

D R A F T R E P O R T

F O O D P R O S P E C T S I N A F G H A N I S T A N
A N A S S E S S M E N T

by Raymond W. Hooker for the O/USAID/REP under a
contract with VITA

June, 1987

TABLE OF CONTENTS

Introduction	1
Purpose	1
Approach	2
Summary and Conclusions	2
Recommendations	12

ANNEX

Current Crop (Wheat) Situation by Province	14
Prices	22
Population Estimates	29
Distribution of Population	37
Production Trends in Agriculture	41
Collection of Agricultural Data	49

TABLES AND FIGURES

	<u>Page</u>
Table 1. Survey Wheat Prices, Averages	24
Table 2. Summary Table, Population Projections	32
Table 3. Population Projections Under Alternative Assumptions, 1978 - 87	33-36
Table 4. Official DRA Production Estimates for Principal Crops, 1977/78-1986/87	42
Table 5. Domestic Wheat Production Required to Provide the Same Per Capita Availabilities as in 1978/79	46
Figure 1. Map of Afghanistan	52

4243D

21'
DRAFT

FOOD PROSPECTS IN AFGHANISTAN - An Assessment

INTRODUCTION

Wheat is by far the single most important food in the Afghan diet. Production of this cereal is rather sensitive to the amount, and distribution, of precipitation, however, and drought conditions can result in a serious shortfall in production which if not supplemented by imports can cause severe hardship or worse.

Some parts of the country, particularly the northwest, have experienced a rather prolonged drought. This drought continued into 1986 and by fall/winter 1986/87 wheat prices in the affected areas had risen very high. The O/AID/REP became concerned about Afghanistan's food situation and requested a consultant to make an assessment of it. This paper presents the results of the assessment. The consultant was charged with certain other tasks the results of which are also included.

PURPOSE

The main purpose was to assess the current food situation in Afghanistan. Is food assistance needed? If so, where, in what quantities and in what mode(s)?

Another purpose was to make a generalized assessment of the status of the country's agriculture.

APPROACH

Afghans in Pakistan who had recently been in their village in Afghanistan were interviewed. They were asked questions about, inter alia, crop prospects, prices, trends in production and yields, rainfall, and problems. The interviews were conducted during the last week of April and the month of May.

Prices -- current, corresponding prices for a year earlier and for two years earlier -- were collected for a number of items. The latter included wheat, which was of primary concern, and also rice, meat (mutton/lamb), sugar, fertilizer and oxen. For some items, prices during the fall/winter, 1986/87, were also collected. Prices were averaged by province. These prices were not weighted. Local expertise in Pakistan was also utilized to obtain information about Afghanistan.

To assess agricultural production trends, estimates were needed for the country's population and the urban-rural distribution of the population. Alternative such estimates were made.

SUMMARY AND CONCLUSIONS

1. Crop prospects in Afghanistan have improved considerably over the last 3-4 months and the country's total wheat production this year should be at least as large as last year. It will probably be larger. Almost all the survey interviewees reported that crops looked satisfactory, good, very good or excellent. There were very

few unsatisfactory or poor reports.

2. During the 1980's domestic production of cereals has been supplemented by official and unofficial (from Pakistan) imports estimated at over 300,000 tons annually. This level was maintained in 1986/87 and we expect it to continue in 1987/88. Pakistan had an excellent wheat crop this year, although heavy late rains and hail caused some damage. Movement of wheat from Pakistan to Afghanistan will continue to supplement domestic production in some of Afghanistan's border provinces, the east central area and the central highlands. It will also flow into Kabul city.

3. This generally optimistic picture is dampened some, however, by the behavior of prices. Based on survey reports, the average national price (about afs 260/seer or afs 37/kg) is now substantially higher--by a third--than a year ago. What part of this is due to inflation we could not determine but would guess that most of it is.

4. There is only one part of the country about which we remain apprehensive. That is the northwest. For all the remaining country we see no basis for concern about a severe food (wheat) shortage this coming winter. This applies to the central highlands--Ghor, Bamyan, Wardak and Oruzgon.

5. The trouble area in the northwest--Jowzjan, Faryab and Badghis provinces--is dryland wheat country where the great bulk of the wheat area is unirrigated. The area has suffered from a rather

prolonged drought--3-4 1/2 years--and over this period many households exhausted their assets as they sold rugs, oxen, jewelry, livestock to purchase food and other necessities. And when the spring rains arrived this year, reported to have been generally excellent but late, many families simply did not have the resources to purchase seed wheat or did not have oxen. Lack of security was also identified as a significant contributing factor. This account we heard time and again and believe that it has to be given credence. Based on interviewee reports the amount of uncropped land is large. Production, consequently, will be substantially smaller than would be estimated when using precipitation data as the predictor. As one interviewee put it, crops look good but there are not very many of them.

6. The three provinces will have to import wheat. Two interviewees from Badghis (one of whom was from east central Badghis where current prices are moderate) stated that this will be the case for their province. They noted that the food (wheat) situation this winter will "be very, very difficult."

7. The absence of data makes it practically impossible to quantify the expected production shortfall. However, the combined population of the three provinces is estimated at 1.35 million. Using the UNHCR/WFP full wheat ration for refugees (500 grams/capita/day or 182.5 kgs/year) gives a total wheat requirement of about 246,000 tons for a full year. With the prospects for the planted acreage reported as looking good, it would seem that not more than a quarter of the "requirement" of 246,000 tons would need to be imported. We

used an estimate of 20% which is still a high proportion of requirements. This is roughly 50,000 tons. We are satisfied that this much wheat would be available in the north from the surplus producing provinces--Takhar, Kunduz, Baghlan and Balkh. It might be available in Balkh alone.

8. There is now some movement of wheat from Mazar-i-Sharif in Balkh province to Miamania in Faryab province. However movement west/southwest from Balkh province seems to be quite limited, as is movement within a province. Thus, prices are generally very much higher in Jowzjan province than in Balkh province and there are very large differences in price within Badghis. However, even if transport were available to move wheat into and within the three provinces, there would still be many households so impoverished that they would not be able to purchase the needed wheat even at "reasonable" prices.

9. The two problems, then, are getting the wheat to the area (transportation) and then getting this wheat to the target population, generally the poor who do not have the income to purchase the needed wheat. This would include the many households who have been reduced to a poverty level by the extended drought and internal refugees.

10. What might be A.I.D.'s role? One, it should consider the feasibility of providing transportation, of placing trucks in the area, through some appropriate entity or entities, to move wheat from, say, Balkh province into the three target provinces.

Secondly, it should consider providing cash grants to the target population.

11. There would be problems associated with implementing these two activities. Whether or not these problems are generally amenable to solution or are so intractable as to guarantee failure of the activities, is beyond the capability of the consultant to judge. Such expertise, while fragmented, probably does exist in Pakistan. It should be assembled and the collective judgement of that body used to make the decision regarding the feasibility of implementing the activities.

12. What are the magnitudes involved? It is 125 km from Mazar-i-Sharif (in Balkh province) to Sheberghan (in Jowzjan). The road is hard surfaced and reportly in good condition. The distance from Sheberghan on to Maimania (in Faryab) via Andkhvoy is 200 km. This is not a great road. It is over 200 km on to the provincial capital of Badghis (Qaleh-ye Now). The roads are very rough. Using the distance to Maimania as an average, a truck might be able to average a round trip from Mazar-i-Sharif in 4 days or 90 round trips a year. With a 6-8 ton payload, this would amount to about 650 tons. At this rate, a fleet of 30 trucks could move approximately 20,000 tons a year, a nice supplement to the wheat movement that would be taking place through other truckers.

13. By the end of our survey, Mazar-i-Sharif wheat was appearing in the Maimania market and the price had reached a low of afs 260/seer when such wheat was available (prices fluctuated upward from that

level, "depending on when the trucks arrived"). This probably means a transport/handling cost of about afs 50/seer or afs 7140/mt. Under the above scheme, an average delivered price might be afs 280-300/seer, say afs 290/seer or afs 41,400/mt. This price for 50,000 mt totals to afs 2.07 billion which if purchased at the current bazarr rate (Kabul) of afs 165/\$ would amount to \$12.5 million. That plus the cost of 30 trucks would total to about \$13.3 million. This we believe would be a very reasonable cost if the program were successful or even moderately so.

14. As noted, survey wheat prices averaged about Afs 260/seer. Is this a "high" price? It is about four times the price of the late 1970's. It is about double the world price when Afghanis are converted to dollars at the free market (Kabul bazaar) rate of Afs 165/\$. It is also roughly double the price of wheat in Pakistan when Afghanis are converted to Pak rupees at the free market rate (Afs 8.5-9.0/Rs). This would seem to be high. However, wage rates in the larger municipalities, the provincial capitals, have increased substantially more than wheat prices and are now 7-10 times their pre-war level. For such wage earners, wheat prices are relatively low. One interviewee referred to a price of Afs 220/seer (in Kunduz) as being "very cheap". But for those that live in small rural villages where employment opportunities are very limited and for internal refugees who have taken refuge in hilly/mountainous areas the price is very high when they have to buy wheat. This is of course true for the households impoverished by the drought in the northwest. Increasingly Mujihadeen military commanders are saying that they cannot attract, or even maintain, their forces unless the

commanders can make wheat available to these volunteers. The latter have to eat. If food is not made available to them by the commanders, the volunteers have to find ways to feed themselves and perhaps their families (e.g., by finding jobs in Pakistan) and are no longer available as a fighter.

15. We concluded that except for the northwest there was no basis for concern about a severe food shortage. Nonetheless there will be many Afghans (generally internal refugees) in scattered pockets throughout the country who will not be able to obtain enough food to provide even a minimal caloric intake. Continued A.I.D. food assistance to these people would seem to be clearly justified. Because of the risks and costs attending the transport of wheat into Afghanistan by the Mujihadeen, the provision of a cash grant would be preferable to a wheat grant. However, if that alternative is not available, then the provision of in-kind food assistance should be continued. Such assistance would make it possible for at least some of these internal refugees to stay in Afghanistan rather than migrating to the refugee camps in Pakistan with all the attendant, and increasing, problems. A disincentive to domestic production? This seems very unlikely. It may result in more output, or help prevent a further decrease. Some Afghans hide in the hills during the day and return to their farms at night to, e.g., irrigate and tend crops. They are not very productive but do produce something while in country. Because of the very high transport costs and dangers, we cannot recommend the provision of in-kind food assistance north of the Hindu Kush. The recommendation for such assistance is restricted to the area south of the Hindu Kush,

including the southern (or southeastern) slope of this mountain range.

16. Mainly in an effort to obtain some notion of what has happened to agricultural production during the 1980's, a number of alternative population projections were made. We consider "Case E" to be the most realistic (see below). For this alternative, the following "parameters" are used for projecting annual population numbers: a mid-1978 population of 15.2 million; war-induced fatalities of 875,000, 1979-87; net out-migration of 4.5 million, 1979-87; and a growth rate of 2.3% annually for the remaining in-country population. The estimated annual distributions of fatalities and net out-migration are shown in Table 3 below. Given the foregoing, the estimated population in years 1983-86 was about 3 million less than, or about 80% of, the 1979 population level.

17. Probably of more significance than the change in the population size is the tremendous shift that has taken place in the location of the remaining in-country population. This movement has been away from the more accessible, generally more agriculturally productive, flatter land into the less accessible, more hilly/mountainous, less agriculturally productive areas and especially into "cities"--the dominant municipalities or the capitals of the provinces. The driving force behind this movement is security. The growing cities also offer attractive employment opportunities which do not exist in the rural villages.

18. It is our information that almost all the provincial capitals

are larger now than pre-war. This includes the central city of Kandahar although the surrounding area has been razed. This is true for Mazar-i-Sharif and reportedly also for Jalalabad. War-torn Herat City is an exception. Farah City is 3-4 times its pre-war size as is Lashkar Gah. The growth of Kabul has been spectacular--from a population of about 700,000 in the late 1970's to at least 2.5 million currently. In very large numbers, rural people are moving to the "cities."

19. A crude calculation of the current settled rural population (i.e., non-nomads and non-urban) suggests that at most it is only 70% of the number in 1979. The same result is obtained when nomads are included in the rural population. It seems almost certain that this population contains a larger proportion of young (less than 16 years of age) and older (over 45 years of age) people; and a smaller proportion of the most productive age group of males, than in the late 1970's.

20. Official DRA data show agricultural production during the 1980's increasing from, or at least maintaining, the pre-war level. There is absolutely no way that this could be the actual case. We could not identify a single factor which might cause the output trend to rise but there are a host of factors pushing the trend downward. Our estimate is that agricultural production is about 70% of what it was in 1978/79. One can predict with a very high degree of confidence that the deterioration will continue as long as the conflict continues.

21. The Agricultural Survey for Afghanistan, an activity conducted under the auspices of the Swedish Committee for Afghanistan, has started collecting agricultural data inside Afghanistan. However, by the time the data are collected, analyzed and the reports are written, the information will not be very current. We believe it important that a continuous effort be made to stay current on the status of food and agriculture. This would require an additional staff member, an Afghan, in the Planning Unit (Agriculture) in Peshawar who would work full time at this task.

22. As now planned, the Agricultural Survey for Afghanistan will collect a very large amount of agricultural data. The number of questionnaire questions is very large. We believe that during the analysis and write-up of the survey data that will be collected for 1987 it will be found that there is substantial latitude for reducing the number of questions without losing important, meaningful information. A rigorous culling of the questionnaire questions would make the data more manageable, expedite analysis and report writing and permit a larger sample of the more important variables. There will be problems in expanding the sample data to obtain national estimates, or estimates by province. It has been suggested that the use of satellite imagery could be valuable in this respect, by providing, e.g., good quantitative estimates of the cropped area by province and for the nation. The resolution of Landsat imagery, however, is apparently not high enough to provide the information wanted. More information is needed on satellite imagery before a decision is made to contract for such services. The VITA office in Washington, D.C. could collect this information.

RECOMMENDATIONS

We concluded that the threat of a severe wheat shortage in the northwest this fall/winter is a real one and merits A.I.D. consideration for assistance. Such assistance should be in the form of trucks and cash grants. Wheat is available in other provinces in the north but additional transportation capacity is needed to move it to the target area. And mainly because of the prolonged drought, many households do not have the purchasing power to buy wheat in the needed amounts. The assistance should be contingent on a determination that most of the cash would reach the target population and that the trucks would be used as intended.

The consultant did not have the knowledge needed to make such a determination. The target provinces are among the most inaccessible in the country and less seems to be known about them by the development community than about most provinces. However, there are probably enough individuals in Pakistan with reliable information about the area so that, based on their collective knowledge, a determination could be made with a relatively high level of confidence. We therefore recommend that the O/USAID/REP assemble this expertise and make a determination based on their collective judgement. Trucks would be needed -- if used as intended -- even if a negative determination were made for the cash grant.

We recommend also that the Planning Unit (Agriculture) in Peshawar hire a full-time Afghan to maintain a current and continuing account of the food/agricultural situation in Afghanistan. Relating to the

Agricultural Survey of Afghanistan, we recommend that the questionnaire questions be rigorously culled during the process of analysis and report writing of the data that will be collected in 1987. This would make the data more manageable, expedite analysis and report completion and make possible for a larger sample of the more important variables. Some personnel are considering contracting for satellite imagery services to supplement the sample data that will be obtained by the Agricultural Survey of Afghanistan. We believe that more information on satellite imagery is needed before a contract is let and we recommend that such be obtained, perhaps by the VITA office in Washington.

CURRENT CROP (WHEAT) SITUATION BY PROVINCE

The following is based on the information obtained during the survey interviews.

Starting in the northeast, Badakshan had very good spring rains and crops are good. Good rains were also reported for Kunduz and south through Takhar and Baghlan. Crops are generally excellent. Two interviewees observed that they had never seen better spring pastures. However, in southwest Baghlan, next to Samangan, crops are not good but are excellent in the north and east of the province where current prices are afs 140-150 per seer. For all of Baghlan province the average survey price was afs 235/seer. The corresponding prices for Kunduz and Takhar were afs 180 and afs 200 respectively (Table 1.).

On south in the east central area, Parwan/Kapisa, Laghman, Kabul, Wardak, Logar, Nangahar, Paktia/Paktika and Ghazni reported crops to be generally satisfactory, from fair in Paktia to very good in Nangahar. Prices ranged from afs 220 to afs 260 per seer. Local production of wheat in the east central area is supplemented by inflows from Pakistan. These unofficial imports are reported to account for over 50% of the wheat consumed in some provinces. Pakistan had an excellent wheat crop this year.

Moving south and west, we find some of the country's lowest wheat prices -- in Kandahar, Helmand, Oruzgon, Farah and Herat provinces. Average prices for these provinces range from afs 180 to afs 210 per

seer. While we were conducting the survey, the military commander for Helmand, Kandahar and Oruzgon provinces made the pronouncement that the food situation in these three provinces "is satisfactory."

The USSR provides wheat (as well as sugar and edible oil) to Herat City. One interviewee reported that the price of wheat in that city has been afs 185/seer for the past 2-3 years. This statement we have not confirmed. Another interviewee stated that the current wheat price in the very northwest of Herat province was afs 300/seer. That area, however, is practically depopulated so that price was not recorded. We obtained no price information on Nimroz province. This province, which is located in the southwest, borders Pakistan and Iran and has a very small population.

Extreme food shortages were reported for some areas in Ghor and Bamyan last fall. However, we picked up no such current accounts during our survey. While we were able to contact no one residing in the central/eastern parts of Ghor, two of the south Ghor interviewees stated that wheat prices were about the same in central Ghor, in/near the provincial capital, as in south Ghor. Also two interviewees (from Badghis) who recently walked through Ghor (one on through Bamyan) reported good rains and that crops looked good from the provincial capital eastward (but crops did not look good in southern Badghis and up to the capital of Ghor, or northwest Ghor). We have one report from north Ghor, at the Badghis-Faryab boundaries, in March just before the spring rains started. The price then was afs 300/seer and this area was selling wheat to buyers further north in Faryab province where prices were afs 150

higher. We believe that we have Ghor well covered. Ghor is indeed poor and food shortages are common place. It will be that way again this winter. But we see little basis for concern about a severe food shortage there.

One of the above interviewees reported that crops also looked good in Bamyan (and excellent in Wardak). Another interviewee on a recent return trip from Balkh to Pakistan also reported that crops looked good in Bamyan. One of Pashawer's best informed individuals on crop conditions in Afghanistan indicated that prospects for Bamyan seemed to be satisfactory. We interviewed one person whose village was in northwest Bamyan. He said that crops looked good but not as good as the two prior years. The price of wheat in his village was afs 300/seer six weeks ago. Our current conclusion is that neither Ghor or Bamyan is at high risk with respect to a severe food shortage this coming winter.

West from Kunduz and Baghlan is Samangan and then Balkh. The reported wheat prices for Samangan are high, much higher than in Kunduz and Baghlan and in most of Balkh. There is wheat on both sides of Samangan and we are not certain of the reason(s) for the relatively high prices reported for that province. They were among the first collected (last week in April) and may reflect prices more like two months ago rather than today. We would guess that today's prices are lower.

For most of Balkh, the price of wheat is relatively low (afs 225/seer or less in the Mayar-i-Sharif market) and crop prospects are reported to look better than in the prior two years. Higher prices were reported in the south. During the period that we were conducting the survey, the price of wheat in Mazar-i-Sharif, the capital of Balkh and the province's largest city, continued to fall, dropping by 20% or more in a 6 week period.

West/southwest of Balkh are Jazyjan, Faryab and Badghis. This is dryland wheat country where the great bulk of the land cropped to wheat is traditionally unirrigated. These provinces have been experiencing a prolonged drought. This drought continued into 1986 and wheat prices in the area rose to very high levels, to afs 500-600 per seer in some cases, in the fall/winter of 1986/87. While late in arriving, spring rains in 1987 reversed the rising prices. These rains were reported to have been excellent in Miamania, the provincial capital of Faryab.

Wheat prices around Miamania reached afs 500/seer last fall/winter. They have since fallen to a low of afs 260/seer as (irrigated) wheat was imported from Mazar-i-Sharif. The price fluctuates upward "depending on when the trucks arrive." In the absence of imports, prices would likely be comparable to those reported for Jawzjan.

An estimated 80% of the wheat land in Faryab province is dryland. During the 3-4 years of drought, many of the dryland farmers completely exhausted their holdings of assets as they sold off jewelry, oxen, rugs, livestock, etc. to buy food and other

necessities. And when it came time to sow wheat once the spring rains came, they did not have the wherewithal to do so. They could not buy seed and many did not have oxen (there are practically no tractors in this part of the country). Harassment by government troops was also frequently cited as an additional reason for the failure to get spring wheat seeded this year.

This account was repeated time and again by interviewees from the three provinces. And we have to give it credence. We believe that enough of the dryland was left unseeded to seriously impact on the local wheat supply that will be available this coming winter. In Faryab province, estimates were given that only 10% of the dryland wheat area was seeded -- and dryland wheat area accounts for about 80% of the total wheat acreage.

In Jawzjan, while wheat prices have fallen from their fall/winter peaks, they are currently still very high, averaging over afs 400/seer. One interviewee from north Jawzjan noted that when he could get wheat from Mazar-i-Sharif, he could buy it for at least afs 100/seer less than the local price. This was the only interviewee, however, that referred to imports from Balkh province.

In Badghis prices are reported to be very high in the north and west central -- afs 500-600 per seer. In the east and east central part of the province, prices are much lower -- afs 280/seer which is less than the price reported for a year ago of afs 300/seer. We questioned the high prices reported in the north and west, but the interviewees were adamant that this was the case. We had one report

that crops were poor in south Badghis although we were not able to obtain prices there.

One thoughtful, well informed interviewee from east central Badghis provided the following assessment of the food situation in that province. There will be no "famine" in his province this coming winter. However, the province will have to import wheat from outside its boundaries, from Herat. He noted that a black market has become established in a village in that part (neck) of Herat province which extends eastward below Badghis and is hopeful that this will be a source of supply. Even so, he said that the food situation will be very tight and it will be very, very difficult especially for the (internal) refugees. Another interviewee from Badghis provided the same assessment.

Pistachio nuts are grown on public lands in Badghis and that province is the country's largest producer of these nuts. The interviewee noted that the nut crop will be good this year and is hopeful that those poor families who need wheat can earn enough income to buy it by harvesting nuts. This is optimistic since there is a mad, mass rush for the nuts every year, as if, as one person put it, it was a pot of gold. And as for importing wheat from the black market in Herat province, distances become great when using pack animals as the mode of transportation. Witness the great difference in wheat price in Badghis (or between Balkh and Jawzjan).

What will be the size of the total wheat crop this year? Most interviewees reported that crops were either satisfactory, good,

very good or excellent. However, some interviewees from dryland wheat areas stressed that while crops looked good, there were not many of them -- the area seeded was way down. This will not affect appreciably the national total. There were very few reports that crops were poor or unsatisfactory.

Based on the survey, then, it would seem that wheat production this year will be as good or better than last year's production.

However, survey data indicate that prices are substantially higher (by a third) than a year ago. If it were not for this price rise, we would think that production will be higher this year than last. While the price increase may be a purely inflationary phenomenon, we have no satisfactory basis on which to make a judgement about it.

The only area (of any size) about which we remain apprehensive is the northwest -- Badghis, Faryab and Jawzjan. There, the possibility of severe hardship in the coming winter is a real one for a sizeable proportion of the population. In this regard, we believe the assessment by the interviewees from Badghis province is realistic, that is, it will be "very, very difficult this winter." The interviewees are overly optimistic, however, in seeing income from pistachio nut harvest as a source of income to purchase wheat. As noted there is always a mad, mass rush for the nuts at harvest time. And moving wheat by pack animals from the "black market" located south of Badghis (in Herat) would be a slow, costly process.

The three provinces will have to import wheat. How much will be needed? We can obtain a rough estimate. The combined population of

the three provinces is estimated at 1.35 million in 1978. Out-migration is reported to have been low in these provinces. Taking account of war fatalities, the population may be about the same as pre-war or about 1.35 million. The UNHCR/WFP full wheat ration for refugees in Pakistan is 500 grams per capita per day or 182.5 kgs per year. The latter times the population (1.35 million) would give the wheat "requirement" for a full year, about 245,000 tons. One-fourth of this amount, or about 62,000 tons, might represent roughly an increase of about a fourth in wheat availability. This would be a big increase. Less would probably suffice.

PRICES

We collected price information for a number of commodities in our survey. We tried to obtain current prices (Apr/May-1987), those of a year ago (4/5-1986), and prices for two years earlier (4/5-85). It was important to obtain the latest possible prices so they would reflect the improved weather conditions -- the late arrival of spring rains in some parts of the country -- on expectations regarding production of the current wheat crop. For a few items we also tried to collect price information for last fall/winter (fall/winter, 86/87) when, due to drought prices of wheat moved sharply higher in some parts of the country.

Since wheat is by far the single most important food item in the Afghan diet, this cereal was our major concern. In some cases we may have received the price of wheat flour, instead of wheat. And in some instances we may have received price which were for earlier in the year which generally would have been higher than current prices. It is clear that at least in some parts of the country prices were declining during the 5-week period that they were being collected. "Current" wheat prices accordingly may have a slight upward bias. And it goes without saying that recall from 2 years ago may be less than perfect. The prices shown for Kabul City (Table 1) are based on information provided by one person, a life-long resident of Kabul who recently escaped to Pakistan.

Wheat Prices. The simple (unweighted) average price of wheat in the survey was about afs 260/seer or about afs 37,000/mt (a seer is

equal to about 7 kgs). The price range by province is wide however, from afs 180 to over afs 400 (Table 1). (Note: Prices were averaged for each province. Prices were not weighted. The afs 260/seer price is the simple average of the averages of the provinces).

TABLE 1

Survey Wheat Prices, Averages (Afs/Seer)

PROVINCE	Apr/May 1985	Apr/May 1986	Winter 86/87	Apr/May 1987
Kunduz	115	150	265	180
Helmand	120	150		180
Kandahar	120	145		185
Oruzgan	120	150	265	185
Takhar	115	150	285	200
Herat				200
Farah	155	170		210
Nangahar	100	150		220
Logar	120	165	375	235
Ghazni	140	190	305	235
Baghlan	130	180	345	235
Zabul	135	190		240
Laghman	110	160		250
Parwan/Kapisa	100	150		260
Kabul	125	170	225	260
Paktia/Paktika	140	200	400	260
Wardak	145	185	280	265
Balkh	115	180	325	265
Ghor	160	220		270
Badakshan	170	170	300	270
Kabu' City	165	205	250	270
Bamyan	150	180	320	300
Samangan	125	205	450	355
Faryab	175	325	450	395
Badghis	250	335	395	410
Jowzjan	185	290	450	410

*Source: Survey Data. One seer is about 7 kgs. Averages are not weighted. Kunar and Nimroz provinces are not included. The current price for Faryab excludes price of imported wheat.

There has been substantial inflation in Afghanistan since the late 1970's and one of the questions that we wanted to address was whether or not the real cost (price) of wheat has risen since that time. While we could not find an appropriate deflator, as is discussed below, there are some indicators.

As noted, the average survey wheat price was about 260/seer. Is this a high price? It is about 4 times the 1976/77-77/78 level. And when one converts Afghanis to dollars at the bazaar (free market) rate of about afs 165/\$, the afs 260/seer translates into \$225/mt, or about double the world market price. And when Afghanis are converted to Pak Rupees at the free market rate (afs 8.5-9.0/Ps) afs 260/seer is equivalent to about double the wheat price in Pakistan.

From the foregoing, it would seem that a price of afs 260/seer for wheat is a high price. And it undoubtedly is for a lot of Afghans. But for some it is cheap. One of the persons that we interviewed noted that wheat in Kunduz was "very cheap". The reference price was afs 220/seer. Wages for workers in the "larger" municipalities have risen much faster than have wheat prices. Examples include the following:

Kabul	<u>Current</u>	<u>Pre-War</u>
- Mason	700-800	100-120
- Carpenter	1000-1200	120-140
- Laborer	250-300	30-50

Farah City

- Mason	1200	80-90
---------	------	-------

Kandahar City

- Laborer

14-15 yr. old	400-500	20-30
older men	600	30-40

Mazar-i-Sharif--pay afs 200-300 a day "just for an old man" ←

Thus, wage rates in the "larger" cities are 7-8-9-10 times the pre-war level. In most rural villages, there simply are no employment opportunities (we have, however, no information about the central highlands). There is a seasonal demand for laborers to harvest wheat and rice. And the wage rate for this is afs 300-400/day (twice these rates if fields are next to a puka road). But this work lasts a relatively short time. Thus for some, wheat is very cheap relative to pre-war prices but to others, such as rural people in small villages, wheat is very expensive if they have to buy it.

Mutton/Lamb. Sample mutton prices averaged (simple, unweighted) afs 144/kg two years ago compared with afs 252/kg currently. This is a 75% increase, something less than the increase in wheat prices over the same period. Due to the drought and very poor pastures, there was heavy selling of flocks in the last half of 1986. This is reflected in mutton prices collected for the fall/winter, 1986 which prices fell sharply in some areas. With the good springs rains and

resulting good pastures, demand for sheep was high this spring. We hypothesized that consequently current mutton price would be sharply higher than a year ago. However, if such happened it is not obvious in the aggregate data. A recent Kabul-resident arrival noted that mutton "is becoming a rare commodity" in Kabul. However, he says it is three times its per-war price, which is a smaller multiple than for wheat.

Fertilizer. Government sells fertilizers at subsidized rates to friends of the regime. In some parts of the country there may be certain other pre-requisites such as the payment of land taxes before fertilizer is issued. None of the survey interviewees had direct access to government fertilizer outlets. There is, however, a vast black market in fertilizer and most interviewees said that fertilizer was generally available if you were willing to pay the price.

The average price for a bag of black fertilizer (urea) was about afs 1150/50-kg bag and for white (DAP), about afs 1250/50-kg bag. In Herat, the fertilizer comes from the USSR and Herat is the source for farmers to the south -- Kandahar, Helmand, Ghor. It was reported that the urea which comes from the USSR is from the Mazar-i-Sharif plant which fertilizer is shipped through the USSR by rail and then delivered by truck to Herat.

While farmers complained mightily about the price of fertilizer, it would seem to be a real bargain even at black market prices -- a kg of either urea or DAP is cheaper than a kg of wheat. And a kg of

fertilizer should produce 2-5 kgs of wheat. However, the risk of crop loss is now substantially greater than it was. Converted to dollars at the free market rate, afs 1250/50-kg bag is equivalent to about \$150/mt for DAP; and afs 1150/50-kg bag is equivalent to about \$140/mt for urea. For delivered prices, both are very reasonable.

Draught Animals. A pair of oxen is a major investment by a farmer. Typical prices are from afs 80,000 to afs 100,000. In some parts of the country, e.g., Helmand and Kandahar, much of the cultivation was done by tractor in the late 1970s. With the difficulties that tractor owners are having with obtaining repairs and parts, oxen are replacing tractors.

The Afghani Price of Foreign Exchange. It has been suggested that the price of wheat be deflated by the bazaar afs/\$ rate in order to obtain some idea of whether food prices have been rising faster than non-food. The concept is that the demand for foreign exchange reflects a demand for non-food items which imports are reported to be widely displayed in Kabul. To make such a comparison and consider it valid requires some heroic assumptions. Since we have not been timid in this regard so far, the comparison follows. The bazaar exchange rate in the late 1970's was about afs 40/\$; it is now afs 165/\$. The average national prices of wheat for the corresponding dates are about afs 60-70 per seer (say afs 65) and about afs 260. The Afghani price of the dollar increased 4 times and the Afghani price of wheat practically the same, which, on the above interpretation, indicates that wheat and non-food prices have risen at practically the same rate.

POPULATION ESTIMATES

For a number of reasons, including that of making an assessment of agricultural production, estimates of Afghanistan's population were needed. Based on alternative parameters, a number of different sets of estimates were made.

Base Year Estimates. We used three sources, viz, USDA/ERS, FAC and World Bank, to establish estimates for the base year, (mid-CY) 1978, or just before Afghans began fleeing their country in significant numbers. The USDA/ERS series was developed in collaboration with AID/W and the U.S. Bureau of Census. The (recent) FAC series presumably has the sanction of DRA. FAO shows a population of 14.04 million in 1975. Projecting this at the growth rate indicated for 1970-75 gives a population of about 15.1 million in 1978. The USDA/ERS estimate is 15.3 million. We used the average, 15.2 million for one set of projections.

For another set of projections we used 14.5 million as the base year population. This level is based on the World Bank's estimate of 14.0 million in 1976/77 which figure would have grown to about 14.5 million by mid-CY 1978.

Net Out-Migration. The number of external refugees attributable to the communist regime -- since the April 1978 coup which deposed, and killed, president Daoud -- is variously estimated from a low of 3.5 million to more than 5.5 million. We used alternative estimates of 4.0 million and 5.0 million as well as the average of these two, 4.5

million. The assumed annual distributions of net out-migration, 1979-87, are shown below in Table 3.

Fatalities Due to Fighting. There has been a large number of fatalities caused directly and indirectly by the war. Estimates range from at least 500,000 to over 1.5 million. We used alternative estimates of 750,000 and 1.0 million as well as the average of the two, 875,000. One knowledgeable Afghan observed that "I have talked to no Afghan who has not had at least one member of his (extended) family killed". With an average family size of 15 members and a population of 15 million, this means total fatalities of at least 1 million. The assumed annual distributions of fatalities are show below in Table 3.

Population Growth Rates. The world Bank shows an overall population growth rate of 2.18% annually, 1972/73-76/77; FAO, 2.4%, 1970-75; and USDA/ERS, 2.6%, for the three years preceding 1978. With the tremendous dislocation of Afghanistan's population during the 1980's, the infant mortality rate must have been awfully high. And an annual growth rate of 2.6% for the remaining in-country population is considered unrealistically high for this period. We used 2.2% and 2.4%, and the average of the two rates, 2.3%, as the alternative growth rates for the remaining population in Afghanistan.

Projections. Eight different population projections were made using eight different sets of parameters. These are shown in detail in Table 3 and summarized in Table 2 below. Cases A and B, which use a 1978 population of 15.2 million, give, for this base year estimate,

extreme (high and low) values for annual decreases in population from the 1979 level. The same is true for Cases C and D, which use a base year population of 14.5 million. Case E combines Cases A and B and Case F combines Cases C and D. Case G combines Cases E and F. For Case H, the last projection, the most frequently quoted figures for the pre-war population and for external refugees are used, i.e., 15 million and 5 million respectively. In common with some of the other projections, 2.3% is used for the annual growth rate of the remaining population and total fatalities (1979-87) are assumed to be 875,000.

Of all the cases, we believe that Case E, while probably conservative, provides the single best annual estimates and that time series is used in looking at the crop production below.

As noted the above Cases are summarized, for 1983-86, in Table 2 below. The Table shows, for example, that for Case E Afghanistan's population was about 3 million less than, or about 80% of, the 1979 level. Table 3-E shows population peaking at 15.38 million in 1979 then declining to a low of 12.27 million in 1984. Population then began to slowly rise reaching 12.61 million by mid-CY 1987 which is 82% of, or 2.8 million less than, the 1979 level.

Table 2 Summary Table, Population Projections

Estimates of Decreases in Population, 1983-86, from 1979 Level and of Population, 1983-86, as a Percent of 1979 Population, under Alternative Parameters*

<u>Parameters</u>	<u>Case A</u>	<u>Case B</u>	<u>Case C</u>	<u>Case D</u>	<u>Case E</u>	<u>Case F</u>	<u>Case G</u>	<u>Case P</u>
1978 Population (m)	15.20	15.20	14.50	14.50	15.20	14.50	14.86	15.0
Growth Rate (%/yr)	2.4	2.2	2.4	2.2	2.3	2.3	2.3	2.3
Total Fatalities (m)	0.75	1.0	0.75	1.0	0.875	0.875	0.875	0.875
Total Net Migration (m)	4.02	5.0	4.02	5.0	4.51	4.51	4.51	5.0
<u>Decrease in Population from 1979 Level (m)</u>								
1983	2.36	3.54	2.43	3.60	2.95	3.02	2.99	3.41
1984	2.43	3.78	2.53	3.85	3.11	3.19	3.15	3.62
1985	2.31	3.75	2.42	3.84	3.04	3.14	3.08	3.57
1986	2.13	3.66	2.27	3.77	2.90	3.02	2.96	3.47
<u>Percent of 1979 Population (%)</u>								
1983	85	77	83	75	81	79	80	78
1984	84	75	83	74	80	78	79	76
1985	85	76	84	74	80	78	79	76
1986	86	76	85	74	81	79	80	77

* Source: Table 3. The yearly distributions of fatalities and of net out-migration are shown in Table 3.

Table 3
Population Projections under Alternative Assumptions
Afghanistan, 1978-87

A. Case A: 1978 population: 15.2m; population growth rate: 2.4%/yr; total fatalities: 750,000; net out-migration: 4.0m

Year	Millions			Popula- tion (d)	Decrease in Population from 1979 (e)	%
	Fatal- ities (a)	Net Out- Migration (b)	(a) & (b) (c)			
						% of 1979 Population (f)
1978	-	-	-	15.20	-	-
1979	.070	.090	.160	15.40	0.0	100
1980	.080	.700	.780	14.99	0.41	97
1981	.090	1.200	1.290	14.06	1.34	91
1982	.090	.900	.990	13.41	1.99	87
1983	.090	.600	.690	13.04	2.36	85
1984	.090	.300	.390	12.97	2.43	84
1985	.085	.100	.185	13.09	2.31	85
1986	.080	.060	.140	13.27	2.13	86
1987	.075	.070	.145	13.44	1.96	87
TOTAL	.750	4.020	4.770			

B. Case B: 1978 population: 15.2 m; population growth rate: 2.2%/yr; total fatalities: 1.0m; net out-migration: 5.0m

	(a)	(b)	(c)	(d)	(e)	(f)
1978	-	-	-	15.20	-	-
1979	.090	.095	.185	15.35	0.0	100
1980	.110	.875	.985	14.70	0.65	96
1981	.130	1.500	1.630	13.40	1.95	87
1982	.140	1.125	1.265	12.43	2.92	81
1983	.140	.750	.890	11.81	3.54	77
1984	.120	.375	.495	11.57	3.78	75
1985	.100	.125	.225	11.60	3.75	76
1986	.090	.075	.165	11.69	3.66	76
1987	.080	.080	.160	11.79	3.56	77
TOTAL	1.750	5.000	6.000			

Table 3 (Continued)
Population Projections

C. Case C: 1978 population: 14.5 m; population growth rate: 2.4%/yr;
total fatalities: 750,000; net out-migration: 4.0m

Year	Millions			Popula- tion (d)	Decrease in Population from 1979 (e)	%
	Fatal- ities (a)	Net Out- Migration (b)	(a) & (b) (c)			
1978	-	-	-	14.50	-	-
1979	.070	.090	.160	14.69	0.0	100
1980	.080	.700	.780	14.26	0.43	97
1981	.090	1.200	1.290	13.31	1.38	91
1982	.090	.900	.990	12.64	2.23	86
1983	.090	.600	.690	12.26	2.43	83
1984	.090	.300	.390	12.16	2.53	83
1985	.085	.100	.185	12.27	2.42	84
1986	.080	.060	.140	12.42	2.27	85
1987	.075	.070	.145	12.57	2.12	86
TOTAL	.750	4.020	4.770			

D. Case D: 1978 population: 14.5 m; population growth rate: 2.2%/yr;
total fatalities: 1.0m; net out-migration: 5.0m

	(a)	(b)	(c)	(d)	(e)	(f)
1978	-	-	-	14.50	-	-
1979	.090	.095	.185	14.63	0.0	100
1980	.110	.875	.985	13.97	0.66	96
1981	.130	1.500	1.630	12.65	1.98	87
1982	.140	1.125	1.265	11.66	2.97	80
1983	.140	.750	.890	11.03	3.60	75
1984	.120	.375	.495	10.78	3.85	74
1985	.100	.125	.225	10.79	3.84	74
1986	.090	.075	.165	10.86	3.77	74
1987	.080	.080	.160	10.94	3.69	75
TOTAL	1.000	5.000	6.000			

Table 3 (Continued)
Population Projections

E. Case E: 1978 population: 15.2 m; population growth rate: 2.3%/yr;
total fatalities: 875,000; net out-migration: 4.5m

Year	Millions			Popula- tion (d)	Decrease in Population from 1979 (e)	%
	Fatal- ities (a)	Net Out- Migration (b)	(a) & (b) (c)			
1978	-	-	-	15.20	-	-
1979	.080	.093	.173	15.38	0.0	100
1980	.095	.787	.882	14.85	0.53	97
1981	.110	1.350	1.460	13.73	1.65	89
1982	.115	1.012	1.127	12.92	2.46	84
1983	.115	.675	.790	12.43	2.95	81
1984	.105	.338	.443	12.27	3.11	80
1985	.093	.112	.205	12.34	3.04	80
1986	.085	.068	.153	12.48	2.90	81
1987	.077	.075	.152	12.61	2.77	82
TOTAL	.875	4.510	5.385			

F. Case F: Same as Case E above except 1978 population is 14.5m

	(a)	(b)	(c)	(d)	(e)	(f)
1978	-	-	-	14.50	-	-
1979	.080	.093	.173	14.66	0.0	100
1980	.095	.787	.882	14.12	0.54	96
1981	.110	1.350	1.460	12.98	1.68	89
1982	.115	1.012	1.127	12.15	2.51	83
1983	.115	.675	.790	11.64	3.02	79
1984	.105	.338	.443	11.47	3.19	78
1985	.093	.112	.205	11.52	3.14	78
1986	.085	.068	.153	11.64	3.02	79
1987	.077	.075	.152	11.75	2.91	80
TOTAL	.875	4.510	5.385			

Table 3 (Continued)
Population Projections

G. Case G: Same as cases E&F above except 1978 population is 14.85 million

Year	Millions			Popula- tion (d)	Decrease in Population from 1979 (e)	%
	Fatal- ities (a)	Net Out- Migration (b)	(a) & (b) (c)			
1978	-	-	-	14.85	-	-
1979	.080	.093	.173	15.02	0.0	100
1980	.095	.787	.882	14.48	0.54	96
1981	.110	1.350	1.460	13.36	1.66	89
1982	.115	1.012	1.127	12.54	2.48	83
1983	.115	.675	.790	12.03	2.99	80
1984	.105	.338	.443	11.87	3.15	79
1985	.093	.112	.205	11.94	3.08	79
1986	.085	.068	.153	12.06	2.96	80
1987	.077	.075	.152	12.18	2.84	81
TOTAL	.875	4.510	5.385			

H. Case H: 1978 population: 15.0 million; population growth rate: 2.3%/yr; total fatalities: 875,000; net out-migration: 5.0 million.

Year	Millions			Popula- tion (d)	Decrease in Population from 1979 (e)	%
	Fatal- ities (a)	Net Out- Migration (b)	(a) & (b) (c)			
1978	-	-	-	14.85 15.00	-	-
1979	.080	.095	.175	15.17	0.0	100
1980	.095	.875	.970	14.55	0.62	96
1981	.110	1.500	1.610	13.27	1.90	87
1982	.115	1.125	1.240	12.34	2.83	81
1983	.115	.750	.865	11.76	3.41	78
1984	.105	.375	.480	11.55	3.62	76
1985	.093	.125	.218	11.60	3.57	76
1986	.085	.075	.160	11.70	3.47	77
1987	.077	.080	.157	11.81	3.36	78
TOTAL	.875	5.000	5.875			

DISTRIBUTION OF POPULATION

Tremendous changes are occurring in the geographic distribution of the population remaining in Afghanistan. The movement is away from the more accessible, flatter, more agriculturally productive rural areas into the hilly, mountainous areas and especially into the cities or dominant municipalities in the respective provinces. The movement is away from areas where there is poor or no security, to sites/areas where there is greater security and also employment opportunities. Some illustrations are given below.

The population of the central city of Kandahar has doubled while the surrounding villages for up to a 50 km radius have been largely destroyed. The population in the province's mountainous north is still largely in place. In Helmand province, Lashkar Gar -- which now has no electricity and no municipal water system (dug wells are now the source of household water) -- has a population that is 3-4 times its pre-war level. While the population north of the highway is largely still in place, 30-40% of the people south of Lashkar Gar has left due to the lack of security, the harassment (i.e., shooting) inflicted on them by both government forces and the Mujihadeen. In Zabul, about 50% of the population moved to Pakistan but the size of the provincial capital (Qalat) has doubled.

In Farah province, 40% of the population has moved to Iran but the population of Farah city has more than tripled, from 20,000 to 70,000. Sixty percent of the population of Nimroz have found life easier across the border in the city of Zabol (mostly Baluchi as are

the people from Nimroz). Still the provincial capital (Zaronj) has grown by perhaps 40% (to maybe 15,000 people!). The war-torn city of Herat is an exception. Its population is less than pre-war. A strip, 35-50 km wide, along the western border, Herat and Farah provinces, is practically depopulated except for groups of fighters.

In the east, transport from Pakistan to Ghazni is much easier than, say, to Kandahar; and Ghazni now serves as a staging point for movement of goods from Pakistan onward to the southwest and north and into the central highlands. The latter area is relatively peaceful. There transportation is easy and safe and new "cities" are springing up. By actual count, in a village in the foothills west of Ghazni, there are now 2500 busses (pick-up truck busses) transporting people and goods into (and out of) the central highlands compared with only 2 such busses pre-war.

The growth in Kabul City has been spectacular. Its pre-war population was estimated at 600,000-700,000. Current population is estimated at up to 4.5 million. The latter is based on a census of Kabul conducted by the government in December 1986. A newly arrived refugee from Kabul (Kabul University) places substantial credence in this estimate, and notes that there has been a tremendous expansion in the city's perimeter. He says that a special effort was made by the census takers to not overcount. The results of the census indicates a population of 4.0-4.5 million. The above referred to Afghan believes that a 4.0 million estimate is a good one. Prior to this estimate, the highest one heard of was 3.0 million, the source being a very knowledgeable Afgha. We note that if the 4.0 million

estimate is correct and that the same holds true for our population estimate, then Kabul currently contains almost 1/3 (4.0:12.6) of the country's population, compared to less than 5% pre-war. This is not believable. Using a lower estimate of 2.5 million still gives Kabul about 20% of the country's (estimated) population. In any case, there has been a tremendous change in the rural-urban distribution of the country's population.

~~The main driving force underlying this change has been the lack of security in the rural areas and the income (job) opportunities available in Kabul. Our information is that Jalalabad is now ^{growing} growing. The cities in the north are also, although apparently not nearly as rapidly as the examples we have presented. It is our experience that there is much less information in Pakistan about the north of Afghanistan than there is about that country south (and west) of the Hindu Kush.~~

The following is an effort to obtain a notional figure for the settled rural population. Using World Bank estimates of the distribution of the country's population among nomads, settled urban and settled rural adjusted to a 1978 population of 15.2 million we obtain the following:

	<u>Population in Millions</u> -- Mid CY 1978
Total	15.2
- Nomads	1.6
- Settled	13.6
- Urban	2.2
- Rural	11.4

There has always been some mystery about where the urban population was in the late 1970's, with Kabul City allocated a population of 600-700 thousand. One estimate places the urban population in Kabul province at 1.1 million. This would leave 1.1 million for all other provinces. For 1987 we make the following assumptions. The population of Kabul City is 2.5 million. Due to destruction by the war, the urban population in the province outside of Kabul City is reduced from 0.4 million to 0.1 million. The total urban population in the remaining provinces increased by about 25% and that there are only 60% as many nomads in country as before the war. As is shown below, this gives a current estimate of the urban plus nomad population of 5.0 million. And with a total current population estimate of 12.6 million, this leaves a rural "settled" population of 7.6 million, which is 67% of the corresponding, but more settled, rural population of 1978. The total rural population, settled plus nomads, would also be about two-thirds of its pre-war level.

Urban and Nomad Population
(Millions)

	<u>1978</u>	<u>1987</u>
Total Population	15.2	12.6
Urban Total	2.2	4.0
- Kabul Province	1.1	2.6
- Kabul City	0.7	2.5
- Other	0.4	0.1
- Other Provinces	1.1	1.4
Nomads	1.6	1.0
Urban & Nomads	3.8	5.0
Settled Rural	11.4	7.6

PRODUCTION TRENDS IN AGRICULTURE

We need to have a better idea of what has been happening to agricultural production in Afghanistan during the 1980's relative to the pre-war level. There are official (DRA) production data and this data show that domestic output of wheat (and all cereals) has increased from, or at least has been maintained at, the pre-war level (see index numbers, Table 4 below). However, given the sharp decline in in-country population and the very large increase in wheat imports over the pre-war period, such production figures have no credibility.

One very simplistic approach to this question would be to assume that there is a rather fixed relationship between the size of the (settled) rural population and crop production, i.e., that the average product of farm workers is about constant. This approach requires an estimate of the settled (non-nomad) population. This we have made (see above) and that estimate places the "settled" rural population at about two-thirds of the 1978 level. This would mean, with a fixed average product (and a number of other assumptions) that crop production is now about two-thirds its pre-war level. One obtains about the same ratio when including nomads in the rural population.

One could argue that in the aggregate the marginal productivity of (farm) labor declines as the quantity rises and that consequently the average product of farm workers would have increased as the rural population declined. This might be a valid argument if a ceteris paribus assumption were valid. However, other things did not remain unchanged.

TABLE 4

Official DRA Production Estimates for Principal Crops

1977/78 - 1986/87*

CROP	Thousands of Metric Tons									
	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87
Wheat	2652	2813	2663	2750	2850	2860	2927	2860	2850	2750
Barley	300	325	318	321	330	329	336	332	333	330
Maize	760	780	760	797	798	800	806	798	799	810
Rice (Paddy)	400	428	439	461	475	473	480	479	480	480
Fruit	692	824	836	891	913	920	930	930	927	950
Vegetables	660	766	804	828	865	912	930	932	920	970
Seed Cotton	137	132	105	65	60	45	50	68	75	75
Sugar Beets	97	73	70	35	20	20	16	26	5	8
Sugar Cane	64	64	64	70	70	72	73	73	73	75
Oilseeds	36	35	42	43	44	45	45	45	45	45

*Source: From IMF Reports. Figures for 86/87 are estimates

CROP	Index Numbers (1980/81 = 100)									
	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87
Wheat	96	102	97	100	104	104	106	104	104	100
Barley	93	101	99	100	103	102	105	103	104	103
Maize	95	98	95	100	100	100	101	100	100	102
Rice (Paddy)	87	93	95	100	103	103	104	104	104	104
Fruit	78	92	94	100	102	103	104	104	104	107
Vegetables	80	93	97	100	104	110	112	113	111	117
Seed Cotton	211	203	162	100	92	69	77	105	115	115
Sugar Beets	277	209	200	100	57	57	46	74	14	23
Sugar Cane	91	91	91	100	100	103	104	104	104	107
Oilseeds	84	81	98	100	102	105	105	105	105	105

For example, it seems certain that the age distribution of the rural population has changed substantially, with an increase in the proportion of the young (say less than 16 years of age) and of the older (say over 45) and a decrease in the proportion of the most productive age group of males which have departed villages to avoid being conscripted by the government. (This may be less true in, for example, the central highlands which is generally under Mujihadeen control). This age group has taken refuge in the hills/mountains, and/or is fighting the jahad or has migrated to Pakistan and Iran.

For villages from which a large proportion of their respective populations have fled - because of bombardment and harassment - the people that remained were the old and the poor. The poor stay because the cost of moving a family to Pakistan/Iran is sizeable (one family from Kabul that recently arrived in Pakistan paid afs 60,000 per family member for a package deal whereby all the arrangements for the escape were made).

As is described below, there are a number of other very good reasons for believing that per-capita farm production could not have been maintained during the 1980's.

Another approach to the question is the following. Take a year in the late 1970's when production was good enough that total per capita availability (for food, feed, seed and waste) was high enough so as to be unlikely that such availability level could have been exceeded in the 1980's. One can then look at how much domestic production would have had to have been, after accounting for

imports, to have provided the same per capita availabilities in the 1980's as in the pre-war year. This is done below.

There were practically no wheat imports in the mid 1970's (25,300, 5,000 and 2,500 tons respectively in 1973/74, 1974/75 and 1975/76). We have no information on wheat imports 1976/77-1979/80. However, 1976/77 was the best wheat crop ever and for both that and the preceeding year there were probably net exports because of unofficial exports to Pakistan. However production fell rather sharply in 1977/78, which was followed by a good year in 1978/79, and then another rather sharp decline in 1979/80. FAO reports commercial imports of 150,000 tons in 1979/80

We pose the question: Taking account of imports, what would annual wheat production needed to have been in the 1980's to have provided the same per capita availability as for 1978/79? As noted 1978/79 was a good crop year. On official data, production was higher than in 1978/79 in 5 years of the 1980's (1981/82-85/86) and some lower in 2 years, 1980/81 and 1986/87. 1978/79 was bracketed, however, by poor years so there may have been some imports. We assumed 48,000 tons (one FAC source shows 4,000 tons of wheat imports, presumably commercial). The official wheat production estimate for that year is 2,813 thousand tons. The official import estimates, 1980/81-85/86 (Table 5 below), are DRA figures. One knowledgeable source estimated that for 1985 between 140,000 and 175,000 tons of wheat were exported from Pakistan to Afghanistan through unofficial channels. This quantity we deem to be highly credible and the annual estimates in Table 5 below are based on that estimate. The

population estimates are those developed for Case E above. Based on the foregoing, there was a total wheat supply of 186 kgs/per capita in 1978/79.

Table 5 indicates that during most of the 1980's wheat production needed to have been only about 70% of 1978/79's production to have provided the same per capita availabilities as was provided in 1978/79. This is a larger decrease than the decrease in population, i.e., total population, was about 80% of the 1979 level while domestic wheat production was about 70% of the 1978/79 level. The decrease for the latter is about the same as the decrease in the rural population.

Table 5

Domestic Wheat Production Required to Provide
the same per Capita Availabilities as in 1978/79

Year	Population Estimates (Millions)	Production & Imports of Wheat Needed to Provide 186 kgs/capita (1000 Tons)	(1000 Tons) Estimated Imports			Required Production (1000 Tons)	Production as a % of 1978/79 (%)
			Off- icial	Unoff- icial	Total		
1978/79	15.38	2861	?	?	48	2813	100
1979/80	14.85	2762	?	60	?		
1980/81	13.73	2554	314	70	384	2160	77
1981/82	12.92	2403	225	80	305	2098	75
1982/83	12.43	2312	266	100	366	1946	70
1983/84	12.27	2282	171	150	320	1962	70
1984/85	12.34	2295	173	150	320	1975	70
1985/86	12.48	2321	150	150	300	2021	72
1986/87	12.61	2345	170	160	330	2015	70

There is of course no way that agricultural production could have been maintained during the 1980's at the pre-war, the late 1970's, level. To illustrate an example of a Lashkar Gar farmer is used. This is an extreme example and representative only to a degree.

As noted, Lashkar Gar now has no electricity or municipal water. It has no milk. The city has expanded to 3-4 times its pre-war size, predominately a result of villagers seeking some security. This example-farmer produced, he said, 50 tons of wheat annually on his farm before the war. That figure is now only 7.5 tons. In the pre-war days, yields were good. There was plenty of water for irrigation purposes and also they could "flush" cropland to leach salts from the soil. There were improved seeds, fertilizer was readily available and there were plenty of workers with labor reasonably priced. Fields were kept free of weeds, shrubs/bushes were removed and farmers were able to protect crops in some degree from flocks of birds. Most field work was done with tractors and the area was a very good place to raise livestock.

All of this has changed. Irrigation water is now very short. Labor is not available and the prices of other inputs are, he said, so very high. Keeping tractors in operation is a big problem due to the difficulty in obtaining repairs and parts and the number of tractors is decreasing. Petrol and diesel, which has to be bought on the black market, are also very costly as is tractor hire. Oxen are replacing tractors. Farmers cannot control weeds because of lack of security and labor and herbicides are not available. Bushes are not removed and there is no bird control. Security problems

greatly discourage the repair and maintenance of irrigation canals and ditches. Except for oxen there is practically no livestock left. Not even the Kuchies graze their flocks in the area anymore. Other farmers include as a reason for declining productivity that of they themselves being away from home participating in the jahad.

As noted, this is an extreme case. But some of the problems identified are experienced by an awful lot of farmers in Afghanistan.

Production of fruits has fallen sharply. A large proportion of the gardens (vineyards, orchards) has been destroyed, at least 30% and probably more, even though official data show the production of fruits rising in the 1980's.

We believe that a decline of 30% in overall agricultural production since the late 1970's is a reasonable, but conservative estimate. Moreover, one can safely forecast that the trend of production will continue to decline as long as the conflict continues.

COLLECTION OF AGRICULTURAL DATA

Under the auspices of the Swedish Committee for Afghanistan (to which A.I.D. provides some funding) an activity is collecting information on Afghanistan's agriculture. Under the project, the Agricultural Survey for Afghanistan, Afghan teams will be sent (this year's teams have already left) to every province to collect agricultural data by interview, mostly of farmers.

The questionnaire, pre-tested in Pakistan, asks for a very large amount of data. The Afghans conducting the survey have received substantial training and guidance. They have been advised on how to select the survey areas, in order to enhance the representativeness of the sample. However, as it should be, safety is the first consideration. Efforts will be made to try to ensure that the field people were in the areas that they said they were. While one would like to have the survey more closely monitored to prevent the manufacture of data by the surveyors themselves, communication will be very difficult and distances are great.

Before winter, the teams will return to Peshawar with their completed questionnaires. The data will then be put on disks/tapes and then analyzed. One cannot expect, it would seem, for the analysis of the data that will be collected in 1987 to be completed until sometime in 1989. The kinds of analysis to be performed has yet to be decided.

As indicated, the questionnaires ask for a lot of information. We

are not sure that the relatively massive amount of data that will be collected will be manageable. We would also guess that during the process of analysis and report writing it will be found that a substantial amount of the data collected contributes only marginally to knowledge about the country's agriculture. We consequently recommend that the number of questions in the questionnaires be rigorously culled during the process of analysis and report writing. Certainly the field personnel should participate in this exercise. If this can be done without losing meaningful information it would expedite the analysis and report writing in the future and make it possible also to obtain a larger sample since the field personnel would need to spend less time for an interview.

The project will provide a lot of valuable information over time. However, care has to be taken with the use of the sample data. Thus, for any particular province, the sample data may be representative, or it may be far from representative of the province. Furthermore, even if representative of a province, if the sample data are used, say, to estimate total production for the whole country, the weight that should be assigned it is not known since crop acreage is not known. Even in the pre-war period, agricultural, and most other, data were notoriously poor. Yet estimates for the nation, and for provinces or regions, are needed and will be made.

Because of the dangers involved in expanding the sample data to estimate aggregates it has been suggested that satellite imagery be used in conjunction with the ground sample data, by, for example,

identifying on the imagery map the areas in which the ground samples were taken and then using the map to make a judgement about the representiveness of the sample; and to obtain accurate estimates of the cropped area.

According to the USDA/SRS team in Pakistan (with the Agricultural Data Collection component of the Food Security Management project) such information is not possible using Landsat imagery. But at least some of the information wanted may be possible from the more powerful US satellites with high resolution imagery or the French satellite. We suggest that, before a contract is negotiated for satellite imagery services, that the team leader (a VITA employee) of the Planning Unit (Peshawar) of the agricultural program articulate/identify the information that is wanted. He would then ask the VITA Washington office to explore with the sources of such imagery what information the source could provide, what it would be willing to provide, what would have to remain classified and what would be the cost.

While the Agriculture Survey for Afghanistan will be collecting agricultural data for that country, by the time the annual reports are published the data will not be very current. It would be very useful to maintain a continuous and systematic effort to be currently informed on the food situation in Afghanistan. The main indicators would probably be price data obtained from newly arrived Afghans. For the Planning Unit to do this, it would need another (Afghan) staff member who would develop contacts whereby he could be informed of new arrivals. We believe that the cost is easily justifiable and recommend that such an employee be added to the staff.

FIGURE 1
MAP OF AFGHANISTAN



Boundary representation is not necessarily authoritative.
Base 800052 (A04007) 8-86