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Interim Report:

**NWFADP Kala Dhaka
Area Development
Project, Pakistan**

Phase I

Prepared for USAID/Pakistan under project number 391-0485

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PREFACE AND ACKNOWLEDGMENTS

This report reviews the major issues affecting the implementation of the U.S. Agency for International Development-funded Kala Dhaka Area Development Project (KDADP). It has been prepared to coincide with the upcoming KDADP workshop and to help focus discussions of USAID and the Government of the North West Frontier Province on the implications of these implementation issues for future project activities. This report is not intended as an evaluation. Rather it is presented as a progress report and as a review of lessons learned to date.

The authors wish to thank the members of the KDADP Project Coordinating Unit, particularly Mohammad Yusuf, the Project Manager, Mr. Siddiqi, the Deputy Project Manager, and Engineer Shah, for their advice and assistance in carrying out the field trips. We would also like to thank the Political Tehsildar at Oghi for providing security during these field trips. The Technical Assistance Team, including the Chief of Party Dick Scott and his wife Mary, Iqbal Niazi, Engineer Ijaz Zahoor, Dr. Zahoor Alam, Ataur Rehman, and Mohammad Niaz, made us welcome and facilitated all our research. For this we are very grateful. Finally, we would like to thank the people of Kala Dhaka who provided us with such generous hospitality and patiently responded to all our inquiries.

All views expressed in this report are those of the contributors and do not necessarily represent those of the Government of Pakistan or the USAID Pakistan Mission.

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NB Fact: The PP and the original PC-1 were based on limited information and experience, and NB a different financing bases. ix NB Can we do a new PC-1 for the balance of the project?

EXECUTIVE SUMMARY

The Kala Dhaka Area Development Project (KDADP) was initiated by the U.S. Agency for International Development in Pakistan in February 1990. The objective of the project is to reduce existing opium poppy cultivation and to discourage expanded opium poppy cultivation in Kala Dhaka by bringing this remote, economically neglected area into the mainstream of the provincial and national economies. KDADP was conceived to have two phases. The objectives of Phase I have been (1) the construction of roads and the establishment of pilot activities in agriculture, health, and education as well as community-based infrastructure development projects; and (2) a review of pilot activities combined with the gathering of data to determine feasible development activities for a full-scale Phase II of the project.

Since KDADP's inception, however, USAID/Pakistan has been reassessing its strategy of remote area development in Pakistan. This reassessment has prompted a shift from the support of infrastructure development projects, and paragonment institutions to manage those projects, to the support of multisectoral development through existing government line departments in partnership with the members of the target communities.

This report presents the findings and recommendations of a team of short-term consultants that provided technical assistance to the Kala Dhaka Area Development Project in the autumn of 1990. The report's findings represent the team's review of current KDADP Phase I project activities. Lessons learned from this review formed the basis for the team's recommendation for the second year of KDADP Phase I as well as the proposed follow-on project, KDADP Phase II. The team's findings and recommendations are organized according to the following sectors.

POPULATION

An estimated 338,000 people live in the Kala Dhaka region. Sixty-eight percent of that population is Pukhtun. Nearly 88 percent of all households sampled have at least one member working outside the region for an average of nine months per year. Sixty-nine percent of all Kala Dhaka males between the ages of 16 and 50 work in largely unskilled jobs in Karachi. This high level of mobility among the male population and the enormous demands on their time when they are actually in Kala Dhaka will be an obstacle to promoting participation in the planning and implementation of project activities. KDADP activities will require the flexibility and the incentives that will guarantee the continuity of village members' commitment.

AGRICULTURE

KDADP has the opportunity to support significant improvements to the region's agriculture by making available improved high-quality wheat, maize, rice, and seed potato, and required inputs (fertilizer and pesticides). The Agriculture Department must improve its support to KDADP in the timely planning, selection, and procurement of inputs to guarantee the acceptance and continued demand for these improved seed varieties. The posting of additional extension agents to the region is a step in that

direction. The Agricultural Department's training of local field workers will also improve its extension services. Additional support must be provided in the form of expanded transport allowances and greater access to project vehicles, to insure the mobility of extension workers during crucial planting periods.

There is no significant opium poppy cultivation in the Kala Dhaka region on the east bank of the Indus River. However, there is insufficient data to make the same determination for the west bank area of Mada Khel. In 1987, the Pakistan Narcotics Control Board conducted an aerial survey of Kala Dhaka. Less than 0.8 percent of the area's cultivable land was planted with poppy. The PNCB should be encouraged to conduct a similar survey in 1991 to determine if poppy cultivation has expanded in Kala Dhaka.

LIVESTOCK AND RANGELAND

While not an established component of KDADP, livestock are as important as crops to the agricultural economy of Kala Dhaka and should be considered in any attempt to improve local production and income. The introduction of improved milch cow and stud buffalo stock are simple measures for upgrading herds and improving milk production, as are feed supplements and the introduction of fodder grasses (as part of a forestry program). KDADP has already introduced a small-scale poultry program among groups of selected women. Kala Dhaka's three veterinary clinics are poorly staffed and lack adequate supplies of vaccines and medicines. KDADP can support the training of stock assistants in basic curative and preventative methods. These stock assistants, having reliable supplies of drugs, can provide continuous veterinary services to the surrounding population.

FORESTRY

Unique opportunities exist for KDADP to support significant contributions to the forest sector of Kala Dhaka. Unlike other regions of Pakistan, the people of Kala Dhaka, rather than the government, control their own forests. In addition, the Government of North West Frontier Province (GONWFP) Forest Department, the line department responsible for KDADP forest sector activities, has gained considerable experience managing reforestation projects along the banks of the Indus River since the construction of the Tarbela Dam. Thus, KDADP can support programs that reinforce local management of existing forest resources while promoting wasteland development and hillside stabilization with the introduction of fast-growing fuelwood and forage species. To do this, however, requires that the KDADP/PCU (Project Coordinating Unit) and the Forest Department develop a detailed work plan for the implementation and monitoring of relevant project activities.

IRRIGATION

The KDADP PC-1 calls for 40 kilometers of irrigation channels to be surveyed and designed under Phase I and 25 miles of channels to be constructed or improved under Phase II. The Project Paper proposed that the survey and cost estimates for these schemes (as well as the roads, water supply schemes, and mini-hydro projects) should be prepared by the Technical Assistance Team (TAT) civil

engineer. The Project Paper also assumed that the TAT civil engineer would be supported by two PCU engineers. It is clear, at this point, that the amount of field work involved in achieving these objectives was grossly underestimated in the KDADP project design. Similarly, the extent to which the PCU engineers can assist in the survey and design work was also miscalculated.

The Irrigation Department has only one engineer who is responsible for the whole of Mansehra District and no design staff. No funds have been budgeted in the Irrigation Department's annual development program for design work in Kala Dhaka. The GONWFP and USAID must make additional resources available to the Irrigation Department or to KDADP to ensure that a systematic design of improvements and extensions to the Kala Dhaka irrigation system is undertaken. Similar resources are also required to ensure community participation in the identification and construction of schemes and to maintain quality control of construction.

ROAD CONSTRUCTION

New Priorities

The KDADP PC-1 called for some 170 kilometers of roads to be designed and built during Phase I and II. However, USAID has indicated that funding for the KDADP road construction component will be greatly reduced. As a result, the GONWFP and USAID must re-evaluate the road construction priorities of the project and establish new priorities in this sector. The improvement and construction of access roads remains perhaps the single most common demand of the population and, thus, the single most effective means of gaining the support of the population for KDADP activities.

A recommended alternative to a major road design and construction effort is the upgrading of the existing jeep tracks/roads in the region to improve access for local transport vehicles. This activity should be undertaken in collaboration with Local Government Rural Development (LGRD) whereby KDADP and LGRD share the costs of design and construction of simple access roads. Lessons learned from other tribal area projects suggest that simple road projects, including construction of jeep tracks, improvements of existing alignments, and roadside stabilization, can be successfully implemented by government line departments as long as project designers accept and plan according to the capacities of the implementing line departments.

USAID has got to accept the upgraded track concept.

HEALTH

Time is at hand to describe how this can be done

One of KDADP's and the GONWFP District Health Officer's goals should be to make all existing basic health units (BHUs) functional and effective, with as complete a staff as possible. At present, there are no government doctors directly associated with the delivery of health services to Kala Dhaka. Doctors will not likely be recruited for the BHU positions without additional compensation. An attempt should be made to revive the past GOP regulations allowing additional compensation for hardship posting. At the same time, the health services should be organized around the concept of BHUs without doctors. Government doctors in the nearby hospitals (such as Thakot, Darband, and Oghi) could be recruited to constitute active backup for the Kala Dhaka BHUs by holding scheduled visits and clinics. Health technicians and dispensers currently providing services require backup, professional support, and supervision on a continuing basis. Government doctors would require additional compensation to make up for lost private practice incomes.

An expanded program for immunization should be established as part of the BHU services as well as supported in its present mobile team format. BHUs presently focus on curative medicine and first-aid. Their activities must be expanded to include health and hygiene education as well as the provision of a wide range of preventive medical activities, including immunization. This expansion of activities can only come about with the support of the District Health Officer.

Why are we focusing on repair and construction - what are the villages giving in return?

WATER SUPPLY

KDADP has identified village water systems for repair and construction but must rely on GONWFP Public Health and Engineering Department (PHED) to provide survey and cost estimates for these activities. PHED has indicated that it does not have the staff to survey, design, and supervise the construction of every water supply scheme planned by KDADP. Nor does PHED have sufficient funds for repair and maintenance of the schemes already built. The planned transfer of the Gadoon Project survey and design team to KDADP will address the problems of survey/design/construction to some degree.

NB Development planning - data base - "clusters" analysis - systematic

EDUCATION

The primary school system in Kala Dhaka is moribund. Teacher absenteeism is acute, teachers are underpaid, and there is a scarcity of teaching materials. Also, there is a lack of supervision of the teachers by the GONWFP Education Department and of institutionalized in-service training for teachers.

KDADP should establish a formal link with the USAID-funded Primary Education Project to focus some of that project's resources and expertise on the acute primary education problems of Kala Dhaka.

What? How?

An education specialist should be added to the KDADP staff to serve as liaison between KDADP, the Primary Education Project, and the Education Department. The education specialist would be responsible for developing programs with the Education Department that would target more support to schools and teachers in Kala Dhaka.

WOMEN IN DEVELOPMENT

A survey of the region indicates that there is considerable scope for promoting development activities, especially income-generating activities, among the women of Kala Dhaka. The survey recommends that KDADP organize a mobile team of female technical assistance specialists in the fields of poultry raising, agriculture, horticulture, and sewing/embroidery. This team should visit villages that have requested these types of assistance. The team would circulate from village to village, introducing new skills and identifying local women who could assume the role of instructors after the program concludes. During the life of the project, the team would return periodically to follow up and continue the instruction. The teams could also help design the phasing-in of primary education programs for girls, and adult literacy and hygiene for women.

NB Community Organization

SECTION ONE

INTRODUCTION

This report presents the findings and recommendations of a team of short-term consultants that provided technical assistance to the Kala Dhaka Area Development Project (KDADP) in the autumn of 1990. The report's findings represent the team's review of current KDADP Phase I project activities. Lessons learned from this review formed the basis for the team's recommendation for the second year of KDADP Phase I as well as the proposed follow-on project, KDADP Phase II.

The summary recommendations of the team of consultants, together with the outstanding project issues that will likely affect the implementation of those recommendations, are presented as an executive summary to this report. The body of the report outlines the basic geography and socioeconomic characteristics of Kala Dhaka, and examines the sectors in which KDADP activities have been undertaken or are planned. These sectors are agriculture, irrigation, transportation, forestry, livestock and rangeland, drinking water supply, primary health care, and education. Special attention is also given to the current and potential role of Kala Dhakan women in many of these sectors in a section on women in development. The more detailed findings and recommendations of the consultants are attached as annexes to the main report.

PROJECT BACKGROUND

In 1983, the U.S. Agency for International Development in Pakistan began its support of the Government of Pakistan's efforts to eliminate opium poppy cultivation in the country. A majority of this support was channeled through the North West Frontier Area Development Project (NWFADP), which was designed to stimulate economic development in the traditional poppy-growing areas of the province and to provide farmers who grow poppy with alternative sources of income.

NWFADP focused on the Gadoon-Ahmazai tribal area, a pocket of significant poppy cultivation east of the Tarbela Dam reservoir. From its inception, the Gadoon-Ahmazai farmers resisted both the project's activities and the GOP's attempts to enforce a ban on poppy cultivation. However, by 1987, the NWFADP had achieved considerable success and an independent evaluation in that year recommended that USAID continue to support activities in the Gadoon-Ahmazai. The same evaluation recommended the extension of similar activities to an adjacent area known as Kala Dhaka (Black Mountain) based on reports that some poppy farmers and opium dealers from Gadoon had been forced to shift their operations to this neighboring tribal area.

In response to that recommendation, USAID initiated the Kala Dhaka Area Development Project in February 1990. The objective of the project is to reduce existing opium poppy cultivation and to discourage expanded opium poppy cultivation in Kala Dhaka, by bringing this remote, economically neglected area into the mainstream of the provincial and national economies. KDADP was conceived to have two phases. The objectives of Phase I have been (1) the construction of roads and the establishment of pilot activities in agriculture, health, and education as well as community-based infrastructure

development projects; and (2) a review of pilot activities combined with the gathering of data with which to determine feasible development activities for a full-scale Phase II of the project.

Since KDADP's inception, however, USAID has been reassessing its strategy of remote area development in Pakistan. This reassessment has prompted a shift from the support of infrastructure development projects, and paragonment institutions to manage those projects, to the support of multisectoral development through existing government line departments in partnership with the members of the target communities. This partnership relies heavily on the work of village organizers who galvanize community participation in the identification, implementation, and maintenance of development activities. Drawing its inspiration from the successful village organization activities of the Agha Khan Rural Support Project in Gilgit, USAID has recently supported the creation of a nongovernmental community development organization called the Sarhad Rural Support Corporation (SRSC) to work in NWFP. The implications of the Mission's evolving remote area development strategy for both KDADP's Phase I and Phase II activities will be examined below.

PILOT ACTIVITIES AND DATA GATHERING

In February 1990, a KDADP Project Coordinating Unit (PCU) was established under the Government of the North West Frontier Province (GONWFP) in Mansehra to administer project funds earmarked for specific pilot activities, and to provide support to the government line departments responsible for implementing those activities. At the same time, the Chief of Party of the DAI Technical Assistance Team (TAT) arrived in Pakistan. The purpose of the TAT is to assist the KDADP Project Manager in initiating development activities in Kala Dhaka and in preparing a project design for Phase II activities.

Delays in project funding and procurement prevented the start-up of a number of planned activities, particularly the agricultural field trials. During the spring, District Commissioner of Mansehra, who also carries the title of KDADP Project Director, the Project Manager, and members of the TAT conducted a number of community meetings (*jirga*) with representatives of each of the major tribal divisions within Kala Dhaka. These meetings were intended to apprise the project area population of the activities planned under KDADP and to seek their cooperation and assistance.

By May 1990, three members of the DAI technical assistance team — the Chief of Party, the civil engineer, and the project social scientist — were able to take up permanent residence in Mansehra. The project agronomist joined the TAT in October. The position of a project medical officer was authorized subsequent to the project start-up and a re-evaluation of the medical activities that were initially proposed. Although a medical officer has yet to be recruited, technical assistance in the medical area has been provided on an intermittent consultant basis by a member of the Ayub Medical College faculty. The TAT has recently been authorized to hire a village organizer who may become a permanent member of the team. KDADP pilot activities are discussed below in the sector descriptions.

In addition to supporting the KDADP pilot activities, the TAT began its socioeconomic surveys of the region. Throughout this report the terms "socioeconomic survey" and "survey" refer to a number of survey instruments that have been used to collect data relevant to the design and implementation of project activities. Chief among these is the Basic Village Survey, an instrument that surveys social and demographic patterns, patterns of agricultural production, and labor migration and patterns of transport

to and from the region. In more than six months of effort, the TAT has identified and surveyed 228 villages. The results of these surveys are presented in the next section.

SECTION TWO

SETTING

Kala Dhaka, or the Mansehra Tribal Area, is a rugged mountainous region of approximately 500 square miles that spans the Indus River in Pakistan's North West Frontier Province. A provincially administered tribal area of NWFP, Kala Dhaka falls under the jurisdiction of the Deputy Commissioner of Mansehra District. The Deputy Commissioner exercises his jurisdiction through the office of a political *tehsildar* based in the town of Oghi, located 25 miles west of Mansehra town. Law and order is maintained in Kala Dhaka and its environs by the paramilitary Frontier Constabulary also based in Oghi. Inhabited largely by Pukhtun tribesmen, Kala Dhaka is locally referred to as *ghair ilaka* or "land of honor," a term that implies that the order of custom prevails over the rule of civil law throughout the region. The civil administration defers to the tribal institution of *jirga* (tribal council) for the adjudication of most local disputes in Kala Dhaka in accordance with the traditional Pukhtun code of honor or *pukhtunwali*. Because of the government's tolerance of tribal custom, Kala Dhaka has a reputation among the surrounding population as a lawless place similar to that shared by the tribal agencies of Waziristan, Orakzai, and Khyber on Pakistan's border with Afghanistan.

GEOGRAPHY

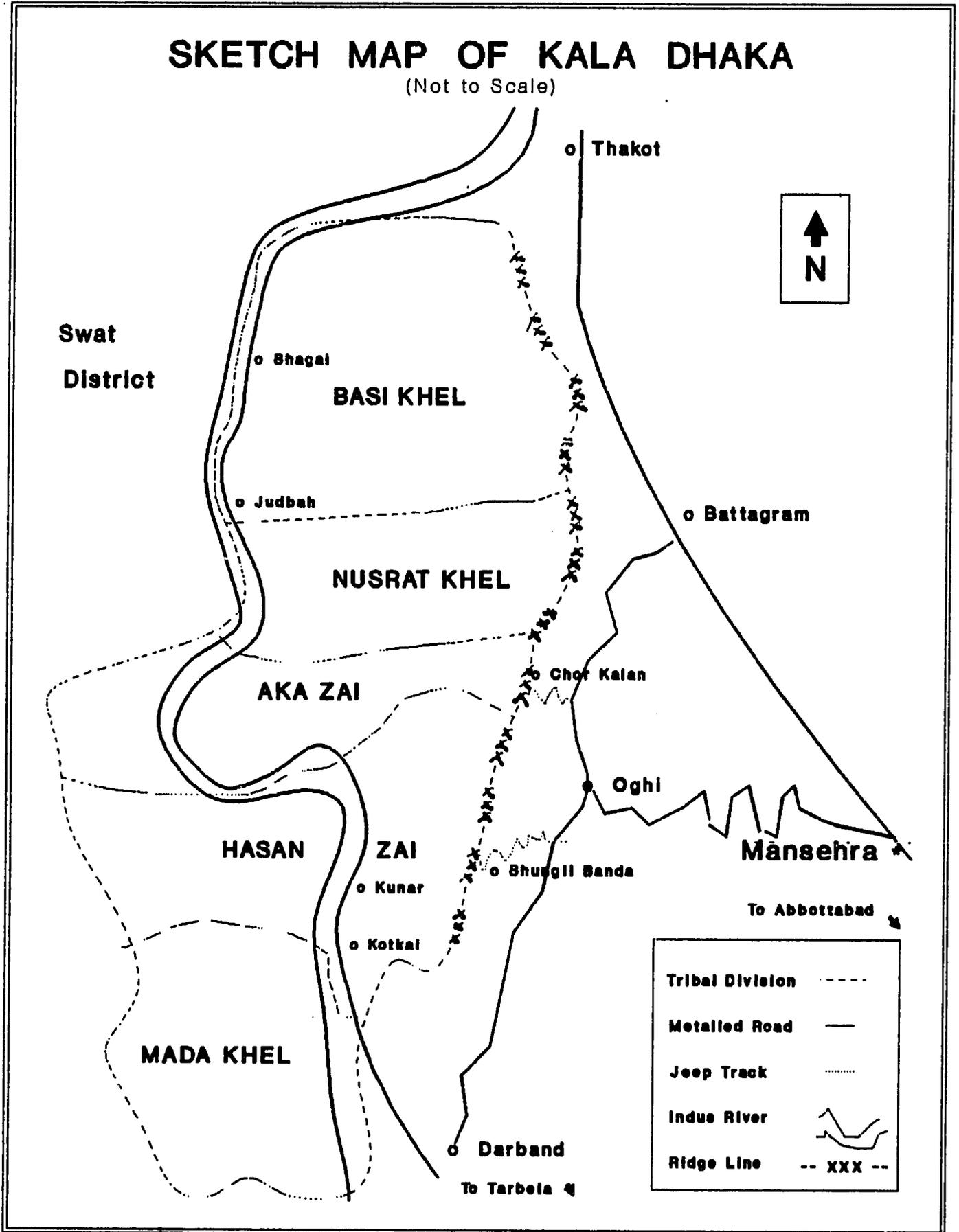
The major portion of Kala Dhaka lies on the eastern bank of the Indus River in the watershed of the mountain range (Black Mountain) from which the area takes its name. This range, which averages 5,000-8,000 feet, runs south to north for approximately 30 miles between the river port of Darband and Thakot, a bazaar on the Karakoram Highway. The western portion of Kala Dhaka lies on an equally steep watershed formed by the mountains that separate the Gadoon Ahmazai tribal area of Swabi District from the Indus basin.

Kala Dhaka is made up of five tribal divisions named after the Pukhtun tribes that claim respective ownership of the land (see map). From north to south, these divisions are Basi Khel, Nusrat Khel, Akazai, Hasanzai, and Mada Khel. The Basi Khel, Nusrat Khel, Akazai, and Hasanzai claim ownership to lands on both sides of the Indus River. However, the west bank lands of the Basi Khel and Nusrat Khel were absorbed into the district of Swat in 1969. The tribal lands of the Mada Khel are concentrated exclusively on the west bank of the Indus. All of the Kala Dhaka tribes lost large amounts of arable bottom land to the reservoir that was formed with the completion of the Tarbela Dam in 1975. Additional land and irrigation infrastructure was lost in the early 1980s when the Frontier Works Organization cut the alignment of the Darband-Thakot road along the east bank of Kala Dhaka.¹ This loss of traditional lands and livelihoods to a combination of administrative fiat and the contingencies of modern infrastructure development lie at the heart of the Kala Dhakans' mistrust of the government and its development initiatives.

¹ This road was never completed. However, the alignment does provide vehicular access to Kala Dhaka settlements along the river bank from both Darband and Thakot.

SKETCH MAP OF KALA DHAKA

(Not to Scale)



In addition to these sociopolitical boundaries, Kala Dhaka can be divided into three general agroecological zones. These zones are the sub-alpine pasture, evergreen forest, and shallow river valleys of the highlands, or *ghariz*, that extend from 5,000-6,000 feet above sea level to the ridgeline; the sparsely populated, steep-sided valleys of the midlands, or *mianzanai*, that extend from 2,000-5/6,000 feet; and the alluvial lowlands and hillsides along the banks of the Indus River, or *sinkarai*.

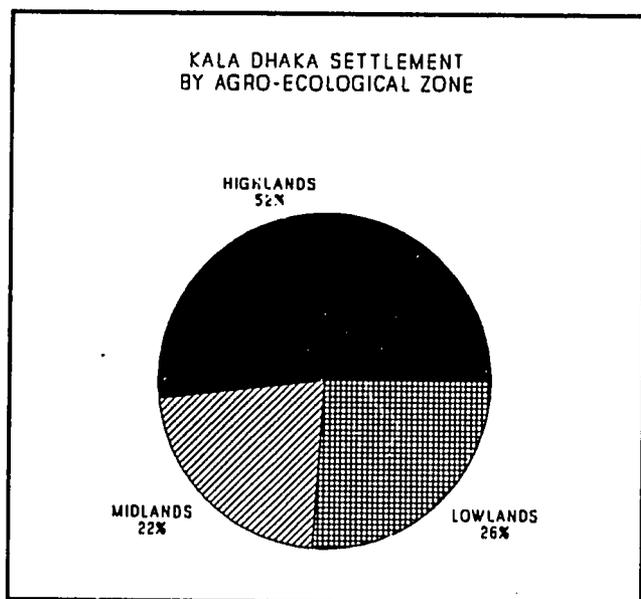


Figure 1

Figure 1 illustrates the general settlement pattern throughout Kala Dhaka. According to the KDADP socioeconomic survey, more than half of the region's population is settled in the highlands zone. The most significant factor underlying this pattern was the flooding of the region's riverside lowlands after the construction of the Tarbela Dam. The formation of the Tarbela reservoir effectively eliminated a sizeable proportion of Kala Dhaka's best agricultural land. Those families displaced by the reservoir flooding exercised one of three options: they relocated to villages in the lowlands zone but above the high-water limit of the reservoir, they relocated to more marginal lands in the midlands and highlands elsewhere in Kala Dhaka, or they relocated outside of the region entirely.

Another factor that accounts for this ratio of settlement is the fact that the socioeconomic survey was conducted during the summer/autumn when the seasonal highland herding settlements

are fully occupied by the seminomadic Gujars, a cattle-herding population that is found throughout the Hindu Kush and Himalayan foothills. A small percentage of this population remains in Kala Dhaka during the winter months, occupying midland and lowland settlements. The remainder migrate out of the region entirely to winter pastures in the Punjab.

Still another factor for most settlement in Kala Dhaka's highland zone is that, as the area's population has expanded, more and more people have been forced to inhabit and cultivate the more marginal lands of the higher elevations. Much of the lands occupied by tenant cultivators, for example, is concentrated in the highland zone.

Agricultural production is consistent in each of these zones: wheat is the predominant *rabi* (winter) crop; and maize and, in the midlands and lowlands, rice are the predominant *kharif* (summer) crops. All cereals are intercropped with a variety of vegetables (squashes and greens) and pulses.

Soil conditions, climate, altitude, and aspect in each zone determine the variety of crops and their yields. However, Kala Dhaka lacks sufficient agricultural land to meet the subsistence requirements of its population. Most households supplement their agricultural production by keeping livestock for milk and meat; the region's abundant grasslands and pasture support a large number of livestock compared to other mountainous areas of Pakistan. Still, because of the region's limited agricultural lands — a problem compounded by the fragmentation of all land holdings — Kala Dhakans depend on the importation of food for at least half of their annual subsistence requirements.

POPULATION AND SETTLEMENT PATTERNS

Table 1 illustrates the summary population estimates for Kala Dhaka derived from the KDADP socioeconomic survey. The total population for the region is estimated at 338,013, living in 228 settlements or "villages."

TABLE 1
SUMMARY OF KALA DHAKA POPULATION ESTIMATES

<u>Tribal Division</u>	<u>Villages</u>	<u>Households</u>	<u>Population</u>
Akazai	32	3,700	42,920
Basi Khel	92	10,090	117,044
Hasanzai	43	6,093	70,679
Mada Khel	38	7,123	82,627
Nusrat Khel	23	2,133	24,743
Totals	228	29,139	338,013

The term "villages" refers to any discrete settlement of two or more houses. Villages in the midlands and along the riverside are typically contiguous settlements made up of scores of households terraced into a hillside to maximize the surrounding agricultural land. In contrast, highland villages are characteristically clustered settlements of smaller numbers of households that are stacked on top of one another, so that the roof of one house constitutes the courtyard of the one above it. This pattern of settlement also maximizes the amount of surrounding land for cultivation.

"Household" is defined as a group of individuals related by birth or marriage sharing the same kitchen and maintaining collective accounts of income and expenditure. Thus, any household may contain a number of nuclear "families." Households typically comprise three generations, including the wives and children of married sons. The average number of individuals per Kala Dhaka household surveyed is estimated to be 11.6. While attempts were made to compensate for both surveyor and respondent bias

in the population data collected during in the Basic Village Survey, the estimates of both village and household numbers may be inflated.²

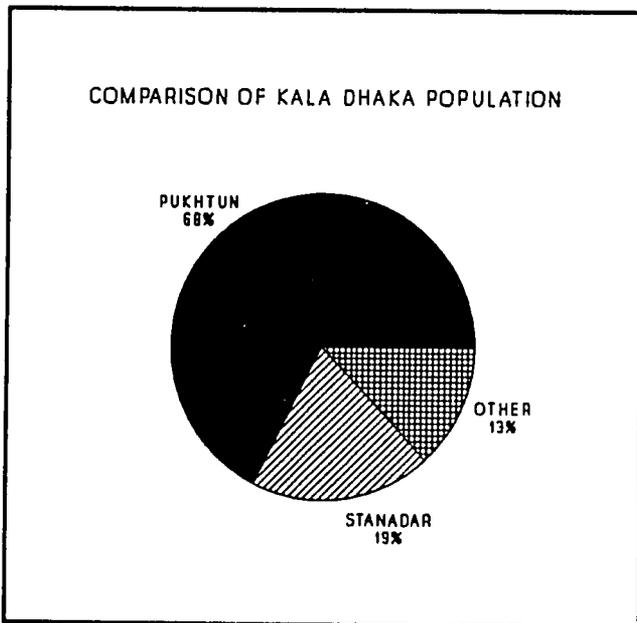


Figure 2

The results of the socioeconomic surveys indicate that in addition to the "native" Pukhtun tribes, in other words, the tribes that claim ownership of their eponymous subdivisions, substantial proportions of other Kala Dhakan Pukhtun subdivisions, as well as ethnic groups indigenous to northern Pakistan, inhabit the same subregions.

The *stanadar*, for example, is the most significant and homogeneous non-Pukhtun group inhabiting Kala Dhaka. The *stanadar* are made up of lineages of Sayyids (groups that claim descent from the Prophet Muhammad), Mullian (from *mullah*, a Muslim religious teacher), and Akhundkhel (descendants of the rulers of Swat). Together, these lineages account for 19 percent of the entire Kala Dhaka population (see Figure 2).

Gujar herdsman and families from neighboring Tanawal and Swat who have settled permanently in Kala Dhaka make up a small fraction of the "other" category illustrated in Figure 2. The remainder of the "other" Kala Dhaka population is made up of the artisan and service groups, including smiths, carpenters, leather workers, cobblers, barbers, boatmen, muleteers, and musicians. Inhabitants of each village retain the services of artisan families by granting them tenancy rights to agricultural lands or by making annual payments of cash and kind.

Each village in Kala Dhaka is relatively homogeneous. One or more subsections of the predominant Pukhtun tribe and their attendant artisan and service families may inhabit the same village. *Stanadar* occupy settlements separate from, albeit neighboring to, those of the Pukhtuns.

Figure 3 illustrates the heterogeneity of the Kala Dhaka population as a whole. This heterogeneity can in part be explained with reference to the dynamics of *pukhtunwali*. Among the predominant Pukhtun population, enmities between families of the same lineage often force the weaker family to flee their own lands and seek asylum in the territory of neighboring Kala Dhakan tribes. The Pukhtun custom of *panah* (providing asylum to fugitives) compels the host to provide for the livelihood

² Village, household, and population estimates represented in Table 1 are derived from a compilation of three separate surveys: the Basic Village Survey, a Household Census, and a Village Population Survey. Each of Kala Dhaka's villages was surveyed as part of the Basic Village Survey. During this survey, an estimated number of households was derived from interviews with village residents. This number was adjusted downward by applying a 15-percent margin of error. The margin of error was calculated by comparing household estimates with actual household counts (Household Census) of randomly selected villages. Despite this adjustment, household figures should still be regarded as estimates. Total population estimates were calculated by multiplying the adjusted number of households by 11.6, the average number of individuals per household derived from a Village Population Survey.

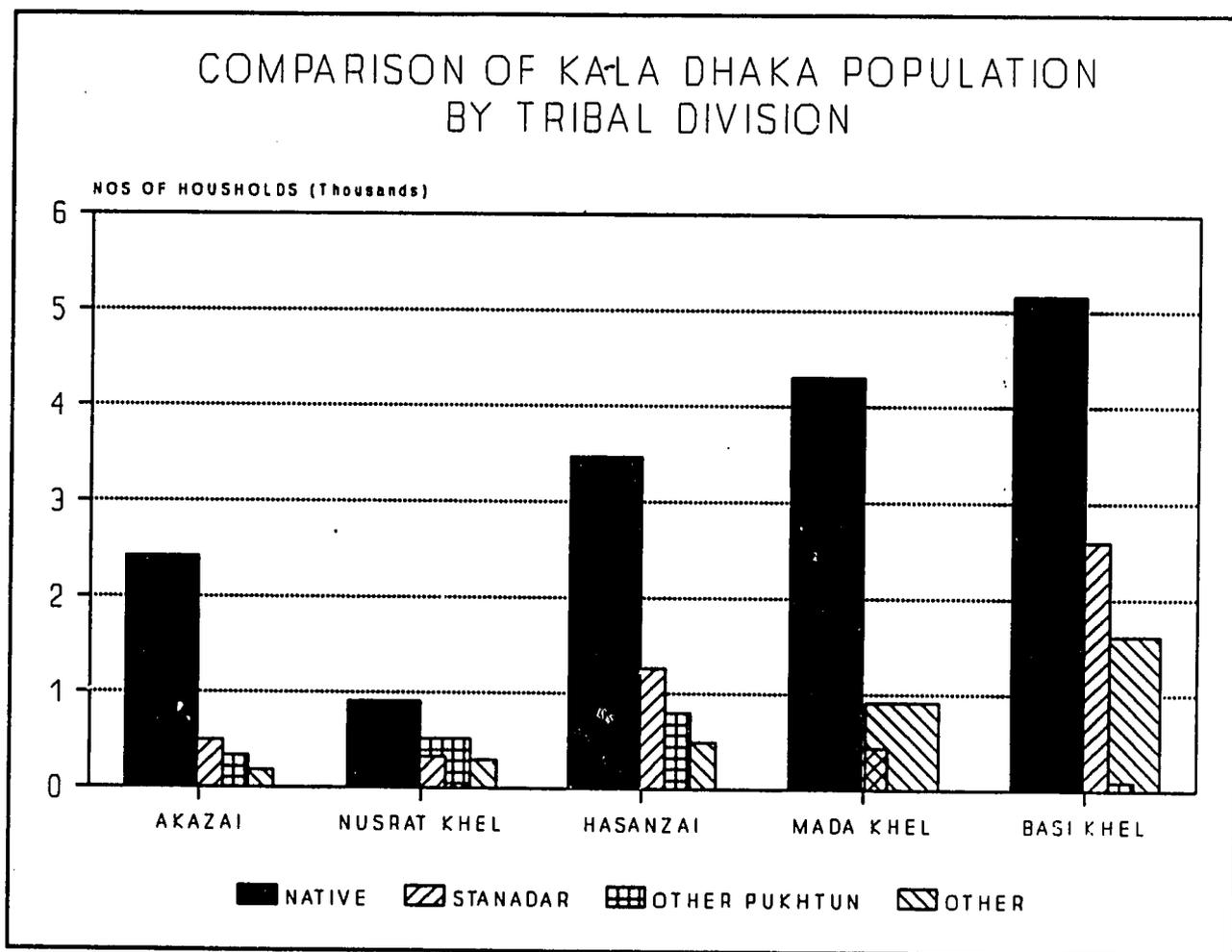


Figure 3

of those who seek his protection. This obligation usually takes the form of providing the fugitive with rights to a parcel of land in exchange for an annual payment in cash or kind, including personal service, called *qalang*. When such enmities threaten to erupt between larger tribal subsections or entire tribes, a *jirga* will propose a traditional compromise of inviting a neutral, non-Pukhtun group, especially the Sayyid from outside the region, to settle on lands dividing the feuding factions. The neutral settlers become a buffer between the factions with ownership rights to the lands that they have settled.

Of course, not all tenant farmers are fugitives. Many have been forced by circumstances, such as the overpartition of family lands, to seek a more substantive land holding elsewhere in Kala Dhaka. In the Nusrat Khel area, for example, families of Basi Khel can be found living as tenants as well as non-Pukhtun families that have migrated from neighboring Kohistan, Swat, and Tanawal.

LAND OWNERSHIP AND TENANCY

There are two forms of land ownership in Kala Dhaka. Among the *stanadar*, lands are privately held by each extended family. Among the Pukhtun, lands are collectively held by the major lineages

within each tribal subdivision. Each patrilineage has rights to a fixed number of units of land called *tora*. The *tora* has no standard measurement. Rather, the size of each *tora* varies according to the quality of land contained within it. For example, a *tora* of river bottom land held by the Bai Khan Khel lineage of the Nusrat Khel division will be smaller than a *tora* of highland forest and pasture land held by the Luqman Khel lineage of the same division.

Periodically, lands within each Pukhtun subdivision have been redistributed under a customary institution called *wesh*. By drawing straws, representatives of each major patrilineage determined to which *tora* their lineage mates would be entitled. That entitlement included not only the land within the *tora* but any fixed property such as housing, animal stalls, and fruit trees. However, new owners were bound to compensate former owners for fixed property in cash.

Until the construction of the Tarbela Dam, inhabitants of Kala Dhaka reported that *wesh* were undertaken every 20-25 years. Some older men interviewed reported having lived in three to four separate settlements in their lifetimes, on both sides of the Indus River, and in different agroecological zones. However, since the dam's construction, no *wesh* has been planned or has been recorded. One reason that Kala Dhakans themselves frequently cite for this suspension of *wesh* is that, during the dam's construction, villagers inhabiting the lands that were to be flooded by the reservoir were provided with cash compensation for those lands by the government. If any new *wesh* were to be organized, those who had received cash compensation would have to pay the value of their compensation in cash to those who would obtain rights to their riverside lands.³ Most families interviewed in the Basic Village Survey admitted that they are unable or unwilling to pay such compensation.

The practice of *wesh* is a valued cultural tradition among the Pukhtuns of Kala Dhaka, a tradition that underscores the egalitarian character of Pukhtun society. However, the enormous disruption of the balance of resource distribution in Kala Dhaka brought about by the construction of the Tarbela Dam has made *wesh* a relatively moribund institution.

No member of any lineage may sell any portion of his lineage's *tora*. However, lineage members may rent their land holdings on an annual or semipermanent basis. In one system, called *ijara*, the renter will provide the owner with a downpayment, in cash or kind, for use of the land after both have agreed to the terms and length of the lease. However, another system, called *qalang*, is by far the more common. In this system, the renter obtains cultivation rights to a piece of land after having agreed to provide the owner with an annual payment in cash or kind, including field labor. The Pukhtuns of Kala Dhaka commonly rent lands that are remote from their own settlements. For this reason, tenancy is largely concentrated in the highlands where tenant households outnumber those in the midlands and riverside by more than five-to-one.

³ The majority of Kala Dhaka's inhabitants who lost agricultural land to the flooding of the Tarbela reservoir continue to occupy their villages. These are situated above the reservoir's high water mark. During the winter, inhabitants of these villages plant a wheat crop on lands from which the reservoir has receded. They are able to harvest the crop before the reservoir is completely recharged with the winter snowmelt.

LABOR MIGRATION

The extent of long-term migration of men from Kala Dhaka for wage employment is a vivid testament to the dependence of the region on outside sources of income for survival. Nearly 88 percent of all Kala Dhaka households surveyed have at least one member working outside the region for an average of nine months per year. Half of those households have from two to five members working outside the region. Of all households surveyed, 69 percent of the males between the ages of 16 and 50 are employed in Karachi, largely in unskilled occupations such as taxi and rickshaw drivers, factory workers, guards, bearers, and waiters. Men in this age group work an average of 11 years in Karachi. They typically spending the months of November through June or July at their jobs and return to Kala Dhaka during the season of peak agricultural labor demand for the harvests of wheat, maize, rice, and, especially, grass for winter livestock fodder. A comparison of the population profiles in Figures 4 and 5 illustrates the dramatic seasonal shift in the male population of Kala Dhaka.

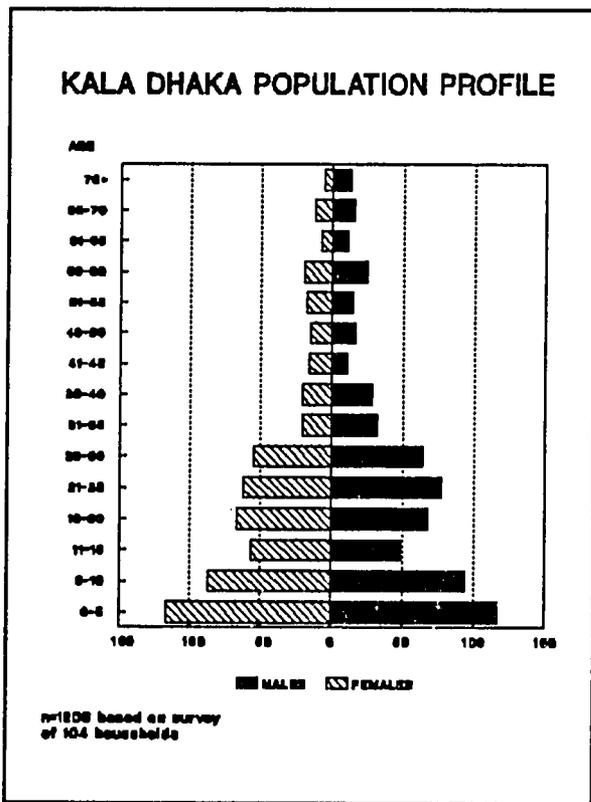


Figure 4

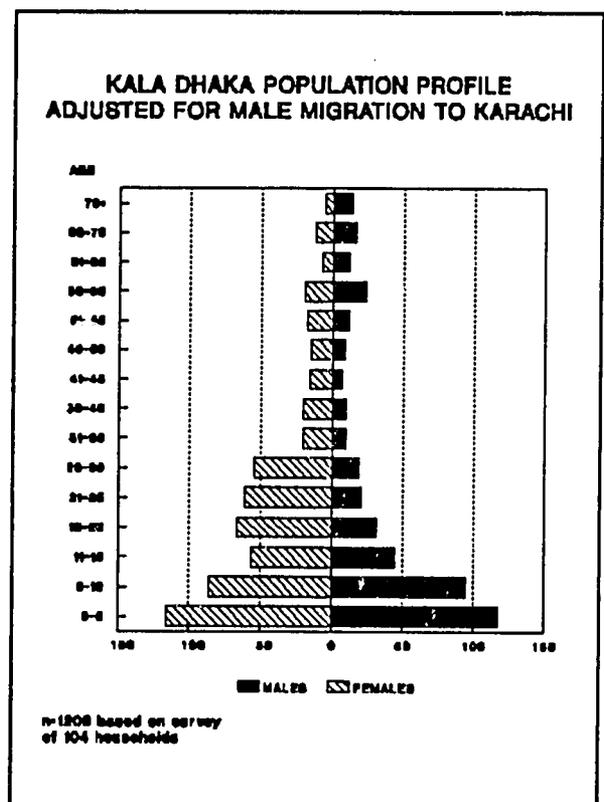


Figure 5

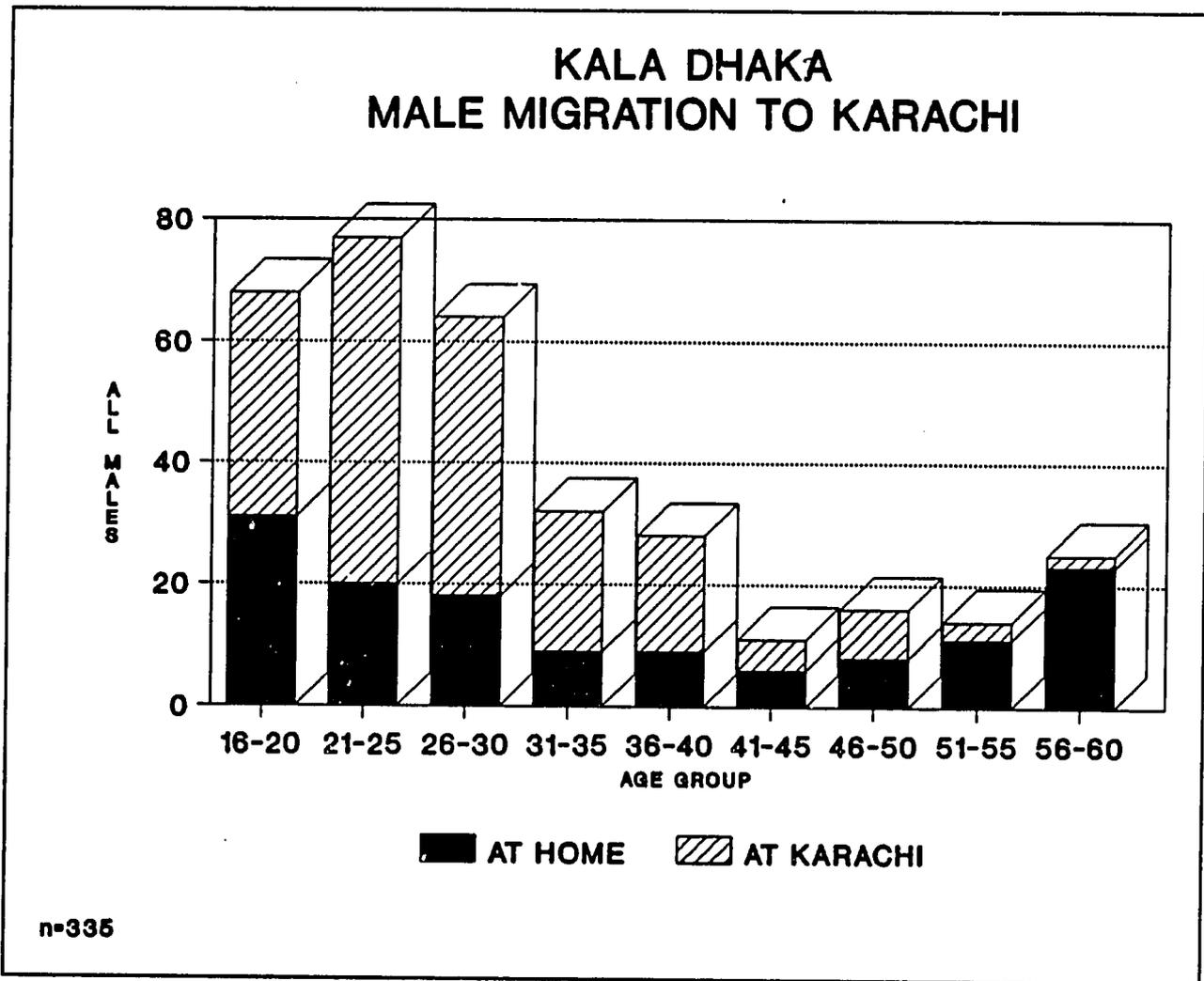


Figure 6

Although a number of families do have men working at jobs in the Middle East (5.3 percent of all men sampled working outside the region), the pattern of labor migration from Kala Dhaka to Karachi predominates (see Figure 6) and appears to have been established for more than a generation. The cost of obtaining visas and work permits for employment in countries like Saudi Arabia and Dubai has escalated dramatically in the last decade, while transport to Karachi by any of the many express buses departing daily from Oghi can be had for less than Rs200. Many Kala Dhakans have established businesses in Karachi, such as hotels and taxi concessions, that provide steady employment to others from their same tribal group. Sons often follow their fathers into the same factory jobs or household service. Large enclaves of Kala Dhakans have grown up in the Pukhtun ghettos of Karachi such as Orangi Town and Patel Parra. Men from the same tribal group, or even the same village, are able to share housing and subsistence expenses in these settlements, and to send messages and money back to their families with returning relatives.

Men employed in Karachi reported saving from Rs900 to Rs1,200 per month from their salaries for remittance back to their homes. Wages are generally remitted annually by men returning for the

agricultural season. These remittances are most commonly used to pay shopkeeper debts incurred by the family for the purchase of basic provisions, arms, and ammunition during the previous year. The continuity between Karachi and Kala Dhaka is enduring and complete: the survival of the Kala Dhakan population is clearly dependent on cash income earned in Karachi.

Some Kala Dhakan men have established semipermanent residence in Karachi and have brought their families to live with them for years at a time. Children of both sexes are enrolled in the Karachi school system and adult women are allowed to avail themselves of existing informal education opportunities (see Annex A). However, this residence is most often temporary, lasting up to only a few years for most families. When girls reach marriageable age, they are returned by their families to the home villages; boys are pressed into employment at early ages, some as young as 12 years of age. Nevertheless, the extent to which Kala Dhakans live and work outside the region suggests that they have a much greater level of exposure to the modern world than people living in similarly remote areas of the country. Project staff must attempt to capitalize on this potential in their efforts to promote community participation in project activities. This exposure is a potential asset to KDADP in its attempts to promote community support for development activities.

The extensive migration to Karachi, and the extent of the dependence on Karachi earnings, has many implications for the planning and implementation of KDADP activities. The widespread male absenteeism for much of the year combined with the intensive agricultural labor requirements of men when they return to their villages will affect their receptivity to, and participation in, KDADP subprojects. Subprojects will have to be carefully targeted and designed to provide suitable incentives for men to divert their labor from either seasonal agricultural demands or wage labor.

This high level of male absenteeism will undoubtedly affect KDADP efforts to promote community participation in project design and implementation. Special efforts will be required to develop village committees in which there is a continuity of membership in order to maintain villager commitment to project activities. Male absenteeism underscores the relevance of project activities that promote skills training and income opportunities among women.

SECTION THREE

AGRICULTURE

BACKGROUND

Subsistence agriculture and livestock raising are the predominant economic activities in Kala Dhaka. The most recent agricultural census (1979-1981) recorded an area of cultivable land of approximately 75,000 acres. The agriculture on this land is both irrigated and rainfed. Because of Kala Dhaka's steep and rugged topography, climate varies with elevation and with aspect: snow falls on the highlands and bananas are cultivated by the riverside. Although precipitation may occur any month of the year, the two main rainy seasons are typically February-April and July-August. The area is well watered; weather records from nearby sites indicate that the lowest elevations receive an average annual rainfall of approximately 30 inches while the highlands may receive over 36 inches.

The 1979-1981 agricultural census recorded 13,750 irrigated acres in Kala Dhaka. Irrigation canals have been constructed by traditional methods and also by the Irrigation Department, particularly in the lower elevations. The three canals constructed by the Irrigation Department are Jiga in Basi Khel, Kotlai in Mada Khel, and Nai Kili in Akazai.

The main crops are maize and rice in the summer and wheat in the winter. The census recorded 54,000 acres of wheat, 62,000 acres of maize, and 12,000 acres of rice. The total cropped area was 129,500 acres, resulting in a cropping intensity of 170 percent. The majority of this cultivation is concentrated in the alluvial lowlands of the *sinkarai*. Little land is suitable for cultivation in the middle elevations, and cultivation in the highlands is limited to steep terraced plots and the congested flatlands that surround villages. Most villagers surveyed were familiar with improved wheat seed varieties as well as both DAP and urea fertilizers. However, the limited availability of these inputs and the high cost of transportation discourages the majority of farmers from using them. This is particularly true of the highland zone. Fewer than 10 percent of the villagers surveyed rely on mechanized equipment; those that do, located exclusively in the lowlands, rent tractor-powered threshers. A wide variety of fruits and both winter and summer vegetables are sporadically cultivated in Kala Dhaka, but limited agricultural land and the difficulties in transporting goods to market discourage any commercial production of fruits and vegetables.

Women participate extensively in agricultural production, helping with plowing, sowing, and harvesting (see Annex A). They raise livestock and chickens, collect fodder, and process dairy products. Women also cultivate vegetables and collect firewood. Seasonal demands for labor such as threshing grain and cutting grass for winter fodder encourage the formation of communal work groups called *hashr*. These groups are made up entirely of men and boys.

OPIUM PRODUCTION IN KALA DHAKA

Wherever wheat is presently grown in Kala Dhaka can be regarded as a potential opium producing area. An aerial survey conducted by the Pakistan Narcotics Control Board in the winter of 1987 estimated that approximately 600 acres of poppy were growing in Kala Dhaka. With a potential area of poppy cultivation of 75,000 acres, there is obviously room for expansion of the poppy crop.¹ During field trips to the area at the start of the 1990 winter season, when it was too early to determine what crop would be planted, poppy was only discussed in three locations. At one site, approximately 1.5 kilos of opium and some poppy seed were seen; in another, a small nursery of approximately 1/20th of an acre was said to have been sown to poppy; and in a third site, poppy was mentioned as a previous crop and a potential future crop.

Approximately 40 percent of the villages surveyed indicated that "a few" households in each village cultivated poppy but the amounts of opium produced were reported to range from one to seven kilograms per village. Those villages reporting poppy cultivation indicated that the opium was sold to smugglers thought to originate in Swat or Swabi districts.

KDADP PHASE I ACTIVITIES

In the GONWFP's PC-1 for Kala Dhaka, as well as the initial KDADP work plan, a number of agriculture activities were proposed. Their progress to date is discussed below, followed by proposals for the future. These recommendations include details of some new activities not envisaged in the PC-1.

Demonstration Plots

According to the PC-1, 1,000 acres of maize, 1,000 acres of wheat, and 500 acres of potato demonstration plots for seed multiplication of improved varieties are planned during Phase I. During the first six months of the project, 250 acres of maize, 250 acres of wheat, and 250 acres of potato demonstration plots were scheduled.

Demonstration plots are an established activity of the NWFP Agriculture Department. The underlying assumption is that better crop varieties are available, and that the Agriculture Department is capable of planting them in a timely fashion, managing them well enough to demonstrate their superiority, and then distributing seeds produced in the demonstration plots to the farming community for continuing seed multiplication. The reality is somewhat distant from this ideal as the following sections demonstrate.

Maize

The budget submitted by the Agriculture Department for the first six months of maize demonstration plots follows:

¹ Based on the 1979-1981 census figures for cultivable land.

Maize ²	Target Summer 1990	per 250 acres
Maize seed	125 mds @ Rs 160/40 kg	Rs 20,000
D.A.P.	250 bags @ Rs 217/bag	54,250
Urea	250 bags @ Rs 149/bag	38,250
Diazanon grl	725 kgs @ Rs 28/kg	20,300
Zinc phosphid	2.5 kgs @ Rs 310/kg	750
Primextra	125 ls @ Rs 200/l	15,000
TOTAL		Rs 148,550

Because of delays in the establishment of the project, the maize program scheduled for summer 1990 was modified. The initial request of the Extra Assistant Director of Agriculture (EADA) in April 1990 was for 500 acres of maize demonstration plots: 200 acres in Basi Khel; and 75 acres each in Nusrat Khel, Akazai, Hasanzai, and Mada Khel.

This program was reduced to 250 acres in mid-May and 100 maunds of Azam seed were requested from the Cereal Crops Research Institute in late June. Azam was not available, so Kisan 90 Dehqan, from the spring 1990 crop, was substituted. Due to the failure of the Agriculture Department to select sites for the demonstrations in a timely fashion, the program was poorly established.

Meetings were held with the landholders from Kunder, Kotlai, and Zizari. In Judbah, the seed and the fertilizer were simply distributed to farmers and planted without supervision. The lateness of the season meant that the land eventually sown was land that had been left uncultivated following the main summer planting. Numbers of kanals (one-fifth of an acre) and plots sown included, in Kotlai, 79 kanals/17 plots; in Gumbat, 48 kanals/19 plots; in Garhai Kali, 134 kanals/19 plots; in Judbah, 85 kanals/24 plots; and in Judbah Minzkiley, 144 kanals/35 plots. A field day was subsequently held at Kotkai.

In mid-August, the EADA reported that only 60 acres of maize had been planted, and that 30 maunds of seed, 120 bags of fertilizer, and five liters of Premixtra had been used. Assuming a total cost of Rs53,680,³ an unutilized balance of approximately Rs100,000. is available for rebudgeting the proposed new activities, including the winter vegetable trials.

Recommendations:

- It is important that the lessons of the 1990 *kharif* (summer) season are not ignored. Preparation for the 1991 *kharif* needs to start early in the spring of 1991. Potential sources of seed are Pirasabek, Swat, and Kalam.

² Assuming 2 bags fertilizer/acre and 20 kg of seed/acre.

³ Based on 30 maunds of seed at Rs140/-, 60 bags of DAP at Rs217/-, 60 bags of urea at Rs152/-, and 5 liters of Premixtra at Rs200/-.

- Varieties need to be chosen with care, and variety trials in various locations/altitudes are needed. Maize is a crop with strong consumer preference. White maize is preferred; unfortunately, there are no white maize varieties resistant to maize smut. The yellow varieties, although resistant, are disliked for bread making. Smut is common in the Kala Dhaka area, and yield increases of 20-50 percent are possible from the use of clean seed of improved varieties. Azam is a variety grown widely in Swat, up to 3,000 feet, but Azam takes 105 days to mature and needs to be planted by the first of July. Shaheen, a white maize variety with no smut resistance, is a short plant with high yield potential. The extent to which the stover is used for fodder and the incidence of maize smut in a particular location will determine its acceptability. It is likely to meet with consumer acceptance; trials in limited areas might be worthwhile. Sadaf is an old variety that may do well with a May planting in the Kala Dhaka region. Soan is a short-season, 80-85 day, medium-stature white variety that comes from Murree, and may do well in the higher areas of Kala Dhaka.
- Field trips in conjunction with the Agricultural Department staff should be arranged at the appropriate time to visit other maize projects working in similar areas, as well as the research activities at NARC and Mingora.

Wheat

The budget submitted to the Agricultural Department for the first six months of demonstration plots follows:

Wheat ⁴	Target Rabi 1990/1991	per 250 acres
Wheat	250 mds @ Rs 160/40 kg	Rs 40,000
D.A.P.	250 bags @ Rs 217/bag	54,250
Urea	250 Bags @ Rs 149/bag	37,250
Buctrial M	75 l @ Rs 210/l	15,750
	TOTAL	Rs 147,250

By September, 150 farmers had been contacted to grow wheat demonstration plots. A plan has been drawn up to plant 45 acres in Hazanzai, 40 acres in Akazai, 35 acres in Nusret Khel, 80 acres in Basikhel, and 50 acres in Madakhel. The planting was to be done in the first week of November. The seed, Pirasabek 85 and Pirasabek 89, has been reserved with the Cereal Crops Research Institute at Pirasabek, but by late September 1990 the order for 250 maunds had not been confirmed and the seed had not been delivered. The arrival of the TAT agronomist and a visit to Pirasbek allowed the program to go ahead. A number of demonstration plots and variety trials were put in late 1990.

⁴ Assuming 2 bags fertilizer/acre and 40 kg seed/acre.

Recommendation:

- As with the preparation of maize trials, the planting of wheat requires timely planning and preparation. The planting of wheat in *rabi* 1991 will require planning and preparation in mid-summer.

Potato

The budget submitted by the Agriculture Department for the first six months of demonstration plots follows:

Potato ⁵	Target <i>Rabi</i> + <i>Kharif</i>	per 250 acres
Potato seed	5,000 mds @ Rs 100/40 kg	500,000
D.A.P.	250 bags @ Rs 217/bag	54,250
Fungicides:		
Benlate	10 kgs @ Rs 625/kg	6,250
Dithan M.45	250 kgs @ Rs 110/kg	27,500
Cobax	250 kgs @ Rs 90/kg	22,500
	TOTAL	Rs 610,500

The potato acreage is split into 125 acres in the *rabi* 1990/1991 and 125 acres in *kharif* 1991. Seed produced during *kharif* in high mountainous areas like Shingldar, Jatka, Pakban, Seru, Manja Kot, and Maira Mada Khel can be partially used by the producer. The rest will be used as seed for the *rabi* crop in the plain area along the Indus river. Similarly, seed produced in the plains during the winter at Dor Maira, Shagai, Jodba, Kotlai, Soormal, Plosa, and so forth, can be used for seed for the later summer crop in the uplands.

Seed for 125 acres, or 2,500 maunds, was requested from Battakundi Farm via the Potato Research Centre in late August. This request was modified to 75 acres by the project officer. By September, 40 farmers had been contacted to grow potato demonstration plots. The seed arrived in poor condition and was undersized; it needed sorting before distribution.

Recommendations:

- The high value of potato seed will ensure that this program is popular with farmers. The project should look now at the potential problems of marketing potato crops before it becomes a problem.
- It is important that a visit is made to the seed producing areas during the growing season to observe the crop, and just prior to shipment to ensure the quality of the seed.

⁵ Assuming 1 bag fertilizer/acre and 800 kg seed/acre.

Agricultural Extension and Education

Prior to the project no agricultural extension staff were working in the Kala Dhaka area. Recently, the Agriculture Department has posted agricultural officers to Darband, Oghi, and Battagram. Six field assistants have also been posted to Thakot, Peshora, Nasrat Khel, Kazabanda, Darband; and Oghi.

Following the *jirgas* called by the KDADP project manager with the Kala Dhaka tribesmen in June, a list of potential field workers was drawn up and 22 have been hired. A training session was held on September 9 and 10 in Oghi by the Agriculture Department. These field workers are to act as liaison between the Agriculture Department and farmers and to assist in distribution of seed, fertilizer, and insecticides. The salary of the field workers is Rs 750 month. The total cost would be Rs 18,750 for six months.

During September, field workers were trained at Oghi, at a cost of Rs28,917. The bill covered food, lodging, and travel expenses. After a short period at the beginning of training, during which a car was hired at Rs300 per day, a car from the PCU was deputed to the training program.

Recommendations:

- The mobility of the Agricultural assistants is crucial to the success of the program. Particularly during peak seasons in the agricultural calendar, they must be allowed access to project vehicles to visit seed sources, arrange for inputs, and deliver the inputs to the field.
- In the autumn of 1990, there were significant delays in paying field assistants and agricultural officers salaries and TA/DA. If the morale of the field force is to be maintained, it is imperative that these bureaucratic delays are removed.
- The resource represented by the field workers needs to be developed. A program of on-the-job training needs to be drawn up, perhaps in conjunction with the regularly scheduled arrival of the field assistants at the office for their salaries.

Field Days

A budget has been submitted for six field days based on the demonstration plots (two for each crop: maize, wheat, and potato). With 200 invitees/field day, the cost for entertaining these guests is estimated to be Rs 5,400/- per field day. The field days will be chaired by the Deputy Commissioner, Project Officer, Assistant Commissioner, and public representatives from the area. The total cost of these field days will be Rs32,400.

Recommendation:

- These activities are popular with staff and farmers and comparatively inexpensive. They should be continued; however, efforts should be made to improve the teaching content of the presentations.

Sprayers

The Agriculture Department also requested 50 spray pumps for use in KDADP activities: 25 for weeds and 25 for diseases. At rupees 1,000/pump, their total cost will be Rs50,000.

Recommendation:

- Because of the difficulties regarding clearance for the use of chemicals on USAID projects, the lack of control over the use of chemicals purchased by the project in the field, and their marginal utility given the conditions in the area, it is recommended that the Agriculture Department should be informed that it should budget for chemicals and pumps through its own ADP.

Budget Abstract

The initial budget for agricultural activities follows:

1) Row crop demonstration	Rs. 295,800
2) Potato demonstration	610,500
3) Field Days	32,400
4) Spray Pumps	50,000
	<hr/>
TOTAL	Rs. 988,700

PROPOSED ACTIVITIES

Fertilizer Distribution

In September 1990, the managing director of the office of the Assistant Director of Agriculture in Peshawar (ADA/Peshawar), following a government directive, approached the project with a request that he be responsible for distributing fertilizer in the area. In conjunction with the Member of the Provincial Assembly for Kala Dhaka, a list of commission agents was drawn up, bags allocated and 12 distribution points were chosen: Bambil Akazai (550 bags), Mahabara Mada Khel (8,500), Kohnar Sharif (850), Kotkay (850), Geway Durbani (1,750), Kotlay Nusrat Khel (1,250), Ghatta Manjakot (850), Judbah Basi Khel (1,150), Kundar Shagi (1,150), Guldhari Dour Maira (550), Ghagbori (550), and Peshowara (550). A total of 10,900 bags were distributed.

Subsequently, in mid-October, the Project Manager suggested 10 storage points, using either government or rented buildings at Chatta, Darband, Judbah, Daur Maira, Shagai, Plosa, Kotkai, Kotlai, Geway. He also requested 7,000 bags of fertilizer, comprising 2,000 bags of nitrophosphate, 3,000 bags of urea, and 2,000 bags of ammonium phosphate. The management of these stores was to be the responsibility of the Assistant Director of Agriculture and the Agriculture Department, with the District Commissioner responsible for security.

The fertilizer in these depots will be supplied at government rates, that is, on a cost basis. KDADP provides a subsidy to offset the cost of transport to the area.

Fruit Tree Distribution

There have been unsolicited requests from the project area for fruit trees, particularly from Mairra, Bakpran, Machra, Zizari, Gumbat, Shokatey, and Paiza Nukha. The species requested included lemon and orange, mango, guava, and lychee. The names of farmers interested in fruit production are in the PCU files.

Initially, the Agriculture Department had requested the funds to carry out the entire planting and management program themselves. The initial program envisaged approximately 39,000 fruit trees to be distributed in the area. In August, a budget of Rs931,600/- was submitted for a five-acre fruit tree nursery.

During the 1990 monsoon (August), a small planting program at Kotlay/Machra/Karkana/Mera Basi Khel planted 100 orange, 50 lemon, five mango, five lychee, and 60 Guava trees.

Recommendation:

- The TAT agronomist is particularly well qualified to examine the pros and cons of this program and set out a budgeted series of activities for implementation in Phase II. The establishment of a nursery is expensive, and while it is probably necessary given the access problems, needs further consideration, including field visits to existing trees established previously under the Narcotics Affairs Unit program.

Rice in Kala Dhaka

Rice is the third most important crop in Kala Dhaka. With an estimated area of 12,000 acres, it follows maize and wheat in total area. It is grown along the valleys, particularly of the larger streams, but small acreages can be found wherever there is sufficient irrigation water. It is a *kharif* crop, sown during May and harvested in October. Like wheat and maize, it is a dual-purpose crop, providing grain for human consumption and straw for livestock. However, because of its high silica content, rice straw is the least preferred of the three grain crop straws, and is consumed only when alternatives are not available.

The agriculture program as currently planned does not include a rice component. In view of the importance of the crop in the area, a rice program should be drawn up for the 1991 *kharif*, focusing in particular on those areas where concurrent improvement of the irrigation system is planned. (See Irrigation section.)

In the upper elevation areas, the generally lower temperatures and the cold irrigation water restrict the choice of varieties. Thus, those basmati and long duration rice varieties grown in the Sind are not suitable for these upland sites. Presently, much of the area is planted to local, tall varieties,

which are liable to lodge, particularly if fertilizer is applied. They also lack disease resistance, are low yielding, and contain admixtures of weed seeds.⁶

The rice research program for the NWFP is based at Tarnab. At Mingora, the agronomy of hill rice has been studied and varieties have been developed for the rice industry, which is based in Swat. This information and the varieties selected are likely to be useful introductions to the Kala Dhaka area.

Recommendations:

- In early 1991, the stations in Swat should be visited. A study tour can be arranged, and selected members of the Agriculture Department and project staff taken for discussions with the government scientists. For the 1991 *kharif* season, seed of six varieties should be procured, such as Swat-1 and 2, JP-5, and IR-6, with the final choice of varieties based on the current recommendations of the rice researchers at Mingora, Tarnab, and NARC. Trials and demonstrations can then be laid out to find suitable rice varieties for the two main agricultural zones in Kala Dhaka: the lowland sites at the ends of the river valleys along the Indus, and sites at the heads of the river valleys and tributaries in the highland zone.
- A program of 100 acres could be planned, with a seed rate of 18-20 pounds/acre. A program of this size will require 2,000 pounds of seed, perhaps four varieties at 500 pounds/variety. This seed should be on hand in Mansehra by mid-April at the latest, to allow its distribution to the field in time for the nurseries to be sown in mid-May. The growth of the crop should be followed closely during the season, and field days or training sessions for project staff held during the key events in the crop calendar. Varieties that are found to perform significantly better than the local check varieties should be bought back from the farmers and distributed as seed to other neighboring farmers in similar locations.⁷ This arrangement will reduce the requirement for imported seed in the *kharif* 1992, and minimize logistical problems.
- It is likely that the simple introduction of clean seed, free from diseases and weeds, will in itself have a significant effect on yield. Other practices that will increase productivity include timely sowing and transplanting, planting adequate field populations, and the use of transplants of the right age. Further yield increases will come from correct water management and fertilizer applications, followed by efficient harvesting and storage.⁸ Reaping of over-ripe panicles can cause losses of 5-10 percent of the grain during threshing. At harvest, the rice panicles should still have 1-2 green grains on their lower portions to reduce shattering.

⁶ Rice mimics such as *Echinochloa* sp. are found as weeds in the rice throughout Kala Dhaka.

⁷ A simple system of exchanging a kilogram of rice purchased in the market for every kilogram of seed rice produced should be used. This should be budgeted for in advance and also explained to the participating farmers at the beginning of the *kharif*, prior to their participation in the program.

⁸ During this past season, heavy rain occurred just as much of the lowland rice was drying in the field.

- Nurseries should be sown in May, and the transplants moved to the field by June. The optimum age for transplanting is about 30 days post sowing. Transplants older than 40 days will not transplant well and yields will be reduced due to an increased incidence of pests and diseases. The recommended spacing is 2-4 seedlings at 8 inch/20 centimeter centers, giving a field population of 100,000 plants/acre, or 250,000 plants/hectare.
- Timely irrigation can significantly affect yields. The key applications are a light irrigation, 3-4 days post transplanting, followed by a maintained water level of 7-10 centimeters throughout the season, especially at tilling. The water should be removed two weeks before harvesting.
- If fertilizer is used, all of the phosphate and half of the nitrogen should be applied prior to transplanting, so the fertilizer should be on hand in the villages in May. The remaining nitrogen needs to go on in late July, 35-40 days post transplanting. The recommended fertilizer rates vary with the variety, with the basmati types receiving lower doses than the coarser grained types. The rates also will also depend on the preceding crop⁹ and the inherent soil fertility. The recommendations for NWFP range from 35-90 pounds/acre of nitrogen, (40-100 kilogram per hectare), and 25-50 pounds/acre of phosphate (30-60 kilogram per hectare).
- Assuming that DAP and urea are used, then a demonstration program of 100 acres would require roughly 100 bags of DAP and 100 bags of urea. All of the DAP should be applied 1-2 days prior to transplanting, together with half the urea, and then the remainder of the urea can be applied after the crop has been weeded, at the end of July.
- The critical period for weeding the crop is mid- to late-July, approximately four weeks after transplanting. It is likely that in some of the fields, the high populations of *Echinochloa*, which already exist in the soil, will reduce yields, even with the use of clean seed. There is no reliable information available on the incidence of other pests and diseases in the area. A survey should be made during the 1991 season. Grasshoppers may be a problem in the nursery, and plant hoppers and stem borers should also be looked out for.
- In the lowland area along the Indus, the possibility of using rice threshers or even harvesters, brought in on boats along the river, could be explored.

⁹ Usually wheat.

SECTION FOUR

LIVESTOCK AND RANGELAND

BACKGROUND

KDADP was not planned to include a livestock component. Nevertheless, the following discussion outlines the importance of livestock to the Kala Dhaka economy, and, because of this importance, the team makes recommendations for both Phase I and Phase II activities in this sector.

The remittances from employment outside Kala Dhaka have allowed many households to accumulate capital for the purchase of livestock. In addition, the area's comparatively good rainfall produces abundant fodder and crop residues to support the animals. Although there is no reliable estimate of the total livestock population in the area, it is clear that livestock are as important as crops to the agricultural economy of the area, and that this sector should be included in any attempt to develop the area.¹

In the lowland zone, buffalos and cows are important, probably due to the increased availability of wheat chaff (*busia*) from the large areas of land along the river.² In the highland zone, cows appear to be more important than buffalos, and goats are more prevalent. Goats (Kaghani and other breeds) are allowed to browse the areas around and above the villages, and, particularly during the summer, are grazed at the higher altitudes. Small numbers of mules, donkeys, and horses are kept as pack animals.

Buffalo are usually stall-fed throughout the year, and are similar to the Nili-Ravi breed of the Punjab. They are kept for ghee and yoghurt production. In the highland zone in particular, their dung is used more for fertilizer in the fields than as a fuel, but dung cakes are evident, particularly in the lowland areas.

A conservative estimate of Kala Dhaka's total buffalo herd is 5,000 head, of which 50 percent are likely to be mature females. Approximately 70 percent of these females (or 1,750) will be lactating at any one time. These lactating females will produce at least 3,000 pounds of milk per lactation period, or 2,344 tons of milk/year. When converted to ghee at Rs35/lb, this production has an annual value of Rs12,864,000.³ These estimates are deliberately low, and the actual value of buffalo milk to the Kala Dhakan economy is likely significantly higher than this.

The relative importance of dairy cows and draught oxen in the area is not known. At the time of our field trips, the maize was still standing in the field and land preparation for wheat had not started.

¹ Kala Dhaka has at least two to three times the livestock population as the neighboring Gadoon area, and the importance of livestock and range in Gadoon was explicitly recognized in the project paper and the range activities proposed for Gadoon II.

² In Judbah, with its significant area of irrigated land, stall-fed cows and buffalo are particularly apparent.

³ Assuming ghee is 0.07 percent of the milk weight.

Cattle are certainly used for threshing of wheat and rice. A single milk cow is likely to produce less than half the total milk of a buffalo, or approximately 1,250 pounds in a six-month lactation period at a lower fat content (less than 5 percent). A buffalo cow will therefore produce more ghee. However, a milk cow requires less feeding, which is likely to be important at the higher elevations, and a cow can also produce its calves at an earlier age and slightly more frequently.

Desi chickens are ubiquitous in the villages of Kala Dhaka. Broods usually range free, although, in two villages, coops were seen. Egg production appears to be only 30-50 eggs/year and predation and disease limit the size of flocks. Newcastle disease, *tughaki*, is reported to be common. Any improved breeds introduced to the project area will require vaccination against this disease.

The animals are fed on the crop residues and the production of grass from the hillside. This grass is both cut by hand and grazed. In the villages themselves, along the field boundaries and terraces, grasses such as *Cenchrus* and *Heteropogon* are allowed to grow and even encouraged. During the autumn, when maize is in the fields, grazing animals are found at the higher elevations above the fields, on the middle portion of the ridge where the steep rocky slopes had made cutting the grass difficult or uneconomic, or were being herded. Stiles are found throughout the area. Down on the river's edge, fields are fenced, and along the trails in the mid-elevations, gates separating portions of grazing were often seen.

In Kala Dhaka, forage trees are not as important a component of the feed as in Gadoon, probably because the natural grass and forb vegetation is more luxuriant. In some of the villages forage legumes are found. The maize stover, rice straw, and the wheat straw are also important. In the lower elevations, along the river where the boat could bring in a thresher, large wheat chaff stacks were found. Bran is fed to buffalo, and water mills for grinding wheat and maize are common. No attempt was made by the TA team to survey the availability of supplements such as cotton seed cake. An initial assessment is that the quantity of forage available in the area is not particularly constraining, and therefore quality of feed could be one focus of the project activity.

The range found in Kala Dhaka is of three main types, corresponding to the three agroecological zones. The highland cooler area, which at least originally had a forest cover; the midlands, where the soil and slope limit production to scrub; and the lowland areas adjacent to the Indus. Of the two productive forage zones, in the lowland zones population pressure from the large villages along the Indus, cutting, and grazing forage on the lower slopes of the ridge are causing changes in the grass cover, which is impoverished and unpalatable grasses are occurring. The highland zone still has a comparatively rich grass flora.

The main growth period for range is the summer monsoon; the cooler temperatures in the winter reduce production, as does the drier spring. Some of the grass that had already been cut for forage by October was of reasonably high quality, still green, and in mid-flower. By late October, the grass has dried off, and is likely to have low protein content and high fibre. For maximum use, the livestock would ideally need a protein supplement.

PROPOSED ACTIVITIES

The preliminary survey reports indicate that stud buffalo are kept in some of the villages in the area, particularly among the Basi Khel. Villages without a male buffalo are charged 30-50 Rs for stud services. Bulls appear to be kept throughout the area, and scrub bullocks were frequently seen during the field trip. Two possible activities to improve the buffalo and cow stock in the area are the importation of improved buffalo bulls and the castration of inferior male cows. Both activities could have a significant effect on the gene pool in the area over time, are comparatively cheap, and would require relatively little ongoing supervision.

Another obvious area for project activity is the distribution of improved breeds of chicken. If this is combined with the Women in Development (WID) program, training can be given in vaccination and improved poultry keeping to ensure that the chickens survive periodic epidemics. Broilers should not be tried until the introduction of improved chickens for small village flocks at various places in the area has given some information on the incidence of disease and the availability of feed. The livestock staff at Abbotabad should be approached to find out what kinds of chickens they have available. Pullets should be used, rather than day-olds. Fayoumi chickens, an Egyptian breed, are available in NWFP and are small chickens with a low feed requirement, disease resistance, and an improved egg laying ability when compared to the desi stock. They have the potential to double the egg production from the scavenger flocks found throughout the area. They should be introduced as small flocks — a cock and a trio of hens — and ideally should be concentrated. Dispersion of the occasional bird throughout the area will only result in the breed being diluted by interbreeding with the local stock. Any chickens introduced should be vaccinated against Newcastle disease.

The trial introduction of fodder species *Grewia (pastonai)* in selected villages, particularly in the upper zone, should be included in the forestry program. If grown as a shade tree around the compound, *Grewia* can be lopped and given to the stall-fed lactating buffalos and cows. The leaves have a high protein content — 20 percent — and could provide a useful supplement to the diet of lactating buffalo to increase their milk yield, particularly during the early part of the year when forage may be in short supply.

The introduction of leafy grass types that have a higher proportion of leaf to stem than the species currently being grown along the terraces could be attempted in a few pilot villages. In areas with available irrigated land, irrigated forage production for stall-fed animals is likely to be an effective way of increasing production. If winter forage is found to be a limiting factor, the possibility of growing irrigated cool season forages such as *berseem* can be explored. This should be done as part of the Agriculture Department program.

Range improvement is likely to be difficult and expensive to implement. Range activities in Pakistan are the responsibility of the Forest Department, not the Livestock Department. The former lack the staff and frequently the interest to get involved in range improvement. On the technical side, earlier cutting of the forage would improve the hay quality, but the availability of labor, the demands of other activities, and the reduced total yields are all likely to make this improvement unacceptable. Fertilization of selected portions of the range will increase the total production, but the cost of fertilizer, the logistics of getting it to the site, and the mentality that regards fertilizer as an input for the fields rather than the hills are obstacles to the introduction of that innovation. In selected sites, a program of reseeding with legumes and improved grasses, combined with phosphate application, could be tried.

A survey of the most important diseases in the area should be made, and steps taken to ensure that the three animal health units located in the area have the vaccines and medicines available to deal with the most common ailments.⁴ The District Animal Husbandry Office is located in Abbotabad, and the Assistant Director for Mansehra district worked with the Gadoon project for some years, and is likely to be a valuable ally in the development of an animal husbandry component.

Given the difficulty of maintaining a qualified staff in the field, two concurrent approaches should be tried. First, training in simple curative and preventative techniques should be given to the stock assistants assigned to the area. They are the front line troops and are responsible for vaccination and treatment at the animal clinics. Diagnosis of the major animal diseases and the appropriate treatment, castration, vaccination, drenching, and simple suturing are possible topics for their ongoing practical education program. Second, a weekly visit to a central site by a mobile veterinary team, on a regular basis, would increase the availability of animal health care in the area, and sidestep the problems of maintaining qualified staff in the field. The veterinarians could be provided TA/DA and transport by the project, as well as some simple equipment and medicines.

⁴ Clinics are located at Seri, Maireh, and Judbah.

SECTION FIVE

FORESTRY

Because of the high population density and the limited availability of agricultural land, the prospects for marked improvement in agricultural productivity in Kala Dhaka are somewhat limited. Forestry, on the other hand, is an important component of the Kala Dhaka project, and there are reasons to be optimistic that improvements can be made in this sector. The Kala Dhaka area is unique in Pakistan in that the forests are controlled by the people, not by the government's Forest Department; currently, the only authority the GONWFP Forest Department has in Kala Dhaka is the right to veto sales of standing timber to commercial contractors. Another source of optimism in this sector is the fact that the Forest Department, through its watershed management projects, has been managing reforestation programs along the banks of the Indus since the building of the Tarbela Dam. Through these activities, the Forestry Department has gained valuable planning and implementation experience in areas like Kala Dhaka.

BACKGROUND

The forested area of Kala Dhaka is estimated to be 83,000 acres, of which 25,000 acres are considered exploitable. The climate is subtropical to temperate and the altitude ranges from 1,500 to 9,800 feet. The upper areas receive snow during the winter. The exploitable forests are in the upper areas and consist mainly of *Pinus wallichiana*, blue pine, on the crest of the ridge, and *P. roxburghii* (*chir* in Pashto) at lower elevations. These forests currently are cut for firewood and building materials by the locals, grazed by animals (particularly in the summer months), and harvested by nonlocal timber contractors. Under the *wesh* system, forests lying adjacent to, and above, the agricultural lands were linked together.

Kala Dhaka east of the Indus is demarcated by a north-south ridge, ranging from 6,000 to 9,900 feet in altitude. Much of the ridge line is over 8,000 feet. The western portion of the ridge is dissected by seven river valleys running to the west; these features create a landscape of steep-sided valleys and spurs which run more or less W-E. The rocks are both igneous and metamorphic. The soils created on the granites of the upper elevations support fair stands of forest, while the intermediate elevations in areas where schist occurs are particularly rocky and barren, with either bare, steep rocky slopes or sparse *Dodonea* (*gharaski*) scrub.

The coniferous forest forms more or less pure stands in the upper areas of Kala Dhaka. Although somewhat reduced in density, forest still occurs along much of the ridge. The blue pine, or *kail*, is above the lower-lying *chir* pine. Most of the broad-leaved trees found in the area are either planted, occur occasionally in the pine forests, or are found naturally in small isolated groups that are based on a spring, a valley head, or a graveyard.

At the highest elevations, above 9,000 feet, flat areas have been converted into pastures by grazing. The vegetation here is *Abies pindrow* (silver fir or *bewitch*) with occasional *kail* and *Picea smithiana* (spruce). Moving down the hill, *kail* becomes dominant, forming more or less pure stands,

with an occasional *Cedrus deodara* (*deodar*). The blue pine extends down to 6,000 - 5,500 feet depending on the aspect. Around 6,000 feet, the blue pine is replaced by chir. On the drier, warmer southern slopes, the chir can extend 500 feet higher. Again, the chir form almost pure stands, with only the occasional oak or rhododendron intermixed. On the better sites, and where the grazing and lopping pressures are lessened, chir can extend as low as 3,000 feet. Generally, however, at this level, the collection of grass and firewood has reduced the pines to occasional specimens, often heavily trimmed, with a scrub ground cover, which may include *Acacia catechu* (*jandar*). From the chir stands, and down to the riverside, much of the slope is covered with only scrub *Dodonea viscosa* (*gharaski/sanatha*), because of the poverty of the soil and the grazing of animals.

Throughout Kala Dhaka, the main villages are found below the blue pine, in degraded chir forest, or at the lower elevations along the river. Much of the *Dodonea* scrub zone, the midlands (4,000 - 2,000 feet), is sparsely populated.

KDADP PHASE I ACTIVITIES

In the KDADP Phase I PC-1, Rs15.882 million were earmarked for afforestation: Rs5.155 million in the first year and Rs10.727 million in the second year, followed during Phase I by Rs2 million in Phase II.¹ The main activity budgeted is the establishment of the forest and fuel wood nurseries sufficient to plant 7,500 acres during the life of the project. Out of the total of 60 acres of nurseries, 10 acres of nurseries were to be raised during the first year of the project.

Nurseries ²	Year 1	Year 2	Year 3	Year 4
Area (acres)	10	20	60	60
Plants (000)	500	1,000	3,000	3,000

If we assume 50,000 plants/acre can be produced in Year 2, then the production from the nurseries is sufficient to plant the areas shown below.

	Year 1	Year 2	Year 3	Year 4	Year 5
Area plantable (acres)	0	500	1000	3000	3000

¹ The figure of Rs15 million in the PC-1 is based on 7,500 acres @ 1,000 seedlings/acre, with plants costed at Rs2/plant.

² Area based on 50,000 plants/acre/year

In the first six-month work plan, the target was increased to 15 acres of nurseries in the first year. Out of this target of 15 acres of nurseries, five acres of tube stock nurseries were to be established in the first six months, June to September, whereas the remaining 10 acres of bare rooted broad-leaved nurseries will be sown in spring 1991. As of October 1990, four acres of nurseries are being established. An additional one acre of nursery proposed for the Akazai region remains to be started due to political problems.

Location of nurseries		Area
Madakhel	Darra	1.00 acre
Hazanzai	Kandar/Towara	0.75 acre
Akazai	—	—
Nusratkhel	Surmal	0.75 acre
Basikhel 1	Judbah	0.75 acre
Basikhel 2	Zizarai	0.75 acre

Afforestation ³	Year 1	Year 2	Year 3	Year 4
Area (acres)	10	20	60	60
Plants (000)	500	1,000	3,000	3,000

Out of the total target for Year 1, 200 acres of afforestation were planned for the 1990 monsoon season, July and August, whereas the remaining 300 acres of afforestation are to be carried out in spring 1991.

The sites listed below were planted at short notice in the 1990 monsoon season (August), and it was not possible to obtain agreement on highland sites for these initial plantings. At that time of the year no bare-rooted planting is possible, and the only tube seeded trees available from the Forest Department nurseries at the end of its own planting season were eucalyptus and chir pine. Despite the fact that these were not the ideal species for the lowland locations allocated by the villages, the Forest Department planted these two species because of local pressure on the KDADP to initiate some form of activity during the 1990 planting season.

³ The funding for the nursery production of plants for Years 3 and 4 is in Phase I.

Location of monsoon 1990 afforestation sites		Area
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Mada Khel	Darra	20 acres
Hazanzai	Kandar/Towara	70 acres
Akazai	—	—
Nusrat Khel	Surmal	50 acres
Basi Khel 1	Judbah	30 acres
Basi Khel 2	Zizari	30 acres

Typically, at the start of any forestry program, the beneficiaries are not only skeptical of the utility of forgoing present gain from agricultural crops for future riches from trees, they are also rarely in the financial position to allocate productive land to plantations. Therefore, people will provide only their most marginal land for initial planting. Of the five sites given by the people of Kala Dhaka, however, only the site at Judbah is truly marginal, and even at this site, survival of planted trees, particularly of eucalyptus, was observed. Even at this site the potential stabilization and reclamation of a coarse river terrace is underway. However, damage of up to 10 percent of the seedlings planted has occurred, due to lax supervision by the locally assigned guards and subsequent damage by grazing cattle.

Phase I of the Kala Dhaka project ends in January 1992, leaving only two more opportunities for planting trees in this phase: spring 1991 and the shorter season in monsoon 1991. In both instances, large-scale production from the project nurseries will not be available in time for planting. In view of the long time lag involved in establishing a forestry project, the importance of decisions made now about future production, the uncertainty about the suitability of all of the sites given by the villages for forest production, and the conflicting reports on the survival of the trees planted in the monsoon 1990, the KDADP TAT retained the services of Dr. Lester Bradford. During his two-week visit, Dr. Bradford inspected the afforestation sites and the nurseries established by the Forest Department. His report, recommending ways to improve the existing afforestation program, is attached as Annex B.

The program of nursery development is of particular concern, especially given the logistical problems of moving seedlings in the area. Therefore, a widespread network of well-located nurseries, which produce the right species in the correct numbers and in a timely fashion, is an essential component of the whole forestry program. If the project does not take steps to establish such a network immediately, trees will not be available in the right place or at the right time for planting in the next (1991) spring planting season. This will create an extra budget expense and will necessitate the transport of trees in from outside the area, once again.

All of the forestry watershed management activities are being carried out through the Forestry Department's Watershed Management Project. The Divisional Forest Officer (DFO)/Unar Watershed Division is supervising these activities. At the present time, the field work is being done by one Forest Block Officer, who works out of Darband and is assisted by 10 forest guards (one for each nursery and each afforestation plot). Two Range Officers of the Unar Watershed Division work in the area parallel to the Kala Dhaka territory. Along with their existing programs in Unar Watershed, which comprise 50,000 acres of forest plantation in three ranges/12 blocks and 50 acres of tree nurseries, they are also responsible for supervising the work in the Project area.

PROPOSED ACTIVITIES

Kala Dhaka has an estimated 26,000 acres of forests. Currently, these forests are either mortgaged to contractors or locally exploited for firewood and building materials. The Forest Department produced a management plan for the area in 1976, but has not been able to implement the plan because of local opposition. Under KDADP, an opportunity now exists to discuss the issues with all of the concerned parties. Considering the proposed investment in 7,500 acres of new trees, it may be possible to negotiate a new agreement, for example, an agreement that transfers responsibility for afforestation to the local people for the development and management of the forest resource.⁴

In addition to reforestation, the opportunity to promote regeneration in some areas of Kala Dhaka can be realized. Pressure on the existing natural forest can be relieved by the introduction of fast-growing fuel and forage species. A number of such species can be introduced to and expanded throughout the area, such as *Populus* (saphada), *Grewia* (*pastonai*) and *Ailanthus* (*baikyana*). The possibility of establishing a *deodar* nursery in one of the higher villages should also be seriously explored. This valuable species grows in the Kala Dhaka region and should be included in the high-altitude reforestation program. This species prefers areas with low summer rainfall and adequate snowfall. It should also be planted high as it is very susceptible to fire damage, and the practice of burning the chir pine needles for grazing purposes will kill *deodar*. *Juglans regia*, walnut, is another species that could also be expanded throughout the upper areas.

Other types of forestry activity could include roadside stabilization along the Thakot-Darband road. As part of the "miscellaneous works" program of the project, a number of sites could be chosen for receipt of antierosion measures. While the road from Thakot to Darband is passable by a four-wheel-drive vehicle, the two major obstacles to its continual use are the rivers that cross the road that need to be forded, and the areas in which slides occur and block the road. Some of these slide areas could be stabilized comparatively cheaply, by using check dams and tree and grass planting. Local inhabitants could be employed to undertake this activity. A reduction in road blockages due to slides would also provide a long-term project benefit to the population of Kala Dhaka as well as demonstrate the utility of trees.⁵

Another area that should be explored is the planting of amenity and utility trees around the numerous public buildings in the area. The establishment of tree planting programs at the 18 primary schools is one option. If nurseries could be established in conjunction with the teacher and tended by the pupils, the immediate environment of the school would be improved and the children's understanding of trees might be enhanced.

⁴ One point of contention between the locals and the Forest Department is the use of government labor to cut and transport the trees. When harvested by a contractor, a side benefit is the extra payment to the locals for this portion of the work.

⁵ Because of time constraints during the 1990 monsoon planting season, outside labor was brought in for the tree planting. This decision created tension, and should be avoided in the future. Even if it is necessary to raise the wage rate to Rs50/day, local labor should be hired and trained for forestry activities.

Yet another possible area for reforestation is land that presently lies abandoned and uncultivated. Portions of land throughout the area have been terraced and subsequently abandoned for agricultural use. The establishment of small village nurseries could provide the planting material to owners of these terraces for reforestation and subsequent use as firewood or building poles.

In Phase II of the KDADP, a separate range officer was scheduled for assignment to the project area. The DFO foresees a need for an extra range officer and three foresters by August 1991 as the major planting program gets underway. In view of the importance of site selection, species selection, and nursery establishment, in addition to the expanded program described above, these positions should be filled immediately to ensure successful completion of all of the planned Phase I activities in the forestry sector.

There is a need for the KDADP/PCU and the Forest Department to draw up a realistic work plan for Kala Dhaka. It should clearly indicate activities planned, those underway, and those to be accomplished. This work plan also should be used to monitor the activities of the Forest Department. Another area to be addressed is amount of resources required to carry out the program. There is a need to have a clear understanding of the total cost of the program and the requirements for labor, materials, and technical inputs at each point in the four-year program.

SECTION SIX

IRRIGATION

BACKGROUND

In 1987, the Special Development Unit (SDU) of GONWFP Planning and Development Department estimated that approximately 18 percent of the cultivated area in Kala Dhaka, or 13,750 acres, is irrigated by small surface water flows.¹ This irrigated area is used mainly to grow wheat in the *rabi* and rice in the *kharif*. Currently there is no significant production of irrigated vegetables in Kala Dhaka.

Irrigation structures are simple and small-scale; diversions constructed upstream send the water along the contour in usually unlined channels to the terraces below. The main diversion structures and thus the larger irrigated areas are located at Judbah (Basi Khel) and Batela (Nusrat Khel). Minor schemes are found at Laid (Akazai) and Kunray (Hasanzai).

The SDU survey of irrigation schemes in the Kala Dhaka region was adopted by GONWFP as a baseline for identifying schemes under the KDADP PC-1. Even though the SDU survey lacks basic data on channel length and discharge rates for 12 out of 30 channels, the total length of channel demarcated probably exceeds the 30 miles of channel construction funded in Phase I of the KDADP.

IRRIGATION SYSTEMS BY TRIBAL DIVISION

The distribution of irrigated land throughout Kala Dhaka is uneven: nearly all the total irrigated acreage is located at the Basi Khel and the Nusrat Khel areas. This irrigated acreage is concentrated at the points where the rivers of Kala Dhaka enter the Indus. Table 2 indicates the irrigation systems identified in the 1987 SDU report.

Mada Khel

Mada Khel has little or no existing irrigation. In 1987, the Charakot scheme was proposed by the SDU. A two-mile channel was proposed for construction in the Mira Nullah supplied with water from the Sonya Khwar. At this time details of the flow rate, the potential irrigated area, and the status of this scheme are not available. Without having conducted a detailed survey, the SDU estimated the cost of constructing this scheme at Rs1 million.

¹ Appendix 10, "Report on the Kala Dhaka Area," October 1987, produced by the Special Development Unit of the Planning and Development Department. This report was based on the 1965-1966 Agricultural Census figures.

TABLE 2
KALA DHAKA IRRIGATION SYSTEMS IDENTIFIED BY THE SDU

Region	Name of Channel	Source	Length/miles
Mada Khel	Charakot (I)	Sonya Nullah	2
Akazai	Darbani (I)	Pir Khel	2.5
	Naraj Akazai (C)	Shawl Khwar	1.5
	Jango (C)	"	2.5
	Maratha (C)	"	0.26
	Kand Bala (I)	"	0.84
	Kand Payan (I)	"	0.82
	Bakrai (I)	"	2.4
Hasanzai	Palosa Newakili (I)	Mangola Nullah	3.0
Basikhel	Judbah (I)	Judbah Khwar	1.5
	Mohd. Saira (I)	"	1.5
	Maira (I)	"	2.0
	Terra Owna (I)	"	0.5
	Ghato Sera (I)	"	1.0
	Maira Ghari (I)	"	3.0
	Judbah Dub (I)	"	2.0
	Bhala (I)	"	1.25
	Shaish (I)	"	0.5
	Nagora (I)	"	0.5
	Shagi (I)	Shagi Khwar	n.a.
	Kandar (I)	"	n.a.
	Shah Dak Kotkai (I)	"	n.a.
	Zizari (I)	Zizari Khwar	n.a.
	Daur (I)	"	n.a.
	Daur Maira (I)	Sadu Khan Khwar	n.a.
Sado Khan (I)	"	n.a.	
Nusrat Khel	Para Bala (I)	Nusrat Khel Nullah	n.a.
	Kotla (I)	"	n.a.
	Kuz Para (I)	"	n.a.
	Suramal (I)	Surmal Khwar	n.a.
	Loya Dara (I)	"	n.a.

(I) = Improvement (C) = New construction.

Hasanzai

The Hasanzai area was also reported to be without irrigated acreage. A three-mile channel was proposed for construction by the SDU with its off-take from Mangano Nullah. This scheme, the so-called Palosa Newakili channel, had an estimated cost of Rs1.5 million. The KDADP PCU's six-month progress report to the Commissioner of Hazara Division (October 1990) lists, under the classification "miscellaneous small works," nine new channels and the rehabilitation of four existing schemes in the Hasanzai area. In the initial survey of the Kala Dhaka area conducted in early 1990, the existence of local irrigation schemes in need of improvement was noted for Seri Kohani, Taigram, and Mera Khan Khail. Other schemes at Tili Saidan and Kunhar Sharif are apparently inoperative, the latter destroyed by the construction of the Thakot-Darband road. A four-kilometer scheme built by the Irrigation Department scheme at Kunray requires maintenance.

Akazai

According to the 1987 SDU figures, the Akazai area has only 50 irrigated acres, but a total of seven channels were being considered either for construction or rehabilitation. Six out of the seven channels are located on the Shawl Khwar, the other on the Pir Khel. The total channel length is 10.82 miles, and the estimated cost of construction is Rs5.41 million. Darbani, Morata, Ghan, and Dharo apparently have locally constructed irrigation schemes in need of some repair. Only the scheme at Morata was reported operational in the KDADP survey. A number of Irrigation Department schemes also are under way in the area. A government irrigation channel was begun by the Irrigation Department from Sural to Laid but not completed. Another Irrigation Department channel from Lashora to Neway Kili was damaged by the construction of the Darband-Thakot road.

Basi Khel

Basi Khel is far and away the most well-endowed area of Kala Dhaka in terms of existing irrigation schemes, with 8,000 irrigated acres according to SDU figures. The SDU proposed improvements to 17 existing channels: 10 on the Judbah Khwar, 3 on the Shagi Khwar, 2 on the Zizari Khwar, and 2 on the Sadu Khan Khwar.

Nusrat Khel

The Nusrat Khel possesses 5,000 acres of irrigated land. The SDU proposed improvements for five channels, three linked to the Nusrat Khel Nullah and two linked to the Sural Kwar.

KDADP PHASE I ACTIVITIES

According to the KDADP PC-1 for Phase I, 40 kilometers of irrigation channels are to be surveyed and designed. In Phase II, 25 miles of channels are to be constructed or improved. The report on the achievements of the first six months work by the PCU lists the following irrigation schemes identified:

	New	Rehabilitation
Hasanzai	9	4
Basi Khel	2	6
Akazai	3	1
Nusrat Khel	-	1
Mada Khel	-	1
Total	14	13

The Irrigation Department has only one engineer who is responsible for the whole of Mansehra District and no design staff. All irrigation design work is subcontracted to private firms. No funds have been budgeted in the Irrigation Department's ADP for design work in Kala Dhaka. The PCU has been allowed to use the contingency line item in the KDADP budget for contracting design staff, but this decision avoids the issue of how the design contractors are chosen and supervised. The experience of another USAID-funded rural development project working in remote areas along the border with Afghanistan, the Tribal Areas Development Project, suggests that the use of outside contractors for design work requires a massive investment of engineering time and expertise on the part of USAID to ensure that the product produced meets A.I.D. requirements and is usable.

The KDADP PC-1 also proposes that the construction of schemes costing less than \$100,000 would be undertaken by Kala Dhaka villagers themselves with supervision by the PCU or TAT staff. Two conditions undermine this proposal: it is impossible for one TAT engineer, supervising scattered works in an area of 50 square miles, to supervise such works with any consistency when it takes at least 3-4 hours to reach any one site from outside the project area. Another, and larger, issue is that the actual mechanism by which the irrigation structures are to be improved needs to be reconsidered. Kala Dhaka is replete with structures that are either broken or are functioning at less than capacity. These structures have been constructed by local contractors.

Both the villagers and the Irrigation Department have made a number of attempts in the past to rehabilitate the existing systems. In 1987-1988, for example, the Annual Development Program of the Irrigation Department included Rs1,708,000 budgeted for improvements on three irrigation channels: Neway Kili in Akazai, Jiga/Jhegal in Basi Khel, and Kotlay in Nusrat Khel. This work was to have been completed in 1988-1989 and can presumably be inspected now. There is some question as to whether the channel improvements met the Irrigation Department's standards.

The construction design work proposed in the KDADP Phase I Project Paper must be undertaken, but not without additional staffing. The KDADP PC-1 calls for 40 kilometers of irrigation channels to be surveyed and designed under Phase I and 25 miles of channels to be constructed or improved under Phase II. The Project Paper proposed that the survey and cost estimates for these schemes (as well as

the roads, water supply schemes, and mini-hydro projects) should be prepared by the TAT civil engineer. The Project Paper also assumed that the TAT civil engineer would be supported by two PCU engineers. It is clear, at this point, that the amount of field work involved in achieving these objectives was grossly underestimated. Similarly, the extent to which the PCU engineers can assist in the survey and design work was also miscalculated.

Alternative approaches to effective implementation of irrigation schemes in Kala Dhaka all have various drawbacks and advantages. The possible approaches include design and construction by project committees, local contractors, the Irrigation Department, outside contractors, and so on. These alternatives need to be discussed now, and consideration of the Gadoon experience, USAID's requirements, the difficulties of access for monitoring and for the supply of materials, and the particular situation at each site should be incorporated into the planning process.

RECOMMENDATIONS

- A plan should be drawn up to collect all available information on the existing irrigation schemes in the area. Once the existing information is collected, along with any available survey data/documents, including details of the discharge rates and the command area of the schemes, a phased program for the irrigation sector can then be developed. The cost estimates for the rehabilitation of the priority schemes in need of improvement can be drawn up, as well as the initial surveys of any important new sites proposed for irrigation structures.
- Without a systematic approach to the area, the improvements and extensions to the irrigation system will continue to be made in a slipshod, inefficient, and inequitable fashion. It is of paramount importance that any schemes funded by the project should be monitored closely to ensure satisfactory construction. It is also important to coordinate the development of the irrigation infrastructure with the agriculture program, particularly its rice program and vegetable production and marketing program.
- KDADP could retain the technical assistance of Gene White, an irrigation engineer working with GONWFP Irrigation Department on the USAID-funded Irrigation Systems Management project. Mr. White should be asked to visit the area and, in conjunction with the Irrigation Department staff and the PCU and TAT engineers, to outline in general terms the kinds of irrigation improvements required in Kala Dhaka, the cost implications of the program, and staff requirements.
- Serious consideration should be given to funding another local-hire engineer for the TAT, perhaps to concentrate on irrigation systems only. In the meantime, immediate plans should be made for the provision of informal training to the PCU engineers, particularly focusing on USAID requirements and the use of computers for the preparation of cost estimates. At minimum, the PCU engineers should be given an orientation to these requirements and methods through a visit to the USAID/Peshawar engineering design office for a period of 2-4 days.

- One possible implementation mechanism for irrigation schemes in Kala Dhaka would be the formation of local committees, with the help of a village organizer (see Section Eight), to undertake the construction responsibilities. The USAID Engineering Office would advise these committees on determining the feasibility and design of the scheme, and would also conduct periodic inspections.
- Either the budget for irrigation schemes has to be increased, or a number of schemes scheduled for construction in Phase II must be eliminated. The rehabilitation of the existing systems will frequently require construction of concrete diversion weirs and channel lining, and will not be significantly cheaper than the construction of new systems. Furthermore, much of the basic information required for design, such as peak stream flows, is unavailable. As a result, overdesign is necessary to prevent structure failure.

SECTION SEVEN

TRANSPORT AND COMMUNICATIONS

As a component of North West Frontier Area Development Project, KDADP was originally designed with an emphasis on road construction. This emphasis reflected the assistance strategy of the USAID/Pakistan Mission developed for other remote and politically fractious areas of the North West Frontier such as Gadoon-Amazai and the Federally Administered Tribal Areas — a strategy that depended on access as the necessary precondition to effective follow-on projects.

A total of nearly Rs55 million was set aside in the KDADP PC-1 for the design and construction for a road connecting the Gadoon area with Maira Kachori in Madda Khel, and for the preliminary design of access roads to be constructed in Phase II westward from the Darband-Oghi-Thakot Road. According to the PC-1, all Phase I design and construction activities were to be contracted directly by the Mission's Office of Engineering. Phase II construction was planned to be contracted out by the GONWFP Communication and Works Department (C&W).

Since KDADP's inception, however, changing perspectives within the Mission regarding the objectives of area development in Pakistan have prompted a reassessment of USAID's commitment to spending KDADP funds obligated for road construction. As a result, the Chief of Party and the Project Officer jointly agreed to postpone the scheduled consultancy of a transport economist until a more specific scope of work could be developed. However, the experience gained in the transport sector by the TAT and the short-term technical assistance team's own observations support the generalizations cited below.

BACKGROUND

Although the mobility of the Kala Dhaka population, as indicated by the extent of labor migration to Karachi, belies the characterization of the region as isolated, the difficulty and cost of access to the area discourage more than the rudimentary commerce and communications that already link Kala Dhakans with greater Pakistan. The east bank of Kala Dhaka is linked to Mansehra via river transport and road while the west bank communities rely exclusively on river transport for access to the district. River transport is by far the cheaper form of transport. During the summer and autumn seasons, much of the traffic entering and leaving the area passes through Darband, a bustling market town situated just south of the Kala Dhaka tribal area border. From there, traffic moves on to the administrative center of Oghi, 18 miles to the NNW via a metalled road, and on to the district center at Mansehra and the Hazara Division center at Abbottabad.

From July to November, the Tarbela Reservoir is of sufficient depth to accommodate a host of small craft that ply the riverside ports from Darband to as far north as Shagai/Basi Khel, some 15 miles due south of Thakot. The annual flooding of the reservoir restores the water link between Kala Dhaka and Haripur, a major market town 20 miles to the south. At Haripur, goods purchased in bulk can be obtained at far more favorable prices than Darband or even Oghi, and haulage rates by river transport are considerably cheaper than by road.

During the July to November season, boatmen effectively monopolize transport service to riverside ports. From these ports, passengers will walk as much as three hours to their villages in the midlands, and will pay a muleteer as much as Rs150 per load to transport goods purchased in outlying bazaars. A small fleet of two-wheel drive pickup trucks continues during this season to provide transport services between Shagai (the northern limit for larger river transport boats) and Luarra Bazaar, on the Kala Dhaka side of the Thakot footbridge, at the northern end of the Darband-Thakot road. Smaller boats ferry passengers across the river to Swat and the west bank of Kala Dhaka. As the reservoir recedes during the winter months, motor transport supplants the boat traffic, with the exception of river ferries, to villages along the entire length of the Darband-Thakot road. However, the poor conditions of that road, with its frequent landslides and washouts, combined with the high vehicle maintenance costs, keep motor transport rates much higher than river transport. A 70-pound bag of flour costing Rs240 in the Darand Bazaar will cost approximately another Rs30 to transport by road to a village on the Darband-Thakot Road as compared to less than Rs10 by boat. The same bag will cost an additional Rs100 to transport to a village in the midlands and Rs150 to a village in the highlands by pack animal. Thus, transport charges can double the cost of a basic commodity for the inhabitants of Kala Dhaka.

As indicated above in Section Two, the results of the socioeconomic surveys indicate that a large proportion of the Kala Dhaka population inhabits the highlands. For much of the year, until the snow blocks the mountain passes, this highland population brings in commodities from entrepôts situated on the eastern slopes of the Kala Dhaka mountains such as Chor Kalan and Shungli Bandi. From their villages, people travel foot paths up and over the 8,000-9,000-foot ridge of mountains that forms Kala Dhaka's eastern border to road heads at Panjagali or Tor Banrh/Kopra (a journey of up to two hours), where they can hire a CJ-7 jeep to take them on to Chor Kalan or Shungli Bazaar, or to Oghi (a journey of another two-three hours). Carriage rates charged by jeep drivers will add another Rs50 per bag of flour from Oghi to Chor Kalan or Shungli Bandi.

The difficulty of access to the region accounts in large part for the problems that government line departments face in keeping staff in the field. Technical line departments such as the Department of Agriculture, the Forestry Department, and Local Government and Rural Development lack adequate staff to supervise and monitor projects in Kala Dhaka with any regularity.

REVISED CONSTRUCTION PRIORITIES

The KDADP FC-1 called for some 170 kilometers of roads to be designed and built during Phase I and II. However, USAID has indicated that funding for the KDADP road construction component will be greatly reduced. As a result, the GONWFP and USAID must re-evaluate the road construction priorities of the project and establish new priorities in this sector. The improvement and construction of access roads remain perhaps the most common demands of the population and, thus, the most effective means of gaining the support of the population for KDADP activities. A recommended alternative to a major road design and construction effort is the upgrading of the existing jeep tracks and roads in the region to improve access for local transport vehicles. The following reviews those tracks and roads that merit priority consideration.

Thakot to Darband Road

The Thakot to Darband Road, running along the eastern bank of the Indus River, is the most important route through the area and serves perhaps the greatest population of any other existing road/track. This road was constructed in the late 1980s but a number of factors have reduced its utility:

- The three key bridges allowing year-round access and use of the road were not built. These have been recently put up for bid by C&W but are not likely to be completed for use for several years;
- Roughly half the culverts were not completed, and resulting washouts during the rainy season impeded passage throughout the year;
- No retaining walls were constructed along the road alignment. As a result, land slides frequently close the road; and
- There is no regular maintenance on this road.

The KDADP TAT was recently informed that the Frontier Corps was to return to complete the work on the road (culverts, roadbed width, and some retaining walls), but apparently there has been a delay in the agreement and work has neither started nor been planned. In short, movement along this road will remain problematical with seasonal high water blocking passage in at least three locations and rock/landslides blocking passage at varying points along the way during all of Phase I and at least well into Phase II. KDADP will continue to request C&W for road-clearing activity as required.

Recommendation:

KDADP should not support any road surface improvement activities on the Darband-Thakot road. **But reclamation, erosion control, and stabilization activities above and below the road could move forward.** The road cut and blasting destabilized many sections of hillside, producing landslide areas. The TAT agronomist has met with officials of the Forest Department's Watershed Management Project to request cost estimates for initiating grass/bush/tree plantation and the construction of retaining walls or small check dams to control eroding washes that block the road.

Maira Mada Khel Road

The Maira Mada Khel Road was scheduled to be designed and built during Phase I of the project. Originally it was to have been some 32 kilometers in length entering from Gadoon and exiting to Swat. With the shift in project focus, this road is presently planned for construction as far as the population center of Maira, 14 kilometers from Gadoon. The Maira road is to be a new-cut road that does not follow an existing jeep track. There is local pressure to extend this road to the Indus River, which would perhaps double its length.

Recommendation:

The initial 14 kilometers of the Maira Road should receive priority, and extensions considered only in the context of future budget constraints.

Bajna Road

The Bajna Road is an important access route to the Kala Dhaka region. A design has already been undertaken by USAID through a local contractor with non-KDADP funds. However, the estimated cost is well beyond likely future budgets for roads. In its present condition, this 24-kilometer track/road is only suitable for short-wheel base jeeps. It is a narrow, one-lane track that begins at the Oghi-Darband Road 1.5 kilometers south of Oghi town. It passes through terraced fields and steep forests, but much of it rests on solid rock retaining walls built during the British administration, and in many areas has reasonable grades and drainage. Some of the hairpin turns need widening and there are a few places with steep grades. This track more or less ends on the ridge line above Kala Dhaka at Panja Gali, at approximately 7,000 feet.

Recommendation:

KDADP should give the same priority to the Bajna Road as to the Maira Road. Since the Bajna Road does not require a new cut, KDADP could enter into a collaborative effort with Local Government Rural Development (LGRD) to develop this track into a single-lane road, with pull-offs, that will allow loaded pickup trucks easy access into the area. LGRD could undertake work on the road base and surface while KDADP could undertake the construction of support structures including culverts and retaining walls as previously designed.

Improved access to the eastern side of Kala Dhaka will greatly reduce transport costs for the local population. LGRD has already laid a base and a single-lane asphalt surface on the first 1/2 kilometers. A joint effort would allow both KDADP and LGRD to accomplish goals that neither could accomplish alone.

Chor Kalan Road

This jeep track begins north of Oghi town at the Frontier Constabulary post and runs approximately 15 kilometers to the ridgeline through the entrepôt village of Chor Kalan on the border of Kala Dhaka. The road is considerably more difficult to negotiate than the Bajna Road. It is a more recent cut, with steeper grades, sharper turns, more washouts, and fewer retaining walls. The Project Paper proposes that this road be extended from the ridgeline to the town of Judbah, on the Indus River.

Recommendation:

Like the Bajna Road, the east-slope alignment of the Chor Kalan Road should be developed in a joint effort with LGRD since most of its alignment rests in Mansehra District and provides access to footpaths and mule tracks in Kala Dhaka. This section of the road should receive KDADP funding

priority. Even if the road were extended over the ridge to Judbah, the majority of the west slope inhabitants would rely on the Darband-Thakot Road for access to and from the area.

Shinglai Road

The Shinglai Road would connect the northeastern end of Kala Dhaka directly with the Karakoram Highway. As proposed in the Project Paper, the Shinglai Road does not follow the alignment of a jeep track like the two previous routes described above, but follows a series of steep footpaths and mule trails. This road would require an entirely new cut and a bridge constructed across the Batagram River. Alternatively, the alignment would follow an indirect route through the dense population and intensive farming area along the narrow flood plain of the same river.

Recommendation:

The Shinglai Road should receive the lowest priority for KDADP funding. The cost of cutting the alignment and extending that alignment to the Karakoram Highway does not match the benefits that the road might provide to the scattered population of this area of Kala Dhaka.

PROPOSED ACTIVITIES

KDADP was originally designed with a significant road construction component. Expectations for road construction have been raised within the provincial government and among the Kala Dhaka population. The improvement and construction of access roads remains perhaps the single most common demand of the population and, thus, the single most effective means of gaining the support of the population for KDADP activities. Lessons learned from other tribal area projects suggest that simple road projects, including construction of jeep tracks, improvement of existing alignments, and roadside stabilization, can be successfully implemented by government line departments as long as project designers accept and plan according to the capacities of the implementing line departments.

USAID, GONWFP, and the KDADP/PCU must decide to what extent road construction/upgrading activities will be supported under KDADP. A number of priorities have been indicated above. Once this decision is made, the PCU must support a systematic survey of the priority road projects to determine costing schedules.

SECTION EIGHT

HEALTH, WATER SUPPLY, EDUCATION AND WOMEN IN DEVELOPMENT ACTIVITIES

This section reviews some of the KDADP activities in the sectors of health, drinking water supply, education, and women in development. No technical consultant has reviewed any activities in the first three of these sectors since KDADP's inception. One member of the short-term consulting team prepared a detailed study of the opportunities for Women in Development (WID) initiatives open to KDADP. This study is attached as Annex A. The following presents a summary of KDADP activities within each of these sectors, a discussion of the broader project issues that they raise, and a series of recommended actions.

HEALTH

Government health services in Kala Dhaka are sporadic and not well distributed in the region (see Table 3). There are nine basic health units (BHUs) in the area if we count ruins and incomplete facilities. One is still under construction. Only three had any medical personnel (health technicians and dispensers) present during the consultant team's field visits. There are no medical doctors, private or public, working in Kala Dhaka. Three BHUs are in need of major repair or reconstruction, and none have functioning water supply systems. Inhabitants of Kala Dhaka rely on a combination of the limited BHU staff and, primarily, on private medical practitioners who have obtained some combination of training as dispensers of western medicine and as *hakim*, or practitioners of homeopathic medicine. These practitioners are most evident in the established shops cum clinics in a number of the riverside ports along the eastern shores of Kala Dhaka such as Kotlai, Judbah, and Shagai.

TABLE 3
GOVERNMENT DEVELOPMENT SCHEMES IN KALA DHAKA

Tribal Divisions	Primary School	Middle School	BHU	Vet'y Clinic	Water Supply Scheme
Basi Khel	29	4	6	1	69
Nusrat Khel	5	0	0	0	12
Aka Zai	10	2	0	0	27
Hasan Zai	11	1	0	0	24
Mada Khel	14	2	1	1	28
Totals	69	9	7	2	160

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In cases of serious illness, Kala Dhakans travel to the nearest government hospitals. For the northern areas of Kala Dhaka, here are the Thakot and Batagram Hospitals. Those in the southern areas travel to Darband and on to Mansehra. But the services in these nearby hospitals are generally very limited and of poor quality. Those with major health problems, if time and money permits, will travel to hospitals in Abbottabad and Karachi. Because of social constraints on women traveling, women and children receive less direct health services than more mobile men.

The original health sector activities planned under KDADP called for the formation of mobile medical teams made up of 3-4 volunteer doctors each. Support staff were not included in the plan. These teams would spend up to three months at a time in Kala Dhaka treating health problems endemic to the area. Clearly, this plan was not complete. As a result of recommendations made by two short-term medical consultants to KDADP, which stressed the difficulties of recruiting volunteer doctors for these mobile teams, the KDADP health sector activities were revised by the Chief of Party. These revised activities include the upgrading and support of existing BHUs and services; the start-up of an extended program for immunization program (EPI); and training of the dispenser/health technicians who staff the BHUs, local midwives (*dai*), and selected local practitioners who operate medical shops.

The need for an immunization program in the area is dramatically underscored by the results of the socioeconomic survey: one out of every two households surveyed in Kala Dhaka reported losing a child to disease by the age of five years. Of these households, the average number of children who succumbed to disease by the age of five was 2.3.

In September, the GONWFP provided staff for two mobile EPI teams, which included four female and two male health workers, to begin the immunization of Kala Dhakan women and children. However, the teams were not well equipped with cold chain or other supplies. After observing problems with the EPI implementation, the Chief of Party commissioned an independent evaluation of the EPI teams' initial efforts. While the evaluation noted that the teams did not lack motivation, it found significant problems in the teams' training and methods. The teams lacked an understanding of the need to use sterile equipment and procedures. They also lacked basic knowledge of handling of vaccines and maintaining the cold chain. The evaluation recommended an immediate basic refresher course for the EPI team members emphasizing hygienic methods and vaccine handling; provision for the teams' basic supplies such as antiseptics, soap, alcohol and cotton swabs; and provision of professional field supervision for the EPI teams, preferably from outside the Health Department.

As a result of this evaluation, KDADP held a high-level meeting with District, Division, Provincial, EPI, and UNICEF officials in search of solutions to the immunization problem. The officials concurred that:

- The teams would receive immediate on-the-job training from EPI/Mansehra;
- The teams would receive professional EPI supervision in the field and adequate logistical support from the District Health Officer (DHO);
- The teams would add iodine treatment for goiter to their activities; and
- The number of teams would not be expanded until the present teams have been trained and are functioning effectively.

Issues and Recommendations:

There is need for an organized, coordinated health care system in Kala Dhaka. KDADP, in collaboration with the DHO, should take action in promoting the development of such a system. The objectives of this action would be to upgrade the quality and delivery of health services by combining the best efforts of private and public sectors. The action can be initiated by establishing an exchange of information between the private and public practitioners that involves a wide variety of both long- and short-term training programs and workshops for both. The private sector treats most health problems in Kala Dhaka at present and this situation is not likely to change. However, the skills of private practitioners need improvement through training.

One of KDADP's and the DHO's goals should be to make all existing BHUs functional and effective, with as complete a staff as possible. At present, there are no government doctors directly associated with the delivery of health services to Kala Dhaka. Doctors will not likely be recruited for the BHU positions without additional compensation. An attempt should be made to revive the past GOP regulations allowing additional compensation for hardship posting. At the same time, the health services should be organized around the concept of BHUs without doctors. Government doctors in the nearby hospitals (like Thakot, Darband, and Oghi) could be recruited to constitute active backup for the Kala Dhaka BHUs by holding scheduled visits and clinics. Health technicians and dispensers currently providing services require backup, professional support, and supervision on a continuing basis. Government doctors would require additional compensation to make up for lost private practice incomes.

EPI activities should be established as part of the BHU system as well as supported in their present mobile team form. BHUs presently focus on curative medicine and first aid. Their activities must be expanded to include health and hygiene education as well as the provision of a wide range of preventive medical activities, including immunization. This expansion of activities can only come about with the support of the DHO.

WATER SUPPLY

Related to health sector activities are KDADP's initiatives to improve the potable water supply in Kala Dhaka. Table 3 indicates that 160 piped water schemes have been constructed in Kala Dhaka. The bulk of these were constructed by local contractors with funding and supervision provided through the Public Health Engineering Department (PHED). Some were financed by successive Kala Dhaka Ministers to the Provincial Assembly from their discretionary development funds. Many were built within the past five years.

Despite this level of government investment in the water supply sector, fewer than 20 percent of the Kala Dhaka households surveyed by the TAT reported piped water as their primary source of water supply. One explanation for this apparent imbalance between supply and demand is that many of the piped water schemes have been constructed to supply water to the village mosques. This reflects a village priority determined by men. Few taps have been constructed along the water supply lines to those mosques. As a result, only those families that live in the vicinity of the village mosque benefit from the water supply schemes. However, many of the schemes that do provide a broader distribution of water supply have been found by a TAT survey to be poorly constructed and in various states of disrepair: supply pipelines are not buried and, thus, are vulnerable to damage; many systems do not have diversion wells or collection tanks at their sources; and many no longer function or receive maintenance. Although

funds are available for construction of schemes, and PHED builds more each year, the quality of the finished product is below acceptable USAID engineering standards. This in part results from the contracting procedures and lack of proper field supervision of the work.

Issues and Recommendations:

The KDADP PC-1 has estimated a budget of Rs21 million for Phase II construction of water supply schemes. Clearly, the construction of these schemes in Kala Dhaka is determined on political grounds, and politics within the community dictate that the supply of water to the local mosque is a priority. The TAT and PCU staff have identified a number of village water systems for repair and construction but must rely on PHED to provide survey and cost estimates for these activities. PHED has indicated that it does not have the staff to survey, design, and supervise the construction of every water supply scheme planned by KDADP. Nor does PHED have sufficient funds for repair and maintenance of the schemes already built. The planned transfer of the Gadoon Project survey and design team to KDADP will address the problems of survey/design/construction to some degree.

KDADP has begun pilot activities to involve the villagers in the identification, planning, construction, and maintenance of the drinking water schemes that serve their communities. However, additional project staff will be required to build effective community organizations capable of undertaking such projects and to provide those organizations with appropriate technical supervision of their projects.

EDUCATION

There are 69 government primary schools in Kala Dhaka. More than 70 percent of the Kala Dhaka government primary schools surveyed by the TAT are not operating because, according to villagers' reports, the teachers assigned to them had not reported for duty or had abandoned their post. The problem of teacher absenteeism in the Kala Dhaka schools is obviously acute. Most of the teachers assigned to these schools are not native to the area. Travel to, and within, the area combined with the lack of hardship allowance or adequate accommodations for staff families discourages many teachers from continuing at their post. Some teachers are apparently political appointees from the local communities and do not find it necessary to fill their roles. At the same time, the logistical problems and inertia discourages the Education Department from supervising and supporting incumbent teachers.

The KDADP PC-1 budgeted Rs936,000 for the in-service training of 20 matriculated teachers from Kala Dhaka. KDADP hopes to expand this training. But the training of new teachers may not solve the problem. The primary school system in Kala Dhaka is moribund. Teachers are underpaid and there is a scarcity of teaching materials. Also, there is a lack of supervision of the teachers by the Education Department, and a lack of institutionalized in-service training for teachers.

The economic future of Kala Dhaka rests with its children. More and more Kala Dhaka families will come to depend on their sons finding employment outside the region. Kala Dhakan children must receive a good, basic education if they are to compete with Pakistan's swelling urban population for employment. KDADP must focus some of its resources on the region's primary school system and, in close collaboration with the Education Department, build a constituency for primary education among the people of Kala Dhaka.

Recommendations:

KDADP should establish a formal link with the USAID-funded Primary Education Project to focus some of that project's resources and expertise on the acute primary education problems of Kala Dhaka.

An education specialist should be added to the KDADP staff to serve as a liaison between KDADP, the Primary Education Project, and the GONWFP Education Department. The education specialist would be responsible for developing programs with the Education Department that would target more support to schools and teachers in Kala Dhaka.

Village action committees, supported by a KDADP village organizer (VO), could promote greater community involvement in monitoring school activities, teacher attendance and an improved education system. These committees could be pressed to take up the maintenance of the many school buildings and teacher residences in Kala Dhaka in need of repair.

WOMEN IN DEVELOPMENT

The chief impediment to women's development commonly identified in Pakistan is sex segregation. The custom of female seclusion (*pardaa*) is a complex set of practices of which veiling is only the most visible means. Other instruments of *pardaa* include segregation of spaces used by women and men and restriction of women's mobility to role-defined spheres of activity. The strictness with which seclusion is observed varies considerably according to a woman's age. Marriageable girls and young married women are subjected to the strictest constraints; women past the age of menopause, on the other hand, enjoy increasing freedom.

In Pakistan, a wife is valued for the children she bears and the work she does, and when betrothals take place early, as they do in Kala Dhaka, these expectations affect females even while they are children. A girl's prospective in-laws have an important voice in any decisions made concerning her, and a married woman is under the control of her mother-in-law. In areas where women's work is essential to most steps in food production (and Kala Dhaka is an excellent example of this), men are often reluctant to allow the establishment of programs for women unless it can be shown that these programs will not remove women from the unpaid workforce, and that they will not put the women in contact with strange men.

Women participate extensively in agricultural production, helping with plowing, sowing, and harvesting, and doing all the weeding and hoeing. In some of the Akazai villages, men and women work in the field together. Women raise livestock and chickens, collect fodder, and process the dairy products. Women also cultivate vegetables and, in some places, fruit trees. *Hashar*, seasonal communal work such as cutting fodder or threshing grain, is done by men, but requires that the participants be fed ample meals and tea. The women do this meal preparation.

Both women and men take it for granted that women must obtain permission from their men in order to participate in project activities (such as attending a skills center or sending a daughter to school). Men and even whole villages differ in their receptiveness to women's development, and we found many men who favor it. There is little evidence, in any case, that such decisions can be imposed on a family by an authority on the village-wide level, although a powerful leader may sometimes be in a position to

dictate whether a school or skills center may be established in the first place. The customary way of making decisions affecting the whole community, however, is by calling a *jirga*.

There are few opportunities for women to earn income, in cash or in kind, in Kala Dhaka; nevertheless many do through the sale of dairy or poultry products, sewing clothes for other women, or making and selling handicrafts. Wives of tenants earn income by doing field work for landholders.

In most villages, a few women specialize in stitching suits for other women and for children, charging rates that range from Rs. 20 to Rs. 40. Women of all regions trade in broken sandals with itinerant merchants to purchase kitchen utensils. Women are entitled to keep anything they earn from cash sales, and typically spend it on gold nose pins, kitchen utensils, and cloth.

Women everywhere reported that they have limited or no access to health care. There are male health technicians in the basic health unit at Daur, as well as privately practicing dispensers and self-taught "doctors" in Kanar Sharif and Kotkay (Hasanzai), Bimbal and Macchra Bazaar (Akazai), and Kotlai (Nusrat Khel), but male doctors cannot examine female patients and, particularly for obstetrical and gynecological complaints, a female doctor or paramedical is necessary. There are no trained midwives (*dai*) in Kala Dhaka, and in some villages there is not even a traditional *dai*. There is a Lady Health Visitor in Darband, but even in villages with access to boat and road transport, women reported that their men did not take them for treatment until an illness became serious, owing to the cost of boat or truck fare on top of the cost of the medicine (which they usually have to buy from the privately owned pharmacy near the hospital). Medicines sold in Darband or Kala Dhaka are reportedly marked up as much as 500 percent.

No functioning girls' schools were found, although buildings for girls' schools have been constructed in Bimbal and Bar Kilay Judbah. The only means for a girl to acquire any education at all, even literacy, in Kala Dhaka is to attend a boys' school; to attend a *madrassa* (religious school), where these exist; or to be tutored privately, usually by a male relative. In Karachi, a few Kala Dhakan girls are attending school, but since the families are sent back after a maximum of three years, girls have no opportunity to finish even primary school.

These restraints on female mobility have important implications for deployment of female teachers and health workers in Kala Dhaka. A woman's acceptance of work requiring her to travel or live away from home, unprotected by a male relative, could easily be perceived in the Kala Dhaka setting as an indication of promiscuity. Even though the society accords protection to guests, such a woman could find herself in a very uncomfortable situation. Female teachers, health, or agricultural extension workers recruited from outside Kala Dhaka and expected to live in villages need to be accompanied by a husband, brother, or father.

Annex A makes specific recommendations for WID activities that have potential for success in Kala Dhaka. These are:

- Poultry raising;
- Animal husbandry;
- Kitchen gardening;
- Sewing and embroidery; and

The Mission's renewed commitment to promoting multisectoral development in remote areas based on a partnership with the intended beneficiaries promises to promote more sustainable, albeit smaller-scale, improvements in the livelihoods of these people. However, KDADP Phase I was not designed with community participation in mind. The promotion of community participation requires commitment not only of the village organizers working in the field but of government and donor alike to support the process. As currently configured, KDADP Phase I does not have the funding nor staff to promote a significant measure of community participation in its project activities. A more specific and detailed strategy for promoting community participation can be developed in Phase II.

Recommendations:

The community organization/participation element should be well established in KDADP with a senior village organizer and, to start, a limited number (3-5) of field workers. This staff should be expanded only as needed in field work with the villages, focused on specific development actions. The field staff would facilitate the organization of the village communities and coordinate the joint effort of the villagers and the line departments. Field workers must develop close working relationship with the inhabitants of each target village to ensure their maximum involvement in project activities. This requirement will limit the number of villages one organizer can manage and the number of activities that KDADP can successfully support.

ANNEX A

KALA DHAKA AREA DEVELOPMENT PROJECT

SOCIOECONOMIC SURVEY
WOMEN'S COMPONENT

FINAL REPORT

Ruth Laila Schmidt

November 7, 1990

SCOPE OF THE RESEARCH

Survey Design

This survey had three designated purposes: to determine the extent of women's participation in a local economy where many men have migrated out for labor, to document women's views and desires about what the project might be able to offer them, and to structure responses to these desires in the form of specific project activities. I also attempted to identify local female leaders and women who might be able to participate in local education and training activities; and Kala Dhaka women living outside Kala Dhaka. As the survey proceeded, inquiries focused more specifically on the following questions:

1. What role do women have in determining the needs of the household and addressing them? Do they control any household resource?
2. Do women have decision-making control of a nature to provide scope for participating in project activities?
3. In what circumstances do entire families shift to Karachi, where do they stay, how long do they stay, and what impact does this have on women who go? What influence do such women have on other women when they return to the village?
4. Are Kala Dhakan women with any level of education, or girls attending any type of school, to be found in the villages we survey, or elsewhere?
5. What is the value of women's contribution to the economy, as reflected in practices like giving brideprice or dowry?
6. What type of influence does the imam possess in the village, and to what extent?

Interviews were designed to be conversation-oriented and open-ended; they were conducted in Pashto by an interviewer/translator¹, and translated into English (in the first two field tours) or Urdu (in the third field tour).² As the survey progressed, it became possible to structure the interview into 20 relatively innocuous questions that led up to, embraced, or subsumed data we needed (these questions can be found at the conclusion of this annex). Note-taking during the interview did not seem to bother the respondents. In fact, women often saw it as an effective means of bringing official attention to their needs. Most of the villages had already been visited by male enumerators conducting the Basic Village Survey, and so long as there was no resistance to the survey *per se*, women were pleasantly surprised to learn that female enumerators had been sent to find out about women's needs and opinions. In some

¹Farrah Qasim Jan served as interviewer/translator during the first two field tours. During the third tour, we were assisted by Shahnaz Khanum.

²With the sole exception of Lakwal (Madakhel), which is Hindko-speaking, all the Kala Dhaka villages are Pashto-speaking. We did meet women who had learned Urdu or Hindko in Karachi, however.

villages, however, people complained that the KDADP was spending too much time and money on "paper work" and not enough on practical benefits.

Locations Visited

We visited 25 villages, in six regions, during three field tours:

- Hasanzai:** Kandar (HZ), Khanano Kilay, Tuara, Kotkay (HZ), and Kanar Sharif;
- Sitanadar:** Saddo Khan, Maira, Matore, Kaho Dherai, Kabalai, Daur, Zizarai, and Kotkay (SD);
- Basikhel:** Shahdag, Shagai, Bar Kilay Judbah, and Garhi Bala Judbah;
- Akazai:** Niway Kilay, Bimbai and Mandha Baba Hamlet of Bilyanrai;
- Nusratkhel:** Kotlai and Surmal; and
- Madakhel:** Mhabra, Lakwal and Dadum.

We were accompanied throughout by M. Iqbal A. Niazi, who was already thoroughly familiar with the region as well as experienced in interviewing techniques.

THE CONTEXT

USAID WID Policy

The USAID Asia Bureau has encouraged Missions to maximize and document the targeting of women in project design and approval, in order to integrate them into the mainstream of mission and bureau programming. Small scale or peripheral women's projects have not been discouraged, but are viewed as insufficient responses to WID policy.³ In the context of ongoing programs, this emphasis has focused attention on:

- improving the productivity of women;
- designing programs to reduce, where possible, the amount of time spent on such activities as carrying water and collecting firewood (for example, by improving water systems or reforesting barren hillsides);
- expanding and improving primary education, especially for girls;
- making maternal and child health a focus of health programs.

³Weiss 1988, p.27.

Constraints on Women's Participation in Development Activities

The chief impediment to women's development generally identified in Pakistan is sex-segregation. In Kala Dhaka, women do not wear veils inside their villages, because residential patterns are lineage-based and everyone is related to a greater or lesser degree; veils are also impractical for women who do agricultural work. This does not mean that sex-segregation is not an important factor in Kala Dhaka, but that it is achieved by means other than veiling.

Seclusion of women [*pardaa*] is a complex set of practices of which veiling is only the most visible means. Other instruments of *pardaa* include segregation of spaces used by women and men, avoidance of eye contact with or turning the body away from unrelated men (*ankhon-ka pardaa* or veiling of the eyes), and restriction of women's mobility to role-defined spheres of activity. The strictness with which seclusion is observed varies considerably according to a woman's age. Marriageable girls and young married women are subjected to the strictest constraints; women past the age of menopause, on the other hand, enjoy increasing freedom.

In Pakistan, a wife is valued for the children she bears and the work she does, and when betrothals take place early, as they do in Kala Dhaka, these expectations affect females even while they are children. A girl's prospective in-laws have an important voice in any decisions made concerning her, and a married woman is under the control of her mother-in-law. In areas where women's work is essential to most steps in food production (and Kala Dhaka is an excellent example of this), men are often reluctant to allow the establishment of programs for women, unless it can be shown that these programs will not remove women from the unpaid workforce.

In section E.6, the constraints imposed by sex-segregation, women's roles within their marital homes, and their agricultural work are described in greater detail.

KALA DHAKA: THE SETTING

Kala Dhaka is divided into two major areas on the basis of land tenure: *wesh* lands subject to periodic rotational tenure, held by Pakhtuns; and noncirculating lands, held by Sitanadar and Syeds. The population is also differentiated into landholders and tenants, of which the latter are Gujars, Azizwami, etc. Imams (Mulan) and boatmen (Mahanangan) hold land which has been given to them by the people among whom they reside. The social organization and roles of the Pakhtun and Sitanadar have been described in detail by Lindholm 1982 (Chapter 3). The patterns of conflict which he describes, both between individuals and between groups, are also seen here, and account for the diversion of a considerable portion of cash income into guns and other weapons.⁴

The population belongs to the Hanafi sect of Sunni Islam. There is one active shrine of the "heterodox charismatic" type described by Lindholm, at Kanar Sharif, which is the site of graves of

⁴The feud between the villages of Maira and Matore, which affects their land cultivation pattern, utilization of the water system, mobility outside the village, and spending patterns, is a good example of the impact of such conflict.

martyred saints and a center of spiritual healing. Missionaries of the Tablighi Jamat⁵ have been active throughout Kala Dhaka; all the villages we visited knew of their teachings.

Although the non-Pakhtun population of Kala Dhaka has adopted many Pakhtun cultural characteristics, as well as the Pashto language, one of the most striking features of the area is its diversity. Even adjacent villages sometimes differ considerably in their economic, educational, and health statuses, as well as in their response to modernizing influences.

Some villages (such as Dadum-MK) place importance on consensual decision-making through the *jirga* process. In such villages we often received an expression of the village's willingness to cooperate with the KDADP, once the consensual process had been concluded. In other villages, (for example, Bar Kilay Judbah-BK and Maira-SD) we found influential political leaders who looked upon obtaining benefits for the community as a useful means of enhancing their political power. In such villages, it was often difficult to gain access to the women, or there seemed to be a relatively low level of interest in programs designed specifically to benefit women.

In Daur (SD) and Niway Kilay (AK), we found progressive imams who favor education, and this attitude was reflected in the village's receptiveness to women's development. In Kanar Sharif, however, the imam opposes any change in the status quo; and the women's development appears to be a controversial subject in that village.

This diversity calls for flexibility in designing and implementing project WID activities; the cookie-cutter approach, though apparently more impartial, does not enable the adjustment of programs to local conditions.

THE ECONOMY

The economy is based on agriculture and livestock raising, and more recently has come to depend heavily on cash remittances from relatives working in Karachi. A great deal of the agricultural and pastoral work is done by women, but since crop yields are usually insufficient for local consumption, there is seldom any marketable surplus, and the work does not bring in much cash. In some cases, moreover, food production itself is a deficit operation (for example, when the cost of feeding participants in *hashar* exceeds the value of the crop). This has led to a division of labor in which women produce most of the goods, and men earn most of the cash. In the Basikhel and Nusratkhel regions, however, women do sell *ghee* [clarified butter] and sometimes chickens for cash; in the Madakhel region, *ghee* is sold; and in Mhabra (Madakhel), eggs are also sold.

In the Hasanzai, Madakhel, Akazai, and Basikhel areas, where land has been submerged by Tarbela Lake, varying amounts of agricultural land have been lost. Consequently, these populations exhibit a heavier dependence on cash income from outside Kala Dhaka. In all of these areas we saw extensive outmigration of men to Karachi. In some households not a single adult male remains.

⁵The Tablighi Jamat is a Muslim missionary movement which has its headquarters at a religious school at Raiwind in the Punjab.

Marriages have traditionally accounted for disposal of considerable cash income in Kala Dhaka, but the Tablighi missionaries have been discouraging the payment of brideprice as well as musical entertainment and the traditional *feu-de-joie*; only five villages still report paying brideprice (however, in two, the boy's family provides a girl's dowry if a girl's family cannot afford it).⁶ In place of the brideprice, the practice of giving a dowry consisting of household goods by the girl's family has come into use. Since the household goods have to be purchased anyway, this has probably resulted in freeing up some cash for other investments, and may bring some income to village women who stitch clothes and embroider pillow covers.

Guns are a standard item of equipment in Kala Dhakan homes, but where feuds exist, a major portion of cash income is spent on weapons: rifles, pistols, hand grenades, as well as binoculars and flares for spotting approaching enemies. Feuds also occasion the construction of fortified, but unproductive, watchtowers, and fields may be left uncultivated, resulting in lost income.

STATUS AND ROLE OF WOMEN

Agricultural Production

Women participate extensively in agricultural production, helping with plowing, sowing, and harvesting, and doing all the weeding and hoeing. In some of the Akazai villages, however, men and women work in the field together. Women raise livestock and chickens — almost every household we visited kept one or more stall-fed buffaloes or at least a goat or two — and collect fodder and process the dairy products. Women also cultivate vegetables⁷ and in some places, fruit trees. *Hashar*, seasonal communal work like making hay or threshing grains, is done by men, but requires that the participants be fed ample meals and tea. The women do this meal preparation.

Management Roles and Decision-Making in the Family

Distribution of crops, purchase and distribution of monthly food stocks, expenditures for clothes, major household articles, and weapons, and daily cash expenses [*mukhtaar-e-aam*, or general authority] are handled by the male head of the household or his designee. However, in Niway Kilay (Akazai), and Mhabra and Dadum (Madakhel), women sometimes manage cash income if there are no adult men left in the household.

Daily management of food stocks within the household is a responsibility of married women, each of whom keeps the keys for the steel boxes and *almaris* [large wooden cabinets]. The boxes are used to store items such as jewelry, weapons, expensive clothes, sugar, and tea leaves, while the cabinets hold

⁶In areas where brideprice is still given, whether in cash or in other goods, the amount ranges between Rs. 3,000 to Rs. 10,000; or from 1-2 kilograms of silver up to 1-2 kilograms of silver plus 4 to 10 grams of gold.

⁷Vegetables are not always cultivated in separate plots, but may be grown as a companion crop with grain; for example, pumpkins with maize.

mainly quilts and pillows. For household management, women keep small amounts of cash, about 30 to 40 rupees, which they have the authority to spend as they need [*mukhtaar-e-khaas*, or limited authority]. Women who sell *ghee*, chickens, or eggs for cash are entitled to keep their earnings, particularly to buy gold nose pins, kitchen utensils, and cloth.

Men dominate in family decision-making. In addition to making major cash purchases, they usually decide which family members are to go to Karachi to become wage-earners. In the Sitanadar region, Bimbal (Akazai), the Judbah villages (Basikhel) and Kotlai (Nusratkhel), betrothals of children are decided by senior males, i.e., the child's father and uncles (although a boy's grandmother, and sometimes his mother, may express a wish to have a particular girl as the boy's bride, and her request will usually be taken seriously). In Niway Kilay (Akazai), Mhabra, Lakwal, and Dadum (Madakhel) and Surmal (Nusratkhel), there is more sharing in decision-making. In Surmal, Mhabra, Lakwal, and Dadum, young men make up their own minds whether to go to Karachi, and seek permission from their parents. In Niway Kilay, Mhabra, Lakwal, Surmal, and Dadum, the mother's approval is necessary for the betrothal of a child.

Older women are the traditional decision-makers among women within the extended kin group, but an especially competent or experienced women also commands respect. A woman who has returned from Karachi often exercises direct and indirect influence on the other women. In Kanar Sharif, however, we found friction between the Karachi-returned women, and those who had not gone to Karachi (particularly the older women).

Both women and men take it for granted that women must obtain permission from their men in order to participate in project activities (such as attending a skills center or sending a daughter to school). As noted above, men and even villages differ in their receptiveness to women's development, and we found many men who favor it. There is little evidence, in any case, that such decisions can be imposed on a family by an authority on the village-wide level, although a powerful leader may sometimes be in a position to dictate whether a school or skills center may be established in the first place. The customary way of making decisions affecting the whole community, however, is by calling a *jirga*.

Women's Work Schedule

A woman's day begins with the *aazaan*, or morning call to prayer. Right after saying prayers she prepares breakfast, which is normally only tea. After drinking tea, some women go to collect fodder and firewood, and to weed and hoe the crops during the growing season; others (usually the older women) remain behind to take care of the children, clean house, and cook. In most villages, the younger women bring fodder and firewood, but in Dadum (Madakhel) we found that the senior women (*masherane*) were doing the grass harvesting. Carrying water and washing clothes is done by younger women, whenever they are not busy with other tasks. Lunch is eaten between 9:00 and 11:00 a.m.

It is difficult to make generalizations about the amount of time that must be spent in collecting fodder, firewood and water, since this depends on the distance women must walk to get them. Likewise, the agricultural workload is greater in those villages which still have sizeable cultivable lands, but may be minimal in villages where large amount of land were submerged by Tarbela Lake. In the Sitanadar and Hasanazai areas, most such work is done during the mornings, and women are usually at home in the

afternoons.⁸ In Basikhel villages, women do fieldwork and collect grass and firewood in the afternoons.⁹ In Bimbai (Akazai), on the riverside, young women bring fodder and firewood in the mornings. But in the hilly village of Niway Kilay (also Akazai), the women have to walk a greater distance, and do not return home until late afternoon.¹⁰ In Kotlai (Nusratkhel) and Dadum (Madakhel), agricultural work continues from sunrise to sunset in the growing season. But in Surmal (Nusratkhel), it appears to take less time. In Mhabra and Lakwal (Madakhel), there are very few fields left to work in.

After the first afternoon prayer women take care of livestock and chickens, and make tea for the family and for guests. Buffaloes and cows are milked twice a day, in the morning and late afternoon. Small children are usually taken care of by older women. The amount of free time enjoyed by women varies from the entire afternoon after the midday prayer until evening, among the Hasanzai; to a brief 90 minutes between 11:00 a.m. and 12:30 a.m., in Shagai and Shahdag (Basikhel) and Kotlai (Sitanadar); to practically no free time except in winter (Bimbai) and Niway Kilay (Akazai) and Dadum (Madakhel). Despite such workloads, women said they could find time for project activities, if they were flexibly scheduled.

Income Generation

There are few opportunities for women to earn income, in cash or in kind, in Kala Dhaka; nevertheless many do, through the sale of dairy or poultry products, sewing clothes for other women, or making and selling handicrafts. Wives of tenants earn income by doing field work for landholders.

In the Basikhel area, women sell *ghee* and chickens for cash, and some women make colorful bread-baskets [*shikeri*] and embroidered bands used to trim women's shirt-sleeves [*piyaakhali*] for their own use and for cash sale. In the Madakhel region, *ghee* is sold, and in Mhabra, *ghee* and eggs are sold. In the Sitanadar area, women also make *shikeri* and *piyaakhali*, but there is no market for them because the skill of making them is more widespread. In Kotkay (Sitanadar), however, the imam's wife and two daughters-in-law earn money by sewing clothes and making embroidery for sale in Kotkay and Shahdag (Basikhel). She told us that since they have no land, they live on what they earn in this way and on what their two sons earn in Karachi.

⁸In Kanar Sharif, we visited a landholder's family where the women do not do fieldwork; however, as we were leaving (late in the afternoon) we noticed a woman returning to the village with a load of grass. There is little cultivable land in Kanar Sharif.

⁹In Judbah, we could not obtain this information because our meetings with women were dominated either by men who insisted that they did all the field work, or by women of landholders' families, who have tenants to do it. In both villages, people estimate that 50 percent of the village has migrated to Karachi, leaving as few as one adult male per household; so it is probable that fodder and firewood collection are done mostly by women (as in other Basikhel villages). There is not much firewood to collect here, since the hills are heavily deforested.

¹⁰We observed three Akazai villages, but in one (Mandha Baba Hamlet of Bilyanrai), we visited a landowner family who have tenants.

Hasanzai women did not report any income-earning activities, aside from sewing clothes for other women (which is the specialty of only a few women). However, during that phase of our research, we were not asking specifically about the sale of *ghee*, which is the commonest type of income-generation. In a later visit to Tuara (Hasanzai), the women asked Farrah Qasim Jan about the possibility of raising "boiler" [broiler] chickens.

In most villages, a few women specialize in stitching suits for other women and for children, charging rates that range from Rs. 20 to Rs. 40. Women of all regions trade in broken sandals with itinerant merchants to purchase kitchen utensils. Women are entitled to keep anything they earn from cash sales, and typically spend it on gold nose pins, kitchen utensils, and cloth.

In Bar Kilay Judbah and Garhi Bala Judbah (Basikhel), women said that they would be ashamed to sell domestic products, such as chickens, eggs or handicrafts, even if they were very poor. Even here, however, women sell *ghee*, and a few women specialize in sewing, charging Rs. 40 per suit.

Women generally are aware of the possibility of income-generation. In Kandar (Hasanzai), a woman who asked that a skills training center be established used the word *hunar*, which means '(marketable) skill(s)'. The word *sentar* [center] itself has entered the local vocabulary, and we met people who knew about the Gadoon-Amazai Nonformal Education Project.

Women's Access To Health Care and Education

Women everywhere reported that they have limited or no access to health care. There are male health technicians in the Basic Health Unit at Daur, as well as privately practicing dispensers and self-taught "doctors" in Kanar Sharif and Kotkay (Hasanzai), Bimbal and Macchra Bazaar (Akazai), and Kotlai (Nusratkhel), but male doctors can not examine female patients, and particularly for obstetrical and gynecological complaints, a female doctor or paramedical is necessary. We found no trained *dais*, and in some villages there is not even a traditional *dai*. There is an LHV in Darband, but even in villages with access to boat and road transport, women reported that their men did not take them for treatment until an illness became serious, owing to the cost of boat or truck fare on top of the cost of the medicine (which they usually have to buy from the privately owned pharmacy near the hospital).¹¹ Medicines sold in Darband or Kala Dhaka are reportedly marked up as much as 500 percent.

In villages located at maximum distances from either Darband or Thakot, or in remote mountain villages, women say they usually have to rely on untrained *dais* (midwives), or on senior female relatives. In such villages, the priority request was for a trained *dai* or "lady doctor."

No functioning girls' schools were found, although buildings for girls' schools have been constructed in Bimbal and Bar Kilay Judbah. The only means for a girl to acquire any education at all, even literacy, in Kala Dhaka is: (1) to attend a boys' school; (2) to attend a *madrasa* (religious school), where these exist; and (3) to be tutored privately, usually by a male relative. In Karachi, a few Kala

¹¹Reporting on the Civil Hospital at Thakot, I. Niazi (July 26) noted that the stock of medicines supplied quarterly by the District health office at Mansehra does not last longer than two to three weeks. Presumably the same shortages occur in the Civil Hospital at Darband.

Dhakan girls are attending school, but since the families are sent back after a maximum of three years, girls have no opportunity to finish even primary school.

In every village, we looked for educated women. We met one woman and four girls who had attended, or were attending boys' schools in Kala Dhaka (three in Saddo Khan and two in Bimbal).¹² One woman had studied up through the sixth class in Karachi; and two women and two girls had been privately educated: two in Karachi and two in Kotkay (Hasanzai).¹³ An additional four girls or women were reported to be studying, or to have studied, in Karachi, but we had no opportunity to learn more about them.

Constraints on Women's Participation in Development Activities

Sex-Segregation

The importance of sex-segregation as a factor in women's lives may be measured by the strictness with which *pardaa* is imposed when unrelated men come to the village, or women move out of Kala Dhaka. Kala Dhakan women are kept away from the gaze of male strangers, and the appropriate place for male visitors is the *hujra*, or guest house for men. It would be a dangerous impropriety for a stranger in a Kala Dhaka village to stroll about village lanes (where women must come and go in the course of their work), to look at women, or to ask questions about his host's female relatives.

When families were resettled from Kala Dhaka in Tarbela Township in the early 1970s, women started wearing the *burqa* [the all-enveloping cloak] whenever they left their compounds, because families of different lineages were resettled together in the township. This reduced women's mobility outside the home to such an extent that men were forced to carry water from public taps (a role they did not relish and a source of many problems for WAPDA).¹⁴

Women who leave the house compound alone do so only in the context of essential work activities, such as fetching water. (But if a woman is suspected of misbehavior on such errands, men may

¹²In both these villages, people placed female education high on their list of priorities.

¹³Although the people of Kotkay (Hasanzai) were extremely unresponsive on two occasions when we visited it, there seems to be a strong demand for education. Some time back, the villagers hijacked the WAPDA steamer and held it for the ransom of a school. When the government agreed to build a school they let it go; however when construction was delayed by some bureaucratic bottleneck, the villagers again hijacked the steamer, until the written authorization to build the school was shown to them.

Although there is a school building, currently there is no schoolteacher in Kotkay. Until recently a schoolteacher from Swat, who was absconding from the police, was taking refuge in the *hujra* in Kotkay and teaching the village children there. He taught them in contingents rather than in a single group, so that the girls could attend separately.

¹⁴H.S. Plunkett 1976, personal communication.

punish them, sometimes severely.)¹⁵ Women usually travel together in work-related contingents, which afford chaperonage.

These restraints on female mobility have important implications for deployment of female teachers and health workers in Kala Dhaka. A woman's acceptance of work requiring her to travel or live away from home, unprotected by a male relative, could easily be perceived in the Kala Dhaka setting as an indication of promiscuity. Even though the society accords protection to guests, such a woman could find herself in a very uncomfortable situation. Female teachers, health, or agricultural extension workers recruited from outside Kala Dhaka who are expected to live in villages need to be accompanied by a husband, brother, or father.

Sex-Defined Roles: Daughter, Wife, Daughter-in-Law

Daughters are considered the property of the lineage group, and may be given in marriage in order to solidify an alliance or to pacify the aggrieved party in a feud. Until recently, brideprice was universal, and in Kotlai and Surmal (Nusratkhel) brideprice is still taken, and was reported to be Rs. 10,000. As mentioned above, a woman is valued for the children she bears and the work she does, and these expectations affect her mobility and access to education even when she is a child. Betrothals may take place as early as the age of six for girls, and eleven or twelve for boys. Although the girl does not usually go to her husband's home until puberty, her prospective in-laws are party to any decisions made concerning her. In 20 out of the 25 villages we visited, marriages were decided by the male head of the household, and a girl's mother had no say in the matter. A married woman is under the control of her mother-in-law, who, having toiled and sacrificed all her own life, feels justified in expecting her daughter-in-law to do the same. Polygamy is common, and a husband does not need a wife's approval; a common reason is a wife's failure to bear sons.

Women's Workload

Since women do much of the field work and carry all the firewood, fodder, and drinking water, men sometimes oppose the establishment of programs for women because they fear the women will stop doing this work. Women, however, do have responsibility for management within the household, and also enjoy at least some leisure time, particularly during winter. Project activities that enhance a woman's ability to perform work she is already responsible for, that benefit the entire family, and which are flexibly scheduled, would probably be accepted at least in more progressive villages, and in very poor villages, where inputs of any type would be welcomed. Programs of this type include poultry raising, fruit and vegetable growing, sewing, and embroidery.

Among the Hasanzai, women told us they were free after the midday prayer until evening, when it is time to light the fire for the evening meal. But in Shagai and Shahdag (Basikhel) and Kotlai (Sitanadar), the women are free only between 11:00 a.m. and 12:30 p.m. In Bimbai and Niway Kilay (Akazai) and in Dadum (Madakhel), the women are free mainly in the winter.

¹⁵In Bar Kilay Judbah, we met a young woman who had been ordered by her husband not to leave the compound. Her mother-in-law ordered her to bring the buffaloes home, so she was obliged to go. When her husband discovered this, he beat her severely and threatened her with a pistol.

DISCUSSION OF DEMAND FOR DEVELOPMENT ACTIVITIES

Poultry Raising

In virtually every village, women are already raising chickens for consumption and to produce eggs, but an almost universal complaint was that the chickens frequently succumb to epidemics. Many villages would welcome programs to improve their poultry and prevent disease through vaccination. Vaccination would make it possible for women to grow more chickens, and to sell the surplus, as is already done in Shagai and Mhabra. An unusually strong interest in poultry raising was shown in Tuara, where women specifically asked for assistance on two visits and also offered to buy the chickens. In Shagai, epidemics among chickens were not mentioned, and the possibility that a more resistant strain of chickens exists in Shagai should be checked.

Protein consumption in Kala Dhaka, especially among women and children, is so low that chicken and egg production could be considerably increased before surpluses are produced for sale, and it would take an undetermined, but significant, period of time to saturate the existing demand.

In some villages, women asked for improved breeds of chickens. The Fayoumi and Mini-Red chickens are good egg-layers, but still scavenge for food, instead of requiring special feed.¹⁶ A poultry expert should be consulted to compare the suitability of various breeds of chickens. Since the acceptability of Fayoumi and Mini-Red chickens for eating is not yet known in Kala Dhaka, they should be introduced on a pilot basis, and the pilot projects monitored.

Chickens are raised in households, and the selection of a limited number of households for trying them out might provoke envy or resentment if there is a strong demand for improved chickens. This can be avoided to some extent if the sale of chickens is subsidized, so that other families are able to buy them. The need for vaccinating the indigenous chickens would not be eliminated, because there would still be households who would not want Fayoumis or Mini-Reds, or could not get them; It would take a year or two before the success or failure of the pilot projects could be documented in any case.

Since women raise the chickens, Pashto-speaking female poultry experts are needed to instruct the women in vaccinating chickens and in raising the improved breeds.

Animal Husbandry

Although women also said they would like to prevent and treat disease in their livestock, especially cows and buffaloes, this was not identified as a major need, in contrast to the situation with chickens. The animals we were able to observe looked well-fed and sleek. Specific problems and opportunities need to be identified by women with qualifications in animal husbandry. The same considerations identified above for poultry apply to animal husbandry: cattle are cared for in households,

¹⁶Zahur Alam Nov. 11, 1990, quoting Dr. Fida Mohammad.

and not all households can take part in pilot experiments, so the women need assistance in looking after the existing animals even if new breeds are introduced.

Fruit and Vegetable Growing

Women already grow vegetables. In Niway Kilay (Akazai), women said they have enough land to grow more varieties, but do not have the knowledge; in Surmal (Nusratkhel), they said they have enough land, and need only seeds. In Bar Kilay Judbah and Garhi Bala Judbah (Basikhel), women said they would increase their vegetable production if they were provided seeds; they complained that the seeds available in Judbah bazaar are too expensive. In Lakwal and Dadum (Madakhel), they said they needed seeds and would have to level more land. However, some root vegetables can be grown on sloping land. Mr. Zahur Alam of the KDADP is presently looking at fields in these areas to determine the local definition of "level," and to see whether there is sloping land suitable for planting root vegetables.

Fruit tree cultivation is more common in non-circulating lands than in *wesh* lands, because fruit trees take time to mature and are not portable. Another major factor, where cultivable land is scarce, is the size of courtyards. In Tuara, where courtyards are spacious, we saw fruit tree seedlings, about 2 ft. tall, growing in some courtyards. But when space is scarce and houses are stacked one on top of another (as in Saddo Khan), fruit trees are not an option. Women in Surmal (Nusratkhel) expressed interest in growing fruit trees. Women in Bimbal said their men had been approached to take part in a horticulture program but they had declined because there was not enough land. They told us they can grow a few trees in courtyards, but not large numbers.

It would be more efficient to coordinate the demonstration of growing of fruit trees and vegetables. One way to do this would be to set up a horticultural demonstration plot in which some vegetables are also grown. Women who visit this plot would be exposed to a variety of options in a single visit, and it might be possible to reduce the number of experts visiting the villages (thus reducing salaries, travel expenses, and the number of meals served to the visitors by the villages).

Since women do most of the cultivation, whether of vegetables or fruit, Pashto-speaking female agriculture extension or horticulture workers are needed to visit participating villages to ensure that information about how to care for plants and seedlings reaches women. A good time for them to visit would be during the winter months when the women have more free time.

Sewing and Embroidery

Instruction in sewing and embroidery was a frequent request, and fits into an economic niche, because women currently spend cash, in most areas, to get clothes made. Embroidery is not an extravagance in Kala Dhaka, rather it is a standard item on many garments and also on table clothes and pillows (particularly the pillows that are universally tucked behind guests to make them comfortable). However, women in Kotkay (Sitanadar) and Mhabra (Madakhel) said that hand-embroidery is too time consuming, and they would like instruction in using a "tap machine" (a sewing machine for doing machine embroidery). In Matore, women urgently need sewing and tailoring instruction, because owing to the feud between their village and Maira (Sitanadar), they have only one source for getting clothes made: a tailor in Kand who has cornered the market, charges the highest rates, and takes a long time

to make inferior garments. Matore should be revisited to ascertain whether they would provide space for a sewing/tailoring class, and to confirm whether they would (as they told Farrah Qasim Jan on October 10) accept a skilled woman in Kabilai as instructor, or whether some other instructor should be recruited.

Other villages requesting some combination of tailoring, sewing, and embroidery include Kandar (Hasanzai),¹⁷ Shagai, Shahdag, Bar Kilay Judbah and Garhi Bala Judbah (Basikhel); Saddo Khan and Daur (Sitanadar), Bimbal (Akazai), and Surmal and Kotlai (Nusratkhel). In Garhi Bala Judbah, there is a woman who knows sewing and embroidery well. In Daur, the imam has offered to construct two rooms above the *madrassa* (religious school) for a women's skills-and-literacy center if KDADP provides construction materials and an instructor. He said that "not everyone will participate, especially in the beginning, but if it is started gradually from [instruction in] embroidery or tailoring, they will take an interest." In addition to Daur, four villages (Surmal and Kotlai (Nusratkhel) and Mhabra and Dadum (Madakhel), offered to share the cost by providing space. In Dadum, there is a women's *hujra* that could be used for a skills center or a girls' school. Basikhel and Sitanadar women already have a viable handicraft industry, so it might be appropriate to enhance their skills and provide marketing assistance.

Details about the specific mix of skills desired by women in particular villages, plus the contribution, if any, they are willing to make are described under the heading of that village in the *Village Logs* attached to the three tour reports.

Female Education

Most of the villages surveyed said they would send their daughters to attend school, if one was available. The sole exception was Mandha Baba Hamlet of Bilyanrai, where the women told us that female education is shameful. This opinion may not reflect that of the rest of Bilyanrai, however. There are completed school buildings for girls primary schools in Bimbal and Bar Kilay Judbah (Basikhel).

Villages that expressed a strong interest in primary schools for girls were Saddo Khan and Daur (Sitanadar), and Bimbal and Niway Kilay (Basikhel). In Daur, the imam, in cooperation with the villagers, has constructed a *madrassa* [religious school], which is now being expanded to make room where girls can sit. In Saddo Khan and Bimbal, there are a few girls attending the boys' primary school; both these villages put girls' education on top of their list of priorities. Bimbal asked for a teacher for their existing school, and Saddo Khan asked for a girls' school. In both Saddo Khan and Daur, the imams favor female education (See *Village Log* in the report on the second tour). Kaho Dherai requested a *maktab* (upgraded religious school), and also offered to provide land for a girls' school and a place for the teachers to live. Mhabra was another village offering to provide land for a girls' school. In Dadum, there is a women's *hujra* that could be used for a skills center or a girls' school.

¹⁷When Kandar (HZ) was revisited by Farrah Qasim Jan on October 19, the women asked her what progress had been made on their project skills center. When Farrah told them the request had been submitted, the woman asked why such a lengthy process had to be gone through, and suggested the KDADP just distribute machines. In Zizarai, women asked for sewing machines, but did not request an instructional program.

Comments made by villagers about female education in individual villages, plus details about cost-sharing offers, if any, have been mentioned in detail under the heading of that village in the *Village Logs* attached to the three tour reports.

Problems relating to the security of female teachers have already been discussed above under section E.6. Female teachers sent to Kala Dhaka should always be accompanied by a husband, brother, or father. An ideal combination would be a husband and wife who are both teachers. But it might also be feasible to hire the woman's relative in some other capacity within the village. When both of them receive salaries, this would also help to overcome the recruitment problem posed by the unavailability of a "hard area allowance."

Female teachers also need safe, clean housing: a house with a latrine and bathing facilities, surrounded by a wall. In this connection, a problem related to their accommodation must be mentioned: bedbugs are widespread in Kala Dhaka, and in our experience, they cause so much discomfort and lack of sleep that staying in a bedbug-ridden house would be enough to discourage a teacher from staying in Kala Dhaka.¹⁸

***Dai* Training**

As mentioned above, women have only the most minimal access to health care. We found no trained *dais*, and in some villages there is not even a traditional *dai*. Women must often rely on untrained *dais* (midwives) and senior female relatives. In such villages, the priority request was for a trained *dai* or "lady doctor." When asked to describe their needs, most villages gave first priority to medical care, particularly for women and children. Entree to any village would be much easier if this were provided initially.

Particularly strong requests for lady doctors or trained *dais* were made by the women in the BHU at Daur (Sitanadar), Shahdag, Bar Kilay Judbah, Garhi Bala Judbah (Basikhel), Niway Kilay (Akazai), Kotlai (Nusratkhel), and Dadum (Madakhel). On the way from Niway Kilay to the boat stop, a woman from Macchra stopped us and asked us to please send someone to train them in midwifery, since "there is no trained *dai* and no one will come from outside. If four women are trained, that will be enough." The possibility of recruiting women for training as *dais* from all these places, plus Bimbal,¹⁹ should be looked at, especially for Bimbal, Niway Kilay, Bar Kilay, Judbah, Garhi Bala, Kotlai and Dadum (MK).

Expansion of the role of *dais* to include preventive care, hygiene and child health would probably not be difficult, considering the levels of need, and the respect which Kala Dhakans show to medical personnel generally (even to dispensers and medical technicians). But at present the foundations must be provided before they can be built on. It might also be possible to expand the women's skills center at Daur (if one is established) to include hygiene as well as literacy.

¹⁸See the third report, page 18 (footnote 22) for a description of these pests.

¹⁹Bimbal did not emphasize the need for a *dai*, but we observed that there is a great deal of disease here and little understanding of hygiene. The women reported that many women die in childbirth.

MISCELLANY

Local Suspicion of KDADP Project Implementation

In Shahdag (Basikhel), Kotkay and Maira (Sitanadar), people claimed that we had only come for paper work, and had not done anything practical; that our activities were all talk, and nothing solid; or asked whether we had just come to complete the work on paper. We previously encountered such suspicions in the Hasanzai area. Under such conditions, even activities of modest cost which are clearly beneficial would probably make a big difference in local attitudes toward the KDADP.

Monitoring

In Kaho Dherai and Daur (Sitanadar) and Niway Kilay (Akazai), people urged us to monitor projects established in their villages. People in Kala Dhaka have seen enough empty school buildings, semi-functional BHUs, and partially completed infrastructure projects to appreciate the importance of project monitoring. Monitoring would also be the best way to expand the database in this area, where people have already been so extensively surveyed, before much project activity has taken place.

Cost-Sharing

Seven villages: Tuara (Hasanzai), Daur and Kaho Dherai (Sitanadar), Kotlai and Surmal (Nusratkhel), and Mhabra and Dadum (Madakhel), offered some kind of cost-sharing, usually in the form of offering land or a building to house the activity. In most cases, details about cost-sharing offers, plus comments, have been mentioned in detail under the heading of that village in the *Village Logs* attached to the three tour reports. The cost-sharing offer made by Tuara was recorded in a later visit, and consisted of an expression of willingness to buy improved chickens.

RECOMMENDATIONS

Initially, a mobile team of female technical assistance specialists in the fields of poultry raising, agriculture, horticulture, and sewing/embroidery should visit villages requesting these types of assistance. The team would circulate from village to village, introducing new skills and identifying local women who could assume the role of instructor after the program concludes. During the program the team would return periodically to follow up and continue the instruction. It would not be necessary for the team to stay overnight in most areas.

The mobile team could also identify candidates for *dai* training, fill in gaps in our knowledge about women in Kala Dhaka, and explain the KDAD Project. They would be able to spot implementation problems not apparent in the planning phase, and coordinate with the KDADP staff and the USAID WID office in finding solutions. They could also help design the phasing-in of primary education programs for girls, and adult literacy and hygiene for women.

APPENDIX

INTERVIEW QUESTIONS REVISED OCTOBER 17, 1990

1. What are the needs and problems of the women in this area as they perceive them?
2. Where do they go for medical treatment?
3. What are the facilities for education in this area? School? *Madrassa*? Any man or woman who teaches privately?
4. What kinds of jobs do women do in the house? Outside the house? At what time(s) of the day do they have free time, or have less work?
5. When grain from crops grown on family land is divided among the family, which family member makes the division?
6. If the grain grown on the land is not enough, which family member makes the decision to buy more? Who buys it?
7. Who decides what clothing/cloth to buy for the family? Who buys it?
8. Who manages the food supplies every day and buys small things when needed, such as matches, biscuits etc.
9. Do the women in this family keep any cash for expenses? How/where do they get this cash?
10. Do any women earn cash money? How? Do women sell *ghee* here? Eggs?
11. In this village, how many families have sent people to Karachi? How many women have gone along?
12. In a family, which person decides what family members should go to Karachi?
13. Do people who go to Karachi return, or do they settle there? Where do they stay?
14. In respondent's family, who chooses the bride for a boy? At what age is the boy betrothed? Is this the custom of this village?
15. In respondent's family, who makes the decision to give the girl? At what age is the girl betrothed? Is this the custom of this village?
16. What things does the boy's family give in the ceremony? What things does the girl's family give?
17. Do there any women who have returned from Karachi in this village? [Try to meet]

18. **Are there any educated women in this village? [Try to meet]
Are there any girls studying in school? In what class? Where?**
19. **Are there any girls studying in Karachi? Anyone who has finished her studies in Karachi?**
20. **What would you like the KDADP to do in your village? What kind of benefits would be useful for you? In what ways would you be able to cooperate?**

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ANNEX B
REPORT ON AFFORESTATION
IN KALA DHAKA

BY

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WASHINGTON, DC

14 NOVEMBER 1990

FOREST PLANTATIONS AND NURSERIES

The Watershed Protection foresters have created five nurseries, each adjoining a forest plantation. Their choice of species and size of seedlings were dictated by having to start their work late in the monsoon planting season of 1990, with only chir pine and eucalyptus available. By planting the chir seedlings on slopes that face north or east, the foresters have provided an environment that helps compensate for an elevation that is lower than the normal chir zone.

Some 200,000 trees were planted on 200 acres with a spacing of 2x2 meters. The five nurseries are on excellent sites and are provided with suitable planting soil including miccorrhiza for chir pine.

The autumn rains were favorable this year so that survival of planted seedlings was good. The chir plantation at Zizarai shows the best growth; the seedlings available for there were large at planting time.

The foresters of the Watershed Management division are competent to handle the technical aspects of the forestry component of the KDADP — as shown by their five well-managed nurseries and plantations.

RECOMMENDATIONS

Forest Plantings

Hillside plantations should continue to have **mixed species**; but the slower-growing chir pine might be planted in small blocks in order to avoid suppression by some of the broad-leaved trees.

The Watershed Management foresters intend to include a percentage of miscellaneous species of trees for special uses such as for shade, sericulture, fruit/nuts or forage.

Pruning of the plantations after about three years would produce more valuable lumber and poles. Pruning and thinning will also provide **firewood** while the plantations are still young.

Roadside Stabilization

The foresters are able to provide the **roadside stabilization** which is much needed on portions of the Darband/Thakot road. This requires a combination of forestry and engineering. The foresters are planning to tackle the most seriously threatened site first.

On the steeper parts of the road, **water velocity must be controlled**. The technique, which will be challenging and expensive, must be to channel the flow through **many small ditches and**

checkdams rather than allowing a large volume of water to accumulate. In places on some of the steepest slopes, large stone walls will be required.

The continued planting of the large woody grass, Arundo donax, on steep slopes is to be encouraged. The addition of a smaller species of grass, particularly a local variety of buffel grass, Cenchrus ciliaris, will speed the recovery of the open hillside. Raising this species in the forest nurseries will provide sod for faster stabilization (although planting Cenchrus by seed should not be overlooked).

The foresters are planning to use the standard roadside-stabilization trees like black locust, Robinia pseudoacacia and ailanthus, Ailanthus altissima; but they will also use locally thriving species like paper mulberry, Broussonetia papyrifera, and kambila, Mallotus philippinensis. Seeds of palosa, Acacia modesta, and sanata, Dodonea viscosa, will be planted directly on the slopes.

Involvement of People

Schools

Conservation awareness is essential if the Kala Dhaka area (as well as the rest of Pakistan) is to halt and reverse the degradation of its hillsides. The involvement of **schoolchildren** in the raising and planting of trees will help accomplish this goal. (Concepts of conservation should also be in the school curriculum).

The schools in villages such as **Surmal, Zizerai, Kandar and Judbah** where nurseries and plantations already exist will be good places to start school forestry projects. Ultimately all the schools in Kala Dhaka should have a forestry program.

The school at **Seri** can have a small nursery and produce trees for planting the few acres of bare ground near the school and other public buildings. (Deodar cedar is recommended for the hilltop and chir pine for the north slope below the buildings).

Women's Participation

Income for women can be available by allowing them to operate small tree nurseries to provide seedlings for the Project. There is an opportunity at **Kandar** for this.

A good source of help would be:

Zarnigar Tayyib, Malakand Social Forestry, P. O. Box 9
Saidu Shariff Phone 056-5786

Zarnigar is a woman forester.

The DFO/Watershed, Mubarik Husain Shah, has suggested that sericulture also is a possible source of income for women. In Mardan the production of silkworm cocoons involves family labor for three months in late spring and can bring in a few thousand rupees. The start-up requires three years, starting with the planting of suitable mulberry cuttings in a nursery in February or March of the first year, transplanting to a permanent site the following spring, and then harvesting leaves to feed the silkworms the next season. Training of families in silkworm rearing is of course also required. (A visit to a successful operation in Mardan would be valuable). Mulberry cuttings and, later, the "seed" or eggs of silkworm are available from the Sericulture Wing of the Forests Department in Peshawar.

Villages

Ultimately tree planting and watershed protection should become the responsibility of the communities themselves. This long-term objective will be attainable only through a slow public-awareness campaign.

In Mada Khel there are already plans to open small nurseries and to establish forest plantations at Manjakot and Mira. Other villages in the chir pine zone and the blue pine zone should be likewise involved.

Range Management

Livestock are an integral part of the farming system of Kala Dhaka. Land-use planning must include range management along with forestry. At the lower elevations of Mada Khel, Hassanzai and Azakhai, bare hills were not obvious, but elsewhere there are many signs of over-grazing such as the bare lands around Jubdah. Also the abundance of wild indigo, Indigofera, on thin soils in the blue pine zone and the patches of Dodonea, Carissa and Adhatoda in the chir pine zone indicate overgrazing.

A survey of the carrying capacity of the grazing areas of separate valleys or ridges would indicate the optimum number of livestock that each area could support, but the problem of over-grazing will not be easily resolved.

Two improvements to livestock management would be:

- carefully controlling the times of grazing
- planting and protecting forage-producing trees (Leucaena, Robinia, Grewia, Amorpha and Celtis).

In the future, if livestock numbers are reduced, better production will be attainable if the unpalatable shrubs and bushes are removed from the currently overgrazed pastures and are replaced with grasses.

APPENDICES to ANNEX B:

THE ENVIRONMENT OF KALA DHAKA

Geology

The two prominent geological formations in Kala Dhaka are the wide-spread, mostly metamorphosed sedimentary rocks and the intruded granites, some of which are also metamorphosed. The soils of granitic origin tend to be deeper and to have less clay content than those derived from sedimentary rock. The well-drained sands and gravels as seen around Judbah are apparently of glacial origin. Understandably, the deepest soils are in depressions and pockets.

Most of Kala Dhaka has a western exposure which provides a drier and sunnier environment than is found around Oghi. The exceptions are the east-facing slopes of Mada Khel and the north-facing sides of most of the valleys.

Climate

Although precipitation may occur any month of the year, there are two dry periods: May/June and October/November. Weather records from nearby sites indicate that the lowest elevations will receive an average rainfall of around 30", and the higher blue-pine zone will receive well over a meter, with part of it as snow.

The climate along the Indus is "dry subtropical" and receives only slight frost in January or February. Summer temperatures are high.

Forest Types

Kala Dhaka has three montane forest types:

- Dry sub-tropical broadleaved forests
- Sub-tropical pine forests and
- Himalayan moist temperate forests

The dry sub-tropical broadleaved type occurs at the lowest elevations of Kala Dhaka. The two species that are the best indicators of this type are khona (wild olive), Olea cuspidata, and palosa (or phulai), Acacia modesta. It is rare to see the true Olea/Acacia type which presently exists in the south end of Kala Dhaka, with large specimens of both species.

Over-cutting and overgrazing has produced two sub-types of "scrub forest" in much of the area. Khiraski, or sanata, Dodonea viscosa, occurs in almost pure stands, and several thorny species of shrubs are common such as garanda, Carissa opaca, and bhaikar, Adhatoda vasica. The unpalatable shrub kambila, Mallotus philippensis is common in the lower elevations of Kala Dhaka. These

woody plants are valuable in controlling erosion, but they are a serious interference to production of grass and browse for livestock.

The lower parts of Kala Dahka, along the Indus River are adjacent to another forest zone (Tropical Dry Deciduous Forests Type), and trees of that zone like shisham (rosewood), Dalbergia sissoo, and simbal (cottonwood), Salmalia malabarica, may be found all the way north to Thakot. These two species will be included in the planting program.

The sub-tropical pine forests type is the chir pine zone which normally occupies the elevation between 3000 and 5500 feet. It can be noticed that chir pine, Pinus roxburghii, will occur at lower elevations on north-facing slopes, and then several hundred feet above the 5500-foot level on south slopes.

The Himalayan moist temperate forests type includes the low-level blue pine, Pinus wallichiana, forests. The blue pine forests occur just above the chir pine zone and dominate the upper reaches of Kala Dhaka all the way to the top of the eastern ridge. Occasional yew trees, Taxus baccata, are seen; and silver fir, Abies pindrow, occurs at the highest elevations. On north slopes blue pine will grow at lower elevations, on a level with the chir pine of the south slopes.

The demand for timber in Pakistan is such that these stands of pine are valuable and must be managed for sustained yield.

TREE SPECIES FOR KALA DHAKA PLANTATIONS

The foresters are aware of the fairly wide variety of desirable species that will grow in Kala Dhaka. The wishes and needs of the local people have to be considered. Cooperation with the agricultural section in planting fruit trees should be kept in mind.

In planting for roadside protection the selection of species has to be determined by other factors such as quick growth, soil-holding ability and even browse resistance.

River zone (up to 3000 feet elevation)

<u>Acacia modesta</u>	Palosa	Browse, firewood, fencing, soil builder
<u>A. catechu</u>	Zanda	Source of "katha" & tannin
<u>Ailanthus</u> , sp.	Bekian	Fast fuelwood, shade, browse
<u>Alnus nitida</u>	Giray	Nitrogen fixing tree
<u>Amorpha fruticosa</u>	Carob	Fast, nitrogen fixer, browse
<u>Broussonetia papyrifera</u>	Paper mulberry	Fast, browse-resistant
<u>Calotropis procera</u>	Spulmai	Goat-resistant, drought-resistant
<u>Cassia fistula</u>	Landes	Firewood, medicine
<u>Dalbergia sissoo</u>	Shisham	Furniture
<u>Eucalyptus microtheca</u>	Lachi	Fast, poles, firewood
<u>E. camaldulensis</u>		Fast, firewood, drought-res.

<u>Ficus bengalensis</u>	Banyan, Bar	Shade
<u>F. religiosa</u>	Peepul	Shade
<u>Gleditschia triacanthos</u>	Honey locust	(same as black locust)
<u>Grevillea robusta</u>	Silky oak	Ornamental, shade
<u>Leucaena leucocephala</u>	Ipil ipil	Very fast, browse, firewood
<u>Melia azadirachta</u>	Bekian	Fast, firewood, shade
<u>Morus, sp.</u>	Toot, Mulberry	Browse, shade, timber, fruit
<u>Nannorrhops ritchieana</u>	Mazri, Chatai palm	Fiber (ropes, hammocks)
<u>Olea cuspidata</u>	Khona, Olive	Tools, very slow
<u>Pinus roxburghii</u>	Chir, Nachtar	Timber, fuel, resin
<u>Populus, sp.</u>	Poplar	Poles, shade
<u>Robinia pseudoacacia</u>	Black locust	Firewood, soil binder, nectar
<u>Salmalia malabarica</u>	Simbal; cotton tree	Shade

Grasses for Roadside Stabilization

Arundo donax A woody perennial grass with creeping rhizomes which are good for stabilizing soil. Normally found in wet places, it will grow on drier hillsides once it is established. The stems can grow up to sixteen feet tall and have been used to make paper. It is suitable for fodder when young. It has been used successfully in Kala Dhaka on eroded slopes.

Cenchrus ciliaris Buffel grass. Widely adapted perennial forage grass. Easily established from seed or from cuttings.

Chir zone (3000-5500 feet)

<u>Acacia catechu</u>		(same as in river zone)
<u>Ailanthus altissima</u>		(same as in river zone)
<u>Celtis eriocarpa</u>		Browse, timber (slow-growing)
<u>Pinus roxburghii</u>		Can grow higher on south slopes; lower on north slopes.
<u>Robinia pseudoacacia</u>		Same qualities as in lower zone.
<u>E. camaldulensis</u>		" "
<u>Grewia optiva</u>	Past'oneh	Winter feed for buffaloes
<u>Populus nigra</u>		Poles (in moist sites)

Blue Pine Zone (above 5000 feet)

<u>Pinus wallichiana</u>	Kail, blue pine	Lumber
<u>Cedrus deodara</u>	De-ar, cedar	Lumber
		(Should be planted on southern exposure)
<u>Juglans regia</u>	Walnut	Plant on deep soils
<u>Morus, sp</u>	Mulberry	Grows well at many elevations.

HYDRAULIC RAMS

The abundance of steep valleys and streams in Kala Dhaka offers an opportunity to use hydraulic rams for lifting water from nearby sources without the need of fuel or of long piping from above. Particularly, the Health Center at Judbah could be considered for such an installation.

APPRECIATION

Much of the substance of this report is the result of conversations with the DFO/Watershed, Mubarik Husain Shah, who shared his knowledge of the Kala Dhaka environment. Also, Tehmansip, the Range Officer was helpful in identifying local plants. The rangers, Mubeen Shah and Abdul Star were valuable with their knowledge of the area. Trips into Kala Dhaka were made more pleasant also by the cheerful assistance of Ghab Nowaz and Mohammad Nisar. All these were good humsafar.

ANNEX C

**INTERNATIONAL NARCOTICS MATTERS
AGRICULTURAL OUTREACH PROGRAM
KALA DHAKA**

From 1985 to the end of 1988, the International Narcotics Matters' Narcotics Affairs Unit (NAU) of the U.S. Embassy in Pakistan, implemented an agricultural outreach program in Kala Dhaka through the GONWFP Agriculture Department. Over that four year period, NAU spent Rs2,169,131, or an average of Rs540,000 per year (approximately \$26,000 per year) in two main areas of activity: the set up of demonstration plots and the distribution of fruit trees.

DEMONSTRATION PLOTS

This program comprised 2,392 acres of demonstration plots at 2,367 sites. In rabi 1985/86, 307 acres of wheat, 20 acres of sarsoon, 13 acres of potato, and 15 acres of onion were planted. In the 1986 kharif, 200 acres of maize, 20 acres each of groundnuts, rice, and soybean, 10 acres each of mash and sunflower, 1 acre of sugarcane, and 0.4 acres of mong were sown. In the 1986/87 rabi program, 500 acres of wheat seed were distributed for demonstration purposes, as well as seed for 20 acres of sarsoon, 18 acres of potato, 10 acres of gram, and 1 acre of sugarcane. In the 1987 kharif, the program consisted of 250 acres of maize, 20 acres of soybean, 15 acres of groundnut, 5 acres of sunflower, and 5 acres of mong. In the 1987/88 rabi 300 acres of wheat, 40 acres of sarsoon, and 20 acres of gram were distributed. In the following spring, 6 acres of potato, 5 acres of peas, and 8 acres of tomato were tried. The 1988 kharif saw 200 acres of maize, 5 acres each of rice and groundnut, 3 acres of mong, 4 acres of moth for fodder, and 1 acre of hybrid sorghum fodder. The 1988/89 rabi program consisted of 300 acres of wheat, 10 acres of sarsoon, and 5 acres of barley.

In all, 340 tons of improved seed were distributed, and 192 acres of the demonstration plots were sprayed. Two hundred sets of poultry were also distributed.

FRUIT TREES

NAU distributed 65,043 fruit trees at a 75 percent subsidy, and 656 acres of orchard planted at 614 sites. This amounted to 20-25,000 plants per year, from a range of species, including apple, apricot, plum, peach, malta, litchi, guava, etc.

Twelve implements were sold at a 50 percent subsidy, and 10 field days were held.

The ongoing NAU agricultural outreach activities are similar in size and objective to those presently being planned for Kala Dhaka. The KDADP agriculturalist should visit to the NAU Islamabad to ascertain what records have been kept of these activities.

A point of particular interest is whether records of the farmers participating and the locations of the fruit tree distribution program are available. This group of farmers could possible serve as the nucleus of the fruit tree expansion program. If these orchards exist, they will be coming into bearing now and they could serve as a focus for training programs, in pruning, pest control, fertilization, and marketing. These orchards could also be used as indicators of the species suitable for the various sites

and microclimates in Kala Dhaka. New orchards could be established in the vicinity of these NAU orchards to take advantage of the lessons learned in the NAU program. These orchards could also serve as the nucleus for a KDADP marketing development initiative in fruit.

Another point of interest is any data on the other crops tested, and the particular varieties used. Any written results will be very useful and could be used for planning the 1991 program. Even if the information available at the Embassy is only anecdotal, it should be collected and incorporated into the Phase II planning.

A visit to Kala Dhaka by SDU staff in 1987 suggested that the NAU outreach program had been less than successful because it suffered from a lack of trained staff, adequate transport, and because of problems of physical access and extension supervision. Although in some respects the precedent may have created problems for KDADP activities, there is hope that with an active training program for the field workers, and the provision of some of the available project transport to the agricultural sector particularly during peak periods, it may be possible to surmount the errors and failures of the past efforts in the area.

ANNEX D
PRELIMINARY WORK PLAN FOR PHASE I
ACTIVITIES BY QUARTER

October to December

Budgeting and planning for the second six month work plan due in December.

Arranging the actual logistics of wheat, fertilizer and potato programs.

Field crops

Distribution of wheat seed and fertilizer for demonstration

Wheat trials planted, October and November.

Maize harvested, [purchase of seed from farmers of promising lines].

[Mung trials harvested and final evaluations made.]

[Gram trials planted]

Horticulture

Inspecting orchard sites and preparing list for fruit tree demand.

Potato seed procurement and storage.

Onion nurseries planted.

Winter vegetables distributed, [including plants from nurseries].

[Potato from summer crop harvested, and evaluated]

[Dec-Jan harvest of fall potato crop.]

[Continue tomato harvest through November]

January to March

Inspection and field demonstrations of all winter crop trials; such as wheat, peas, gram, rape, barley.

Preparation for trial sampling/evaluation.

[Groundnuts planted.]

[Spring potato planted]

Distribution of fruit trees/citrus.

Demonstration and training on the pruning of fruit trees.

Onion seedlings transplanted.

April to June

Procurement of all seed and inputs for maize demonstrations.

Following field days, harvest wheat trials.

Purchase back seed of promising wheat varieties.

Field day for onions, tomatoes and squashes.

Establish tomato nurseries.

Prepare for seed potato procurement.

Harvest onions and evaluate.

July to September

Continue harvesting and marketing onions.

Maize planted, and thinning trials carried out.

Planning and organizing the inputs for the winter wheat program.

Spring potato crop harvested.

Fall potato crop planted.

Visit the fruit tree orchards and check on survival of the spring planting.

Tomato harvest and marketing program in full swing.

Transplanting fall tomato in favored sites.

Preparation for the wheat demonstration distribution.

Pea and rape seed procured.

Plant winter vegetable nurseries.

ANNEX E
SOME COMMON RANGE GRASSES OF THE KALA DHAKA AREA

Heteropogon contortus - *sural, sarwala, abdarka, kursali*.

A good fodder, prior to flowering. The hay will keep for several years. The 5-8 cm hairy awn makes the flowering/fruited plant less palatable.

Chrysopogon aucheri - *spin wakha, kwar, sabah*.

Found on dry rocky slopes, in the mid elevations of the project area, welcome fodder in these barren spots.

Apluda mutica - *chhant, ghagari, lung, shlanta*.

Good/fair fodder, especially when green. Found in the lower elevations, often in the shade.

Cymbopogon jwarancusa - *khavi*

Found in drier areas. Unpalatable and coarse when adult. Important when young as grows fast following the rains.

Aristida adscensionis - *banakai*

Found in the drier areas, on the poorer soils. Occurs along Thakot-Darband road. Weedy and probably grazed.

Setaria pumila - *ban kangni*

Common annual weed of disturbed ground, field edges.

Phacelurus speciosus - *shamaha*.

A variable grass, often stemmy, with stiff glaucous leaves, but occasionally lush.

Cenchrus ciliaris - *spin wargai*

Found throughout the area, common on the terrace edges on the east side of the ridge. May occur on steep rocky slopes. Growing on the slopes along the Thakot-Darband road.

Pennisetum flaccidum - *spin wargai*

Common in the upper areas, grazed by goats.

Pennisetum orientale - *spin wargai*

Dicanthium annulatum - *palawan, sarbaga*

Sorghum nitidum - *chota baru*

ANNEX F

**FIELD TRIPS BY SHORT-TERM AGRICULTURALIST & ANTHROPOLOGIST
SEPTEMBER 25 - OCTOBER 10, 1990**

TRIP 1: Oghi to Thakot via Pakban/Shagai

Tuesday 25th September

Oghi-Jalgali-Serai Banda by jeep
Between Machai Dhanda and Machai Sar by foot
Down spur along ridge to Pakban by foot

Spent night at Pakban Bara hujra

Wednesday 26th September

Discussions in Pakban Bara
Downhill to adjacent village Pakban Kus
Discussions in Pakban Kus
Walked along northern side of Haicheru Khar valley to Chhiwang
Discussions in Chhiwang
Up tributary valley, crossed river then downstream to Batela

Spent night in private hujra at Batela

Thursday 27th September

Discussions in Batela
Walked south-west along tributary valley to Balkot
Discussions in Balkot
Walked down Haicheru Khar valley to Kotlai
Discussions in Kotlai
Inspected maize demonstration plot at Kotlai, visited "wharf".

Spent night in hujra at Kotlai

Friday 28th September

Walked along Thakot-Darband road to Judbah
Inspected forest plantation at Judbah colony
Discussions at Afzar Khans hujra
Boat to Shagai
Discussions in Shagai

Spent night at hujra at Shagai

Saturday 29th September

Walked along Thakot-Darband road to Thakot
Discussions at Dera Kot tea shop
Discussions at hujra in Zezari

Spent night at C & W guest house in Thakot

TRIP 2: Thakot to Pashora via Shingaldar & Bartunai

Wednesday 3rd October

Project vehicle to Thakot
Walked across footbridge
Private pickup 2 km along Thakot-Darband road to Ghorian
Walked up valley, crossed ridge, up second larger valley
Arrived Makhranai after 7 hours

Spent night at private house in Makranai

Thursday 4th October

Up to ridge, over saddle to valley of Kalash Khar
Down northern side of valley to Shingaldar
Discussions at Shingaldar primary school
Visited defunct BHU Shingaldar
Back up valley to saddle on ridge
Crossed ridge south of Chazano Sar
Down northern side of valley to Bar Bartunai
Discussions at Bartunai

Spent night at private hujra of Hakim Khan, Bartunai

Friday 5th October

Down spur to KKH at Kot Qala, 3 hours walk.
Returned to Manshera via Battagram

TRIP 3: Oghi to Darband, via Panja Gali, Seri and Marey

Saturday 6th October

Jeep from Oghi via Shergarh to ridge at Panji gali
Walked along western edge of ridge to Seri

Discussions at Seri

Spent night at hujra of Alem Zeb Khan at Bara Seri

Sunday 7th October

Visited primary school, Seri
Crossed Shai Khwar to Khand
Discussions at Khand hujra

Spent night in private hujra, Khand

Monday 8th October

Visited primary school and secondary school under construction
Walked down northern side of Shai Khwar valley to Surmal
Discussions at Surmal hujra
Walked to Girvay
Truck to Bakrai
Boat from Bakrai to Marey
Discussions at Marey

Spent night at hujra, Marey

Tuesday 9th October

Boat to Darband
Project vehicle to Manshera

TRIP 4: Darband to Koray and return by car along road

Wednesday 17th October

Project vehicle from Darband
Visited forestry nursery and plantation, Kandar
Discussions at hujra Kandar
Discussions at hujra Tuara
Stopped by river south of Koray

Waded river, spent night in private house at Koray

Thursday 18th October

Returned along road to Ganar
Road blocked by slide
Z. Alem and Aurangzeb Khan to KotKai, Tuara and Kandar by boat
After some time and road repairs, J.Greenham by road to Darband.