted for fertilizer is given in-kind; that for pesticides, seeds, and labor in cash. Total disbursement of agricultural credit increased nearly 400 percent during the past 6 years. Total recovery from agricultural loans has averaged 50 percent over recent years.

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* The maximum available loan amount per acre ranges from about Tk. 1,000 for local aman rice to about Tk. 2,500 for HYV boro rice.

15. Fertilizer Distribution Credit

A credit program for wholesalers to finance fertilizer puchases was introduced country-wide in November 1982. It is referred to as the BADC Dealers' In-kind Credit Program and is accessible to any thana wholesaler upon meeting certain criteria. The main features of the program are as follows: 1) Credit is granted in-kind on a revolving basis and may be turned-over any number of times, subject to the terms and conditions as stipulated; 2) Credit is granted for purchases of 15 to 25 tons of fertilizer subject to a credit ceiling of 100,000 takas' worth of fertilizer; 3) The credit is to be granted against a bank guarantee (any scheduled bank) which is held by BADC and is valid for 12 consecutive months from the date of issue; 4) A wholesaler must make full payment on his outstanding credit to BADC before purchasing any additional fertilizer from BADC; 5) The credit is interest free for 60 days from date of lifting. Extensions beyond the 60 day period may be requested. (If the extension is approved by BADC, interest is charged at 5 percent per month during the approved extension period. If the loanee fails to make repayment within the first 60 days and has not obtained an approved extension, BADC shall present the bank guarantee to the issuing bank for payment); and 6) No credit is to be granted for a period of 60 days prior to the expiration of a bank guarantee. (Within this period, BADC shall present the bank guarantee for payment of unsettled accounts, if any.)

As of November 1983, 169 loan applications had been received from wholesalers in 18 out of 20 districts. All were approved. These approved loans total taka 16 million, an average of taka 95,000 per loan. Over the past 12 months, the purchases from these loans amounted to only a small fraction of BADC's fertilizer sales. The major factor limiting utilization of this program has been the difficulty experienced by wholesalers in obtaining the required bank guarantee. In order for a wholesaler to qualify for the bank guarantee, some banks were requiring up to 110 percent of the amount of the proposed in-kind loan to be held by the bank in a savings and/or checking account. This limiting factor has been mitigated by a recent directive to all nationalized banks stating that in order to obtain a bank guarantee for participation in BADC's in-kind credit program, banks may require a maximum of 30 percent of the proposed loan to be held by the banks. This program is now expected to be utilized by increasing numbers of small scale wholesalers.

TABLE B-5: Projected Requirement and Availability of Fertilizers, 1983/84 - 1987/88 ('000 MT)

Item	1983/84				1984/85				1985/86				1986/87				1987/88			
	Urea	TSP	DAP	MP	Urea	TSP	DAP	MP	Urea	TSP	DAP	MP	Urea	TSP	DAP	MP	Urea	TSP	DAP	MP
Sales Projection [a]	678	220	83	55	732	241	89	60	789	263	98	65	854	287	107	70	922	313	115	77
Buffer Stock [b]	170	88	33	22	183	96	36	24	197	105	39	26	214	115	43	28	231	125	46	31
Sales Plus Buffer	848	308	116	77	915	337	125	84	986	368	137	91	1,068	402	150	98	1,153	438	161	108
Opening Stock	140	120	22	29	140	88	33	22	188	96	36	24	189	105	39	26	220	115	43	28
Domestic Production [c]	615	76	--	--	780	76	--	--	790	76	--	--	885	76	--	--	995	76	--	--
Import Projection	63	112	94	48	--	173	92	62	--	196	101	67	--	221	111	72	--	247	118	80

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a/ Fertilizer consumption projections are based on demands for nutrients as shown in Table B-6.

b/ Buffer stocks are 25 percent of annual projected sales for urea and 40 percent for TSP, DAP, and MP.

c/ See Table B-12 for basis of domestic production projections.

TABLE B-6: Projected Fertilizer Consumption, Domestic Production and Import Requirements, by Nutrient, 1983/84 - 1987/88 ('000 MT)

Year	Fertilizer Consumption*			Total	Domestic Production**		Import Requirements**		
	N	P_2O_5	K_2O		N	P_2O_5	N	P_2O_5	K_2O
1983/84	327	140	33	500	283	35	44	105	33
1984/85	353	152	36	541	359	35	--	117	36
1985/86	381	166	39	586	363	35	18	131	39
1986/87	412	181	42	635	407	35	5	146	42
1987/88	445	197	46	688	458	35	--	162	46

* Projections based on compound annual nutrient growth rates of 8% for N, 9% for P_2O_5, and 9% for K_2O with base year 1982/83.

** Production and import projections are illustrated in TABLE B-12 and TABLE B-13, respectively.

TABLE B-7: Fertilizer Consumption, by Product and Nutrient 1968/69 - 1982/83 ('000 MT)

YEAR	UREA	TSP	DAP	MP	OTHER*	TOTAL	N	P_2O_5	K_2O	TOTAL
1968/69	163	54	--	13	--	229	75	25	8	108
1969/70	220	67	--	15	--	282	92	31	9	132
1970/71	216	76	--	17	--	309	99	35	10	144
1971/72	173	61	--	14	--	248	79	28	9	116
1972/73	281	90	--	19	--	390	129	42	11	182
1973/74	272	95	--	19	--	386	125	44	12	181
1974/75	177	76	--	18	--	284	82	39	11	132
1975/76	317	112	--	23	13	465	147	54	15	216
1976/77	359	128	--	23	11	521	166	61	15	242
1977/78	488	195	--	42	5	730	224	91	26	341
1978/79	478	181	38	48	9	754	227	103	29	359
1979/80	542	209	43	47	10	851	258	118	29	405
1980/81	569	219	43	46	12	889	271	122	29	422
1981/82	528	212	49	46	8	843	253	121	29	403
1982/83	629	206	73	50	10	968	303	128	30	461

Source: BADC Fertilizer Newsletters.

* Other includes NPK (15-15-15), hyperphosphate, zinc sulfate, potassium sulfate, super phosphate, and triple phosphate.

TABLE B-8: Official Retail Fertilizer Prices, 1976/77-Present*

(Taka per maund) a/

Date of Effect	Urea	DAP	TSP(P) b/	TSP(G) c/	MP	NPK
July 1, 1976	60	-	-	48	40	40
Dec. 15, 1976	60	-	-	48	40	45
July 1, 1978	70	-	-	55	45	45
Oct. 3, 1978	70	-	-	55	45	55
Oct.16, 1978	70	70	-	55	45	55
Aug. 27, 1979	90	90	60	70	55	55
Nov. 2, 1980	110	110	80	90	70	90
Dec. 7, 1981	132	132	95	115	90	115
July 1, 1982	148	148	110	140	110	140

Source: BADC

* Retail prices were deregulated in the Chittagong Division April 1982 and all Division April 1983.

a/ One metric ton equals 26.79 maunds

Tk/Md	Tk/MT
70	1875
90	2410
110	2945
115	3080
132	3535
140	3750

b/ Powdered

c/ Granular

TABLE B-9: Average Application of Fertilizer Nutrients, 1972/73 - 82/83

Year	Gross Cropped Area (10^6 Ac)	Total Nutrients ('000 MT)	Nutrients (lbs/Ac)	Nutrients (Kgs/ha)	Overall Application Ratios $N:P_2O_5$	Overall Application Ratios $P_2O_5:K_2O$
1973/74	30.68	180.5	13.0	14.2	2.9	3.8
1974/75	29.92	131.6	9.7	10.6	2.1	3.6
1975/76	31.14	215.9	15.3	16.8	2.7	3.7
1976/77	30.44	242.0	17.5	19.2	2.7	4.2
1977/78	31.19	341.3	24.1	26.4	2.5	3.5
1978/79	31.85	359.6	24.9	27.3	2.7	3.5
1979/80	31.98	405.6	28.0	30.7	2.2	4.1
1980/81	32.52	422.5	28.6	31.4	2.2	4.2
1981/82	32.64	402.4	27.2	29.8	2.1	4.3
1982/83	32.93	461.1	30.9	33.8	2.4	4.3

Source: Bangladesh Bureau of Statistics

TABLE B-10: Number of Farmers and Average Levels of Use of Fertilizers Per Acre of Cropped Land Per Farm by Farm Size (Land Owned) and by Season, 1979/80

Farm Size (Owned) (Acres)	Number of Farmers a/ (#)	Percent Using Fertilizer (%)	Average Use Level On All Land Cropped (Mds/Ac)	Average Use Level By Fertilizer Users Only (Mds/Ac)
1979/80 Boro Season				
≤1.0	436	66.7	1.42	2.13
1.0 - 2.5	610	66.1	1.21	1.83
2.5 - 5.0	387	67.3	0.95	1.41
>5.0	183	77.5	1.11	1.43
All Sample	1,616	68.0	1.20	1.76
1980 Aus Season				
≤1.0	448	59.9	0.85	1.42
1.0 - 2.5	584	59.8	0.73	1.22
2.5 - 5.0	392	62.5	0.68	1.09
>5.0	263	67.3	0.82	1.22
All Sample	1,687	61.6	0.70	1.14
1980 Aman Season				
≤1.0	541	53.8	0.83	1.54
1.0 - 2.5	645	56.7	0.76	1.34
2.5 - 5.0	415	67.0	0.84	1.25
>5.0	276	71.7	0.79	1.10
All Sample	1,877	60.9	0.80	1.31

Source: Agricultural Production, Fertilizer Use, and Equity Considerations, IFDC/BARC, FSD P.57.

a/ With Crops but not necessarily using fertilizers.

TABLE B-11: Percentage of Farmers Using Chemical Fertilizers and Average Levels of Use, by Tenure Group and Season, 1979/80

Tenure/ Season	Percent of Farmers a/ Using Fertilizer (%)	Average Levels of Fertilizer Use (Mds/Ac)
1979/80 Boro Season		
On Owner-Operated Land	65.5	1.13
On Sharecropped Land	60.6	1.23
On Cash Rented Land	81.5	2.66
1980 Aus Season		
On Owner-Operated Land	60.0	0.74
On Sharecropped Land	48.0	0.61
On Cash Rented Land	75.5	1.60
1980 Aman Season		
On Owner-Operated Land	51.0	0.80
On Sharecropped Land	72.0	0.74
On Cash Rented Land	62.5	0.95

Source: IFDC/BARC, FSD PP. 57-58

a / Farmers with crops.

TABLE B-12: Domestic Fertilizer Production, Actual and Projected*('000 MT)

Year	Urea NGFF a/	Urea NFFG b/.	Urea ZFCL c/	New Urea Facilities Ghorasal d/	New Urea Facilities Chittagong d/	Urea Total	Chittagong TSP e/
1976/77	78.4(67)	208.1(56)	-	-	-	285.5	38.0(25)
1977/78	61.4(53)	151.0(40)	-	-	-	212.4	41.3(27)
1978/79	54.6(47)	236.1(63)	-	-	-	290.7	62.3(41)
1979/80	104.6(91)	256.6(69)	-	-	-	361.2	71.1(47)
1980/81	99.2(86)	245.5(66)	-	-	-	344.7	71.2(47)
1981/82	92.5(80)	253.0(68)	62(12)	-	-	407.7	57.9(38)
1982/83	86.1(75)	223.3(59)	118(22)	-	-	426.4	66.5(44)
1983/84	87.0(75)	263.0(70)	265(50)	-	-	615.0	76.0(50)
1984/85	87.0(75)	263.0(70)	370(70)	60(60)	-	780.0	76.0(50)
1985/86	87.0(75)	263.0(70)	370(70)	70(70)	-	790.0	76.0(50)
1986/87	87.0(75)	263.0(70)	395(75)	80(80)	60(10)	885.0	76.0(50)
1987/88	87.0(75)	263.0(70)	395(75)	80(80)	170(30)	995.0	76.0(50)
1988/89	87.0(75)	263.0(70)	395(75)	80(80)	280(50)	1105.0	76.0(50)
1989/90	87.0(75)	263.0(70)	395(75)	80(80)	390(70)	1215.0	76.0(50)

* Actual production and installed capacity based on BCIC figures for 1976/77 through 1982/83; for 1983/84 onward figures are based on projections. Figures in parentheses are operation of capacities as a percent of installed capacity.

a/ Natural Gas Fertilizer Factory, Fenchuganj (NGFF). Production started December 13, 1961. Installed capacity is 115,500 tpy urea.

b/ Urea Fertilizer Factory, Ghorasal (UFFG). Production started in 1972, Installed capacity is 374,000 tpy of urea.

c/ Zia Fertilizer Company, Ltd. (ZFCL), Ashuganj. Production started December 15, 1981. Installed capacity is 528,000 tpy urea.

d/ Urea Plant Ghorasal, installed capacity will be 100,000 tpy urea; Urea Plant Chittagong, installed capacity will be 561,000 tpy urea.

e/ Triple superphosphate (TSP) complex at Chittagong. Production started October 1974. Installed capacity is 152,000.

TABLE B-13: Fertilizer Imports, Actual and Projected, 1973/74-1987/88 ('000 MT)

Year	Urea	TSP	DAP	MP	Other*	Total
1973/74	--	97	--	41	11	149
1974/75	142	48	--	7	20	232
1975/76	72	223	--	37	2	334
1976/77	11	21	--	10	--	42
1977/78	260	115	--	13	--	388
1978/79	349	104	84	77	12	626
1979/80	286	174	42	60	11	573
1980/81	64	192	45	43	20	364
1981/82	254	147	37	26	--	464
1982/83	43	135	72	44	9	303
1983/84	63	112	94	48	10	327
1984/85	--	173	92	62	10	337
1985/86	--	196	101	67	10	374
1986/87	--	221	111	72	10	414
1987/88	--	247	118	80	10	455

Source: Actuals based on BADC Newsletters; projections based on fertilizer requirements and availabilities as shown in Table B-5.

* Other includes NPK (15-15-15), hyperphosphate, zinc sulfate, potassium sulfate, super phosphate, and triple phosphate.

TABLE B- 14: **Fertilizer Imports**
(Thousands of Metric Tons)

1981-82

	Urea	TSP	DAP	MP	Others	Total
Netherlands	46.9	72.3	-	-	-	119.2
Saudi	74.8	-	-	-	-	74.8
OPEC	50.3	2.0	-	-	-	52.3
IDA	35.6	15.1	-	-	-	50.7
Norway	10.1	15.7	9.4	-	-	35.2
Germany	-	16.6	14.4	-	-	31.0
IFAD	14.5	-	13.1	-	-	27.6
CIDA	-	-	-	26.0	-	26.0
Bulgaria	22.2	-	-	-	-	22.2
Denmark	-	15.5	-	-	-	15.5
ADB	-	9.9	-	-	-	9.9
TOTAL:	254.4	147.1	36.9	26.0	-	464.4

1982-83

	Urea	TSP	DAP	MP	Others	Total
USAID	-	-	71.7	-	-	71.7
Netherlands	-	65.2	-	-	-	65.2
CIDA	-	-	-	44.0	-	44.0
Denmark	-	40.1	-	-	-	40.1
Saudi	33.1	-	-	-	-	33.1
Bulgaria	-	22.0	-	-	-	22.0
Japan	9.9	8.8	-	-	-	18.7
Norway	-	-	-	-	9.4	9.4
TOTAL:	43.0	136.1	71.7	44.0	9.4	304.2

TABLE B-15: BADC Warehouse Number and Capacity as of December 1983

Type of Facility	Number			Capacity ('000 Tons)		
	Owned	Leased	Total	Owned	Leased	Total
District						
PDP	158	433	591*	211	142	353
TSC	69	201	270**	19	24	43
Total	227	634	861	230	166	396
Transit						
Chittagong	3	4	7	25	1	26
Khulna	2	-	2	11	-	11
Narayanganj	-	2	2	-	2	2
Total	5	6	11	36	3	39
Grand Total	232	640	872	266	169	435

Source: BADC Monthly Fertilizer Newsletter, No. 69.

*PDP facilities average nearly 6 warehouses per location.

**TSC facilities average approximately 3 warehouses per location.

TABLE B-16: Fertilizer Plant Storage Capacities
('000 MT)

Factory Location	Bulk	Bagged	Total
Fenchuganj (Urea)	10,000	2,500	12,500
Ghorasal (Urea)	50,000	10,000	60,000
Ashuganj (Urea)	40,000	8,000	48,000
Chittagong (TSP)	15,000	4,000	19,000
Total	115,000	24,500	139,500

Source: IFDC, Bangladesh Policy Options for the Development of the Fertilizer Sector, May 1983.

TABLE B-17: BADC's Average Annual Reserve Stocks, 1969/70 - 1981/82

Year	Procurement minus Sales, BADC ('000 LT)	Year	Procurement minus Sales, BADC ('000 LT)
1969/70	16.8	1976/77	-158.5
1970/71	37.5	1977/78	-49.2
1971/72	-78.0	1978/79	206.2
1972/73	42.9	1979/80	88.6
1973/74	36.3	1980/81	99.8
1974/75	56.0	1981/82	113.4
1975/76	-16.2	Total	196.0

Source: BADC

Project Design Summary
Logical Framework

Project Title & Number: Fertilizer Distribution Improvement, Phase II (388-0060)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
GOAL Increased agricultural production	MEASURES OF GOAL ACHIEVEMENT - Minimum 4% average annual increase in agricultural production	- Official production data - Sample surveys	FOR ACHIEVING GOAL - Distribution of weather conditions roughly normal - Growth in complementary inputs adequate - No abnormally high insect or plant disease infestation experienced
PURPOSE Increased use of fertilizer	END OF PROJECT STATUS - An average annual growth in aggregate fertilizer consumption of at least 8% over life of project	- Sample surveys - Official production and import data	FOR ACHIEVING PURPOSE - GOB and fertilizer donors permit private distributors to operate under assistance agreement - Farmers' cultural practices can be improved
OUTPUTS 1. Assured fertilizer supplies 2. Distributor and Dealer Credit Program	MAGNITUDE OF OUTPUTS 1. Five months inventory of phosphates and potash and potash and three months inventory of urea 2. Distributors and dealers purchasing fertilizer with FDI-II credit	- Independent AID field surveys - Bangladesh Government statistics	FOR ACHIEVING OUTPUTS - Fertilizer supplies meet fertilizer demands - Private fertilizer distributors and dealers will compete but not collude

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
OUTPUTS 3. Competing large scale and middle size fertilizer wholesalers 4. Increased efficiency in fertilizer distribution and marketing 5. Active fertilizer dealer development and sales promotion programs 6. Improved access to fertilizer sales outlets	**MAGNITUDE OF OUTPUTS** 3. A significant number of fertilizer wholesalers purchasing from depots, factories, and ports 4. Decreases in per unit volume fertilizer distribution costs 5. BADC's Dealer Development and Training Program assessed and found effective 6. Physical accessibility improved at fertilizer sales outlets		**FOR ACHIEVING OUTPUTS**
INPUTS **US** - Training and technical assistance - Credit/Fertilizer - Physical infrastructure **GOB** - Insurance/execution of required policies, regulations and directives. - Personnel and supporting services - Fertilizer, transportation and storage - Other budgetary support **Other Donors** - Technical assistance - Commodities	**IMPLEMENTATION TARGET** **US** - Training and technical assistance, $6 million - Commodities, mostly fertilizer or credit, $52 million - Physical infrastructure, $7 million **GOB** - Personnel and supporting services, $125,000 - Fertilizer and its logistical support $600 million **Other Donors** - $450 million	- AID procurement and disbursement records - GOB budget materials - Independent AID field surveys	**FOR ACHIEVING INPUTS** - AID funding available - Undertaking of Government to provide required budgetary support - Other donor contributions materialize

ANNEX D: BENEFITS FROM ADOPTING PRIVATE WHOLESALING OF FERTILIZER IN BANGLADESH.

A) INTRODUCTION: Under the currently existing marketing scheme, private traders are permitted only to retail fertilizer, and engage in relative minor levels of wholesaling, obtaining it at the nearest Primary Distribution Point (PDP). No longer are retailers obliged to sell in only one locality. Retailers remain small in terms of volume. Incentives to buy and sell in numerous localities, and incentives to trade in large volume, are not present. Discounts now offered to trade large volumes are very small and scarcely cover the increased management costs involved.

One of the principal reasons private traders do not move fertilizer very far geographically is that they are not able to sell at variable prices according to distance from supply points; the force governing this is not coercion , but rather the economic fact that BADC has numerous PDPs throughout the country, all selling at a uniform price. At present any private trader who carries fertilizer very far (and expects commensurately higher prices) will find that he has crossed into the natural trading region served by another PDP, and fertilizer is sold wholesale at lower cost.

The benefit to the government of Bangladesh from having fairly uniform prices is the political value of delivering a crucial commodity at an apparently uniform price throughout the country, with farmers near supply points paying more than they would have otherwise, and those far from supply points paying less. For the purpose of our analysis it can be said that BADC has chosen arbitrarily to make the supply curve of fertilizer very elastic indeed (in current market prices, not accounting or shadow prices). This elastic supply curve contrasts very sharply with that of the demand curve. Numerous studies have shown that the demand curve for fertilizer is very inelastic with respect to price. (See for instance Cristina C. David, "Fertilizer in the Asian Rice Economy", Stanford Food Research Institute Studies, vol XV,No.1, 1976 and Surjit S.Sidhu, Carlos A.Baanante and Ekramul Ahsan, "Agricultural Production, Fertilizer Use and Equity Considerations, Results and Analysis of Farm Survey Data 1980/82,Bangladesh", IFDC draft, November 1983.) The most recent information for Bangladesh indicates that the elasticity may be in the neighborhood of -0.3.

B) TYPES OF BENEFITS: The project may be used entirely to import fertilizer, or it may be used entirely to finance credit for distributors, or a combination of these two activities. The discussion which follows therefore discusses the various types of possible benefits, both those which would result strictly from the importation of fertilizer and those which would result from marketing system reforms. The latter would be increases in consumers' surplus to current fertilizer using farmers (or changes in the level of subsidy when economic prices are considered) and increases in grain production caused by more

dynamic fertilizer distribution (faster growth in total sales). This section will then turn to the issue of what prices will be used to evaluate the benefits, and specifically will discuss the difference between financial and economic prices.

(1) This project will support and guarantee the importation of sufficient quantities of fertilizer to insure adequate supplies to Bangladesh. There will be an exposition of the value of the benefits resulting from the importation and use of this fertilizer in producing additional grain in Bangladesh. These benefits alone justify the project. Even were there no benefits whatsoever from reforms in the marketing system, since Bangladesh is a net importer of grain, it is always more economical to import fertilizer than to import grain, given the relative magnitude of international ocean freight costs in the project period.

There must also be considered the economic benefits of the policy changes incorporated in marketing reform. Development projects in the field of marketing and distribution can have two principal goals as their target: cost reduction in distribution, and/or the generation of increased demand and therefore increased sales volume.

(2) The reduction of distribution costs would benefit the current producers and consumers of fertilizer directly, even without any increased sales of fertilizer. Reducing distribution costs by moving from government distribution to private distribution will come from the use of lower cost transport equipment, least cost routing, more rapid response to shifts in demand both in time and location, and less expensive storage.

(3) Generation of new demand for fertilizer would benefit Bangladesh in a slightly more indirect manner: increased fertilizer use would be of benefit only to the extent that it was converted into additional agricultural production and even then the benefit would not be the gross value but only the net value of that increased production (after subtraction of production costs). This paper will look at the possible benefits accruing to Bangladesh of these two different sorts, stemming from the reforms and changes in the marketing of fertilizer described in earlier sections of this project paper.

C) FINANCIAL VERSUS ECONOMIC BENEFITS; what prices should be used? In financial analysis, the benefits are valued at current market prices, with no consideration given to the array of taxes, subsidies, quantitative restrictions and other distortions which divert domestic prices from the levels they would reach were the economy an open market economy with freer international trade and prices allowed to find their own level. Economic analysis makes the opposite assumption, namely that prices are rid of distortions so as to reflect the true scarcity value associated with the relevant goods and services under consideration. The set of financial and economic prices adopted in this analysis are

shown in table D-1:

Table D-1: Financial and Economic Prices Adopted

Item	Financial Price		Economic Price	
	Tk/md	$/ton	Tk/md	$/ton
Rice,Coarse	240	260	340	287
Paddy	150	163	221	187
Wheat	152	165	243	205
Urea	148	161	242	205
Triple Super Phoshpate	140	151	258	218
Diammonium Phosphate	148	161	323	273
Ocean Transport (non-US)	37	40	47	40
Ocean Transport (US flag)	126	137	-	-
Avg Ocean Transport	82	89	47	40
Foreign Exchange	24.7 Tk/$		31.7 Tk/$	

Sources: Asian Development Bank, Third Crop Intensification Program Loan, Nov 8,1983, Annex 14, pages 3 and 4.
World Bank, Extension and Research Project II,Feb,1982 for Standard Conversion Factor underlying Shadow Exchange Rate estimate.
World Bank, Commodity Price Projections,July,1983

D) GENERATION OF INCREASED DEMAND FOR FERTILIZER BY SHIFTING TO PRIVATE DISTRIBUTION.

During earlier periods Bangladesh has obtained remarkable growth rates in fertilizer consumption, exceeding 10% per annum for sustained periods. However in the last six years, growth has slowed to only 5% per year. It is one of the principal goals of the project to recapture the earlier accelerated growth rate to the extent possible. With more aggresive marketing management Private Distributors are expected to sell fertilizer products at annual growth rates of about 8% per annum. The difference in sales growths paths of 5% and 8% is a significant element of the project benefits assuming that the main element of project expenditure would be the supplying of credit to Private Distributors.

Table D-2:NET BENEFITS/ACRE (measured in financial prices)
(TAKA/ACRE)

	Crop:	Aman 81	Boro 81/82	Aus 82	Wheat 81/82
Marginal gross benefits	tk/acre	282	913	246	354
(yield increment)	md/acre *	1.97	6.25	1.64	2.33
(price)	tk/md	143	146	150	152
Fertilizer Cost	tk/acre	106	382	124	180
(NPK)	md/acre	.45	1.38	.41	.67
(price NPK)	tk/md	236	277	302	269
Net Benefits/acre	tk/acre	176	530	122	174
(Equivalent in $/acre)		7.11	21.47	4.95	7.04

Source:IFDC Equity study,
table 12.11

* = average yield with fertilizer less average yield without fertilizer, according to sample data

Table D-3:Benefits from Additional Sales of FertilizerFinancial Analysis (by year)

Item: year		0	1	2	3	4
BADC sales ('000 tons)		1046	1098	1153	1211	1271
BADC+PD ('000 tons)		1046	1133	1227	1329	1439
net addtl sales,('000 tons)		0	35	74	118	168
Allocation to various cereal crops:						
('000 tons)	Proportion:					
Aman	.451	0	16	33	53	76
Boro	.275	0	9	20	32	46
Aus	.202	0	7	15	24	34
Wheat	.072	0	2	5	8	12
NPK applied VariousCrops, (in thousand maunds):						
Aman		0	192	409	655	931
Boro		0	117	250	399	568
Aus		0	86	183	293	417
Wheat		0	31	65	105	149
Acres Fertilized: (thousand acres)	NPK (md/acre)					
Aman (appl rate)	.45	0	426	909	1455	2069
Boro (appl rate)	1.38	0	85	181	289	411
Aus (appl rate)	.41	0	210	447	715	1017
Wheat (appl rate)	.67	0	46	98	156	222
Total area fertilized		0	766	1635	2615	3720
Marginal Net Benefits Accruing Because of additional Fertilizer (thousand taka)						
Aman (tk/acre)	176	0	75033	160046	256053	364166
Boro (tk/acre)	530	0	44927	95829	153315	218048
Aus (tk/acre)	122	0	25568	54537	87253	124094
Wheat (tk/acre)	174	0	7954	16966	27143	38604
Total (undiscounted), thousand Taka		0	153482	327378	523764	744912
Total,(undiscounted), thousand dollars ($)		0	6139	13095	20951	29796
(total for 10 years, undiscounted,'000$)				393787		
NPV at 15%				190351		
NPV at 18%				161248		
NPV at 20%				145045		
NPV at 24%				118624		
NPV at 28%				98328		

(market prices, no distortions)

5	6	7	8	9	10	Item:
1335	1402	1472	1545	1623	1704	BADC sales
1558	1688	1828	1980	2144	2322	BADC+PD
223	286	356	434	521	618	net addtl sales,
						Allocation ('000 tons)
101	129	161	196	235	279	Aman
61	79	98	119	143	170	Boro
45	58	72	88	105	125	Aus
16	21	26	31	38	44	Wheat
						NPK applied (in '000 mds)
1242	1589	1978	2413	2896	3434	Aman
757	969	1206	1471	1766	2094	Boro
556	712	886	1081	1297	1538	Aus
198	254	316	385	462	548	Wheat
						Acres Fertilized: ('000 acres)
2759	3532	4397	5361	6436	7632	Aman
549	702	874	1066	1280	1517	Boro
1356	1736	2161	2636	3164	3752	Aus
296	379	471	575	690	818	Wheat
4960	6350	7904	9638	11570	13720	Total area
						Marginal Net Ben.
						('000 taka)
485595	621663	773812	943618	1132796	1343219	Aman
290755	372227	463328	565001	678273	804266	Boro
165472	211839	263685	321549	386013	457717	Aus
51476	65900	82029	100029	120083	142389	Wheat
993298	1271628	1582854	1930196	2317166	2747592	Total thousand Taka
39732	50865	63314	77208	92687	109904	Total '000 $

An extra 3% fertilizer sold each year would lead to increased cereal grain production principally. At the moment over 87% of fertilizer consumed in Bangladesh is applied to cereals, according to the findings of the IFDC Equity study, for the crop seasons 1981-1982. (tables 11.1, 11.4, 11.5, 11.7). If it is assumed that the additional fertilizer sold each year will be allocated by farmers principally to cereal crops and in the same proportions as now prevail then they will use the fertilizer mainly on Aman and Boro rice (45% and 28%) and use much less on Aus rice and wheat (20% and 7%). The benefits from applying fertilizer to Boro rice production are the greatest as can be seen in table D-2, drawn from the same IFDC study. Prices have not changed substantially since the 1981/1982 seasons studied and the findings do not require alteration to account for inflation.

The numbers in table D-2 regarding fertilizer benefits per acre and application rates can be combined with the assumptions mentioned above about probable allocation among crops to derive a stream of benefits that will accrue over time due to the additional growth rate of 3 extra per cent per year. This series of calculations is performed in table D-3 below (in financial prices, not economic prices).

In the first year of the project an additional 3% fertilizer sold means only an extra 35,000 tons, but in later years the difference grows into several hundred thousand tons per year. Even in the first year an additional 766,000 acres could be fertilized and this number expands steadily through time. (The assumption here is that in the first instance farmers will expand fertilizer use at the same rate they currently find economically feasible. Obviously in later stages they will increase fertilizer application rates but for illustrative purposes Table D-3 assumes a continual area expansion at constant application rates. The benefit stream begins slowly at an incremental 6139 thousand dollars in the first year but increases steadily as the fertilizer consumption paths diverge over time. Discounting of future benefits over time is clearly called for, given that the largest benefits occur well in the future. Discount rates varying from 15% to 24% were chosen to evaluate the benefit stream; at the low discount rate of 15% the Net Present Value of the Benefit stream is 190,351 thousand dollars and at the higher discount rate of 24% the present value is 118,624 thousand dollars. It must be reiterated that these are net, not gross benefits; the marginal net benefits per acre adopted have already excluded all other costs of production. The benefits have been calculated in Financial or current market prices, and will accrue entirely to farmers.

An economic analysis of the same increase in fertilizer consumption growth rates leads to very similar conclusions. When table D-2 (net benefits per acre per cereal crop) is recalculated in border or economic prices, the result is table D-4 which is not dramatically different: Boro rice is the most socially profitable use of fertilizer returning a net $20.70 per acre (see

Table D-4: NET BENEFITS/ACRE USING ECONOMIC PRICES
(TAKA/ACRE)

	Crop:	Aman 81	Boro 81/82	Aus 82	Wheat 81/82
Marginal gross benefits	$ /acre	13.75	43.63	11.45	17.83
(yield increment)	ton/acre	.07	.23	.06	.09
(price)	$/ton	187	187	187	205
Fertilizer Cost	$ /acre	7.47	22.92	6.81	11.13
(NPK)	ton/acre	.02	.05	.02	.03
(price NPK)	$/ton	445	445	445	445
Net Benefits/acre.	$ /acre	6.28	20.70	4.64	6.70

Source:IFDC Equity study,
table 12.11

Table D-5: Benefits from additional sales of Fertilizer (by year) — Economic Analysis

Item:	year	0	1	2	3	4
BADC sales ('000 tons)		1046	1098	1153	1211	1271
BADC+PD ('000 tons)		1046	1133	1227	1329	1439
net addtl sales	('000ton)	0	35	74	118	168
Allocation to various cereal crops:						
('000 tons)	Proportion:					
Aman	.45	0	16	33	53	76
Boro	.28	0	9	20	32	46
Aus	.20	0	7	15	24	34
Wheat	.07	0	2	5	8	12
NPK applied VariousCrops, (in thousand maunds)						
Aman		0	192	409	655	931
Boro		0	117	250	399	568
Aus		0	86	183	293	417
Wheat		0	31	65	105	149
Acres Fertilized: (thousand acres)	NPK (md/acre)					
Aman (appl rate)	.45	0	426	909	1455	2069
Boro (appl rate)	1.38	0	85	181	289	411
Aus (appl rate)	.41	0	210	447	715	1017
Wheat (appl rate)	.67	0	46	98	156	222
total area fertilized		0	766	1635	2615	3720
Marginal Net Benefits Accruing Because of additional Fertilizer (thousand taka)	(from table D-4)					
Aman ($/acre)	6.28	0	2677	5711	9136	12994
Boro ($/acre)	20.70	0	1755	3743	5988	8516
Aus ($/acre)	4.64	0	972	2074	3318	4720
Wheat ($/acre)	6.70	0	306	653	1045	1486
Total (undiscounted), thousand $		0	5711	12181	19488	27716
Total,undisc,'000 $		0	5711	12181	19488	27716
(total for 10 years, undiscounted,'000$)				366297		
NPV at 15%				177063		
NPV at18%				149992		
NPV at 20%				134919		
NPV at 24%				110343		
NPV at 28%				91464		

Economic Analysis (assuming economic/accounting prices

5	6	7	8	9	10
1335	1402	1472	1545	1623	1704
1558	1688	1828	1980	2144	2322
223	286	356	434	521	618
101	129	161	196	235	279
61	79	98	119	143	170
45	58	72	88	105	125
16	21	26	31	38	44
1242	1589	1978	2413	2896	3434
757	969	1206	1471	1766	2094
556	712	886	1081	1297	1538
198	254	316	385	462	548
2759	3532	4397	5361	6436	7632
549	702	874	1066	1280	1517
1356	1736	2161	2636	-3164	3752
296	379	471	575	690	818
4960	6350	7904	9638	11570	13720
17327	22182	27611	33670	40420	47928
11356	14538	18096	22067	26491	31412
6293	8057	10029	12229	14681	17408
1982	2538	3159	3852	4624	5483
36958	47314	58894	71818	86216	102231

table D-4) compared to a financial benefit of 530 taka/acre (see table D-2). Wheat is the second most socially profitable crop when valued in economic terms, with a net value per acre of $6.70, and Aman rice is the third most socially profitable at $6.28 per acre. Previously in table D-2 it had been seen that wheat and Aman rice were about equal; they diverge in economic prices because of the greater value of wheat in border prices compared to local paddy.

Table D-5 shows the value of applying the additional 3% per year of fertilizer to the economy in social or economic prices and should be compared with table D-3. Both tables carry out the potential benefits for a period of ten years and both use discount rates varying from 15% to 24%. When evaluated at the low discount rate of 15%, the Net Present Value of the benefits stream is $177,063 thousand dollars which is almost identical to the value in financial prices ($190,351 thousand dollars). And at a higher discount rate of 24% the present value of the benefits stream is $110,343 thousand dollars which is again almost identical to the value in financial prices.

Performing a seperate economic from financial analysis of the benefits has not shown a great difference; although there are some distortions in prices of both foodgrains and fertilizer in Bangladesh the overall impact is fairly neutral as far as farm level per acre accounts are concerned and the benefits of increasing the growth rate of fertilizer from 5% per year to 8% per year are sizeable by either set of prices. (The fact that both fertilizer and foodgrain prices are suppressed downward has an effect on the terms of trade of agriculture versus non-agriculture however.) The benefits are also much larger than the undiscounted present value of the project inputs incurred by USAID, ($65,000 thousand dollars) but it must be realized that substantial additional investment will be required of the Private Distributors to enable them to reach this accelerated growth rate of consumption, and the benefits of the additional sales will be the result of that investment. The increment of 3% extra sales of fertilizer will not be cost free.

E) COST REDUCTION: If private wholesaling distributors (PDs) can transport, store and distribute more cheaply than BADC then the supply curve of fertilizer to the market will be shifted downward (the same quantities can be delivered at a lower average price). When this occurs, both consumers and sellers of fertilizer benefit, but to different proportions governed by the relevant price elasticities. Given what is known about the almost infinite price elasticity of supply and the rather inelastic situation with demand, in Bangladesh it would be principally consumers who benefit. But it would not be fair to say that the supply curve would shift downward parallel to the current BADC supply curve because private distributors will want to cover their transportation costs as they vary with distance. BADC estimates that very quickly after the introduction of private distribution, the PDs should be expected to capture about two-thirds of the urea market (distributing 476,000 tons)

of lower transport costs. BADC has also estimated for the non-urea market, meaning phosphates and potash which are supplied by the one TSP factory in Chittagong and otherwise by imports, that about forty percent will be distributed by the private distributors near the supply points leaving BADC with the unenviable task of distributing the remaining 60% at a fixed price in the more remote areas of Bangladesh.

Diagrams 1 and 2 depict the situation for urea and for phosphate fertilizers, both before (only BADC distributing) and after (with both BADC and PDs distributing). The benefits caused by the project are represented by the triangular shaped area entitled "increase in consumers' surplus." For the first year, the gain in consumers' surplus from urea distribution is estimated by the following:

$$G = 1/2\,(P_{BADC} - P_{Port})(\text{Quantity sold by PDs})$$

where the following definitions hold:

G = Gain in consumers' surplus, in current Taka

P_{BADC} = ex-PDP price of BADC

P_{Port} = discounted price offered to PDs for large sales volumes, for purchase at Ports and Factories

Table D-6 shows the estimated gains in Consumers' Surplus from lower distribution costs of urea, TSP and DAP, given the assumptions of BADC that Private Distributors will capture 65% of the urea market and 40% of the TSP and DAP markets. The table presents estimates of these values for the first ten years only and assumes the recent historical growth in total sales of all products, namely five per cent per year.

The undiscounted present value of benefits from urea sales equals 60,603 thousand dollars; those of TSP are 11,389 thousand dollars; and those from DAP sales are 4,866 thousand dollars. When a discount factor of 24% is used, these three present values of benefits drop to: (urea) 20,553; (TSP) 3,862; (DAP) 1,650 thousand dollars. The sum (discounted at 24%) is 26,065 thousand dollars. These are all valued at financial prices, not economic prices.

F) SUBSIDIES: COST REDUCTION EVALUATED IN ECONOMIC PRICES

An equivalent economic evaluation is exceedingly more complex. The "economic" supply curve to the market of the various fertilizers is a step function, not a smooth curve. This reflects the various discrete procurement prices from the different sources of fertilizer. For instance, for urea, there are three major factories producing in Bangladesh with two more in the construction and planning stage. Of the three current urea producers, two are very low cost older technology plants, and the third is relatively high cost producer. The per/ton production costs are not exactly known (as to whether the natural gas input

Table D-6: Benefits Accruing as Increases in Consumers' Surplus Resulting From Cost Reduction For Fertilizer Distributed by the Private Distributors (Evaluated in Financial, Not Economic, Prices)

Item Year:	1	2	3	4	5	6	7	8	9	10
UREA FERTILIZER										
BADC sale '000ton (g=0.05%/yr)	729	765	804	844	886	930	977	1026	1077	1131
PD Sales (65.3%) (g=0.05%/yr)	476	500	525	551	579	608	638	670	703	738
BADC Price (tk/ton	3695	3695	3695	3695	3695	3695	3695	3695	3695	3695
PD initial price (tk/ton)	3195	3195	3195	3195	3195	3195	3195	3195	3195	3195
Increase in Consumers Surplus (in '000 tk)	119009	124960	131208	137768	144656	151889	159484	167458	175831	184622
Increase in CS, (in '000 $ USA)	4818	5059	5312	5578	5857	6149	6457	6780	7119	7475
Sum, (undiscounted) of increased CS (in'000$)		60603								
Present Value, benefits, 20%		23671								
Present Value, benefits, 24%		20553								
Present Value, benefits, 28%		18058								
TRIPLE SUPER PHOSPHATE (T.S.P.)										
BADC SALES ('000tons)	224	235	247	259	272	285	300	315	330	347
PD Sales (40%)	89	94	99	104	109	114	120	126	132	139
BADC price	3475	3475	3475	3475	3475	3475	3475	3475	3475	3475
PD price, initial	2975	2975	2975	2975	2975	2975	2975	2975	2975	2975
Increase in Surplus ('000 tk)	22365	23483	24657	25890	27185	28544	29971	31470	33043	34695
Increase in CS ('000 $USA)	905	951	998	1048	1101	1156	1213	1274	1338	1405
Sum, (undiscounted) of increased CS (in '000$)		11389								
Present Value, benefits, 20%		4448								
Present Value, benefits, 24%		3862								
Present Value, benefits, 28%		3394								

Table D-6 continued

DI-AMMONIUM PHOSPHATE

BADC SALES ('000 tons)	96	100	105	111	116	122	128	134	141	148
PD SALES (40%) ('000 tons)	38	40	42	44	46	49	51	54	56	59
BADC price	3695	3695	3695	3695	3695	3695	3695	3695	3695	3695
PD initial price	3195	3195	3195	3195	3195	3195	3195	3195	3195	3195
Increase in Consumers Surplus ('000 tk)	9555	10033	10534	11061	11614	12195	12805	13445	14117	14823
Increase in CS ('000 $)	387	406	426	448	470	494	518	544	572	600

SUM, (undiscounted) of increased CS, (in '000$) 4866
Present Value, benefits, 20% 1900
Present Value, benefits, 24% 1650
Present Value, benefits, 28% 1450

DISCOUNTED PRESENT VALUES FROM SALES OF THREE TYPES, (UREA, TSP, DAP) OF FERTILIZER: (IN '000 $)

Present Value, Benefits, 20% 30020
Present Value, Benefits, 24% 26065
Present Value, Benefits, 28% 22902

is fully priced and what amortization of capital is assumed) but the ex-factory prices are known. They are as follows:

TABLE D-7 : Ex-factory and CIF Import Procurement Prices of Urea, in Taka/metric ton and US dollars per metric ton.

Source:	Tk/ton	US$/ton	Volume (tons)
Ashuganj			380,000
(selling)	3860	156	
(production)	4500	182	
Ghorasal			250,000
(selling)	2800	113	
Fenchuganj			85,000
(selling)	2800	113	
Saudi Arabia (SAAFCO, C+F, C'gong)	5064	205	
USA(50% US ships, C+F)	5978	242	

One of the project's purposes is to secure a pooled ex-factory price (or ex-factory/port if some quantities of urea are still imported). The initial price charged for urea (3195 Taka/ton) is still above ex-factory current prices for Fenchuganj and Ghorasal factories; BADC would make a profit on sales from these factories to Private Distributors. However the initial price of 3195 is substantially below both the ex-factory sales price and the estimated production costs of Ashuganj (which are 3860 and 4500 Taka according to the New Nation, Nov 21,1983). To these source prices is added a uniform 900 Taka per ton distribution charge at present. Lower distribution costs of urea by Private Distributors will lower the effective subsidy all of which is currently paid to Ashuganj and for imported urea fertilizer. Instead of there being an increase in Consumer's Surplus (as in the case of the Financial Analysis above) there will be no net change in BADC's subsidy. At present, the Government of Bangladesh is attempting to stay within a fertilizer subsidy ceiling of 1,000 million Taka. But it has not been successful at doing so, by its own estimates for the past few years.

With the initiation of wholesale fertilizer distribution through this project, the level of total subsidy will be about 1,324 million Taka as table D-8 shows. The reason for exceeding the 1,000 million limit is not the introduction of private wholesaling however. Rather it is because phosphate type fertilizers will still be heavily subsidized as at present (either with or without the project). Distribution costs and changes in them are not the underlying source of the subsidy. The Chittagong TSP factory is a high cost producer (5735 tk/ton) and imported TSP is also expensive (5385 Tk/ton) compared to either

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Table D-8: Fertilizer subsidy,with Project, year 1984/85

Item		Urea	TSP	DAP	MP
BADC Procurement Cost:					
Ashuganj,volume,tons	395000				
"price,tk/ton	3860				
" COST,Million Tk		1525			
Ghorasal,volume,tons	263000				
"price,tk/ton	2800				
"COST,Million Tk		736.4			
Fenchuganj,volume,tons	87000				
"price,tk/ton	2800				
"COST,Million Tk		243.6			
ChittagongTSP,vol.,tons	76000				
" price,tk/ton	5735				
" COST,million Tk			436		
Imported					
urea,volume	0				
urea,price	5064				
urea,COST		0			
TSP,volume	148000				
TSP,price	5385				
TSP,COST			797		
DAP,volume	96000				
DAP,price	6743				
DAP,COST				647	
MP,volume	60000				
MP,price	4663				
MP,COST					280
PROCUREMENT COST BY KIND (in million Taka)		2505	1233	647	280
BADC's Distribution costs					
type volume unit cost					
urea 269000 1050		282			
TSP 135000 1050			142		
DAP 58000 1050				61	
MP 60000 1050					63
TOTAL COST,BY KIND		2787	1375	708	343
SALES PROCEEDS TO BADC:					
Volume sold to PDs		476000	89000	38000	0
price charged		3195	2975	3195	2175
REVENUE from PDs (millionTk)		1521	265	121	0
Volume sold directly		269000	135000	58000	60000
price charged		3970	3750	3970	2950
REV,direct sales(Million Tk)		1068	506	230	177
TOTAL REVENUES,BY KIND		2589	771	352	177
SUBSIDY (NET LOSS)		-198	-604	-357	-166
TOTAL SUBSIDY (IN MILLION TK)	-1324.30				
PERCENT	100	15	46	27	13
Rate of Subsidy (in%)		7	44	50	48

Table D-8b: Fertilizer subsidy,without Project, year 1984/85

Item		Urea	TSP	DAP	MP
BADC Procurement Cost:					
Ashuganj,volume,tons	395000				
"price,tk/ton	3860				
" COST,Million Tk		1525			
Ghorasal,volume,tons	263000				
"price,tk/ton	2800				
"COST,Million Tk		736.4			
Fenchuganj,volume,tons	87000				
"price,tk/ton	2800				
"COST,Million Tk		243.6			
ChittagongTSP,vol.,tons	76000				
" price,tk/ton	5735				
" COST,million Tk			436		
Imported					
urea,volume	0				
urea,price	5064				
urea,COST		0			
TSP,volume	148000				
TSP,price	5385				
TSP,COST			797		
DAP,volume	96000				
DAP,price	6743				
DAP,COST				647	
MP,volume	60000				
MP,price	4663				
MP,COST					280
PROCUREMENT COST BY KIND (in million Taka)		2505	1233	647	280
BADC's Distribution costs					
type	volume unit cost				
urea	745000 900	671			
TSP	224000 900		202		
DAP	96000 900			86	
MP	60000 900				54
TOTAL COST,BY KIND		3175	1434	734	334
SALES PROCEEDS TO BADC:					
Volume sold to PDs		0	0	0	0
price charged		3195	2975	3195	2175
REVENUE from PDs (millionTk)		0	0	0	0
Volume sold directly		745000	224000	96000	60000
price charged		3970	3750	3970	2950
REV,direct sales(Million Tk)		2958	840	381	177
TOTAL REVENUES,BY KIND		2958	840	381	177
SUBSIDY (NET LOSS)		-218	-594	-353	-157
TOTAL SUBSIDY (IN MILLION TK)	-1321.38				
PERCENT	100	16	45	27	12

the prevailing retail price (3750 Tk/ton) or BADC's PDP price (3475 Tk/ton) or what BADC will charge the Private Distributors (2975 tk/ton). Table D-8 shows that of the total subsidy (1324.30 million Taka) to be incurred by BADC in the project year 1984/85 for example, that 46% of that subsidy will be caused by TSP sales and only 15% by urea sales.

The second largest source of subsidy is on imported DAP fertilizer. While procurement cost will equal 708 million Taka, sales will generate revenues of only 336 million taka, leaving a net subsidy of 352 million Taka. The implied rate of subsidy is therefore 50% for each bag of DAP and 44% for TSP. On the other hand the rate of subsidy on urea will be only 7% which is approximately what it is now. Potash (MP) will also be subsidized to a high rate per bag (48%) but since potash sales are small it will not be a major factor contributing to total subsidy. Potash will be the source of only 13% of total subsidy.

The two tables which show a comparison of subsidy levels with and without the project are tables D-8 and D-8b (the first is with the project and the latter without.) Without the project it is calculated that the total subsidy incurred by BADC is also over one billion taka; it is in fact 1.321 billion taka, a figure almost identical to the level of BADC subsidy with the project. When discounts even as large as 500 Taka per ton are given to Private Distributors who capture about 2/3 of the urea market and 40% of the non-urea market the total subsidy in the system remains essentially unchanged. BADC has said that when private distributors capture nearby markets, BADC will be forced to incur higher average distribution costs for the remaining market it serves. BADC has estimated that its costs will rise by as much as 150 Taka per ton. Table 8 makes this adjustment (incomperison to table 8b "without project")and still the total BADC subsidy remains virtually unchanged.

These calculations regarding subsidy make the perhaps unrealistic assumption that BADC will undertake commensurate cost-reducing steps exactly apace with the rate at which Private Distributors increase their operations. BADC will not be able to reduce its cost-incurring activities as rapidly as P.D.s move into operation however because there are a number of residual operations which only BADC can and will undertake. The principal activity which only BADC can and will undertake is to maintain a national security stock level adequate to compensate for fluctuations in production, factory breakdowns, delayed ship arrivals and the like.It is true that in the beginning the Private Distributors will choose to market in the lowest cost transport areas,leaving BADC with the highest cost transport areas. But as the PDs move further and further out, capturing more of the market they too will move into higher cost transport areas. And the total subsidy would only rise to the extent that BADC does not lower its own costs through reductions in distribution network as Private Distributors take over marketing operations.

G) INCREASED GRAIN PRODUCTION DUE TO IMPORTED PROJECT

FERTILIZERS:

The project commodity to be imported would most likely be phosphate type fertilizers, principally triple super phosphate and di-ammonium phosphate. There may be a need for occasional imports of urea, but no likely need for imports of potash or sulfur based fertilizers given other donor commitments of potash and the availability of local sulfur containing gypsum as a by-product of TSP production in Chittagong. The crop which responds best to phosphate application is wheat where the response is almost as large as the response to nitrogen. The IFDC showed the following marginal crop responses to fertilizer nutrient application:

Table D-9: Average Crop Response (in pounds of unmilled grain per pound of nutrient applied) from Applied On-Farm Research Trials, Bangladesh,1979/80.

Crop	N	P205	K20
Boro Paddy	15.6	11.6	12.0
Aus Paddy	9.8	9.9	7.9
Aman Paddy	9.3	8.5	13.1
Wheat	18.8	13.8	14.4

Source: IFDC Policy Options, page 78

These responses are of course experimental, and although conducted under farmer conditions, will be difficult to reproduce on a large scale. And in the case of rice,they refer not to milled rice, but to paddy. Yield responses in terms of rice will be about 2/3 of the paddy yield response. More recent production function estimates of yield response to all nutrients (sum of N plus P205 plus K20) in Bangladesh, estimated again by the IFDC show the following responses, for the period 1980/81 through 1982:

Table D-10 : Cereal Crop Yield Responses to the application of nutrients (units of grain per unit of combined NPK nutrient)

Aman Paddy,1981	4.37
Boro Paddy, 1981/82	5.34
Aus Paddy,1982	4.00
Wheat, 1981/82	3.48 *

*= a non-linear response was estimated for this crop so the yield response declines with increasing application.

Source: IFDC, Agricultural Production, Fertilizer Use, and Equity

Considerations, (in draft), November 1983, table 12.5,and table 12.11.

If most project funding is used to import fertilizers then the costs and benefits from the application of that fertilizer and resulting increased grain production can be calculated. Table D-11 estimates the benefits and costs both in financial and economic terms. It assumes that 33% of imported fertilizer would be urea, 33% DAP and 33% would be TSP; it further assumes that farmers will allocate the fertilizer among their cereal crops in approxmiately the same proportion as they currently do. The IFDC found that for fertilizer applied to cereals, about 45% is applied to Aman rice, 28% to Boro rice, 20% to Aus rice and about 7% to wheat. The table assumes that that allocation will continue. At current rates of application, about 659,000 additional acres of Aman could be fertilized, 131,000 of additional Boro, 324,000 of additional Aus rice, and 71,000 additional acres of wheat. In financial terms the value of the resulting additional grain which can be produced is almost $16,597,000 for an annual project cost of $ 13,000,000. The benefit /cost ratio would be therefore 1.28. The Present Value of the Benefits stream (discounted at 24%) is 45,564 thousand dollars, compared to a present value of the cost stream of 35,690 thousand dollars). The Net Present Value,in Financial terms is therefore 9874.47 thousand dollars.

In economic values for the various crops and the imported fertilizers, the gross benefit stream accruing each year would equal $19,753,000 compared to an annual economic cost stream of $13,000,000. The benefit cost ratio in economic terms is therefore 1.52 as can be seen in the calculations in the table. The Present Value of the Economic Benefit stream is 54,229 thousand dollars compared to the Present Value of the Cost stream, 35,690 thousand dollars,discounted at 24%. It should be noted that discounting future values back to the present makes no difference in this case since it is assumed that equal annual imports of the intermediate good, fertilizer,will be made, and that equal annual increments of cereal production take place.

Table D-11: Net Benefits due to Increased Grain Production, under the Assumption that project funds are used principally to import Fertilizer.

Item	Year1	Year2	Year3	Year4	Year5
ImportValue ('000$)	11000	11000	11000	11000	11000
Urea imported (33%) ('000ton)	18.08	18.08	18.08	18.08	18.08
TSP imported (33%) ('000ton)	16.80	16.80	16.80	16.80	16.80
DAP imported(33%) ('000ton)	13.42	13.42	13.42	13.42	13.42
Nutrients imported (in '000 ton)					
p2o5	13.90	13.90	13.90	13.90	13.90
N	10.73	10.73	10.73	10.73	10.73
Nutrients Applied to Various Crops (in thousand maunds of nutrients)					
Aman (45.1%) p2o5	167.40	167.40	167.40	167.40	167.40
n	129.25	129.25	129.25	129.25	129.25
sum	296.65	296.65	296.65	296.65	296.65
Boro (27.5%) p2o5	102.07	102.07	102.07	102.07	102.07
n	78.81	78.81	78.81	78.81	78.81
sum	180.88	180.88	180.88	180.88	180.88
Aus (20.2%) p2o5	74.98	74.98	74.98	74.98	74.98
n	57.89	57.89	57.89	57.89	57.89
sum	132.87	132.87	132.87	132.87	132.87
Wheat (7.2%) p2o5	26.72	26.72	26.72	26.72	26.72
n	20.63	20.63	20.63	20.63	20.63
sum	47.36	47.36	47.36	47.36	47.36
Incremental Area Fertilized, in thousand acres, assuming all additional fertilizer is applied to crop area currently not fertilized. (application rates in mds nutrients NPK/acre)					
Aman (appl rate 0.45 md/acre)	659	659	659	659	659
Boro (appl rate 1.38md/acre)	131	131	131	131	131
Aus (appl rate 0.41 md/acre)	324	324	324	324	324
Wheat (appl rate 0.67 md/acre)	71	71	71	71	71

Table D-11 continued ...

Incremental Gross Revenues per cereal crop,Financial analysis:
(in thousand Taka)

Aman (282 Tk/acre)	185707	185707	185707	185707	185707
Boro (913 Tk/acre)	119605	119605	119605	119605	119605
Aus (246 tk/acre)	79561	79561	79561	79561	79561
Wheat (355 Tk/acre)	25067	25067	25067	25067	25067
Sum (in'000 Taka)	409940	409940	409940	409940	409940

Financial Benefit Stream, at exchange rate 24.7tk/$,in '000$:

16597	16597	16597	16597	16597

Financial Cost Stream,all project costs:

13000	13000	13000	13000	13000

NPV Benefits,20%: 49634.46
NPV Benefits,24%: 45564.47
NPV Benefits,28%: 42023.08

NPV,Costs,20%: 38877.96
NPV,Costs,24%; 35690.00
NPV,Costs,28%: 32916.08

Financial B/C Ratio,same for all three discount rates:
1.28

Table D-11 concluded.

Incremental Gross Revenues, Economic Prices: year 1	year 2	year 3	year 4	year 5
(in '000 $)				
9065	9065	9065	9065	9065
5718	5718	5718	5718	5718
3710	3710	3710	3710	3710
1260	1260	1260	1260	1260

Economic Benefit stream:				
19753	19753	19753	19753	19753
Economic Cost stream, all project costs:				
13000	13000	13000	13000	13000

59074.00
54229.98
50015.09

38877.96
35690.00
32916.08

Economic B/C ratio, same for all three discount rates: 1.52

DIAGRAM 1: INCREASE IN CONSUMERS' SURPLUS FROM UREA WHOLESALING

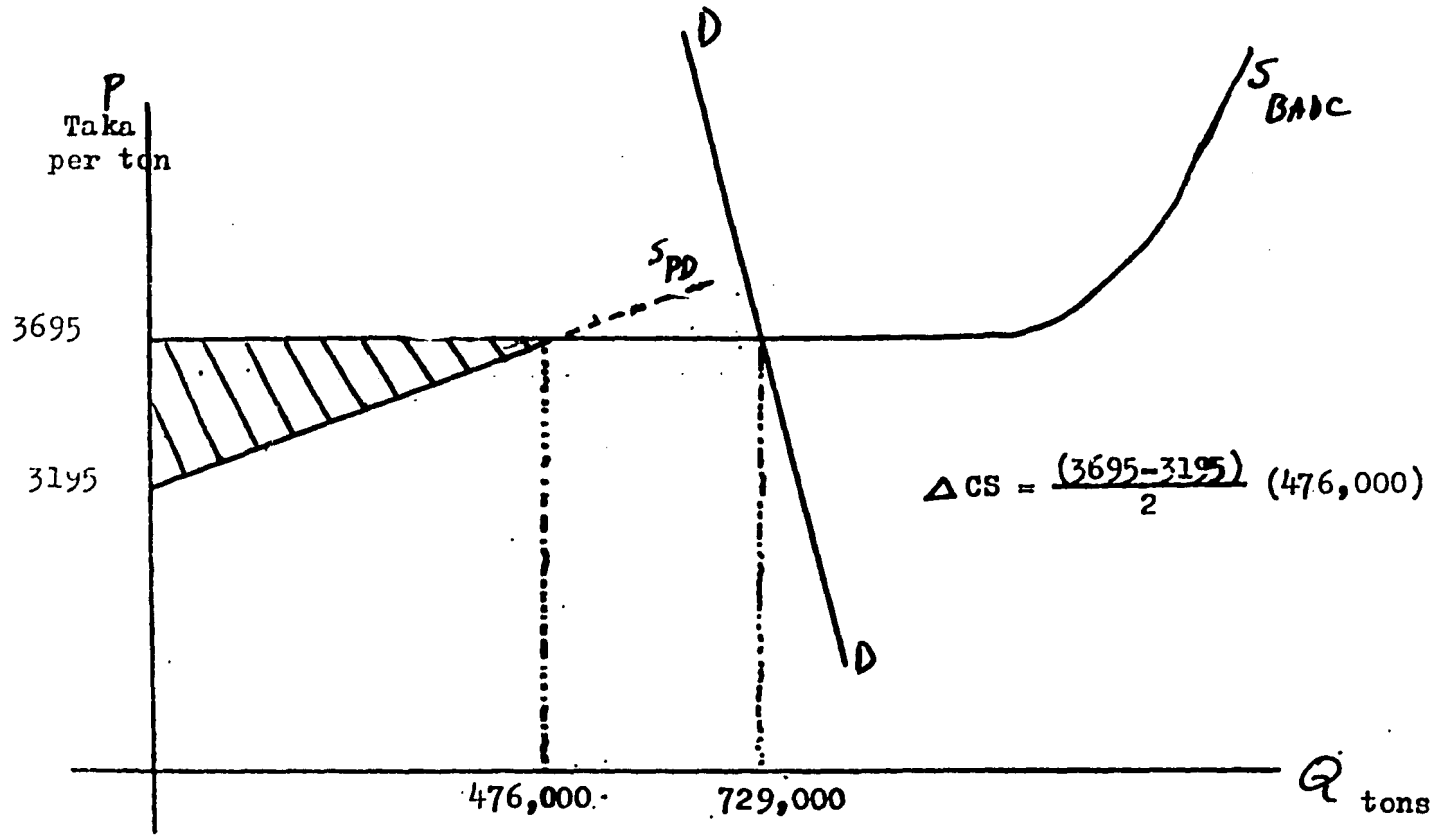
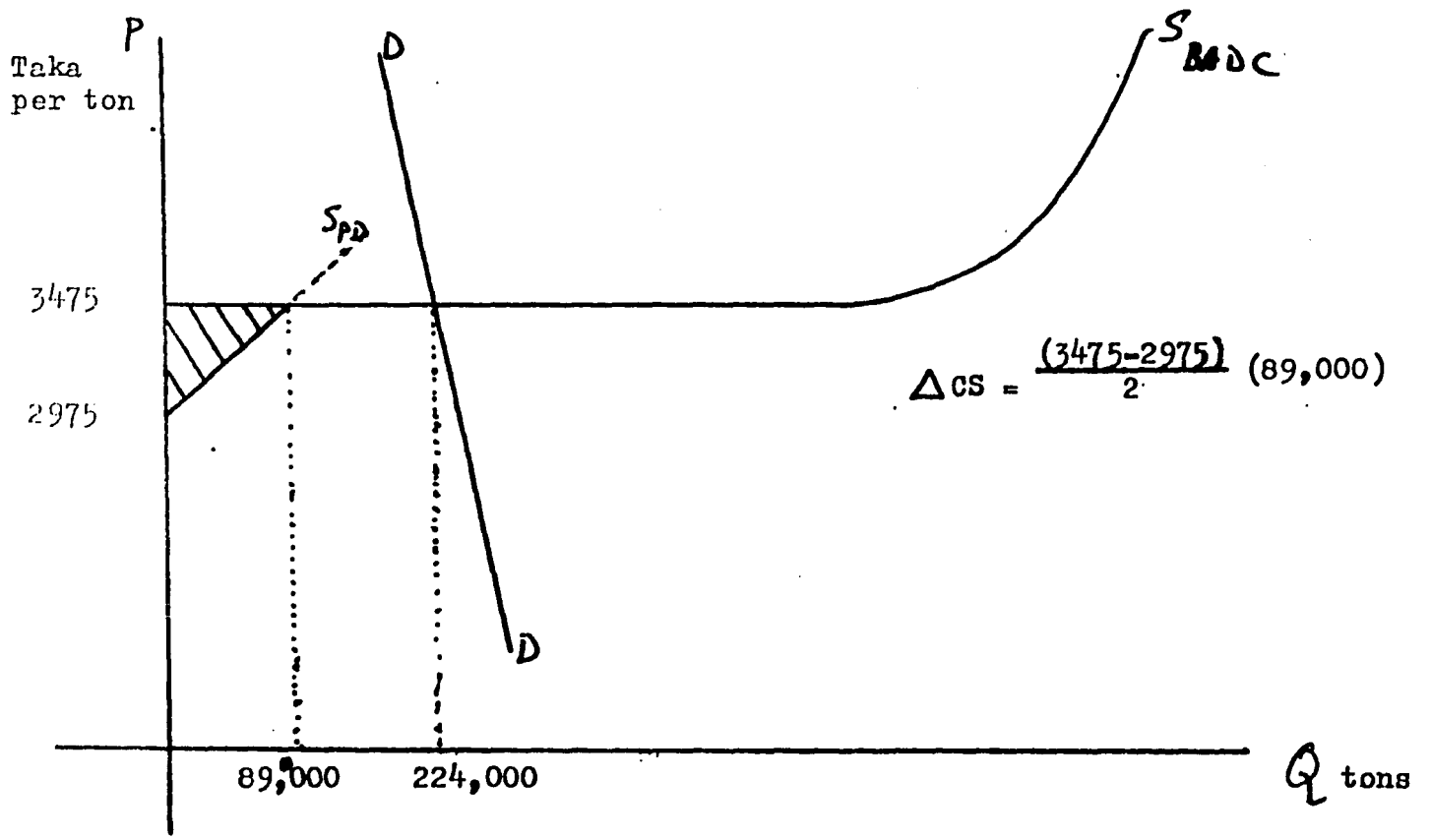


DIAGRAM 2: INCREASE IN CONSUMERS' SURPLUS FROM TSP WHOLESALING



ANNEX - F

BANGLADESH
FERTILIZER DISTRIBUTION IMPROVEMENT II

CERTIFICATION PURSUANT TO SECTION 611(e) OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, James A. Norris, Mission Director, the principal officer of the Agency for International Development in Bangladesh, having taken into account, among other things, the maintenance and utilization by the Bangladesh Government and its agencies of projects previously financed by the United States, do hereby certify that in my judgment Bangladesh has the financial and human resources capability to utilize effectively the project to be financed by this grant and loan agreement.

This judgment is based upon considerations discussed in the Project Paper (388-0060) to which this certification is attached.

James A. Norris
Director

2/14/85
Date

ANNEX - E

ENVIRONMENTAL AND ENERGY ASSESSMENTS

According to STATE 087821 (1983), the Bureau concurs with the environmental impact assessment in the PID which concludes that no further environmental analysis is needed for the Fertilizer Distribution Improvement II Project.

The purposes of this project are to increase: 1) efficiency in the delivery of fertilizer to farmers, 2) efficiency in the use of fertilizer by farmers, and 3) the growth rate in aggregate fertilizer consumption. The project, primarily a marketing improvement project, will contain no major energy consumption/production elements and will not consume significant amounts of physical energy resources. Project elements will not convert physical energy to secondary forms of energy. Physical energy consumption will be limited to the importation and distribution of fertilizer and minor construction improvements to river and road approaches to fertilizer supply points. The project's major new initiative will allow private fertilizer distributors to compete with the Government's Bangladesh Agricultural Development Corporation (BADC). By adhering to least cost transportation routes and modes, the private distributors are fully expected to distribute fertilizer with lower operating costs than BADC. The project is, therefore, expected to minimize the amount of energy (fuel) used to distribute fertilizer throughout Bangladesh. In view of the above, it is concluded that no further energy analysis is needed for the Fertilizer Distribution Improvement II Project.

P 012305Z OCT 82.
FM SECSTATE WASHDC
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UNCLAS SECTION 01 OF 02 STATE 278228
AIDAC
E.O. 12356: N/A
TAG:

SUBJECT: FERTILIZER DISTRIBUTION IMPROVEMENT II PID (388-0060)

REF: STATE 270149

1. SUMMARY: APAC REVIEWED AND APPROVED THE FERTILIZER DISTRIBUTION II PROJECT ON SEPTEMBER 22, 1982. MISSION IS CONGRATULATED ON THOROUGH AND WELL WRITTEN PID. MISSION REPRESENTATIVE CHARLES ANTHOLT'S PRESENCE WAS VERY HELPFUL IN REVIEWING THIS AMBITIOUS AND DIFFICULT ACTIVITY. COMMENTS AND SUGGESTIONS FOR PP DEVELOPMENT FOLLOW. END SUMMARY.

2. PHASE I PROJECT EVALUATION: APAC PRFFERENCE WOULD HAVE BEEN FOR SUBMISSION OF THE PID AFTER THE PHASE I EVALUATION SCHEDULED FOR OCTOBER WE UNDERSTAND THIS WAS ALSO MISSION'S PREFERENCE BUT STAFF AND TIMING CONSTRAINTS FOR THE SUBMISSION OF THE FY 84 CP AND OTHER ACTIVITIES PRECLUDED THIS POSSIBILITY. APAC REQUESTS THEREFORE THAT THE MISSION SUBMIT COPIES OF THE EVALUATON TO AID/W AND CABLE MISSION COMMENTS ON EVALUATION AND HOW THE EVALUATION RESULTS WILL AFFECT THE DESIGN OF THE PP. AID/W WILL REVIEW BOTH EVALUATION AND MISSION COMMENTS AND PROVIDE ADDITIONAL GUIDANCE AS APPROPRIATE.

3. INSTITUTIONAL OBJECTIVES: APAC AGREED WITH PROPOSAL TO DIVEST PUBLIC SECTOR CONTROLLED FERTILIZER DISTRIBUTION AND MARKETING ACTIVITIES BUT CONSIDERED THE PROPOSED INSTITUTIONAL OBJECTIVES AND THE TIMEFRAME TO BE VERY AMBITIOUS. THE DEVELOPMENT OF EFFECTIVE TRADE ASSOCIATIONS AND REGULATING BOARDS WILL BE DIFFICULT UNDERTAKING IN THEMSELVES. IN ADDITION, THE MISSION SHOULD EXPECT SIGNIFICANT OPPOSITION TO THE BADC DIVESTITURE FROM BUREAUCRATIC ENTITIES AND OTHERS WITH STAKES IN THE STATUS QUO. STRATEGIES SHOULD BE DEVELOPED TO CUSHION THE IMPACT OF THE SIGNIFICANT INSTITUTIONAL CHANGES. APAC REQUESTS MISSION REVIEW THE TECHNICAL ASSISTANCE REQUIREMENTS FOR BOTH THE PP DESIGN AND PROJECT IMPLEMENTATION. APAC VIEW WAS THAT PID UNDER-ESTIMATED DIFFICULTIES THAT COULD BE ENCOUNTERED.

4. POLICY OBJECTIVES: THERE ARE POLICY OPTIONS AS TO THE MIX OF PUBLIC AND PRIVATE SECTOR AND THE ROLES AND RESPONSIBILITIES OF THE ENTITIES CARRYING OUT THE DISTRIBUTION AND MARKETING OF FERTILIZER.

ADDITION, THERE ARE POLICY RELATED AREAS SUCH AS THE PRICING FOR FERTILIZER AND POLICIES FOR OWNERSHIP/LEASE OF WAREHOUSE FACILITIES. APAC REQUESTS THEREFORE THAT THE MISSION BE CLEAR AS TO THE POLICY OBJECTIVES TO BE ADDRESSED IN THIS PROJECT AND EXPLAIN THESE OBJECTIVES IN A SPECIAL POLICY SECTION IN THE PP. THIS SECTION OF THE PP WOULD INCLUDE A DESCRIPTION OF THE SPECIFIC POLICY OBJECTIVES TO BE ADDRESSED, HOW THEY WILL BE ACCOMPLISHED, INSTITUTIONS OR ENTITIES THAT WILL IMPLEMENT CHANGES, RELATION TO CDSS, AND STRTEGIES FOR IMPLEMENTATION.

5. WAREHOUSES: THERE WAS CONSIDERABLE DISCUSSION ABOUT THE PROPOSAL TO SELL OR LEASE TO PRIVATE SECTOR WAREHOUSE FACILITIES CONSTRUCTED UNDER PHASE I. WHILE WE CONCUR WITH THE MISSION INITIATIVE IN THIS AREA, APAC REQUESTS THAT THE PP PRESENT A SET OF POLICIES AND IMPLEMENTATION ARRANGEMENTS AS TO LEASE/OWNERSHIP ARRANGEMENTS CREDIT FACILITIES, ETC., TO REACH THIS OBJECTIVE. PP SHOULD ALSO INCLUDE A FINANCIAL ANALYSIS OF COST OF WAREHOUSES AND EXPECTED FAIR MARKET RATE OF RETURN. WE DO NOT WISH TO BE ACCUSED OF BUILDING THESE WAREHOUSES FOR THE BDG WITH GRANTS AND SOFT LOANS AND THEN SUBSIDIZING THE SALE OF THE VARY SAME UNITS TO THE PRIVATE SECTOR. IN ADDITION, IN VIEW OF DIVESTITURE PROPOSAL, APAC REQUESTS A THOROUGH MISSION REVIEW OF REMAINING WAREHOUSE CONSTRUCTION COMPONENT (STAGE III) OF PROJECT BEFORE MISSION PROCEEDS WITH THIS ACTIVITY. PLEASE ADVISE AND/W BY SEPTEL OF THE RESULTS OF THIS REVIEW.

6. FERTILIZER PURCHASE APPRANGEMENTS: APAC DISCUSSED THE IMPORTANCE OF THE PURCHASE AND INSTITUTIONAL APPRANGEMENT OPTIONS AVAILABLE FOR PROCUREMENT OF FERTILIZER. THE PROPOSAL, EXPLAINED BY ANTHOLT, TO REVIEW PROCUREMENT ARRANGEMENTS IN OTHER COUNTRIES SEEMS REASONABLE. MISSION SHOULD SEEK TDY ASSISTANCE FOR REVIEW OF PROCUREMENT AND INSTITUTIONAL OPTIONS EITHER BEFORE OR AFTER PROPOSED THIRD COUNTRY PROCUREMENT REVIEW. SER/COM HAS IDENTIFIED STAFF TO ASSIST MISSION. SEPTEL WILL ADVISE AVAILABILITY.

7. FERTILIZER DEMAND PROJECTIONS: MISSION SHOULD REVIEW FERTILIZER DEMAND PROJECTIONS FOR TSP, DAP, MICRO NUTRIENTS, AND OTHER FERTILIZERS IN PP. THE DEMAND PROJECTIONS SHOULD WEIGH THE IMPACT OF PRICE RATIONALIZATION, SUBSIDY REDUCTIONS, DIVESTITURE OF DISTRIBUTION AND MARKETING RESPONSIBILITIES, AND BROADER DISTRIBUTION OF FERTILIZER.

8. MONITORING AND EVALUATION PLAN: MISSION SHOULD INCLUDE EVALUATION PROPOSALS TO IDENTIFY AND TO COLLECT BASELINE DATA FOR ALL APPROPRIATE PROJECT COMPONENTS AT THE BEGINNING OF THE PROJECT AND AT REGULAR INTERVALS THEREAFTER, WE ARE ESPECIALLY CONCERNED THAT WE HAVE FIRM QUANTITATIVE DATA ON THE PROJECT"S IMPACT ON BENEFICIARIES (REFTEL).

9. PROGRAM FLEXIBILITY: THE MAGNITUDE OF THIS PROJECT IMPLIED A SIGNIFICANT MORTGAGE AND HENCE REDUCED FLEXIBILITY TO MEET FUTURE PROGRAM NEEDS. IN ADDITION, IT WAS APAC'S VIEW THAT PROJECT FLEXIBILITY SHOULD BE ENCOURAGED. CONSEQUENTLY, APAC SUGGESTS, FOR MISSION CONSIDERATION, A REVIEW OF PROGRAM FUNDING REQUIREMENTS AND BROADENING OF PROJECT AUTHORIZATION TO INCLUDE ELIGIBILITY FOR PROCUREMENT OF OTHER AGRICULTURAL RELATED COMMODITIES CONTRIBUTING TO FERTILIZER SECTOR.

10. ECONOMIC ANALYSIS: MISSION SHOULD PRESENT IN THE PP AN ECONOMIC ANALYSIS OF THE COST TRADE-OFFS BETWEEN PUBLIC AND PRIVATE SECTOR INVOLVEMENT IN FERTILIZER DISTRIBUTION AND MARKETING. THIS ANALYSIS COULD BE HELPFUL AS A BARGAINING POINT IN DISCUSSION WITH BDG OFFICIALS. ALSO, THIS TYPE OF ECONOMIC ANALYSIS COULD SERVE AS A BENCHMARK OF WHAT MIGHT BE EXPECTED FROM DIVESTITURES IN FERTILIZER DISTRIBUTION AND MARKETING IN OTHER COUNTRIES. APAC ALSO EXPECTS THAT THIS SECTION WOULD INCLUDE A THOROUGH ANALYSIS OF SUBSIDIES.

11. TECHNICAL ASSISTANCE AND STAFFING: IT WAS APAC'S VIEW THAT THIS PROJECT WOULD REQUIRE SIGNIFICANT STAFF AND TDY SUPPORT BOTH FOR PROJECT DESIGN AND IMPLEMENTATION. FOR PP DESIGN, WE WERE UNCERTAIN AS TO MISSION REQUIREMENTS STIPULATED DIFFERENTLY ON PID FACESHEET AND WITHIN THE TEXT. THE TA REQUIREMENTS STIPULATED ON PAGE 19 OF THE PID SEEM TO BE MORE IN LINE WITH OUR VIEW OF PROJECT PREPARATION REQUIREMENTS. HOWEVER, WE BELIEVE THAT THE SUBSTANTIAL POLICY AND INSTITUTIONAL ACTIVITIES WILL REQUIRE ADDITIONAL TECHNICAL ASSISTANCE. IN addition TO TA FOR PP PREPARATION, APAC WAS CONCERNED WHETHER MISSION STAFF WAS SUFFICIENT TO IMPLEMENT THIS COMPLEX ACTIVITY. WE THEREFORE REQUEST MISSION REVIEW SKILLS AND STAFF AVAILABILITY TO IMPLEMENT THIS PROJECT.

12. PLEASE ADVISE TA REQUIREMENTS FOR PP DESIGN. SEPTEL WILL PROVIDE INFORMATION ON COMMODITY CONSULTANTS. DAM BT.
#8228

Project No. 388-0060

STATUTORY CHECKLIST
5C(1) - COUNTRY CHECKLIST

See the Country Checklist submitted with the Project Paper for Extension of the Bangladesh Family Planning Services Project, No. 388-0050.

5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance Funds, B.2. applies to projects funded with Development Assistance loans, and B.3. applies to projects funded from ESF.

CROSS REFERENCES:	IS COUNTRY CHECKLIST UP TO DATE?	a)Yes
	HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?	b)Yes

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act Sec. 523, FAA Sec. 634A; Sec. 653(b).

(a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that amount)?	a) The project was included in the FY84 CP on a Planned Program Summary Sheet. A full CN will be sent to Congress before obligation. b) Yes

2. FAA Sec. 611(a)(1). Prior to obligation in excess of $100,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

a) Yes

b) Yes

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

Not required.

4.	FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction,has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973?(See AID Handbook 3 for new guidelines.)	N/A
5.	FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?	Yes, Director's certification included in Project Paper.
6.	FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so,why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	No
7.	FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	a) N/A b) It fosters the private initiative of fertilizer dealers and distributors through competition. c) It helps cooperatives by making the dealer development program open to them and fertilizer stocks available. d) It encourages active competition among fertilizer distributors. e) It will increase efficiency in the delivery of fertilizer to farmers thereby raising yields. f) N/A
8.	FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	N/A

9.	FAA Sec. 612(b), 636(h); FY 1982 Appropriation Act Sec.507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.	The entire host country contribution is in local currency. The local costs of contractor services will be paid with U.S. owned Taka.
10.	FAA Sec. 612(d). Does the U.S.own excess foreign currency of the country and, if so, what arrangements have been made for its release?	No
11.	FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts,except where applicable procurement rules allow otherwise?	Yes
12.	FY 1982 Appropriation Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?	a) N/A b) No
13.	FAA Sec. 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16? Does the project or program take into consideration the problem of the destruction of tropical forests?	a) Yes b) Yes
14.	FAA Sec. 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)?	N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria.

	a. FAA Secs. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive produc tion and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a	a) Project purpose is to increase the use of fertilizer and the efficiency of fertilizer delivery to farmers.

sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by develo ping countries?	b) The dealer development program will be open and fertilizer stocks available to cooperatives. c) The project will increase availability of fertilizer. d) N/A e) N/A
b. FAA Sec. 103, 103A,104,105,106. Does the project fit the criteria for the type of funds (functional account) being used?	Yes, Sec.103
c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving,labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?	N/A
d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?	Yes
e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"? (M.O. 1232.1 defined a capital project as "the construction, expansion, equipping or alteration of a physical facility or facilities financed by AID dollar assistance of not less than $100,000, including related advisory, managerial and training services, and not undertaken as part of a project of a predominantly technical assistance character."	Yes; Bangladesh is "relatively least developed."
f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustained economic growth?	Yes

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.	The project is designed to increase the growth rate in aggregate fertilizer consumption. To accomplish that purpose the project provides incentives to encourage expanded private sector participation in fertilizer distribution and marketing.	

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the counry to repay the loan, at a reasonable rate of interest.	N/A
b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?	N/A
c. ISDCA of 1981, Sec.724(c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)?	N/A

3. Economic Support Fund Project Criteria

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Sec. 102?	N/A
b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?	N/A
c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to nonproliferation objectives?	N/A
d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?	N/A

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an asistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement (B) Construction, and (C) Other Restrictions.

A. Procurement

1.	FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?	Yes
2.	FAA Sec.604(a) Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?	Yes
3.	FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States agaist marine risk with such a company?	Yes
4.	FAA Sec.604(e); ISDCA OF 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be financed, is there provisions against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)	N/A
5.	FAA Sec. 604(g). Will construction or engineering services be procured from firms of countries otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one or these areas?	No
6.	FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates?	No

7.	FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?	a) Yes. b) N/A
8.	International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available?	Yes
9.	FY 1982 Appropriation Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?	Yes, such clauses are routinely inserted in all A.I.D.-direct contracts.
B.	Construction	
1.	FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used?	U.S. firms will be eligible to bid on all such contracts.
2.	FAA Sec. 611(c). If contracts for construction are to be financed, will they will let on a competitive basis to maximum extent practicable?	Yes
3.	FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the CP)?	N/A
C.	Other Restrictions	
1.	FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?	N/A
2.	FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?	N/A

3. FAA Sec. 620 (h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? Yes

4. Will arrangements preclude use of financing:

a. FAA Sec. 104(f); FY 1982 Appropriation Act Sec. 525: (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization? (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion? 1) Yes 2) Yes 3) Yes 4) Yes

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? Yes

c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? Yes

d. FAA Sec. 662. For CIA activities? Yes

e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes

f. FY 1982 Appropriation Act, Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for military personnel? Yes

g. FY 1982 Appropriation Act, Sec. 505. To pay U.N. assessments, arrearages or dues? Yes

h. FY 1982 Appropriation Act, Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)? Yes

i. FY 1982 Appropriation Act, Sec. 510. To finance the export of nuclear equipment, fuel, or technology or to train foreign national in nuclear fields?	Yes
j. FY 1982 Appropriation Act, Sec. 511. Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	No
k. FY 1982 Appropriation Act, Sec. 515. To be used for publicity or propaganda purposes within U.S. not authorized by Congress?	No.