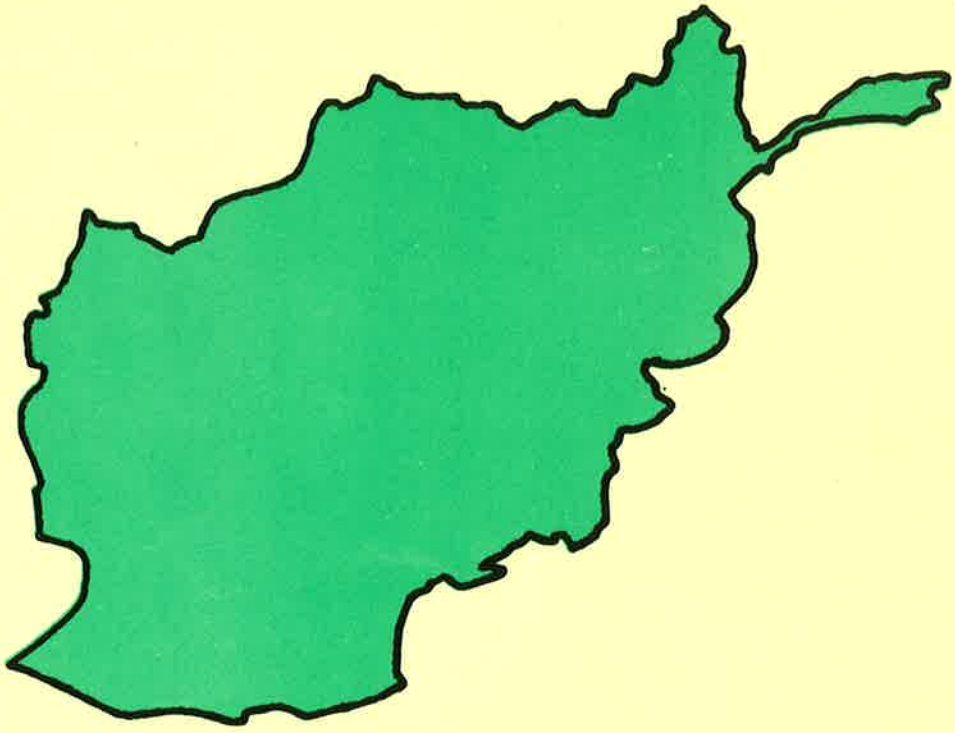
The Agricultural Survey of Afghanistan



The Swedish Committee for Afghanistan

FIFTEENTH REPORT
PART VI

Farming Systems of Nad Ali District
Helmand Province

August, 1992

Farming Systems of Nad Ali, Helmand

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Abbreviations, Weights and Measures

ASA	Agricultural Survey of Afghanistan
SCA	Swedish Committee for Afghanistan
SIDA	Swedish International Development Agency
ODA	British Overseas Development Administration
MCI	Medical Corp International
NGO	Non-Governmental Organisation
J	Jerib
S	Seer

1 seer	= 7 Kgs	1 US $	= Afs 750*
1 jerib	= 0.2 ha	1 Pakistani Rupee	= Afs 30*
1 seer/jerib	= 35 Kg/ha		

* These rates are approximate and volatile.

Acknowledgements

The Agricultural Survey of Afghanistan (ASA) based in Peshawar is one of the operational sections of the Agricultural Department of the Swedish Committee for Afghanistan (SCA). The ASA would like to thank the farmers, shuras and local authorities in Afghanistan who cooperated with the ASA enumerators and supervisors again in 1991.

Financial support for the ASA has been from many sources since its inception in 1986. The principal source is now the Government of Sweden through SIDA and the SCA.

The ASA and the SCA also wish to acknowledge the support of the Overseas Development Administration (ODA) of the British Government in the provision of consultancy support through Agrisystems (Overseas) Ltd.

This report was prepared by Assistant Professor Mohammad Omar Anwarzay.

Summary

Due to the modern irrigation system and plentiful water supply the agricultural land of Nad Ali is cultivated intensively. Double cropping is common. Some land which is to be sown in Spring with cotton or peanut is left fallow over Winter after being ploughed in Autumn.

The Winter crops commonly grown are wheat, poppy and alfalfa. Summer crops are cotton, maize, peanut, melon, water melon, beans, and mungbeans which are grown after wheat, poppy or fallow. Poppy and peanut are important cash crops which have been newly introduced and occupy a significant place in crop rotation.

The majority (80%) of land is cultivated by sharecropper and the rest is planted by land owners.

The farmers interviewed in the survey area can be divided into three categories according to farm size. Small farmers who have less than 10 jeribs and medium farmers who have between 10 and 25 jeribs, each make up 40% of farmers. The big farmers with more than 25 jeribs make up the rest (20%) of the farmers. A household model, described in this report, has been based on the average farmer for each range.

The average small size farmer has a family of 9.5 persons, two oxen, one cow, one donkey and some sheep. They live below subsistence level and have to sell their labour. They farm their own land.

The average medium size farmer has a household of more than 13 persons, two oxen, one or two cows, 5 to 10 sheep and goats and one donkey. They produce enough for their household's subsistence. They farm their own land and also let some to sharecroppers.

The average big farmer has a household of more than 15 persons, more than 3 cows, more than 10 sheep and goats, no oxen and no donkey. All of them have one tractor, produce surplus products and sell them. They usually sharecrop their land to another.

Sharecropped land make up about 80% of the total and provides one-fifth of the output for the sharecropper and four-fifths for the landlord. The sharecropper provides only labour, and no inputs as in other parts of the country.

The main factors which distinguish Nad Ali from the other parts of Afghanistan are plentiful irrigation water, use of improved wheat seed, use of tractors and the application of high rates of fertiliser to all major crops. Other distinguishing characteristics are that it is prosperous with relatively large landholdings, but rather feudal-landlords are dependent on labour from sharecroppers who are effectively tied labourers.

The cropping system is intensive, together with high inputs and high outputs, and thus can be rather risky. If low crop yields or crop failure occur, then farmers' losses can be high. Weeds, diseases and pests are just such problems in this regard and are a starting point for aid agencies.

Strategies to reduce the attractiveness to farmers of poppy cultivation should focus on providing benefits to the smaller and poorer farmers who provide most of the labour through sharecropping. Strategies focussed only on increased yield benefit the landlord more than the sharecropper, who often receives only a fifth of the output. Livestock, on the other hand, are owned entirely by the farm family, sharecropper and landlord alike.

Introduction

The principal objective of this report is to illustrate the main farming systems in Nad Ali by describing three representative farm households. Ninety-nine farm households were interviewed in detail and divided into three groups on the basis of area cultivated. The report also describes some of the social circumstances (land tenure and labour) that have direct relevance to the constraints and potential inherent in the farming system.

The household models[1] are intended to be used as an analytical tool for formulating a development strategy. Development or rehabilitation options can be judged in terms of their economic impact on the average farming household. This conforms with the approach of most development agencies investing in the rural sector of developing countries. In particular this approach allows the targeting of certain groups (if represented in the models) such as the rural poor and landless farmers.

The report is one of a set of seven covering areas within the following districts and provinces:

District	Province
1. Sholgera	Balkh
2. Nejrab	Kapisa
3. Metherlam	Laghman
4. Maidan Shar/Jalrez	Wardak
5. Qarabagh	Ghazni
6. Nad Ali	Helmand
7. Arghandab	Kandahar

Survey method

The farming system survey data is drawn primarily from a formal survey of 99 farmers in 25 villages carried out during 1991 by one of the ASA enumerators. An English copy of the questionnaire form used can be found in Annex A.

A small group of geographically contiguous villages was chosen. This had several advantages. Firstly, by surveying all of the villages in the chosen area the problem of selecting a representative example was by-passed. Secondly, by concentrating on a small area the farming system was relatively more uniform and therefore open to generalisations. Thirdly by remaining in a group of contiguous villages the enumerator was able to spend more time questioning farmers, and less time travelling.

The farmers households were divided into three groups, but this division was not arbitrary. The first step in establishing the groups was through the use of a computer program that chose farm size ranges to best illu-

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1. *A household model in this report refers to a table describing the principal transfers undertaken by the household (see chapter 7).*

strate any difference in cropping patterns. The program also ensured that each group contained a reasonable proportion of the farmers interviewed.

The second step was to check that the resulting groups were sufficiently different to justify using them as the basis for the different household models that appear in chapter 7. This was achieved through debriefing interviews with the enumerator and running other variables such as oxen ownership and land tenure against these farm sizes ranges.

As a second part of the survey, the enumerator[1], with four years of survey experience in Helmand combined with training in surveying and agronomy in Peshawar, collected more general agricultural information that was difficult to obtain through a formal questionnaire.

Through debriefing, the qualitative information collected by the enumerator has been incorporated in the report. The quality of the qualitative data was much higher than expected and has contributed greatly to a much better understanding of the data collected in the formal survey.

The ASA has collected information in the different districts of Helmand for the last five years. This information has been looked at in greater detail than in previous reports[2], and is presented at the district level, not the provincial. This allows a more detailed analysis of the ASA data than in the past. Any agency interested in obtaining more detailed information, if it is available, should apply to:

The Director, Dr. Azam Gul,
Agricultural Survey of Afghhanistan,
Agriculture Department of the Swedish Committee for Afghanistan,
13, University Road,
P.O. Box 689,
University Town,
PESHAWAR,PAKISTAN

Tel.0521- 42719/44286/42769
Tlx. 52365 SCA PK
Fax. 0521-840519

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1. *Abdul Bari, a graduate of Helmand Agriculture High School, who has been serving as resident extensionist in the survey area.*

2. *See ASA, Sixth report, 1988 and 1989 Surveys, August 1990; and the Twelfth Report, 1990 Survey, November 1991.*

Chapter 1 - Background

1.1 Physical description

Helmand is a province in Southwestern Afghanistan which once was part of Kandahar and was subsequently called the province of Girishk. It has an area of 59,720 sq km, ranking first among Afghan provinces. Its population was estimated at 325,500. When this province was still called Girishk in 1960, the province capital was the present-day town of Girishk. After, the name of the province was changed to Helmand, its capital was Bust and a few years later it became Lashkargah. The Lashkargah area has a population of about 30,000 inhabitants. There are about 650 villages in this province. Helmand is bounded by the Afghan provinces of Nimruz in the west, Ghor in the north, Oruzgan in the northeast and Kandahar in the east. In the south, Helmand borders the State of Pakistan[1].

The province is mainly flat and 700 to 800m elevation except in the north-east where hills rise to about 1000m.

The area surveyed is part of the modern irrigation network installed in the Helmand valley from the late 1950s and completed in the early 1970s largely with American financial and technical assistance. Although the Nad Ali area actually extends into the non-irrigated area of semi-desert and seasonal swamps west of Lashkargah, the area surveyed is only the irrigated area.

There are two main types of irrigation system in the province: traditional *karez*[2] irrigated farming in the hilly area in the north-east of the province, and the modern irrigated farming system in the centre and south of the province where the Helmand river is used to irrigate a rather narrow command area in the Helmand valley. A major off-take is the Boghrah Canal which irrigates two main areas, namely Nad Ali and Marja which are about 10km and 20km respectively east of the main Helmand valley. Nad Ali is thus entirely in the modern irrigated sector. The total area covered by vegetation (and therefore irrigation - the surrounding area is desert) as shown on satellite imagery in 1985 is about 16km by 8km (12,800 hectares).

Nad Ali is a district in west-central Helmand. To the north is Washer, to the south Khan Neshin and Nawa-i-Barakzai, to the west is Nimruz, and to the east Lashkargah and Gereshk.

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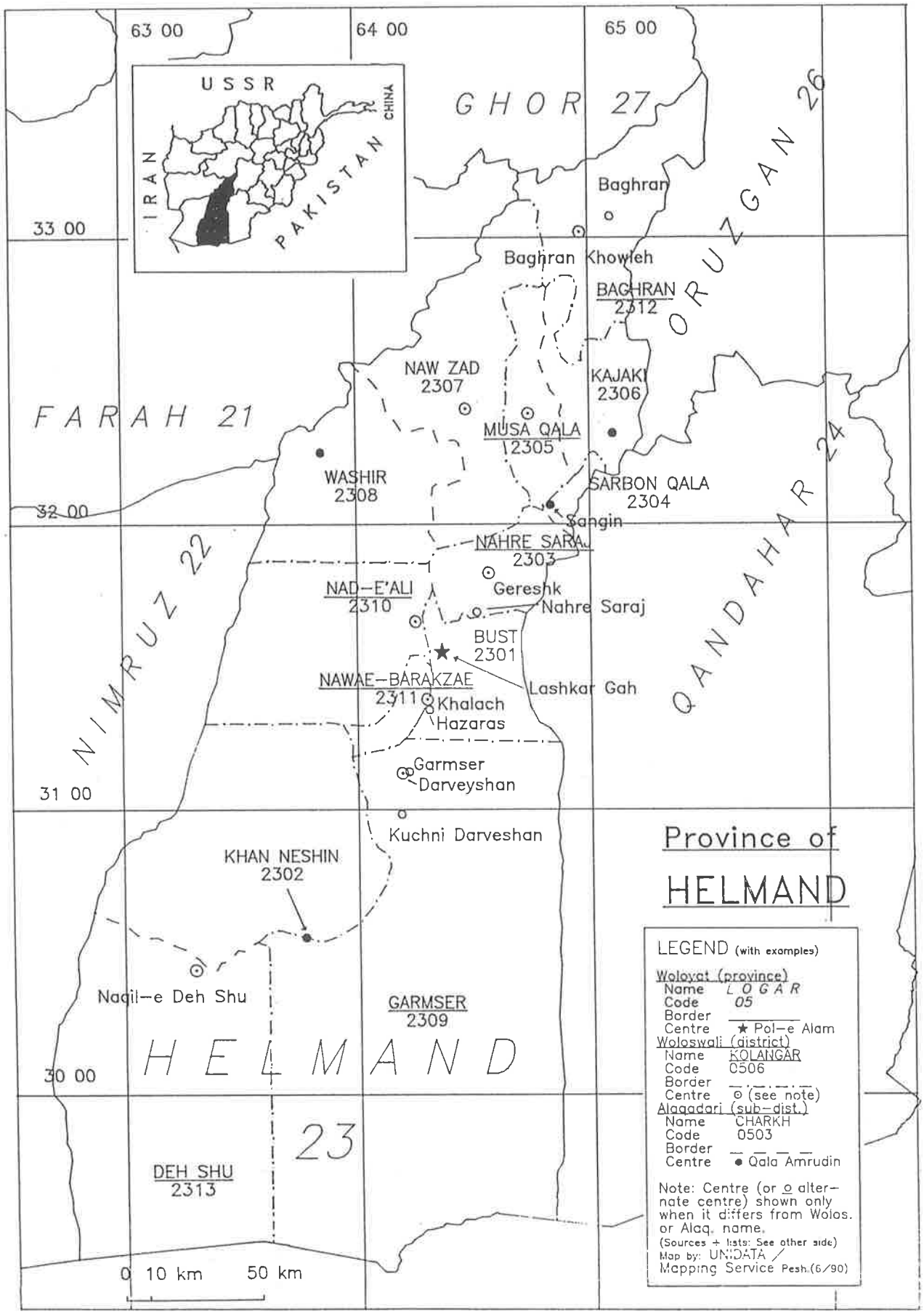
1. *Adamec, L.W. (editor), Farah and Southwestern Afghanistan, Historical and Political Gazetteer of Afghanistan., Vol. 2, Akademische Druck- u. Verlagsanstalt, Graz - Austria, 1973.*

2. *Subterranean canal in which a horizontal shaft from the surface is dug toward the ground-water supply (aquifer). The horizontal shaft serves as a conveyance channel and can sometimes continue for up to 30 or 50 km to the source of the ground-water supply. A vertical shaft is then dug directly down to the tunnel.*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Baghran
Baghran Khowleh
BAGHRAN 2312
NAW ZAD 2307
KAJAKI 2306
MUSA QALA 2305
WASHIR 2308
SARBON QALA 2304
Sangin
NAHRE SARAJ 2303
Gereshk
Nahre Saraj
NAD-E'ALI 2310
BUST 2301
NAWAE-BARAKZAE 2311
Lashkar Gah
Khalach
Hazaras
Garmser
Darveyshan
Kuchni Darveshan
KHAN NESHIN 2302
Naqil-e Deh Shu
GARMSER 2309
DEH SHU 2313
0 10 km 50 km
Province of
HELMAND
LEGEND (with examples)
Woloyat (province)
Name LOGAR
Code 05
Border
Centre ★ Pol-e Alam
Woloswali (district)
Name KOLANGAR
Code 0506
Border
Centre ⊙ (see note)
Alaqadari (sub-dist.)
Name CHARKH
Code 0503
Border
Centre • Qala Amrudin
Note: Centre (or ○ alternate centre) shown only when it differs from Wolos. or Alaq. name.
(Sources + lists: See other side)
Map by: UNDATA / Mapping Service Pesh.(6/90)

The survey area which is located in Nad Ali includes 24 villages. The biggest villages are Dahana-i-Sharqi and Dahana-i-Gharbi (each with about 1,000 farm families), Khushal Kalay (with about 600 farm families), Naqil Abad and Zarghoun Kalay (each with about 500 farm families), Chah-i-Mirza and Shin Kalay (each with about 400 families), Loy Bagh (with 300 families) and finally Group Shash (with 250 farm families). In all, there are nearly 5,000 families or about 65,000 people.

1.2 Geography

1.2.1 Climate, rainfall and soils

Helmand is a hot semi-desert province. Mean annual rainfall is less than 100 mm[1]. Frost rarely occures, allowing year-round cropping.

Helmand has saline and calcareous soil, especially in Marja, Garmser and Nawa where the salt problem is very serious.

1.2.2 Water resources

The Helmand river flows from the north-east corner of the province to the south-west. On it there are three barrages; at Kajaki, Girishk, and Garmser which form the main part of the irrigation system. There are 360 *karez* in Zamindawar (Kajaki district) which date from Ahmad Shah Baba era and are collectively known as *Ahmad Shahi Karez*. There are also some *karez* in Nawzad, Mosa Qala and Washer. Besides this, there are some springs in Baghni Nawa (Mosa Qala district).

1.2.3 Natural vegetation[2]

The non-irrigated areas have Ghaz (*Tamarix spp.*, Saxaul (*Haloxylon spp.*), Terkha or felon herb (*Artemisia maritina*), Spelani (*Peganum harmala*), Zozan (*Alhagi camelorum*), Tarboz-i-Abojehel (*Citrullus colocynthus*), wormwood and feathergrass and halophilous vegetation[3]. In the irrigated areas natural willow, poplar and oleander occur.

1.2.4 Major towns and bazaars

There are nine districts in Helmand including: Musa Qala, Gereshk (Nahre Saraj), Kajaki, Naw Zad, Garmser, Nad Ali, Nawa-i-Barakzai, Baghran and Deh Shu; and three sub-districts: Sarban Qala, Washir and Khan Neshin (see map #1). The provincial capital is Lashkargah (Bust).

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1. *National Atlas of Afghanistan. p. 18, GEOKART, Poland, 1984.*

2. *Hassanyar, S.A. et al. Introducing the Natural Forests of Afghanistan, Faculty of Agriculture, Kabul University, 1985.*

3. *National Atlas of Afghanistan. p. 19, GEOKART, Poland, 1984.*

1.3 Demography

1.3.1 Population

In 1979, the Government census indicated a population of 485,975 for Helmand province, and 63,953 for Nad Ali district[1].

1.3.2 Major ethnic groups

Tribally and linguistically, almost all of the people in the northern part of the province are Pashton and in the south there are about one per cent Hazaras. The project area is, however, largely occupied by Pashtons. The major Pashton tribes are: Barakzai, Alizai, Noorzai, Eshaqzai, Alekozai, Ghilzai, and Popalzai.

1.3.3 Major movements of people

Nad Ali, together with much of the modern irrigated area of the Helmand valley, was settled during the early 1960s almost entirely by Pashton of the Ghilzai tribe. Before this time the area was largely uninhabited and was occupied by nomadic people (known as *Kuchi*).

Refugees from Nad Ali district are mainly located in Baluchistan (Girdi Jangal, Chaghi, Punj Pai and Quetta in that order) and Iran (Zahidan).

1.3.4 Household size

Average household size in 1990 was 13 persons of which six were less than 10 years old, two were between 10 and 20, four were between 20 and 50, and one was over 50 years old. Less than five per cent of households were less than seven persons. Table 1-1 below shows the distribution of household size in 1991 in the survey area.

Table 1-1: Distribution of people per household

No. of fmrs questioned	percentage of people in each rang					
	<3	4–6	7–9	10–12	13–15	>16
99	1	14	23	21	19	21

1. *Eighmy, T.H., Afghanistan's population Inside and Out, Demographic Data for Reconstruction and Planning. USAID, 1990.*

Chapter 2 - Farming Systems

2.1 Description of farming systems

Double cropping is a common practice in the survey area, i.e. the same land grows two crops in one year. For example wheat and poppy are sown in Autumn and harvested in May and June, after harvest, maize and cotton is sown in June and July on the same plot of land and harvested before Autumn planting.

There are few differences between the modern and traditional irrigated areas of Helmand as far as farming systems are concerned. In fact the main crops in both areas are irrigated wheat or opium poppy followed by maize or cotton. Differences in farming systems are based on farm size, as the farm models show. The specific difference is that the smallest farmers (represented by Model One, 5 jeribs) farm their own land, while larger farmers (represented by Models Two and Three, 17.5 jeribs and 28 jeribs respectively) sharecrop their land.

The main crops of the survey area are irrigated wheat, alfalfa, poppy, cotton, maize, and peanut which are planted by 98%, 53%, 52%, 43%, and 29% of farmers respectively (see table 2-1).

Table 2-1: Crops grown by the farmers

Crops	% of fmrs growing crop	Avg. Area (jerib)	Avg. Seed (seer/jerib)	Avg. Yield (seer/jerib)	Average production per fmrs (seer)
Irr. Wheat	98	10.8	5.6	81	882
Alfalfa	53	1.9	1.3	-	6
Poppy	53	1.6	0.3	3	7
Cotton	52	4.9	2.1	79	378
Maize	43	5.7	2.2	56	312
Pea Nut	29	4.0	1.3	84	337
Bean	7	7.1	1.6	34	240
Clover	7	2.1	0.7	-	-
Mung Bean	7	7.3	1.3	27	196
Vegetables			(kg/jerib)		
Water Melon	15	3.1	4.0	-	-
Tomato	5	0.6	-	-	-
Okra	4	0.5	1.0	-	-
Onion	2	1.5	10.7	-	-
Cucumber	1	1.0	1.0	-	-
Egg Plant	1	1.0	-	-	-

Number of farmers questioned : 99

Poppy, which is planted by 53% of farmers has increased its acreage dramatically in the last few years and is a major cash crop.

Based on this survey 40% of farmers have fruit trees and 32% of them have grape vines, mainly for home consumption (see Table 2-2).

Table 2-2: Average number of fruit trees and vines

	In production		Not in production		
Crops	% of fmrs owning	Avg. no.	% of fmrs owning	Avg. no.	Avg. Value of products (Afs)
Fruit trees	22	70	18	41	67143
Vines	22	242	10	101	116000

Number of farmers questioned: 99

2.1.1 Land tenure

In the survey area larger landowners usually hire extra labour on a share-cropping basis. For example 68% of landowners sharecrop their land to another (see table 2-3).

Table 2-3: Percentage of farmers having Sown or Fallow land

	Sown land (jerib)		Fallow land (jerib)			
	Irrigated		Irrigated		Overall land	Total average
Land	% of fmrs	Avg. Land	% of fmrs	Avg. Land	% of fmrs	area/fmrs
Owned	99	17	44	8	99	20
Rented to another	4	19	1	1	4	19
Rented from another	2	24	1	3	2	26
Sharecropped to another	68	20	30	8	68	23
Sharecropped from another	-	-	-	-	-	-
Held as security on loan	2	18	-	-	2	18
Recoverable on repayment of loan	1	5	-	-	1	5
Total land cultivated by household	33	9	12	8	33	12

Number of farmers questioned : 99

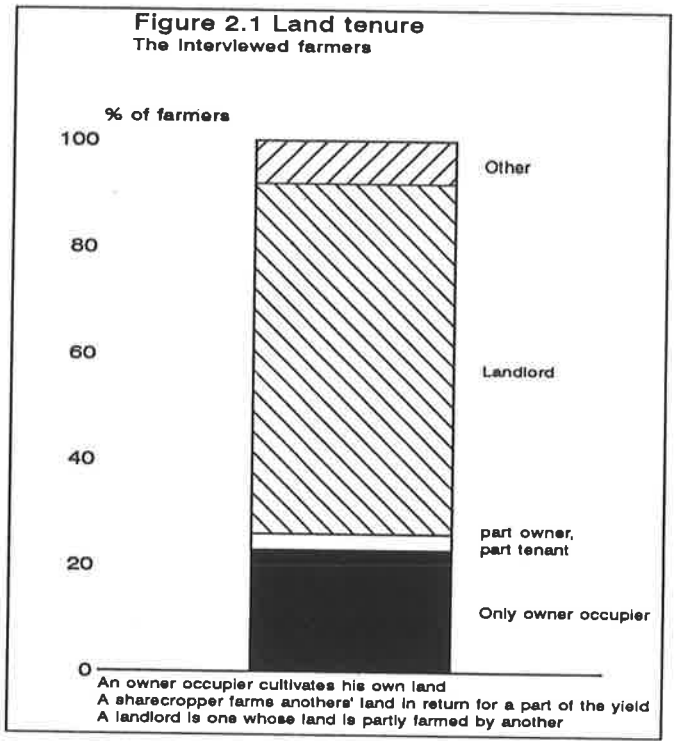
Figure 2.1 Land tenure
The interviewed farmers
% of farmers
100
80
60
40
20
0
Other
Landlord
part owner,
part tenant
Only owner occupier
An owner occupier cultivates his own land
A sharecropper farms anothers' land in return for a part of the yield
A landlord is one whose land is partly farmed by another

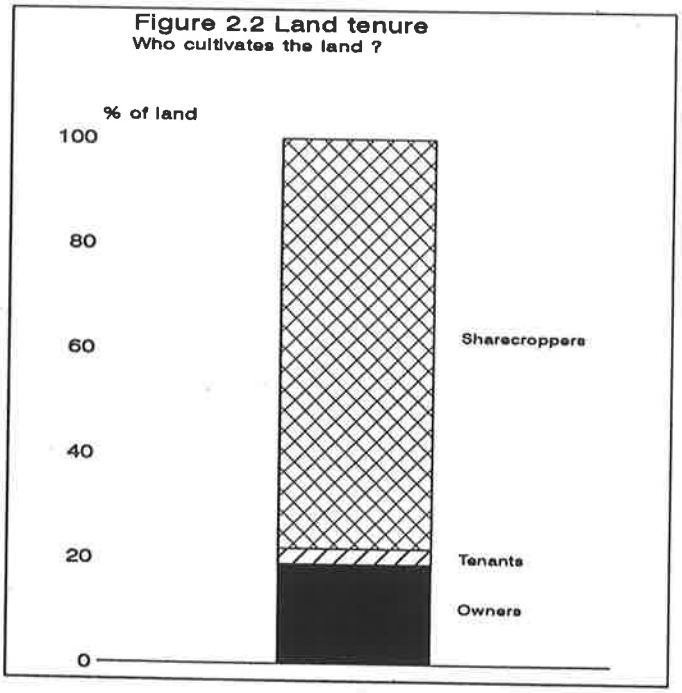
Figure 2.2 Land tenure
Who cultivates the land ?
% of land
100
80
60
40
20
0
Sharecroppers
Tenants
Owners

All agricultural land in Nad Ali is irrigated; there is no rain fed land. Average farm size is about 40 jeribs and most farmers (87% in 1990) leave almost half their land fallow so that the average cropped area is slightly more than 20 jeribs. The fallow period is usually during the Winter in order to have land prepared for Spring crops.

According to this survey nearly 30% of farm families are only owner occupiers who cultivate their own land and nearly 70% of them are landlords whose land is partly farmed by another (see figure 2-1). The remainder is farmed by tenants and others.

About 80% of the land is cultivated by sharecroppers, about 15% by owner-occupiers, and about 5% by tenants (see figure 2-2). The sharecroppers and tenants themselves were not interviewed.

This breakdown of who cultivates the land should not be taken to mean that, of the cultivators themselves, the division is also 80:15:5. Nor should it be taken to mean that the division can simply be into these three categories. The facts, according to the survey, are as follows:

a) Landowners usually provide all the inputs and farm power and the sharecropper receives one-fifth of the yield. However for poppy the sharecropper receives one-third of the yield because this crop needs more care and intensive work.

b) Sharecropped land, which make up about 80% of the total land, provides one-fifth of the output for the sharecropper and four-fifths for the landlord. The sharecropper provides no inputs except labour. (This systems differs from that in many other parts of Afghanistan where the sharecropper takes one-third and the landlord takes two-thirds, but they also split the cost of material inputs (seed and fertiliser) on the same basis. At Nad Ali the sharecropper is thus little more than a tied labourer, though he differs from the ordinary labourer in one respect; he runs the risk of receiving nothing if there is crop failure.

c) The most important crop in terms of the proportion of farmers growing it and in terms of average area cropped is irrigated wheat. The average farmer grows about 15 jeribs. The most important crop in terms of profitability is poppy, which like wheat is grown as a winter crop. The main limiting factor for this crop is labour availability at harvest, and once this limit is reached, generally about one jerib on individual farms, then the rest of the land is devoted to wheat.

d) Where irrigation water is not a limiting factor, irrigated wheat is followed by maize, the second most important crop. Where there is sufficient irrigation water about 85% of farmers grow the same area as under wheat.

e) Occupying the land at the same time as maize is cotton. When irrigation water is not limiting it is the third most important crop, with 60% of farmers growing an average of 8 jeribs.

f) Alfalfa (or more rarely clover) is grown by all farmers.

g) The survey shows that 99% of farmers own an average of 17 jeribs of cultivated irrigated land. But two-thirds of farmers let their land out to sharecroppers, and the amount of land they let out averages 20 jeribs. These figures show that it is the richer farmers who let their land to sharecroppers. A small number (5%) rent their land out (an average of 20 jeribs) without sharecropping. Only 29% of landowners farm their own land, and these are the ones who own rather less land than most - an average of 9 jeribs. All this shows that Nad Ali is a relatively rich area in land tenure terms.

2.2 Farm size and farming systems

The agricultural land of Nad Ali[1] which was distributed to the farmers by the Government has different parcel sizes due to the quality of land and different land reform systems.

To illustrate the different farming systems in Nad Ali the farm families of the survey area are divided in three main groups (see table 2-4).

Nad Ali, probably because in Government land distributed area every farmer was given about 30 jeribs of land, has a lower proportion of farmers with holdings over 30 jeribs than any other district in the province. It also has a much lower proportion of farmers than the provincial average of farmers with holdings of less than 10 jeribs (though Garmser is the lowest in that respect). In short, Nad Ali has more uniform farm sizes than the rest of the province - as one would expect in Government distributed area. About a quarter are in the one to 10 jerib range, nearly half are in the 11 to 20 jerib range, and about a quarter are in the 21 to 30 jerib range. This compares with the provincial average where about 40% are below 10 jeribs, nearly a third are in the 11 to 20 jerib range, and nearly a third are over 20 jeribs.

Figure 2-3 shows that 50% of farm families have less than 30 jeribs of land. For example, more than 20% of farmers have 5 to 8 jeribs, 13% of them have 25 to 28 jeribs, and only 3% of farmers have more than 40 jeribs of land (see figure 2-4).

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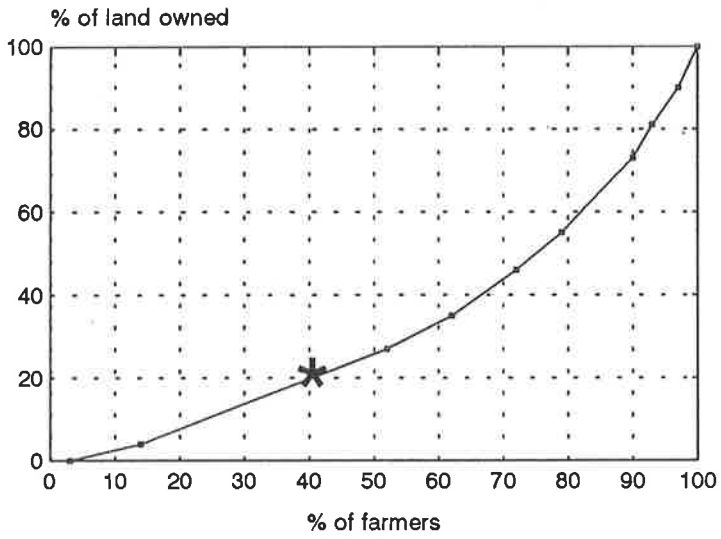
1. *In some areas of Helmand such as Marja, Nad Ali, Nawa and Garmser the agricultural land which was distributed by Government during the Zahir Shah and President Daud eras is called "form" (derived from the form on which the land title deed was written [Pashto "Forma"]). There are three kinds of form due to the quality of the land: the first class land is 20 jeribs /form, the second class land is between 25 and 27 jeribs/form and finally the third class land is between 30 and 35 jeribs /form. According to our enumerator, in King Mohd. Zahir Shah's era a form of land was more than 30 jeribs (which makes about 60% of the total distributed land by the Government), In President Mohd.Daud's era one form was between 10 and 20 jeribs (about 30% of the total distributed land by the Government) and finally, in the Communists' so called "Land Reform" era one form of land was between 6 and 10 jeribs due to the quality of the land (about 10% of the total distributed land by the Government).*

Figure 2-3: Distribution of land in Nad Ali



* i.e. 20% of the land is owned by 40% of the farmers.

Figure 2-4: Farm size
Irrigated owned land

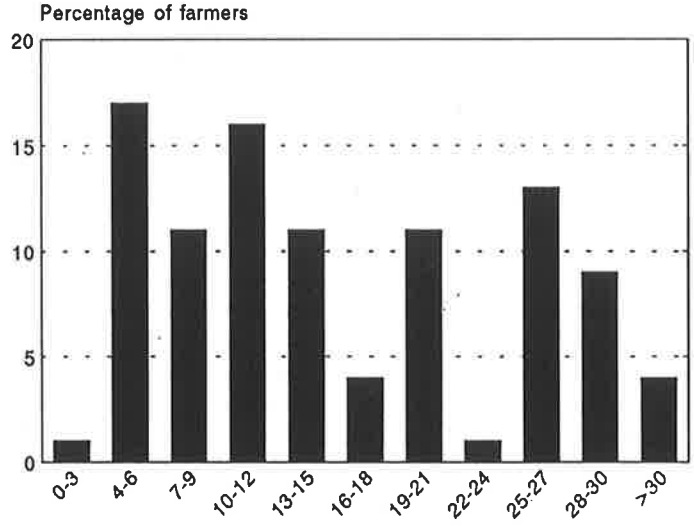


Table 2-4: Crops and Farm size

	Small			Medium			Large		
Farm size (jeribs):	<10			10-25			>25		
No. of fmrs in range:	39			40			19		
Av. no. of crop grown per fmr:	3.4			3.9			4.7		
Crop	% fmrs	Av. jrbs		Crop	% fmrs	Av. jrbs	Crop	% fmrs	Av. jrbs
Wheat	95	4.8		Wheat	100	10.8	Wheat	100	22.1
Poppy	46	0.8		Alfalfa	63	1.1	Cotton	84	5.3
Maize	46	1.6		Poppy	55	1.6	Poppy	58	1.8
Alfalfa	41	0.5		Cotton	53	2.3	Peanut	58	2.5
Cotton	33	1.2		Maize	43	2.6	Alfalfa	53	1.6
Peanut	21	0.5		Peanut	23	1.1	Maize	37	3.8
Melon	21	0.5		Grape	15	17.9	Grape	16	65.9
Grape	10	13.8		Melon	13	0.6	Pomegra	16	5.6
Fruit	10	9.0		Clover	8	0.2	Bean	16	1.4
Mung B	8	0.2		Fruit	8	4.1	Mung B	16	2.0
Clover	5	0.1		Bean	5	0.5	Clover	11	0.2
Bean	5	0.1		Onion	3	0.0	Melon	11	0.2
Pomegra	3	1.5		Mung B	3	0.1			

Number of farmers questioned : 99

2.2.1 Farm size and household size

On average, the larger farms have more people per family than the smaller farms. For example, small farmers with less than 10 jeribs have about 10 persons, the medium farmers with 10 to 25 jeribs have 13 persons, while the large farm family with more than 25 jeribs has 15 persons in a household (see table 2-5 and 2-6).

Table 2-5: Average no. in a household in relation to average farm size

Farm size (jeribs):	<10	10–25	>25
No. of people/family	9.5	13.3	15.2

Number of farmers questioned : 99

Table 2-6: Family size and farm size

	Farm size ranges (jerib)								
	<10			10–25			>25		
No. of fmrs	Family size ranges (no. of people)								
questioned	<6	7–12	>12	<6	7–12	>12	<6	7–12	>12
99	25	53	23	5	43	53	16	32	53

Note: Figures in body of table are % of households interviewed

2.2.2 Farm size and oxen ownership

When we compare oxen ownership with farm size we find that 93% of small farmers have no oxen while only 8% of them have two oxen. In the medium group, 98% have no oxen. None of the large farmers have any oxen (see table 2-7).

Table 2-7: Oxen ownership and farm size

	Farm size ranges (jerib)								
	<10			10–25			>25		
No. of fmrs questioned	No. of oxen								
	0	1	2	0	1	2	0	1	2
99	93	-	8	98	-	3	100	-	-

2.2.3 Farm size and cropping patterns

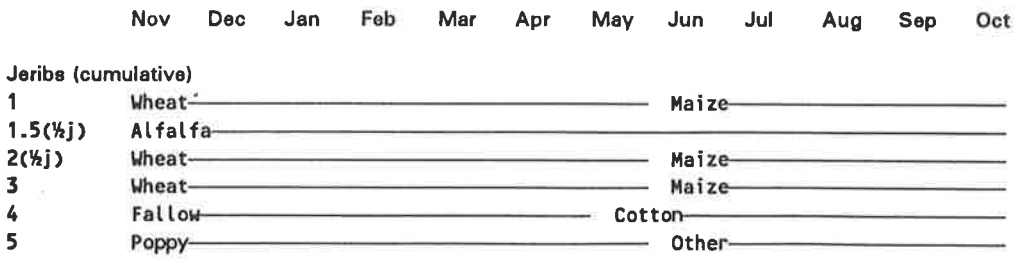
Crop rotation is largely based on irrigated winter wheat which is grown by almost all farmers. It may be followed by cotton, maize, peanut, melon or beans. The second most important crop, in terms of the proportion of farmers growing it, is poppy. This is usually followed by cotton, but may also be followed by maize or peanut. If cotton follows wheat then it is sown in May/June. If cotton follows poppy then it is sown in April. Almost all of the fields which are sown to wheat are followed by maize. Wheat and maize are grown on larger areas than all other crops.

Cotton is nearly always preceded by fallow because of its long growing season. There are two varieties of cotton which have different sowing times: one in April when it follows fallow; and the other after the wheat harvest in June.

Wheat or poppy follow maize. Watermelon follows wheat. Peanuts and "other" crops occupy the same place in the rotation and are treated here as one for the purposes of presentation. As farm size increases, the proportion of land under wheat and peanut also increases, while the proportion of poppy and maize decrease, as figure 2-5 shows.

Figure 2-5: NAD ALI CROPPING PATTERNS

MODEL ONE, 5 JERIB FARM



MODEL TWO, 17½ JERIB FARM

Jeribs (cumulative)	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	Wheat							Maize				
2	Alfalfa											
3	Wheat							Maize				
4	Wheat							Maize				
5	Wheat							Maize				
6	Wheat							Maize				
7	Wheat							Maize				
8	Wheat							Maize				
9	Wheat							Maize				
10	Wheat							Maize				
11	Wheat							Maize				
12	Wheat							Maize				
13	Wheat							Other				
13½(½j)	Wheat						Cotton					
14(½j)	Poppy						Peanut/Other					
15	Fallow						Cotton					
15½(½j)	Poppy						Peanut/Other					
16(½j)	Fallow						Cotton					
16(½j)	Fallow						Cotton					
17½(½j)	Wheat							Maize				

MODEL THREE 28 JERIB FARM

Jeribs (cumulative)	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	Wheat							Maize				
1½(½j)	Alfalfa											
2(½j)	Alfalfa											
2½(½j)	Alfalfa											
3(½j)	Wheat							Maize				
4	Wheat							Maize				
5	Wheat							Maize				
6	Wheat							Maize				
7	Wheat							Maize				
8	Wheat							Maize				
9	Wheat							Maize				
10	Wheat							Maize				
11	Wheat							Maize				
12	Wheat							Maize				
13	Wheat							Maize				
14	Wheat							Maize				
15	Wheat							Maize				
16	Wheat							Maize				
17	Wheat							Maize				
18	Wheat							Maize				
19	Wheat							Maize				
20	Wheat							Other				
21	Wheat							Cotton				
22	Fallow					Cotton						
23	Poppy						Peanut/Other					
24	Poppy					Cotton						
25	Fallow					Cotton						
26	Poppy						Peanut/Other					
27	Fallow					Cotton						
28	Poppy						Peanut/Other					

Chapter 3 - Crop Production

3.1 Management practices for major crops

3.1.1 Wheat

Wheat is usually sown in November and December (see table 3-1). When the field is at proper moisture condition it is ploughed twice by *dufal* (mouldboard plough) and then by *nufal* (nine point cultivator). After this the farmers broadcast the seed (5 to 6 seers/jerib) and fertiliser (one and a half bags of urea and one bag of grey fertiliser/jerib). They then plough the land by *nufal* again and harrow (*mala*) it.

Table 3-1: Cropping dates

Crop	No. of fmrs giving data on crop	Planting month	Variability (1) (Standard deviation)	Harvesting month	Variability (1) (Standard deviation)
Irr. Wheat	97	November/Dec.	0.5	June	0.3
Poppy	52	November	0.0	May	0.2
Cotton	50	April/June	0.9	November	0.4
Maize	43	June	0.6	October	0.3
Peanut	29	April	0.0	November	0.3
Clover	2	September	1.5	July	0.0
Melon/Water M.	15	April/June	1.2	July/September	0.8
Onion	1	October	0.0	June	0.0
Bean	7	June	1.4	October	0.3
Mung Bean	7	June	0.5	October	0.0

(1) The higher the variability (measured in standard deviations) the longer the period during which the activity may take place. For example the planting month for irrigated wheat has a standard deviation .5 months indicating that the activity also takes place in November and December.

Wheat is mainly harvested in June. The farming system survey shows that, 98% of farmers grow an average of nearly 11 jeribs of irrigated wheat. This is about two-thirds of the provincial average (16 jeribs) and is a reflection, as we shall see, of the relative prosperity of Nad Ali compared to other parts of the province. Yields are well above the provincial average of 53 seers/jerib at 81 seers (see table 2-1, table 3-2 and figure 3-1).

Table 3-2: Ratio of yields/seed sown (seers)

Crop name	No.fmrs giving data	ratio of yield/seed sown
Irrigated Wheat	97	15
Maize	43	26
Alfalfa	52	-
Grape	13	-
Pea Nut	29	67

Number of farmers questioned: 99

Figure 3-1: Wheat Yields

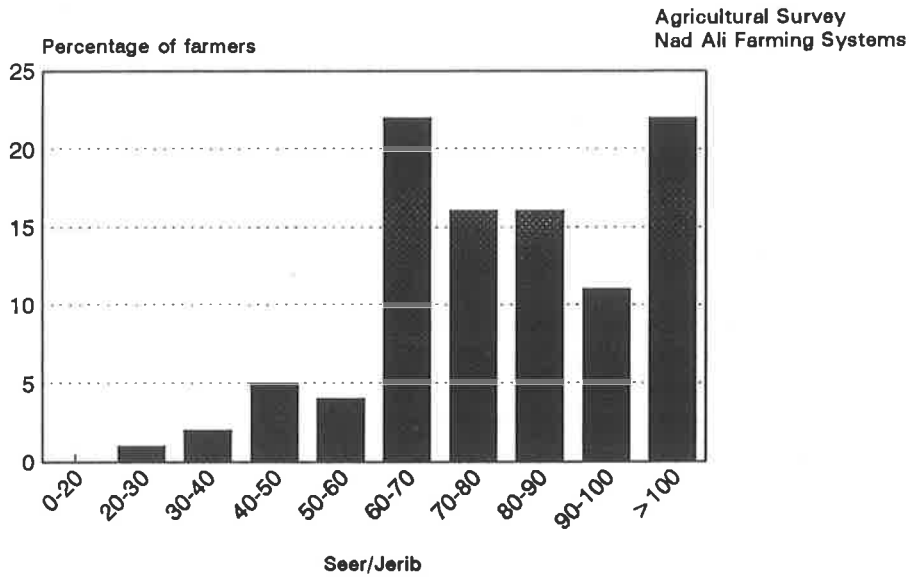


Figure 3-2: Poppy Yields

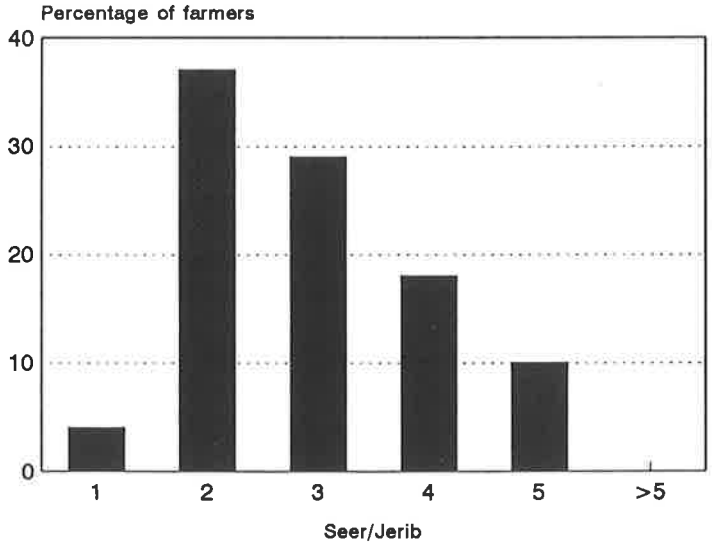
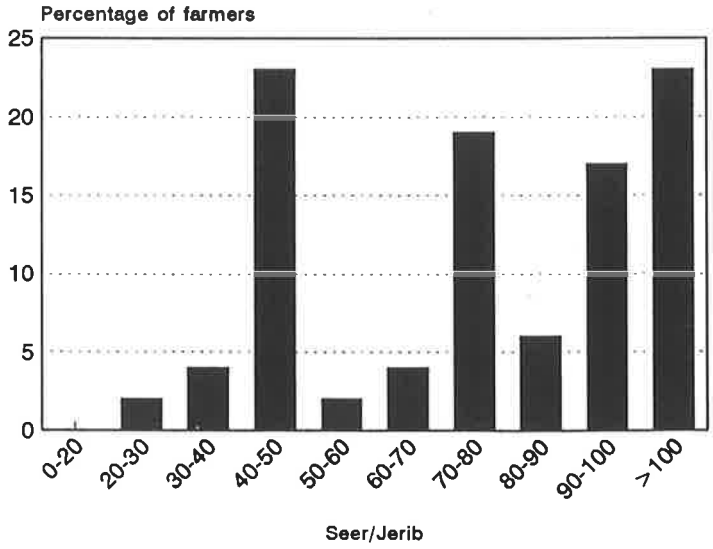


Figure 3-3: Cotton Yields



3.1.2 Poppy

Land preparation for poppy is the same as for wheat, except that the seed is broadcast after ploughing and harrowing the field. The seeding rate is 0.3 seers/jerib. As the poppy seed is small, farmers usually mix seed with soil and broadcast the mixture.

Poppy is usually sown in November on fertile land. Two or three top dressings with urea are common. It needs 3 to 4 Irrigations according to weather conditions. Cultivation is necessary at least three times during the early growing stages of the plant.

According to this survey, 48% of small farmers grow an average of 0.8 jeribs, 55% of medium farmers grow an average of 1.6 jeribs, and 58% of large farmers grow an average of 1.8 jeribs. Harvesting time is usually late May. The sap of the capsules are collected at least 3 times and the average yield is 3 seers/jerib (see table 2-1, table 2-4 and figure 3-2).

3.1.3 Alfalfa

After land preparation and irrigation the seed is broadcast (1.3 seers/jerib). This crop occupies the field for 5 to 6 years. The farmers of this area usually broadcast farm manure in alfalfa early in the Spring. Grey fertiliser is usually applied after cutting (if it is necessary) during the growing season.

Based on this survey, 53% of farmers grow an average of just under 2 jeribs of alfalfa to support mainly cattle. Nearly 90% of farmers own an average of four cows or calves, as well as other livestock.

To summarise on winter crops; the average farmer will have nearly 11 jeribs of wheat, 1.6 jeribs of poppy and nearly 2 jeribs of alfalfa, a total of nearly 15 jeribs. The remaining 2 jeribs (the average farmer has 17 jeribs), are fallow. With the exception of some vegetables, the crops below are summer crops.

3.1.4 Cotton

There are two methods of sowing cotton in the survey area: firstly, planting on soil ridges. This method is practised by 20% of farmers. The field is ploughed in Autumn and the soil ridges are made in April. The distance between two ridges is about 50 cm and between two plants about 20 to 25 cm. When the ridges have been made the field is irrigated. The farmers make holes on the top of the ridges, put 2 to 3 seeds in it and cover it with soil[1].

1. *Information is based on the observation of the enumerator.*

Figure 3-4: Maize Yields

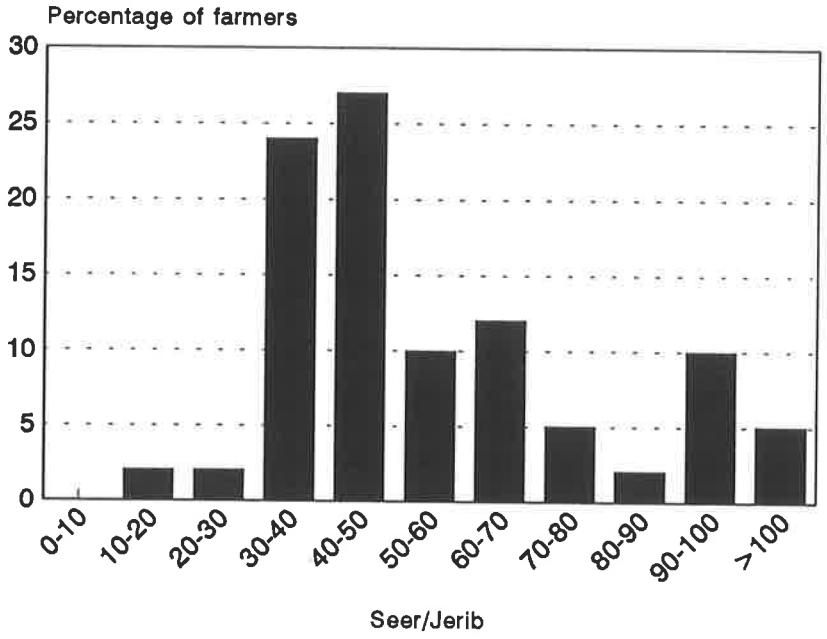
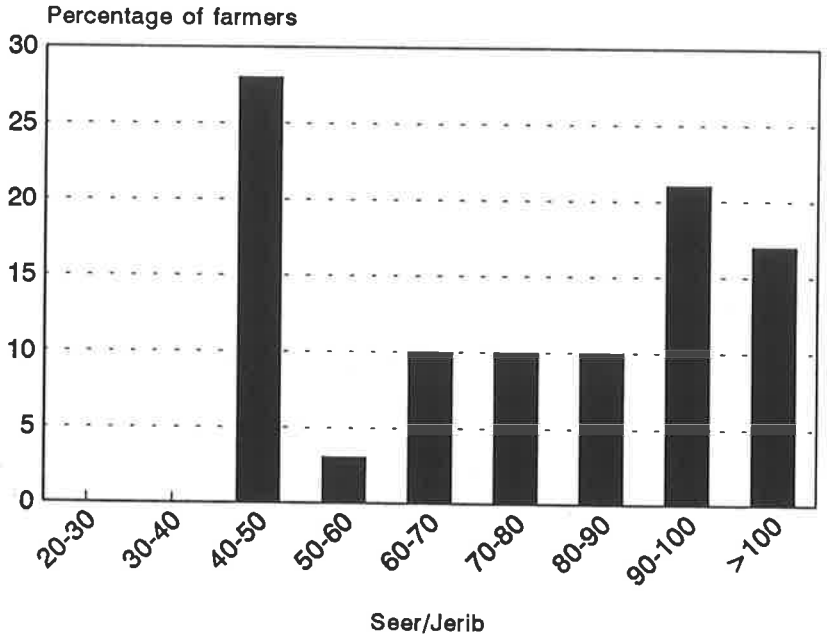


Figure 3-5: Pea Nut Yields



The second method of sowing cotton is by broadcasting the seeds. This is practised by 80% of farmers. This type of cotton grown in the district is sown in June after harvesting of wheat. This method of land preparation and sowing of cotton is the same as for wheat. The seeding rate is two seers/jerib. White fertiliser (urea) is usually applied after sowing.

According to this survey, 52% of farmers grow nearly 5 jeribs of cotton, yielding an average of nearly 80 seers (see table 2-1 and figure 3-3). The proportion growing cotton is much higher than the provincial average (7%) because of access to the Government ginnery at Lashkargah, though the average area grown by each farmer is somewhat less than the provincial average (7 jeribs), and the yield is the same. Cotton is usually harvested 2 to 3 times in the survey area.

3.1.5 Maize

Maize is usually sown as a second crop after wheat or poppy in June. This is used as grain crop for human consumption (80%) and the rest (20%) is used as animal feed. Land preparation and sowing are the same as for wheat. The average seeding rate is 2.2 seers/jerib.

This survey shows that less than half the farmers (43%) grow maize but the average area (5.7 jeribs) is second only to wheat (see table 2-1 and figure 3-4).

3.1.6 Peanut

The field is ploughed in late Autumn and left fallow until Spring. In April the farmers make soil ridges and then irrigate the field. When the field is in proper moisture condition the farmers make small holes on the top of the ridges with shovels and sow 2 to 3 seeds in each hole. The seeding rate is about 1.3 seers/jerib, and the distance between two ridges are 30 to 35 cm. Fertiliser application is not common on peanut.

Cultivation is usually done 2 to 3 times with shovels. Peanut is harvested in November.

According to this survey, peanut is grown by 29% of the farmers interviewed on an average area of 4 jeribs. It has become more popular in recent years as the cost of urea fertiliser has risen and yield of wheat has fallen. Average yield of peanut (84 s/j) is slightly higher than that of wheat (see table 2-1 and figure 3-5).

3.1.7 Water melon and Melon

Falez (20% melon and 80% water melon) is also common in the survey area. There are two methods of growing falez: Firstly, the line sown crop which is mostly rain fed or on residual moisture after irrigated wheat (or poppy in June) and harvested in September. This method is practised by 80% of farmers. Secondly, there is a ditch or irrigated method in which the farmers make small ditches which are about two meters away from each other. This method is usually used for melon and is practised by

20% of farmers. The melon is sown in April and harvested in July[1].

According to this survey, 15% of farmers grow an average of over 3 jeribs (see table 2-1).

3.1.8 Other Crops

Other minor crops are bean and mung bean (grown by 7% of farmers on an average area of over than 7 jeribs), clover (7% of farmers on over 2 jeribs), and vegetables (see table 2-1).

3.2 Seed, fertiliser and crop protection

3.2.1 Seed

According to our enumerator, no local wheat variety is sown by farmers in the survey area. About 95% of farmers use *Mexipak* (an old improved wheat seed) and about 6% of farmers use *Pir Sabak 85* which is distributed by SCA (to about 4% of the farmers in the survey area) and *MCI* (to 2% of the farmers) in the area. Only one per cent of farmers said that lack of improved wheat seed was a constraint on crop production in 1990.

A yield of about 130 to 160 seers/jerib for *Mexipak* and a yield of about 200 seers/jerib (i.e. four times the national average yield) for *Pir Sabak 85* was reported in this area in 1991[2].

Table 3-3 shows that 88% of farmer indicate the Government as their source of improved wheat seed which was before the war. After interviewing the enumerator, it was found that the seed was *Mexipak*, which was distributed by the Government about 20 years ago. Now farmers are using their own seed kept from one year to the next.

Table 3-3: Improved wheat seed

% of farmers		Last Year		Ever before
Using		95		6
Not using		4		94
Not answering		1		0
% of fmrs using improved seed who would :-				
Use it again		27		50
Not use it again		72		33
Not answering		1		17
Source of improved seed and % of fmrs using the source				
1	SCA	4	Government	3
2	Government	88	Neighbour	1
3	Own	1	Pakistan	1
4	MCI	2	Iran	1

No. of farmers questioned: 99

1. *The information is based on the observation of the enumerator.*

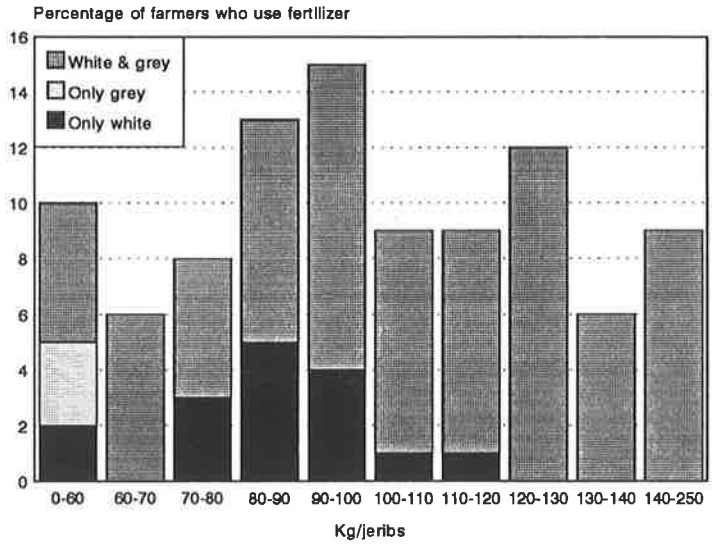
2. *The information is based on the observation of the enumerator.*

3.2.2 Fertiliser

Almost all farmers who grew irrigated wheat used fertiliser in 1991, and of those, nearly 80% used both white and grey 1.5 bags and three-quarters of a 50kg bag respectively per jerib (see table 3-4, 3-5 and figure 3-6). The price of grey fertiliser[1], which apparently comes from Iran[2], was As 13,800/36 kg bag in 1991 and urea was almost the same at Afs 13,500. We do not have reliable historical price data for fertiliser, but whatever the prices were in 1990, the use of fertiliser on wheat then was lower according to the survey - 1.3 bags of white/jerib and 0.4 bags of grey.

Significant amounts of fertiliser are applied to poppy, cotton and maize. Just over half the farmers growing poppy apply fertiliser, and of these nearly 60% use only white, and the other 40% use both types. Aid agencies which promote the supply of fertiliser or are thinking of doing so may be in a quandary when they see that, on a per jerib basis, as much fertiliser is applied to poppy as to wheat.

Figure 3-6: Rates of fertilizer use for irrigated wheat



1. *The name of the Iranian grey fertiliser is not clear.*

2. *According to the enumerator.*

Table 3-4: Percent of farmers using fertiliser

Crops	% of fmrs growing crop	% of fmrs not using fertiliser	Only white fert. % of fmrs	Only white fert. Avg. Kg/jerib	Only grey fert. % of fmrs	Only grey fert. Avg. Kg/jrb	Grey and White fert. % of fmrs	Grey and White fert. White Avg. Kg/jrb	Grey and White fert. Grey Avg. Kg/jrb
Irr. Wheat	98	2	16	86	3	36	79	73	35
Alfalfa	53	80	8	53	8	39	4	38	36
Poppy	53	48	28	77	2	59	21	67	38
Cotton	52	52	23	83	5	51	20	69	32
Maize	43	64	30	65	2	51	4	59	46
Pea Nut	29	99	-	-	-	-	1	35	75
Melon	15	94	2	54	1	50	3	23	10
Clover	7	99	-	-	1	50	-	-	-
Mung Bean	7	99	1	35	-	-	-	-	-
All crops		1	14	80	-	-	85	70	36

Number of farmers questioned : 99

They may draw some comfort from two things. One is that the proportion of total fertiliser applied to poppy is small compared to wheat - about 1:16. The other is that Nad Ali is unusual in Afghanistan in applying so much fertiliser to poppy.

Table 3-5: Fertiliser use and farm size (Both grey and white)

No. of fmrs questioned	Farm size ranges (jerib) <10 Fertiliser application rates (Kg/jerib) 0	1-75	75-105	105-250	10-25 0	1-75	75-105	105-250	>25 0	1-75	75-105	105-250
99	-	19	43	38	-	25	28	48	-	19	44	38

Note: Figures in body of table are % of fmrs in each farm size range

About the same amount of both types of fertiliser are applied to cotton as to wheat and poppy on a per jerib basis, and like poppy, by about half the farmers overall. Half of these farmers apply only white and half apply both types. Just over a third of maize farmers apply fertiliser, and as is common in the rest of the country, almost all of these apply only white. The maize crop utilises residual phosphate left over from the wheat crop.

3.2.3 Crop Protection

3.2.3.1 Weeds

According to this survey 82% of farmers indicate weeds as a big problem in wheat, 79% in poppy, and 75% in peanut (see table 3-6).

Table 3-6: Crop problems

Crops	% of fmrs growing crop	Weeds problem and intensity (i)	Low	Medium	High
Irrigated Wheat	98	75	-	18	82
Poppy	53	27	7	14	79
Cotton	52	65	6	27	67
Pea Nut	29	69	-	25	75
Bean	7	14	100	-	-

Number of farmers questioned : 99
(i) % of total growers who have some weeds problem

3.2.3.2 Diseases and Pests

There are many plant diseases and pests in the survey area. These are listed in table 3-7 below[1].

Table 3-7: Diseases and pests problem

Crop	Pests	Diseases
Wheat	Army worm	Rust &loose smut
Cotton	Aphids, Cut worm, Mites, Spiny boll worm, Thrips, White fly and Termites	
Melon	Melon fly, Red beetle, and Aphids	Powdery mildew
Water melon	Melon fly, Mites and Aphids	
Pomegranate	Aphids	
Grapes	Oriental wasp	
Cabbage	Maggot	
Onion	Maggot	

1. *Information in this section is based on the observation of the enumerator and according to Jerry L. Rann, Field Manual for Identification and Control of some of the Major Economic Pests in Afghanistan.*

3.2.3.3 Agrochemicals

Apart from crop protection chemicals provided under aid programmes[1], farmers are able to buy 2,4-D for broad leaved weeds in wheat in the local bazaar. Difficulties in supply due to war have led to local shortage, the price has recently risen from Afs 3,000/kg in 1989 to Afs 10,000/kg in 1991.

3.3 Farm power

According to this survey, only 6% of farmers use oxen compared to 94% who use tractors (see table 3-8). Unusually for Afghanistan as a whole, there are no farmers who use both tractors and oxen. For those using only tractors, two-thirds hired them and the remaining third owned, shared or borrowed them (see table 3-9).

Just over one in ten farmers own one ox and the same proportion owns a pair. The remaining three-quarters do not own any oxen. Nearly one in ten farmers own their own tractor, and the same proportion use only their oxen on their own land. Two-thirds of farmers hired a tractor and half of them use no other source of farm power. Farm power shortage is the fourth most important problem faced by farmers after crop disease, irrigation water, and weeds, and is equal with fertiliser.

Table 3-8: Percent of farmers using Oxen or Tractor

		Only oxen			Only tractor		
			Own, shared or borrowed	Hired		Own, shared or borrowed	Hired
Crops	% of fmrs growing crop	% of fmrs	% of fmrs	% of fmrs	% of fmrs	% of fmrs	% of fmrs
Irr. Wheat	98	6	83	17	92	37	66
Alfalfa	53	1	100	-	8	38	63
Poppy	53	2	100	-	51	36	66
Cotton	52	1	100	-	49	49	55
Maize	43	2	100	-	39	28	77
Pea Nut	29	-	-	-	28	32	75
Melon	15	-	-	-	12	33	67
Bean	7	-	-	-	6	83	17
Clover	7	-	-	-	3	67	33
Mung Bean	7	-	-	-	5	80	40
Onion	2	-	-	-	1	100	-
All crops		6	83	17	94	37	67

Number of farmers questioned : 99

1. *The SCA Department of Agriculture's programme provides zinc phosphide for rats, metasystox as an insecticide for fruit trees and vegetables, 2,4-D against broadleaved weeds in wheat, and Arelan and Graminon against weed grasses in wheat. For example, in early 1992, our plant protectionists used 400 kg 2,4-D and 80 liters Graminon against weeds in the survey area.*

Table 3-9: Oxen and Tractor use per jerib

		Oxen			Tractor				
			Own, shared or borrowed			Own, shared or borrowed		Hired	
Crops	% of fmrs growing crop	% of fmrs	Avg. no. of jerib	Avg. no. of days/jrb	% of fmrs	Avg. no. of jerib	Avg. no. of hour/jrb	Avg. no. of jerib	Avg. no. of hour/jrb
Irr. Wheat	98	6	5.8	1.1	92	13.6	1.1	10.3	1.2
Alfalfa	53	1	2.0	1.0	8	2.5	0.9	2.2	1.1
Poppy	53	2	1.5	1.5	51	3.4	1.1	2.3	1.2
Cotton	52	1	3.0	1.3	49	5.2	1.1	4.5	1.2
Maize	43	2	2.5	1.3	39	7.5	1.1	5.2	1.3
Pea Nut	29	-	-	-	28	4.7	1.1	3.9	1.2
Melon	15	-	-	-	12	3.5	1.3	3.5	1.1
Bean	7	-	-	-	6	5.6	1.4	15.0	1.3
Clover	7	-	-	-	3	3.0	0.9	4.0	1.0
Mung Bean	7	-	-	-	5	6.3	1.3	3.0	1.4
Onion	2	-	-	-	1	1.0	1.0	-	-
All crops		6	8.4	1.1	94	25.1	1.2	18.0	1.2

Number of farmers questioned : 99

3.3.1 Hired farm power cost

The average cost of hired oxen is 3,000 Afs/day[1] (see table 3-10) and the average cost of a hired tractor is from 8,000 to 10,000 Afs /jerib (see table 3-11). According to our enumerator, for threshing of wheat, the tractor owner receives between 10 and 12 % of the yield.

Threshing of wheat is usually performed during the night for two reasons: a) tractors are busy on other activities during the day and; b) the weather is too hot in the day.

The demand for hired tractors is very high in June (harvesting), July (threshing), November and December (land preparation for wheat and peanut) see figure 3-7. The farmers of the survey area usually make a contract with tractor owners, i.e. ploughing and threshing is done by the same tractor owner.

If 10 labourers are available, a tractor can thresh the wheat of 10 to 15 jeribs of land per night.

1. *According to the enumerator, one pair of oxen can plough about one jerib of land per day, depending on soil conditions and distance of the land from the house. This is a general rule-of-thumb throughout Afghanistan.*

Table 3-10: Average cost of hired oxen

Crops	% of fmrs growing crop	Hired Oxen: % of fmrs (i)	% of fmrs (ii)	Avg. no. of jrb	Avg. no. day/jrb	Avg. cost Afs/jrb	Avg. cost per fmrs
Irr. Wheat	98	6	17	2.0	1.0	3,000	6,000
Alfalfa	53	1	-	-	-	-	-
Poppy	53	2	-	-	-	-	-
Cotton	52	1	-	-	-	-	-
Maize	43	2	-	-	-	-	-
Pea Nut	29	-	-	-	-	-	-
Melon	15	-	-	-	-	-	-
Bean	7	-	-	-	-	-	-
Clover	7	-	-	-	-	-	-
Mung Bean	7	-	-	-	-	-	-
Onion	2	-	-	-	-	-	-
All crops		6	17	2.0	1.0	3,000	6,000

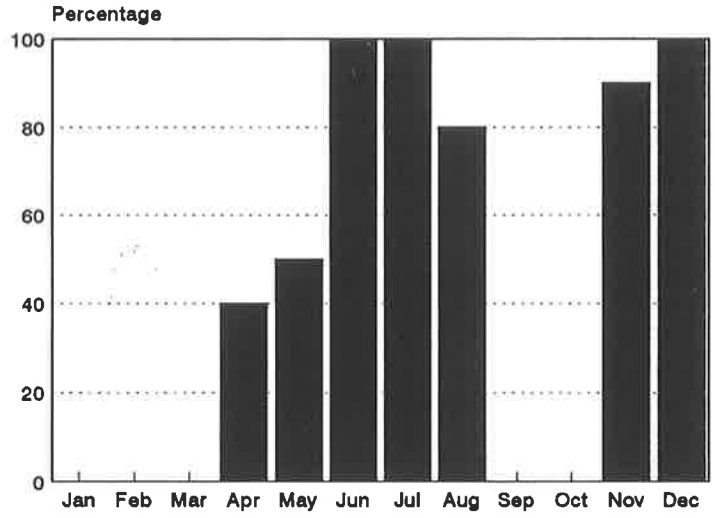
Number of farmers questioned : 99
Average Afs/day for oxen : 3,000
(i) % of total farmers using tractor or oxen
(ii) The % of tractor/oxen users who use hired tractor/oxen

Table 3-11: Average cost of hired tractor

Crops	% of fmrs growing crop	Hired Tractor: % of fmrs (i)	% of fmrs (ii)	Avg. no. of jrb	Avg. no. hour/jrb	Avg. cost Afs/jrb	Standard deviation	Avg. cost per fmrs
Irr. Wheat	98	92	66	10.3	1.2	8,467	1,704	87,000
Alfalfa	53	8	63	2.2	1.1	8,530	1,471	19,000
Poppy	53	51	66	2.3	1.2	8,990	2,321	20,000
Cotton	52	49	55	4.5	1.2	8,717	1,896	38,000
Maize	43	39	77	5.2	1.3	9,201	1,640	45,000
Pea Nut	29	28	75	3.9	1.2	9,378	2,338	36,000
Melon	15	12	67	3.5	1.1	8,156	2,073	27,000
Bean	7	6	17	15.0	1.3	9,333	-	140,000
Clover	7	3	33	4.0	1.0	7,000	-	28,000
Mung Bean	7	5	40	3.0	1.4	10,688	1,313	31,000
Onion	2	1	-	-	-	-	-	-
All crops		94	67	18.0	1.2	8,650	1,657	154,000

Number of farmers questioned : 99
Average Afs/hour for tractor : 7,326
(i) % of total farmers using tractor or oxen
(ii) The % of tractor/oxen users who use hired tractor/oxen

Figure 3-7: Demand for hired tractor



Source: Enumerator estimate

Chapter 4 - Labour

In Nad Ali, 60% of households have agricultural land and the rest (40%) are landless which is a cheap source of extra farm labour[1].

In the survey area, farm families are the usual source of labour. For example, a small sized farmer with less than 10 jeribs has 1.5 permanent farm workers, a medium sized farmer with 10 to 25 jeribs has more than 2 farm workers and large farmers with more than 25 jeribs have 1.7 permanent farm workers (see table 4-1).

Table 4-1: Household composition and farm size

	Farm size (ranges in jeribs)			
	< 10	10 - 25	> 25	
No. of fmrs:	39	40	19	
	Average No. of Persons per household			
				Overall
Adults[2]	9.1	12.3	14.7	11.4
Farm workers	1.5	2.1	1.7	1.8

1. *According to our enumerator.*

2. *The figures for the number of adults seem high, but was derived from the answers to the direct question "How many adult members live permanently at home?"*

Twenty-four per cent of small farmers and 28% of medium farmers claim they do not have enough labour, but the large farmer who share-crops his land to another has in most cases, enough labour (see table 4-2).

Table 4-2: Labour needs and farm size

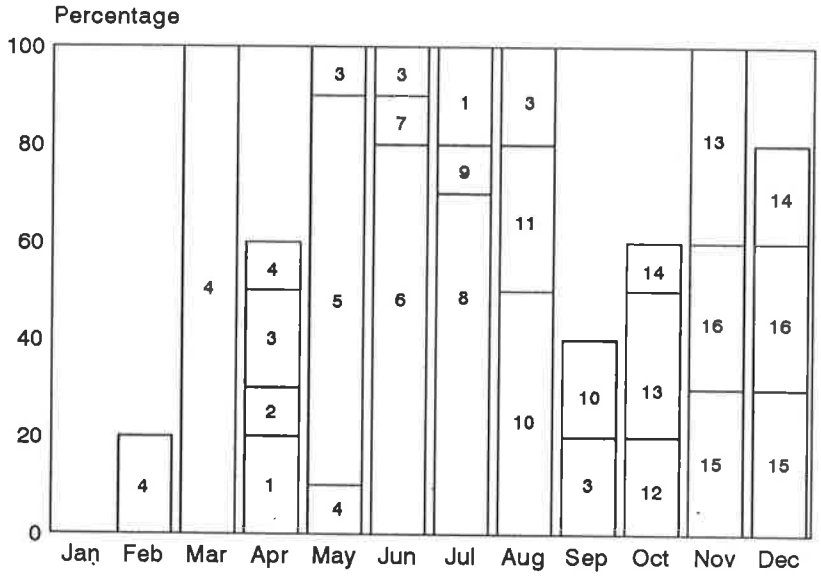
	Farm size ranges (jeribs)		
	1 - 10	11 - 25	> 25
No. of fmrs:	39	40	19
Labour	Percent of farmers		
Enough	15	12	11
Not enough	24	28	7

99 farmers questioned

4.1 Major activities

The major farming activities take place from April to November (see table 4-3, table 4-4 and table 4-5). In May, farmers are mainly busy on the poppy field. The months of June and July are mainly harvesting time, while November and December are the planting and harvesting season (see figure 4-1). Time consuming activities are poppy harvesting, weeding and harvesting of cotton with 33, 31 and 30 days per activity respectively (see table 4-5).

Figure 4-1: Nad Ali
Farming Activities



Source: Enumerator estimate

1. Planting of melon and cotton
2. Farm manuring
3. Irrigation
4. Weeding of poppy
5. Harvesting of poppy
6. Wheat harvesting
7. Weeding of peanut
8. Wheat threshing
9. Planting of maize
10. Weeding of cotton and peanut
11. Thining of maize
12. Harvesting of maize
13. Harvesting of cotton
14. Ploughing
15. Planting of wheat
16. Planting of poppy

Table 4-3: Major farming activities

No. of farmers involved in activity by month

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Irrigation	45	50	15	10	.	.	.	.	.	.	.
Weeding	39	28	10	2	.	.	.	.	.	.	.
Reaping of Wheat	.	1	75	.	.	.	.	.	.	.	.
Stacking of Wheat	.	1	72	.	.	.	.	.	.	.	.
Threshing of Wheat	.	.	23	41	1	.	.	.	.	.	.
Cleaning of Wheat	.	.	6	52	1	.	.	.	.	.	.
Making the plants to give Pop	1	51	.	.	.	.	.	.	.	.	.
Collecting of Poppy	1	45	1	.	.	.	.	.	.	.	.
Applying of Fertiliser	31	8	1	1	.	.	.	.	.	.	.
Cultivation of Maize	.	.	1	32	1	.	.	.	.	.	.
Threshing	.	1	9	14	.	.	.	.	.	.	.
Collecting of Apple	.	1	15	1	.	.	.	.	.	.	.
Stacking	.	1	15	1	.	.	.	.	.	.	.
Weeding of Peanut	.	1	4	1	.	.	.	.	.	.	.
Collecting of Wheat	.	2	3	.	.	.	.	.	.	.	.
Weeding of Cotton	.	1	2	1	.	.	.	.	.	.	.
Cultivation of Cotton	1	.	.	2	1	.	.	.	.	.	.
Collecting of Cotton	.	.	.	.	.	.	2	1	.	.	.
Reaping of Poppy	.	.	2	.	.	.	.	.	.	.	.
Cleaning of Cotton	.	.	.	2	.	.	.	.	.	.	.
Irrigation of Wheat	1	.	.	.	.	.	.	.	.	.	.
Cultivation of Pulses	.	.	.	1	.	.	.	.	.	.	.
Irrigation of Cotton	.	.	.	1	.	.	.	.	.	.	.

99 farmers questioned

Table 4-4: Major activities for which hired labour is used

No. of farmers hiring labour

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Irrigation	3	1	.	.	.	.	.	.	.	.	.
Weeding	12	2	.	.	.	.	.	.	.	.	.
Reaping of Wheat	.	1	59	.	.	.	.	.	.	.	.
Stacking of Wheat	.	.	23	.	.	.	.	.	.	.	.
Threshing of Wheat	.	.	23	39	1	.	.	.	.	.	.
Cleaning of Wheat	.	.	.	1	.	.	.	.	.	.	.
Making the plants to give Pop	1	47	.	.	.	.	.	.	.	.	.
Collecting of Poppy	1	43	.	.	.	.	.	.	.	.	.
Applying of Fertiliser	.	1	.	.	.	.	.	.	.	.	.
Cultivation of Maize	.	.	1	1	.	.	.	.	.	.	.
Threshing	.	1	7	13	.	.	.	.	.	.	.
Collecting of Apple	.	1	6	1	.	.	.	.	.	.	.
Stacking	.	1	1	.	.	.	.	.	.	.	.
Weeding of Peanut	.	.	.	1	.	.	.	.	.	.	.
Collecting of Wheat	.	1	2	.	.	.	.	.	.	.	.
Weeding of Cotton	.	.	1	.	.	.	.	.	.	.	.
Cultivation of Cotton	.	.	.	.	.	.	.	.	.	.	.
Collecting of Cotton	.	.	.	.	.	.	2	1	.	.	.
Reaping of Poppy	.	1	.	.	.	.	.	.	.	.	
Irrigation of Wheat	.	.	.	.	.	.	.	.	.	.	.
Cultivation of Pulses	.	.	.	.	.	.	.	.	.	.	.
Irrigation of Cotton	.	.	.	.	.	.	.	.	.	.	.

99 farmers questioned

Table 4-5: Average no of days per activity

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Irrigation	3	3	3	.	.	.	.	.	.	.	9
Weeding	14	10	7	.	.	.	.	.	.	.	31
Reaping of Wheat	.	.	10	.	.	.	.	.	.	.	10
Stacking of Wheat	.	.	6	.	.	.	.	.	.	.	6
Threshing of Wheat	.	.	.	2	.	.	.	.	.	.	2
Cleaning of Wheat	.	.	.	12	.	.	.	.	.	.	12
Making the plants to give Pop	.	17	.	.	.	.	.	.	.	.	17
Collecting of Poppy	.	16	.	.	.	.	.	.	.	.	16
Applying of Fertiliser	2	.	.	.	.	.	.	.	.	.	2
Cultivation of Maize	.	.	.	3	.	.	.	.	.	.	3
Threshing	.	.	.	1	.	.	.	.	.	.	1
Collecting of Apple	.	.	8	.	.	.	.	.	.	.	8
Stacking	.	.	6	.	.	.	.	.	.	.	6
Weeding of Peanut	.	10	9	.	.	.	.	.	.	.	19
Collecting of Wheat	.	.	8	.	.	.	.	.	.	.	8
Weeding of Cotton	.	.	10	.	.	.	.	.	.	.	10
Cultivation of Cotton	.	.	.	1	.	.	.	.	.	.	1
Cleaning of Poppy	.	8	.	.	.	.	.	.	.	.	8
Collecting of Cotton	.	.	.	.	.	.	30	.	.	.	30
Reaping of Poppy	.	.	8	.	.	.	.	.	.	.	8
Cleaning of Cotton	.	.	.	11	.	.	.	.	.	.	11
Irrigation of Wheat	4	.	.	.	.	.	.	.	.	.	4
Cultivation of Pulses	.	.	.	2	.	.	.	.	.	.	2
Irrigation of Cotton	.	.	.	2	.	.	.	.	.	.	2
Total	23	64	74	41	.	.	30	.	.	.	

99 farmers questioned

4.2 Labour shortages

Extra labour is usually needed for harvesting of poppy, wheat and cotton. The larger cultivated areas require more labour (table 4-6).

Table 4-6: Labour needs related to the number of jeribs cultivated per worker

	No. of jeribs per permanent worker									
	1 - 2		3 - 4		5 - 6		7 - 8		> 8	
No. of fmrs:	3		15		21		14		32	
Labour	% fmrs	Av. jrbs	% fmrs	Av. jrbs	% fmrs	Av. jrbs	% fmrs	Av. jrbs	% fmrs	Av. jrbs
Enough	0	-	2	6	7	7	4	11	17	23
Not enough	3	4	13	10	14	12	10	20	15	24

99 farmers questioned

Looking at table 4-7, we can see that 38% of small and 41% of medium farmers used hired labour. The percentage of large farmers who have more than 25 jeribs is about half that of the two other categories. This is because the large farmers have tractors and utilize sharecroppers.

Table 4-7: Hired labour and farm size

	Farm size (ranges in jeribs)			
	< 10	10 - 25	> 25	
Hired labour	Percent of households			Total
Not Used	2	0	1	3
Used	38	41	18	97
98 farmers questioned				100

Table 4-8 shows that 41% of farmers claim labour as insufficient for one to two months, mainly during harvest time.

Table 4-8: Hired labour and labour needs

Use of Hired labour	% of fmrs claiming labour as:			
	Sufficient	Not sufficient	No response	Total
Not used	0	2	1	3
For 1-2 months	26	41	0	68
For over 2 months	13	16	0	29
Total	39	60	1	100

99 farmers questioned

4.3 Hired labour cost

As already mentioned, hired labour is usually used at harvest time. For reaping of wheat the labourer receives 45 to 50 kg wheat/jerib,[1] while for harvesting of poppy the labourer receives between one-sixth and one-eighth of the yield. The daily wage is equivalent to about 1,500 Afs[2].

1. *This is a fixed amount, not a proportion of the actual yield, and is expressed here in kg. not seers because it is based on the Kandahar seer which equals 4.5 kg. Thus the labourer receives 10-12 Kandahar seers/jerib.*

2. *Information is based on the observation of the enumerator.*

Chapter 5 - Livestock[1]

Animal raising is a common occupation in the survey area. For example small farmers usually keep two oxen, one cow, 4 to 5 sheep, one donkey and 5 to 10 chickens. The medium sized farmers also have two oxen, one to two cows, 5 to 10 sheep, one donkey and some chickens. Large farmers usually don't have oxen or donkeys but keep more than 3 cows and more than 10 sheep and some goats.

The farmers of this area feed their animals alfalfa, clover and weeds and usually they graze their animals during the Spring. During the Winter they feed them straw (*buhsa*), cotton cake, and maize grain/flour. For example, during ploughing time oxen receive 4 to 6 kg of maize grain/flour and other times they feed one kg/cow/day or ox, 0.5 kg/donkey/day and 0.2 kg/sheep/day. Cotton cake is usually fed to the animals during the winter at night at the rate of 0.5 kg/cow or ox.

According to this survey, 53% of farmers grow alfalfa and 7% of them grow clover (see table 2-1) for livestock, mainly beef cattle for sale and cows for domestic milk production.

The price of a pair of oxen is about 300,000 Afs, while one cow costs between 150,000 and 200,000 Afs. The price of a sheep is 100,000 Afs, goats (local) 30,000 to 40,000 Afs and Sestani goats costs 80,000 to 90,000 Afs. Donkeys are usually sold at 20,000 to 30,000 Afs, and finally, the price of a chicken is more than 2,000 Afs. An egg costs about 100 Afs.

Chapter 6 - Agricultural products

6.1 Subsistence requirements

From the three categories of farmers in Nad Ali, small farmers with less than 10 jeribs have to do some off-farm work or sell their labour in order to achieve subsistence. The majority of medium sized farmers with 10 to 25 jeribs produce enough for their own consumption, whilst the large farmers with more than 25 jeribs of land produce more than enough for subsistence and usually sell agricultural surplus.

Twenty-six per cent of small farmers, 20% of medium farmers and 7% of large farmers claim they have insufficient wheat (see table 6-1) for subsistence purposes. This is probably as a result of the effect of poppy cultivation.

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1. *Information in this chapter is based on the observation of the enumerator.*

Table 6-1: Wheat sufficiency and farm size

	Farm size ranges (jeribs)			
	< 10	11 - 25	> 25	
No. of fmrs:	39	40	19	
Wheat	Percent of farmers			Total
Enough	13	18	11	42
Not enough	26	20	7	54

99 farmers questioned

According to this survey, out of 99 interviewed farmers, 28 people had between 51 to 75 seers of wheat per person per year. Eleven per cent indicate that between 51 to 75 seers of wheat per person per year is not enough for subsistence, while 17% of farmers indicate that this amount is enough (see table 6-2). This amount of wheat is for own consumption and other basic needs such as clothing, oil, tea, sugar etc.

Table 6-2: Wheat sufficiency

	Seers of wheat per person per year		
	1 - 50	51 - 75	> 75
No. of fmrs:	33	28	35
Wheat	Percent of farmers		
Enough	8	11	22
Not enough	24	17	11

99 farmers questioned

6.2 Sales of agricultural products

The main crop products which are sold are wheat, raw opium, maize and cotton. Mung beans is an important cash crop grow by one in seven farmers, and where it is grown, is usually the third largest cropped area on the farm. Cotton is ginned locally in Lashkargah and is purchased by the parastatal cotton company.

According to this survey 18% of farmers sold an average 366 seers of wheat at 517 Afs/seer. Fifteen per cent sold 4 seers of opium at 312,191 Afs/seer, and 12% sold 262 seers of peanuts for more than 1,000 Afs/seer (see table 6-3).

Table 6-3: Agricultural products

Crops	% of fmrs sold product	Avg. of product sold (seer)	Avg. cost of product (Afs)	Avg. cost of product (Afs/seer)
Irrigated Wheat	18	366	188,889	517
Poppy	15	4	1,263,333	312,191
Pea Nut	12	262	273,750	1,046
Cotton	5	278	284,000	1,022
Maize	5	380	82,000	216
Water Melon	5	-	124,000	-
Bean	3	87	86,667	1,000
Mung Bean	2	65	350,000	5,385

Number of farmers questioned : 99

6.3 Agricultural products prices[1]

The prices of agricultural products were constantly fluctuating when the survey was in progress (June to September, 1991). For example, in June of 1991 the price of wheat was a little more than 500 Afs/seer, while in August of the same year (just one month later) it rose to 1,700 Afs/seer.

The reason for this dramatic increase in the price of wheat is the high demand of poppy growers as well as in other parts of the country for wheat because they do not grow enough wheat to meet either their own demand or local demand. They try to buy large quantities of wheat at the time of wheat harvest. As wheat supply becomes rapidly short the price for wheat goes up.

In Autumn of 1991 the price for maize was 1,250 Afs/seer, for poppy 5,500,000 Afs/seer, peanut 3,900 Afs/seer, cotton 2,000 Afs/seer and poppy seed *Khashkhash* was 900 Afs/seer which is a large change in comparison with the prices in table 6-3.

6.4 Livestock products

The main livestock products are ghee, wool, dried curt (*Qurut*), and furs or skins.

A cow can produce 20 to 35 kg of ghee during its lactation period valued at 1,500 Afs/kg and 14 kg dried curt valued at 700 Afs/kg. Sheep can produce 4 kg ghee valued at 2,000 Afs/kg, 4 to 5 kg dried curt and can produce 2 kg of wool/year valued at 350 Afs/kg[2].

Chapter 7 - Budgets

7.1 Crop budgets (gross margins)

The prices used to estimate the gross margins are the prices quoted by farmers. For example, the price of white fertiliser at 13,500 Afs per 50 kg bag is the price paid in the Autumn of 1990 and used on the crop harvested in 1991. The wheat price is for the harvest period of 1991. Prices now are very different.

The same crop gross margins are used for each of the three models, as the differences between the variable costs of different farm sizes was minimal.

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1. *Information is based on the obervation of the enumerator.*

2. *According to the enumerator.*

Nad Ali HOUSEHOLD MODEL

CROP GROSS MARGINS PER JERIB

	Wheat		Poppy		Maize		Cotton		Alfalfa		Other	
	Rate	Afs'000	Rate	Afs'000	Rate	Afs'000	Rate	Afs'000	Rate	Afs'000	Rate	Afs'000
Inputs												
Seed, seers	4	5,280	0.50	10,000	3	2,640	4	0	4	4	4.00	5,280
White fert., kgs	75	20,250	75	20,250	23	6,210	37	9,990	0	0	75	20,250
Grey fert., kgs	38	10,488	38	10,488	17	4,692	17	4,692	0.00	0	38	10,488
Hired oxen												
Hired tractor	1	12,000	1	12,000	1	12,000	1	12,000	1	12,000	1	12,000
Hired labour												
Total variable costs		48,018		52,738		25,542		26,682		12,004		48,018
Yield (seers/jerib)	81	97,200	3	750,000	56	44,800		237,000		70,000	81	97,200
Income less direct costs		49,182		697,262		19,258		210,318	0	57,996	81	49,182
Taxes in kind		2,587		36,676		1,013		11,063		3,051		2,587
Gross margin		46,595		660,586		18,245		199,255		54,945		46,595

7.2 Farm Budgets and Household Models

During the war most of the assistance for agriculture has been geared towards increasing food production without reference to the distribution of the benefits amongst the different groups of society nor indeed with reference to whether the value of the increased production was greater than the cost of the project.

While describing the farming systems in Nad Ali the report has attempted to illustrate some of the differences between three groups of households with differing farm sizes. In this section much of the information relating to these different groups of farmers is summarised in three models.

The main purpose of the models is to provide a basic tool for interpreting the varying economic impact of different development strategies. For example, if a planner was attempting to decide between implementing a programme for an improved maize variety and one for an improved peanut variety it would be possible to quickly calculate which would be of greatest economic benefit given the price ratios and existing cropping patterns. It is also possible to use the models to estimate how a project's benefits are distributed between the smaller and larger farmers.

For example, a project distributing an equal amount of an improved seed variety for each household (i.e. without reference to farm size) would be gearing assistance towards smaller farmers for the simple reason that there are more smaller farmers than large ones. The same strategy though is not so efficient in terms of increasing total production as the smaller farmers, in comparison to the larger, are likely to use a greater proportion of their harvest for consumption rather than seed for the next year's crop.

It is also possible, with reference to the chapter 4 on labour, to ensure that any proposed changes, for example an attempted introduction or expansion of a cash crop, does not exacerbate the labour shortage of any particular month.

Reference to land tenure is also important in assessing a project's impact. If a sharecropper is receiving fertiliser or seed he himself is only going to benefit from between one quarter and one half of the incremental yield whereas an owner cultivator will receive the full benefit. Therefore, if a project is intending to concentrate on the poorest, who are often involved in sharecropping, it would clearly be more efficient to provide assistance resulting in a benefit to which the sharecropper has full rights.

Three models have been prepared based on the three ranges of farm sizes that have been the basis for much of the preceding text. Each of the three models has been based on a farmer who owns and cultivates all his land, as this category of farmer was predominant in each of the three farm size ranges. However it should be borne in mind that some of the smaller farmers sharecrop some of the land they cultivate and therefore only receive part of the yield. Again some of the farmers sharecrop their land as well as claim to cultivate it as some of the family members do contribute some labour towards its management. Therefore in some cases the larger landowners are not receiving the full yield that the large farmer model suggests they would.

The models have been simplified as much as possible to illustrate the relative income between the small, medium and large sized farmer and as a summary to the observations made in the previous chapters.

FARM BUDGET ONE

Farm size,jeribs:	5
People in household:	10
Adult equivalents:	8

	Food Grains			Cash crops			Other crops			
	Wheat	Maize	Total	Poppy	Cotton	Total	Alfalfa	Other	Fallow	Total
Area,jeribs	4.80	1.30	6.10	0.70	1.00	1.70	0.40	1.00	1.30	6.10
Cropping intensity	1.84									
Production, seers	389	73	462	2	79	81	280			
Nominal value,'000Afs	466,560	58,240	524,800	525,000	237,000	762,000	28,000			
Variable costs,'000Afs	230,486	33,205	263,691	36,917	26,682	63,599	4,802			
Gross margins,'000Afs	223,656	23,719	247,375	462,410	199,255	661,665	21,978			

HOUSEHOLD MODEL

Sharecroppers' share										
Post Harvest losses, per cent	10	10		5	10		10			
Prod. after losses, seers	350	66	415	2	71	73	252			
Consumption & miller's share,seers	0	0	0	0	0	0	0			TOTAL VALUE OF
Sales, seers	350	66	415	2	71	73	252			SALES
Value of sales,'000Afs	419,904	52,416	472,320	498,750	213,300	712,050	25,200			1,184,370
Prod.surplus/deficit, seers										
Grain purchases, seers										TOTAL CASH FLOW
Cost of purchases,'000Afs										
Cash flow,'000Afs	419,904	52,416	472,320	498,750	213,300	25,200			737,250	1,209,570

Return to labour	
No. persons working	2
Days worked per man	145
Return per man per day,Afs	4,171

PRICE & OTHER DATA	Unit cost	Amount/j Wheat	Poppy	Maize	Cotton	Alfalfa
White fertiliser,kg	270	75	73	23	37	0
Grey fertiliser, kg	276	38	40	17	17	0
Seed, seers/jerib		4	1	3	4	4
Yield, seer		81	3	56	79	700
Hired labour,man day	1,500					
Hire oxen,cultivation	12,000					
Hire tractor,cultivation	12,000					
Hire tractor,threshing						
Value/seer, Afs		1,200	300,000	800	3,000	100
Household size,seers	10					
Subsistence/adult,seers	25					
Subsistence/household,seers	208					

FARM BUDGET TWO

Farm size,jeribs:	17.50
People in household:	14
Adult equivalents:	11
Subsistence,seers:	266

	Food Grains			Cash crops			Other crops				
	Wheat	Maize	Total	Poppy	Cotton	Total	Alfalfa	Other	Fallow	Total	
Area,jeribs	14.00	4.40	18.40	2.10	3.60	5.70	1.40	3.50	4.60	6.10	
Cropping intensity	1.66										
Production, seers	1,134	246	1,380	5	284	290	980				
Nominal value,'000Afs	1,360,800	197,120	1,557,920	1,575,000	853,200	2,428,200	98,000				
Variable costs,'000Afs	672,252	112,385	784,637	110,750	96,055	206,805	16,806				
Gross margins,'000Afs	652,330	80,278	732,609	1,387,231	717,319	2,104,550	76,924				
HOUSEHOLD MODEL											
Sharecroppers' share,'000Afs	272,160	39,424	311,584	315,000	170,640	485,640	19,600				
Post Harvest losses, per cent	10	10		5	10		10				
Prods less PHL & sharecropper,seers	794	172	966	4	199	203	686				
Consumption & miller's share,seers	244	0	244	0	0	0	0				TOTAL VALUE OF
Sales, seers	550	172	722	4	199	203	686				SALES
Value of sales,'000Afs	659,854	137,984	797,838	1,181,250	597,240	1,778,490	68,600				2,576,328
Prod.surplus/deficit, seers											
Grain purchases, seers											TOTAL
Cost of purchases,'000Afs											CASH FLOW
Cash flow,'000Afs	659,854	137,984	797,838	1,181,250	597,240	1,778,490			3,556,980		4,354,818

Return to labour	
No. persons working	4
Days worked per man	145
Return per man per day, Afs	7,508

PRICE & OTHER DATA	Unit cost	Amount/j Wheat	Poppy	Maize	Cotton	Alfalfa
White fertiliser,kg	270	75	73	23	37	0
Grey fertiliser, kg	276	38	40	17	17	0
Seed, seers/jerib		4	1	3	4	4
Yield, seer		81	3	56	79	700
Hired labour,man day	1,500					
Hired oxen, crop	12,000					
Hired tractor, crop	12,000					
Value/seer, Afs		1,200	300,000	800	3,000	100
Household size,persons	14					
Subsistence/adult,seers	25					
Subsistence/household,seers	208					

FARM BUDGET THREE

Farm size,jeribs:	28.00
People in household:	20
Adult equivalents:	16
Subsistence,seers:	400

	Food Grains			Cash crops			Other crops			
	Wheat	Maize	Total	Poppy	Cotton	Total	Alfalfa	Other	Fallow	Total
Area,jeribs	24.20	4.20	28.40	2.00	5.80	7.80	1.80	4.00	4.10	0.00
Cropping intensity	1.50									
Production, seers	1,960	235	2,195	5	458	463	1,260			
Nominal value,'000Afs	2,352,240	188,160	2,540,400	1,500,000	1,374,600	2,874,600	126,000			
Variable costs,'000Afs	1,162,036	107,276	1,269,312	105,476	154,756	260,232	21,607			
Gross margins,'000Afs	1,127,600	76,629	1,204,229	1,321,172	1,155,681	2,476,853	98,902			

HOUSEHOLD MODEL

Sharecroppers' share,'000Afs	470,448	37,632	508,080	300,000	274,920	574,920	25,200			
Post Harvest losses, per cent	10	10		5	10		10			
Prod less PHL & sharecropper,seers	1,372	165	1,537	4	321	324	882			
Consumption & miller's share,seers	367	0	367	0	0	203	0			TOTAL VALUE OF
Sales, seers	1,005	165	1,170	4	321	121	882			SALES
Value of sales,'000Afs	1,206,408	131,712	1,338,120	1,125,000	962,220	2,087,220	88,200			3,425,340
Prod.surplus/deficit, seers										
Grain purchases, seers										TOTAL
Cost of purchases,'000Afs										CASH FLOW
Cash flow,'000Afs	1,206,408	131,712	1,338,120	1,125,000	962,220	2,087,220			4,174,440	5,512,560

Return to labour	
No. persons working	4
Days worked per man	145
Return per man per day, Afs	9,504

PRICE & OTHER DATA	Unit cost	Amount/j Wheat	Poppy	Maize	Cotton	Alfalfa
White fertiliser,kg	270	75	73	23	37	0
Grey fertiliser, kg	276	38	40	17	17	0
Seed, seers/jerib		4	1	3	4	4
Yield, seer		81	3	56	79	700
Hired labour,man day	1,500					
Hired oxen, crop	12,000					
Hired tractor, crop	12,000					
Value/seer, Afs		1,200	300,000	800	3,000	100
Household size,seers	14					
Subsistence/adult,seers	25					
Subsistence/household,seers	0					

ANNEXES

ANNEX A — Survey Methods and Questionnaire

Part one - Survey methods

The ASA's national surveys have been sample surveys. They are not censuses of agriculture. They are based on specific information that a farmer gives directly to the enumerator about his own, and no one else's, farming operations. This, we believe, is essential to quantitative data collection. If the respondent is asked questions about his village or district his answer in many cases is likely to be vague simply because the question is extremely difficult to answer with any degree of accuracy.

From experience we have also found that generalised agricultural information resulting from group interviews or from village elders is of poor quality when compared to that derived from individual farmers speaking about their own farms. This is not to say that this approach does not have its place when the topic is not agriculture. Indeed there are some topics that can only be addressed at a more general level.

To select a representative sample is as much an art as a science even in countries with developed statistical departments. There are however certain accepted methods of obtaining something akin to a representative sample. The most common approach is to draw up a list of whatever you are going to sample, randomly select a proportion and then go and question the selected sample.

The ASA, in the absence of anything approaching a list of farmers, of even a list of villages, has attempted to select a representative sample by another, accepted, approach. This is to purposively, not randomly, select those places and farmers who are to be questioned.

The weakness of a purposive approach is that the sample selected is subject to bias. For example, enumerators may only talk to larger farmers along main travel routes and miss the more peripheral, poorer and difficult to reach farmers.

Enumerators are trained to cover a wide spread of villages in their assigned districts, and to select a range of farmers in each village they visit. The 'representativeness' thus depends on the access that the enumerators have to the district and their diligence in covering large areas.

While it would be foolhardy to say that, without exception, the enumerators always work in accordance with their guidelines it is felt that this approach is the least risky avenue open to us for obtaining a representative sample.

A rough but practical approach is made to match the number of farmers questioned in a province to the total number of farmers in a province. Each enumerator is expected to interview a set number of farmers and more enumerators are assigned, in as far as we are able, to the more populous areas. The correlation between the proportion of farmers questioned in each province compared with the proportion of the total population in that province is high, i.e. we have questioned more farmers in areas of dense population than in sparsely populated areas. This issue is of importance to us from the point of view of common sense as we wish

to have most information from areas where most people live. However it is not of great importance, from a statistical viewpoint, as the results are usually presented at the provincial or district level, not the national level. Where a figure for the whole country has been quoted in a report we have often found that there is an insignificant difference when it is weighted to account for our bias towards some provinces (i.e. Logar) and when it is not.

To insure that the reader is not misled the results are presented at the district or provincial level with the number of farmers questioned. It is thus the responsibility of the reader to judge what degree of belief he is going to give to information derived from x number of farmers. In this context, it is useful to note the statisticians rule of thumb that a sample of less than thirty is unreliable.

Unfortunately, it is difficult to compare the results between the different surveys. This is because the enumerators found it extremely onerous to interview the same farmers each year. The difference between the results has to be large before its statistical significance can be inferred.

The most reliable time series of data we have is that collected at one time. Though this is subject to the weakness and bias of a respondents memory and goes against the rule of surveying theory, we have increasingly found these results confirmed.

In summary, the ASA's national surveys rest their reliability on enumerator training, good enumerator/farmer relations, common sense and the sheer number of farmer interviews, not on random sampling techniques, which the circumstances render impractical and risky when applied to the whole country.

AGRICULTURAL SURVEY OF AFGHANISTAN
FARMING SYSTEMS SURVEY
VILLAGE FORM

Enumerator _____ Date _____

Province _____ District _____

		Number of families	Number of farming families
Main village name	_____	_____	_____
Lesser village name	_____	_____	_____

List the types of irrigation the village uses in order of importance

1. _____

2. _____

3. _____

(1. Canals, 2. Karez, 3. Diesel pumps, 4. Other types of pumps, 5. None)

How many shops are there in the village

How long does it take to travel to the nearest bazaar _____ (days or hours) by _____ (means of transport)

What is the name of the nearest bazaar _____

Number of tractors owned by people in the village _____

Number of farmers interviewed in the village _____

AGRICULTURAL SURVEY OF AFGHANISTAN — FARMING SYSTEMS SURVEY

Enumerator _____ Date _____

Province _____ District _____ Village _____

LAND

Orchards, vineyards and vegetable gardens

	Number in production	Number not in production	Value of product (Afs)
Fruit trees:			
Vines:			
Size of vegetable garden:		Local measure jeribs	

Other land in jeribs

	SOWN		FALLOW		
	Irrigated	Rainfed	Irrigated	Rainfed	Total
Land owned					
Land rented to another					
Land rented from another					
Land sharecropped to another					
Land sharecropped from another					
Land held as security on loan					
Land recoverable on repayment of loan					
Total land cultivated by the household					

If the farmer sharecrops land who provides the following inputs:

	Landlord	Sharecropper
Farm power (Oxen/Tractor)		
Fertiliser (if any)		
Seed		

What proportion of the crop does the sharecropper keep for himself

CROPS GROWN BY THE FARMER

List the crops grown by the farmer in order of importance

Crop	Area in jeribs	Seed sown in seers	Total harvested in seers
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

List Vegetables grown:

	No. of jeribs	Seed sown in kg
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

On the following calendar mark the period during which these crops are grown:

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
1. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
7. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vegetable																				
1. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3. _____	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Which Summer crops follow which Winter crops on the same land
(State both the Winter crop and the following Summer crop)

Winter crop	Summer crop
1. _____	_____
2. _____	_____
3. _____	_____

Which Winter crops follow which Summer crops on the same land
(State bothe the Summer crop and the following Winter crop)

Summer crop	Winter crop
1. _____	_____
2. _____	_____
3. _____	_____

Are there any annual crops that you grow together on the same land at the same time (yes/no)

If yes which crops are these

Ask the farmer to describe any big changes in the type of crops or the annual of crops he has grown over the last 10 year.

If there have been any changes what have been the causes

Fertiliser

Has the farmer used fertiliser during the last year (yes/no) _____

List below the crops which the farmer has fertilised:

	White			Grey		
Crop	How many bags used	Size of of bags	No. of jeribs fertilised	How many bags used	Size of bags	No. of jeribs fertilised
1. _____	_____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____	_____

How many Afs did the farmer pay for white fertiliser per bag _____ Afs

How many Afs did the farmer pay for grey fertiliser per bag _____ Afs

If the farmer would like to use more fertiliser what prevents him from using more

Farm Power

Does the farmer own:

	A pair of trained oxen	One oxen	A tractor
Yes/no	_____	_____	_____

What means of land cultivation does the farmer use:

	Oxen				Tractor			
	Own, shared or borrowed		Hired		Own, shared or borrowed		Hired	
Crop	Area used jeribs	Time spent days	Area used jeribs	Time spent days	Area used jeribs	Time spent hours	Area used jeribs	Time spent hours
1. _____	___	___	___	___	___	___	___	___
2. _____	___	___	___	___	___	___	___	___
3. _____	___	___	___	___	___	___	___	___
4. _____	___	___	___	___	___	___	___	___
5. _____	___	___	___	___	___	___	___	___

If the farmer used a hired tractor how much did he pay (Afs per hour) ___

If the farmer used hired oxen how much did he pay (Afs per day) ___

Has the farmer's means of cultivation changed during the last ten years (yes/no) ___

If the means have changed:

When did they change (date to nearest year)

What means did he use before:

Why did the farmer change:

Does a shortage of farm power cause the farmer to delay the sowing of crops (yes/no) ___

Would the farmer like to change his present means of cultivating his land (yes/no) ___

What would he like to change it to ___

Why does he not change

What are the farmer's reasons for wanting to change

Seed

Has the farmer used any improved wheat varieties in the last year (yes/no) _____

Where did he obtain it from _____

If it was available would the farmer use it again (yes/no) _____

What did he like about it

What did he not like about it

Has the farmer ever used an improved seed variety in the past (yes/no) _____

Where did he obtain it from _____

If it was available would the farmer use it again (yes/no) _____

What did he like about it

What did he not like about it

1. High yields
2. Good taste
3. Resistance to disease
4. Long straw
5. Short growing period
6. Good baking qualities
7. Awns to protect from birds

Weeds

Does the farmer have a weeds problem (yes/no)

If so, describe crops affected in order of importance

Crop affected	Is the problem big, moderate or small
1. _____	_____
2. _____	_____
3. _____	_____

Other Pests

What other pests attack the farmers crops

Crop affected	Name of pest	Is the problem
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

SALES OF AGRICULTURAL PRODUCE

Did the household produce enough wheat for its own needs during the last year (yes/no) _____

Did the household sell any agricultural produce over the last year (yes/no) _____

If so, list the types of produce sold

Produce	Amount of produce sold (seers)	How many Afs did the household receive for this commodity
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

Did the farmer sell more agricultural produce before the war (yes/no) _____

If so, what are the reasons for him not selling as much now

LABOUR AVAILABILITY

What is the total number of people in the household _____

How many children between 7 and 15 years _____

How many people between over 60 years _____

How many adult members live permanently at home _____

Do you have sufficient labour for your agricultural activities (yes/no) _____

How many adult men work permanently on the farm _____

LABOUR REQUIREMENTS

Which is your busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the second) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the third) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the tenth) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the eleventh) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the twelfth) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the seventh) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the eight) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

Which is your next (the ninth) busiest month:

List the activities you carry out this month in order of importance

Activity	Number of people involved in the activity during this month			Number of days spent on this activity during this month
	Household members	Sharecropper	Hired labour	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____

ANNEX B - Farming System Survey Data

Farming System Survey (1991)
Frequency distribution of irrigated cultivated area per farm

Province: Helmand
District: Nadi-ali

Land	No. fmrs questioned	No. fmrs with irr	Percentage of farmers in each range (areas in jeribs) 1 0-2	2 3-4	3 5-6	4 7-8	5 9-10	6 11-12	7 13-14	8 15-16	9 17-18	10 19-20	11 >20
Owned	99	98	-	4	14	8	13	6	5	7	3	9	30
Cultivated	99	33	3	9	36	15	9	6	-	9	-	3	9

Farming System Survey (1991)
Distribution of Wheat Yield

Province: Helmand

District	No. of farmers qestioned	Percentage of farmers whose yield (seer/jerib) is in these ranges 0-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	>100
Nadi-ali	99	-	1	2	5	4	22	16	16	11	22

Farming System Survey (1991)
Rates of fertilizer use for irrigated wheat
Nadi Ali

Type	No. of fmrs. using fert.	Percentage of fmrs using fertilizer in the following ranges (kg/jeribs) 0-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130	130-140	140-250
Only white	16	2	-	3	5	4	1	1	-	-	-
Only grey	3	3	-	-	-	-	-	-	-	-	-
Both white & grey	78	5	6	5	8	11	8	8	12	6	9
Total	97	10	6	8	13	15	9	9	12	6	9

No. of farmer questioned 99

Farming System Survey (1991)
No. of Adults and farm size
Province: Helmand
District: Nadi-ali

Farm size (ranges in jeribs)											
< 10				10 - 25				> 25			
39				40				19			
Adults per household											
0	1- 5	6-11	>11	0	1- 5	6-11	>11	0	1- 5	6-11	>11
-	10	59	31	-	5	53	43	5	5	26	63

Farming System Survey (1991)
No. of Permanent workers and farm size
Province: Helmand
District: Nadi-ali

Farm size (ranges in jeribs)											
< 10				10 - 25				> 25			
39				40				19			
Permanent workers per household											
0	1	2–3	>3	0	1	2–3	>3	0	1	2–3	>3
5	49	46	-	13	28	45	15	32	11	42	16

ANNEX C- National Survey Data

Part One 1987 National Survey Data

Yield 1987, 1986, 1985, 1980, 1978

District : Bust
Province : Helmand

Crop	1987			1986			1985			1980			1978		
	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield
Irrigated Wheat	-	-	-	-	-	-	-	-	-	-	-	-	100	15.0	100.0
Cotton	-	-	-	-	-	-	-	-	-	-	-	-	100	13.0	80.0

1 farmers questioned in Afghanistan

Yield 1987, 1986, 1985, 1980, 1978

District : Nahre Saraj
Province : Helmand

Crop	1987			1986			1985			1980			1978		
	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield
Irrigated Wheat	100	7.0	50.0	100	5.0	90.0	100	6.0	60.0	100	15.0	80.0	100	10.0	70.0
Cotton	100	4.0	80.0	100	6.0	70.0	100	5.0	60.0	100	7.0	90.0	100	4.0	100.0
Alfalfa	100	1.0	-	100	1.0	-	100	1.0	-	100	1.5	-	100	2.0	-
Maize	-	-	-	-	-	-	100	2.0	60.0	100	3.0	45.0	100	5.0	70.0

1 farmers questioned in Afghanistan

Yield 1987, 1986, 1985, 1980, 1978

District : Mosa Qala
Province : Helmand

Crop	1987			1986			1985			1980			1978		
	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield
Alfalfa	90	1.4	-	90	1.4	-	90	1.6	-	90	1.4	-	85	1.3	-
Rainfed Wheat	55	34.2	45.0	55	37.4	46.4	55	39.9	49.1	65	70.1	62.8	65	90.6	65.8
Grape	20	9.3	76.7	20	9.3	77.5	20	9.3	150.0	20	9.3	167.5	20	9.3	175.0
Almond	20	5.5	50.0	20	5.5	40.0	20	5.5	63.3	20	5.5	106.7	20	5.5	146.7
Maize	15	1.0	-	15	1.0	-	-	-	-	10	1.5	-	20	1.5	-
Irrigated Wheat	5	9.0	50.0	5	8.0	60.0	5	10.0	90.0	15	45.0	58.3	15	51.7	65.0
Barley	5	1.0	-	-	-	-	5	1.0	-	5	1.0	-	5	1.0	-
Vegetable	5	1.0	-	5	1.0	-	5	1.0	-	10	1.3	-	10	1.3	-
Apricot	5	3.0	120.0	5	3.0	80.0	5	3.0	180.0	5	3.0	100.0	5	3.0	260.0

20 farmers questioned in Afghanistan

Yield 1987, 1986, 1985, 1980, 1978

District : Nauzad
Province : Helmand

Crop	1987			1986			1985			1980			1978		
	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield
Alfalfa	69	1.3	-	69	1.2	-	62	1.2	-	69	1.4	-	69	1.6	-
Almond	54	3.3	51.7	54	3.3	61.3	54	3.3	61.3	54	3.3	100.0	46	3.2	136.7
Maize	23	9.3	35.0	31	5.5	61.7	23	11.0	65.0	15	9.5	70.0	23	9.0	65.0
Grape	23	7.3	60.0	23	7.3	83.3	23	7.3	146.7	23	7.3	160.0	23	7.3	273.3
Rainfed Wheat	15	25.0	57.5	23	38.0	43.3	23	44.7	51.7	54	88.5	61.7	54	100.6	69.3
Apricot	15	3.0	-	15	3.0	-	15	3.0	-	15	3.0	-	15	3.0	-
Irrigated Wheat	8	6.0	40.0	8	5.0	50.0	8	8.0	60.0	23	23.3	53.3	31	37.5	85.0

13 farmers questioned in Afghanistan

Yield 1987, 1986, 1985, 1980, 1978

District : Garmser

	1987			1986			1985			1980			1978		
	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield
Maize	83	4.5	54.0	83	6.8	45.0	83	7.4	54.7	83	4.0	40.7	100	30.5	91.5
Cotton	42	4.2	70.0	25	4.7	50.7	13	1.1	-	83	1.5	-	83	1.4	-
Mung Bean	33	6.0	25.0	17	10.0	45.0	42	5.8	30.0	50	7.3	50.0	50	11.3	40.0

Yield 1987, 1986, 1985, 1980, 1978

District : Nadi-ali

Province : Helmand

	1987			1986			1985			1980			1978		
Crop	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield
Alfalfa	67	1.3	-	68	1.3	-	68	1.1	-	71	1.0	84.0	100	12.8	97.5
Maize	33	2.4	52.5	33	2.3	53.7	87	6.3	73.7	89	8.5	82.2	98	9.2	94.2
Bean	21	2.3	38.3	24	2.3	40.0	14	2.9	41.3	18	1.3	-	29	2.3	75.0
Barley	3	1.0	-	2	1.0	-	2	2.0	-	3	3.0	-	5	3.0	135.0

60 farmers questioned in Afghanistan

Yield 1987, 1986, 1985, 1980, 1978

District : Nawae-barakzae
Province : Helmand

Crop	1987			1986			1985			1980			1978		
	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield	% fmrs grow crop	Avg. area jerib	Avg. yield
Irrigated Wheat	89	30.0	36.9	89	38.5	45.0	89	56.3	51.4	100	71.2	82.2	100	100.3	100.6
Alfalfa	78	1.4	-	78	1.6	-	78	1.6	-	89	2.1	-	89	2.5	-
Cotton	56	9.7	90.0	67	11.8	48.3	56	6.2	52.0	100	22.8	81.9	100	28.1	95.6
Maize	33	2.7	40.0	22	4.0	40.0	44	6.0	52.5	89	7.4	67.1	89	7.5	67.1
Mung Bean	11	1.0	-	22	3.0	15.0	33	2.0	18.0	67	7.7	42.5	67	9.0	40.0
Bean	11	7.0	-	11	7.0	-	-	-	-	-	-	-	-	-	-

9 farmers questioned in Afghanistan

Yields 1978

Bust

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	1	100	15.0	100	100
Cotton	1	100	13.0	100	80

1 farmers questioned in Afghanistan

Yields 1978

Nahre Saraj

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	1	100	10.0	100	70
Maize	1	100	5.0	100	70
Cotton	1	100	4.0	100	100
Alfalfa	1	100	2.0	-	-

1 farmers questioned in Afghanistan

Yields 1978

Mosa Qala

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Alfalfa	17	85	1.3	-	-
Rainfed Wheat	13	65	63.7	65	66
Maize	4	20	1.5	-	-
Grape	4	20	4.3	20	175
Almond	4	20	5.5	15	147
Irrigated Wheat	3	15	51.7	15	65
Vegetable	2	10	1.3	-	-
Barley	1	5	1.0	-	-
Apricot	1	5	3.0	5	260

20 farmers questioned in Afghanistan

Yields 1978

Nauzad

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Alfalfa	9	69	1.6	-	-
Rainfed Wheat	7	54	43.4	54	69
Almond	6	46	3.2	23	137
Irrigated Wheat	4	31	37.5	31	85
Maize	3	23	9.0	15	65
Grape	3	23	7.3	23	273
Apricot	2	15	3.0	-	-

13 farmers questioned in Afghanistan

Yields 1978

Garmser

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	12	100	23.8	100	91
Maize	10	83	6.8	75	82
Alfalfa	10	83	1.4	-	-
Cotton	9	75	8.3	75	97
Mung Bean	6	50	11.3	8	40

12 farmers questioned in Afghanistan

Yields 1978

Nadi-ali

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	66	100	12.8	100	98
Cotton	65	98	9.2	98	94
Alfalfa	55	83	1.5	-	-
Maize	45	68	4.1	48	77
Bean	19	29	2.3	6	75
Mung Bean	17	26	1.8	8	57
Melon	2	3	3.0	3	135
Barley	2	3	1.0	-	-

66 farmers questioned in Afghanistan

Yields 1978

Nawae-barakzae

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	9	100	24.8	100	101
Cotton	9	100	28.1	100	96
Maize	8	89	7.5	78	67
Alfalfa	8	89	2.5	-	-
Mung Bean	6	67	9.0	22	40

9 farmers questioned in Afghanistan

Fertiliser use 1978

Irrigated Wheat

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	1	1	-	-	-	-	-	-	-	-	1	100.0	2.0	1.0	-	-	-	100	1
Nahre Saraj	1	1	-	-	-	-	-	-	-	-	1	100.0	2.0	1.0	-	-	-	70	1
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	3	-	3	100.0	-	-	-	-	-	-	-	-	-	-	65	-	-	-	3
Kajaki	No data																		
Nauzad	4	-	4	100.0	-	-	-	-	-	-	-	-	-	-	85	-	-	-	4
Garmser	12	12	-	-	-	-	-	-	-	-	12	100.0	1.8	0.9	-	-	-	91	12
Nadi-ali	66	66	-	-	-	-	-	-	-	-	66	100.0	1.6	0.9	-	-	-	98	66
Nawae-barakzae	9	9	-	-	-	-	-	-	-	-	9	100.0	1.6	1.4	-	-	-	101	9
Total :	96	89	7	7.3	-	-	-	-	-	-	89	92.7	1.6	0.9	76	-	-	97	96

Fertiliser use 1978

Rainfed Wheat

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	No data																		
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	13	-	13	100.0	-	-	-	-	-	-	-	-	-	-	66	-	-	-	13
Kajaki	No data																		
Nauzad	7	-	7	100.0	-	-	-	-	-	-	-	-	-	-	69	-	-	-	7
Total :	20	-	20	100.0	-	-	-	-	-	-	-	-	-	-	67	-	-	-	20

Fertiliser use 1978

Maize

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	1	1	-	-	-	-	-	-	-	-	1	100.0	2.0	1.0	-	-	-	70	1
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	No data																		
Kajaki	No data																		
Nauzad	2	-	2	100.0	-	-	-	-	-	-	-	-	-	-	65	-	-	-	2
Washare	No data																		
Garmser	9	9	-	-	-	-	-	-	-	-	9	100.0	1.8	0.9	-	-	-	82	9
Nadi-ali	32	27	5	15.6	2	6.3	1.0	-	-	-	25	78.1	1.3	0.8	66	75	-	79	32
Nawae-barakzae	7	7	-	-	1	14.3	1.0	-	-	-	6	85.7	1.5	0.9	-	60	-	68	7
Baghran	No data																		
Deshu	No data																		
Total :	51	44	7	13.7	3	5.9	1.0	-	-	-	41	80.4	1.5	0.8	66	70	-	78	51

Farm power 1978

Percent using or owning the following resources

Province/District	Total		Tractor		Oxen			By hand	Other means	No. of oxen owned			
	fmr(i)	fmr(ii)	owned	hired	owned	shared	hired			1 oxen	2 oxen	3 oxen	4+ oxen
Helmand :													
Bust	1	1	-	100	-	-	100	-	-	-	-	-	-
Nahre Saraj	1	1	-	100	-	-	-	-	-	-	-	-	-
Reg	No data												
Sarbon Qala	No data												
Mosa Qala	20	20	10	30	40	-	-	95	-	-	35	5	5
Kajaki	No data												
Nauzad	13	13	15	38	31	-	-	92	-	-	31	-	-
Washare	No data												
Garmser	12	12	25	25	50	-	-	-	-	-	50	-	17
Nadi-ali	66	66	45	52	5	-	5	-	-	2	3	2	-
Nawae-barakzae	9	9	44	33	22	-	-	-	-	-	11	-	-
Baghran	No data												
Deshu	No data												
Total :	122	122	34	43	19	-	3	25	-	1	16	2	2

(i) Number of farmers questioned in Afghanistan
(ii) Number of farmers given data on farmpower

Constraints on crop production 1978

Irrigated Wheat

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	8	8	16	-	-	5	-	-	-	-	63	-	-	-	-	-
Washare	No data																
Garmser	12	4	-	10	-	23	5	4	4	6	2	8	-	4	8	23	2
Nadi-ali	66	7	-	42	-	8	-	4	8	4	-	24	-	-	-	3	-
Nawae-barakzae	9	-	-	-	-	100	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	6	1	31	-	13	2	3	5	4	1	23	-	1	2	8	1

Constraints on crop production 1978

Rainfed Wheat

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	23	14	-	-	-	-	-	-	-	56	-	7	-	-	-
Kajaki	No data																
Nauzad	13	-	20	-	-	-	-	-	-	-	-	80	-	-	-	-	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	22	8	-	-	-	-	-	-	-	66	-	4	-	-	-

Constraints on crop production 1978

Maize

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	33	-	-	-	-	-	-	-	-	-	67	-	-	-	-	-
Washare	No data																
Garmser	12	10	-	24	-	37	13	3	-	-	-	-	-	-	-	12	-
Nadi-ali	66	6	4	35	4	4	-	2	-	6	-	32	-	-	1	4	-
Nawae-barakzae	9	9	-	24	4	18	-	6	9	-	-	26	-	-	4	-	-
Baghran	No data																
Deshu	No data																
Total :	122	9	3	30	3	13	3	3	1	4	-	26	-	-	2	5	-

Constraints on crop production 1978

Barley

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Constraints on crop production 1978

Rice

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Yields 1985

Nahre Saraj

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	1	100	6.0	100	60
Maize	1	100	2.0	100	60
Cotton	1	100	5.0	100	60
Alfalfa	1	100	1.0	-	-

1 farmers questioned in Afghanistan

Yields 1985

Mosa Qala

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Alfalfa	18	90	1.6	-	-
Rainfed Wheat	11	55	39.9	55	49
Grape	4	20	4.3	20	150
Almond	4	20	5.5	15	63
Irrigated Wheat	1	5	10.0	5	90
Vegetable	1	5	1.0	-	-
Barley	1	5	1.0	-	-
Apricot	1	5	3.0	5	180

20 farmers questioned in Afghanistan

Yields 1985

Nauzad

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Alfalfa	8	62	1.2	-	-
Almond	7	54	3.3	31	61
Maize	3	23	11.0	15	65
Grape	3	23	7.3	23	147
Rainfed Wheat	3	23	44.7	23	52
Apricot	2	15	3.0	-	-
Irrigated Wheat	1	8	8.0	8	60

13 farmers questioned in Afghanistan

Yields 1985

Garmser

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	11	92	13.3	83	56
Maize	10	83	7.4	75	57
Alfalfa	9	75	1.1	-	-
Mung Bean	5	42	3.8	8	30
Cotton	5	42	9.0	42	60

12 farmers questioned in Afghanistan

Yields 1985

Nadi-ali

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	54	82	8.2	74	75
Alfalfa	45	68	1.1	-	-
Cotton	44	67	6.5	67	74
Maize	20	30	2.9	20	53
Mung Bean	15	23	2.8	12	48
Bean	9	14	2.9	6	41
Barley	1	2	2.0	-	-

66 farmers questioned in Afghanistan

Yields 1985

Nawae-barakzae

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	8	89	31.3	78	51
Alfalfa	7	78	1.6	-	-
Cotton	5	56	6.2	56	52
Maize	4	44	6.0	22	53
Mung Bean	3	33	2.0	11	18

9 farmers questioned in Afghanistan

Fertiliser use 1985

Irrigated Wheat

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	1	1	-	-	1	100.0	1.0	-	-	-	-	-	-	-	-	60	-	-	1
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	1	-	1	100.0	-	-	-	-	-	-	-	-	-	-	90	-	-	-	1
Kajaki	No data																		
Nauzad	1	-	1	100.0	-	-	-	-	-	-	-	-	-	-	60	-	-	-	1
Washare	No data																		
Garmser	11	11	-	-	4	36.4	1.0	-	-	-	7	63.6	1.9	1.1	-	45	-	55	10
Nadi-ali	54	38	16	29.6	12	22.2	1.0	-	-	-	26	48.1	1.5	0.8	58	73	-	72	49
Nawae-barakzae	8	3	5	62.5	-	-	-	-	-	-	3	37.5	1.0	0.7	54	-	-	30	7
Total :	76	53	23	30.3	17	22.4	1.0	-	-	-	36	47.4	1.5	0.8	59	65	-	65	69

Fertiliser use 1985

Rainfed Wheat

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	No data																		
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	11	-	11	100.0	-	-	-	-	-	-	-	-	-	-	49	-	-	-	11
Kajaki	No data																		
Nauzad	3	-	3	100.0	-	-	-	-	-	-	-	-	-	-	52	-	-	-	3
Washare	No data																		
Total :	14	-	14	100.0	-	-	-	-	-	-	-	-	-	-	50	-	-	-	14

(i) Number of farmers given data for crop(1), crop(2) and crop(3)

Fertiliser use 1985

Maize

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	1	-	1	100.0	-	-	-	-	-	-	-	-	-	-	60	-	-	-	1
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	No data																		
Kajaki	No data																		
Nauzad	2	-	2	100.0	-	-	-	-	-	-	-	-	-	-	65	-	-	-	2
Washare	No data																		
Garmser	9	7	2	22.2	-	-	-	-	-	-	7	77.8	1.9	1.1	45	-	-	60	9
Nadi-ali	14	1	13	92.9	1	7.1	1.0	-	-	-	-	-	-	-	48	60	-	-	13
Nawae-barakzae	3	1	2	66.7	1	33.3	1.0	-	-	-	-	-	-	-	25	55	-	-	2
Baghran	No data																		
Deshu	No data																		
Total :	29	9	20	69.0	2	6.9	1.0	-	-	-	7	24.1	1.9	1.1	48	58	-	60	27

(i) Number of farmers given data for crop(1), crop(2) and crop(3)

Farm power 1985

Percent using or owning the following resources

Province/District	Total		Tractor		Oxen			By hand	Other means	No. of oxen owned			
	fmr(i)	fmr(ii)	owned	hired	owned	shared	hired			1 oxen	2 oxen	3 oxen	4+ oxen
Helmand :													
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	1	-	100	-	-	-	-	-	-	-	-	-
Reg	No data												
Sarbon Qala	No data												
Mosa Qala	20	20	5	25	30	-	-	95	-	-	20	-	5
Kajaki	No data												
Nauzad	13	13	-	31	8	-	-	92	-	-	8	-	-
Washare	No data												
Garmser	12	11	18	36	45	9	-	-	-	-	45	-	9
Nadi-ali	66	55	45	55	4	-	5	-	-	4	4	-	-
Nawae-barakzae	9	8	50	50	-	-	-	-	-	-	-	-	-
Baghran	No data												
Deshu	No data												
Total :	122	108	30	44	13	1	3	29	-	2	11	-	2

(i) Number of farmers questioned in Afghanistan
(ii) Number of farmers given data on farmpower

Constraints on crop production 1985

Irrigated Wheat

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	16	-	24	12	48	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	16	-	24	-	48	-	12	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	24	-	-	48	-	-	-	-	-	16	-	12	-	-	-
Washare	No data																
Garmser	12	19	-	7	9	47	3	4	-	4	-	4	-	3	-	-	-
Nadi-ali	66	21	-	9	7	51	1	1	1	-	-	6	-	2	-	1	-
Nawae-barakzae	9	23	-	8	7	49	-	5	-	4	-	5	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	21	-	9	7	50	1	2	-	1	-	5	-	2	-	1	-

Constraints on crop production 1985

Rainfed Wheat

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	23	6	-	50	3	-	-	1	-	5	-	5	1	6	-
Kajaki	No data																
Nauzad	13	-	24	8	-	59	-	-	-	-	-	4	-	-	-	6	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	23	6	-	52	3	-	-	1	-	5	-	3	1	6	-

Constraints on crop production 1985

Maize

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	12	-	24	16	48	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	19	-	21	-	51	-	-	-	-	-	9	-	-	-	-	-
Washare	No data																
Garmser	12	19	-	8	5	50	8	1	1	-	-	4	-	-	-	1	2
Nadi-ali	66	16	-	10	17	51	3	2	-	1	-	1	-	-	-	-	-
Nawae-barakzae	9	26	-	6	9	53	-	-	-	-	-	6	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	18	-	10	11	51	4	1	-	-	-	3	-	-	-	-	1

Constraints on crop production 1985

Barley

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Constraints on crop production 1985

Rice

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Yields 1987

Nahre Saraj

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	1	100	7.0	100	50
Cotton	1	100	4.0	100	80
Alfalfa	1	100	1.0	-	-

1 farmers questioned in Afghanistan

Yields 1987

Mosa Qala

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Alfalfa	18	90	1.4	-	-
Rainfed Wheat	11	55	34.2	50	45
Grape	4	20	4.3	15	77
Almond	4	20	5.5	10	50
Maize	3	15	1.0	-	-
Irrigated Wheat	1	5	9.0	5	50
Vegetable	1	5	1.0	-	-
Barley	1	5	1.0	-	-
Apricot	1	5	3.0	5	120

20 farmers questioned in Afghanistan

Yields 1987

Nauzad

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Alfalfa	9	69	1.3	-	-
Almond	7	54	3.3	23	52
Maize	3	23	9.3	8	35
Grape	3	23	7.3	23	60
Rainfed Wheat	2	15	25.0	15	58
Apricot	2	15	3.0	-	-
Irrigated Wheat	1	8	6.0	8	40

13 farmers questioned in Afghanistan

Yields 1987

Garmser

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	10	83	10.8	83	54
Maize	10	83	4.5	42	54
Alfalfa	9	75	1.4	-	-
Cotton	5	42	4.2	8	70
Mung Bean	4	33	6.0	8	25

12 farmers questioned in Afghanistan

Yields 1987

Nadi-ali

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	52	79	7.6	79	68
Alfalfa	44	67	1.3	-	-
Cotton	42	64	5.5	3	80
Maize	22	33	2.6	6	53
Bean	14	21	2.3	5	38
Mung Bean	13	20	2.9	3	43
Melon	2	3	2.0	3	85
Barley	2	3	1.0	-	-

66 farmers questioned in Afghanistan

Yields 1987

Nawae-barakzae

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	8	89	30.0	89	37
Alfalfa	7	78	1.4	-	-
Cotton	5	56	9.7	11	90
Maize	3	33	2.7	11	40
Mung Bean	1	11	1.0	-	-
Bean	1	11	7.0	-	-

9 farmers questioned in Afghanistan

Fertiliser use 1987

Irrigated Wheat

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	1	1	-	-	1	100.0	1.0	-	-	-	-	-	-	-	-	50	-	-	1
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	1	-	1	100.0	-	-	-	-	-	-	-	-	-	-	50	-	-	-	1
Kajaki	No data																		
Nauzad	1	-	1	100.0	-	-	-	-	-	-	-	-	-	-	40	-	-	-	1
Washare	No data																		
Garmser	10	9	1	10.0	2	20.0	1.0	-	-	-	7	70.0	1.9	1.1	40	70	-	51	10
Nadi-ali	52	43	9	17.3	6	11.5	1.0	-	-	-	37	71.2	1.5	0.8	58	68	-	71	52
Nawae-barakzae	8	4	4	50.0	-	-	-	-	-	-	4	50.0	1.0	0.9	39	-	-	35	8
Total :	73	57	16	21.9	9	12.3	1.0	-	-	-	48	65.8	1.5	0.9	51	67	-	65	73

Fertiliser use 1987

Rainfed Wheat

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	No data																		
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	11	-	11	100.0	-	-	-	-	-	-	-	-	-	-	41	-	-	-	10
Kajaki	No data																		
Nauzad	2	-	2	100.0	-	-	-	-	-	-	-	-	-	-	58	-	-	-	2
Washare	No data																		
Total :	13	-	13	100.0	-	-	-	-	-	-	-	-	-	-	43	-	-	-	12

Fertiliser use 1987

Maize

Farmers questioned in Afghanistan

Province/District	No. fmrs growing crop (i)	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)				No frms given yield data
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey	
Helmand :																			
Bust	No data																		
Nahre Saraj	No data																		
Reg	No data																		
Sarbon Qala	No data																		
Mosa Qala	No data																		
Kajaki	No data																		
Nauzad	2	-	2	100.0	-	-	-	-	-	-	-	-	-	-	18	-	-	-	1
Washare	No data																		
Garmser	9	7	2	22.2	1	11.1	0.5	-	-	-	6	66.7	1.8	1.1	50	-	-	28	5
Nadi-ali	14	10	4	28.6	1	7.1	1.0	-	-	-	9	64.3	1.0	0.8	40	-	-	6	4
Nawae-barakzae	2	1	1	50.0	-	-	-	-	-	-	1	50.0	0.5	0.5	-	-	-	40	1
Baghran	No data																		
Deshu	No data																		
Total :	27	18	9	33.3	2	7.4	0.8	-	-	-	16	59.3	1.3	0.9	33	-	-	16	11

(i) Number of farmers given data for crop(1), crop(2) and crop(3)

Farm power 1987

Percent using or owning the following resources

Province/District	Total		Tractor		Oxen			By hand	Other means	No. of oxen owned			
	fmr(i)	fmr(ii)	owned	hired	owned	shared	hired			1 oxen	2 oxen	3 oxen	4+ oxen
Helmand :													
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	1	-	100	-	-	-	-	-	-	-	-	-
Reg	No data												
Sarbon Qala	No data												
Mosa Qala	20	20	5	25	30	-	-	95	-	-	25	-	-
Kajaki	No data												
Nauzad	13	13	-	23	8	-	-	92	-	-	8	-	-
Washare	No data												
Garmser	12	10	30	30	40	-	-	-	-	10	30	-	-
Nadi-ali	66	52	33	67	4	-	2	-	-	2	4	-	-
Nawae-barakzae	9	8	50	50	-	-	-	-	-	-	-	-	-
Baghran	No data												
Deshu	No data												
Total :	122	104	24	49	13	-	1	30	-	2	11	-	-

(i) Number of farmers questioned in Afghanistan
(ii) Number of farmers given data on farmpower

Constraints on crop production 1987

Irrigated Wheat

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	16	-	24	12	48	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	16	-	24	-	48	-	12	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	12	-	-	48	-	-	-	-	-	16	-	24	-	-	-
Washare	No data																
Garmser	12	22	-	7	9	48	3	5	-	1	-	3	2	-	-	-	-
Nadi-ali	66	22	-	10	6	50	1	2	1	1	-	5	-	1	-	1	-
Nawae-barakzae	9	23	-	9	8	48	-	5	-	2	-	6	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	21	-	10	6	50	1	3	1	1	-	5	-	1	-	-	-

Constraints on crop production 1987

Rainfed Wheat

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	24	6	-	51	2	-	-	2	-	3	-	5	1	6	-
Kajaki	No data																
Nauzad	13	-	22	11	-	55	-	-	-	3	-	4	-	-	-	6	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	23	7	-	52	2	-	-	3	-	3	-	3	1	6	-

Constraints on crop production 1987

Maize

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	24	-	17	-	59	-	-	-	-	-	-	-	-	-	-	-
Washare	No data																
Garmser	12	19	-	8	6	50	8	-	1	-	-	6	-	-	-	1	-
Nadi-ali	66	20	-	5	8	53	4	2	-	1	-	5	-	-	-	2	-
Nawae-barakzae	9	24	-	16	6	48	-	-	-	6	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	20	-	8	7	52	5	1	-	1	-	4	-	-	-	2	-

Constraints on crop production 1987

Barley

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Constraints on crop production 1987

Rice

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned in Afg.	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																	
Bust	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nahre Saraj	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reg	No data																
Sarbon Qala	No data																
Mosa Qala	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kajaki	No data																
Nauzad	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washare	No data																
Garmser	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nadi-ali	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawae-barakzae	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baghran	No data																
Deshu	No data																
Total :	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ANNEX C - National Survey Data

Part Two - 1989 National Survey Data

Helmand

The data is organised by district. For each district there are the following tables:

Household size

Farm size

Tenure and farm size

Yields

Fertiliser and farm power

Constrains on crop production

Livestock

Livestock
Oxen, sheep and goats, cows and calves

Livestock
Horses, donkeys and camels

The districts covered by the survey in this province are:

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Bust	22	17	9	3	5	2.2

Distribution of people per household

		Percentage of people in each range								
District	Number of people questioned	1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Bust	22	0	9	18	5	32	0	14	9	14

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
		av.jbs	% fmrs	av.jbs	% fmrs	irrig av.jbs	rain av.jbs	% fmrs	irrigated (i) av.jbs	% fmrs	rainfed (ii) av.jbs	% fmrs	farm av.jbs
Cropped Bust	22	31.3	100		0			0	31.3	100		0	31.3
Uncropped Bust	22	22.3	77		0			0	22.3	77		0	22.3
Total Bust	22	48.5	100		0			0	48.5	100		0	48.5

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	>100
Bust	27	23	9	14	9	5	9	0	0	0	5

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Bust	22	40.1	95		0		0		0	225.0	5

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Bust	22	23.3	95		0		0		0	200.0	5

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Bust

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	22	100	17	100	93
Maize	21	95	17	0	0
Melon	17	77	8	0	0
Alfalfa	14	64	2	0	0
Cotton	10	45	14	0	0
Grape	4	18	3	0	0
Pomegranate	4	18	3	0	0

22 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	0	5	14	14	23	9	36

(i) Number of farmers given data for crop(1), crop(2) and crop(3)

Fertiliser use 1989

Bust

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	22	22	1	5	1	5	1.6	0	0	0.0	20	91	1.6	0.8	33	90	0	97

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

	Total		Tractor	Oxen					
District	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Bust	22	22	64	0	27	5	14	5	5

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Bust	4	0	15	19	31	11	2	2	5	0	4	0	4	2	0	2

Problems as percieved by farmers 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Bust	4	0	15	19	31	12	1	1	5	0	4	0	3	2	0	2

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Bust	22	27	2.3	73	1.9	73	2.6	68	10.8	0		0		59	1.7

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Bust	22	73	5	14	5	5	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 – 25	26 – 50	51 – 75	76 – 100	101 – 125	126 – 150	>150
Bust	22	32	64	0	0	5	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Bust	22	27	27	41	0	0	0	5	0

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Bust	22	27	18	27	14	5	5	0	5

Livestock

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Bust	22	100	0	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Bust	22	41	32	18	5	5	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Bust	22	100	0	0	0	0	0	0	0

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Reg	28	14	7	3	5	2.6

Distribution of people per household

		Percentage of people in each range								
District	Number of people questioned	1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Reg	28	0	18	14	25	11	11	0	4	18

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
						irrig	rain		irrigated (i)		rainfed (ii)		farm
		av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs
Cropped Reg	28	14.6	100		0			0	14.6	100		0	14.6
Uncropped Reg	28	11.5	46		0			0	11.5	46		0	11.5
Total Reg	28	20.0	100		0			0	20.0	100		0	20.0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	>100
Reg	39	36	14	4	7	0	0	0	0	0	0

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Reg	28	20.4	96		0		0		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Reg	28	14.9	96		0		0		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Reg

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	28	100	10	100	78
Maize	27	96	10	0	0
Alfalfa	21	75	2	0	0
Melon	8	29	5	0	0
Mung Bean	4	14	5	0	0
Fruit	3	11	1	0	0
Grape	1	4	3	0	0
Pomegranate	1	4	4	0	0

28 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	0	7	11	36	21	18	7

Fertiliser use 1989

Reg

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	28	28	1	4	4	14	1.3	0	0	0.0	23	82	1.1	0.5	50	77	0	79

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

District	Total		Tractor	Oxen					
	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Reg	28	28	64	7	29	0	29	0	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Reg	2	0	21	30	2	15	11	0	1	1	4	0	2	4	2	5

Problems as percieved by farmers 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Reg	1	0	22	28	8	15	8	0	1	1	4	0	3	3	2	5

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Reg	28	29	2.0	93	1.5	89	1.7	46	7.0	0		0		89	1.7

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Reg	28	71	0	29	0	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 - 25	26 - 50	51 - 75	76 - 100	101 - 125	126 - 150	>150
Reg	28	54	46	0	0	0	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Reg	28	7	54	29	11	0	0	0	0

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Reg	28	11	36	43	11	0	0	0	0

Livestock

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Reg	28	100	0	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Reg	28	11	50	21	11	7	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Reg	28	100	0	0	0	0	0	0	0

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Sarbon Qala	23	18	10	4	5	3.4

Distribution of people per household

		Percentage of people in each range								
District	Number of people questioned	1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Sarbon Qala	23	0	0	5	50	0	5	10	10	20

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
						irrig	rain		irrigated (i)		rainfed (ii)		farm
		av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs
Cropped Sarbon Qala	23	14.3	100		0			0	14.3	100		0	14.3
Uncropped Sarbon Qala	23	38.8	39		0			0	38.8	39		0	38.8
Total Sarbon Qala	23	29.5	100		0			0	29.5	100		0	29.5

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	>100
Sarbon Qala	39	35	9	13	4	0	0	0	0	0	0

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Sarbon Qala	23	14.4	96		0	13.0	4		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land both under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Sarbon Qala	23	30.2	96		0	13.0	4		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Sarbon Qala

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	23	100	11	87	82
Maize	23	100	10	0	0
Alfalfa	7	30	2	0	0
Fruit	7	30	3	0	0
Pomegranate	5	22	4	0	0
Melon	4	17	6	9	290
Grape	1	4	2	0	0
Clover	1	4	3	0	0

23 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	0	13	4	13	13	22	13

Fertiliser use 1989

Sarbon Qal

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	23	23	0	0	2	9	1.4	0	0	0.0	21	91	1.4	0.6	0	55	0	104

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

District	Total		Tractor	Oxen					
	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Sarbon Qala	23	23	52	4	43	22	22	0	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Sarbon Qala	11	0	22	20	1	17	9	0	7	3	2	0	1	0	3	3

Problems as percieved by farmers in 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Sarbon Qala	13	0	18	19	9	15	9	1	5	3	1	0	2	0	2	4

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Sarbon Qala	23	43	1.5	96	1.6	78	1.8	78	7.4	17	1.0	0		61	1.9

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Sarbon Qala	23	57	22	22	0	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 – 25	26 – 50	51 – 75	76 – 100	101 – 125	126 – 150	>150
Sarbon Qala	23	22	74	4	0	0	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Sarbon Qala	23	4	39	52	4	0	0	0	0

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Sarbon Qala	23	22	35	30	9	0	4	0	0

Livestock 1989

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Sarbon Qala	23	83	17	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Sarbon Qala	23	39	13	43	4	0	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Sarbon Qala	23	100	0	0	0	0	0	0	0

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Mosa Qala	21	11	7	3	2	2.5

Distribution of people per household

		Percentage of people in each range								
District	Number of people questioned	1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Mosa Qala	21	0	14	38	19	5	10	14	0	0

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
		av.jbs	% fmrs	av.jbs	% fmrs	irrig av.jbs	rain av.jbs	% fmrs	irrigated (i) av.jbs	% fmrs	rainfed (ii) av.jbs	% fmrs	farm av.jbs
Cropped Mosa Qala	21	14.6	100		0			0	14.6	100		0	14.6
Uncropped Mosa Qala	21	4.3	86		0	5.0	15.0	5	4.3	90	15.0	5	5.1
Total Mosa Qala	21	18.0	95		0	30.0	15.0	5	18.5	100	15.0	5	19.2

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	>100
Mosa Qala	33	43	14	10	0	0	0	0	0	0	0

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Mosa Qala	21	18.0	86	9.0	5	35.5	10		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Mosa Qala	21	13.2	86	8.0	5	30.5	10		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Mosa Qala

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	21	100	11	100	101
Maize	21	100	10	0	0
Alfalfa	12	57	2	0	0
Grape	8	38	3	19	95
Tobacco	7	33	2	10	80
Mung Bean	6	29	3	0	0
Almond	3	14	2	14	48
Fruit	2	10	2	0	0

21 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	0	0	0	14	33	43	10

Fertiliser use 1989

Mosa Qala

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	21	21	0	0	0	0	0.0	0	0	0.0	21	100	0.9	0.4	0	0	0	100
Grape	8	4	0	0	1	25	2.0	0	0	0.0	3	75	0.7	0.5	0	120	0	89

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

District	Total fmrs (i)	Total fmrs (ii)	Tractor hired	Oxen hired	Oxen owned	1 oxen	2 oxen	3 oxen	4+ oxen
Mosa Qala	21	21	29	5	76	33	43	0	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Mosa Qala	14	0	13	19	0	29	12	0	0	1	3	0	1	0	7	0

Problems as percieved by farmers 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Mosa Qala	15	0	10	19	0	32	13	1	0	1	2	0	2	0	4	0

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Mosa Qala	21	76	1.6	95	1.9	100	2.5	86	14.0	10	1.0	0		95	1.9

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Mosa Qala	21	24	33	43	0	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 – 25	26 – 50	51 – 75	76 – 100	101 – 125	126 – 150	>150
Mosa Qala	21	14	76	10	0	0	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Mosa Qala	21	5	29	52	14	0	0	0	0

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Mosa Qala	21	0	29	52	14	0	0	0	5

Livestock

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Mosa Qala	21	90	10	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Mosa Qala	21	5	29	48	19	0	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Mosa Qala	21	100	0	0	0	0	0	0	0

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Kajaki	19	13	8	2	4	2.4

Distribution of people per household

		Percentage of people in each range								
District	Number of people questioned	1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Kajaki	19	0	6	25	25	31	0	13	0	0

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
		av.jbs	% fmrs	av.jbs	% fmrs	irrig av.jbs	rain av.jbs	% fmrs	irrigated (i) av.jbs	% fmrs	rainfed (ii) av.jbs	% fmrs	farm av.jbs
Cropped Kajaki	19	11.9	100		0			0	11.9	100		0	11.9
Uncropped Kajaki	19	15.6	74		0			0	15.6	74		0	15.6
Total Kajaki	19	23.5	100		0			0	23.5	100		0	23.5

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	>100
Kajaki	37	58	5	0	0	0	0	0	0	0	0

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Kajaki	19	24.6	84		0	17.7	16		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Kajaki	19	12.4	84		0	9.7	16		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Kajaki

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	19	100	10	100	82
Maize	17	89	7	0	0
Fruit	8	42	2	0	0
Alfalfa	7	37	2	0	0
Grape	2	11	4	5	250
Almond	2	11	3	5	53
Mung Bean	1	5	5	0	0
Pomegranate	1	5	1	0	0

19 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	0	5	21	32	5	11	21

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Kajaki	19	58	1.5	100	1.3	95	1.1	89	10.6	0		0		84	1.6

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Kajaki	19	42	26	32	0	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 - 25	26 - 50	51 - 75	76 - 100	101 - 125	126 - 150	>150
Kajaki	19	11	84	5	0	0	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Kajaki	19	0	79	16	5	0	0	0	0

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Kajaki	19	5	84	11	0	0	0	0	0

Livestock

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Kajaki	19	100	0	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Kajaki	19	16	42	37	5	0	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Kajaki	19	100	0	0	0	0	0	0	0

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Nauzad	34	17	10	3	4	4.0

Distribution of people per household

District	Number of people questioned	Percentage of people in each range								
		1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Nauzad	34	3	9	18	12	21	9	3	6	18

Fertiliser use 1989

Kajaki

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	19	19	0	0	1	5	0.3	0	0	0.0	18	95	1.0	0.4	0	26	0	87
Grape	2	1	0	0	0	0	0.0	1	100	3.3	0	0	0.0	0.0	0	0	250	0

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

District	Total		Tractor	Oxen					
	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Kajaki	19	19	37	11	58	26	32	0	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Kajaki	29	0	27	14	0	12	8	0	0	2	5	0	1	0	2	1

Problems as percieved by farmers 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Kajaki	33	0	20	12	15	9	5	0	0	2	3	0	1	0	0	1

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
						irrig	rain		irrigated (i)		rainfed (ii)		farm
		av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs
Cropped Nauzad	34	25.5	97	60.0	3			0	25.5	97	60.0	3	26.5
Uncropped Nauzad	34	53.7	85	40.0	3	37.0	300.0	3	53.2	88	170.0	6	62.4
Total Nauzad	34	74.2	94	100.0	3	60.0	300.0	3	73.8	97	200.0	6	83.4

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	>100
Nauzad	24	41	15	9	0	3	0	0	3	0	3

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Nauzad	34	27.1	97		0	7.0	3		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land both under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Nauzad	34	85.5	97		0	15.0	3		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Nauzad

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	33	97	12	94	39
Almond	15	44	9	44	36
Maize	9	26	10	0	0
Fruit	9	26	3	3	8
Alfalfa	6	18	1	0	0
Pomegranate	4	12	2	0	0
Melon	3	9	6	6	116
Apricot	2	6	2	3	60
Rainfed Wheat	1	3	30	3	7
Mung Bean	1	3	6	0	0
Sesame	1	3	20	0	0
Apple	1	3	1	0	0

34 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	15	33	30	12	3	0	6

Fertiliser use 1989

Nauzad

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	33	33	8	24	10	30	0.2	0	0	0.0	15	45	0.3	0.2	33	34	0	56

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

	Total		Tractor	Oxen					
District	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Nauzad	34	34	38	9	47	12	35	0	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers in 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Nauzad	36	2	12	16	1	15	4	0	2	3	3	0	5	0	2	0

Problems as percieved by farmers in 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Nauzad	37	2	12	15	1	14	4	0	1	4	3	0	5	0	1	0

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Nauzad	34	47	1.8	91	1.7	88	1.9	68	43.3	9	1.7	12	3.5	88	1.7

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Nauzad	34	53	12	35	0	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 – 25	26 – 50	51 – 75	76 – 100	101 – 125	126 – 150	>150
Nauzad	34	32	53	6	0	0	0	0	9

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Nauzad	34	9	56	24	3	6	0	0	3

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Nauzad	34	12	53	21	6	0	3	3	3

Livestock 1989

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Nauzad	34	91	3	6	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Nauzad	34	12	47	29	6	3	0	3	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Nauzad	34	88	6	3	0	0	0	0	3

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Nadi-ali	67	17	8	4	5	2.4

Distribution of people per household

District	Number of people questioned	Percentage of people in each range								
		1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Nadi-ali	67	0	8	12	22	18	5	8	8	20

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
						irrig	rain		irrigated (i)		rainfed (ii)		farm
		av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs
Cropped Nadi-ali	67	26.0	100		0			0	26.0	100		0	26.0
Uncropped Nadi-ali	67	17.3	87		0			0	17.3	87		0	17.3
Total Nadi-ali	67	41.0	100		0			0	41.0	100		0	41.0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	>100
Nadi-ali	10	21	36	19	4	1	3	1	1	0	1

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Nadi-ali	67	38.5	82		0	54.8	9		0	49.7	9

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Nadi-ali	67	23.5	82		0	41.0	9		0	34.3	9

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Nadi-ali

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	66	99	15	97	64
Maize	57	85	14	0	0
Alfalfa	42	63	2	0	0
Cotton	40	60	8	0	0
Melon	24	36	7	0	0
Bean	12	18	8	0	0
Mung Bean	10	15	6	0	0
Grape	7	10	3	0	0
Pomegranate	5	7	3	0	0
Clover	3	4	8	1	1
Carrot	1	1	1	0	0

67 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	3	12	29	27	15	8	5

Fertiliser use 1989

Nadi-ali

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Bags applied/jb Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	66	66	1	2	18	27	1.3	0	0	0.0	47	71	0.5	0.3	11	54	0	71

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

District	Total		Tractor	Oxen					
	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Nadi-ali	67	67	67	0	9	0	7	1	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Nadi-ali	28	0	17	18	3	11	5	2	1	0	2	0	5	3	0	5

Problems as percieved by farmers 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Nadi-ali	27	0	18	18	3	12	4	2	1	0	2	0	5	3	0	5

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Nadi-ali	67	9	2.2	91	2.0	84	2.9	75	6.6	0		0		55	1.7

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Nadi-ali	67	91	0	7	1	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 - 25	26 - 50	51 - 75	76 - 100	101 - 125	126 - 150	>150
Nadi-ali	67	25	72	3	0	0	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Nadi-ali	67	9	37	31	10	7	3	0	1

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Nadi-ali	67	16	19	34	9	10	1	3	6

Livestock

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Nadi-ali	67	100	0	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Nadi-ali	67	45	30	15	7	3	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Nadi-ali	67	100	0	0	0	0	0	0	0

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Nawae-barakza	29	16	7	3	6	2.2

Distribution of people per household

		Percentage of people in each range								
District	Number of people questioned	1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Nawae-barakza	29	0	0	24	28	17	3	10	0	17

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
						irrig	rain		irrigated (i)		rainfed (ii)		farm
		av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs
Cropped													
Nawae-barakz	29	22.2	100		0			0	22.2	100		0	22.2
Uncropped													
Nawae-barakz	29	32.8	97		0			0	32.8	97		0	32.8
Total													
Nawae-barakz	29	53.9	100		0			0	53.9	100		0	53.9

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	>100
Nawae-barakz	7	38	24	17	7	3	3	0	0	0	0

Tenure and farm size 1989

Land under cultivation

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Nawae-barakz	29	52.2	90		0	67.5	7		0	70.0	3

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land under cultivation and uncultivated

District	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Nawae-barakz	29	20.6	90		0	25.0	7		0	60.0	3

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Nawae–barakza

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	29	100	19	100	38
Maize	20	69	8	0	0
Alfalfa	13	45	2	0	0
Grape	7	24	3	0	0
Cotton	4	14	8	0	0
Mung Bean	4	14	11	0	0
Pomegranate	4	14	2	0	0
Melon	1	3	4	0	0

29 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wh	14	34	28	14	7	0	3

Fertiliser use 1989

Nawae-bara

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	29	29	1	3	13	45	0.7	0	0	0.0	15	52	0.8	0.4	13	45	0	44

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

	Total		Tractor	Oxen					
District	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Nawae-barakz	29	29	72	0	7	0	7	0	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Nawae-barakz	23	0	13	13	28	10	2	3	0	0	0	0	3	3	0	1

Problems as percieved by farmers 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Nawae-barakz	23	0	13	14	28	10	2	3	0	0	0	0	2	3	0	1

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Nawae-barakz	29	7	2.0	66	1.5	69	1.9	55	4.6	0		0		41	1.2

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Nawae-barakz	29	93	0	7	0	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 - 25	26 - 50	51 - 75	76 - 100	101 - 125	126 - 150	>150
Nawae-barakz	29	45	55	0	0	0	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Nawae-barakz	29	34	38	24	0	3	0	0	0

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Nawae-barakz	29	31	24	28	17	0	0	0	0

Livestock

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Nawae-barakz	29	100	0	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Nawae-barakz	29	59	34	7	0	0	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Nawae-barakz	29	100	0	0	0	0	0	0	0

Household size 1989

Average number of people, adults, youths, young children and farm workers per household

District	Number of people questioned	Av. no. of persons per household	Av. no. of adults per household	Av. no. 7–15 yrs per household	Av. no. below 7 yrs per household	Av. no. of farm workers per household
Baghran	26	12	7	2	3	2.9

Distribution of people per household

		Percentage of people in each range								
District	Number of people questioned	1 0 – 3	2 4 – 6	3 7 – 9	4 10 – 12	5 13 – 15	6 16 – 18	7 19 – 21	8 22 – 24	9 >24
Baghran	26	4	8	27	27	4	15	8	4	4

Farm size 1989

District	number fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
						irrig	rain		irrigated (i)		rainfed (ii)		farm
		av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs	% fmrs	av.jbs
Cropped Baghran	26	9.0	100		0			0	9.0	100		0	9.0
Uncropped Baghran	26	10.8	69		0			0	10.8	69		0	10.8
Total Baghran	26	16.5	100		0			0	16.5	100		0	16.5

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Frequency distribution of irrigated cropped land

District	Percentage of farmers in each range (areas in jeribs)										
	1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	>100
Baghran	73	15	4	8	0	0	0	0	0	0	0

Tenure and farm size 1989

Land under cultivation

Province	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Baghran	26	8.8	96	15.0	4		0		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Land both under cultivation and uncultivated

Province	number fmrs questioned	only owner occupiers		only sharecroppers		only tenants		owner occupiers & sharecroppers		owner occupiers & tenants	
		av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers	av. jerib per farm	percent farmers
Baghran	26	16.0	96	27.0	4		0		0		0

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Yields 1989

Baghran

Crop	No. fmrs growing crop	percentage who grew crop	average area jeribs	percentage of fmrs giving yield data	average yield seers/jerib
Irrigated Wheat	26	100	8	100	43
Maize	23	88	4	0	0
Fruit	10	38	2	0	0
Alfalfa	1	4	1	0	0
Pomegranate	1	4	2	0	0
Apricot	1	4	1	0	0
Almond	1	4	5	4	19

26 farmers questioned

Frequency distribution of cereal yields

	Percentage of farmers in each range (seers/jeribs)						
Crop	1–19	20–39	40–59	60–79	80–99	100–120	>120
Irrigated Wheat	0	46	19	27	4	0	0

Fertiliser use 1989

Baghran

	No. Fmrs Growing Crop		No Fert.		Only White Fert.(iii)			Only Grey Fert.(iv)			Grey & White Fert.				Yield (Seers/Jerib)			
	(i)	(ii)	No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags applied/jb White	Bags applied/jb Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wh	26	26	3	12	8	31	0.4	0	0	0.0	15	58	0.7	0.3	72	39	0	52

Note:
(i) The number of farmers who stated they grew crop.
(ii) The number of farmers who stated they grew crop and gave information on crop area. This column provides base for calculations.
(iii) Urea (46% N) is commonly known as white fertiliser in Afghanistan.
(iv) DAP (18% N and 46% P) is commonly known as grey fertiliser in Afghanistan.

Farm power 1989

Percent using or owning the following resources

	Total		Tractor	Oxen					
District	fmrs (i)	fmrs (ii)	hired	hired	owned	1 oxen	2 oxen	3 oxen	4+ oxen
Baghran	26	26	0	19	88	50	38	0	0

(i) Total numbers of farmers questioned
(ii) Numbers of farmers answering questions on farm power

Constraints on crop production

Problems as percieved by farmers in 1989

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Baghran	27	1	20	20	0	12	11	0	1	5	1	0	0	0	2	0

Problems as percieved by farmers in 1988 (1989 Survey)

District	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Improv seed	Crop protec	Labour	Flood damage	Insect	Crop disea	Animal disea	Birds	Rats	Exten-sion	Others
Baghran	29	1	19	22	0	12	10	0	1	5	1	0	0	0	0	0

Livestock

Average numbers of animals per family

District	number of farmers questioned	oxen		cows		calves		sheep & goats		horses		camels		donkeys	
		% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no	% owning	av. no
Baghran	26	88	1.4	77	1.3	65	1.4	69	14.4	8	1.0	8	1.0	65	1.4

Livestock 1989

Distribution of oxen ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of oxen:							
		none	1 oxen	2 oxen	3 oxen	4 oxen	5 oxen	6 oxen	>6 oxen
Baghran	26	12	50	38	0	0	0	0	0

Distribution of sheep and goat ownership

District	number of farmers questioned.	Percentage of farmers owning the following the number of sheep & goats:							
		none	0 – 25	26 – 50	51 – 75	76 – 100	101 – 125	126 – 150	>150
Baghran	26	31	62	4	4	0	0	0	0

Distribution of cow ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of cows:							
		none	1 cow	2 cows	3 cows	4 cows	5 cows	6 cows	>6 cows
Baghran	26	23	58	19	0	0	0	0	0

Distribution of calf ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of calves:							
		none	1 calf	2 calves	3 calves	4 calves	5 calves	6 calves	>6 calves
Baghran	26	35	46	15	4	0	0	0	0

Livestock 1989

Distribution of horse ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of horses:							
		none	1 horse	2 horses	3 horses	4 horses	5 horses	6 horses	>6 horses
Baghran	26	92	8	0	0	0	0	0	0

Distribution of donkey ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of donkeys:							
		none	1 donkey	2 donkeys	3 donkeys	4 donkeys	5 donkeys	6 donkeys	>6 donkeys
Baghran	26	35	46	15	4	0	0	0	0

Distribution of camel ownership

District	number of farmers questioned	Percentage of farmers owning the following the number of camels:							
		none	1 camel	2 camels	3 camels	4 camels	5 camels	6 camels	>6 camels
Baghran	26	92	8	0	0	0	0	0	0

ANNEX C - National Survey Data

Part Three - 1990 National Survey Data

Yields 1990

Irrigated Wheat

Province/District	No. of farmers questioned	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Helmand :						
Bust	26	26	100	14.9	100	48
Nahre Saraj	No data					
Reg	40	40	100	17.2	100	54
Sarbon Qala	49	45	92	13.6	92	66
Mosa Qala	No data					
Kajaki	1	1	100	18.0	100	59
Nauzad	42	37	88	7.6	86	45
Washare	No data					
Garmser	21	21	100	29.2	100	52
Nadi-ali	48	48	100	17.2	100	49
Nawae-barakzae	No data					
Baghran	No data					
Deshu	No data					
Total :	227	218	96	15.7	96	53

Yields 1990

Maize

Province/District	No. of farmers questioned	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Helmand :						
Bust	26	8	31	6.3	31	37
Nahre Saraj	No data					
Reg	40	37	93	16.1	90	64
Sarbon Qala	49	45	92	12.6	82	61
Mosa Qala	No data					
Kajaki	1	1	100	10.0	100	53
Nauzad	42	20	48	5.3	26	55
Washare	No data					
Garmser	21	5	24	15.4	24	39
Nadi-ali	48	6	13	9.0	13	35
Nawae-barakzae	No data					
Baghran	No data					
Deshu	No data					
Total :	227	122	54	11.9	47	59

Yields 1990

Barley

Province/District	No. of farmers questioned	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Helmand :						
Bust	26	-	-	-	-	-
Nahre Saraj	No data					
Reg	40	-	-	-	-	-
Sarbon Qala	49	2	4	3.0	-	-
Mosa Qala	No data					
Kajaki	1	-	-	-	-	-
Nauzad	42	1	2	1.0	2	40
Washare	No data					
Garmser	21	-	-	-	-	-
Nadi-ali	48	-	-	-	-	-
Nawae-barakzae	No data					
Baghran	No data					
Deshu	No data					
Total :	227	3	1	2.3	-	40

Farm size 1990

Average areas of arable, cultivated and abandoned land

Province/District	No. fmrs questioned	Avg. total arable area per fmr	Avg. arable cultivated area per fmr	Avg. abandoned area per fmr with abandoned land	% fmrs with abandoned land
Helmand :					
Bust	26	26.3	18.4	13.7	58
Nahre Saraj	No data				
Reg	40	26.1	22.0	12.7	33
Sarbon Qala	49	25.4	19.8	25.0	22
Mosa Qala	No data				
Kajaki	1	40.0	20.0	20.0	100
Nauzad	42	24.2	11.9	16.7	74
Washare	No data				
Garmser	21	93.5	49.4	66.1	67
Nadi-ali	48	30.6	20.3	13.4	77
Nawae-barakzae	No data				
Baghran	No data				
Deshu	No data				
Total :	227	32.9	21.4	21.3	54

Farm size 1990

Average areas of irrigated and rainfed land, under cultivation

Province/District	No. fmrs questioned	fmrs with irrigated land only		fmrs with rainfed land only		fmrs with both irrigated and rainfed			overall				
		av.jbs	% fmrs	av.jbs	% fmrs	irrig av.jbs	rain av.jbs	% fmrs	irrigated(i) av.jbs	% fmrs	rainfed(ii) av.jbs	% fmrs	farm av.jbs
Helmand :													
Bust	26	18.4	100	-	-	-	-	-	18.4	100	-	-	18.4
Nahre Saraj	No data												
Reg	40	22.0	100	-	-	-	-	-	22.0	100	-	-	22.0
Sarbon Qala	49	19.8	100	-	-	-	-	-	19.8	100	-	-	19.8
Mosa Qala	No data												
Kajaki	1	2 -	100	-	-	-	-	-	20.0	100	-	-	20.0
Nauzad	42	11.9	100	-	-	-	-	-	11.9	100	-	-	11.9
Washare	No data												
Garmser	21	49.4	100	-	-	-	-	-	49.4	100	-	-	49.4
Nadi-ali	48	20.3	100	-	-	-	-	-	20.3	100	-	-	20.3
Nawae-barakzae	No data												
Baghran	No data												
Deshu	No data												
Total :	227	21.4	100	-	-	-	-	-	21.4	100	-	-	21.4

(i) Average area irrigated for all those farmers who have some irrigated land
(ii) Average area rainfed for all those farmers who have some rainfed land

Farm size 1990

Frequency distribution of Total cultivated area per farm

Province/District	No. fmrs questioned	Percentage of farmers in each range (areas in jerib)										
		1 0–10	2 11–20	3 21–30	4 31–40	5 41–50	6 51–60	7 61–70	8 71–80	9 81–90	10 91–100	11 >100
Helmand :												
Bust	26	50	27	8	8	–	–	–	8	–	–	–
Nahre Saraj	No data											
Reg	40	40	23	13	8	5	8	3	–	3	–	–
Sarbon Qala	49	39	24	16	10	4	–	6	–	–	–	–
Mosa Qala	No data											
Kajaki	1	–	100	–	–	–	–	–	–	–	–	–
Nauzad	42	62	29	2	2	–	2	–	–	2	–	–
Washare	No data											
Garmser	21	19	33	14	–	5	–	5	10	–	–	14
Nadi-ali	48	27	44	23	2	–	2	–	–	–	–	2
Nawae-barakzae	No data											
Baghran	No data											
Deshu	No data											
Total :	227	40	30	13	5	2	2	2	2	1	–	2

Farm size 1990

Frequency distribution of Irrigated cultivated area per farm

Province/District	No. fmrs questioned	Percentage of farmers in each range (areas in jerib)										
		1 0–10	2 11–20	3 21–30	4 31–40	5 41–50	6 51–60	7 61–70	8 71–80	9 81–90	10 91–100	11 >100
Helmand :												
Bust	26	50	27	8	8	–	–	–	8	–	–	–
Nahre Saraj	No data											
Reg	40	40	23	13	8	5	8	3	–	3	–	–
Sarbon Qala	49	39	24	16	10	4	–	6	–	–	–	–
Mosa Qala	No data											
Kajaki	1	–	100	–	–	–	–	–	–	–	–	–
Nauzad	42	62	29	2	2	–	2	–	–	2	–	–
Washare	No data											
Garmser	21	19	33	14	–	5	–	5	10	–	–	14
Nadi–ali	48	27	44	23	2	–	2	–	–	–	–	2
Nawae–barakzae	No data											
Baghran	No data											
Deshu	No data											
Total :	227	40	30	13	5	2	2	2	2	1	–	2

Fertiliser use 1990

Irrigated Wheat

Province/District	No. fmrs growing crop	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)			
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey
Helmand :																		
Bust	26	26	-	-	10	38.5	1.3	-	-	-	16	61.5	1.0	0.4	-	50	-	48
Nahre Saraj	No data																	
Reg	40	40	-	-	6	15.0	1.1	-	-	-	34	85.0	1.0	0.4	-	35	-	56
Sarbon Qala	45	45	-	-	2	4.4	0.8	-	-	-	43	95.6	0.9	0.4	-	47	-	67
Mosa Qala	No data																	
Kajaki	1	1	-	-	-	-	-	-	-	-	1	100.0	0.3	0.2	-	-	-	59
Nauzad	37	37	8	21.6	10	27.0	0.4	1	2.7	1.1	18	48.6	0.5	0.3	44	40	66	46
Washare	No data																	
Garmser	21	21	-	-	12	57.1	0.5	-	-	-	9	42.9	0.5	0.1	-	30	-	33
Nadi-ali	48	48	-	-	17	35.4	1.4	-	-	-	31	64.6	1.3	0.4	-	45	-	52
Nawae-barakzae	No data																	
Baghran	No data																	
Deshu	No data																	
Total :	218	218	8	3.7	57	26.1	0.9	1	0.5	1.1	152	69.7	0.9	0.3	44	38	66	51

Fertiliser use 1990

Maize

Province/District	No. fmrs growing crop	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)			
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey
Helmand :																		
Bust	8	8	-	-	8	100.0	1.0	-	-	-	-	-	-	-	-	37	-	-
Nahre Saraj	No data																	
Reg	37	36	1	2.8	34	94.4	0.8	-	-	-	1	2.8	0.8	0.4	40	64	-	78
Sarbon Qala	45	40	1	2.5	30	75.0	0.8	-	-	-	9	22.5	0.8	0.3	33	63	-	82
Mosa Qala	No data																	
Kajaki	1	1	-	-	1	100.0	0.5	-	-	-	-	-	-	-	-	53	-	-
Nauzad	20	11	1	9.1	8	72.7	0.8	-	-	-	2	18.2	0.7	0.5	43	60	-	57
Washare	No data																	
Garmser	5	5	2	40.0	2	40.0	0.5	-	-	-	1	20.0	0.5	0.2	27	49	-	25
Nadi-ali	6	6	-	-	6	100.0	0.8	-	-	-	-	-	-	-	-	35	-	-
Nawae-barakzae	No data																	
Baghran	No data																	
Deshu	No data																	
Total :	122	107	5	4.7	89	83.2	0.8	-	-	-	13	12.2	0.8	0.3	32	60	-	76

Fertiliser use 1990

Barley

Province/District	No. fmrs growing crop	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)			
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey
Helmand :																		
Bust	No data																	
Nahre Saraj	No data																	
Reg	No data																	
Sarbon Qala	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mosa Qala	No data																	
Kajaki	No data																	
Nauzad	1	1	1	100.0	-	-	-	-	-	-	-	-	-	-	40	-	-	-
Washare	No data																	
Garmser	No data																	
Nadi-ali	No data																	
Nawae-barakzae	No data																	
Baghran	No data																	
Deshu	No data																	
Total :	3	1	1	100.0	-	-	-	-	-	-	-	-	-	-	40	-	-	-

Farm power 1990

Percent using or owning the following resources

Province/District	Total		Tractor			Oxen				Other means	No. of oxen owned			
	fmr(i)	fmr(ii)	owned	hired	borrowed	owned	shared	hired	borrowed		1 oxen	2 oxen	3 oxen	4+ oxen
Helmand :														
Bust	26	26	8	42	-	23	19	4	4	19	19	23	-	-
Nahre Saraj	No data													
Reg	40	40	30	55	3	10	3	-	-	30	18	10	-	-
Sarbon Qala	49	49	18	51	-	20	12	8	-	57	14	22	-	-
Mosa Qala	No data													
Kajaki	1	1	-	-	-	-	100	-	-	100	100	-	-	-
Nauzad	42	42	12	48	-	2	12	29	-	81	17	2	-	-
Washare	No data													
Garmser	21	21	29	62	-	5	-	10	-	14	-	5	-	-
Nadi-ali	48	47	17	62	4	15	4	-	-	19	4	15	-	-
Nawae-barakzae	No data													
Baghran	No data													
Deshu	No data													
Total :	227	226	19	53	1	13	9	8	-	41	13	13	-	-

(i) Total number of farmers questioned
(ii) Number of farmers answering on farm power

Farm power 1990

Percent of farmers using only the following individual or combination of methods for field caltivations

Province/District	Total		Only one method								Combination of methods										
			Tractor			Oxen					Hired Tractor with					Other with					
	fmr(i)	fmr(ii)	owned	hired	borrowed	owned	shared	hired	borrowed	Other means	owned oxen	shared oxen	hired oxen	borrowed oxen		owned tractor	hired tractor	owned oxen	shared oxen	hired oxen	borrowed oxen
Helmand :																					
Bust	26	26	4	27	-	23	19	4	4	-	-	-	-	-		4	15	-	-	-	-
Nahre Saraj	No data																				
Reg	40	40	15	45	3	5	3	-	-	-	-	-	-	-		15	10	5	-	-	-
Sarbon Qala	49	49	2	16	-	6	8	4	-	2	4	2	-	-		16	22	8	-	2	-
Mosa Qala	No data																				
Kajaki	1	1	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	100	-	-
Nauzad	42	42	5	2	-	2	-	7	-	-	-	-	-	-		5	45	-	10	21	-
Washare	No data																				
Garmser	21	21	19	52	-	-	-	10	-	-	5	-	-	-		10	5	-	-	-	-
Nadi-ali	48	47	11	51	2	13	2	-	-	-	-	2	-	-		6	9	2	-	-	-
Nawae-barakzae	No data																				
Baghran	No data																				
Deshu	No data																				
Total :	227	226	8	31	1	8	5	4	-	-	1	1	-	-		10	19	3	2	4	-

(i) Total number of farmers questioned
(ii) Number of farmers answering on farm power

Livestock 1990

Average numbers of animals per family

Province/District	No. fmrs questioned	Oxen		Cows & Calves		Sheep & Goats		Horses		Camels		Donkeys	
		% owning	avg.no	% owning	avg.no	% owning	avg.no	% owning	avg.no	% owning	avg.no	% owning	avg.no
Helmand :													
Bust	26	42	1.5	77	3.0	77	8.1	8	1.0	-	-	73	1.2
Nahre Saraj	No data												
Reg	40	28	1.4	93	3.7	65	8.0	8	1.0	-	-	63	2.1
Sarbon Qala	49	37	1.6	100	4.4	69	14.6	16	1.1	-	-	71	1.9
Rosa Qala	No data												
Kajaki	1	100	1.0	100	2.0	100	2.0	-	-	-	-	100	2.0
Nauzad	42	19	1.1	83	2.5	62	13.0	-	-	2	1.0	64	1.3
Washare	No data												
Garmser	21	5	2.0	81	3.1	81	11.3	-	-	5	3.0	52	1.4
Nadi-ali	48	19	1.8	88	4.0	65	6.6	10	1.0	-	-	46	1.5
Nawae-barakzae	No data												
Baghran	No data												
Deshu	No data												
Total :	227	26	1.5	89	3.6	68	10.3	8	1.1	1	2.0	62	1.6

Livestock 1990

Distribution of Oxen ownership

Province/District	No. of farmer questioned	Percentage of farmers owning the following number of Oxen: None	1 Oxen	2 Oxen	3 Oxen	4 Oxen	5 Oxen	6 Oxen	>6 Oxen
Helmand :									
Bust	26	58	19	23	-	-	-	-	-
Nahre saraj	No data								
Reg	40	73	18	10	-	-	-	-	-
Sarbon qala	49	63	14	22	-	-	-	-	-
Mosa qala	No data								
Kajaki	1	-	100	-	-	-	-	-	-
Nauzad	42	81	17	2	-	-	-	-	-
Washare	No data								
Garmser	21	95	-	5	-	-	-	-	-
Nadi-ali	48	81	4	15	-	-	-	-	-
Nawae-barakzae	No data								
Baghran	No data								
Deshu	No data								
Total :	227	74	13	13	-	-	-	-	-

Livestock 1990

Distribution of sheep and goat ownership

Province/District	No. fmrs questioned	Percentage of farmers owning the following number of sheep and goats : None	1 – 25	26 – 50	51 – 75	76 – 100	101 – 125	126 – 150	> 150
Helmand :									
Bust	26	23	77	-	-	-	-	-	-
Nahre Saraj	No data								
Reg	40	35	63	3	-	-	-	-	-
Sarbon Qala	49	31	61	2	2	4	-	-	-
Mosa Qala	No data								
Kajaki	1	-	100	-	-	-	-	-	-
Nauzad	42	38	60	-	-	-	-	-	2
Washare	No data								
Garmser	21	19	76	-	5	-	-	-	-
Nadi-ali	48	35	65	-	-	-	-	-	-
Nawae-barakzae	No data								
Baghran	No data								
Deshu	No data								
Total :	227	32	65	1	1	1	-	-	-

Livestock 1990

Distribution of Cows and Calves ownership

Province/District	No. of farmer questioned	Percentage of farmers owning the following number of Cows and Calves:							
		None	1 Cow	2 Cows	3 Cows	4 Cows	5 Cows	6 Cows	>6 Cows
Helmand :									
Bust	26	23	15	31	15	4	-	8	4
Nahre Saraj	No data								
Reg	40	8	3	35	13	20	10	-	13
Sarbon Qala	49	-	2	33	12	20	14	4	14
Mosa Qala	No data								
Kajaki	1	-	-	100	-	-	-	-	-
Nauzad	42	17	5	50	17	7	5	-	-
Washare	No data								
Garmser	21	19	10	33	10	10	5	14	-
Nadi-ali	48	13	2	31	19	8	13	2	13
Nawae-barakzae	No data								
Baghran	No data								
Deshu	No data								
Total :	227	11	5	36	15	12	9	4	8

Livestock 1990

Distribution of Donkeys ownership

Province/District	No. of farmer questioned	Percentage of farmers owning the following number of Donkeys: None	1 Donkey	2 Donkeys	3 Donkeys	4 Donkeys	5 Donkeys	6 Donkeys	>6 Donkeys
Helmand :									
Bust	26	27	62	12	-	-	-	-	-
Nahre saraj	No data								
Reg	40	38	33	28	-	-	-	-	3
Sarbon qala	49	29	27	35	4	4	-	-	2
Mosa qala	No data								
Kajaki	1	-	-	100	-	-	-	-	-
Nauzad	42	36	50	12	-	-	2	-	-
Washare	No data								
Garmser	21	48	33	19	-	-	-	-	-
Nadi-ali	48	54	25	17	4	-	-	-	-
Nawae-barakzae	No data								
Baghran	No data								
Deshu	No data								
Total :	227	38	36	22	2	1	-	-	1

Livestock 1990

Distribution of Horses ownership

Province/District	No. of farmer questioned	Percentage of farmers owning the following number of Horses:							
		None	1 Horse	2 Horses	3 Horses	4 Horses	5 Horses	6 Horses	>6 Horses
Helmand :									
Bust	26	92	8	-	-	-	-	-	-
Nahre saraj	No data								
Reg	40	93	8	-	-	-	-	-	-
Sarbon qala	49	84	14	2	-	-	-	-	-
Mosa qala	No data								
Kajaki	1	100	-	-	-	-	-	-	-
Nauzad	42	100	-	-	-	-	-	-	-
Washare	No data								
Garmser	21	100	-	-	-	-	-	-	-
Nadi-ali	48	90	10	-	-	-	-	-	-
Nawae-barakzae	No data								
Baghran	No data								
Deshu	No data								
Total :	227	92	7	-	-	-	-	-	-

Livestock 1990

Distribution of Camels ownership

Province/District	No. of farmer questioned	Percentage of farmers owning the following number of Camels:							
		None	1 Camel	2 Camels	3 Camels	4 Camels	5 Camels	6 Camels	>6 Camels
Helmand :									
Bust	26	100	-	-	-	-	-	-	-
Nahre saraj	No data								
Reg	40	100	-	-	-	-	-	-	-
Sarbon qala	49	100	-	-	-	-	-	-	-
Mosa qala	No data								
Kajaki	1	100	-	-	-	-	-	-	-
Nauzad	42	98	2	-	-	-	-	-	-
Washare	No data								
Garmser	21	95	-	-	5	-	-	-	-
Nadi-ali	48	100	-	-	-	-	-	-	-
Nawae-barakzae	No data								
Baghran	No data								
Deshu	No data								
Total :	227	99	-	-	-	-	-	-	-

Constraints on crop production 1990

Problems as percieved by farmers (weighted average percents)

Province/District	No. fmrs questioned	Irrig water	Rain-fall	Farm power	Fert-iliser	War effect	Credit	Improv seed	Insect	Weeds	Crop chemic	Labour	Flood damage	Crop diseas	Animal diseas	Birds	Rats Mice	Exte-nsion	Other
Helmand :																			
Bust	26	34	-	5	9	7	7	-	-	29	1	-	1	1	3	-	-	3	-
Nahre Saraj	No data																		
Reg	40	1	-	4	4	-	-	-	-	25	-	-	2	56	-	-	1	6	1
Sarbon Qala	49	6	-	5	-	-	1	-	2	11	-	-	4	47	1	-	4	8	10
Mosa Qala	No data																		
Kajaki	1	-	-	-	27	-	-	-	-	-	-	-	-	55	-	-	18	-	-
Nauzad	42	15	-	4	6	-	-	10	10	7	4	-	-	27	-	-	3	3	10
Washare	No data																		
Garmser	21	-	-	11	19	-	2	14	-	4	-	-	-	39	1	3	1	1	6
Nadi-ali	48	50	-	12	8	-	1	1	-	12	1	-	1	1	1	-	-	1	11
Nawae-barakzae	No data																		
Baghran	No data																		
Deshu	No data																		
Total :	227	20	-	7	7	1	2	4	2	14	1	-	1	28	1	-	2	4	7

Yields 1990

Nadi-ali

Crop	No. fmrs growing crop	Percentage who grew crop	Average area jeribs	Percentage of fmrs giving yield data	Average yield seer/jerib
Irrigated Wheat	48	100	17.2	100	49
Alfalfa	14	29	2.1	-	-
Grape	7	15	1.4	-	-
Maize	6	13	9.0	13	35
Cotton	6	13	9.5	10	37
Melon	3	6	5.3	-	-
Vegetable	1	2	1.0	-	-
Fruit	1	2	2.0	-	-
Apricot	1	2	1.0	-	-

48 farmers questioned

Fertiliser use 1990

Nadi-ali

Crop	No. fmrs growing crop	No. fmrs given fertiliser data	No Fert.		Only White Fert.			Only Grey Fert.			Grey & White Fert.				Yield(Seers/Jerib)			
			No. Fmrs	% Fmrs	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb	No. Fmrs	% Fmrs	Bags apld/jb White	Bags apld/jb Grey	No Fert	Only White	Only Grey	White & Grey
Irrigated Wheat	48	48	-	-	17	35.4	1.4	-	-	-	31	64.6	1.3	0.4	-	45	-	52
Alfalfa	14	10	1	10.0	6	60.0	1.1	1	10.0	2.0	2	20.0	1.0	0.8	-	-	-	-
Maize	6	6	-	-	6	100.0	0.8	-	-	-	-	-	-	-	-	35	-	-
Cotton	6	6	1	16.7	2	33.3	1.9	-	-	-	3	50.0	1.1	0.6	-	39	-	41
Grape	7	5	1	20.0	-	-	-	4	80.0	1.2	-	-	-	-	-	-	-	-
Melon	3	3	2	66.7	1	33.3	0.1	-	-	-	-	-	-	-	-	-	-	-
Vegetable	1	1	-	-	1	100.0	2.0	-	-	-	-	-	-	-	-	-	-	-
Fruit	1	1	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apricot	1	1	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Correlation coefficient of fertiliser against yield

Irrigated Wheat 1990

Helmand province

District	Average yield seers/jerib	Fertiliser applied bags/jerib	Correlation coeficient all seeds	Correlation coeficient improved seeds	Correlation coeficient unimproved seeds	Total all seeds	Total improved seeds	Total unimproved seeds
Bust	48.2	1.4	0.54	0.54	-	26	25	1
Nahre Saraj	-	-	-	-	-	-	-	-
Reg	53.7	1.4	0.43	0.42	-	40	39	1
Sarbon Qala	66.1	1.3	0.43	0.43	-	45	44	1
Mosa Qala	-	-	-	-	-	-	-	-
Kajaki	59.0	0.5	-	-	-	1	1	-
Nauzad	45.3	0.7	0.55	0.72	0.36	29	8	21
Washare	-	-	-	-	-	-	-	-
Garmser	52.2	0.6	0.23	-0.24	0.37	21	4	17
Nadi-ali	48.5	1.6	0.27	0.26	-	48	47	1
Nawae-barakzae	-	-	-	-	-	-	-	-
Baghran	-	-	-	-	-	-	-	-
Deshu	-	-	-	-	-	-	-	-

Correlation coefficient of cultivated area against yield

Irrigated Wheat 1990

Helmand province

District	Average yield seers/jerib	Average area jerib	Correlation coeficient all seeds	Correlation coeficient improved seeds	Correlation coeficient unimproved seeds	Total all seeds	Total improved seeds	Total unimproved seeds
Bust	48.2	14.9	-0.45	-0.46	-	26	25	1
Nahre Saraj	-	-	-	-	-	-	-	-
Reg	53.7	17.2	-0.26	-0.24	-	40	39	1
Sarbon Qala	66.1	13.6	-0.12	-0.13	-	45	44	1
Mosa Qala	-	-	-	-	-	-	-	-
Kajaki	59.0	18.0	-	-	-	1	1	-
Nauzad	45.3	7.6	-0.29	-0.17	-0.25	36	8	28
Washare	-	-	-	-	-	-	-	-
Garmser	52.2	32.3	-0.11	0.21	-0.22	21	4	17
Nadi-ali	48.5	17.2	-0.05	-0.06	-	48	47	1
Nawae-barakzae	-	-	-	-	-	-	-	-
Baghran	-	-	-	-	-	-	-	-
Deshu	-	-	-	-	-	-	-	-

ANNEX C - National Survey Data

Part Four - Miscellaneous Data on hired labour and farmpower

Farm power 1989

Use of hired tractors

Province : Helmand

	Average hours hired tractor used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
Land preparation	-	0.67	1.17	1.00	1.17	1.18	1.37	1.10	0.83	1.22	0.98
Planting	-	1.06	1.15	0.80	1.00	0.90	0.93	0.89	0.71	0.59	0.57
Treshing	-	0.42	1.11	0.69	0.94	0.66	1.04	0.52	0.79	0.37	0.42
Total hours	-	1.78	2.36	2.43	2.43	2.20	2.38	2.23	2.38	2.17	1.82
No. farmers	-	3	17	6	14	18	5	12	3	3	55

Total no. fmrs questioned : 270

Use of hired oxen

Province : Helmand

	Average no of days hired oxen used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
Land preparation	-	-	0.60	-	-	-	-	-	-	-	0.33
Planting	-	1.10	1.37	-	-	0.80	-	1.13	-	-	0.33
Treshing	-	1.00	0.50	-	0.58	0.30	-	1.33	-	-	0.05
Total days	-	1.30	1.30	-	0.58	1.10	-	2.47	-	-	0.72
No. farmers	-	5	4	-	2	1	-	1	-	-	1

Total no. fmrs questioned : 270

Use of hired labour

Province : Helmand

	Percent of farmers using hired labour on the following ranges of land (jerib)										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
All year	-	-	-	-	-	3.45	-	4.17	25.00	12.50	6.48
Planting	-	-	-	-	-	3.45	-	-	-	-	3.70
Weeding	-	-	-	-	-	-	5.88	-	12.50	-	5.56
Harvest	-	-	3.85	5.56	5.26	24.14	35.29	12.50	50.00	25.00	40.74
Anytime	-	-	3.85	5.56	5.26	31.03	41.18	20.83	87.50	37.50	47.22
No. fmrs in range	-	13	26	18	19	29	17	24	8	8	108

Total no. fmrs questioned : 270

Use of hired labour

Province : Helmand

	Average no of days hired labour used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
No. days	-	-	3.00	6.00	2.22	3.61	3.34	6.02	4.55	1.04	3.05
No. farmers	-	-	1	1	1	9	7	5	7	3	51

Total no. fmrs questioned : 270

Farm power 1989

Use of hired tractors for Irrigated Wheat

Province : Helmand

	Average hours hired tractor used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
Land preparation	1.00	1.00	1.00	0.98	0.95	1.00	0.99	0.99	1.00	1.00	0.95
Planting	0.50	0.90	0.74	0.76	0.73	0.61	0.66	0.53	0.49	0.82	0.54
Treshing	0.50	1.11	1.35	1.16	0.78	0.73	0.98	0.63	0.53	0.61	0.59
Total hours	2.00	1.95	2.58	2.62	1.99	2.06	2.17	1.95	2.02	1.77	1.96
No. farmers	1	13	17	11	14	21	12	15	5	3	21

Total no. fmrs questioned : 270

Use of hired oxen for Irrigated Wheat

Province : Helmand

	Average no of days hired oxen used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
Land preparation	-	1.00	-	-	-	-	-	-	-	-	-
Planting	-	1.00	1.13	-	1.00	-	-	1.21	-	-	-
Treshing	-	1.22	-	-	0.44	-	-	1.43	-	-	-
Total days	-	1.33	1.13	-	0.94	-	-	2.64	-	-	-
No. farmers	-	8	2	-	2	-	-	1	-	-	-

Total no. fmrs questioned : 270

Use of hired labour for Irrigated Wheat

Province : Helmand

	Percent of farmers using hired labour on the following ranges of land (jerib)										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
All year	-	-	-	-	4.76	-	15.79	3.03	-	14.29	11.76
Planting	-	-	-	-	-	-	-	-	-	14.29	5.88
Weeding	-	-	-	-	-	-	-	-	-	-	-
Harvest	-	4.00	10.81	8.70	9.52	29.27	15.79	39.39	44.44	28.57	39.22
Anytime	-	4.00	10.81	8.70	19.05	29.27	36.84	42.42	44.44	28.57	54.90
No. fmrs in range	2	25	37	23	21	41	19	33	9	7	51

Total no. fmrs questioned : 270

Use of hired labour for Irrigated Wheat

Province : Helmand

	Average no of days hired labour used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
No. days	-	4.00	5.91	2.62	8.76	2.86	6.82	2.63	2.50	22.11	3.84
No. farmers	-	1	4	2	4	12	7	14	4	2	28

Total no. fmrs questioned : 270

Farm power 1989

Hired labour use for Irrigated Wheat

Province/District	Number of farmers questioned	No. fmrs grew crop	% using hired labour	Average yearly expend	Av. no. days used/year	Percent of fmrs using hired labour for:			
						all year	planting	weeding	harvest
Helmand:									
Bust	22	22	41	46111	84	-	-	-	89
Nahre Saraj	No data								
Reg	28	28	36	14000	30	10	-	-	90
Sarbon Qala	24	24	17	109763	285	50	25	-	25
Mosa Qala	21	21	29	75000	186	67	-	-	17
Kajaki	19	19	5	2500	8	-	-	-	100
Nauzad	34	33	21	123214	359	57	14	-	57
Washare	No data								
Garmser	No data								
Nadi-ali	67	66	44	22479	36	-	3	-	100
Nawae-barakzae	29	29	38	23227	33	9	-	-	91
Baghran	26	26	4	60000	300	-	100	-	-
Deshu	No data								
Total :	270	268	29	42006	97	15	5	-	81

Farm power 1989

Use of hired tractors

District : Nadi-ali
Province : Helmand

Activities	Average hours hired tractor used per jerib of land										
	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	>=20
Land preparation	-	-	1.33	1.00	1.24	1.50	1.00	1.06	-	1.50	0.98
Planting	-	-	0.80	0.58	0.59	0.70	0.50	0.53	-	0.72	0.48
Treshing	-	-	0.87	0.58	0.95	0.58	0.58	0.53	-	0.33	0.44
Total hours	-	-	3.07	2.17	2.78	2.78	2.08	2.13	-	2.53	1.90
No. farmers	-	-	3	2	2	4	1	3	-	2	28

Total no. fmrs questioned : 67

Use of hired oxen

District : Nadi-ali
Province : Helmand

Activities	Average no of days hired oxen used per jerib of land										
	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	>=20
Land preparation	-	-	-	-	-	-	-	-	-	-	-
Planting	-	-	-	-	-	-	-	-	-	-	-
Treshing	-	-	-	-	-	-	-	-	-	-	-
Total days	-	-	-	-	-	-	-	-	-	-	-
No. farmers	-	-	-	-	-	-	-	-	-	-	-

Total no. fmrs questioned : 67

Use of hired labour

District : Nadi-ali
Province : Helmand

	Percent of farmers using hired labour on the following ranges of land (jerib)										
Activities	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	>=20
All year	-	-	-	-	-	-	-	-	-	-	-
Planting	-	-	-	-	-	-	-	-	-	-	2.17
Weeding	-	-	-	-	-	-	-	-	-	-	6.52
Harvest	-	-	-	-	-	60.00	100.0	40.00	-	-	54.35
Anytime	-	-	-	-	-	60.00	100.0	40.00	-	-	54.35
No. fmrs in range	-	-	3	2	2	5	2	5	-	2	46

Total no. fmrs questioned : 67

Use of hired labour

District : Nadi-ali
Province : Helmand

	Average no of days hired labour used per jerib of land										
Activities	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	>=20
No. days	-	-	-	-	-	2.50	2.71	2.23	-	-	1.17
No. farmers	-	-	-	-	-	3	2	2	-	-	25

Total no. fmrs questioned : 67

Farm power 1989

Use of hired tractors for Irrigated Wheat

District : Nadi-ali
Province : Helmand

	Average hours hired tractor used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
Land preparation	-	1.00	1.00	1.00	0.97	1.00	0.98	0.99	1.00	1.00	0.85
Planting	-	0.67	0.40	0.46	0.50	0.48	0.48	0.41	0.49	0.47	0.44
Treshing	-	1.00	1.25	0.82	0.73	0.75	0.71	0.74	0.64	0.63	0.68
Total hours	-	3.17	2.65	2.29	2.20	2.23	2.16	2.14	2.14	2.11	1.96
No. farmers	-	2	4	2	4	8	5	7	4	1	7

Total no. fmrs questioned : 67

Use of hired oxen for Irrigated Wheat

District : Nadi-ali
Province : Helmand

	Average no of days hired oxen used per jerib of land										
Activities	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	>=20
Land preparation	-	-	-	-	-	-	-	-	-	-	-
Planting	-	-	-	-	-	-	-	-	-	-	-
Treshing	-	-	-	-	-	-	-	-	-	-	-
Total days	-	-	-	-	-	-	-	-	-	-	-
No. farmers	-	-	-	-	-	-	-	-	-	-	-

Total no. fmrs questioned : 67

Use of hired labour for Irrigated Wheat

District : Nadi-ali
Province : Helmand

	Percent of farmers using hired labour on the following ranges of land (jerib)										
Activities	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	>=20
All year	-	-	-	-	-	-	-	-	-	-	-
Planting	-	-	-	-	-	-	-	-	-	-	7.69
Weeding	-	-	-	-	-	-	-	-	-	-	-
Harvest	-	-	40.00	50.00	-	36.36	28.57	58.33	66.67	-	69.23
Anytime	-	-	40.00	50.00	-	36.36	28.57	58.33	66.67	-	69.23
No. fmrs in range	-	2	5	2	6	11	7	12	6	2	13

Total no. fmrs questioned : 67

Use of hired labour for Irrigated Wheat

District : Nadi-ali
Province : Helmand

	Average no of days hired labour used per jerib of land										
Activities	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	>=20
No. days	-	-	4.88	2.38	-	3.43	1.82	1.80	2.50	-	1.43
No. farmers	-	-	2	1	-	4	2	7	4	-	9

Total no. fmrs questioned : 67

ANNEX D - Hired Labour Costs

1989

In 1989 the ASA collected details on daily labour rates paid by farmers hiring labour for their farming operations. Although the data is now out of date, it does illustrate the large general differences between labour rates for the whole country. The north-eastern provinces who hire the most labour also have the highest labour rates. Typically the rates which are paid range between 700 and 900 Afs per day. The next highest rates are found in the south-eastern provinces of Kandahar, Helmand and Paktika ranging between 400 and 800 Afs per day. The labour rates in other areas generally range between 400 and 600 Afs per day.

There is also a seasonal element to the labour rates. In some provinces the rates for the wheat harvest are higher than for the maize harvest. Presumably this is due to a slacker demand during the Summer crop harvesting season.

The exchange rate in Kabul was 450 Afs per US dollar (USD). This gives a rate of 1.3 USD for a days work during harvest.

1990

In harvest time of 1990, labour rates were about 1,200 Afs per day.

The exchange rate in Kabul in August 1990 was about 650 Afs per USD. In 1990 one days labour at harvest time would therefore cost 2 USD.

1991

In 1991 harvest time the cost of labour was in the range of 2,000 Afs per day in the north-west of Afghanistan, and around 1,200 Afs in the southern regions.

The 1991 August Kabul exchange rate between Afs and US dollars was approximately 1,000 Afs per USD. One days labour would therefore cost the hirer about 2 USD.