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REPORT ON THE KALA DHAKA AREA
OCTOBER, 1987

SPECIAL DEVELOPMENT UNIT

PLANNING AND DEVELOPMENT DEPARTMENT

REPORT ON THE KALA DHAKA AREA BY THE SPECIAL DEVELOPMENT UNIT
FOR OPIUM GROWING AREAS PLANNING AND DEVELOPMENT DEPT.: NWFP
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1. INTRODUCTION

In recent years the Government has become increasingly concerned to provide development assistance to the Kala Dhaka area (also known as Black Mountain or Mansehra Tribal Area) in Mansehra District. In late 1985 a Concept Paper was prepared which provided initial information and formulated a 3 year, Rs. 119 million integrated development program in the communications, health, rural electrification, rural drinking water, education, agriculture and irrigation sectors. This Report draws ideas and data from the Concept Paper as well as from local and Provincial sources.

The aim of the present Report is to gather together as much information as possible on Kala Dhaka in order to assist in the design of a narcotics related rural development project in the area. Generally, as there is a paucity of authenticated data available the findings, in the main, are preliminary only. A list of Government personnel associated with Kala Dhaka who are in a position to provide assistance to the design team from USAID, is also provided.

Finally the Report outlines the issues which the SDU is giving priority to, in relation to its brief to promote and foster the kind of development which will assist in the long term elimination of poppy cultivation.

2. THE PROJECT AREA

a). Location.

According to Agriculture Censuses of 1981-82. Kala Dhaka comprises an area of 254,000 acres (approximately 1000 sq. km) and is located on the western side of Mansehra district. It straddles the Indus river with the northern part of the area lying east of the river and the southern part lying west of the river. The southern portion of the area is bounded on the west and north by the Buner subdivision of Swat District, on the south by the Hazara Amazai area (which lies in Haripur tehsil of Abbottabad District) and to the east, across the Indus by Mansehra Tehsil of Mansehra District.

The northern part of Kala Dhaka is bounded on the west, across the Indus, partly by Buner and partly by Shanglappar Subdivisions in Swat District. To the north, across the river, lies Shanglappar Subdivision, and to the east and south of the area lies Mansehra Tehsil. The portion lying on the Left Bank of the Indus River is known as Kala Dhaka Mansehra whilst the portion on the Right Bank is known as Kala Dhaka Swat.

The area was completely dislocated by the construction of Tarbela Dam when some of the best agricultural land was submerged, and major lines of communication to Darband and Oghi were destroyed. Appendix 1 provides details on land use and the amount of land which each tribe lost to Tarbela Lake. As a result of this loss, mule tracks now provide much of the access to and within the area. It is possible to use the lake for access to many areas on the banks during the summer months. During this period, boats can travel some 57 km upstream from Darband for approximately 4 months when the snow melt is normal. In the remaining months of the year, however, transport by water is severely restricted as the lake level is reduced to meet hydro electric and irrigation requirements.

The lake is also silting up at a faster rate than originally anticipated, and this is likely to have substantial influence on navigability in the future.

b). Topography.

Kala Dhaka or Black Mountain, is as its name suggests, largely a mountainous area. A rugged ridge about 2,500 metres high runs along the eastern boundary of the northern portion of the area. From this ridge, land slopes down to the west in a series of lateral spurs which extend to the Indus river. A ridge also runs along the western side of the river, in the southern portion of the area. This ridge, averaging about 2,000 meters elevation, is an extension of the Mahaban Range located in the Gadoon-Amazai Project area and is intersected in the middle by the Chamla river.

The land consists mostly of steep hillsides, with narrow terraces in those places where rock outcrops are not too severe. On the lower slopes the gradient is not so steep and larger areas of farmland are available. Many steep sided valleys dissect the region and there are seven main water courses entering the Indus from the left bank and three from the right bank.

c). Climate.

Generally the temperature of Mansehra District is hot in summer and cool to cold in winter and the area is reported to have marked seasonal periods of snow, rain and drought. This requires resification maximum mean temperature for the district in January is 12 degrees (C) and the minimum is 2.8 degrees (C). Corresponding coverage figures for July are 30.6 and 21.2 degrees owing to its higher elevation, temperatures in Kala Dhaka are likely to be lower on average than in the rest of the district.

Official records between 1953 and 1968 from the rain gauging station at Oghi which is situated on the east side of the eastern boundary (see Appendix 2), show that precipitation occurs in every month of the year with the highest occurring on average during the months of February (122.2 mm) March (107.8 mm) April

(128.5 mm) July (187.7 mm) and August (138.7 mm). There is a high degree of annual variation and there is also likely to be considerable variation in annual rainfall in different areas of Kala Dhaka.

d) Soils.

A geological survey of the area has yet to be undertaken but some basic observations carried out by the Divisional Forest Officer, Battagram, in 1976 indicate that the parent rocks are composed of gneiss schists, granited mica schists and shales. Mica schists occur in the lower portions and the surface soil was formed by podsolization of the parent rock. The soil is loose, friable with a fair amount of clay and is generally suitable for cultivation, but liable to erosion. In some areas it has been estimated that as much as two per cent per year of the top soil has been lost through wind and soil erosion. The principal causes of erosion are overgrazing and deforestation, and farming on very steep slopes.

Forest soils are generally deep enough to support a good quality crop, except on the steeper slopes where rock outcrops are visible. The soils under the alpine fir forests are rich in humus.

e). Minerals.

In the Hazara District the following minerals have been reported: pyrites, graphite, marble, mica and asbestos. Within the Kala Dhaka area, a detailed survey has yet to be carried out although preliminary field visits by officers from the Geological Survey of Pakistan indicate the following incidences:

- | | |
|---------------------------|------------------------------|
| i) White marble | - Thakot and adjoining areas |
| ii) Lead, Zinc, Magnetite | - From Besham to Banda |
| iii) Beryl | - Rajolawari |
| iv) Soap stone/Talc | - Checker |
| v) Feldspar/party clay | - Ahal Mansehra |
| vi) Barite | - Kand Saider |

Other minerals reported to be found in the area are Mica and Bauxite.

f). Population.

The total population of Kala Dhaka given in the 1981 Census is 83,927 of which 42,277 were registered as males and 41,650 as females. This total figure is generally considered to be inaccurate, however, and it is estimated that the number of people in the area is closer to 150,000. Kala Dhaka is divided into five tribal groupings which are detailed in Annex 1. The main groups are the Essazai, comprising about 53 per cent of the total Kala Dhaka population, with sub-tribes of:

- i. Hassanzai - from Kandar to Bakray. Accounting for approximately 37 per cent of the population.
- ii. Akazai - from Bimbal to Sormal. Accounting for approximately 20 per cent of the population.
- iii. Nusrat Khel - in the area between Khro Piazza and Gumbat. Accounting for approximately 19 per cent of the population.

and the Mullazai, comprising about 47 per cent of the total population, with sub-tribes of:

- iv. Basi Khel - from Judbah to Kamseer in the east and Iraya in the north. Accounting for approximately 14 per cent of the population.
- v. Madda Khel - from Badar to Koz Sharai on the
(WEST OF INDUS) Right Bank. Accounting for approximately 10 per cent of the population.

3. ADMINISTRATION.

a). Administrative Structure.

Kala Dhaka has had the status of a Provincially Administered Tribal Area (PATA), since 1972. Prior to that time it was a Frontier Region and administered as a Federally Administered Tribal Area (FATA). Despite its official status as a PATA, Kala Dhaka still resembles in a number of respects a Frontier Region, which is an area falling within the administrative boundaries of a settled district but, having a predominantly tribal character and traditions, and enjoys the privileges of a Tribal Agency. Unlike a Tribal Agency, which is administered by a Political Agent, a Frontier Region is administered by the Deputy Commissioner of the District in which it falls.

While the Deputy Commissioner has direct responsibility for the area, his administration of the area is referred to as "indirect." He is represented in the Mansehra Tribal Area by a Political Tehsildar, who is exclusively concerned with administrative matters pertaining to the area, and who is assisted in law and order matters by a District Officer of the Frontier Constabulary.

Politically the tribes are represented by two elected members of the Provincial Assembly who are referred to as MPAs (Members of the Provincial Assembly). Over and above representing their constituents the MPAs are allocated a certain amount of funds for development projects.

b). Tribal Administration.

The system of locally elected councils begun in 1979 did not extend to Kala Dhaka because of its particular status. Thus, there are no representatives from the area who sit on either the District or Union Councils in Mansehra. An Agency Council did exist during the period 1958-65 when Agency Councils, which were established in the FATAs, were made up of representatives from the area nominated by the Government. The tribes themselves put forward a list of representatives, and from this list the Government chooses a certain number as Agency Councillors. A proposal to create a similar Agency Council for Kala Dhaka is at present being considered by the Provincial Government. If approved, this Agency Council would undertake the planning and implementation of development schemes in the area. It is unlikely, however, that the Council will have its own technical staff but will rather rely on the technical expertise of line departments and also possibly that of the Mansehra District Council to assist in the design and implementation of development projects.

c). Law and Order.

Jirga law is enforced by individual tribes although they sometimes ask the Political Tehsildar to arbitrate on major disputes over cases of murder. The Political Tehsildar, as the official who deals directly with the tribes is also consulted on issues raised by the Government such as the payment of compensation for land acquired for construction of roads, Basic Health Units (BHU), schools etc. Generally the region, apart from tribal law, is lawless since there is no police force and proclaimed offenders can seek and do obtain sanctuary in the Kala Dhaka. They can only be apprehended through negotiations between the District Administration and the tribal chiefs. A Frontier Constabulary fort has been set up on the border of the area in the northern region near Chor Kalam. Its main purpose is to protect villages from raiding parties from Kohistan and to protect the nomadic Gurgars from local bandits.

There is also a proposal, currently before the Home Department, by the Commissioner Hazara Division, to establish a levy of 350 men drawn from the area, under the control of the Deputy Commissioner Mansehra. This proposal, if implemented, besides providing the beginnings of law enforcement in the area would also be a significant source of employment.

d). Development Program Under Deputy Commissioner.

With the exception of those instigated by the two Members of the Provincial Assembly (MPA), all development projects in Kala Dhaka must be channeled through the office of the Deputy Commissioner (D.C.) The office commissions smaller works, such as drinking water supply schemes through local contractors. Larger development activities under the Annual Development Plan (ADP) are implemented through the responsible line departments.

In practice the Rural Development program under the Deputy Commissioner tends to balance more politically oriented development initiatives undertaken by the MPA's and ensures a more even distribution of development throughout the area.

The Deputy Commissioner considers that the local population feel in a relatively strong position to bargain on development issues. They are aware of developments in Gadoon Amazai and know that because their area is not directly controlled by the local administration they can make enforcement difficult if they wish.

4. INFRASTRUCTURE.

a) Roads and Communications

At present no roads exist in Kala Dhaka except for a major shingled road from Thakot to Darband in the northern portion of the area, which is currently being constructed by the Frontier Works Organization of the army with Provincial Government funds. The length of this road is 84.0 km and it is expected that it will be completed in June 1988, at an estimated cost of the Rs. 95.068 million. Expenditure to date has been Rs. 62.325 million, with a further Rs. 20 million allocated for the 1987-88 financial year. At the end of September, 1987 the initial pilot cut was 75 per cent complete, with travel possible from Darband to Judbah, a distance of 57 km and from Thakot to Zizari, a distance of 15 km. A further 5 km has been completed between Judbah and Zizari but in this area conditions for road construction are very difficult.

Small pickup trucks and minibuses are able to use the open sections of the road during dry weather, but there are no motorable lateral connections at present. There are no roads on the right bank; only mountain tracks which lead to the present road heads at Charorai (Swat) and Bori (Hazara). There are no bridges across the Indus, which can only be crossed by boat. A number of small boats operate out of Darband carrying passengers and small parcels of freight largely to the west shore.

Several additional roads into and through the area have been proposed. The one most likely to be considered first runs from Judbah to Machriband via Utlabanda. A fund of Rs. 2.224 million has been allocated to the MPA's under the Provincial ADP for 1987-88. The MPA's have identified in consultation with local people additional sections of roads which should be constructed in Kala Dhaka area in order to meet the socio-economic needs of the people. The statement showing the proposed roads is given in Appendix 4.

b). Drinking Water Supply Schemes.

The absence of accessible drinking water has been a major problem in Kala Dhaka. During last three years the Government of NWFP has been making special allocations under the Rural Development Program for small rural works in the area to be

executed by the Deputy Commissioner Office. More than 80 per cent of projects implemented have been water supply schemes. So far 43 small water supply schemes have been completed through the Rural Works Program, while work on 1 further scheme is in progress. These schemes, although not providing water according to standards acceptable to the Department of Public Health Engineering, are meeting an urgent need and will provide water to approximately 50 per cent of the population.

A block allocation of Rs. 2.224 million has been made in the 1987-88 Provincial ADP and a considerable portion of these funds are being used for drinking water supply schemes. The Public Health Engineering Department have completed seven drinking water supply schemes at Sural, Kandar Sharif, Dadun, Dour Payan, Zizari, Tiagram at a total cost of Rs. 2.01 million at the end of fiscal year 1986-87. These schemes are designed to a higher standard than those under the Rural Development Program and will provide a safe potable water supply which cannot be contaminated.

The Department also commenced the construction of two additional water supply schemes in the area during 1986-87 which are expected to be completed by the end of 1987-88. These schemes are located at Tillipaiza and Bimbal and the cost on completion is expected to be Rs. 1.286 million. Additional data on Drinking Water Supply Schemes is presented in Appendix 5.

c). Health.

Five Basic Health Units have been constructed (see Appendix 6) at an individual cost of Rs. 1.00 million with each unit designed to serve a population of approximately 15,000 people. At present there is no doctor serving the area and each BHU has to provide services to approximately 30,000 people. The District Health Officer reported that under present conditions it is impossible to persuade trained staff to reside in the area and immunization programs can only be carried out with the greatest difficulty. The Health Department is planning to undertake work on three additional units which will be established at Kandar, Shagai and Manjakot. A typical BHU consists of a walled compound containing a main building and two separate accommodation buildings. One such unit is being built at a cost of Rs. 1.0 million was observed at Mera (Basi Khel).

d). Education.

There are 18 Government primary schools, 5 mosque schools and two middle school for boys, all of which are reported by the Divisional Education Office in Abbottabad to be adequately staffed. Funds have been made available in the 1987-88 ADP for the province for the construction of four further primary schools. Additional data is provided in Appendix 7.

e) Electricity and Telecommunications.

There is neither electricity nor a telecommunications system in the area. There may be possibilities for installing mini hydel schemes on Maira nullah in the Mada Khel area and on the Shwal nullah in the Akazai area. These potential sites would, however, have to be subjected to detailed investigations. Other possibilities for mini hydel schemes may exist but they have not yet been identified.

5. PRESENT AGRICULTURE AND FORESTRY.

a). Crop Cultivation.

Annual crop cultivation is the principal economic occupation and apart from the raising of buffalo, cattle and goats where suitable grazing exists, there are few other income earning activities. Cultivation depends for the most part on rainfall, the distribution of which does not particularly coincide with the optimum water requirements of existing crops. Approximately 18 per cent of the cultivated area is irrigated by small surface diversion flows.

The agricultural census of 1979-81 estimated the total cultivable land in the area at 75,000 acres. The irrigated portion of the cultivated area was estimated at 13,750 acres while the total cropped area was estimated at 129,500 acres giving an annual cropping intensity of approximately 170 per cent.

The principal rotation on rainfed areas is wheat in the Rabi (winter) season and maize in the Kharif (summer) season. Poppy is grown on a wide scatter on relatively small areas and tends to predominate in the more remote, high villages where irrigation is not available (see Appendix 8). Potatoes have also been introduced over the last 20 years and are reported to be becoming increasingly popular. Where irrigation is available wheat is grown in the Rabi season and rice in the Kharif season.

The estimated area under main crops between 1979 and 1984 is as follows:-

CROPPED AREA KALA DHAKA (acres)

YEAR	WHEAT	PADDY	MAIZE	POPPY
1979-81	54700	12040	62800	367
1982-84	53300	12050	62000	630

Relatively large areas are reported to have been terraced around the time of Independence. This activity was commenced out of a fear that when the region was incorporated within Pakistan, unused land might be excised from the local community and declared Government property. It is understood that cultivation of a significant portion of this land was abandoned shortly afterwards because of inadequate water supply and degradation through soil erosion. It is not known to what extent these abandoned areas might yet be brought under cultivation.

b). Livestock.

According to the report of the Deputy Director of the Livestock Department in Mansehra, buffaloes are raised for dairying on the flatter areas along the banks of the Indus, while cattle and goats are raised on the higher grasslands and areas which cannot be cultivated. There may be scope for increasing livestock production from these lands but there is no data available on the extent of grazing land nor on livestock numbers. It has been reported, however, that significant degradation of certain slopes has taken place, possibly because of overgrazing.

In addition to settled livestock, nomadic Gujars bring large herds of sheep, cattle and goats during the summer to the alpine pastures for which they pay rent-in-kind, usually in the form of dairy produce.

c). Forestry.

There are considerable forest resources in the area and these are jointly owned by the resident tribes. Apart from a study which was undertaken in 1976, the Department of Forestry has no activities in the area. The area of forest is estimated to be about 83,000 acres, of which about 26,000 are considered to be exploitable. Approximately 20,000 acres lie in the Battagram Range and the remainder in the Shergarh Range. The forest is described as Himalayan moist temperate and is composed of Kail, Fir and Spruce. Further details are presented in Appendix 9.

d). Present Developments.

i) Crop cultivation.

A substantial program for improved seeds and fertilizer for existing crops, the introduction of new annual crops such as soybean groundnut, grams, deciduous and tropical fruits and cool season vegetables is being developed under the EADA (Extra Assistant Director of Agriculture) Mansehra with INM financial assistance (see appendix 10). Spot checks by SDU staff during their limited visits to the area evoked a less than enthusiastic response from those members of the farming community spoken to. The program has only been in place since October 1985 and the Department is severely hampered by insufficient trained staff and transport and the present very severe difficulties of entering and moving around the

area. The program is, however, conceptually sound and, given that the management problems of extension delivery can be solved, should provide a basis for raising agricultural productivity in the area and introducing new cropping systems.

The following medicinal herbs are reported in the area: *Waleriana Wallichii* (Mushk-bala), *Skimmia Laureala* (Mer), *Podophyllum Tundifolium* (Rantanjot), *Atropa Belladonna* and *Artemisca Maritima*. None are presently exploited commercially but this could be investigated.

A (subsidy) of Rs. 0.546 million has been provided in the 1987-88 provincial ADP for distribution of 500 tons of urea, 500 t of D.A.P. and 500 t of ammonium sulphate in Kala Dhaka.

ii) Irrigation.

Opinions on the extent to which the irrigation system can be developed vary from limited to substantial, but cannot really be determined until detailed hydrological surveys and surveys of potential command areas and existing water rights have been carried out. The EADA is of the opinion that the irrigated area could be expanded substantially both through extending the surface system and through lift irrigation.

The office of the Executive Engineer for Irrigation Abbottabad is at present working on rehabilitating schemes shown in the table below and is of the opinion that the main opportunities lie in improving existing systems rather than in the development of new systems.

IMPROVEMENT OF EXISTING IRRIGATION SCHEMES
IN KALA DHAKA 1986-1988.

TRIBAL AREA	NAME OF CHANNEL	COST (Rs. Millions)
Akazai	New Kali	0.665
Basi Khel	Thegal	0.35
Nusrat Khel	Kotlay	0.693
Total Cost:		1.708

These improvements are expected to raise the existing delivery from 0.5 cusecs to 3 cusecs in each channel and bring an additional 235 acres of land in total under command. The improvements are being financed under the ADP for 1987-88 and are expected to be completed in 1988.

A reconnaissance assessment of irrigation potential for the Mada Khel, Akazai, Basi Khel and Nusrath Khel

areas is given in Appendix 11. The assessment indicates that only in the Basi Khel area are there any estimates available of potential discharge while the only areas in which substantial lengths of irrigation channels have been developed are AKazai and Basi Khel.

iii) Livestock.

Three veterinary centres, which the Department of Livestock expected to take over in November were being constructed in 1987. At the moment the Department reports that it does not have sufficient staff, vehicles nor veterinary medicines to be able to run the centres at Judbah, Maira Mada Khel and Seri Kohan.

iv) Forestry.

There is an urgent need for the preparation of a comprehensive forest policy for the area because the construction of the Darband-Thakot road will greatly improve access to the forests in the area and it is likely that exploitation will substantially increase. The main marketable timbers are fir, spruce and blue pine in the form of scantlings. These are carried out by mules to the Oghi road and then shipped direct to Havelian. The Forestry Department has not yet been able to effect the management plan produced for the area in 1976, primarily because local villagers have continued to restrict access. The Department has carried out extensive management, rehabilitation and replanting programs throughout the District over the last ten years, and the longer term benefits of sound forest management area being clearly demonstrated.

The management plan produced by the Department for Kala Dhaka, based on the estimated exploitable resource base of 26,000 acres has the following main objectives:-

- The gradual development of a sound management system which would provide appropriate financial incentives to prevent indiscriminate felling and to introduce sustained yield felling, in order to conserve the existing forest and allow regeneration of deforested areas
- The maximization of sustained yield productivity
- The preservation and enhancement of existing water sheds by introducing modern techniques of watershed management
- The provision of timber for fuel and other needs to local inhabitants

The Forestry Department and the office of the Deputy Commissioner are currently negotiating with the people of Kala Dhaka on the ground rules for managed exploitation in the future. There are, however, practical difficulties to an amicable agreement, particularly the fact that existing national and provisional laws on forest exploitation can not as yet be applied in this area. This is important because much of the Kala Dhaka forest has already been mortgaged to outside developers and national laws prohibit exploitation which is not managed by the Forest Department. It is hoped that some compromise can be reached but it is not yet clear which form which it will take.

v) Infrastructure.

The current road building program is beginning to have an impact particularly the Darband to Thakot Road. Teams from the SDU have travelled along sections from Thakot to Zizari and 4 km from Darband. Although the road now provides a partially completed spine along the left bank, it is far from an all weather road, and is subject to slippage on the cuts and the shoulders, gullying and to certain sections becoming impassable when the various nullahs it cross as are in flood. Furthermore although it will considerably improve general access conditions for agriculture development, access to most agricultural areas will still remain difficult until lateral connections are constructed. Similar limitations also apply to the small amount of road building at present being carried out and contemplated under the Rural Development Program and with the funds provided to the MPA's.

Once a basic road system is provided agricultural and social development will still remain a difficult task. Many of the farming areas are situated on steep, high, terraced land where final access will only be possible on foot and where the supply of inputs and provision of extension, cannot be easily achieved.

The primary concern of the SDU in poppy and potential poppy growing areas is to promote activities development is to generate sufficient income to make the cultivation of poppy less economically necessary to very poor households and, over the long term, substantially less attractive as a choice of cash crop, so that the ban on cultivation is not breached on any scale.

It is becoming clear from existing projects that the range of activities undertaken are leading to significant declines in poppy cultivation. Against this, the farming communities are less than satisfied with the alternative sources of income provided by these activities. Generally, the only alternative source of income available on any scale is from the production of other crops by improving agriculture productivity and by changing cropping systems. Certain forms of infrastructural investment, primarily roads, are

essential pre-requisites to agricultural investment. The provision of social services is also an integral part of the enforcement bargain with poppy growers. These activities alone will not lead, however, to substantial increases in non poppy income, and unless project give priority to increasing agricultural income these is continuous possibility of poppy cultivation re-emerging if marketing conditions remain favourable.

6. PRIORITIES FOR PROJECT DESIGN.

a) General.

Poppy cultivation is not particularly a problem in Kala Dhaka at the moment since as yet it is only grown on a small scale. It would not appear difficult at the present stage of negotiations, to obtain the consent of the community to eliminate it entirely, provided the people can be persuaded that they are going to be provided with reasonable income generating opportunities. This is likely to be difficult, however, for various reasons.

Although the local economy of Kala Dhaka is entirely based on agriculture it is an area of substantial food deficit, with an estimated 50 percent of basic food requirements having to be imported. The deficit is partly due to low productivity but also to very high ratios of population to cultivated land. This excess population can only be maintained by remittances from family members working outside the area. These remittances are by far the most important source of cash income for the resident population, of whom it is reported that almost every family has one or more member working in cities, principally Karachi.

In addition to the problems of low productivity and of excess population in relation to productive resources, the question of agricultural development is further complicated by the "Vaish system" of land holding (see Appendix 12), where cultivation rights on an area of land are rotated every ten years or so. This system mitigates against the possibility of cultivators making any substantial improvements to the land or introducing perennial crops. Improvements therefore, will have to be geared largely to increasing productivity of existing annual crops. Although this is an essential initial step in a food deficit area it cannot alone lead to scale of income increases which will make poppy a less attractive means of obtaining cash income in the future. The MPA's have expressed the hope that over the longer term, as alternative development options become available, the vaish system can be substantially modified, if not finally abolished.

A further difficulty when considering the kind of development which will eventually lead to self sustaining increases in income is the fact that the forests have been mortgaged to commercial contractors under previous agreements. Negotiations have been taking place to bring the forest areas

under the purview of the Department of Forests under which complete logging of an area is banned. So far, however, the people would prefer to maintain the system where they sell the logging rights direct to commercial contractors. While this attitude persists it will be difficult to put in place the kind of programs which will lead to re-afforestation, sound watershed management and sustained yield felling of forest areas.

The development priorities of the people of the area as expressed through Jirgas and their locally elected representatives are: roads, electricity and the improvement and extension of their irrigation systems. Although roads are the sine qua non of agricultural development in Kala Dhaka, it will take considerable time before the provision of these facilities can have any impact on the area. It is unlikely under current project design and approval procedures that any construction can take place before mid 1989. Even if construction starts then, the very difficult terrain and the remoteness of the area will make for slow progress and it will probably take another two years before there has been any measurable improvement to access and in the ability to move around in the area.

b) Specific.

The SDU is primarily concerned that agricultural development is given the highest priority in the design and implementation of any multi sectoral project proposed for Kala Dhaka. In practice it will not be easy to ensure that this priority is maintained upon implementation given the general conditions in the area, possible conflicts with political and social priorities and the current lack of resources with which to mount an extension campaign which will achieve a substantial impact, within the Department of Agriculture.

The SDU is also concerned, that the current impetus for development and goodwill towards a potential project within the community are not lost, due to the long hiatus between project design and implementation. It is very important, because the people of Kala Dhaka feel they are in a strong bargaining position that, as far as possible a visible development profile is maintained in the area until full scale development begins. Otherwise they may react negatively to final project proposals and increase the difficulty of subsequent negotiations over the course of development.

It is fully appreciated that the Design Team will have very limited time in an area where it is difficult to move quickly and where reliable data is not readily available. The Team will also have to take into account the views of departments, agencies and representatives of Government, who will have their own priorities and perspectives on the development process. It also must be generally appreciated that a Design Team cannot solve problems but only put forward a balance of proposals designed to initiate processes which, if successfully carried out will achieve project objectives.

In terms of SDU policy intervention projects should eventually lead to substantial increases in agricultural income so that the enforcement of ban is accepted by the community and that they can eventually meet their cash requirements without resorting to poppy cultivation. If this policy is not clearly kept to the fore at the design stage there is a danger when implementation commences, that the major aim of the Project, which is to increase non poppy agricultural income, will be lost in a welter of political social and departmental priorities resulting in a concentration on the problems of establishing project "hardware" to the detriment of developing appropriate "software" systems.

In relation to the above policy the SDU is giving particular emphasis to the following aspects of Project Design:-

1. that an assessment is made of improvements which can be realistically aimed for in the agriculture and forestry sectors given existing constraints, and what physical and managerial resources are required to initiate a program designed to achieve these improvements;
2. that an assessment is made of which infrastructural projects should be given priority in support of programs to improve productivity in the agriculture and forestry sectors;
3. that proposals for social sector development are based on political and social priorities, and although related to, are not confused with agricultural development priorities;
4. that an assessment is made in relation to the Team's main findings and in conjunction with the SDU of:-
 - a) what can be done immediately to improve and give a higher profile to present programs in the agricultural sector and what if anything can be done in the forestry sector,
 - b) the possibilities of setting up decentralized management systems with which communities can interact directly in terms of introducing improvements in the agricultural and forestry sectors,
 - c) enhancing the general profile of the project by such measures as early selection of youths for training in basic agricultural and forestry skills and raising a levy force in the area.

APPENDICES

1. Land Use
2. Climate
3. Population
4. Roads
5. Drinking Water Supply Schemes
6. Health
7. Education
8. List of Poppy Villages - 1987
9. Forestry
10. Irrigation
11. INM's Outreach Program
12. An Outline of the Waish System
13. Reconnaissance Observation - Field Visit October 87
14. List of Key Contacts

APPENDIX 1

LAND USE
(acres)

Table 1.

	BASI KHEL	NUSRAT KHEL	AKA ZAI	HASAN ZAI	MADDA KHEL	TOTAL
POPULATION (1972)	72,000	20,000	28,000	35,000	40,000	195,000
TOTAL AREA	86,250	31,250	32,500	55,625	52,500	258,125
LAND BEFORE TARBELA:						
Cultivated	33,000	16,000	4,000	10,000	15,000	78,000
Irrigated	8,000	5,000	50	0	0	13,050
Un-irrigated	25,000	11,000	3,950	10,000	15,000	64,950
Total	53,250	15,250	28,500	45,625	37,500	180,125
LAND LOST TO TARBELA:						
Cultivated	50	28	1,018	1,336	615	3,047
Un-cultivated	13	6	373	500	175	1,067
Total	63	34	1,391	1,836	790	4,114
Cult land lost as % of total cultivated	0.2	0.2	25.5	13.4	4.1	3.9
LAND NOW AVAILABLE:						
Cultivated	32,950	15,912	2,982	8,664	14,385	74,893
Un-cultivated	53,237	15,244	28,127	45,125	37,325	179,058
Total	86,187	31,216	31,109	53,789	51,710	254,011
AREA USED 1979-1981:						
Wheat	24,000	10,000	2,700	6,000	12,000	54,700
Paddy	8,000	4,000	40	0	0	12,040
Maize	25,000	11,000	3,800	9,000	14,000	62,800
Poppy	120	40	62	85	60	367
AREA USED 1982-1984:						
Wheat	22,000	10,000	2,500	6,300	12,500	53,300
Paddy	7,000	5,000	50	0	0	12,050
Maize	24,000	12,000	3,600	8,600	13,800	62,000
Poppy	200	80	90	110	150	630
AVERAGE AREA PER CAPITA						
Poppy	0.018	0.024	0.022	0.022	0.021	0.020
Paddy	0.83	1.80	0.01	0.00	0.00	0.49
Wheat	2.6	4.0	0.7	1.4	2.5	2.2
Maize	2.7	4.6	1.1	2.0	2.8	2.6

APPENDIX I (continued)

Table 2.

	BASI KHEL	NUSRAI KHEL	AKA ZAI	HASAN ZAI	MADDA KHEL	TOTAL
POPULATION (1972)	72,000	20,000	28,000	35,000	40,000	195,000
CULTIVATED AREA	33,000	16,000	4,000	10,000	15,000	78,000
UN-CULTIVATED AREA	53,250	15,250	28,500	45,625	37,500	180,125
TOTAL AREA	86,250	31,250	32,500	55,625	52,500	258,125
ALL HOLDINGS:						
No. of Owners	17,975	4,400	8,000	8,400	9,800	48,575
Cultivated Land	27,925	13,000	3,150	8,600	12,000	64,675
Un-cultivated Land	46,250	12,850	23,350	36,225	27,900	146,575
Total	74,175	25,850	26,500	44,825	39,900	211,250
1 TO 5 ACRE HOLDINGS:						
No. of Owners	13,900	3,070	6,730	6,485	3,100	33,285
Cultivated Land	2,575	1,100	250	2,500	3,200	10,325
Un-cultivated Land	10,350	1,350	4,050	2,875	4,500	23,125
Total	12,925	2,450	5,000	5,375	7,700	33,450
5 TO 12 ACRE HOLDINGS:						
No. of Owners	2,500	700	800	1,100	900	6,000
Cultivated Land	3,000	3,100	300	1,100	2,100	10,100
Un-cultivated Land	12,000	3,200	6,300	8,800	5,100	35,400
Total	20,000	6,300	7,100	9,900	7,200	50,500
12 TO 25 ACRE HOLDINGS:						
No. of Owners	1,200	450	300	450	450	2,850
Cultivated Land	10,000	4,500	600	1,400	2,500	19,000
Un-cultivated Land	14,000	4,500	5,400	7,600	5,150	36,650
Total	24,000	9,000	6,000	9,000	7,650	55,650
25 TO 50 ACRE HOLDINGS:						
No. of Owners	300	150	130	250	230	1,060
Cultivated Land	4,000	3,200	500	1,300	1,900	10,900
Un-cultivated Land	5,000	2,800	4,700	8,700	6,150	27,350
Total	9,000	6,000	5,200	10,000	8,050	38,250
50 TO 100 ACRE HOLDINGS:						
No. of Owners	50	30	40	100	110	330
Cultivated Land	1,800	1,100	300	1,200	1,700	6,100
Un-cultivated Land	2,200	1,000	2,900	6,800	6,000	18,900
Total	4,000	2,100	3,200	8,000	7,700	25,000
100 TO 200 ACRE HOLDINGS:						
No. of Owners	25	0	0	15	10	50
Cultivated Land	1,550	0	0	1,100	700	3,250
Un-cultivated Land	2,700	0	0	1,450	1,000	5,150
Total	4,250	0	0	2,550	1,600	8,400

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APPENDIX 1 (continued)

PER CENT OF TOTAL IN EACH GROUP

Table 3.

	BASI KHEL	NUSRAT KHEL	AKA ZAI	HASAN ZAI	MADA KHEL	TOTAL
1 TO 5 ACRE HOLDINGS:						
No. of Owners	77	70	84	77	83	79
Cultivated Land	9	8	30	29	27	16
Un-cultivated Land	22	11	17	8	16	16
Total	17	9	19	12	19	16
5 TO 12 ACRE HOLDINGS:						
No. of Owners	14	16	10	13	9	12
Cultivated Land	29	24	25	13	18	23
Un-cultivated Land	26	25	27	24	18	24
Total	27	24	27	22	18	24
12 TO 25 ACRE HOLDINGS:						
No. of Owners	7	10	4	5	5	6
Cultivated Land	36	35	19	16	21	29
Un-cultivated Land	30	35	23	21	18	25
Total	32	35	23	20	19	26
25 TO 50 ACRE HOLDINGS:						
No. of Owners	2	3	2	3	2	2
Cultivated Land	14	25	16	15	16	17
Un-cultivated Land	11	22	20	24	22	19
Total	12	23	20	22	20	18
50 TO 100 ACRE HOLDINGS:						
No. of Owners	0.3	0.7	0.5	1.2	1.1	0.7
Cultivated Land	6.4	8.5	9.5	14.0	14.2	9.4
Un-cultivated Land	4.8	7.8	12.4	18.8	21.5	12.9
Total	5.4	8.1	12.1	17.8	19.3	11.8
100 TO 200 ACRE HOLDINGS:						
No. of Owners	0.1	0.0	0.0	0.2	0.1	0.1
Cultivated Land	5.6	0.0	0.0	12.8	5.0	5.0
Un-cultivated Land	5.8	0.0	0.0	4.0	3.6	3.5
Total	5.7	0.0	0.0	5.7	4.0	4.0

(%)

APPENDIX 1 (continued)

PER CENT OF TOTAL IN EACH GROUP

Table 4.

	BASI KHEL	NUSRAT KHEL	AKA ZAI	HASAN ZAI	MADA KHEL	TOTAL
No. OF OWNERS:						
1 to 5 ac. farms	77.3	69.8	84.1	77.2	82.7	78.8
5 to 12 ac. farms	13.9	15.9	10.0	13.1	9.2	12.4
12 to 25 ac. farms	6.7	10.2	3.8	5.4	4.6	5.9
25 to 50 ac. farms	1.7	3.4	1.6	3.0	2.3	2.2
50 to 100 ac. farms	0.3	0.7	0.5	1.2	1.1	0.7
100 to 200 ac. farms	0.1	0.0	0.0	0.2	0.1	0.1
CULTIVATED LAND:						
1 to 5 ac. farms	9.2	8.5	30.2	29.1	26.7	16.0
5 to 12 ac. farms	28.6	23.8	25.4	12.8	17.5	23.3
12 to 25 ac. farms	35.8	34.6	19.0	16.3	20.8	29.4
25 to 50 ac. farms	14.3	24.6	15.9	15.1	15.8	16.9
50 to 100 ac. farms	6.4	8.5	9.5	14.0	14.2	9.4
100 to 200 ac. farms	5.6	0.0	0.0	12.8	5.0	5.0
UN-CULTIVATED LAND:						
1 to 5 ac. farms	22.4	10.5	17.3	7.9	16.1	15.8
5 to 12 ac. farms	25.9	24.9	27.0	24.3	18.3	24.2
12 to 25 ac. farms	30.3	35.0	23.1	21.0	18.5	25.0
25 to 50 ac. farms	10.8	21.8	20.1	24.0	22.0	18.7
50 to 100 ac. farms	4.8	7.8	12.4	18.8	21.5	12.9
100 to 200 ac. farms	5.8	0.0	0.0	4.0	3.6	3.5
TOTAL CULT. & UNCULT:						
1 to 5 ac. farms	17.4	9.5	18.9	12.0	19.3	15.8
5 to 12 ac. farms	27.0	24.4	26.8	22.1	18.0	23.9
12 to 25 ac. farms	32.4	34.8	22.6	20.1	19.2	26.3
25 to 50 ac. farms	12.1	23.2	19.6	22.3	20.2	18.1
50 to 100 ac. farms	5.4	8.1	12.1	17.8	19.3	11.8
100 to 200 ac. farms	5.7	0.0	0.0	5.7	4.0	4.0

The source of base data for the above tables is SDU files. Its accuracy can not be verified.

Some discussion of Figures 1 and 2 is presented in Appendix 12, where it is observed that distribution of ownership of land and output of agricultural production appear to follow standard Lorenz curve characteristics.

Figure 3 - Land Availability:

The Figure shows the amount of land available in each Khel for each of the three main crops. If the base data is accurate then some profound differences are apparent. The Akazai people for example have almost no rice area, and less than one kanal (one kanal equals one eighth of an acre - 605 sq. yds.) per person per year of wheat and maize from which to grow all their food requirements. Either this is a woefully inadequate amount, when compared to Nusrat Khel for example, or land at Akazai is relatively much better.

Figure 4 - Agricultural Data:

The first two bars in the Figure show population and cultivated land area in each Khel, as proportions of the respective totals for the whole of Kala Dhaka. In the Khels where population exceeds land, one may assume that the quality of land is perhaps better than where land exceeds population.

The third bar of the chart shows the proportion of cultivated land lost to Tarbela Lake, as a per cent of the total amount lost for all of Kala Dhaka. Clearly Hassanzai, Akazai and Madda Khel lost the the greatest amounts of cultivated land.

The fifth bar is empty but the sixth shows the proportion of land lost to the lake in each Khel as a per cent of the total cultivated in each Khel. Here it is noted that Basi Khel and Nusrat Khel lost almost nothing; Madda Khel lost only 5 per cent; whilst Akazai lost 25 per cent and Hassanzai 15 per cent of all their available cultivable land.

When one looks back to Figure 3, in conjunction now with the information from Figure 4, it seems that the peoples of Akazai and Hassanzai are still greatly affected by the loss of their best land to the lake. If this observation is correct, then development assistance priorities should reflect the high population ratio to available land in these particular food deficit Khels.

Figure 1.

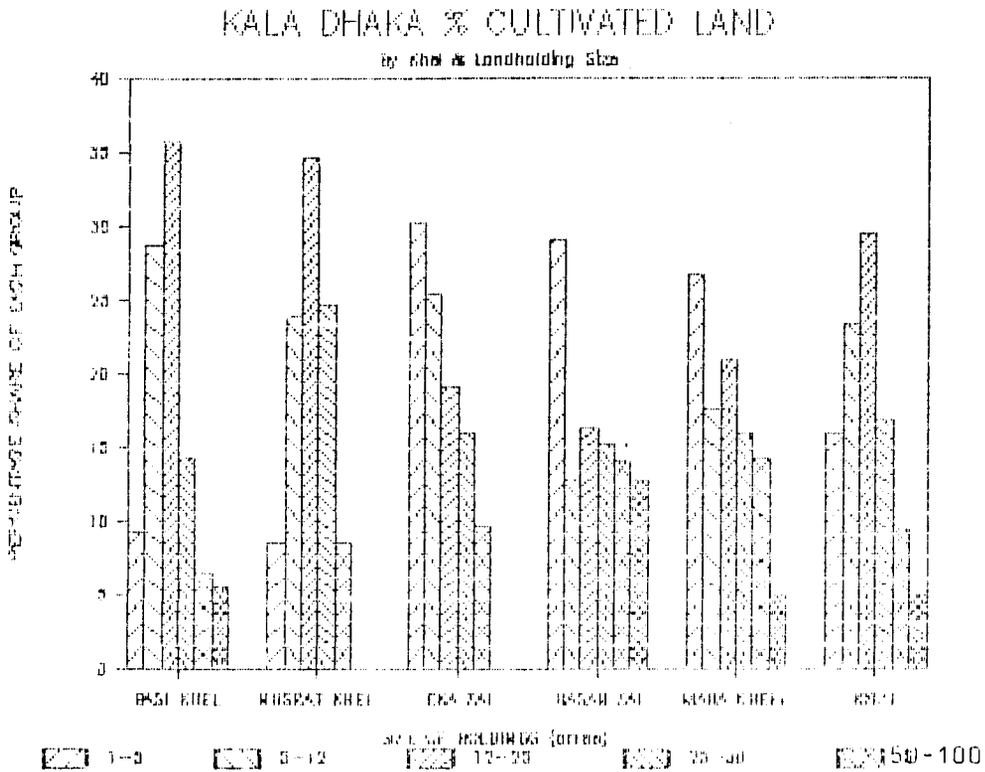
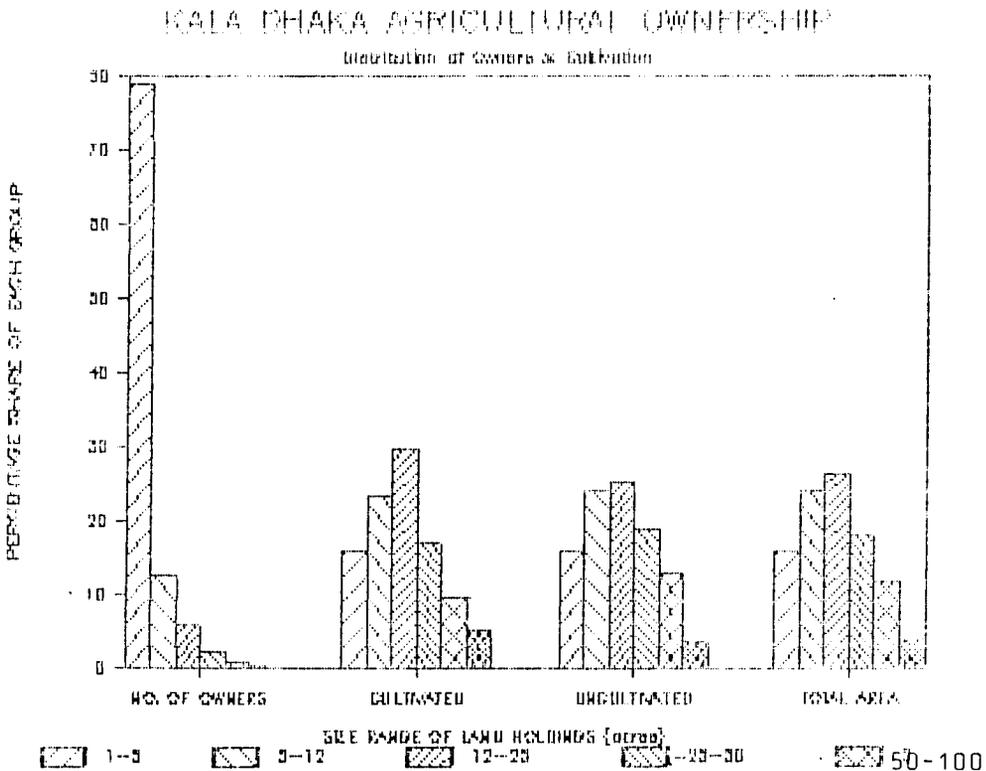


Figure 2.



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Figure 3.

KALA DHAKA LAND AVAILABILITY

Average per Capita - 1979-1984

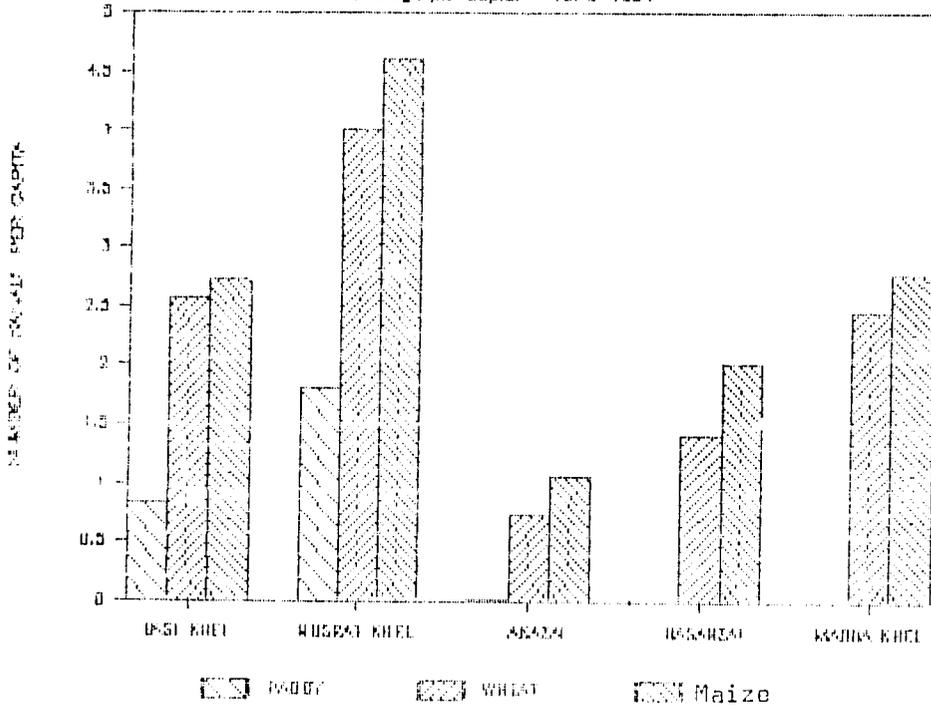
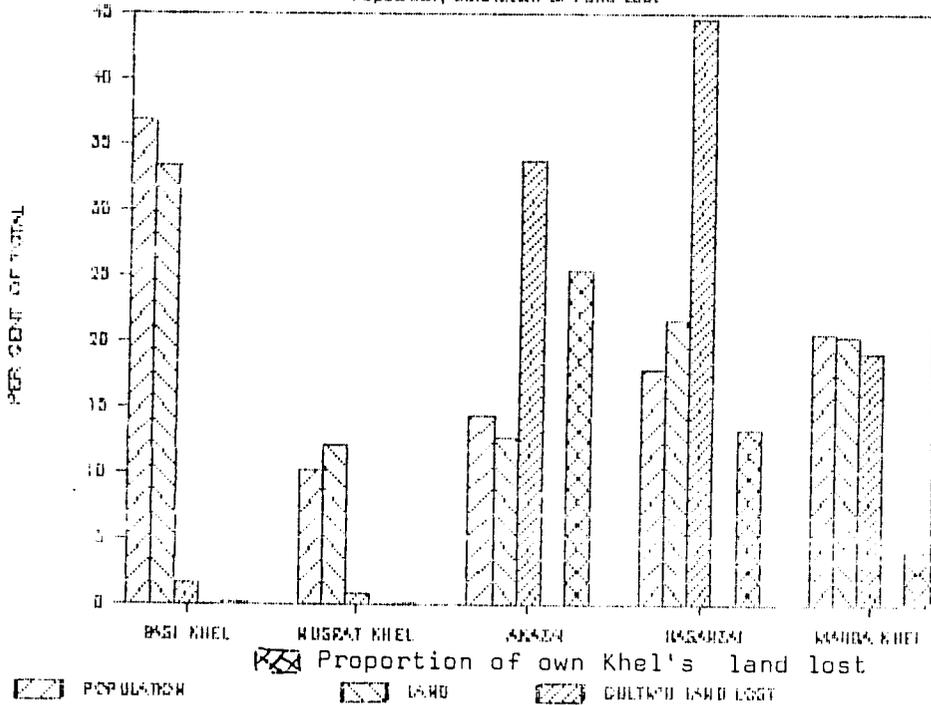


Figure 4.

KALA DHAKA AGRICULTURAL DATA

Population, Cultivation & Land Lost



APPENDIX 2

CLIMATE

RAIN FALL AT OGH1 (mm)
1958 - 1968

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1958	58.1	50.0	151.1	48.5	33.8	29.5	244.3	188.5	115.8	33.3	13.2	295.3	1219
1959	110.5	169.7	93.7	172.7	128.8	7.9	143.8	215.1	140.0	13.5	146.0	6.9	1548
1960	Data not available												
1961	122.0	59.7	83.1	156.7	59.9	43.4	166.4	140.0	112.8	39.4	121.9	22.9	1133
1962	13.2	103.1	106.2	73.5	34.3	70.4	322.8	144.5	35.3	37.8	29.5	100.6	1071
1963	0.0	59.4	229.6	184.7	112.8	16.3	169.2	156.5	77.2	15.0	70.9	41.1	1133
1964	187.2	95.5	61.2	91.2	52.8	6.6	287.8	175.8	88.9	16.5	2.5	53.1	1119
1965	42.9	238.5	140.7	268.5	243.3	17.5	197.9	156.5	16.0	19.1	22.6	54.0	1398
1966	0.0	215.6	225.3	179.2	42.7	23.9	137.2	104.6	107.2	164.8	0.0	25.9	1217
1967	6.6	239.5	21.6	153.7	41.1	74.2	101.6	141.7	57.4	41.7	0.0	137.4	1017
1968	113.3	122.2	73.2	73.4	65.3	32.0	293.4	102.1	9.4	91.2	61.0	0.0	1036
Avg.	59.7	121.2	107.8	128.5	74.1	29.2	187.7	138.7	69.1	42.9	42.5	63.3	1064.7

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APPENDIX 3

POPULATION DATA

This data is still awaited.

APPENDIX 4

ROADS

The MPA's have conveyed the following requests to the SDU team for consideration for inclusion in the Project for Kala Dhaka. These requests have not been prioritized.

ROAD FROM:	TO	LENGTH (km)	COST Rs.m.	VILLAGES EN ROUTE	NOTES
MADA KHEL:					
Dhand	Maira	12	18	Badar, Gowardla, Chirakot	1
Charori	Maira	12	18	Ghari, Choond, Maira	2
Mahabara	Maira	10	15	Mahabara, Titai	
Mahabara	Mera Khan Khel	20	30	Karat	
Palosa	Choond	20	30	Baba, Sulamany, Manjakot	
HASSANZAI:					
Mera Khan Khel	Palosa	10	15	Deray, Nadrei, Gari	
Shangli	Kunhar	20	30	Shangli, Tilli Soydan, Borian, Tilgram, Mish Kot	3
AKAZAI					
Naray Lilly	Lashora	20	30	Bimbal, Biliari, Loid	4
NUSRAT KHEL:					
Kotly	Chore Kalam Rd.	30	45	Balkot, Chawang, Sachka, Pak Ban, Mochi Sa	
BASI KHEL					
Judbah	Namli Maidan	40	60	Judbah Bala, Gari, Giginari, Jatka, Shalof	
Zirani	Kalash	30	45	Dherai, Kotka, Sundri	
Gilban	Magnai Kamaisher	16	24	(direct)	5
Hakot	Kalash	20	30	Markan, Shingabdar	
TOTALS:		290	435		

NOTES:

1. Road already exists up to Dhand in Hazara Amazai.
2. Road already exists up to Charori in Dagga Tehsil.
3. D.C. has already constructed 5km under Rural Works Program.
4. To link left Bank areas with the Right Bank.
5. Low priority - being in a Settled Area.

Length and cost data are tentative.

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It has been estimated that about a dozen boats operate in the area, providing an invaluable link between the two sides of the lake. They are generally about six meters long, of shallow draught, powered by small outboard motors and have a capacity of one tonne. It is possible to steam almost as high as Judbah throughout the year. Some typical statistics are shown in the table below:

SECTOR	DISTANCE (km)	TRAVEL TIME (hours)	PASSENGER FARE (Rs.)	FREIGHT RATE Rs./cwt
Lubela - Darband	40	2.5	15	16
Darband - Maira	8	0.3	5	10
Darband - Judbah	50	3	20	20

It is considered that this aspect of communication has significant scope for assistance under any project for the area. Numerous small pick up trucks and mini buses operate in and out of Kala Dhaka on the Darband Thakot road. In the northern section, approximately 6 were noticed; whilst in the south the number is perhaps nearer to 50.

During visits to the area it was also noted that in several places debris from the bench cut had simply been pushed over the side of the mountain, without concern for the terraces below. Some were seen to have been covered by the land slides, whilst others were in tact but the small channel supplying water had been blocked; thereby denying the farmers the opportunity to grow rice this year. It is important that this type of practice is not followed in the new Project.

The following is a list of villages within two miles of the proposed road Machriband to Judbah.
(distances are in eighths of a mile (100 m.))

Machriband	1	Garhi	1
Cheer	0	Shagay	12
Utlabanda	0	Banda	3
Chawong	0	Kopra	0
Sachka	0	Barmokar	11
Pakban (N)	1	Toram	8
Pakban (S)	0	Morada	9
Jangray	9	Mohammadi	16
Bala	8	Ramos	7
Kala Kunda	12	Sandu	7
Sandray	9	Batela	5
Giqiani	12	Bil Kot	9
Shatal	17	Gombal	4
Relana Ashrey	12	Pain	0
Shadao	14	Judbah	0
		Judbah Bala	0

The following is a list of villages within two miles of the Thakot Barband road:
(distances are in eighths of a mile (100 m.))

BASI KHEL:		NUSRAT KHEL:		HASSANZAI	
Larya	2	Kotli	0	Bakray	1
Badukhan	0	Bilkot	9	Sadlogay	4
Daddar	1	Batela	16	Gozikot	3
Guldari	1	Lodara	1	Tilli	16
Daur	5	Sornal	1	Borian	13
Daur Mera	5			Taigram	14
Dando	10	AKAZAI		Mash Kot	12
Baddar	10	Mohammadi	10	Kunaray	10
Markani	16	Paiza	7	Kurhar Sharif	3
Dandi	8	Darbanai	2	Kot Key	2
Zizari	3	Kalala	13	Tohara	2
Chalmar	12	Kot Kai	16	Kandar	0
Sari	15	Khadong	2		
Dheri	3	Loshora	4		
Jaigle	1	Laid (E)	4		
Kot kal	1	Gogus	10		
Soray Khamar	3	Kot Kai	16		
Sundari	15	Dadau	4		
Kunder	1	Norar	4		
Herrail	10	Laid (W)	10		
Bato Banda	1	Banda	10		
Relara	8	Umar Bandu	11		
Ashy	12	Biliani	15		
Shadag	3	Bakiana	14		
Shagay	4	Binbal	17		
Judban Bala	12				
Jubbah	0				
Pain	0				
Pamail	3				
Gombal	3				

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APPENDIX 5

DRINKING WATER SUPPLY SCHEMES

The following villages have drinking water supply schemes:

Abu Shani
Adu Khan
Baddar (N)
Baddar (S)
Bag
Bey Raza
Bimbal
Borian
Chawong
Cheer
Choond
Daddy Banda
Dana
Darbari
Dheri
Dour Mera
Gagiani
Gigyan
Gito
Gowandla
Hernail
Judbah
Kala Sar
Kalala
Kalash
Karnah
Khadang
Kot Key
Kunhar
Legra
Manja Kot
Mangri
Mera (North)
Mera (South)
Mahabra
Nadrai
Petow Ashray
Pranjai
San Dray
Sar Garhi
Seri
Utlare
Yagub Khan
Dalosa Jhango

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APPENDIX 6

HEALTH

The following villages have Basic Health Units:

Barthori
Judbah
Manja Kot
Mera (North)
Shingle Dar

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APPENDIX 7

EDUCATION

18 Primary Schools at:-

1. Choor Kalan
2. Tilli Sydan
3. Manja Kot
4. Maira Khan Khel
5. Seri Khohani
6. Merani
7. Barthooni
8. Daur Maira
9. Shingle Dar
10. Jugi Bala
11. Sado Khan
12. Kotli
13. Maira
14. Cheri
15. Choord
16. Kolkai
17. Judba
18. Shass Dang

5 Mosque Schools at:

1. Bimbal
2. Kaleesa
3. Pirbala
4. Manjakot
5. Kunhar

2 Middle Schools at:-

1. Maira
2. Judba

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APPENDIX 8

LIST OF VILLAGES IN KALA DHAKA
GROWING POPPY DURING 1987 KARIF SEASON

	VILLAGE	AREA (acres)	KHEL
1	Maira	20	Mada Khel
2	Manjakot	20	Mada Khel
3	Chira Kot	18	Mada Khel
4	Doba Bala	13	Mada Khel
5	Judba paeen	13	Basi Khel
6	Karor	13	Mada Khel
7	Shah Daq	12	Basi Khel
8	Kalsona	11	Mada Khel
9	Zizari	11	Basi Khel
10	Bayo	10	Hassanzai
11	Gowandla	10	Mada Khel
12	Karnah	10	Hassanzai
13	Kundar	10	Basi Khel
14	Maira	10	Basi Khel
15	Naway Kily	10	Hassanzai
16	Titai	10	Mada Khel
17	Towara	10	Hassanzai
18	Choran	9	Mada Khel
19	Doba Paeen	9	Mada Khel
20	Kagh Bala	9	Mada Khel
21	Kagh Paeen	9	Mada Khel
22	Nola	9	Mada Khel
23	Shagai	9	Basi Khel
24	Soria	9	Mada Khel
25	Balkot	8	Nusrat Khel
26	Judba Bala	8	Basi Khel
27	Kumar Sharif	8	Hassanzai
28	Ladh	8	Akazai
29	Palosa	8	Hassanzai
30	Parangal	8	Mada Khel
31	Phagban Paeen	8	Nusrat Khel
32	Ghari Judha	7	Basi Khel
33	Gumbat	7	Nusrat Khel
34	Kotkay	7	Hassanzai
35	Kotlay	7	Nusrat Khel
36	Marar	7	Hassanzai
37	Nadrai	7	Hassanzai
38	Suchka	7	Nusrat Khel
39	Badar	6	Basi Khel
40	Dilyari	6	Akazai
41	Phagban Bala	6	Nusrat Khel
42	Chato	5	Nusrat Khel
43	Daram Nona	5	Basi Khel
44	Darbani	5	Akazai
45	Dore Maira	5	Basi Khel

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APPENDIX 8 (continued)
LIST OF VILLAGES IN KALA DHAKA
GROWING POPPY DURING 1987 KARIF SEASON

VILLAGE	AREA (acres)	KHEL	
46	Gegal	5	Basi Khel
47	Gharri	5	Hassanzai
48	Kand Bala	5	Basi Khel
49	Kandar	5	Hassanzai
50	Kunhari	5	Hassanzai
51	Lashora	5	Akazai
52	Machara	5	Akazai
53	Shingaldar	5	Basi Khel
54	Tarkana	5	Nusrat Khel
55	Batilla	4	Nusrat Khel
56	Bikiaran	4	Akazai
57	Bilbari	4	Akazai
58	Bimbal	4	Akazai
59	Kand Paeen	4	Akazai
60	Shallon	4	Basi Khel
61	Tilli	4	Hassanzai
62	Utlar	4	Basi Khel
63	Dada Banda	3	Basi Khel
64	Gul Dhari	3	Basi Khel
65	Jahngaray	3	Nusrat Khel
66	Kand Bala	3	Akazai
67	Khadang	3	Akazai
68	Markhanai	3	Basi Khel
69	Nawa Killi	3	Akazai
70	Shatal	3	Basi Khel
71	Sora Ashray	3	Basi Khel
72	Bair Tooke	2	Basi Khel
73	Bakrai	2	Hassanzai
74	Barazai	2	Basi Khel
75	Chamb Kalagaj	2	Basi Khel
76	Gigani	2	Basi Khel
77	Hannai	2	Basi Khel
78	Jhatka	2	Basi Khel
79	Kalala	2	Akazai
80	Kalash	2	Basi Khel
81	Karoon	2	Basi Khel
82	Maira	2	Akazai
83	Mola Patay	2	Basi Khel
84	Sadu Khan	2	Basi Khel
85	Sari Kohari	2	Hassanzai
86	Surban	2	Basi Khel
87	Surmal	2	Akazai
88	Bargai	1	Basi Khel
89	Targram	1	Hassanzai

Summary:

Akazai	60	Nusrat Khel	60
Basi Khel	157	Madda Khel	177
Hassanzai	101	TOTAL	555 acres.

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APPENDIX 9

FORESTRY

There are three main forest types in Kala Dhaka:

- i. Pure fir and spruce - above 8,000 feet.
In areas which have been previously exploited, the crop is quite depleted. Regeneration is only occasional because of the thick, undecomposed humus layer and because of overgrazing by livestock.
- ii. Mixed fir, spruce and blue-pine - 4,500 to 8,000 feet.
This forest has been severely depleted in the past and is now often found only in inaccessible areas. Regeneration of blue-pine is fair but fir is scanty. The area is almost devoid of underwood as it has been used previously for household fires.
- iii. Pure blue-pine forests - 4,500 to 8,000 feet.
This represents the largest forest and is often seen to be regenerating well. These forests have been heavily worked in the past, for commercial and domestic purposes.

The approximate distribution of the forest is as follows:

RANGE	FOREST	AREA (acres)
Batagram	Bilandkot	100
	Saidra	76
	Kopra	448
	Pirari	1,828
	Kabian	672
	Tortam	404
	Mangrai	261
	Kamesar	456
	Bartuni	2,675
	Derai	490
	Shingaldar	1,596
	Sadu Khan	710
	Kochand	330
	Kalash	735
Gantar	3,967	
Nusrat Khel	2,532	
	Sub-total	19,572
Shergarh	Pabalgali	595
	Sorikohari	2,970
	Akazai	3,200
		Sub-total
	GRAND TOTAL	26,337

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APPENDIX 10

IRRIGATION

WATER SECTOR PROGRAMME

S. No.	Name of the Channel to be Improved (I) or Constructed (C)	Source	Discharge Available in cusecs	Length of the Channel (Miles)	Discharge (cusecs)	Area (ac.)	Est'd. Cost (M. Rs)
I. Mada Khel Area.							
1	(I) Charakot Channel	Sonya Nullah	DNA	2	DNA	DNA	1.0
II. Akazai Area.							
1	(I) Existing Darbani Ch.	Pir Khel	-do-	2.5	-do-	do	1.25
2	(C) Naraj Akazai Ch.	Shawl Kwar	-do-	1.5	-do-	do	0.75
3	(C) Jango Irr. Channel	Shawl Kwar	-do-	2.5	-do-	do	1.25
4	(C) Maratha Irr. Ch.	Shawl Kwar	-do-	0.26	-do-	do	0.13
5	(I) Kand Bala Channel	Shawl Kwar	-do-	0.44	-do-	do	0.42
6	(I) Kand Payan Channel	Shawl Kwar	-do-	0.82	-do-	do	0.41
7	(I) Bakrai Channel	Shawl Kwar	-do-	2.4	-do-	do	1.20
III. Hassanzai Area.							
1	(I) Palosa Nowakili Ch.	Mangano Null.	-do-	3.0	-do-	do	1.5
IV. Basikhel Area.							
1	(I) Judbah Channel	Judbah Kwar	24	1.5	12	24,000	0.75
2	(I) Mohd. Saira Ch.	Judbah Kwar	12	1.5	1.5	250	0.75
3	(I) Maina Channel	Judbah Kwar	10.5	2	1.5	250	1.0
4	(I) Terra Owra Ch.	Judbah Kwar	9.0	0.5	1.5	250	0.25
5	(I) Ghato Sera Ch.	Judbah Kwar	7.5	1.0	1.5	250	0.50
6	(I) Maina Ghari Ch.	Judbah Kwar	6.0	3.0	1.5	250	1.5
7	(I) Judbah Dub Ch.	Judbah Kwar	4.5	2.0	1.5	50	0.00
8	(I) Bhala Channel	Judbah Kwar	3.0	1.25	2	250	0.63
9	(I) Shaikh Channel	Judbah Kwar	1.6	0.5	0.5	125	0.25
10	(I) Haqora Channel	Judbah Kwar	0.5	0.5	0.5	63	0.25
11	(I) Shaqi Channel	Shaqi Kwar	DNA	DNA	DNA	DNA	
12	(I) Kanda Channel	Shaqi Kwar	do	-do-	-do-	do	
13	(I) Shah Pak Kotkot Ch.	Shaqi Kwar	-do-	-do-	-do-	do	
14	(I) Zizari Channel with branch channels	Zizari Kwar	-do-	-do-	-do-	do	
15	(I) Dair main Channel with 3 branch channels	Zizari Kwar	-do-	-do-	-do-	do	

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WATER SECTOR PROGRAMME (continued)

S. No.	Name of the Channel to be Improved (I) or Constructed (C)	Source	Discharge Available in cusecs	Length of the Channel (Miles)	Discharge (cusecs)	Area (ac.) C.C.A.	Estd. Cost (M.Rs)
16	(I) Daur Maira main Ch. with 3 branch channels	Sadu Khan Kwar	-do-	-do-	-do-	-do-	-do-
17	(I) Sado Khan main Ch. with 2 Branch Channels	Sadu Khan Kwar	-do-	-do-	-do-	-do-	-do-
	V. Nusrat Khel Area.	Nusrat Khel Nullah	DNA	DNA	DNA	DNA	
1	(I) Para Bala Ch.	-do-	-do-	-do-	-do-	-do-	-do-
2	(I) Kotla Channel	-do-	-do-	-do-	-do-	-do-	-do-
3	(I) Kuz Para Channel	-do-	-do-	-do-	-do-	-do-	-do-
4	(I) Surmal Channel	Surmal Kwar	-do-	-do-	-do-	-do-	-do-
5	(I) To a Dara Channel	-do-	-do-	-do-	-do-	-do-	-do-
				29.57			14.79

REMARKS:

1. Realistic assessment of a firm cost estimate, area available for cultivation and discharge available from the source cannot be vouched at this stage unless detailed survey of the area is conducted and geo-hydrological data is made available.
2. The data incorporated in the proforma is based on the information available from the locals.
3. The cost estimates are based on similar works already completed under the IRM project in Malakand Agency, with 50% increase for the transportation charges as the area is difficult and inaccessible.
4. The cost estimates for the project area works out at Rs.100 per ft. run of the channel.
5. The cost given is tentative and subject to variation after the detailed survey and investigation of the area is carried out.

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APPENDIX 11

INM's OUTREACH PROGRAM

INM has been active in Kala Dhaka since 1984. During that time the following achievements have been made:

Demonstration Plots	No.	1,14
Demonstration Plots	Acres	1,185
Fruit Plants	No.	19,031
Fruit Orchards	No.	104
Fruit Orchards	Acres	190
Seed Distribution	Tonnes	56
Area Sprayed	Acres	60
Fertilizer Demonstrations	No.	2
Farmers Assisted	No.	10,000
Field Days Held	No.	2

FIELD ASSISTANTS FROM GOV LINE AGENCIES

A 300 ALLOWANCE

*WILL BEING HOUSED AT NO. 4 GO. ROAD WITH 160 F.A.'S
TO STAY IN AREA*

MERA MAM KHEL

SUREAN

MARBANA

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APPENDIX 12

AN OUTLINE OF THE WAISH SYSTEM

The waish system of landholding and use has been followed in the area since time immemorial and was evolved by Sheikh Malee Baba who was the pioneer of the Yousafzai tribe. The basic concept of the waish system is to apportion land so that each member of the tribe has an equal productive potential from his share. Then at the end of every ten years or so all land owners exchange land. The waish is effected through a Jirga or assembly of the tribal elders and in certain cases Shariat or Islamic law can be resorted to with an intermediary role played by the syed leaders, but this would only take place when tribal sanctions fail to resolve disputes. The objectives of the system are to:-

- share the profit and loss of the holdings in turn
- stand united for the defence of the area in case of any anticipated attack from outside
- maintain the socio-economic condition of the area
- maintain a system of democracy
- maintain equity in the society
- discourage one man rule
- maintain peace and tranquillity
- maintain a happy medium between rich and poor

Originally the waish had a cycle of 10 years, but in recent times this has been increased to 15 and there are requests to further increase it to 20. It may be that with the passage of time the tribes will simply agree to abandon the system, by not changing waish when the next one is due.

The following table shows the date when the last waish was undertaken and the anticipated date for the next.

KHEL	Waish	
	Last one	Next one
Madda Khel	1976	Nov. 1987
Akazai	1977	-do-
Hassanzai	1960	-do-
Basi Khel	1947	-do-
Nusrath Khel	1974	-do-

Originally, the Essazai tribe divided their lands into about 70 agricultural production units, while the Mulazai tribe divided their lands into 100 basic units. The basis of the division is rather complicated and relates not only to productive capacity, but also to strategic location and allocation of the units to those groups (syeds) lying in the "buffer zone" between different

tribes. Over the years the system has been further confused by fragmentation of the original shares into different generations.

Most landholders today do not have all their holdings in one block, there may be some forest, grazing and some good lands. The shares of 96 and 108 were originally fixed according to the number of bullocks or equivalent rupee cover available at that time, the details of such shares are given as under:-

1. Madda Khel area = 96 shares = 96 bullocks = 48 ploughs.
2. Hassan Zai = 96 shares
3. Akazai = 96 shares
4. Basi Khel = 108 shares
5. Nusrath Khel = 108 shares

where

1 plough	= 2 neemakai (neemakai = 1/2 of bullock)
1 bullock	= 1/4rth of a seer.
1 bullock	= 16 toorai (16 annas).
1 bullock	= 64 paisas.
1 paisa	= 4 dhamrees. (1/4rth of a paisa)

Those who originally had more bullocks received a larger amount of land than those with only one. But land can be bought and sold at any time, but at the end of the cycle it reverts back to the original owner, who then exchanges with someone else and moves to a new location; which also includes moving to a different house. The capability of the land is assessed at the time of the new waish, so improvements effected during the period of the previous cycle may alter the size of a new land holding entitlement, because the original entitlement was also determined on a productive potential basis. However, if for certain reasons a person wants to sell his share; for utilizing the money in business outside the area, he is entitled to do so. The sale deed is carried out as under:-

1. Temporary Mortgage

In this case the money should be returned to the mortgagee during the currency of the waish according to the legal deed of such transaction executed in the presence of the elders of the area.

2. Permanent Mortgage

The right of occupancy of the mortgagee remains valid up to the termination of the period of the waish. The mortgagor must return the money according to the terms and conditions of the agreement within the stipulated period.

3. Purchase of Shares

In this case the owner of the share establishes permanent rights. At the time of the next waish an equivalent share is allotted to him in another area.

Appendix 1 provides some interesting data on the distribution in Kala Dhaka and the area and production of crops. Some of the data seems to go against the description of the waish system given to the SDU because ownership appears to follow much the same pattern as is found in many places around the world. Figures 1 and 2 show that about 80 per cent of the farmers have access to a land area of only 1 to 5 acres which represent 15 percent of the total area of Kala Dhaka. On the other hand the lowest 3 per cent of land owners control 3 per cent of the cultivated land. In Madda Khel for example, the best 30 of the 96 agricultural production units (comprising the waish) produce two thirds of the total output.

The implications of this system are that it makes for a conservative approach to land management and thus it can be a great hindrance to development. On the other hand, it has proved over many generations to be one way of ensuring the community is maintained as one unit, with community interests overriding but protecting the interests and well-being of the individual. The difficult thing will be to predict how the waish system will accommodate all the modernizing pressures associated with any outside development assistance package. As a larger and larger proportion of the community gains access to increased opportunities such as education, health, employment and agricultural production and hospitals, the system will come under immense pressure to change in profound ways. The form of these changes can only be guessed at now, although already there are some people who want the whole system abandoned; and in fact it has been suggested to the SDU that the forthcoming waish, if it eventuates in any or all of the Khels, may well be the last one. If this is the case then the constraints noted above may not be so important since landholders will be able to make changes which they can be confident of receiving benefits from over succeeding family generations.

The important point for the project Design Team is to be aware of the system and to recognize that specific recommendations for project activities may not always be possible because of the constraints of waish. Such constraints are more likely to relate to proposals affecting individual farmers than the community as a whole. In the latter case, the tribe can allocate priorities much more easily than they can sanction an apparent benefit which seems to be directed only to one or a few members of the whole group.

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APPENDIX 13

RECONNAISSANCE OBSERVATION - FIELD VISIT TO KALA DHAKA AREA OCTOBER 1987

The Technical Team of SDU headed by the Chief, visited Kala Dhaka area on 9.10.87 and carried out a reconnaissance survey of the following areas.

I. Visit on 9.10.87 to Maira Village of Mada Khel Area. Present Land Use.

The total cultivated land in this area is 14,385 acres, and the irrigated area is nil. The main crops of the area are wheat 12,000 acres and maize 14,000 acres.

The party visited the Maira Village and en-route examined the availability of supply in the following nullahs.

1. Mahabra Nullah.

The nullah originates from Chakla and after traversing for two miles in the valley it debouches in Tarbela Lake.

The supply available in the nullah is hardly one cusec which is fully committed, for domestic use and drinking water supply schemes installed in the area under the rural development programme.

2. Maira Nullah.

The nullah starts from Madakai and after traversing for five miles it joins the Barando river. On this nullah there are about five water mills installed at various locations and a natural fall of about 600 ft. available at Sori.

The discharge available in the nullah is about three cusecs which can be diverted for irrigation purpose by constructing a sub surface wari up-stream of the water mills. Since the owners of the mills have got permanent water rights, the withdrawal of supply for irrigation purpose will create political complications. Anyhow, the existing fall of 600 ft. can be utilized for generating electricity. At the end of the visit to this area, the MPA demanded the construction of Charakot irrigation channel which will have its off-take from Sonya Kwar where perennial flow is available. The work is included in Appendix 10.

II. Visit on 10.10.87 to Akazai Area.

The party left Maira village for Judbah village of Basi Khel area and on the way came across the areas of Bimbal and Bilyani villages where maize was sown and presently not receiving any irrigation supplies.

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Since both the areas are located right on the bank of Tarbela Lake the possibility of harnessing the sub-soil water should be explored. In this area, if open wells are tried for irrigation purpose on an experimental basis, tangible results are expected as these wells derive the supply from the water in the lake. Exact locations can not be predicted at this stage.

At the end of the visit to this area the local MPA put forth the demands of the locals which are given as under:-

- a. Construction of hydel station on Shawl Kwar where a natural fall of 40 ft. is available and also there is a flow of about 15 cusecs available round the year.
- b. Improvement to existing Darbary irrigation channel and construction of three new irrigation channels. (For details see Appendix 10).

Present Land Use.

The Agricultural census of 1965-66 put the total cultivated land in the area at 2,982 acres, including 50 acres of land under irrigation. The main crops in the area are wheat 2,700 acres, rice 40 acres and maize 3800 acres.

III. Visit on 10/11.10.87 to Basi Khel area/Nusrat Khel area.

At Judbah village of Basi Khel area the MPA put forth the demands of the locals of Basi Khel and Nusrat Khel tribes which are detailed as under.

1. Basi Khel Area.
 - a. Improvement to 17 existing irrigation channel in Basi Khel area (For detail see Appendix 10).

Land Use.

The total cultivated area is 32,950 acres, including 8,000 acres under irrigation. The main crops of the area are wheat 24,000 acres, rice 8,000 acres and maize 25,000 acres.

2. Nusrat Khel Area.
 - a. Improvement to five existing irrigation channels in Nusrat Khel area (For detail see Appendix 10).

Land Use.

The total cultivated area is 15,240 acres, including 5,000 acres under irrigation. The main crops in the area are wheat 10,000 acres, rice 4,000 acres and maize 25,000 acres.

Salient Features of the Schemes.

The work of improvement to the existing irrigation channels and construction of new channels envisages the construction of:

- a) Permanent sub-surface weir in the nullah to tap the surface as well as sub-surface flow and a head regulator.
- b) Lining of the channel to check seepage losses.
- c) Providing cross drainage works at the vulnerable points.
- d) Construction of Pucca structures like retaining walls.

Presently the irrigators have constructed temporary diversion bunds at the head of the existing channels which are generally washed away during floods, thus causing interruption in the irrigation supplies for indefinite periods during monsoon and winter freshets.

With the completion of the above works regular irrigation supplies to the standing cultivation will be ensured. Moreover, with the stoppage of the seepage losses the existing cropping intensity of the area will be improved and in addition to above new areas will also be brought under command.

Comments.

1. The schemes given in Appendix 10 are based on investigation of reconnaissance stage/local information and detailed investigation will have to be taken up for preparing the feasibility report.
2. Since no geo-hydrological data of the nullahs is available, the quantitative assessment of the ground water potential can not be ascertained at this stage.
3. There is a need to set up a comprehensive system of daily discharge observations on these nullahs as knowledge of the daily stream flows over a longer period is indispensable for a correct determination of the scope of a project and for preparing a suitable design of the component engineering works.

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APPENDIX 14

LIST OF KEY CONTACTS

Sl. No.	Name	Title	Address
1.	Ejaz Rahim	Commissioner Hazara	Abbotabad.
2.	Hifz-ur-Rehman	Deputy Commissioner	Mansehra.
3.	Mohammad Zaman	Sub Divisional Officer Irrigation Department.	Abbotabad.
4.	M. Ismatullah Khan	Deputy Director Agri.	Abbotabad.
5.	Ghazi Marjan	Conservator of Forest	Abbotabad.
6.	Iqbal Ludhi	District Health Officer	Abbotabad.
7.	Mohammad Sadiq	Assistant Director Animal Husbandry	Abbotabad.
8.	M. Kiyani	E.A.D.A.	Mansehra.
9.	M. Naseem	XEN C&W	Mansehra.
10.	Shah Wazir Khan	Divisional Forest Officer.	Batagram.
11.	M. Farid Khan	Political Tehsildar	Oghi.
12.	Capt. Syed Shaukat Hussain Shah	District Officer Frontier Constabulary	Oghi.
13.	Abdul Hamid Khan	Director of Industries	Peshawar.
14.	Amanullah Khan	Divisional Forest Officer Forest Pre- Investment Centre	Peshawar.
15.	Mohammad Abid	Director (Mines) Sarhad Development Authority	Peshawar.
16.	Zarin Gul	Member of the Provincial Assembly	Darband.
17.	Afsar Khan	Member of the Provincial Assembly	Judba.
18.	Maj Rashid	Frontier Works Organization.	Thakot.

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