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AMEX



**AGRICULTURAL INPUT MOBILIZATION
FOR AFGHANISTAN—
FINAL REPORT OF ASSIGNMENT**

Prepared for:

**Office of the AID Representative
Islamabad, Pakistan**

**Under a Subcontract to
Volunteers in Technical Assistance**

Prepared by:

**Chemonics International Consulting Division
2000 M Street, N.W., Suite 200
Washington, D.C. 20036**

In Association With

**AMEX International
1725 K Street, N.W.
Washington, D.C. 20006**

November 4, 1988

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Mr. Gary Lewis
Office of the AID Representative
American Embassy
Islamabad, Pakistan

Dear Gary:

I am pleased to provide herewith the final report on "Agricultural Input Mobilization for Afghanistan" prepared by Chemonics International in association with AMEX International. This work has been financed under a subcontract with VITA under their contract with AID/REP.

The basic study was carried out and the draft report prepared over a three-week period in October 1988, by a three-person team provided by Chemonics and AMEX. I joined the team as a fourth member for the final week. The team worked very closely with you and others in the O/AID/REP, with VITA, and with many other individuals and entities in Pakistan. We very much appreciate the cooperation received. The draft report was presented to the AID/REP's office on our final day in Pakistan, Thursday, October 20, 1988.

Within a week after our return to the United States, we received from you a set of comments on the draft report. As agreed, we have reviewed these comments and modified the report accordingly.

The main thrust of the comments received suggest that the procurement and distribution of fertilizer and seeds be carried out using existing entities and facilities to a much greater degree than contemplated in the draft report. Chemonics understands the concerns of the AID/REP in this regard, but we continue to believe that the originally proposed free-standing distribution entity, AIME, offers the best opportunity to get the job done. Therefore, we have retained this approach in section V of the report. However, to be responsive to the AID/REP's concerns, we have added a section VI in which we describe briefly the alternative approach.

We have also provided, as a final annex to the report, a listing of all of the AID/REP's comments and an indication of our disposition of those comments.

Chemonics is very pleased to have had this opportunity to work with you and your colleagues and others in Pakistan and Afghanistan on this important activity. Based on our long experience with fertilizer, seeds, and other inputs in Afghanistan, we believe that it is vital to ensure an adequate supply and distribution system in time for the next major planting season in September 1989. We are ready to assist the AID/REP in the further elaboration of this activity if desired.

Sincerely yours,



Thurston F. Teele
Director

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ACRONYMS

ACLU	Afghan Central Logistics Unit
AFC	Afghan Fertilizer Company
AID	Agency for International Development
AIME	Agricultural Input Mobilization Entity
ARD	Agriculture and Rural Development
CEP	Commodity Export Program
CIF	Cost Insurance and Freight
CIP	Commodity Import Program
DAP	Diammonium Phosphate
DWT	Dry Weight
FFC	Faugi Fertilizer Company Ltd.
FID	Fertilizer Import Department
FOB	Free on Board
GOA	Government of Afghanistan
GOP	Government of Pakistan
GT	Grand Trunk
LOA	Length Overall
MAI	Ministry of Agriculture and Irrigation
MOA	Ministry of Agriculture
N	Nitrogen (Fertilizer)
NFDC	National Fertilizer Development Center
NLC	National Logistics Cell
P	Phosphate (Fertilizer)
PR	Pakistan Railway
VITA	Volunteers in Technical Assistance

SECTION I

INTRODUCTION AND SUMMARY

This paper proposes a system under which USAID-financed fertilizer, seed, and other agricultural inputs can be procured and distributed within the liberated crescent of Afghanistan (see map on page 4) in a way that will (1) be independent of the Kabul government, (2) make maximum use of the private sector and the lessons learned from the Afghan Fertilizer Company experience prior to the war, and (3) be easily transferred to Kabul and expanded into a nationwide input distribution program (a new AFC) once this becomes possible.

A. Financing Mechanism

Chemonics has identified two basic mechanisms for the procurement or supply of fertilizer and other inputs that may be suitable for the first year or two of the mobilization project: (1) a grant program and (2) a commodity import program (CIP). We believe it is not possible to depend solely on a CIP, because it will be necessary to "give away" a significant portion of the fertilizer handled. Therefore, the viable options are (1) a single grant program with a mixture of cash sales and "give away" commodities to the returning refugees and displaced persons, and (2) a dual program, in which part of the fertilizer would be provided under a CIP for cash sales to generate local currency reflows, and the remainder would be obtained through a grant program covering only the "give away" commodities. In both cases, it would be possible to add a credit program, and apply it to both the sales element and ultimately to the "give away" element, thus eventually changing the "give away" to a credit program.

A third financing mechanism is also available and, we understand, being considered by the AID/REP's office: inclusion of fertilizer, improved seed, and other agricultural inputs as part of the existing commodity export program (CEP). We have provided a discussion of this approach in section VI of this report. In general terms, this approach would use an existing program and delivery mechanism to procure and deliver fertilizer within Afghanistan in the same manner as other commodities. As discussed in section VI, Chemonics does not believe this approach will be successful because, based on experience, we believe that fertilizer and seed must be treated differently from other commodities.

Chemonics favors the adoption of a single AID-financed grant program during at least the first two years of the effort. This

would include a targeted ("coupon") "give away" program to persons in greatest need, and a cash sales program for those farmers requiring fertilizer and willing to purchase it on a cash basis. The cash generated from the sales would be used to support the operations of the distribution agency. (see below)

The CIP option is not favored because the potential for generating local currency is very small and would not, in our view, justify going through the complexities of a CIP. The basic problem is that the present, government-run AFC is selling fertilizer in Afghanistan at a subsidized price of Afs. 600 per 50 kg bag of urea and Afs. 700 for DAP. This works out to \$3.00 and \$3.50 per bag at the street rate of Afs. 210 to \$1, or \$60 and \$70 per ton. Since fertilizer is not readily available to all farmers at this price, we assume that the demand is such that USAID-financed fertilizer could be sold for twice the "official, subsidized price," or \$120 and \$140 per ton, perhaps even higher. We estimate that the cost of getting the fertilizer from Pakistan to Afghanistan, including dealer margins, is \$80 per ton. This would allow a reflow, after covering delivery and sales costs or margins, of the Af. equivalent of \$40 and \$60 per ton. The procurement cost of the fertilizer in Pakistan under such a program is, say, \$160 per ton for urea and at least \$240 per ton for DAP. Thus the reflows would be \$40 on a procurement outlay of \$160 (25%) for urea, and \$60 on an outlay of \$240 (25%) for DAP, not very attractive by CIP standards. Note that even these modest reflows depend on the procurement being effected in Pakistan; if offshore procurement were required, the transport costs and margins would eat up more of the sales revenues, and the resulting smaller reflows would be a very small percentage of the higher procurement cost. Finally, Chemonics believes that the reflows possible from the sales part of the grant program, used to help finance the distribution operation, would probably be larger on a per ton basis than those of the CIP program.

We thus propose a straight grant program with a portion set aside for "give away" (to support the returning refugees and displaced persons) during the first year of each refugee's or displaced person's return, followed by a credit program, and a portion set aside for cash sale to persons not qualifying for the "give away." A credit sales program would be set up as soon as possible after the first year.

B. Distribution Mechanism

Based on Chemonics' long experience in Afghanistan with the Afghan Fertilizer Company, our extensive interviews during the current assignment, and the guidelines provided by the AID Representative's (AID/REP) office, we propose the following basic mechanism. We propose the creation of what we call the AIME, or Agricultural Input Mobilization Entity, charged with procurement, shipping, and wholesale (and occasional) retail distribution of

fertilizer originating in Pakistan or offshore via Pakistan. AIME would be governed by a "Supreme Council," which, among other things, would set policy, including the determination of who is eligible to receive "give away" fertilizer and seed. The term "Supreme Council" has special validity in the Afghan context. The AIME would be managed by a team of expatriate specialists provided by a private firm under contract or grant financed by the AID/REP, and staffed by Afghan and Pakistani specialists recruited by the management team. Candidates would doubtless include former employees of the AFC. AIME would depend as much as possible on private retailers for retail sales and to a limited degree on private wholesalers, but would itself have the full range of capabilities including direct AIME retailing to ensure that all parties maintain reasonable performance standards and margins.

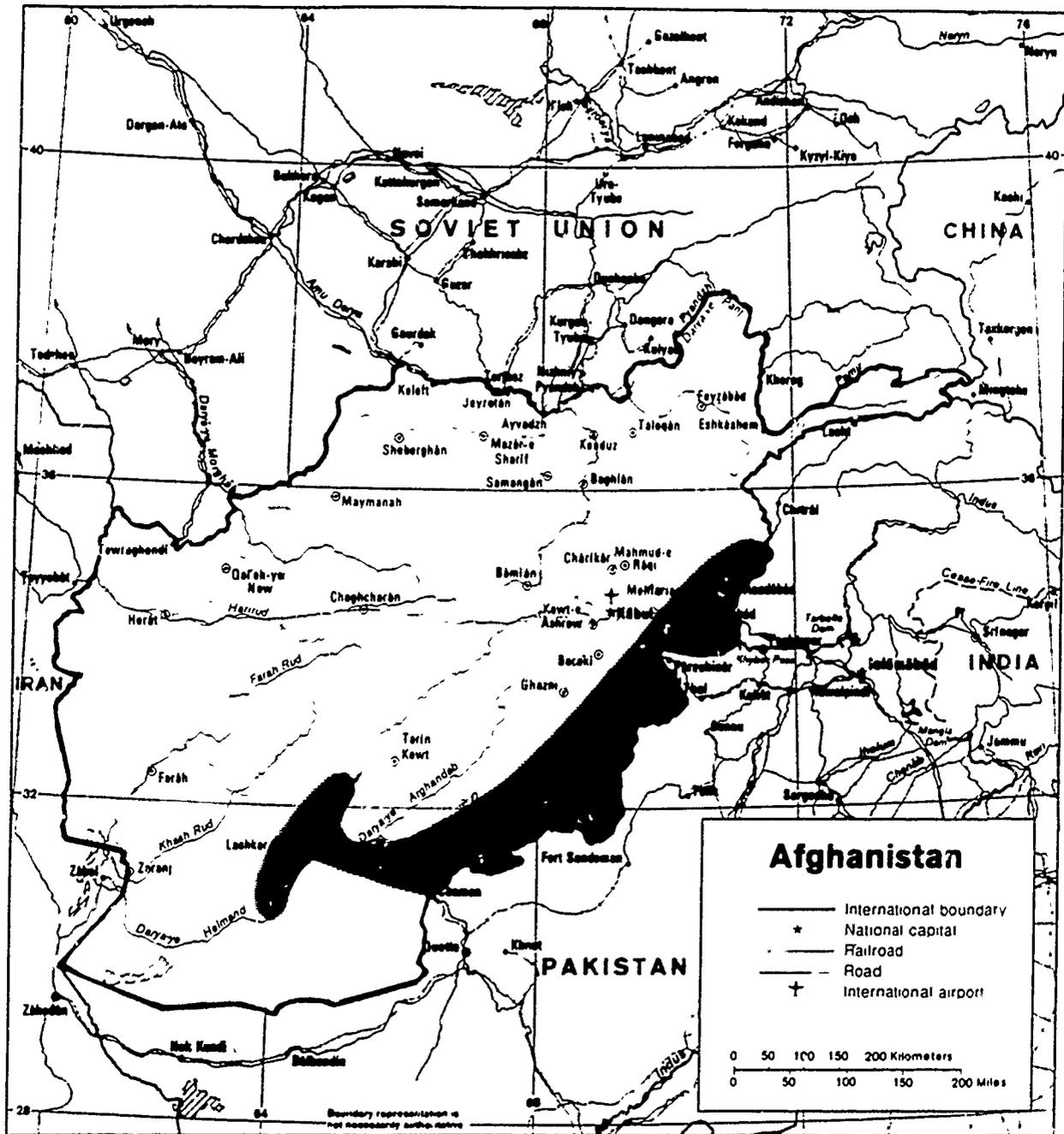
These basic parameters of the program have been selected as the best approach to (1) ensuring the availability of fertilizer and other inputs to the returning refugees and displaced persons, and to other farmers in the liberated areas, and (2) creating a distribution mechanism that can most easily be expanded when the time comes.

Details of this program are provided in the following sections, especially in section V.

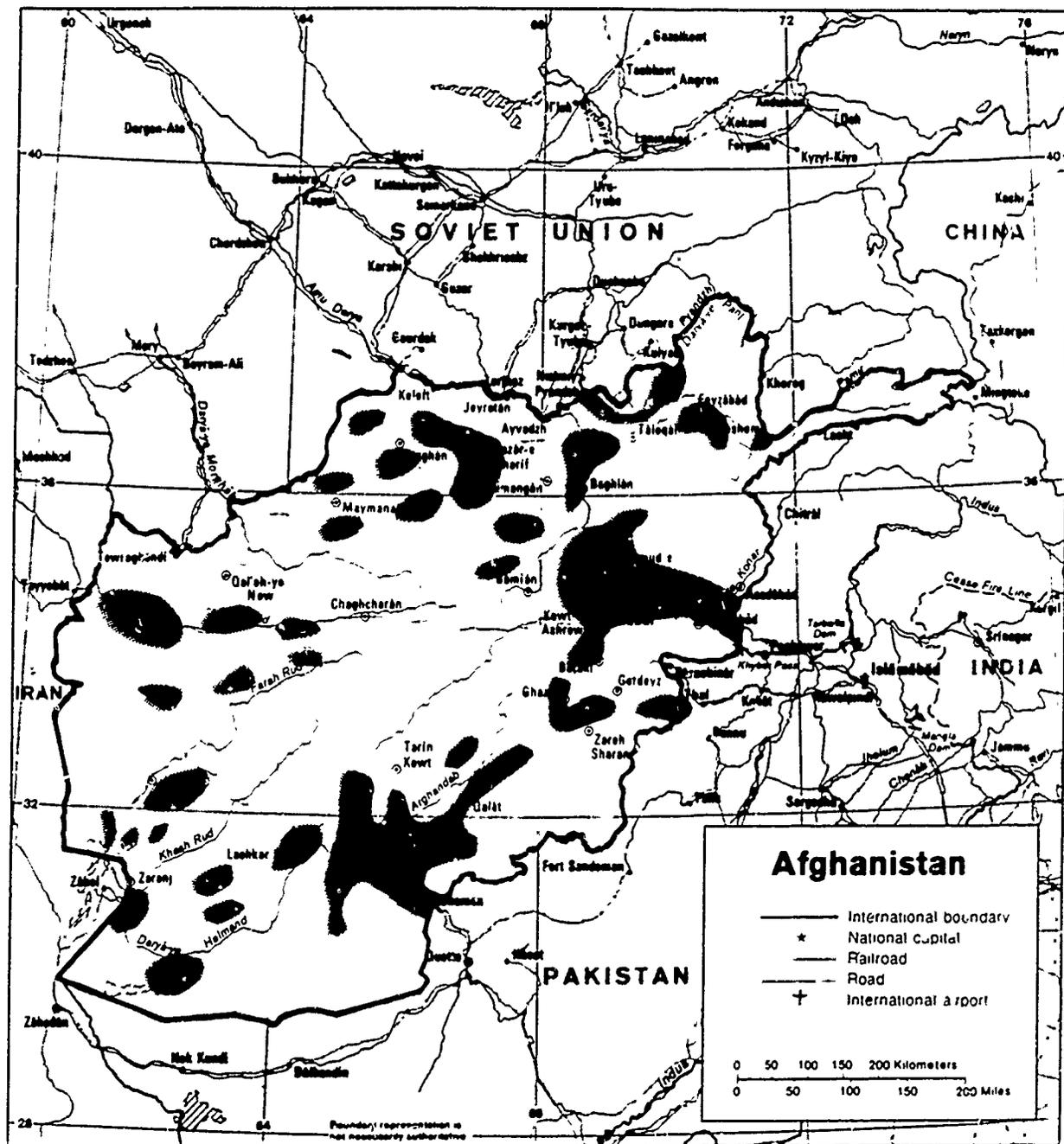
Section VI below provides a discussion of an alternative delivery mechanism that would include fertilizer and improved seed in the existing commodity export program (CEP) and make maximum use of existing procurement, transportation, storage and delivery mechanisms. As discussed in that section, Chemonics does not believe this to be the preferred approach.

C. Other Material

The report and its annexes also provide considerable information on the market for fertilizer and, to a lesser extent, other inputs in the liberated areas of Afghanistan. Among other things, the data serve to justify a minimum first year 20,000 MT program. Considerable information and analysis of the supply situation, including the transportation and storage sectors, are also provided herewith.



THE LIBERATED CRESCENT OF AFGHANISTAN
 (indicated by shaded area)



MAJOR AREAS UNDER CULTIVATION

SECTION II

BACKGROUND AND SETTING

The background and setting for the proposed agricultural input activity are described below. As most of this material is available in detail in other documents, it is provided in summary form here and in the following sections of the report as needed.

A. The State of Afghanistan's Agriculture Sector

Afghanistan is traditionally a highly agricultural country. Although the terrain is rugged, most of the country lies in the temperate zone and, between rainfall and snow-fed rivers, has reasonable water supplies to support both rainfed and irrigated agriculture. Before the war, in spite of the country's many problems, Afghanistan was approaching net food self sufficiency. This self sufficiency was engendered in significant part by the use of fertilizer on most of the irrigated wheat, grapes, and other crops. Fertilizer availability was assured from 1972 onward by the quasi-private Afghan Fertilizer Company.

Afghanistan's agriculture has been severely damaged by the war, with the disruption of normal services, the destruction of irrigation systems and roads, a deteriorated availability of inputs and, of course, the departure of a major portion of the agricultural population as refugees or war casualties. On the other hand, the reduction in population numbers needing to be fed has lowered the food requirements. With respect to inputs, the Afghan Fertilizer Company has remained in existence, but has been converted into a full governmental entity, one that is highly politicized. Overcoming considerable logistical difficulties, the AFC reportedly provides fertilizer only or mainly to people acceptable to the ruling party. Available distribution figures from the AFC suggest that quantities distributed in recent years by the company are higher than before the war, a statistic that should be taken with some skepticism. The main rationale supporting the possible validity of these figures is that, given the deterioration of the overall farming system in the country, only heavier than usual applications of fertilizer could maintain production at anything close to acceptable levels.

Furthermore, it appears that the Soviet-built and -operated urea plant at Mazar-i-Sharif is not only still operating, but doing so with an output of about 120,000 MT per year, considerably above the original design capacity. Assuming this to be the case, the plant represents an enormous potential advantage for the eventual normalization and recovery of Afghanistan's agriculture sector. As discussed in detail elsewhere in this report, this situation has several unique

elements, including the possibility that significant quantities of urea are being "exported" to the Soviet Union.

Whatever the truth, the basic fact is that Afghanistan's agricultural economy continues to function, but with numerous deficiencies that must be dealt with if the country is to return to net food self sufficiency. Improved availability of fertilizer, quality seed, and other inputs to all farmers throughout the country is a key to this recovery.

Fertilizer and seed are especially important. Before the war, the effectiveness of fertilizer, particularly urea and DAP, was graphically demonstrated in the context of Afghanistan's irrigated agriculture, particularly with wheat, grapes, and cotton (the last two being major cash crops). With respect to wheat, it was clearly demonstrated that importing (or producing and using) fertilizer was far preferable to importing wheat because fertilizer use would increase wheat production at a ratio of approximately 4 kgs of wheat to 1 kg of fertilizer. With respect to seed, it is generally believed that the Afghan seed stock has not been adequately renewed since 1980, i.e., farmers have been replanting the same germplasm for many years, thus resulting in very poor seed quality leading to poor yields. It will be necessary to ensure that improved seed, of the new Mexipak varieties available in Pakistan, are made available with the fertilizer. Fertilizer without improved seed, or the reverse, would sharply reduce the effectiveness of these key inputs.

B. Immediate Problem and Target

Afghan agriculture is obviously faced with global problems, as discussed above. As part of the overall recovery effort, ways will ultimately have to be found to ensure, among other things, the availability of agricultural inputs in the entire country and to all classes of farmers. However, the immediate problem to be dealt with through USAID-financed efforts involves input requirements in the liberated areas of the south and east and, especially, for the returning refugees and displaced persons. The problem, whence is defined the objective, is twofold: first, to give the refugees and displaced persons both the ability to return successfully and the incentives to do so and, secondly, to attempt to ensure that Afghanistan--especially the liberated areas (not traditionally food surplus areas)--will be able to grow enough food to feed the entire population of those lands, including the existing population and the returnees.

This dual target, assistance to direct refugees and displaced persons, and food adequacy in the liberated areas, leads to the dual program that is presented extensively in subsequent sections of the report.

SECTION III

FERTILIZER DEMAND

The purpose of this section is to determine a rational level or volume for a program of supplying fertilizer to the liberated crescent of Afghanistan (see map on page 4). This area has been identified as the target area as it is home to the majority of the refugees resident in Pakistan, and is almost totally liberated. Fertilizer controlled by the Kabul regime is only marginally available in this region, frequently at "black market" prices. Historically, it is not a food surplus area and with the influx of returning refugees food production must be maximized. Furthermore, it includes irrigated areas at lower elevations that have extended growing seasons capable of producing two or three crops a year if adequate inputs are available. Finally, it is a region that can be serviced in a cross-border program with relative ease.

The issue of demand can be looked at in two ways, the first of these being a conventional demand analysis. In other words, using past or present data on fertilizer consumption and availabilities, how much fertilizer could the target area absorb? The second way is to examine how much fertilizer will be needed to meet the two objectives of the project: (1) to assist and motivate the refugees who return to Afghanistan and resume farming their lands, and (2) to ensure that an adequate supply of food can be grown in the area to feed both the existing population and the returning refugees.

Data is very weak to support a conventional analysis of demand in this situation. Accordingly, we strongly recommend that the second approach be used--e.g., after the analysis, a rather modest target figure be selected to meet minimum requirements, also ensuring that the area shall be able to absorb the product made available.

In developing demand projections, two factors were predominant:

- o the historical offtake of fertilizer, and
- o the food needs of the returning refugees.

Much of the analysis necessarily deals with the whole country. However, as is discussed throughout this report, the chief area of interest is the liberated crescent, i.e., the area clearly under Mujahidin control, which is on the border with Pakistan, extending to a depth of about 200 to 250 km.

A. Conventional Demand Analysis

Table 1 on the following page, provides the data reported by the Afghan Fertilizer Company (AFC) on its sales from 1972 through 1986. The product described is a mix of locally produced urea (from the Mazar-i-Sharif plant) and imported phosphatic fertilizers, mainly DAP. The data spans the period when the AFC was operated as a quasi-private company aided by a technical assistance team from Chemonics, up to 1979, and the period under the Kabul regime thereafter. During the pre-war period, the ratio between urea and DAP, by product weight, tended to be 2:1, a ratio based on agronomic recommendations for the major crops. Pre-war phosphate fertilizer imports originated in the free world; since 1980, they have come mostly from the Soviet bloc.

The table shows that AFC sales apparently tended to increase after the war started. We also understand that the Mazar plant has continued to operate since the war started and now is producing 120,000 MT, which is above the design capacity. It is entirely possible that the 120,000 MT of urea were distributed in Afghanistan along with whatever phosphate the Soviets were able to supply from the outside. The data suggests that some 50,000 MT of phosphate fertilizer were supplied in 1986, keeping the ratio between nitrogen and phosphate close to the historical levels. We also understand that the total deliveries dropped to 135,000 MT in 1987. Since we have heard nothing to indicate a fall off in urea from Mazar, this suggests that the Soviets fell very short in their phosphate deliveries, which squares with anecdotal information that the Soviets reneged on their commitments in this regard and that there have been shortages of phosphate.

The above refers to the global demand in Afghanistan. We are mainly interested in the liberated crescent. We do have one informally obtained report from the AFC that breaks down sales by province, and gives an opportunity to add up the sales from those provinces in the crescent. In doing so, we find that 40% of the phosphate fertilizer reported and 50% of the urea was sold in the crescent, or a combined share of 47.6%. The total figures in this report, interestingly, were considerably lower than in other reports: about 87,000 MT for the country as a whole (1987-88). The total sales in the crescent were 40,000 MT.

Looking at historical data, the following figures cover an area that is similar to but larger than the crescent, the old Kandahar and Kabul AFC districts.

	<u>Kandahar</u>	<u>Kabul</u>	<u>Total</u>
1973-1975	22,000 MT	24,000 MT	46,000 MT
1976-1979	31,000 MT	32,000 MT	63,000 MT

Table 1: Reported Fertilizer Sales by Afghan Fertilizer Company (AFC) by Year

<u>Year</u>	<u>Sales of Fertilizer</u> <u>(in Metric Tons)</u>
1972	44,000
1973	63,000
1974	70,000
1975	84,000
1976	100,000
1978	103,000
1979	94,000
1980	104,000
1981	98,000
1982	115,000
1983	121,000
1984	146,000
1985	152,000
1986	170,000

Source: AFC via Dr. Wakil's memo of July 11, 1988

Table 2 : Fertilizer Lifting by Province in Afghanistan During 1987/1988

NO.	CITY	PLANNED YEAR 1988/89		ACTUAL SALE 1987/88	
		UREA	PHOSPHATE	UREA	PHOSPHATE
1	Kabul	5,610	2,862	3,877	1,765
2	Laghman	1,349	635	759	243
3	Paktia	1,076	547	559	211
4	Wardak	1,189	604	859	257
5	Paktika	108	55	31	22
6	Ghazni	1,794	912	142	380
7	Parwan	8,180	4,158	4,731	1,533
8	Kopisa	2,495	1,269	1,284	462
9	Bamyan	593	302	359	153
10	Nimroz	2,890	1,470	1,455	562
11	Nangahad	14,000	6,500	8,187	2,346
12	Badkhashan	404	206	234	98
13	Takhar	3,387	1,721	1,254	849
14	Kunduz	11,000	5,500	7,366	2,746
15	Baghlan	5,716	29,006	3,105	117
16	Samangan	896	456	509	179
17	Balkh	5,169	2,628	3,154	1,415
18	Jozjan	1,573	801	987	351
19	Faryab	449	229	240	97
20	Herat	6,920	3,518	4,057	1,179
21	Farah	2,615	1,330	1,604	475
22	Badghis	1,345	684	921	460
23	Golat	821	42	57	16
24	Kandahar	5,389	3,740	3,405	1,087
25	Zabul	496	252	139	68
26	Uruzgan	2,482	1,262	744	584
27	Helmand	25,019	11,966	12,273	4,177
28	Timroz	209	103	132	53
29	Kunar	674	342	266	102
	Tota	114,000	57,000	63,620	23,040

Thus, one could argue that the historical requirement for the area is 60,000 MT, and the current figure is 40,000 MT. The reduction would be explained by the fact that the crescent is somewhat smaller than these two former AFC districts, the reduction in agricultural population and all of the other problems facing agriculture in the area.

Perhaps the most valuable aspect of all of the current AFC data is the indication that, in spite of all the problems, Afghan farmers are interested in using fertilizer and sufficiently knowledgeable about it to do so when it is available. The very low subsidized prices charged by the government (Afs. 600/bag, equal to about \$60 per ton of urea) doubtless contribute to the significant quantities demanded. Still, given the data, we believe that the crescent area may eventually have a maximum outlet demand for up to 80,000 MT of fertilizer.

B. Computation of Demand Based on Need

The other way to look at demand is to base it on an analysis of need. There are obviously many farmers remaining in the crescent. They require fertilizer and, reportedly, at least some of them are receiving it, especially those on which the party looks with favor. Indeed, if the AFC is delivering the tonnages claimed, a considerable amount must be getting into the area, in spite of the difficulties in moving it from Mazar, north of the Salang pass, to the south. Reports indicate that fertilizer is available in the area, in spite of recent reports of shortages of phosphate. We could say that the existing source, the AFC, is supplying the remaining farmers, although we doubt that this is entirely true.

In short, we believe that a certain amount of additional fertilizer, if available from sources in Pakistan, would be purchased by the existing farmers in the area to supplement whatever they are getting from the Mazar plant and the Soviet Union. Since these farmers are "established," they would be good candidates for cash sales rather than the "give away" program planned. We would be comfortable in estimating between 5,000 and 10,000 MT in this category, more heavily weighted toward DAP than is usually the case because of the difficulty in obtaining phosphate fertilizer from the Soviet bloc in recent times. This estimate is also based on a sales price for fertilizer to established area farmers of at least Afs. 1,400 per bag of DAP, double the official price. This higher price is possible only because of the perceived shortages of phosphate fertilizer at the present time.

If the premise that the farmers who have remained in Afghanistan during the war continue to have access to fertilizer and to produce enough food to feed themselves is valid, it is the requirements of the returning refugees and displaced persons that

must be addressed. This is so because (1) they are the main target of the program and (2) they will need "give away" fertilizer that will obviously not be available from the AFC.

The basic computation of need for the refugees and displaced persons is quite simple. We estimate that each person requires 170 kg of grain per year. If a kg of fertilizer is needed to produce between 3 and 4 kg of wheat, each returning refugee or displaced person would need to be supported by about 50 kgs of fertilizer or, rather conveniently, one bag. In practical terms, one family of six would need six bags of fertilizer. Of course, the mix would still be between nitrogen and phosphate, at a ratio of 2:1, so this would mean four bags of urea and two bags of DAP.

The amount of fertilizer needed to support subsistence farming very simply becomes a function of the number of refugees and displaced persons one expects, or wants, to return and take up farming each year. One million refugees and displaced persons would require 50,000 MT of fertilizer to grow the subsistence food crop.

While it has been estimated that as many as one million refugees may return to Afghanistan this year or next, we do not think one can plan on such a figure. Perhaps 400,000 refugees and displaced persons might be expected to return and begin farming in the liberated crescent in the first year, and 600,000 in the second. Fertilizer for this group would be 20,000 MT for the first year and 30,000 MT the next.

Thus, using these very rough data, we have a supplemental requirement for the existing population of between 5,000 and 10,000 MT of fertilizer in the first year (1989-1990), and for the returning refugees and displaced persons, based on 400,000 people, we estimate a need of about 20,000 MT. This brings the total to 25,000-30,000 MT. However, given all of the constraints, and in the interest of being conservative, we prefer to reduce the total target amount to 20,000 MT. The motivation for this conservative approach is, in part, a belief that even this tonnage would be a strain on the delivery system in the first year. Given the apparent shortages of phosphate in the area, we would expect to depart from the usual 2:1 ratio and import a 1:1 ratio of urea to DAP.

C. Economics and Price Considerations

Although we believe that our estimated figure for effective demand for refugee/displaced persons and supplemental sale fertilizer in the liberated crescent is low, and can easily be absorbed under the proposed program, we believe that, for the long pull, more rigorous examination of the economics of fertilizer marketing and sales would be justified. This is especially true because we propose that the "give away" period be

very short for each target family, encompassing only the first year, after which the returned refugees and displaced persons would be expected to buy their fertilizer for cash or credit.

Basically, a farmer's decision to buy and use fertilizer is based on the cost-benefit of so doing. The fact that research data indicates a return of 4 kgs of additional wheat for each kg of fertilizer used in accordance with recommendations makes the calculation relatively easy. Under current conditions in Afghanistan, with everything in short supply, the 4:1 ratio may, in fact, be considerably less. However, for the purpose of this report's calculation, we shall use that ratio as follows:

One kg of fertilizer will produce four kg of wheat. The prices of urea, DAP, and wheat are the following:

Official prices: Urea, Afs. 600/50 kg or about \$60/MT
DAP, Afs. 700/50 kg bag or \$ \$70/MT

Wheat, Afs. 200/seer equals about \$130/MT

With one kg of fertilizer producing 4 kg of wheat and at official prices, \$60 worth of urea produces 4 x \$130, which equals \$520 worth of wheat. This is a cost/benefit ratio of almost 9:1 (the farmer gets Afs. 9 back for each Af. used for fertilizer). Since we usually believe a return of Afs. 3 for each Af. spent on fertilizer to be sufficient inducement for farmers to invest in fertilizer, this benefit/cost ratio of 9:1 is far more than enough to interest farmers in purchasing and using the commodity.

Even if several of the assumptions are changed--e.g., doubling the price of fertilizer to the black market rate and dropping the impact of the fertilizer on wheat from 4:1 to 3:1--we still have \$120 in fertilizer producing \$390 worth of wheat, a cost/benefit ratio still in excess of 3:1. In fact, even higher fertilizer prices can be tolerated and still lead to purchase, as long as the impact ratio (the amount of wheat produced for each unit of fertilizer added) does not fall much below 3:1 and the price of wheat remains high.

Thus, because fertilizer use appears so profitable, it could be argued that considerably more than the suggested 5,000 MT of fertilizer for purchase to supplement the AFC fertilizer could be sold in the crescent at a price at least double the official figure. However, as indicated previously, we prefer to remain conservative in our demand and program projections.

D. Agricultural Production Constraints

One of the reasons for conservatism in projecting effective fertilizer demand in Afghanistan for the next few years is the

presence of a number of relatively severe agricultural constraints. These tend to hold down the use of fertilizer.

1. Seed

While we have little reliable information on the quality of wheat seed currently being planted by Afghan farmers we do know that there has been no infusion of new genetic material since the mid-1970s. We also know that there is a demand for fertilizer and that farmers continue to apply it to wheat even at "black market" prices. We can therefore assume that the response to fertilizer applied to the wheat seed currently available is in the range of 3- or 4-to-1. There is, however, no doubt that the wheat seed currently being used in Afghanistan has degenerated and needs replacement. The development of new varieties within Afghanistan will be a long-term venture. Meanwhile, good new varieties used within Pakistan are regarded as suitable. The fertilizer program will need to be backed up by a program of procuring seed in Pakistan and delivering it, for sale or "give away," along with the fertilizer. At the same time, work should begin on seed multiplication and certification in Afghanistan. The proposed AIME could and should handle seed as well. Until and unless good seed is available along with the fertilizer, the full benefit of the fertilizer will not be obtained. In the meantime, existing seed is responding to fertilizer and fertilizer is the key to maximizing food production.

2. Farm Power

As is well known, the war has caused severe reductions in farm animal supply in Afghanistan. Other programs are gearing up to deal with this problem. Because of the long delays in breeding up the supply in Afghanistan, current programs involve the importing of animals from Pakistan, the United States, and elsewhere. Until the farm power supply is restored, this will be a major constraint, in effect holding down the demand for fertilizer.

3. Irrigation Water Supply

The loss of irrigation facilities as a result of the war is also well known and current projects, including USAID-financed efforts, are dealing with it as best they can. In Afghanistan, most fertilizer and quality seed is used on irrigated land; crops grown on rainfed land rarely respond enough to fertilizer to justify the cost. Therefore, continued efforts to restore irrigation facilities must go hand in hand with the inputs program if both are to be effective.

4. Production Credit

Credit is, as always, a major problem. Once we get beyond the "give away" phase of the inputs program for the returned refugees and displaced persons, a credit program will be needed to support fertilizer purchases. There is no obvious way to provide the credit. The Agricultural Bank is still operating, but as an agency of the Kabul government and therefore not suitable for our purposes. Within a short time after the inputs program begins, AIME and other entities will have to develop a workable credit program.

SECTION IV

FERTILIZER SUPPLY

This section summarizes briefly the somewhat complex situation with respect to fertilizer supply as it relates to Afghanistan. A much more detailed discussion is provided in annex B.

Imported fertilizer requirements, particularly urea and DAP, can be obtained from three sources:

- o the United States;
- o other free world countries; and
- o Pakistan.

Procurement from the United States or other free world sources would require the product to be shipped by sea from the source to Karachi Port, received and handled in Karachi Port, and shipped by rail or truck from Karachi Port to the railheads serving Afghanistan: Chaman and Peshawar. Procurement from Pakistan would, obviously, avoid the ocean shipment and the handling in Karachi Port. The product would be shipped by rail and/or truck from the plant or other location in Pakistan to the railhead, for onward transport to Afghanistan by truck.

Chemonics strongly recommends procurement of fertilizer and seeds from Pakistan. Pakistan imports large quantities of DAP for its own requirements, some financed by USAID loans and grants. DAP is imported by the government's Fertilizer Import Department (FID, formerly the FDFI), which distributes the product in various ways, including through the fertilizer companies. The requirements for the proposed fertilizer program for Afghanistan, between 5,000 and 10,000 MT of DAP in the first year and somewhat more in the second, represent a very small percentage of Pakistan's imports and consumption, and should be easy to procure with the assistance of the GOP. Clearly, a special arrangement would have to be made with respect to price, as AIME could not expect to benefit from the major subsidies provided by the GOP for domestically consumed DAP.

With respect to urea, Pakistan is a major producer. Current capacity is 1,900,000 MT from six major factories. Current production is at or near capacity. Pakistan is currently more or less self sufficient in urea, although this is expected to change as consumption temporarily moves ahead of production until new plants are built. In any event, the Afghan requirements, 10,000 to 15,000 MT in the first year, are a tiny percentage of the total available and could be procured with no impact on the overall Pakistani supply-and-demand and price picture.

We recommend that fertilizer be procured in Pakistan because this would substantially reduce forwarding, handling, transport, and storage problems, as follows:

- o the average inland transport distance would be reduced, in the case of urea;
- o storage requirements in Peshawar and Chaman would be reduced;
- o transport to Peshawar and Chaman would normally be provided by FID or the companies, thus relieving AIME of the responsibility; and
- o the need for handling imports in bond to the border would be eliminated.

These points and many others are covered in much more detail in annex B.

SECTION V

DISTRIBUTION

A. Introduction

Section V sets out Chemonics' proposals for a procurement and distribution entity which, we believe, is essential for the effective distribution of fertilizer, seed, and perhaps other inputs into the liberated areas of Afghanistan beginning with the next major growing season in September 1989. We propose a new organization called the Agricultural Input Mobilization Entity (AIME), which would have the full responsibility for procurement, transport, and distribution of the inputs. Recommending the creation of such an entity recognizes that fertilizer and seed are different from other commodities and require special treatment if they are to be placed where needed and then used effectively. These commodities are, by their nature, different from other bulk commodities such as wheat and cement. This view of the requirements of fertilizer and seed distribution is based, in large part, on the experience of AID in dealing with these subjects for more than a decade prior to the onset of the war.

The proposed AIME, as described below and outlined in the chart on page 22, would have full responsibility for these activities and control most of the required resources. It would purchase or otherwise obtain outside resources, such as trucking and warehousing, to the extent that they are securely available. We recognize that it would be possible to provide most of the required services of procurement, transportation, storage, etc. through existing or planned entities, and understand the attraction to the AID/REP's office of such an approach. We do not recommend it. However, since it is an important option, we present our ideas regarding this alternate approach in section VI.

B. A Cross Border Distribution System

Although both the Afghan Fertilizer Company (AFC) and the Agricultural Development Bank (Ag Bank) have survived the war in Afghanistan and are operational, their orientation has changed significantly. Both are under the absolute control of the Ministry of Agriculture (MOA) and AFC sales are made only to individuals who receive an allocation from the MOA. Unofficial charges of Afs. 20-50 for each 50 kg bag of fertilizer are levied by MOA staff. Under the current regime in Kabul, those elements that resulted in the AFC's success in the 1970s have been eliminated. The AFC is now just another bureaucratic institution.

When peace and a new government come to Kabul, the AFC and the Ag Bank will require major revitalization if they are to play a major role in returning Afghanistan to self sufficiency in food grains.

In any case, neither can now be used in a USAID-financed cross-border program for input distribution or farm credit. Institutional agricultural credit will be of major importance once some of the war damage is repaired and agriculture begins to operate under normal conditions. However, at this point the real need is to make minimal repairs on the irrigation structures and get crops into the ground to provide at least subsistence levels of food for the returning refugees and displaced persons.

The AFC, as operated prior to the war (see annex A), was considered to be the most efficient and effective organization of its kind in the country. In 1978, the World Bank in its economic report on Afghanistan singled out the AFC/Ag Bank operation as being the most important factor contributing to food security in the country.

1. Criteria for an Interim Agricultural Input Mobilization Entity (AIME)

The following criteria for the establishment of a distribution entity reflect our understanding of the AID/REP's parameters as well as limitations imposed by the current conditions in Afghanistan.

- o It is neither appropriate nor desirable to attempt to establish a permanent distribution system. Any mechanism should have as its purpose the interim supply and distribution of fertilizer and other inputs to a target group in Afghanistan. It would be a temporary system.
- o The primary beneficiaries will be (a) displaced Afghans who are being resettled and (b) the returning refugees. Secondary beneficiaries will be Afghan farmers whose operations were only marginally affected by the war, who remained in place, and who can buy inputs with cash.
- o Cross-border movement of agricultural inputs will be controlled so as to assure their not being used to support the Kabul regime.
- o Any distribution mechanism must have the endorsement of the Seven Party Alliance. However, neither any of the parties nor the Alliance would be directly involved in or have direct influence on the AIME's management.
- o The AIME's primary area of operation would be in a crescent roughly 250 Km inside Afghanistan, from the

Helmand valley in the south and then north along the Pakistan border to Kunar province. This is referred to as the liberated crescent.

- o The system STFT would be a fiscally responsible one.

2. A Conceptual Framework for an AIME

Consistent with the above criteria, the AIME would be created along the lines of the AFC and would be composed of the following elements:

- o a Supreme Council (with 6 to 10 members) made up of senior Afghans, plus representatives of AID and the AIME's management;
- o a four-person expatriate management team with operational and fiscal management responsibilities;
- o a counterpart Afghan management team recruited to the extent possible from former members of the AFC or current AFC staff now resident in Kabul;
- o at least three senior regional managers in Afghanistan, possibly in Kandahar, Jalalabad, and Ghazni;
- o an operating staff at all locations for administration, accounting, inventory control, and warehousing;
- o office and warehouse facilities in Peshawar and Quetta, as well as office and warehouse facilities in Afghanistan;
- o a fleet of approximately 100 trucks of seven-ton capacity and possibly 20 pickup trucks for regional operations within Afghanistan; and
- o a wholesaler/dealer network covering the target area.

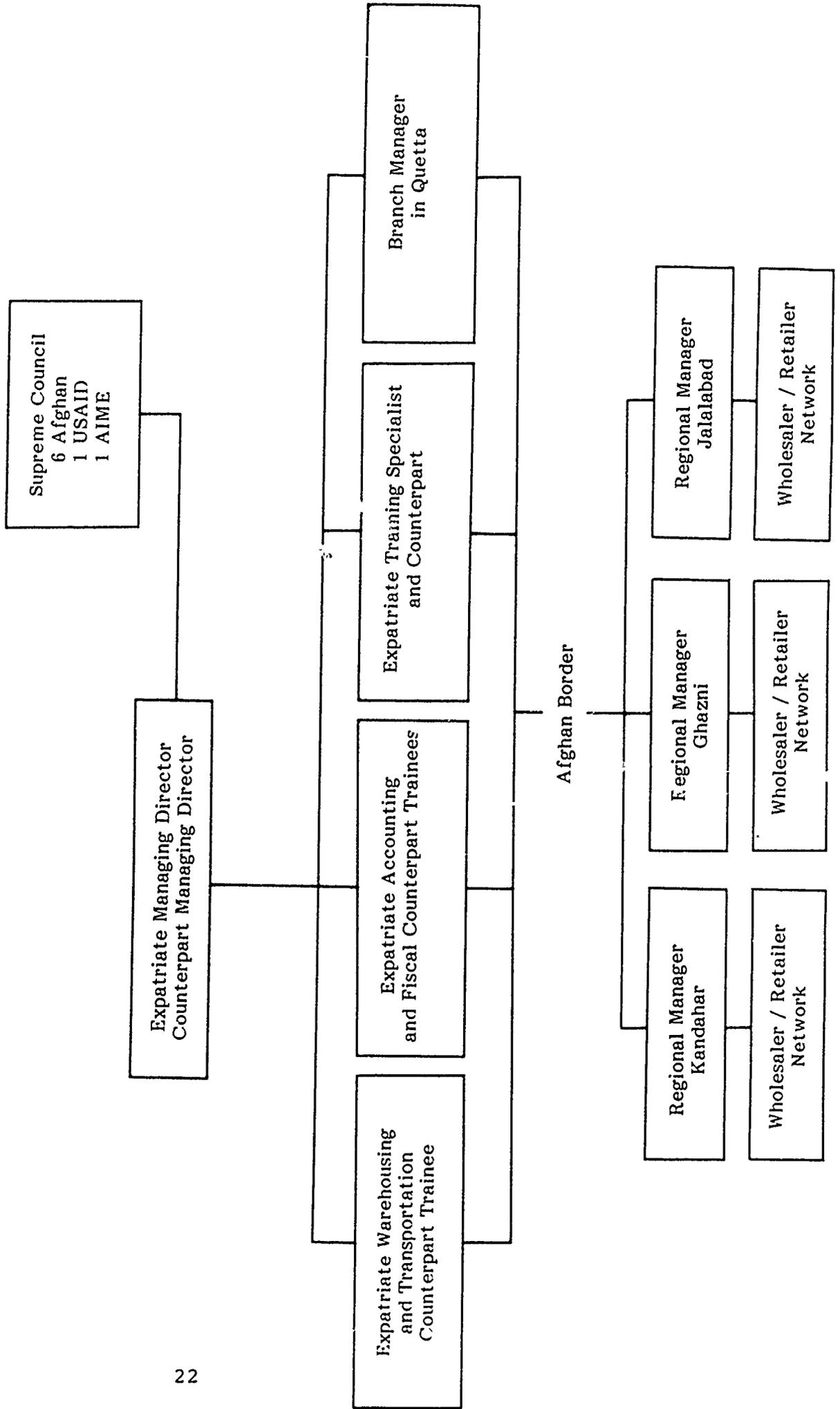
3. Structure of the AIME

AIME would be a temporary entity structured to deliver agriculture inputs inside Afghanistan targeted for returning refugees and displaced persons yet capable of supplying the needs of the total farming community. The principal concentration of effort would be in a crescent-shaped area averaging about 250 Km in width inside the Afghan border, running from the Helmand valley in the south to Kunar province in the north.

a. Physical Facilities

- o The AIME's principal office would be in Peshawar with a branch office in Quetta. Both locations would have

Agricultural Input Mobilization Entity (AIME)



warehouse facilities for 4-5,000 tons of fertilizer, seed, tools, parts, and other supplies.

- o A fleet of 100 trucks of seven-ton capacity would commute between the warehouses in Pakistan and distribution locations in Afghanistan. The trucks would serve as an extension of the warehouse delivering to AIME distribution points, dealers, and, where appropriate directly to farmers.
- o In Afghanistan, regional headquarters would be located near the cities of Kandahar, Ghazni, and Jalalabad. In addition to office space, each regional headquarters would have storage for 1,000 tons of inputs; sub-regional offices would have storage space adequate to meet local needs.
- o To provide mobility to home office, regional and sub-regional personnel vehicles will be required. It is estimated that 20 pickup trucks would be needed.
- o Office equipment for all offices.

b. Management of the AIME

USAID, using Handbook 13 grant or normal contracting procedures, would request proposals from qualified U.S. firms. To qualify, a firm would demonstrate not only its technical competence but also a level of prior experience and on-board capacity to handle the extraordinary responsibility of the AIME program. The selected firm, under the terms of the grant agreement or contract, would be directly responsible for all operational aspects of the AIME. The firm would provide:

- o Resident (in Pakistan) expatriate management with direct operational responsibility and expertise in the following disciplines:
 - Managing Director/Procurement
 - Financial Management
 - Logistics and Warehousing
 - Training
 - Short-term technical specialists
- o Afghan nationals for management functions and operating staff, to the extent possible recruited from current and former AFC personnel. All such staff would be cleared by the Seven Party Alliance.
- o In-country and home office procurement of all commodities and supplies as provides in the grant agreement or

contract, or financed by other mechanisms (including the CIP).

- o Financial and end-use accountability for all AIME activities. This would include printing and controlling input coupons but not distributing them.
- o Expertise and home office support to mobilize the AIME and expedite the start up process.

4. Function of the AIME

The principal purpose of AIME would be to procure, import, warehouse, transport, and distribute inputs across the Afghan border through a private wholesaler/retailer network. The secondary purpose would be to upgrade the training of former AFC employees and train new employees on the job who may in the future become employees of a new AFC.

As Afghanistan returns to its pre-war status, is pacified, and installs a popular form of government in Kabul, the AIME could, with all its records, accounts, and assets, be merged with the AFC in Kabul or even become the new AFC. If, however, the entity is no longer needed it would be dissolved as the management contract terminates.

In the meantime, AIME's management would proceed with the process of activating AIME along the lines of the following scenario:

- o locate facilities and establish headquarters in Peshawar;
- o recruit initial Afghan staff;
- o refine commodity schedules and initiate procurement actions;
- o locate and establish a branch office in Quetta;
- o locate and establish warehouses in Peshawar and Quetta;
- o establish regional and sub-regional offices and warehouses in Kandahar, Ghazni, and Jalalabad;
- o with the assistance of local leadership, identify wholesalers and retail dealers; in areas where there are no apparent dealers, make arrangements for direct distribution to farmers;
- o establish accounting and inventory control procedures;

- o establish procedures for movement of commodities in Pakistan with GOP authorities and in Afghanistan with the Alliance;
- o recruit and train warehouse workers, truck drivers, etc.;
- o receive and inventory commodities; and
- o organize convoys and begin movement of commodities into Afghanistan.

3. Marketing

The AIME would sell or "give away" products through its wholesaler/dealer organization or directly to farmers in areas where there are no dealers. Sales would be made at fair market prices--say, twice the current official prices--to anyone who has the cash to pay. Reflows from these sales would be used to offset AIME operating expenses.

4. Coupons for the Target Group

As the AFC was organized, a system to target fertilizer sales to small farmers through the use of an inovative credit system was developed. The system promoted the formation of small groups of village farmers who undertook to jointly and individually guarantee repayment of loans made by the Ag Bank for fertilizer and seed. In order to insure that loan funds were used to buy these inputs, farmers were issued coupons redeemable in the proper ratio of urea to DAP and appropriate quantities of seed. In order to assure, to the degree possible, that coupons were not traded in a "black market," the coupons required endorsement by the farmer and the fertilizer dealer through the use of a signature ring or stamp. This type of endorsement is highly respected in Afghan society and proved to be effective in limiting illicit trade in coupons. Fertilizer distributors and dealers used the coupons to purchase additional fertilizer and were paid sales commissions in cash. There is no evidence that this coupon system has continued to operate during the war, but it remains as a potentially viable means of targeting specific groups of beneficiaries.

Coupons redeemable in fertilizer, seed, or other inputs could be given to the target group in the first year of return of refugees or displaced persons. In succeeding years, with the establishment of some kind of credit mechanism, coupons could be issued against a promise to repay. Coupons would be used by the beneficiaires to purchase inputs through the wholesaler/retailer network or directly from AIME. Dealers would use the coupons to purchase more fertilizer or other inputs from either the wholesalers or the AIME. Sales commissions on coupon sales would be paid by AIME in cash.

Coupon allocation would be made by the AIME Supreme Council (described below) and could be distributed to the target group through various means:

- o a non-governmental organization developed specifically for this task;
- o The Seven Party Alliance;
- o local commanders in Afghanistan; or
- o handed directly to returning refugees.

A coupon system would require close monitoring and supervision to assure that the target group is indeed being served and that commodities remain in Afghanistan.

The use of coupons provides a great deal of flexibility. They could be:

- o sold on concessional terms to those who could afford to pay a modest amount for seed fertilizer, etc.
- o issued as credit against a promise to pay at some future date
- o denominated in terms of seed, fertilizer, tools pesticide, etc.
- o used to strike a balance between cash sales and grants or vary the level of subsidy

5. Supreme Council

Another contributing factor to the success of the AFC was the separation of the policy-making body from the management entity. This was accomplished through the use of a traditionally Afghan forum or body of respected elders charged with overseeing a specific activity, the Dari words for which can be literally translated as "Supreme Council."

The Supreme Council for AFC was composed of senior cabinet ministers of concerned ministries, the president of the Ag Bank, and the managing director of the AFC. The role of the Supreme Council was to establish fertilizer policy relating to procurement, subsidy/retail selling price, negotiating fertilizer grants and concessional fertilizer loans, and to address other policy matters. The Supreme Council was, however, constrained from interfering with the day-to-day operation and management of the AFC. It had no authority to dictate who was hired or fired or to compel AFC management to respond to requests from

individual council members for special treatment of friends and relatives.

A Supreme Council for AIME would be appropriate to set policy relating to input distribution. Such a council should be comprised of senior Afghans of the character and stature of Dr. Abdul Wakil and Dr. Azam Gul, who would be acceptable to the Seven Party Alliance and who have the respect of the Afghan community. USAID's interests should also be represented on the council. The managing director of AIME should be an ex-officio member.

The council would set fertilizer prices; recommend allocations, when necessary; determine which groups or individuals would be recipient of coupons; and address other policy issues. The council would not, however, have direct operational control of the AIME.

To constitute this council along the lines of the AFC Council would provide an opportunity to establish an objective, technically sound, and apolitical policy framework for input distribution and is essential if AIME is to have the credibility to enable it to function effectively.

SECTION VI

ALTERNATE DISTRIBUTION APPROACH

A. Introduction

This section responds to concerns raised by the AID/REP's office that (1) the distribution mechanism described in section V may involve an unacceptable degree of institution building and (2) it would be desirable to make more use of existing institutions and facilities. Chemonics believes that the free standing distribution mechanism, AIME, described in section V is the best way to deal with the provision of fertilizer and seed, but we recognize that other approaches are possible.

Two such approaches are covered: (1) a Commodity Export Program (CEP) and (2) AIME's use of some existing facilities.

B. The Commodity Export Program Approach

Fertilizer, seed, and possibly other agricultural inputs could be included as commodities in the CEP. The mechanism for procuring and distributing these commodities is an established one: the American Manufacturers Export Group (AMEG) as a contractor to procure and store products; the GOP as a conduit to turn the products over to the Mujahidin; the soon-to-be formed Afghan Central Logistics Unit (ACLU) to transport the products into Afghanistan; the Mujahidin warehouses at the border and in-country for storage; and the Mujahidin local commanders to distribute. Such a system is not likely to have the desired, significant impact on food production because (1) this system would not provide technical assistance to farmers; (2) there would be no end use accountability; (3) such a system would inject tribal and ethnic overtones which may affect equitable distribution; and (4) a coupon system for "give away" or credit sales, or a direct cash sales program would be difficult or impossible to administer.

This approach would, in our view, eliminate the need, and forego the opportunity, for AIME. Nevertheless, since fertilizer and seed are so important, and present such special problems, it may be desirable for the AID/REP to engage a PSC to monitor and coordinate the fertilizer and seed elements of the CEP.

However, Chemonics does not recommend including agriculture inputs in the CEP as a means distribution.

C. An Autonomous AIME Using Existing Facilities

Chemonics is convinced that an AIME as described in section V, a vertically integrated free standing entity, is the most likely to achieve the desired results. However, should the

AID/REP deem it desirable and appropriate to maximize the use of existing organizations and facilities, the following approach could be used and at the same time preserve many of the important elements of AIME. Basically, it would involve creating AIME but having AIME work with and use AMEG, ACLU, and the Alliance, or individual Mujahidin warehouses and other facilities, to carry out the program.

1. Criteria

The criteria as developed in section V. B. 1. would apply with one addition, i.e., AIME would maximize the use of existing entities and facilities such as AMEG and the ACLU as well as, where appropriate, the Mujahidin warehouses at the border and in country.

2. Framework for a Modified AIME

A modified AIME would have the following elements:

- o a Supreme Council (6-10 people) composed of senior Afghans, a representative of AID/REP, and the AIME expatriate manager;
- o a four-person expatriate management team with direct operational and fiscal management responsibilities;
- o a counterpart senior management team to the extent possible recruited from current or former AFC-trained staff;
- o a least three senior regional managers in Afghanistan, possibly in Kandahar, Ghazni, and Jalalabad;
- o an operating staff for administration, accounting, inventory control, and, where necessary, warehousing; and
- o a wholesaler/retailer network covering the target area.

3. Structure

AIME would be a temporary entity structured to deliver agricultural inputs to a target group inside Afghanistan, primarily in the liberated crescent area. AIME would have the capacity to make cash sales and administer a coupon program to assure delivery to the target group. AIME would rely on AMEG to procure, transport, and store agricultural inputs in warehouses in Peshawar and Quetta. Fiscal and accounting responsibilities would remain with AMEG until AIME took delivery at the warehouses. AIME would make transport arrangements into Afghanistan using, to the maximum extent possible, the transport facilities of the ACLU. AIME would also make warehousing

arrangements inside Afghanistan using, where possible, warehouse facilities of the parties or Mujahidin. Where such facilities were inappropriate or unavailable AIME would be responsible for making alternate storage arrangements.

AIME's principal office could be located in facilities supplied by AMEG in Peshawar with a branch office in Quetta also supplied by AMEG. In Peshawar, office space would be needed for the expatriate managing director and counterpart, financial manager and counterpart, and inventory control/warehousing manager and counterpart, as well as offices for supporting staff. In Quetta office space would be needed for the branch, manager, his counterpart, and supporting staff.

In Afghanistan, regional office and warehousing facilities would be required in each of the three proposed regions. If adequate warehousing is available through the Mujahidin, they would be used but there would still be AIME-hired warehouse management staff.

As described in section V, under this system AIME would still make maximum use of private wholesalers and retailers to handle the last stages of the distribution. In most cases, the farmers would receive their product from the private retailers.

D. Management

AIME would be directly managed by a contract expatriate management team composed of:

- o A managing director (chief of party) with a solid background in fertilizer and other agricultural input distribution. In-depth experience in developing countries, preferably in the subcontinent, would also be required.
- o A financial manager responsible for all fiscal aspects of AIME, including administration of the coupon program. This contractor should have experience in handling financial aspects of an agricultural input distribution complex in a developing country situation.
- o Logistics, inventory, and warehousing manager to coordinate shipment and establish an inventory control system. He would also be responsible for training warehousemen and establishing warehouse procedures. This training would be desirable even if AMEG warehouses were used in Pakistan and Mujahidin warehouses in Pakistan and Afghanistan.

- o A technical training specialist to provide short-term training to AIME personnel and private wholesalers and retailers working with farmers in Afghanistan.
- o There would also be a need for short-term technical specialists in country as well as home-office backstopping of the project. However, with AMEG handling the procurement and shipping to the border points, less home-office involvement would be required than with the free standing AIME.

AIME would, in addition to the expatriate staff, employ Afghan nationals as counterparts to the expatriate management and staff to support the management, administration, accounting, and fiscal functions, as well as the physical functions of handling inputs. The first choice for Afghan national staff would be current or former AFC employees.

All other aspects of AIME would remain the same as those described in section V. The nature and structure of the Supreme Council, and its relationship to the Mujahidin and the Seven Party Alliance would remain unchanged except for the need to negotiate over the use of warehouses, etc.

The major advantage of this system over the free standing AIME discussed in section V would be that AIME would have few physical assets and could be easily terminated at any appropriate time. The major disadvantage would be that AIME, and thus the procurement and distribution of fertilizer and seeds, would be much more dependent on outside entities with which AIME could negotiate but not control. The outside entities all have their own agenda and priorities. A failure to perform on the part of one of these entities would leave AIME struggling to find alternative resources which would delay things considerably. Delays in furnishing fertilizer and seed beyond the dates set by the agricultural calendar, are very serious indeed.

ANNEX A

THE AFGHAN FERTILIZER COMPANY

The introduction and adaptation of High Yielding Varieties (HYV) of wheat in Afghanistan during the mid-1960s created a demand for fertilizer that exceeded the Government of Afghanistan's (GOA) capacity to satisfy. Problems inherent within the system inhibited distribution and generated handling and inventory losses in excess of 20%. The Ministry of Agriculture and Irrigation (MAI) was the principal GOA instrument chosen to import, store, and sell fertilizer directly to farmers for cash. A credit sales system was administered by the GOA's Food Department, which proved unable to collect more than small amounts of the credit issued. In response to USAID's urging, the GOA/MAI agreed to establish a system that provided selected village dealers with consigned inventories of fertilizer and deferred payment on sales until harvest time. The system was an improvement over the MAI direct sales approach and worked well at first. The system, however, soon bogged down as the MAI established a sales margin that was inadequate to cover normal handling loss and provide even a small profit. Supplies normally fell short of demand during peak use periods. The abnormal handling loss experienced by the MAI coupled with an excessive subsidy represented a severe strain on the GOA budget.

Formation and Structure of the Afghan Fertilizer Company

In 1970, the failure of the system was acknowledged by some members of the GOA and, in the spring of 1971, the cabinet endorsed "in principle" the desirability of shifting the responsibility of fertilizer distribution to the private sector. In May 1971, USAID offered to finance the projected fertilizer short-fall if assurances could be provided that it would be distributed in accordance with the cabinet decision. The GOA rejected the offer.

In July 1971, the effects of two years of drought spurred the GOA into taking emergency action to ensure that wheat production for the 1972 crop would be maximized. Dr. Abdul Wakil was appointed minister without portfolio and charged with the responsibility for fertilizer supply and distribution as well as the expansion and reorganization of the extension service. The "Emergency Power" invested in Dr. Wakil allowed for shortcutting many of the inhibiting bureaucratic procedures and provided for an objective approach to fertilizer distribution. An objective approach coupled with the Agricultural Bank's emergency credit system, which provided credit to individual members of village groups who undertook the responsibility jointly and individually to repay the credit, resulted in unprecedented levels of

fertilizer and seed distribution throughout Afghanistan. This effort resulted in a record-breaking wheat harvest in 1972.

While the GOA recognized that this emergency system could not be used permanently, it was nonetheless a graphic demonstration of what could be done. An objectively oriented group of Afghans unencumbered by bureaucratic roadblocks could indeed bring unprecedented quantities of fertilizer to an unprecedented number of farmers. The situation was thus ripe for another look at an alternative distribution system.

Dr. Wakil organized a working party (later known as the "Wakil Fertilizer Committee") to explore in greater detail how a private distribution system could, under Afghan conditions, be organized. The committee chaired by Dr. Wakil was composed of representatives from the UNDP-financed Agricultural Bank expatriate management team, an American advisory team financed by AID to assist in private industrial development, and AID. The committee produced and forwarded to the GOA cabinet the "Wakil Report," which proposed the formation of a private joint stock company called the Afghan Fertilizer Company (AFC). The company, which was to be responsible for the procurement, importation, storage, and distribution of fertilizer, would be 51% owned by the Agricultural Bank with the balance of the stock made available to qualified, financially sound private wholesalers. The cabinet accepted the major recommendation of the "Wakil Report" and initiated action by relieving the MAI of all responsibility for fertilizer; appointing a GOA fertilizer policy committee chaired by Dr. Wakil, with members from the Ministries of Finance, Planning, and Agriculture to set fertilizer prices and deal with other policy issues; authorizing the Agriculture Development Bank to form the AFC; and, finally, by instructing the Ministry of Planning to request AID-financed assistance to cover the cost of a three-year supply of fertilizer and a nine-man expatriate management team for the AFC.

In October 1972, AID approved a \$20 million loan to support the AFC. By late November, a management team was selected and, in January 1973, the team arrived in Kabul. The team had direct operational and financial responsibility for the AFC and immediately began to select management trainees/counterparts and staff for the company.

The AFC became operational in March 1973. AFC wholesalers began establishing dealer networks in all provinces of Afghanistan. By June, the product was moving through the system and the AFC was launched. The July 1973 coup deposed the king and brought with it a new government. The new Minister of Agriculture immediately attempted to take over the AFC and place responsibility for fertilizer distribution once again under the control of the MAI. USAID vigorously opposed such a move holding that the loan agreement would be breached and that the second

tranche of fertilizer (some \$12 million) would be lost to Afghanistan.

The issue was not immediately settled and the AFC remained operational as originally designed. Fall 1973 fertilizer sales were the highest on record and handling losses were reduced from 20% to less than 0.5%.

Negotiations continued with the MAI over the status of the AFC and a consensus was reached in the fall of 1974. The AFC would remain intact but the expatriates would become advisors, while their Afghan counterpart trainees would become the managers and operators. In addition, the new government felt that it was inequitable for wealthy merchants to make a profit by handling a strategic commodity like fertilizer. USAID concented to the GOA position but insisted that wholesalers who had invested in the AFC be reimbursed.

The AFC continued to operate efficiently, albeit with a reduced capacity to handle the product even with a significantly larger staff.

During the period 1973 to 1978 fertilizer sales increased at the rate of approximately 15% per year with more than 80,000 tons sold in 1978. The AFC's capacity to efficiently procure, import, warehouse, and distribute fertilizer coupled with effective credit supplied by the Agricultural Bank's national system lead the country to self-sufficiency in food production in 1978.

ANNEX B

DETAILED INFORMATION ON FERTILIZER SUPPLY

A. Introduction

As pointed out in section III, it will be necessary to supply only urea and DAP to Afghan farmers during 1988 and 1989, and not other types of fertilizers. There are several potential sources of these fertilizers, each entailing its own combination of available handling and transport systems. The selection of the source or sources will depend on many factors, the most important of these being:

- o constraints on sourcing that may be imposed by applicable USAID procurement rules;
- o restrictions in the capacity to handle and transport fertilizers through the required systems; and
- o the degree to which the program can utilize sources and services within Pakistan which are largely controlled by agencies of the GOP.

Sources of fertilizer supply are categorized as coming from:

- o the United States;
- o the Free World; and
- o Pakistan and Afghanistan.

If procurement of any or all of the requirement is from off-shore Pakistan (U.S. and Free World) it will be necessary to receive these supplies in Karachi and forward them via rail and/or truck to Peshawar and Chaman, which is the railhead between Quetta and the Afghan border. Terminals at Peshawar and Chaman must then handle and store significant quantities of fertilizer before they can be trucked cross-border to the areas targeted for supply in Afghanistan.

Pakistan imports large quantities of DAP, some of which is brought in under USAID loans and grants. It also produces large tonnages of urea. The total annual urea capacity is 1,900,000 MT in six factories and production in Fertilizer Year 1987 was only slightly under the total capacity figure. For reasons outlined below (subsection B-3) we believe it is possible to procure urea from domestic producers and purchase imported DAP and/or urea from or with the help of the Fertilizer Import Department (FID, formerly FDFI). The FID is responsible for procuring and forwarding all Pakistan fertilizer imports.

Sourcing the fertilizer requirement in Pakistan would substantially reduce forwarding, handling, transport, and storage problems because:

- o the average inland transport distance would be reduced (in the case of urea);
- o storage requirements at Peshawar and Chaman would be substantially reduced;
- o FID and/or the producers would normally arrange the primary transport to depots in Peshawar and Chaman; and
- o the necessity of handling imports in bond to the border would be eliminated.

To the extent that urea is available in the targeted areas from the factory in northern Afghanistan (Mazar-i-Sharif), supply of urea from other sources can be reduced correspondingly; particularly, the amount of urea transported cross-border can be lowered. For reasons discussed below (subsection B-3) we have assumed in this study that only insignificant amounts from this source will reach the targeted area during 1989 and the same probably will hold true in 1990.

What follows is a more detailed description of the sources and the handling and transport systems available to procure and distribute 20,000 MT of fertilizers to the targeted area inside Afghanistan for the crop season commencing in October 1989. The discussion is probably applicable to the 1990 crop season as well, when we believe around 30,000 MT will be required in the targeted area. Beyond 1990, many factors are likely to change; particularly, the area to be supplied may expand to include other major farming areas in Afghanistan, the majority of the refugees are likely to have returned to their homes, and direct procurement through new agencies in Kabul may be in effect.

B. Fertilizer Sources

1. United States Producers

A list of U.S. urea and DAP producers is provided in annex B, table B-4 of this document. In 1987, the U.S. exported 6.6 million MT of DAP representing about 60% of all DAP traded internationally in that year. In contrast, the U.S. was a net importer of 1.4 million MT of urea in that year.

As the largest exporter of DAP, the U.S. product reached all major Asian markets, including India, China, and Pakistan, in 1987. There would be no difficulty in sourcing the quantities required to be imported for distribution in Afghanistan (5,000 to

10,000 MT) in 1987 in the U.S. However, several factors may combine to make these imports extremely expensive.

The Karachi Port can handle 20,000 to 30,000 DWT vessels and fertilizer is normally received in ships of that size. We project the combined tonnage of DAP and urea required in the target area in 1989 to be no more than 20,000 MT. If purchased in the U.S., this would mean a minimum of two shipments, one of 10,000 to 15,000 MT of urea and the other of 5,000 to 10,000 MT of DAP. Freight rates for vessels of this size from U.S. ports will be approximately 50 to 80% higher than the rates for the larger vessels normally used.

Considering the requirement that 50% of USAID-financed commodities be transported in U.S. bottoms, the already inflated rates will be increased by an additional factor of 70% to 100%, unless a determination is made that no U.S. bottoms are available.

Moreover, since the U.S. is a large net importer of urea, the export price (FOB price) of urea from the U.S. will reflect, at least in part, the average in-bound freight cost of the imports and will therefore generally be available for export at prices above the internationally competitive rates. The only possible exception to this would be supply from the Unocal plant at Kenai, Alaska, which, in effect, takes on some of the attributes of an off-shore supplier to the U.S.

A further problem, discussed in subsection C below, arises because of the very high costs of bagging and bag handling in the U.S.

The small vessel sizes, the potentially excessive U.S. freight, and the probable need to bag at least the urea purchases in the U.S. make it certain that procurement from other international sources, or from FID and Pakistan urea producers, will be substantially less expensive.

Estimated current Karachi Port landed costs from several sources are shown in annex B, table B-1.

2. International Producers

A list of Free World countries that are producers/exporters of urea and DAP can be found in annex B, table B-5. While not complete, the major Asian exporters of urea and Free World exporters of DAP are listed.

The FOB bulk prices from Asian DAP producers (Korea, the Philippines, and Jordan) have always been in near equilibrium with the FOB bulk price ex-Tampa, Florida, plus internationally competitive freight in handy-sized bulk carriers (approximately

Annex Table B - 1
Estimated Landed Costs of DAP and Urea at Karachi from Various Sources

SOURCE PORT VESSEL SIZE	D A P					UREA			NOTES
	USA TAMPA 30,000 MT	USA TAMPA 15,000 MT	JORDAN AQABA 15,000 MT	PHILIPPINES ISABEL 15,000 MT	KOREA YOSU 15,000 MT	USA KENAI 15,000 MT	ABU DHABI AL RUWAIS 15,000 MT	INDONESIA ACEH 15,000 MT	
	FOB BULK	\$200	\$200	\$210		\$210	\$130		
FOB BAGGED				\$225			\$150	\$150	1
OCEAN FREIGHT	36	54	15	18	18	\$60	\$10	20	
BAGGING COST	10	10	10		10	20			2
CLEARING & FORWARDING	3	3	3	3	3	3	3	3	2
COST ON BOARD INLAND TRANSPORT	\$249	\$267	\$238	\$246	\$241	\$213	\$163	\$173	
COST ON DECK BOTTOM	36	54	N/A	18	N/A	60	N/A	N/A	
COST ON BOARD IF USAID RULES	\$285	\$321	N/A	\$254	N/A	\$273	N/A	N/A	

NOTES: 1. FOB bulk prices derived from GREEN MARKETS. September 12, 1989.
2. Bagging, clearing and forwarding costs from FID.

30,000 DWT) into the region. When purchasing DAP in smaller vessels from Asian producers, the overall freight premium for smaller vessels is substantially reduced. The much shorter transport versus the haul from Tampa and the greater availability of smaller vessels in Asia reduces the rate differential for small vessels sailing directly from non-regional ports, particularly Tampa.

Moreover, the differential for bagging and handling fertilizers purchased from the Asian producers is only 25% to 35% of the differential required by U.S. producers (\$10 per MT vs \$45) and European sources (\$10 per MT vs \$30). See subsection D below for a discussion about bagging operations at the Port of Karachi and other third-country locations, and their corresponding costs.

While the price of DAP is closely linked to the FOB bulk price established at Tampa, urea prices from Asian producers also tend to vary in accordance with regional supply/demand requirements, and therefore are not so tightly linked to other international prices. Landed costs at Karachi will generally be lower for urea produced by Asian suppliers than for other international producers, whether or not shipment is by small vessels. The smaller the shipment, the greater the advantage as in the case of DAP.

See annex B, table B-1 for estimated landed costs from several international sources.

3. Sourcing in Pakistan and Afghanistan

a. Pakistan

The annual urea production capacity of the six producers in Pakistan is shown in annex B, table B-7. The production from these sources is currently in balance with domestic consumption, but is expected to fall below total consumption in succeeding years at a rate of about 10% per year until new plants are built.

The 10,000 to 15,000 MT of urea required for Afghanistan in 1989 is less than 2% of current annual production in Pakistan, and with the cooperation of the GOP, can easily be purchased from Pakistani producers with little effect on Pakistan supply/demand and future urea imports. One of the producers, the Fauji Fertilizer Corporation (FFC), has expressed a willingness to supply the entire quantity.

Sourcing urea in Pakistan would have the following benefits:

- o provides the lowest practical price at railhead in Peshawar and Chaman;
- o allows synchronization of shipments to railhead with cross-border distribution, thus minimizing storage at railhead;
- o reduces bag damage and handling loss; and
- o would facilitate adjustments in the amount lifted to meet changing conditions and requirements in Afghanistan.

While DAP is not produced in Pakistan, the FID has continuously imported large quantities for a number of years including substantial quantities from the U.S. under USAID financing. The provincial government marketing agencies and the major producers maintain large stocks of DAP in many up-country locations at all times. The FFC has suggested they could supply the Afghan requirement from their up-country stocks under an arrangement whereby FID would subsequently replace the quantities lifted.

We have not specifically explored the possibility of purchasing the Afghanistan requirement from provincial stocks or through FID with the GOP but believe that agreement should be forthcoming, particularly in view of the very modest requirement (only 1% of imports) and the willingness of the GOP to cooperate in programs in aid of the Afghanistan refugees. The same benefits listed above for urea would apply to domestic (Pakistan) purchases of DAP.

The overall costs of fertilizer, delivered via railhead, are discussed in subsections F and G.

b. Afghanistan

There is a urea factory at Mazar-i-Sharif in northern Afghanistan near the Russian border. The plant is a Russian-designed, reciprocating compressor factory that was put into operation in 1974. The rated capacity of the plant is 104,000 MT per year of prilled urea. The natural gas feed stock comes from gas wells in close proximity to the plant. While we have tried to learn more about the characteristics of this plant, there appears to be no technical information available in Pakistan at this time.

It has been reported by at least two Afghan sources that the plant is presently being operated at an annual rate of 120,000 MT, under Russian management and heavily manned by Russian technicians. Over-capacity production in an old plant strongly infers recent modification of this facility by the Russians.

One of the sources cited has told us that a recent traveller in the area of the plant reports that bagged urea has been extensively stored under tarpaulins outside the permanent product storage buildings, implying large inventories and high-capacity production. It is also reported that some urea has been exported to Russia, and it is presumed that these exports have been balanced by import of Russian urea into the Herat area of western Afghanistan. Local urea product has apparently been distributed into the target area in the recent past, although the quantities are thought to be small. It is reported that urea is plentiful north of the Hindu Kush, partly because the Mujahidin have waylaid substantial quantities being transported south by truck.

All the reports about the current production and distribution from this factory are verbal. The high rates of production reported are consistent with the reported quantities of fertilizer distributed by the still-functioning AFC in the last few years (see table 1 in the main report). However, the amounts said to be distributed by the AFC in recent years seem to be inconsistent with the data regarding trends in agricultural production, yield, manpower, and population displacement developed by the Swedish Committee for Afghanistan.

It is our view that the target area cannot depend on the urea supply from the factory at Mazar-i-Sharif and a significant portion of the requirement of urea must be imported through or from Pakistan in 1989 and probably in 1990.

Phosphatic fertilizers are thought to have been imported from Poland via Russia. As in the case of urea, it is assumed that insufficient phosphatic fertilizers will reach the target area from this source in 1989. This may be particularly true vis-a-vis phosphates as they undoubtedly represent grant or soft loan assistance from Russia.

It is important to understand that both the urea production at Mazar-i-Sharif and the import of large quantities of phosphatic fertilizer into the non-targeted areas of Afghanistan are totally dependent on the continuing direct assistance of the Russians and without this assistance the amounts of fertilizer that might be required to be supplied through Pakistan in 1989 and succeeding years, necessary to prevent wide spread hunger, perhaps famine, are of the order of 200,000 MT. It is doubtful that the Pakistan port, rail, and road facilities could handle this additional volume, at least in 1989, and without free access to all areas in Afghanistan from Peshawar and Chaman, supplying the entire country would be virtually impossible.

4. International Traders

It is possible to tender for supply of fertilizers through international traders rather than directly with producers. This may, in fact, be the most practical way of tendering if USAID procedures and AID Geographic Code 000 apply. In this case the trader is able to bid and supply on a CIF Karachi basis where most U.S. producers are unwilling to bid directly because:

- o bid and performance bonds are required;
- o contracting for freight is difficult; and
- o freight cost components are uncertain.

Free World tenders for supply should be open to traders as well as producer/exporters, since some producers only bid through traders and trade export associations.

c. Ocean Freight

(1) C & F Versus FOB Shipments

Fertilizers are frequently purchased on a C & F or CIF basis and, if possible, it is recommended that imports going into Pakistan for this program should be CIF because:

- o FOB purchases require additional effort in contracting for freight and insurance; and
- o there is virtually no cost advantage in breaking out freight or insurance as separate contracts.

However, procurement under AID Geographic Code 000 will require that purchase contracts be FOB and a separate freight contract be bid. In this case, the tendering procedure for freight contracts is spelled out in detail by USAID and this procedure is well known to FID. Help in preparing a freight IFB can probably be obtained from FID.

(2) Ocean Freight Costs

Estimated current ocean freight rates for fertilizer cargoes are shown in annex B, table B-1 above. Rates have been selected for the ports of Kenai (USA), Tampa (USA), Aqaba (Jordan), Isabel (Philippines), Yosu (Korea), Al Ruwais (Abu Dhabi), and Aceh (Indonesia). Urea rates are for bagged cargo (except from Kenai) and DAP rates are for bulk cargoes (except from Yosu). The Kenai freight includes handling and bagging of urea at an intermediate point, such as Yosu, Isabel,

or Singapore. DAP purchased offshore is assumed to be bagged in Karachi. The freight rates are only indicative.

D. Bagging

Fertilizers must be bagged before transporting within Pakistan and Afghanistan. Almost all bagged fertilizer is handled in 50 Kg woven polypropylene outer bags with polyethylene-free inner liners. USAID has detailed specifications for such bags and these are generally accepted as a standard throughout the world.

During our discussions with several people and organizations during this study, the use of smaller bags (e.g., 20 Kg, 30 Kg, 35 Kg) has been mentioned. Smaller bags would allow easier distribution to remote areas, and also, if fertilizers are to be distributed to returnees before departing Pakistan, the smaller bags would be more portable. We recommend, however, that the 50 Kg standard bag should be used for the following reasons:

- o Many producers do not have bagging equipment that will handle the smaller bags.
- o Costs of bagging, handling, and storing increase sharply as the bag size goes down.
- o 50 Kg is the size that both Afghan and Pakistani farmers are accustomed to.
- o 50 Kg bags are easy to handle.

It is standard FID practice to tender for DAP on a bulk-plus-empty-bags basis and bag all DAP cargoes at berth side in Karachi using portable bag packers. Because of concern regarding moisture pickup and hygroscopicity, the FID does not bag urea at Karachi. All of their urea purchases are on a bagged basis and urea purchases for the Afghan program will necessarily be on the same basis.

Bagging costs vary greatly. The current costs of unloading, loading, and bagging into wagons and trucks at Karachi Port is Rs 60 per MT exclusive of bag cost. At the present time, FID estimates the differential being paid for bags in the composite bulk with bags price is \$6.50 per MT. Total cost for bagging and loading at Karachi is therefore about \$10 per MT.

The current U.S. cost of reclaiming bulk product, bags, bagging, and bag handling into the hold of a vessel is about \$45 to \$60 per MT. The corresponding cost in the Philippines or Korea is \$10 to \$11 per MT. The cost of receiving bulk cargo,

unloading, storing, bagging, and reloading at Singapore is \$22 to \$27 per MT. The same operation at Antwerp or Rotterdam is about \$32 to \$36 per MT. Korea and the Philippines also have the capability of receiving bulk cargo, storing, bagging, and loading (as opposed to bagging out of their own bulk storage) at a probable additional cost of \$4 to \$5 per MT. All of the above estimates include physical losses which can run anywhere from 1/4% to 2%, depending on the complexity and location of the operation.

Other locations where bulk cargoes can be received, bagged, and reloaded are Hong Kong and Turkey. In the case of Turkey, in recent years large quantities of bagged DAP have been supplied to Iran, FOB the Turkish border, from both DAP factories and bulk unloading/bagging operations in several Turkish ports. Within a few years it seems probable that western and northern Afghanistan will be supplied from Turkish or Iranian ports across the Iran/Afghanistan border.

E. Port of Karachi

The NFDC publication, "Fertilizer Handling at Karachi Port and Future Prospect" (May 1988), contains a complete description of the fertilizer bagging and handling facilities at Karachi Port and should be read thoroughly. Additional comments, however, are in order.

The Karachi Port often suffers severe congestion; for this reason, three berths are for the exclusive purpose of fertilizer unloading. Delay of full cargo fertilizer vessels due to congestion has been minimized in recent years. The fertilizer berths have a maximum draft of 32 feet and an LOA of 560 feet. Vessels up to a maximum of 35,000 DWT have been received at these berths.

Based on the NFDC report, the present bagging and handling facilities have a peak throughput capability of about 200,000 MT per month. At this level, the full 1989 requirement for Afghanistan could be received and bagged in all months except December and January. There is evidence of a minor peak in July, which at the volumes contemplated should not disturb the orderly handling of the Afghan requirement. The anticipated levels of throughput at Karachi for 1989 and 1990 do not appear to be limited in any way by congestion of the unloading and bagging operations at that port.

However, if it were necessary to handle the full Afghan requirement of, say, 200,000 MT through Karachi, both the domestic supply and the supply to Afghanistan would be disrupted.

F. Inland Freight

1. Clearing and Forwarding

Pakistani imports of fertilizer for domestic distribution are handled out of Karachi port by approved freight forwarders. A list of such forwarders with fertilizer experience is appended in annex B, table B-6.

The forwarding operation includes unloading, clearing, wharfage payments, freight contracting, inspection, and loading. Wharfage and inland freight are either paid directly or reimbursed to the forwarder. The costs of the forwarding service exclusive of unloading/loading and inland freight but including wharfage is estimated at Rs 50 per MT. If cargo is bagged in Karachi, the unloading and loading is covered in the bagging charges set out above. Unloading and loading bagged cargo is estimated at Rs 40 per MT.

The average rate of unloading and bagging fertilizer is about 1300 MT per day. In order to avoid over filling the port transit shed and/or incurring transit shed demurrage it is necessary to ship bagged goods from the port at a rate of around 1000 MT per day. This is equivalent to shipping a minimum of 42 rail wagons (24 MT per wagon) or 125 trucks (8 MT per truck) each day.

The forwarding agent is normally responsible for indenting for rail wagon from the Pakistan Railway (PR) at the port and otherwise arranging trucks for the portion which cannot be shipped by rail.

Indents for rail wagon are filed with the PR at least 24 hours in advance of requirement. Unless the indent has priority it is placed in the queue and wagons are supplied as required or more often as empties are available.

FID has appointed the National Logistic Cell, which is a wing of the Pakistan Army, to handle all clearing and forwarding of imported fertilizers. The NLC also manages the berth-side bag packing operation.

Annex B, table B-1 above summarizes all cost to put bagged fertilizers in rail wagons or trucks at Karachi Port, including FOB price, ocean freight, receiving, clearing, bagging, and forwarding.

2. Rail

The Pakistan Railway system provides direct broad gauge facility to railheads near the Afghan border at Chaman (about 95 Km beyond Quetta) and at Peshawar. The rail distances from

Karachi to these two points are about 950 Km and 1630 Km respectively.

The PR rail system is generally underutilized in comparison to, for instance, the Indian railways. It is difficult to gauge the true capacity of the system. The reasons for the poor performance are not entirely clear but lack of rolling stock, coupled with the inefficient management of what is available, are major contributors to the problem. The result is frequent delay in supplying wagons at Karachi Port. In order to expedite shipments to the Afghan border it may be necessary to transport as much as 30 to 50% of the imported fertilizer by truck. Truck rates are substantially higher than rail rates, so the use of trucks should be confined to the shorter run to Chaman as much as possible.

In order to minimize port handling and inland transport costs it will be necessary to place a manager at Karachi during the unloading of vessels. This person must be delegated the authority to make decisions regarding the alternate use of rail and truck transport.

The PR is accustomed to handling block or rake trains. From Karachi to Lahore, blocks comprise 75 wagons. From Lahore to Peshawar, and from Karachi to Chaman, blocks include 45 wagons. The larger blocks are broken at Lahore and the residual wagons are shipped in regular goods trains or are held until a full block can be assembled.

Moving in blocks is the preferred alternative because:

- o transit time is shortened and
- o clearance formalities at railhead are much easier and quicker.

The transit time by rail to Peshawar varies between 12 to 20 days and to Chaman by 8 to 15 days.

At both Karachi Port and at the railhead, wagons attract hourly demurrage beginning six hours after they have been spotted for loading or unloading. Demurrage rates vary with time on the siding and from station to station.

The current freight rate from Karachi to Peshawar is about Rs 500 per MT and from Karachi to Chaman about Rs 300 per MT.

3. Truck

NLC is responsible for the truck movement of public sector materiel from Karachi Port. They operate a fleet of their own trucks, mostly comprised of 20 MT double trailer rigs,

and otherwise contract for private carriers when additional trucks are needed.

We were unable to obtain figures for the total number and capacity of trucks operating in Pakistan, but discussion with FID, FFC, and importers in Karachi indicate that there is no shortage of trucks. Truck transport from Karachi to Chaman is estimated to take about 60 hours and to Peshawar, about four days.

Truck rates from Karachi to Peshawar by privately-owned trucks arranged directly with owners and brokers are about Rs 700 per MT and to Chaman, about Rs 370 per MT. The rates charged by NLC are about 50% higher than normal truck rates or Rs 1050 and Rs 560 per MT respectively.

G. Border Terminals

It will be necessary to operate a warehouse and distribution complex at both the Chaman and Peshawar railheads and possibly other points. While we visited Peshawar we were unable to reach Quetta and Chaman. Discussions with others currently involved in fertilizer distribution indicate that our observations in Peshawar hold also in Chaman, and probably the problems observed are more severe, particularly regarding availability of storage.

In Peshawar, goods transported by rail can be received at the Peshawar Town station or the Peshawar Cantt station. Peshawar Cantt presently operates the dry port (bonded area) for Peshawar. The dry port is totally inadequate for receipt of block trains of fertilizer. This, coupled with the delay in clearing documents at Peshawar and the probability that customs officials will require that goods bound for Afghanistan be escorted to the border, means that transporting fertilizers in bond should be avoided at all cost.

Block train shipments can easily be handled at Peshawar Town station and this destination should be used. The station has covered transit storage at trackside equivalent to more than 1000 MT of bagged fertilizer. A block of wagons can be unloaded in two to three days, which means that, using the one-day free time in the transit shed, about 300 MT (38 truck loads) per day must be moved out of the station.

To the maximum extent possible, shipments from the rail transit sheds should go directly cross-border in order to minimize handling into and out of storage in Peshawar. Intermediate storage is expensive and each handling operation increases bag damage and physical loss. The cost of unloading wagons and loading trucks at the rail transit shed is estimated to be Rs 12 per MT. The cost out of the wagon, through transit shed and into storage at Peshawar is estimated to be Rs 40 per

MT. Storage and loading out of "go downs" is estimated at Rs 35 per MT for an average storage time of six to eight weeks, giving a total of Rs 75 per MT if rail shipments are stored in Peshawar.

Truck shipments from Karachi or other Pakistan points of origin will have to be terminated at the railheads. Direct, tailgate transfer to cross-border trucks should be maximized to reduce the costs and losses of going into and out of storage. Tailgate transfer will cost an estimated Rs 10 per MT while transfer into and out of storage, including storage time is estimated to be Rs 50 per MT.

The average terminalling costs at both Chaman and Peshawar, assuming the following:

- o 50% by truck, 50% by rail,
- o 50% of rail shipments loaded directly to cross-border trucks,
- o 50% of in-bound trucks are loaded by tailgate to cross-border trucks,

and using the estimated cost elements above, will be Rs 36 per MT. Average costs will be higher if movement by rail is reduced and/or a larger fraction of fertilizers is stored in Peshawar.

The costs at Chaman should be the same.

There are other points along the Pakistan/Afghanistan border where trucks can cross. In particular, the Mujahidin have at least one crossing point south of Peshawar which can apparently handle large daily tonnages. We have not tried to investigate this and other such points. Access to railhead and availability of storage at these points should be followed up by more detailed studies to follow.

The peak storage requirements at Peshawar and Chaman are estimated on the basis of the following assumptions:

- o The cross-border fertilizer shipping period is 13 weeks long.
- o 50% of all fertilizers will be transported through Peshawar, the remainder through Chaman.
- o 100% of the supply must be imported through Karachi.
- o Dispatch from Karachi will be concentrated in a one month-period.

o Arrival at Peshawar and Chaman (10,000 MT each) will be more or less uniform over a period of about seven weeks.

Dispatch to Afghanistan from railhead will take place over a period of about 13 weeks beginning with the first arrivals by trucks at railhead. An average of 14 trucks per day will be dispatched from each railhead during the 13-week period and the peak storage requirement at each railhead is about 4500 MT.

If local sources (FID, Pakistan urea producers) can be utilized, we estimate that storage at each railhead can be reduced to less than 1000 MT since arrivals at Chaman and Peshawar can be synchronized with cross-border trucks over the full 13-week shipping period.

While it is possible to store 4500 MT of fertilizer at Peshawar in old houses, shops, etc., secure, covered storage of more than 100 to 200 MT capacity is difficult to find. Obviously, storing in small quantities in 20 or more widely spread points at one railhead would create immense problems of coordination and control. If the storage requirement is more than, say, 1000 MT, it would be better to rent a walled open compound (serai) and store fertilizer in the open under tarpaulins (preferably of polyethylene sheets). The same would be true at Chaman.

The terminalling operation at railhead will require experienced supervision (say, four persons, including accounting control) and a staff of perhaps 20 local employees (plus guards) at each location.

Annex B, table B-2 sets out the average costs of moving fertilizer from Karachi to Chaman and Peshawar, including storage and loading of trucks destined for Afghanistan. Annex B, table B-3 summarizes the estimated total unit costs on board trucks for fertilizers purchased from U.S. sources under USAID rules, from the probable lowest cost source, and from stocks in Pakistan.

H. Cross-Border Transportation

At the present time there is a thriving trade (not in fertilizer) in both directions across the Afghanistan/Pakistan border. Both Afghan and Pakistani trucks are used to haul most of this trade, although traditional methods (camels, horses, mules, etc.) are also used.

Much of the border traffic, perhaps one-half, is presently crossing under import and export documents provided by the Kabul Government. The normal border crossing points for the highway beyond Peshawar and Chaman are under the control of the Kabul Government whose documents are generally required to cross the

border. Apparently, some commerce crosses unofficially as well, either by forged documents or by bribing guards. Roads have also been cut around these crossings which allow entry without any border formalities (or informalities). It is obvious from discussion with traders, truckers, and Alliance representatives that an increasing amount of materiel is moving over the border without Kabul Government documents.

Pakistani trucks move only on the Grand Trunk Road between Peshawar, Jalalabad, and Kabul, and normally do not take cargo for intermediate points on this road. The same apparently holds true between Chaman and Kandahar. Afghan trucks can reach anywhere in the country from the two railheads. As a consequence, fertilizers moving to the target area are expected to move entirely in Afghan trucks (or possibly trucks owned by the AIME, perhaps without registry), and without the Kabul Government's documentation.

A representative of the Alliance has stated that in 1986/87 there were 20,000 Afghan registered trucks having a total capacity 157,000 MT, down from a total capacity of 170,000 MT in 1978/79. Two-thirds of these trucks are privately owned and the remainder are owned by public sector concerns. There is apparently no shortage of fuel; the consultants were told that nobody walks on the roads any longer, everybody rides.

With an operating fleet this large, there should be no difficulty in moving 20,000 MT of fertilizer cross-border in 1989. About 200,000 MT of wheat, alone, are expected to cross in 1988, an average of 68 trucks per day.

It is possible to contract for cross-border trucking in Peshawar, Rawalpindi, and Lahore. It is also possible to directly hire the daily requirement on an individual basis in the Peshawar bazaar, which is what trucking contractors do, in any case.

It has also been suggested that the AIME maintain and operate its own fleet of trucks. The number of eight-ton trucks required to move 20,000 MT of fertilizer during a 13-week period, assuming an average four-day round trip, is 110, a manageable number. Even a small number of trucks--say, 25--which could accompany hired vehicles to their destination, could be valuable as a means of verifying delivery. However, the question of registry needs to be examined carefully. Registry in Afghanistan would be by application to an element of the Kabul Government. Is this acceptable? Can Pakistan-registered vehicles freely move in Afghanistan? Can unregistered vehicles be driven in Pakistan?

Annex Table B - 2
 Inland Costs of Delivering Fertilizer at Chaman and Peshawar

Item	Estimated Unit Cost (Rs./MT)	Chaman		Peshawar	
		MT Handled	Cost Millions Rs	MT Handled	Cost Millions Rs
Total Tons		10,000		10,000	
by Rail		3,000		7,000	
by Truck		7,000		3,000	
Average Frt			3.49		5.60
Direct from Rail	Rs. 12	1,500	0.02	3,500	0.04
Direct from Truck	Rs. 10	3,500	0.04	1,500	0.02
In/Out by Rail	Rs. 75	1,500	0.1	3,500	0.26
In/Out by Truck	Rs. 50	3,500	0.18	1,500	0.08
Total Cost			3.84		6.00
Total Unit Cost Rs			Rs. 384		Rs. 600
Total Unit Costs \$			\$ 21		\$ 33

Overall average cost is \$27.

Annex Table B - 3
Total Fertilizer Unit Costs FOT Chaman and Peshawar

\$ per MT

	DAP			UREA		
	USAID Procurement	Lowest Imported Cost	Estimated Pakistani Source	USAID Procurement	Lowest Imported Cost	Estimated Pakistani Source
Origin	Tampa	Jordan	(1)	Kenai	Al Ruwais	(1)
Cost FOT Karachi	321	238		273	163	
Inland Costs						
Chaman	21	21		21	21	
Peshawar	33	33		33	33	
Total Cost						
Chaman	342	259		294	184	
Peshawar	354	271	281	306	196	206

(1) Lowest imported Cost plus \$10.

Annex B Table B-4

U.S. Producers/Exporters of DAP and Urea

DAP

Urea

Agrico Chemical Co. (Freeport)
1615 Poydras St.
New Orleans, LA 70112

Agrico Chemical Co. (Freeport)
1615 Poydras St.
New Orleans, LA 70112

CF Industries, Inc.
Salem Lake Drive
Long Grove, IL 60047

Columbia Nitrogen Corp.
P.O. Box 1483(13)
Augusta, GA 30913

CONSERV, Inc.
P.O. Box 314
Nichols, FL 33863

First Mississippi Corp.
Box 1249
Jackson, MS 39205

Kaiser Estech
Division of Vigoro Ind., Inc.
P.O. Box 246
Savannah, GA 31402

Mississippi Chemical Corp.
P.O. Box 388
Hwy. 49E
Yazoo City, MS 39194

Mobil Mining & Minerals Co.
P.O. Box 26683
Richmond, VA 23261

Olin Corporation
P.O. Box 991
Little Rock, AR 72203

Occidental Chemical Corp.
Agricultural Products Group
P.O. Box 31597
Tampa, FL 33631-3597

Occidental Chemical Corp.
Agricultural Products Group
P.O. Box 31597
Tampa, FL 33631-3597

Royster Company
P.O. Box Drawer 1940
Norfolk, VA 23501

Union Oil Co.
Kenai, Alaska

Texasgulf
Morehead, North Carolina

Annex B Table B-5

OTHER FREE WORLD PRODUCERS/EXPORTERS OF DAP AND UREA`

<u>Country</u>	<u>Name</u>	<u>Port</u>
<u>Urea (Asia Only)</u>		
Indonesia	Pusri	(Sumatra)
Indonesia	Kaltim	Bontong, Kalimantan
Indonesia	Kujang	(Jaba)
Indonesia	Asean Aceh	Aceh, Sumatra
Malaysia	Asean Bintulu	
U.A.E.	ADNOC	Al Ruwais, Abu Dhabi
Qatar		
Saudi Arabia	SAFCO	
Kuwait	PIC	Kuwait & Bahrain
<u>DAP</u>		
Philippines	Philippine Phosphate Fertilizer Corp.	Isabel, Leyte
Korea	Namhae Chemical Corp.	Yosu
Jordan	Jordan Phosphate Chemical Co.	Aqaba
Morocco	OCP	Casablanca

Annex B Table B-6

RECOMMENDED CLEARING/FORWARDING AGENTS IN PAKISTAN

Haji Mumtaz Goods TPT Co.

Niaz Muhammad & Brothers

Bashir Siddiq Goods

Transnational Limited

New Malik Goods

Azad Chaudhry Goods

New Hakeem & Company

Ashfaq Goods Transport

Black Hawk Carriers (PVT) Ltd.

World Wide Carriers

Murad & Company

M. B. Enterprises (PTV) Ltd.

Tariq Associates Limited

Source: FFC

Annex B Table B-7

PRODUCERS OF UREA IN PAKISTAN

<u>Name</u>	<u>Location</u>	<u>Capacity</u>
Exxon	Dharki, Sind	230,000 MT/year
Pak-Saudi	Mirpur Mathelo, Sind	554,000 "
Fauji Fertilizer Corp.	Goth Macchi, Punjab	570,000 "
Dawood-Hercules	Lahor, Punjab	346,000 "
Pak-Arab	Multan, Punjab	100,000 "
Pak-China	Hazara, Punjab	<u>99,000 "</u>
		1,899,000 MT/year

ANNEX C

PERSONS CONTACTED BY THE CHEMONICS FERTILIZER TEAM

<u>Name</u>	<u>Title</u>	<u>Organization</u>
Tahir Saleem	Project Director	National Fertilizer Development Center, Islamabad
Juan I. de la Vega	Project Manager	FAO/NFDC, Islamabad
Whitney Yelverton	Assist. V.P.	The Fertilizer Institute, Washington, D.C.
David Garner	Chief of Party	VITA, Peshawar
Abdul Wakil	Chief Tech. Advisor	VITA, Peshawar
Farogh Assam		Seven Party Alliance
Azim Nasser Zia	Member	National Islamic Front of Afghanistan
Homer Hepworth	Wheat Breeder	CIMMYT, Mexico City
Imtiaz Ahmad	Dep. Port Manager	Pakistan Railrays, Peshawar
Ishtiag Ahmad	Managing Partner	Al-Mushtag & Co
Ray Fort	Regional Director	FAO/Islamabad
Azam Gul	Director	The Swedish Committee, Peshawar
Rahim Chaudhry	Sr. Salesperson	Fauji Fertilizer Co. Ltd., Lahore
Saed Mohsin Rizvi	Director	Federal Directorate of Fertilizer Import (FID)
Thomas Olsen	Ag. Economist	USAID/Pakistan
Robert Armstrong	Ag. Economist	AID/W/ANE/RD
Gary Lewis	Ag. Dev. Officer	AID/REP/ISL.
John Gunning	Prog. Officer	AID/REP/ISL.
Henry Cushing	Area Rep.	AID/REP/Peshawar
Albert Nehoda	Field Officer	AID/REP/Peshawar

ANNEX D

RESPONSE TO AID/REP/ADO COMMENTS ON THE CHEMONICS
AGRICULTURE INPUT MOBILIZATION FOR AFGHANISTAN

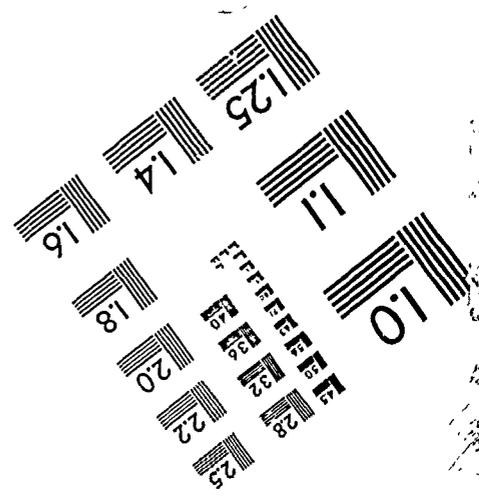
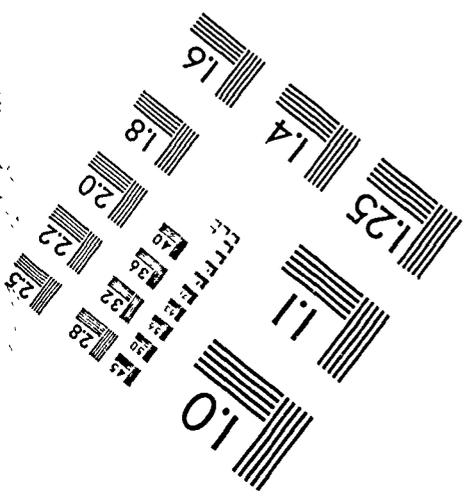
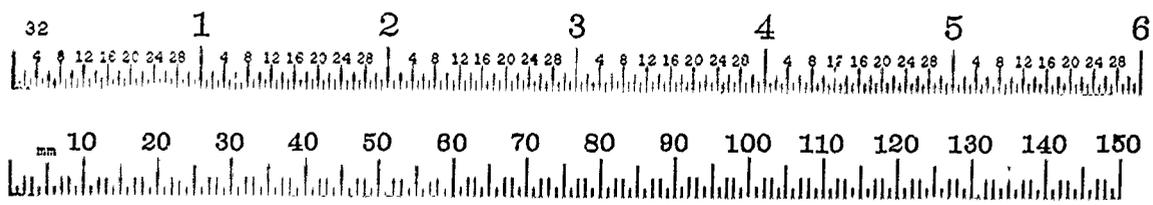
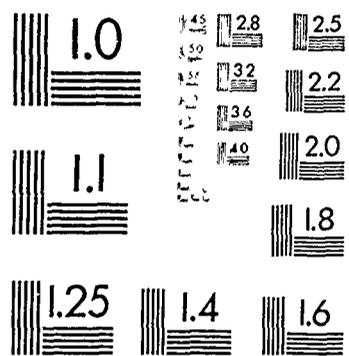
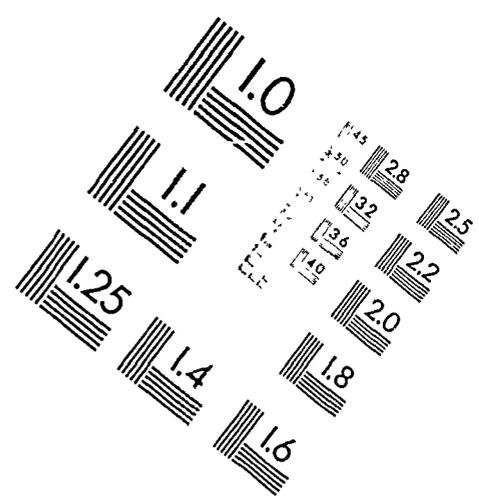
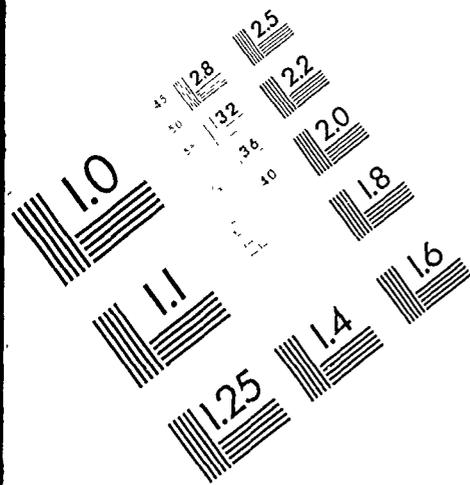
Issue	Response
1. The use of AID/REP's Commodity Export Program (CEP), AMEG, and the Afghan Central Logistics Unit (ACLU) to procure, transport, and store ag. inputs.	A new section VI B describes a scenario utilizing, to the extent Chemonics deems feasible, the facilities and expertise of AMEG, the ACLU trucks, and Mujahidin warehousing facilities.
2. Detail on the function of AIME given the involvement of AMEG and ACLU.	The role and function of AIME technical management if AMEG and ACLU are to be used as described in section VI B.
3. Define "Crescent Area" rationale	The opening paragraph of section III has been expanded to include description and rationale which targets the "Crescent Area" or "liberated crescent."
4. Emphasize the positive economic impact of Afghan CIP on Pakistan.	The scope of this study did not include this aspect of the fertilizer activity. Therefore, it was not addressed. However, procurement of fertilizer and seed in Pakistan for the Afghanistan program would doubtless have some net beneficial impact on the Pakistan economy.
5. Include a clearer discussion of the Supreme Council and the coupon system.	An expanded description of the Supreme Council is included in section V.B.5. and more details on the origin and effectiveness of the coupon system is included in section V.B.4.

Issue	Response
6. Provide more detail on credit sales program.	The paper identifies institutional credit as a potential constraint, but makes no attempt to recommend such a system. If and when the Ag. Bank in Kabul can be utilized, a functioning coupon system could be easily used to implement a credit program, as was the case before the war.
7. Target beneficiaries should include displaced Afghans.	All references to target beneficiaries now include displaced Afghans.
8. Reference to improved operation when country is secured.	Reference included in distribution section.
9. Grant should not be targeted to induce refugees to return to Afghanistan.	All references to using program as an inducement to encourage refugees to return have been removed from the report.
10. Grandeur of "Supreme Council" as a managing body questioned.	Supreme Council described in section V and its level, we believe, is justified. Supreme Council is strictly a policy-making body that has no role in management. The term "Supreme Council" is a translation from a Farsi formulation which has credibility.
11. Returning refugees and displaced persons.	All references now include displaced persons.

Issue	Response
<p>12. Concern regarding probability of recruiting distributors/dealer network and AFC personnel in time for 1989 season.</p>	<p>There is a degree of speculation as to the ability of AIME to recruit staff and identify an adequate distributor network in time to supply fertilizer and other inputs for fall 1989 season. Chemonics has discussed this possibility with Dr. Wakil and other informed Afghans. It is their considered opinion that AFC staff in sufficient numbers could be located in time if AIME were to begin recruiting shortly after the first of the year. There is also a strong opinion that an adequate number of interested distributors could be located. There is less conviction as to a wide ranging dealer network in place by the fall. We foresee AIME making direct sales to farmers where inadequate dealerships are in place.</p>
<p>13. Implication that fertilizer is moving into Afghanistan from Pakistan.</p>	<p>Reference cited is to the possibility of future movement across the border, not to current movement.</p>
<p>14. Questions the meaning of "fertilizer year."</p>	<p>"Fertilizer year" is equivalent to a crop planting season, i.e., the fall thru spring.</p>

Issue	Response
15. Should AIME go forward in the absence of new HYV seed.	Section on seed (III.D.1.) has been expanded to address this issue. In short, although seed quality has deteriorated, the farmer demand for fertilizer in Afghanistan is testimony to continued response. Even though marginal, it must exceed a response ratio of at least 3 to 1, or farmers would not be willing to buy. Thus, although a combined fertilizer seed program is preferable, a "fertilizer only" program is feasible.
16. Extensive Mujahidin warehousing.	Where suitable and available, AIME could use Mujahidin warehousing on a negotiated basis. This is reflected in section VI.
17. The use of ACLU trucks to cross border.	ACLU trucking would be used where appropriate on a negotiated basis; see section VI.
18. AIME should use ACLU truck in lieu of its own fleet.	Section VI proposes the use of ACLU trucks. Section V would see AIME as more of a stand alone entity, complete with considerable transport capability.
19. Concern that AIME is designed as a continuing entity as reference is made that AIME is eventually to take over AFC.	As AIME is described, it could make a significant contribution to accelerating the eventual reconstitution of a nationwide AFC. If this proves to be an undesirable event, AIME could easily be dismantled. Chemonics is convinced that AIME, as described in section V, has the best chance of achieving the desired goal.

Issue	Response
20. Use of AMEG facilities in Peshawar and Quetta.	Section VI.B. describes a scenario in which AIME would use these facilities.
21. AIME should use AMEG procurement.	Same as above.
22. Detail coupon system including protection from "black market."	Detail on "coupon" system is expanded in section V.B.4. It includes a reference to the "black market" problem.



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