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SOCIO ECONOMIC PROFILE  
OF  
ORAKZAI AGENCY

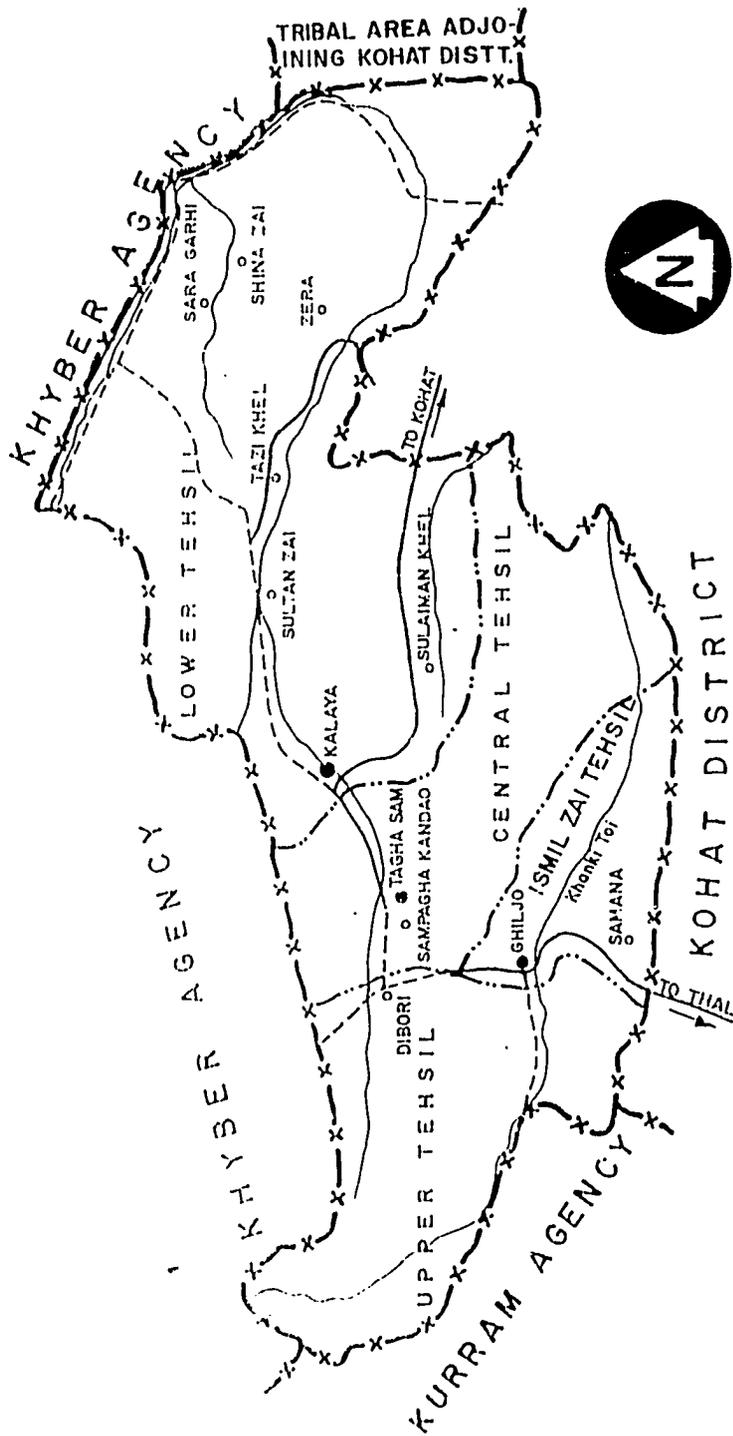
PREPARED FOR THE PLANNING  
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BY:

UNITED STATES AGENCY FOR  
INTERNATIONAL DEVELOPMENT

JULY 1991

WP51:ORAKZAI:zi\*

# ORAKZAI AGENCY



## REFERENCES

— X — X —	AGENCY BOUNDARY
— · — · —	TEHSIL BOUNDARY
— — — —	METALLED ROAD
— — — —	TRACKS
~~~~~	RIVER / NALA
●	AGENCY HEADQUARTER
●	TEHSIL HEADQUARTER
○	OTHER LOCALITIES

SCALE 1:333,333

KILOMETERS 5 10 15 20 KILOMETERS



## EXECUTIVE SUMMARY

### Geography

Among the seven tribal agencies, Orakzai is the second smallest in area after Bajaur Agency. It is bounded by Kurram Agency in the west, Khyber in the north, District Kohat on the south and Peshawar in the east. The whole of the territory of Orakzai Agency is a mountainous tract dissected by numerous dry water courses, especially in the southwestern part of the Agency. The two major streams are the Mastora and Khanki Toi, both of which originate in the hills to the west and run to the east.

Although there are no rain gauges placed in the Agency, rainfall is presumed to be around 34-36" per annum. The Agency has cold winters and mild summers.

### Administration and Economy

There are two administrative sub-divisions: Upper Orakzai and Lower Orakzai. Each sub-division consists of two tehsils. An Assistant Political Agent is in charge of each sub-division. Orakzai Agency was established in 1973 and comprises those areas inhabited by the Orakzai and Daulatzai Tribes. These were areas which were previously included in the Tribal Areas adjoining Kohat District and Hangu Tehsil. The Agency Headquarters are located at Hangu which is physically located outside the Agency. Almost the whole of Orakzai Agency is accessible except the Manazai area. Lower Orakzai Sub-Division is relatively more developed, accessible and stable than Upper Orakzai Sub-Division.

There are no general indicators that yield information concerning income, employment and migration. Agriculture and remittances are probably the economic mainstays. Pressure on scarce land resources has led to considerable migration to settled areas of Pakistan and the Gulf. Opportunities for overseas employment, however, are far more limited now, due to the Gulf crisis of 1990-91. Remittances have in general not been invested in productive activities, except perhaps for the purchase of trucks or tractors. The principal bazaars are mainly at Kada, Mishti Mela and Ghaljo. Many Orakzai residents have shops at Hangu where most of the tribesmen come to purchase goods.

### Population

The 1981 census recorded the Agency's population as 358,751. Orakzai was the most populated of all the Tribal Agencies. Density was also one of the highest in FATA, with about 233 persons per square kilometer.

The population growth rate is not known. If we use an average growth rate of 2.8% (the intercensal annual average growth from 1972-81), then density now would be around 307 persons per square kilometer. Around 54% of population was aged fourteen and under in 1981, a very high dependency ratio.

The literacy rate was very low in 1981, the lowest of all the Tribal Agencies. Only 3 percent of those aged ten and older were literate. Lower Tehsil had the highest literacy rate of 4.35 percent among all Orakzai tehsils. Ismailzai Tehsil ranked second, Upper Tehsil third and Central fourth in terms of literacy. Among males, Lower Tehsil had the highest literacy rate of 7.5 percent, and Upper Tehsil had the lowest literacy of 3 percent.

The Agency has two main Islamic sects: Sunni and Shia. Lower Tehsil is mixture of both sects. The other three tehsils are entirely Sunni. The most populous tribal group in Upper Tehsil is Ali Khel (Sunni) economically dominant in Orakzai Agency. In Lower Tehsil, there are 12 tribal groups followed by 6 in Upper Tehsil, 5 in Ismailzai Tehsil and 3 in Central Tehsil.

### **Refugees**

Orakzai Agency has fewer refugees than other Tribal Agencies. As of December 1990, there were only two camps in Orakzai with 13,417 refugees. These refugees moved southeast from Kurram Agency, where they originally came from Paktia, Logar and Paktika provinces of Afghanistan. These camps are located near Ghaljo, the headquarters of Upper Tehsil. Due to their limited numbers, these refugees do not cause major problems for locals. These refugees live in small kacha huts and sometimes obtain casual employment as laborers in construction or agriculture. Registered refugees are provided with some basic food items and kerosene oil. There is one Basic Health Unit (BHU) with one male doctor for both camps. There are two primary schools and one middle school in the camps.

### **Land Use and Agriculture**

Orakzai Agency consists of 379,943 acres of area, only 10 percent of which is arable. The arable land tends to be fertile and good for agriculture. Agriculture statistics for 1981-82 show that approximately six percent of the total Agency area is cultivated.

Beginning with 1981-82, land use statistics show a substantial decrease in cultivated acreage for the Agency from 39,800 acres in 1980-81 to 24,710 acres in 1981-82. The cropped area also shows a decrease of more than 50 percent in the same period. The predominant pattern of land-holding in Orakzai Agency is of small, fragmented farms concentrating on subsistence crops. In Orakzai, the smallest holders appear to be slightly better off in terms of average farm size, as compared with other Agencies. The average size of farm holdings under 2.5 acres was 1.31 acres in 1980. Orakzai had the smallest percentage of large holdings (25 acres and above) and large holdings also occupied the least amount of cultivated land. In Orakzai the 1980 Agriculture Census found that 85% of all farms were fragmented into least 2 pieces. The staple crops of Orakzai are wheat and maize. The climate and soil are favorable for the cultivation of fruits and vegetables, but because of a shortage of water, horticulture crops are rarely grown in significant quantity or on a systematic basis. Other crops included potatoes, pulses, red beans, onions, turnips, rubbi seed oil, barley, rice and fruit. Hashish is grown on a sizeable area.

According to 1986-87 Development Statistics, there were 27 tractors in the Agency. These are used to plow fields, level land, used for transport and are also rented out to other families. The number of mechanical threshers is not known. Improved wheat and maize seed is sold by the Agriculture Department which has sales depots mainly in Lower-Sub-Division. There are no sales depots in Upper Sub-Division where farmers either use their own seed stocks or purchase stocks from the Agriculture Department in Hangu. Fertilizer and pesticides are also sold by the Agriculture Department but only in Lower-Sub-Division. There is no source of institutional credit for Orakzai farmers.

The Agency has an inadequately staffed and equipped extension service even in comparison with other Tribal Agencies. There are one Assistant Director, four Field Assistants, two Crop Reporters, and ten Budders assigned to Orakzai Agency. They sell agricultural inputs and provide extension services. The Agriculture Department's office is based at Kalaya, Lower Sub-division, and its activities are concentrated mainly in Lower Tehsil. Even this limited staff can hardly cover Lower Tehsil. Lack of transport also hinders outreach. There are only two fruit nurseries, located at Barand Khel and Story Khel. Since the mid 1980's, the Agency extension staff have planted a total of 46 demonstration plots for wheat, 28 for maize and 10 for gram, a fairly low level of effort that perhaps reflects staffing, transport and funding limitations.

## **Irrigation, Flood Protection and Potable Water**

Improvement and development of surface and ground water irrigation schemes are undertaken by FATA Development Corporation (FATA-DC). There has been some investment in improving Agency irrigation facilities, but unfortunately no comparable investment in agriculture. Improvements to surface schemes or construction of new surface irrigation systems seem to have been undertaken at approximately 19 sites, mostly on the left and right banks of Mastura and Khanki rivers.

Twenty-two testwells have been drilled, of these, 7 have been abandoned, 11 have been energized and 4 testwells are in the process of conversion to tubewells. There is some evidence that they pump water for relatively few hours per day and therefore irrigate less land than anticipated. This is an expensive program, and sufficient numbers of people and acres should benefit in order to justify the considerable investment cost and the high operating costs, both of which are borne by the government.

Small dams are a new area of interest. FATA-DC has surveyed three sites in the Agency but consultants have not yet been hired to prepare feasibility reports.

There is relatively little activity with respect to flood protection. The Local Government and Rural Development Department (LG&RDD) seems to carry the major responsibility for the construction of small scale bunds. Its efforts are a little uneven perhaps because its funding is uneven. From 1985-86 to 1988-89, 90 bunds were completed by LG&RDD. There is no replacement program for bunds that have come to the end of their useful life. FATA-DC has completed one flood protection scheme.

## **Animal Husbandry**

Based on figures produced by the Livestock Census conducted in 1986, there are 68 sheep per square kilometer and 94 goats per square kilometer in Orakzai Agency. Afghan Refugee-owned animals, which were not included in this count, are limited because of the low refugee population. The Agency has no veterinary hospital but has fifteen veterinary dispensaries and six veterinary centers. These facilities are served by two veterinarians, one veterinary compounder, and twenty stock assistants. Orakzai Agency is less well served with facilities than Kurram Agency with four animal hospitals, fourteen dispensaries and three artificial insemination centers.

The level of effort seems to be low in the field of vaccination. No efforts have been made to improve the nutritional status of

animals. The number of artificial inseminations performed declined from 73 in 1987-88 to 39 in 1988-89. Orakzai appears to be less successful with insemination than some other Agencies.

### Forestry

As in most of FATA, deforestation and consequent soil erosion are serious problems. There are sizeable forests in eight areas of Agency, but six have been seriously affected by deforestation. These areas have become deforested due to drought, over grazing, and chopping of logs legally and illegally. Forestry Department staff consist of one forester at each nursery (there are three nurseries) and five to six block plantations. The Department has established block plantations on its own land as well as on privately owned land.

The Sericulture Department manages one Mulberry nursery at Kurez and one farm at Kadda. The sericulture staff are responsible for propagation and distribution of mulberry plants and silk seed. In 1990, 64 seed packets were sold to farmers. The Department also bought back 270 kgs of dry silk cocoons while farmers sold the remaining cocoons to private dealers.

### Communications

As of April 1990, the C&W Department had reportedly completed or had under construction 228 km paved roads and 233 km of shingled roads. Several roads of 100 km length are funded by Orakzai's allocation but they are located outside the Agency and provide access to the Agency. Four entry points to the Agency are on Kohat-Parachinar road. These entry points are at Kacha-Pacca-Maria Bala, Jazora-Wam Paura, Hangu-Sahu Khel, and Kacha Pacca Khaizargari road. The only entrance from a Tribal Agency is through Khyber Agency via the Tirah road.

The closest air link is at Kohat which is a 45 minutes drive from Hangu.

### Education

With respect to education, using 1981 Census data and a 2.8 percent per annum population growth rate, the female primary education participation rate in 1989-90 was roughly one percent while the male participation rate was 16 percent. This is a very low primary education rate compared to Kurram, South Waziristan and North Waziristan Agencies. Girls' primary enrollments however increased 4 times and boys' enrollments 2 times between 1980-81 and 1989-90. Much of this increase in has probably been consumed by population growth.

The middle school participation rate of eligible females from ages 10-14 is negligible. Out of roughly 50,000 eligible females, only 4 were attending middle classes in the year 1989-90. The middle school participation rate of eligible male children of ages 10-14 was roughly 3 percent in the year 1989-90.

There are 11 secondary schools for boys and one for girls. The latter is not functional as yet. The approximate participation rate of eligible male children of ages 15-19 in secondary classes is less than 1 percent. There was only one higher secondary school with class 11 and 12 at Kalaya. There were 16 Mosque schools and 5 Mohallah schools in 1990 in Orakzai Agency.

The main concentration of educational activities is in Lower Tehsil, which has only 20 percent of Agency population. Upper Tehsil has 37 percent of the Agency population but has few educational institutions. There are only 18 primary schools for both sexes in Upper Tehsil and no middle or secondary school. Moreover, with roughly the same population, Orakzai has fewer educational facilities than Kurram, South or North Waziristan Agencies.

### Health

While a network of 30 facilities of different kinds exists, it is difficult to speak of a functioning referral system being in place. Almost all referrals from lower level facilities are to the Kalaya and Samana Civil Hospitals, which do not admit in-patients, and to physicians and hospitals at Hangu and Kohat. Although a significant number of facilities are equipped for indoor patients, not a single facility admits patients. Most Basic Health Units do not have physicians.

There are no female physicians working at any Agency facility, and many facilities lack trained Dais. The difficulty of recruiting female practitioners adversely effect the quality of care for women in the Agency, but this is a problem that only time can remedy.

There are only ten fixed EPI centers. While outreach teams work from three different centers, their reach is limited as transportation has not been fully provided. There are also four mobile teams working in the Agency.

### Electrification

WAPDA has provided 1,647 legal connections while (another) approximately 3,000 illegal connections existed in 1990. Thus WAPDA cannot bill for much of the electricity it provides to the Agency, and it appears to have no way of cutting illegal

connections. An additional problem is that most of the holders of legal connections do not pay their bills. Electricity charges are also highly subsidized.

As of June 1990, WAPDA had brought electricity to 141 villages via 146 transformers in the Orakzai Agency. There are also six illegal transformers. There are two grid stations of 66 kv ratings established at Kalaya. The central part of Orakzai Agency is mostly electrified.

### Investment

Orakzai Agency ranks sixth among all Agencies in terms of total allocations from 1972 to 1988-89. In 1974-75, schemes were started in power, health, education and housing. After that, schemes were gradually initiated in agriculture, communications, rural development, irrigation and forestry. Initial investment in 1974-75 was Rs.3 million, which rose to Rs.92 million in 1988-89.

In infrastructure development sectors such as power and communications, allocations gradually increased over time. In the basic human needs sectors, such as education, health and potable water, the allocations rose many times from a very low base. In the irrigation sector too, the allocations increased, but in the agriculture and rural development sectors, the allocations have been almost constant despite inflation which shows that these sectors are not a strong priority of the Government.

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LIST OF  
ACRONYMS

ADP	Annual Development Program
APA	Assistant Political Agent
APO	Assistant Political Officer
C&W	Communication and Works Department
EADA	Extra Assistant Director of Agriculture
EXEN	Executive Engineer
FATA	Federally Administered Tribal Areas
FATA-DC	Federally Administered Tribal Areas Development Corporation
FR	Frontier Region
GOP	Government of Pakistan
LG&RDD	Local Government and Rural Development Department
MNA	Member, National Assembly
NWFP	Northwest Frontier Province
PA	Political Agent
PHED	Public Health Engineering Department
RTV	Refugee Tented Village
SDO	Sub-Divisional Officer
UNHCR	United Nations High Commission for Refugees
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

## Preface

This is the fourth in a series of profiles on seven of the tribal agencies. The other three in the series cover Kurram, North and South Waziristan. Each profile is accompanied by a series of maps, more about which can be found in the following section.

The purpose of these profiles is to make available, in an integrated fashion, what is known (and equally, what is not known) about the resources, development achievements and prospects, and limitations (be they physical or man-made) in the concerned Agency. Because the information that has been collected and analyzed is designed to help development planners, a considerable level of detail is presented in the reports.

Work began on this profile in July 1990 and continued through July 1991 at which time a first draft was completed. Staff changes that occurred during the course of the research caused delays.

I would like once again to thank senior officials of the Planning and Development Department for sharing information and views. I would also like to thank the Political Agent. Line Agency staff gave generously of their time and tried to respond to what must at times have seemed like an unending series of requests.

The research was carried out by Mr. Ziauddin (senior researcher); Mr. Shahzad Raza; Mr. Shakeel Tabassum; Mr. Taimur Azam Khan (all staff of USAID/Peshawar) and Dr. Ruth Schmidt (consultant). Finally, we would like to record here the work of Mr. Khairullah, Mr. Faridur Rehman and Miss Shaheen Kausar, who drew the maps of the Agency that accompany this report.

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and Planning Unit,  
Rural Development Div.

July 1991

## Introduction to the Maps

We relied on Survey of Pakistan maps in drawing a new base map of Orakzai Agency. The Survey of Pakistan maps were on a scale of 1:50,000 and contained roads (shingle, paved and tracks), rivers, towns, contours and Agency boundaries. They are out of dates. The scale was reduced to a scale of 1:75,000 in the new base map.

This new base map does not include the Biland Khel area of Orakzai Agency which is not physically joined to the Agency. The Biland Khel area could not be accommodated in the base map. This area is a small pocket of 2.5 square miles; and it lies a couple of miles from Thall (Kohat district) in between Thall and North Waziristan Agency on the right bank of the river Kurram. It has a population of about 5,000. Administratively, this area is part of Ismailzai Tehsil of Orakzai Agency.

The maps are as follows:

- 1) 1:75,000 base map with villages, roads, elevation contours, rivers, tois, and refugece camps.
- 2) 1:75,000 transparent overlay for the base map, showing elevation and vegetation shadings. Areas of vegetation may have changed since data were collected for the Survey of Pakistan maps.
- 3) two 1:75,000 transparent overlays for the base map, one showing girls' schools and the other boys' schools as of December 1990.
- 4) 1:75,000 transparent overlay for the base map, showing ground and surface water irrigation schemes. The scheme is marked by the village it serves.
- 5) 1:75,000 transparent overlay for the base map showing health facilities and potable water projects.
- 6) 1:75,000 transparent overlay for the base map showing agricultural facilities.
- 7) 1:75,000 transparent overlay for the base map showing forestry facilities.
- 8) 1:75,000 transparent overlay for the base map showing animal husbandry facilities.
- 9) 1:75,000 transparent overlay for the base map showing the electricity grid.

The team was not able to mark tehsils or subdistricts on the base map because we did not have sufficiently accurate information to permit us to do so. It was not possible to develop a land use map because the researchers lacked adequate materials from which to draw one. It was equally impossible to do a map showing the cropping pattern or irrigated/unirrigated land. It was also not possible to draw a population density map.

A decision was made not to mark planned projects on the map since plans can change and projects sometimes run into political difficulties. No distinction was made on the maps between projects under construction and projects completed, in order to keep the maps current a little longer. Where appropriate, plans are mentioned in the narrative report. These maps will, in any case, require annual revision. New schools or the upgrading of existing schools, roads, health facilities, irrigation schemes, and the like will need to be added, if the maps are to continue to be useful.

## 1. GEOGRAPHY

### A. Topography

Orakzai Agency is a hilly region with fertile valleys. The elevation of the hills varies from over 10,000 feet in the west to less than 6,650 feet in the east. The two major perennial rivers are the Mastura and Khanki Toi, both of which flow eastward. They are fed by numerous smaller streams, many of which are seasonal. The cultivable land is found primarily in the Mastura and Khanki Toi valleys, and in those of their tributaries. The watershed between the Mastura and the Khanki Toi is formed by steep, precipitous hills which prevent easy communication between Lower Tehsil and the other three Tehsils: Upper, Central and Ismail Zai. Fig. I.1 shows Tribal Agency river systems and drainage.

The Agency is bounded by Kurram Agency in the West, Khyber in the North, District Kohat on the South and Peshawar on the East. Generally, elevation of the plains varies from 5200 to 5500 feet above mean sea level. Important peaks are those of Sangla, 6325 feet and Chara Kandao, 5643 feet.

### B. Important Plains

Orakzai Agency consists of small plains with a low gradient along both banks of the Mastura river. These plains are further subdivided by streams joining the main Mastura river. These plains are fertile. Agriculture is practised throughout the plains. Presently agricultural cultivation in most parts of these plains is rain dependent. Some parts of the plains are being irrigated by irrigation channels taken out from the Mastura river and its tributaries.

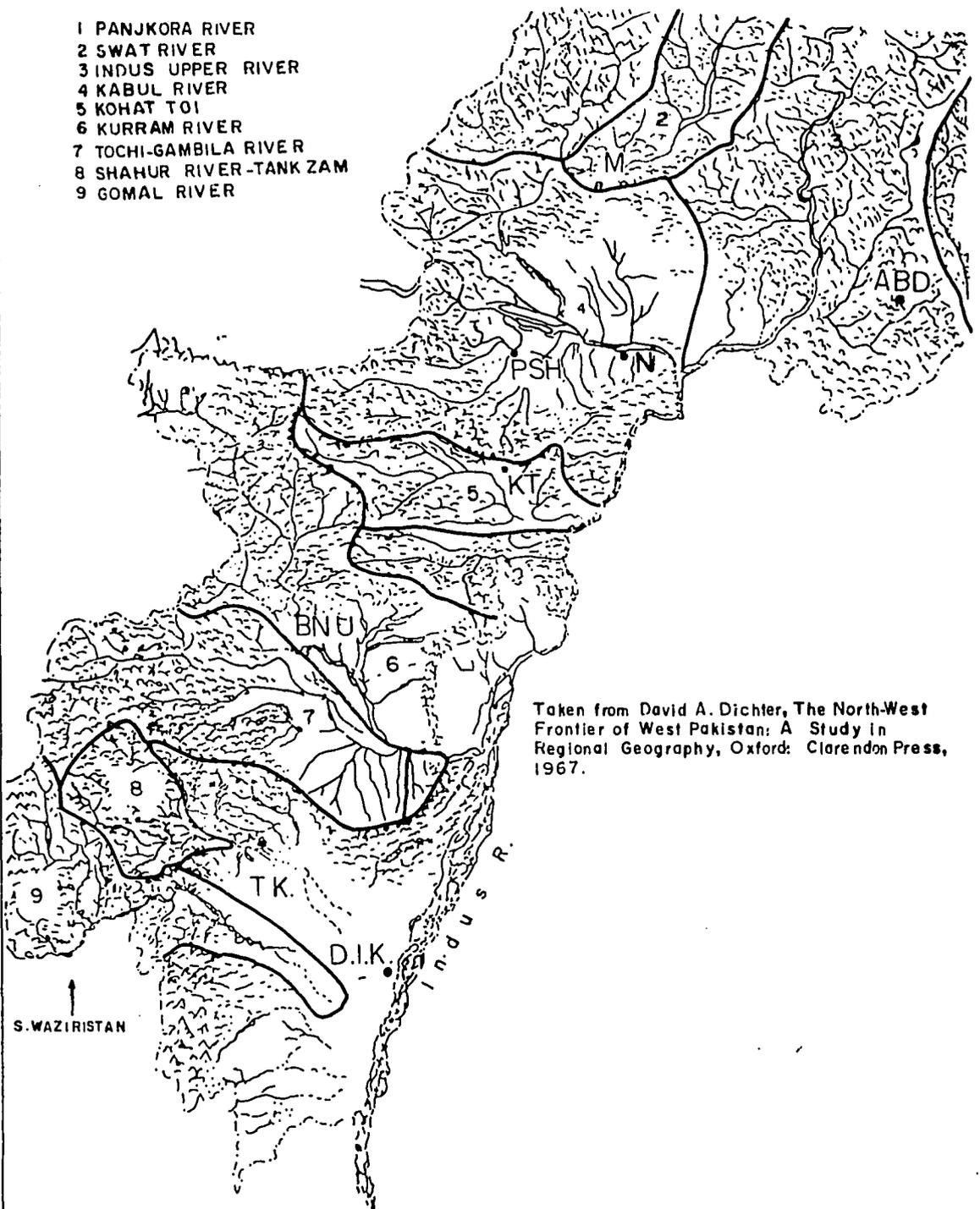
### C. Climate

Orakzai Agency is characterized by intense cold in winter when the temperature falls below freezing, and mild summers. December, January and February are the coldest months and snowfall occurs in these months. Summers are mild and the maximum temperature does not go above 30 degree C. Surrounding mountains are covered by dense and thick forests which produce a cooling effect in summer.

### D. Rainfall

Due to Orakzai's geographical position and its thick forest cover, it rains throughout the year. In winter, the precipitation is in the form of snow over the surrounding mountains as well as in the valley itself. There are no rain gauges but rainfall is presumed to be around 36" per annum. Fig. I.2 illustrates rainfall and Fig. I.3 shows the various climatic

- 1 PANJKORA RIVER
- 2 SWAT RIVER
- 3 INDUS UPPER RIVER
- 4 KABUL RIVER
- 5 KOHAT TOI
- 6 KURRAM RIVER
- 7 TOCHI-GAMBILA RIVER
- 8 SHAHUR RIVER-TANK ZAM
- 9 GOMAL RIVER



Taken from David A. Dichter, *The North-West Frontier of West Pakistan: A Study in Regional Geography*, Oxford: Clarendon Press, 1967.

FIG 1.1: The N.W. Frontier: Drainage and main River Systems

1a

regions based on rainfall probability and temperature.

#### E. Geology

The area of Feroz Khel plains is surrounded by the rock units of Kohat pothwar, varying in age from lower Jurassic to Eocene. The rocks are mainly composed of shale, marl, limestone and sand stone. The structural formation in Orakzai Agency is east-west, with marked deviation visible in Sepeh and the Utman Khel area, where the general trend is to the north west. Strictly speaking in geological terms, 13 different rock units have been identified in Orakzai Agency, and these are related to the Kohat hills and salt range. The following three units predominate in the Agency.

1. Lockhart limestone
2. Hangu formation
3. Samana suk limestone

Samana suk lime stone is exposed in the southwestern part of Feroz Khel plain and has direct contact with Hangu formation. The lower part of Hangu formation is ferruginous sand-stone and the upper part is thin to medium budded limestone, shale and marl. The Hangu formation is mostly unfossiliferous, and based on this, the formation is thought to date from the Paleocene age. The Hangu formation is overlaid by Lockhart limestone having faulted contact with each other. On the eastern part of the Feroz Khel plain, some rock formations are exposed with a general eastwest trend.

#### F. Latitude and Longitude

The Agency lies within latitude 33 degrees north and longitude 70 degree east.

#### G. Minerals\*

The geological study of Orakzai Agency was conducted under the scheme "Investigation and Large Scale Mapping in Mineral Bearing Areas" sponsored by the FATA Development Corporation in October 1976.

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 \*Much of the information in this section is taken from "Records of Federally Administered Tribal Areas Development Corporation Peshawar Volume II, Geology of Orakzai Agency Pakistan", by M. A. Rabbani, 1978, NWFP/Peshawar.

The study resulted in the discovery of coal, alum, phosphate and iron ore. Iron is scattered throughout the Range in fairly sizeable deposits.

Iron is found in Cretaceous and Palaeocene rocks throughout the Agency. The Cretaceous rocks (Chichali formation) contain 14.38 percent iron with an average of 20 percent in lean deposits. Iron ore bed is also exposed near Shimar Killi, Sultanzai and adjoining with fairly good lateral extension and thickness. Approximate iron ore reserves are listed in table I.1.

Table I.1

IRON ORE RESERVES				
Formation	Age	Locality	Grade	Reserves
Chichali	Cretaceous	Kurez	Low	2.3 Million Tons
Chichali	Cretaceous	Shimar Killi	Low	0.4 Million Tons
Hangu	Palaeocene	Karbogha	Medium	3 Thousand Tons

Alum is present near village Bar Trangura in the quartzite sandstone of the Hangu formation. Coal is found in bands south of Dauli and Lwara Mela villages. The coal-bearing horizon (Palaeocene) near Dauli is approximately 50 feet long and 7 to 8 feet thick. It is soft and odorless, containing 43.48 to 43.83 percent carbon. Coal at Lowara Mela (Eocene) forms 6 inches to 8 inches of thick bands in white quartzite sandstone with 47.22 percent carbon.

In 1986-87, studies were conducted on coal deposits of Orakzai Agency in collaboration with Geological Survey of Pakistan. Main attention was given to coal as it was commercially exploitable. Coal is confined to Hangu formation of Palco coverage. Results of these studies were encouraging. Another scheme "Prospection and Evaluation of Coal" is being prepared in order to undertake the work of estimating reserves.

NWA - N. Waziristan  
 SWA - S. Waziristan

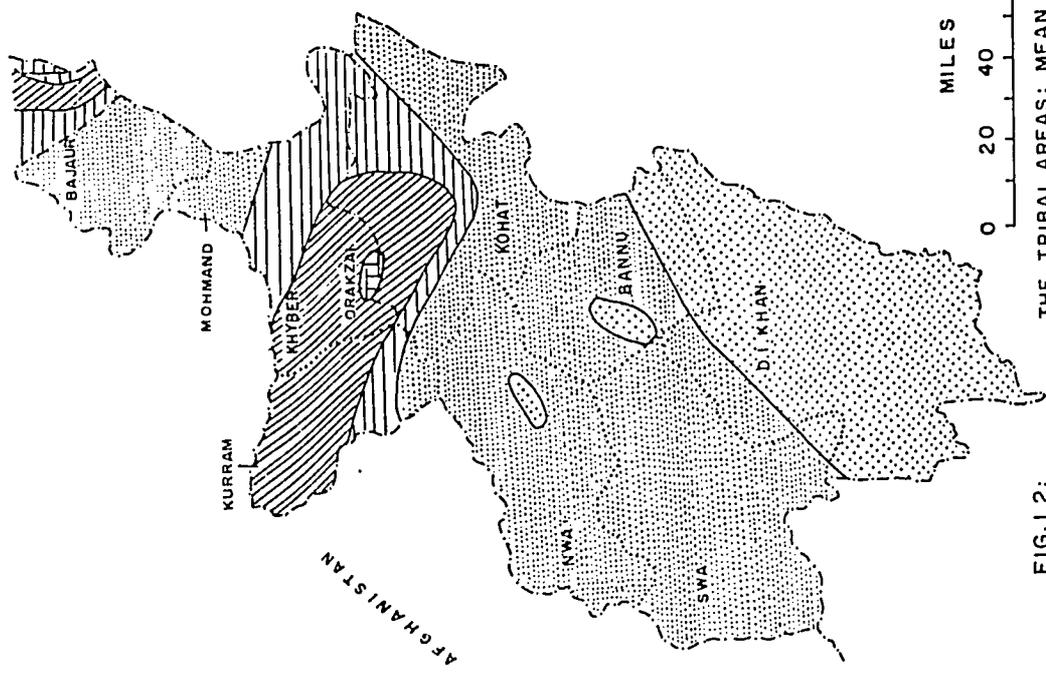
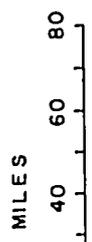
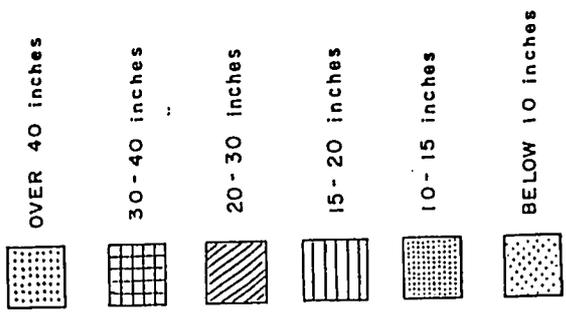
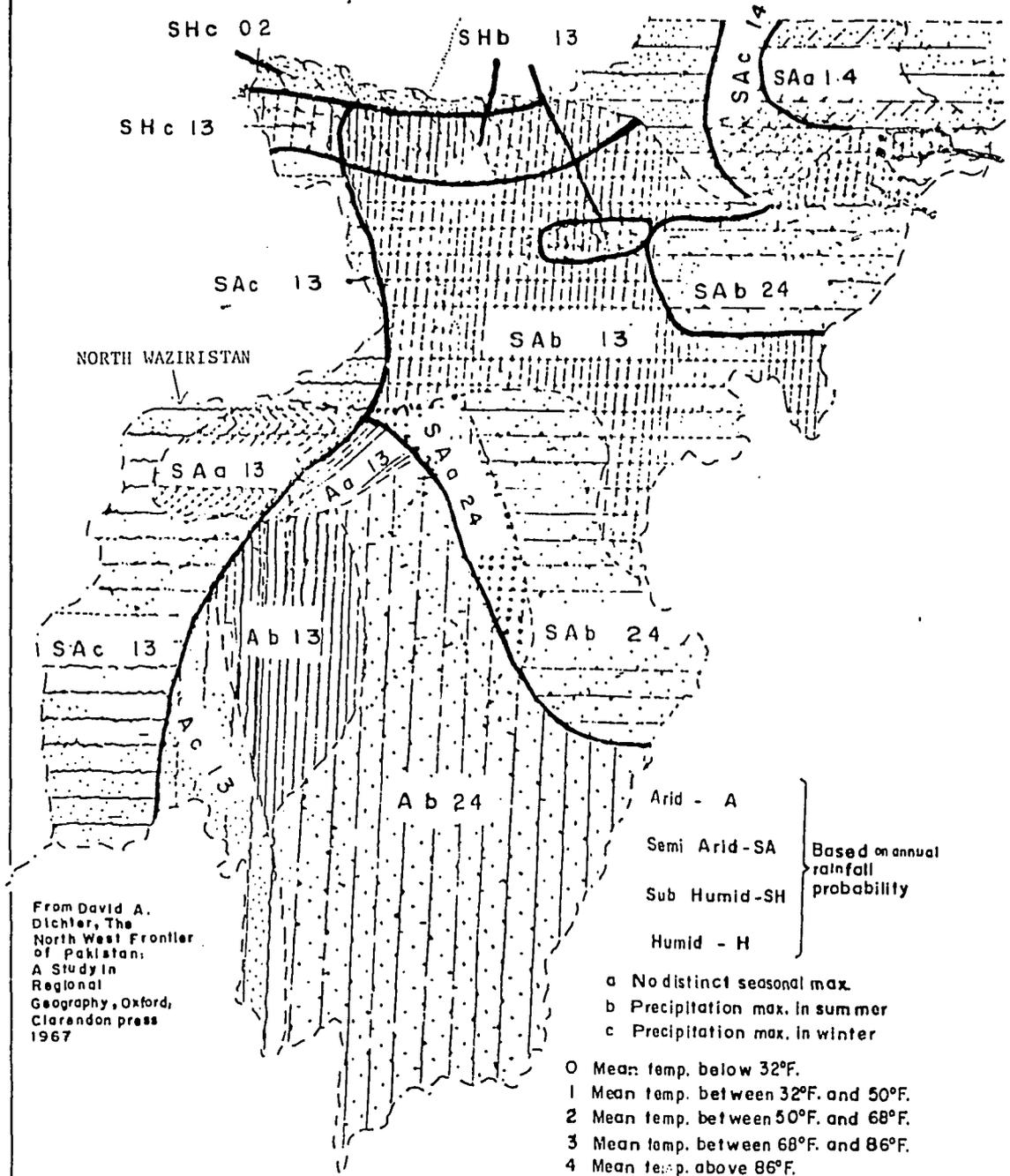


FIG. 1.2: THE TRIBAL AREAS: MEAN ANNUAL RAINFALL  
 Taken from David A. Ditcher, *The North-West Frontier of West Pakistan: A Study in Regional Geography*, Oxford: Clarendon Press, 1967.



From David A. Dichter, The North West Frontier of Pakistan: A Study in Regional Geography, Oxford, Clarendon press 1967

FIG-1-3: CLIMATIC REGIONS IN NWFP.

## II. ADMINISTRATION AND ECONOMY

### A. Administration

Orakzai Agency takes its name from the Orakzai Tribes inhabiting the area. This Agency was established on December 1, 1973 and comprises areas inhabited by the Orakzai and Daulatzai Tribes formally included in the Tribal Areas adjoining Kohat District and Hangu Tehsil. The Agency is bounded on the north by Khyber Agency, on the east by the Tribal Area adjoining Kohat District, on the south by Kohat District, and on the west by Kurram Agency. The Agency Headquarters was established at Hangu which is outside the Agency.

A separate Agency was created due to the long time demand of people of this area for a separate administrative structure that could bring more rapid development. Initially, Dabari area of Upper Tehsil was selected as the headquarters for Orakzai Agency. However, the people of Dabari did not give land for the construction of government buildings; therefore, Kalaya was selected as a second choice. Considerable construction was undertaken to establish offices for the political authorities and concerned line agencies at Kalaya. These offices at Kalaya, however, functioned only from February 1984 to August 1984. The inhabitants of Upper and Central Tehsils refused to go to Kalaya. The reasons put forth were 1) the complete isolation of Kalaya in the case of sectarian clashes (Kalaya is a Shia area); and 2) difficult access for the people of other areas to Kalaya because of the lack of good roads and a transport system. Later on, it was decided to establish headquarters buildings at Hangu, which is part of the settled area adjacent to Orakzai Agency. Hangu is easily accessible from many parts of the Agency and is viewed by all in the Agency as neutral territory. Now the Tehsil headquarters of Lower Tehsil are at Kalaya, and only the Agriculture Department has its Agency office at Kalaya. The rest of the line agency offices are at Hangu.

The Agency administration is headed by a Political Agent based at Hangu. The Agency has been divided into two sub-divisions and each sub-division consists of two tehsils.

Sub-divisions	Tehsils	Tehsil headquarters
Upper Orakzai	Upper Tehsil	Ghaljo
	Ismail Zai Tehsil	Samana
Lower Orakzai	Lower Tehsil	Kalaya
	Central Tehsil	Togharam

See the frontispiece map for tehsil boundaries.

Each subdivision is headed by an Assistant Political Agent, while a Political Tehsildar is in charge of each Tehsil. For small sized tehsils, the Political Naib Tehsildar is in charge. Ismailzai and Central Tehsils are small in area so Naib Tehsildars are in charge of these. Upper and Lower Tehsils are headed by Political Tehsildars. The Political Agent has a staff of one superintendent, two stenographers and a few clerks. Assistant Political Agents (APA) usually have a staff consisting of a reader, stenographer and political Muharars, while Tehsildars are supported by a few clerks.

Orakzai Agency formally includes a small area that is not physically part of the Agency. The Biland Khel tribe occupies the Biland Khel area (a small pocket measuring 2-1/2 miles) which lies a couple of miles from Thall (Kohat District), in between Thall and North Waziristan Agency on the right bank of river Kurram. Its population of about 5,000 consists of the Lodiani, Adizai, Palmat Khel, Masti Khel and Piran clans which are stated to have come from different places and settled here in the remote past. Before 1931, they were attached to North Waziristan Agency but they did not enjoy the status of a tribal area. During the period 1935-37, they were attached to Kohat District. With the creation of Orakzai Agency, the area somehow or other formally became attached to Orakzai. Administratively, the area is part of Ismailzai Tehsil of Orakzai Agency.

Almost the whole of Orakzai Agency is accessible except Manazai area. Development schemes are carried out in most parts of the Agency. Lower Orakzai Sub-Division is relatively more developed, accessible and stable than Upper Orakzai Sub-division.

#### B. Economy

There are no general indicators that can help us gain a sense of Agency productivity, the contribution of various sectors to productivity, remittances, employment, the economic impact of refugees, or income. Estimates made of agricultural production are problematic and may understate or overstate true production.

Agriculture and remittances are probably the two most important sources of income for the vast majority of inhabitants. Enlisting in the militia and army has also been a traditional source of employment and it is still important. Short-term unskilled employment on development projects (roads, irrigation systems, etc.) and longer term employment as chowkidars on some schemes have become more important during the last two decades. There is virtually no mining or industry. The Agency appears to lack both the skilled manpower and the raw materials that would be needed to support the development of successful industrial enterprises.

No data are available concerning the amount of remittances coming into the Agency annually. Exact numbers of Agency residents abroad are not available. As elsewhere in Pakistan, the total amount of remittances has declined in recent years and more especially in recent months owing to decreased job availability in the Arab petroleum-exporting countries. The Ministry of Labour, Manpower and Overseas Pakistanis reported in 1990 that returning migrants outnumbered those who were emigrating for work. This is particularly true of the unskilled and semi-skilled, as most of Orakzai migrants would be classified. Those migrants who are working in Dubai and the UAE remain unaffected by recent events (1990) in the Gulf; but those who were in Kuwait or Iraq have been forced to leave. Often they have lost their savings as well as their jobs, and those who have returned recently to Orakzai are now finding it difficult to adjust to a subsistence lifestyle. Others who were able to invest their funds productively are better off. Transport vehicles in Daboori are owned by local residents. It is probable that many of those who can no longer emigrate abroad for work choose or may choose to go to Karachi or another major city in Pakistan. However, remittances earned in Pakistan are substantially lower than those earned overseas.

In general, remittance monies have probably not been invested productively, in part because of the lack of opportunities in the Agency. Perhaps most remittances were and still are spent on marriage; building a Pucca house; buying a truck, van or tractor; opening a shop, and purchasing consumer goods. Those with considerable funds might buy land in the settled area and build a house for rent or a hotel. Investment in agriculture seems to have largely been limited to the purchase of agricultural machinery. Investment in trucks and buses is productive, so are tractors which can be given on hire.

With respect to agriculture, very little Agency land is cultivated but a considerable amount of land that is farmed is used to produce hashish as a cash crop. People do have livestock but do not raise animals on a commercial basis. Animals are kept largely for family use.

There are no big bazaars in Orakzai Agency. There are a few small bazaars consisting of 20 to 30 shops in each bazaar. These small bazaars are mainly at Kada, Mishti Mela and Ghaljo. The Ghaljo bazaar is threatened by annual floods that have already consumed much of the low-lying agricultural land in the area. The shops sell miscellaneous goods of daily use, such as groceries, cloth, fruit, medicine, etc. On every Friday, each of these bazaars turns into a big bazaar as villagers from surrounding villages come to sell and buy goods. There is also a small wood market at Sangra where mostly fuel wood is sold. Many Orakzai residents have shops

at Hangu where most of the tribesmen come for shopping. Hangu, as noted, is equally accessible from Upper and Lower subdivisions.

There are prospects for tourism but due to security reasons, lack of education and a closed culture, it is difficult to exploit these prospects.

There are three branches of nationalized banks, one each at Kalaya, Ghaljo and Kara. There is one vocational training institute at Kalaya. Buildings for a Technical College are complete at Ghalaka Mela but the institute is not in operation yet.

As Orakzai Agency has no border with Afghanistan, smuggling, except for hashish, is not a major source of income.

### III. POPULATION

#### A. Government Census Data

The 1981 Population Census reports the population of Orakzai Agency as 358,751. The population was divided among four tehsils as follows:

Tehsils	Population	% of Total Agency Population
Central Tehsil	103,505	29%
Ismailzai Tehsil	48,116	14%
Lower Tehsil	71,582	20%
Upper Tehsil	135,548	37%

In 1981, Orakzai was the most densely populated Agency of all Tribal Agencies. It had a population density of 233 persons per square kilometer. By contrast, South Waziristan Agency had a population density of only 46.7 persons per square kilometer. Fig. III.1 shows comparative density in FATA.

The overall sex ratio was 115.3 at the time of the Census. Central Tehsil had the highest sex ratio of 135.3 whereas Ismailzai tehsil had the lowest sex ratio of 95.9 males per 100 females. The overall sex ratio suggests that women were undercounted and/or that female mortality rates may be very high.

About 34 percent of the total Agency population was under 10 years of age and 54 percent under 15 years of age at the time of the 1981 Census. This shows a very high dependency ratio and the young age structure of the population.

The Agency's average household size was 11.3 persons. In Central Tehsil, it was 15.4 persons, the highest of all other tehsils. Ismailzai Tehsil had average of 8.4 persons per household. The Agency as a whole had the largest household size as compared to other Agencies. It is hard to know, however, whether fertility is higher or whether there is more pressure on housing. High population density might support the latter as a reason for such large household size.

#### B. Population Growth

The intercensal growth rate from 1972 to 1981 was recorded as 26.5 percent. This indicates that the population increased by 75,194 from 1972 to 1981. The average annual growth rate used from 1972 to 1981 was 2.8 percent.

To determine the present growth rate from 1981 through 1991, this intercensal average annual growth rate of 2.8 percent has been used. This growth rate would give a 1991 population of 472,851 or an increase of 114,100 people since 1981.

### C. Literacy

The Literacy rate in Orakzai Agency is low, as elsewhere in FATA. In 1981, 3 percent of those ten years of age and older were literate. The Agency had the lowest literacy rate of all Tribal Agencies. Lower Tehsil had the highest literacy rate of 4.35 percent among all Orakzai tehsils. Central, Ismailzai, and Upper Tehsils lag behind the Lower Tehsil due to their very low female literacy rate. About 5,254 males and 198 females or 1.52 percent of the population had completed at least primary school education in 1981.

Among males, Lower Tehsil had the highest literacy rate of 7.5 percent, and Upper Tehsil had the lowest rate of 3.1 percent. Among females, Lower Tehsil again had the highest literacy rate of 1 percent, and Ismailzai tehsil had the lowest rate of 0.5 percent. Table III.1 below explains these details further.

Table III.1

#### LITERACY OF POPULATION 10 YEARS OF AGE & ABOVE IN 1981

Tehsils	Population	Illiterate	Literate	Percent Literate
Central:				
Males	137,240	130,769	6,471	4.71
Females	98,591	97,906	685	0.69
Ismailzai:				
Males	14,857	13,917	940	6.32
Females	13,787	13,718	69	0.52
Lower:				
Males	25,288	23,404	1,884	7.45
Females	23,439	23,202	237	1.01
Upper:				
Males	55,022	53,329	1,693	3.07
Females	34,769	34,452	317	0.91

#### D. Religious & Tribal Groups

The Agency population is almost entirely Muslim. In 1981, the Census counted 105 Christians. The Muslim population of 10 years and above was 235,618, out of which 39 percent could read the Holy Quran. Among this, 28 percent were males and 11 percent were females.

The Agency has two main Islamic sects: Sunni and Shia. Lower Tehsil is a mixture of both sects. The other three tehsils are entirely Sunni. According to the 1981 Census, Lower Tehsil had a total Shia population of 31,777, or 44.5 percent of the tehsil population. Only 8.8 percent of the Agency's population is Shia.

The most numerous tribal group is the Ali Khel, a Sunni group. The Ali Khel are economically dominant in Upper tehsil in particular but generally in the Agency as a whole. Ali Khel tribe had a total population of 64,253 in 1981. In Central Tehsil, Mishti is the predominant tribal group. According to the Assistant Political Agent, the Agency at this writing is calm as far as clashes between tribal groups and religious sects are concerned. There have in the past been sectarian problems, with the most recent serious tensions occurring after General Zia's death in 1987.

Each tehsil has various tribal groups. The groups according to the 1981 Census are shown in Table III.2.

Table III.2

#### Tribal Groups in Tehsils

Tehsils	Groups	Males	Females	Total
Ismailzai	Biland Khel	2,052	2,339	4,391
	Ali Khel	7,576	7,750	15,326
	Rabia Khel	10,829	11,465	22,294
	Daradar Mamazai	2,868	2,885	5,753
	Sada Khel	177	175	352
Central	Issa Khel	2,717	2,198	4,915
	Mishti	34,193	24,566	58,759
	Sheikhan	22,182	17,649	39,831
Upper	Ali Khel	37,012	27,241	64,253
	Mullah Khel	21,186	19,262	40,448
	Mamrazai	13,739	14,866	28,605
	Khud	520	458	978
	Ibrahim Khel	322	269	591
	Khanki Issa Khel	365	308	673

Tehsils	Groups	Males	Females	Total
Lower	Sturi Khel	2,642	3,627	6,269
	Khowa Sturi Khel	2,028	2,197	4,225
	Mani Khel	5,872	5,007	10,879
	Sepoya	2,589	2,751	5,340
	Bar Mohd. Khel	11,634	9,657	21,291
	Utman Khel	3,264	2,485	5,749
	Feroz Khel	3,854	5,574	9,428
	Bexoti	1,521	1,887	3,276
	Baramzai	571	641	1,212
	Sultanzai	1,166	1,219	2,385
	Kalaya Saiden	445	506	951
	Mandara Khel	203	242	445

## IV. REFUGEES

Orakzai Agency has no border area linked with Afghanistan and it is already very densely populated. Both factors have limited the number of Afghan refugees living in the Agency. There are only two camps in Orakzai with the following populations:

S. No.	Camps	Number of Families	Individuals
1.	Ghaljo-1	1199	8098
2.	Ghaljo-2	784	5319

These two camps were established in Ghaljo area of Orakzai Agency in 1981. These are located at a distance of three miles from each other. Due to very limited numbers, these refugees do not cause major problems for locals or the environment. The refugees have mainly moved southeast from Kurram Agency, and originally came from Paktia, Logar and Paktika provinces of Afghanistan. The distribution of these refugee families by tribe is given below:

S.No	Tribes	Number of Families
1.	Tata Khel	800
2.	Ahmad Zai	238
3.	Kugyani	424
4.	Shinwari	172
5.	Hasan Khel	22
6.	Zari	9
7.	Mangel	38
8.	Mian Khel	13
9.	Nasir	52
10.	Sulat Khel	24
11.	Dolat Zai	53
12.	Khilji	2
13.	Esa Khel	17
14.	Akbar Khel	4
15.	Safi	6
16.	Sali Khel	15
17.	Utman Khel	95

These refugees live in small katcha huts and sometimes obtain casual employment as laborers in construction or agriculture.

Registered refugees are provided with food (flour, dry milk, edible oil) on an individual basis and kerosene oil on a family basis. Because of declining foreign assistance, sugar, cloth and the maintenance allowance have been cut. The supply of kerosene has become erratic. During the July-September 1990 repatriation scheme of the United Nations, no refugee family living in Orakzai was reported as having gone back to Afghanistan.

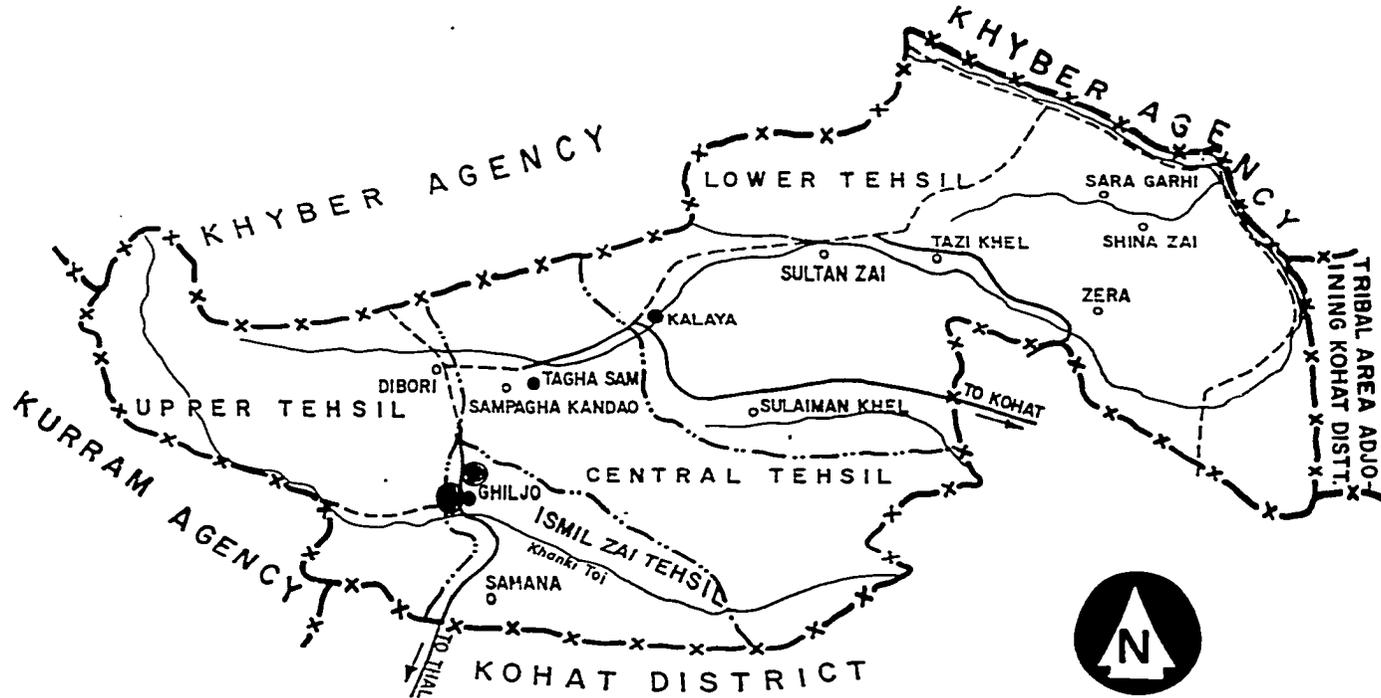
There is one Basic Health Unit (BHU) for both males and females. It serves both camps. There is one male doctor assigned to the BHU, and there are no female paramedical staff. There are two primary schools, one middle school and one theological school in the camps. These are all kacha constructions. There is one UNHCR water scheme which provides camp-1 with 16 water tanks and camp-2 with 6 tanks.

The Political Agent is the Agency Administrator for Afghan refugees. The office of the Afghan Refugee Administrator is located on the premises of the office of the Political Agent at Hangu and consists of an Accountant and few clerks. There is one Refugee Village Administrator (RVA) in each camp, and he lives in the camp to which he is assigned.

Fig. IV.1

# ORAKZAI AGENCY

## REFUGEES CAMPS



### REFERENCES

AGENCY BOUNDARY	-- x --
TEHSIL BOUNDARY	.....
METALLED ROAD	————
TRACKS	- - - -
RIVER/NALA	~~~~~
REFUGEES CAMPS	●

SCALE 1:333,333



130

## V. LAND USE

Orakzai Agency is a semi-arid zone consisting of 379,943 of area. Out of this area, approximately 90 percent is unavailable for cultivation, due to hilly terrain.

The average rainfall is estimated at 36 inches and the mountains receive snowfall. The Agency is drained by the Mastura and Khanki streams. The source of the streams is from exfiltration of ground water and snow melt from the mountains. Due to excessive bed slopes and flash floods the rivers have scoured the banks. Central and Lower Tehsils and the right bank of these streams are covered with forests.

It has been observed that the soils of Orakzai Agency are fertile and good for agriculture. These soils are well drained except in a few areas.

There is good surface and ground water availability for agriculture.

Land use statistics are shown in Table V.1.

Beginning with 1981-82, the land use statistics show a substantial decrease in cultivated acreage for the Agency, from 39,800 acres to 24,710 acres. The cropped area also shows a decrease of more than 50% from 1980-81 to 1981-82, to 24,000 acres. Land use statistics for other Tribal Agencies also show a sharp change in cultivated area for the year 1981-82. We can only presume that these changes in the statistics were the result of new information, obtained from an aerial survey or satellite imagery. In general, estimates since 1981-82 are probably more reliable, although there are some problems with them.

Statistics for 1987-88 show that approximately six percent of the total Agency land area is cultivated. The cropped area in the Agency is 24,068 acres. The cropping intensity is 100 percent. The above cropping intensity could perhaps be raised to 175 percent with inputs of more water through the realization of new irrigation schemes or rehabilitation of existing schemes.

Table V.1

Land Utilization in Orakzai Agency, Selected Years, 1974-1990 (in acres)						
Land Use	1974-75	1981-82	1982-83	1986-87	1988-89	1989-90
Total Area	379,943	379,943	379,943	379,943	379,943	379,943
Cultivated Area	39,800	24,710	24,710	24,680	23,969	27,305
Net Sown	38,000	23,218	13,492	14,826	15,172	14,950
Current Fallow	1,799	1,492	11,218	9,854	8,797	12,355
Cropped Area	57,001	24,957	21,794	23,845	24,068	24,068
Area Sown More Than Once	19,000	1,740	8,303	9,019	8,896	9,118
Uncultivated Area	-	355,233	355,233	355,263	355,975	352,639
Culturable Waste	2,829	2,740	2,740	2,718	2,718	2,718
Forest	-	759	759	810	1,982	1,982
Unavailable for Cultivation	-	351,734	351,734	351,734	-	349,939
Percentage of Total Area that is Cultivated	10.5%	6.5%	6.5%	6.5%	6.3%	7.2%
Percentage of Cultivated Area that is sown	95%	94%	55%	60%	63%	55%
Percentage of Cultivated Area that is Fallow	5%	6%	45%	40%	37%	45%

## VI. AGRICULTURE

### A. Farm Population and Landholdings

The 1980 Agriculture Census (based on a sample survey) recorded a farm population of 174,291, which was 45% of the total population of the Agency as counted in the 1981 Population Census. One might have expected a larger percentage of the population to be engaged in farming in the year 1980.

The predominant pattern of land holding in Orakzai Agency is of small, fragmented farms concentrating on subsistence crops or hashish. In Orakzai, the smallest holders appear to be slightly better off in terms of farm size relative to other Tribal Agencies. The average size of farm holdings under 2.5 acres was 1.3 acres in 1980. In North Waziristan and Kurram, where the percentage of small farms was larger, the average size of farms under 2.5 acres was 1.04 acres for both Agencies. In terms of farm family members, 45% were living on less than 2.5 acres. This is an improvement over Kurram (53%) (although a greater portion of Kurram's land would be irrigated) and North Waziristan (69%), but it compares unfavorably with South Waziristan (37%). Table VI.1 compares the land holding pattern in four Tribal Agencies.

Orakzai stood second among four Tribal agencies with respect to the percentage of farms classed as medium-sized holdings (from 2.5 acres to under 7.5 acres). It had the smallest percentage of farms classed large holdings (25 acres and above), and large holdings occupied the least amount of cultivated land. These statistics demonstrate that ownership is perhaps most egalitarian in Orakzai, followed by Kurram, North Waziristan and then South Waziristan Agency.

In all the FATAs, farm fragmentation is a factor which limits the efficient use of machinery and labor, thus reducing productivity. High birth rates and inheritance laws designed to divide land of all types, from fertile to marginal, equitably, combine to result in an ever growing number, but decreasing average size, of farms. When a farmer has to move from one small patch of land to another, possibly located at some distance away, the cost efficiency of farm machines is reduced, and time is wasted in travel. Fragmented farms also tend to be heterogeneous in soil, situation and fertility. In Orakzai, the 1980 Agriculture Census found that 85% of all farms were fragmented into at least 2 pieces, and the percentage of farms that were fragmented increased with the increase in farm size.

Table VI.I:

## Farm Size: Orakzai Agency

Farm Total Size	Under 2.5 acres	2.5-5 acres	5-7.5 acres	7.5-12.5 acres	Above 12.5 acres	Totals
% of Farms	51 %	28 %	12 %	7 %	2 %	100%
% of Cultiv. Land	22 %	29 %	20 %	19 %	10 %	100% Land

## Farm Size: North Waziristan Agency

Farm Size	Under 2.5 acres	2.5-5 acres	5-7.5 acres	7.5-12.5 acres	Above 12.5 acres	Totals
% of Farms	74 %	17 %	5 %	2 %	2 %	100%
% of Cultiv. Land	24 %	17 %	10 %	5 %	44 %	100%

## Farm Size: Kurram Agency

Farm Size	Under 2.5 acres	2.5-5 acres	5-7.5 acres	7.5-12.5 acres	Above 12.5 acres	Totals
% of Farms	61 %	19 %	10 %	6 %	4 %	100%
% of Cultiv. Land	20 %	19 %	18 %	16 %	27 %	100%

## Farm Size: South Waziristan Agency

Farm Size	Under 2.5 acres	2.5-5 acres	5-7.5 acres	7.5-12.5 acres	Above 12.5 acres	Totals
% of Farms	40 %	32 %	14 %	8 %	6 %	100%
% of Cultiv. Land	14 %	23 %	13 %	14 %	36 %	100%

Table VI.2 shows the percentage of farms fragmented by size of holding.

**Table VI.2: Percent of Farms Fragmented Into at Least 2 Pieces**

Total Farms	Under 2.5 ac.	2.5-5 acres	5-7.5 acres	7.5-12.5ac.	5-7.5 12.5	
% of Farms Fragmented	85 %	74 %	96 %	98 %	99 %	100 %

Fragmentation affected over half (53%) of all farms including those smaller than one acre in size. Farms cultivated by owner-cum-tenant were the most highly fragmented, as a consequence of renting land that would be unlikely to be contiguous to the owned land. Table VI.3 shows fragmentation by type of holding.

**Table VI.3: Percent of Farms Fragmented By Tenure**

Type of Farm	Owner Operated	Owner-cum-tenant	Tenant Operated
% of Farm Fragmented	84 %	96 %	80 %

Out of a total farm area of 49,112 acres included in the Agriculture Census, only 3,107 acres were held in units of one piece. The average number of parcels per farm in Orakzai Agency compares unfavorably with the average number of parcels per farm in North Waziristan and South Waziristan. Only Kurram showed greater fragmentation. In Orakzai, even farms under one acre in size were fragmented into an average of 2.5 parcels. Table VI.4 compares farm fragmentation in four Agencies.

**Table VI.4: Average Number of Parcels Per Farm in 4 Agencies**

Agency	Orakzai	North Waziristan	South Waziristan	Kurram
Average Number of Parcels per farm	4.7	3.6	4.4	5.3

Since less than 7% of the total land area of Orakzai is cultivated and the population appears to be increasing at 2.89 percent per year, pressure on cultivated land continues to grow.

The population density in 1980 per cultivated acre was 7.7, and the average farm household size was 8.1. The comparable estimate for North Waziristan average farm household size was 8.2, while in Kurram and South Waziristan it was 10.2 for the same period.

According to the Agriculture Census of 1980, 89% of farm family males aged 10 years and older worked solely for their own households, overwhelmingly in farm work. The rest were either economically inactive or employed elsewhere. Of those holding less than 2.5 acres, 91% of males worked solely in their own households.

### B. General Description

All of the arable land is terraced, and much of it is barani. Land lying adjacent to the river banks is used for irrigated crops, principally rice; however, this land is subject to seasonal flooding, and there is evidence of considerable loss of floodplain land. A monograph on Orakzai written in 1900 mentions that the chief crop along the banks of the Khanki was rice of a good quality.\* However, since 1972, rice has not even been cultivated in Ghaljo, the chief town in the Khanki valley. The bed of the Khankai river at Ghaljo has been reduced to a vast rocky wasteland, and all the low-lying fields have been washed away. Flooding may result from a combination of deforestation and overgrazing, due to greater population pressure; the dry and friable soil; and the narrowness of the upper valleys, which act as funnels for flood waters. It is also possible that some of the soils in the Khanki drainage are saline and do not support enough vegetation to halt erosion, since salt-encrusted rocks are found in some stream beds between Ghaljo and Daboori. By contrast, on the right bank of the Khanki, there are thickly forested hills and visibly less erosion.

The staple crops of Orakzai are wheat and maize. The climate and soil are favorable for the cultivation of fruits and vegetables, but because of a shortage of water, these are rarely grown in significant quantity or on a systematic basis.

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 \* L. White King Monograph on the Orakzai Country and Clans. Indian Civil Service: Punjab Government Press, 1900. Reissued in 1987 by the Tribal Affairs Research Cell of the Home and Tribal Affairs Department, Government of N.W.F.P.

In 1980, the Agriculture Census recorded that 9% of the cropped area in its sample was irrigated. Eighteen percent of the cropped area belonging to farms under one acre in size was irrigated. The percentage of irrigated land falls as farm size increases, but for farms exceeding 5 acres, the percentage of irrigated land rises as farm sizes increase.

Common crop rotations in the Agency are:

Wheat	Cannabis
Wheat	Maize
Wheat	Pulses
Wheat	Vegetables
Wheat	Barley
Wheat	Potatoes
Poppy	Fallow
Cannabis	Fallow
Maize	Rubbi oil seed
Maize	Barley

## C. Crops

### 1. Introduction

The Agriculture Census of 1980 found wheat to be the dominant crop in Orakzai, occupying 48% of the total cropped area in its sample. In 1980, the wheat crop occupied a larger share of the Rabi cropped area in Orakzai relative to North and South Waziristan and Kurram. Table VI.5 shows this comparison.

Table VI.5: Wheat as Percent of Cropped Area in 4 Tribal Agencies

Agency	Orakzai	North Waziristan	South Waziristan	Kurram
% of Total Cropped Area	48 %	60 %	42 %	41 %
% of Rabi Cropped Area	98 %	90 %	92 %	86 %

Kharif crops occupied 50% of the total cropped area with maize accounting for 41% of the total cropped area and 83% of the Kharif cropped area. In 1980 Orakzai had the least variety in its crop mix out of 4 Tribal Agencies. Wheat and maize together accounted for 91% of the total cropped area in Orakzai, 86% in North Waziristan, 74% in South Waziristan and only 56% in Kurram. Only Khyber Agency had a higher percentage of its cropped area in wheat. Table VI.6 compares Maize acreage as a percentage of the cropped area in four Tribal Agencies.

Table VI.6: Maize as Percent of Cropped Area in 4 Agencies

Agency	Orakzai	North Waziristan	South Waziristan	Kurram
% of Total Cropped Area	41 %	26 %	32 %	15 %
% of Kharif Cropped Area	83 %	79 %	68 %	30 %

Other crops raised in Orakzai Agency included potatoes, pulses, red beans, onions, turnips, pumpkins, rubbi oil seed, barley, rice, hashish and fruit.

The smallest farms of under 1 acre grew primarily food grains, while farms between 2.5 and 25 acres in size grew more vegetables and fruit, suggesting that when a farmer has very little land, he concentrates on subsistence crops. While the percentage of wheat cultivation had a positive correlation with the size of farm, the percentage of maize cultivation was almost the same for all categories of farms.

The following acreage shown in Table VI.7 is occupied by food grain crops in the Kharif and Rabi seasons, according to statistics provided by the Agricultural Directorate in Kalaya.

Table VI.7: Acreage occupied by Foodgrain Crops in Orakzai

Crop	Varieties	Acres	% Irri- gated	Ave. Yield MT/Acre
Maize (Kharif)	Swabi, Azam White, Local	9,884	65 %	0.60 ~ 0.80
Rice (Kharif)	Local coarse	274	100 %	0.96 ~ 1.20
Wheat (Rabi)	Pak 81, Pirsabak	13,788	50 %	1.20 ~ 1.60

The figures for percentage of maize and wheat crops irrigated do not seem realistic. The 1980 Agriculture Census reported only 14% of wheat and 9% of maize was planted on irrigated land in 1980. It is improbable that the percentage of irrigated land has risen so substantially in the past decade, especially as erosion of floodplain land has worsened. However, the Agriculture Directorate, Kalaya figures are consistent with the FATA Agriculture Directorate statistics, which report that 60% of the

cultivated land is irrigated. As discussed below under Sources of Data, there are discrepancies between the Agriculture Census figures and the FATA Agriculture Directorate figures that are too great to resolve by reference to the statistics themselves. In this case, field observation (during a survey of sample locations during the 1990 Rabi season) lends support to the statistics reported in the Agriculture Census.

To some extent, discrepancies in reporting may arise from confusion over the local concept of irrigation, which is not always clear cut. When distinguishing irrigated from barani land, farmers were more apt to talk about location or characteristics of the land or soil, than about the source of water. Irrigated land was described as lying alongside streams, as 'cold', free of stones and sand, and having a yellowish color. Barani land was described as sloping. The amount of water available for irrigation appears to depend to some extent on the volume of flow in the streams, which in turn depends on rainfall.

At the highest elevations, maize and wheat are not grown sequentially in the same field, because the length of time the crops take to mature precludes the use the same field for both Kharif and Rabi crops.

A variety of fruits and vegetables are grown, but in insignificant quantities, because irrigation is usually necessary for their cultivation. Even where irrigation exists, vegetables may not be grown because they are thought to use too much water as compared with grain crops.

## 2. Sources of Data

A few words about the sources and reliability of the data used in this profile are necessary before statistics for individual crops are presented. The Agriculture Census estimates for wheat and maize, which are based on a survey, are much higher than the FATA Agriculture Directorate estimates. The Census reported 26,883 acres of wheat and 23,117 acres of maize planted, while the FATA Agriculture Directorate reported 11,614 acres of wheat and 12,824 acres of maize planted in 1980-81. The FATA Agriculture statistics give higher estimates for paddy than reported by the Census for the same period. The discrepancies between the Agriculture Census figures and the FATA Agriculture figures are too large to resolve by comparing the presentation of the statistics.

These discrepancies caution us against relying on either set of statistics, whether those of the Census or of the FATA Agriculture Directorate. None of the areas in the Agency has ever paid any land revenues, so no land records exist, and

estimates are often made casually by agriculture staff who have no accurate means of confirming them. They lack statistical staff and methodology to make adequate estimates of crop acreages. In addition, most of the area in Orakzai Agency is practically inaccessible to agriculture staff due to lack of transportation and shortage of field staff. Finally, the Agriculture Census relied on estimates by farmers of cropped acreage, and not on enumerator measurement, so over-estimates may have been made.

Acreage and production statistics for crops over time may appear rational in FATA Agriculture Directorate reports but sometimes production and acreage estimates show startling increases and decreases, which are very difficult to explain. For some crops in some years identical estimates of acreages for different crops are reported year after year, suggesting that actual field data were unavailable.

### 3. Maize

In the Lower Subdivision, the varieties of maize reported were Swabi white, Azam and "local". In the Upper and Central Tehsils, an indigenous maize classification was reported: sarda, 'cold' and garma, 'hot'. Generally, sarda maize is sown on barani land and garma on irrigated land. However, in Ghiljo farmers reported sowing both varieties on the same land--sarda is sown first, and garma is sown 15 days later, because it germinates more rapidly.

In the Upper and Central Tehsils, farmers said they initially sow corn very densely, and subsequently thin 40% to 50% of the plants for use as fodder. In Ghaljo (Upper Tehsil), farmers said that when they irrigate maize, or when the rainfall is good, they get yields of 1.6-2.0 MT/acre, but that when rainfall is scanty, the yield is only 0.8-1.0 MT/acre. In the Central Tehsil, farmers in Dran (where all the land is barani) reported yields of 0.8-1.2 MT/acre. In Torsmat (also barani), farmers reported only 0.72-0.8 MT/acre even with good rain. The elevation may be a factor; Dran lies at approximately 2,500 ft., but Torsmat lies between 4,000 to 5,000 ft. The average yields for maize reported by the agriculture authorities in Killaya were 0.2-0.32 MT/acre for unirrigated maize, 0.8+ MT/acre for irrigated maize, and an average of 0.6-0.8 MT/acre for the crop as a whole, throughout Orakzai.

Table VI.8 shows FATA Agriculture Directorate statistics for acreage, production, and yields of maize since 1974-75.

Table VI.8: Maize Acreage and Yields in Orakzai Agency

Year	Acreage	Production in MT	Yield (MT/Acre)
1974-75	12,550	--	--
1975-76	6,899	3,505	0.51
1976-77	12,800	10,211	0.80
1977-78	12,800	10,211	0.80
1978-79	12,000	10,211	0.80
1979-80	12,825	10,211	0.80
1980-81	12,825	4,500	0.35
1981-82	12,849	4,500	0.35
1982-83	9,884	3,500	0.35
1983-84	9,884	3,480	0.35
1984-85	11,120	3,945	0.35
1985-86	9,884	3,508	0.36
1986-87	9,884	4,500	0.46
1987-88	-----	-----	-----
1988-89	10,008	4,500	0.45
1989-90	10,131	4,750	0.47

Statistics are inconsistent. Even though acreage and production figures tally, there are unexplained fluctuations. In 1982-83, the acreage fell 23% to 9,884 acres from 12,849 acres, and remained constant for a year; then it shot up by 13% in 1984-85; than fell back to the earlier level and remained constant for two more years. During some periods, the acreage and production figures appear to be simply repeated from the previous year; once from 1976 to 1979; a second time from 1983 to 1984 and lastly from 1986 to 1987. Between 1986 and 1990, figures for acreage and production show a consistent increase.

Yields also show a steep fall between 1979-80 and 1980-81; although they increase again from 1986-87 to 1989-90, they never approach the original level. The yield per acre in 1989-90 is much lower than yields reported by the Agriculture Directorate in Kalaya for the same period.

Since maize yields are substantially lower when the crop is not irrigated, or rainfall is inadequate, it is possible that variations in rainfall account for shifts in yields. However, rainfall fluctuations should not affect acreage to the same extent. If rainfall is the major factor, we would expect to see sharper drops in yields than in acreages; there should also be more fluctuation in yields from year to year.

Poor yields per acre could also be due to local practices such as growing unimproved varieties on barani land, or thinning of maize to provide fodder for cattle. As mentioned above, farmers in three different locations in Orakzai, describing yields on their

own fields, gave widely varying estimates, ranging from a high of 1.6-2.0 MT per irrigated acre in Ghiljo to a low of 0.6-0.8 MT per rainfed acre. But again, variations in such practices ought to affect yields more than acreage.

There are similar problems with other possible explanations for the inconsistencies. Variations in the ratio of vegetables and pulses companion-cropped with maize would affect yields, but not acreage. While there is no accurate data on mixed cropping in the same acreage, the quantity of vegetables and pulses grown is so minimal compared with that of maize, that such fluctuations should not make much difference in the totals. Likewise, the practice of leaving land fallow after poppy cultivation would show up as reduced acreage in years following greater poppy cultivation; but unofficial estimates do not suggest such extensive poppy cultivation.

Unreported production of cannabis is a more likely reason (if in fact there is a reason other than reporting problems) for the erratic fluctuations in both acreage and yields. Both cannabis and maize are grown on barani land during the Kharif season. Cannabis production, however, is never reported, and even cannabis acreage is excluded from land use totals, despite the fact that wheat is subsequently grown in the same fields during the Rabi season. If cannabis production increases, it should show up as a decrease in both maize acreages and maize production, but there should not be a corresponding drop in wheat acreages and production.

If we compare fluctuations in maize and wheat acreages for the ten year period 1977 through 1987, we do in fact find that maize acreages and production fell over time, whereas wheat acreages increased. This ten year period may conveniently be divided into two halves: the first five years, before the 23% drop in maize acreage occurred; and the second five years, during which maize acreages remained low. Maize acreages for the second five years averaged 19% lower than acreages for the first five years. Average wheat acreages for the second five years, however, exceeded those of the first five years by 13%.

Of course, a 19% fall in the acreage under maize does not automatically imply that acreage under cannabis has increased by 19%, since some Kharif acreage would be occupied by rice and vegetables.. However, rice is not grown on barani land, and neither the 1980 Agricultural Census statistics nor the FATA Agriculture Directorate statistics report more than 321 acres under rice in any year, as compared with at least 9,977 acres under maize during the past five years; so at best, rice could not displace more than 3% of the maize acreage. Potatoes could account for the difference: the Agricultural Census reported

2,236 acres under potatoes (2,139 on barani land) during the 1980 Kharif season (as compared with 12,849 acres of maize). However, if cultivation of potatoes displaced maize in 1982-83 (when the maize acreage dropped), the Kharif acreage under potatoes should have more than doubled in the two year period. Unfortunately, FATA Agriculture Directorate statistics report no data at all for potatoes during this period, so this hypothesis cannot be explored further.

Assuming that in any given area, maize, wheat and cannabis are all grown on the same lands, it is interesting to compare average maize acreages with average wheat acreages. During the first five years, 1977-78 through 1981-82, maize acreage averaged 109% of wheat acreage. This ratio was reversed in the second five years, 1982-83 through 1986-87, when maize acreage averaged only 79% of wheat acreage.

Maize acreages and yields for the past decade have remained low. Acreages appear to have stabilized at about 2% higher than their lowest levels, and yields at 30% higher than their lowest levels. It is possible that cannabis production took off in 1982-83, and has become well-established as a crop, but in the absence of reliable estimates for cannabis cultivation, there is no way to confirm this.

#### 4. Rice

Farmers in sample locations surveyed in 1990 reported that only a local coarse variety of rice is grown, and only for domestic consumption. The amount of land available for rice cultivation appears to have diminished considerably during the last 100 years due to loss of riverside fields from flood damage. Since most rice is irrigated, the crop cannot be grown in areas where only barani land exists. In Ghiljo, where flood damage has been very severe, farmers said no rice has been grown since 1972, even though the climate is suitable for it.

The 1980 Agriculture Census, reported on the other hand that rice occupied 1% of the Kharif crop acreage, or 195 acres, of which 87 acres were planted in the IRRI improved variety rice, and 108 acres were planted in "other varieties". According to the Census, only 52% of the crop, or 102 acres, was irrigated. Only 21% of the IRRI improved variety was irrigated, while 77% of other varieties was irrigated.

FATA Agriculture Directorate statistics for the same period show a much higher level of rice cultivation in Orakzai, reporting 321 acres of rice planted in the Agency in 1980-81. Directorate statistics also report that all the rice was grown on irrigated land. For the period of 1986-87, FATA Development Statistics

reported 247 acres under rice, which is fairly consistent with the figure of 272 acres reported by the Agriculture Directorate at Kalaya.

### 5. Wheat

Winter wheat is a subsistence crop grown for domestic consumption. In Lower Tehsil, the varieties of wheat reported were Pak 81 and Pirsabak 85. In Upper and Central Tehsils, farmers report growing Mexipak, which is locally known by the names Meshtipak and Nestipak. The latter name reveals the popularity of this variety, since nesti means 'poverty', and Nestipak translates into 'that which removes poverty'.

In Ghaljo (Upper Tehsil), farmers said that they obtained yields of 1.6-1.76 MT/acre for MexiPak. Data for yields were not available in Dran, but the variety planted was Mexipak. In Torsmat, farmers reported only 0.12-0.24 MT/acre, also for Mexipak, depending on the amount of rain. Dran lies at approximately 2,500 ft., and Torsmat lies between 4,000 to 5,000 ft. The average yields for wheat reported by the agriculture authorities in Kalaya were 1.2-1.6 MT/acre for the crop as a whole, throughout Orakzai. The Kalaya figures are consistent with the yields reported at Ghiljo, but differ considerably both with the yields reported at Torsmat and the FATA Agriculture Directorate statistics for acreage, production, and yields of wheat from 1974-75 to 1986-87.

The amount of acreage reported under wheat as shown in Table VI.9 remained relatively consistent between 1977-78 and 1986-87, reflecting the fact that wheat accounts for all but two percent of the Rabi crop.

**Table VI.9: Wheat Acreage and Yields in Orakzai Agency**

Year	Acreage	Production in MT	Yield (MT/Acre)
1974-75	8,999	2,235	0.25
1975-76	4,999	985	0.20
1976-77	4,999	985	0.20
1977-78	11,001	4,571	0.42
1978-79	11,001	4,590	0.42
1979-80	11,614	4,782	0.41
1980-81	11,614	4,782	0.41
1981-82	11,614	4,782	0.41
1982-83	11,614	4,782	0.41
1983-84	11,737	4,266	0.36
1984-85	13,591	4,941	0.36
1985-86	13,591	4,972	0.37
1986-87	13,591	4,980	0.37

## 6. Vegetables

According to information provided by the Assistant Director of Agriculture in Kalaya, the following vegetables are cultivated in Orakzai Agency during the Kharif season: beans (red, mung and mash); potatoes, onions, tomatoes, chilies, garlic, turnips, eggplant, cucumber, cauliflower, spinach, cabbage, and radish. In mainly barani areas, however, vegetables are not grown regularly because they require too much water. In such areas, the only vegetables grown are potatoes, onions, tomatoes, or chilies; and sometimes, red beans. Another reason farmers are reluctant to grow vegetables, according to the Assistant Director, is that they tend to be stolen at night.

The only vegetable crop grown commercially is potatoes, which are said to be of a good quality. The 1980 Agricultural Census reports a total of 2,248 acres of potatoes, of which 99% were grown during the Kharif season, and 95% were unirrigated. Ninety-one percent of the crop was grown by farms of medium size, or between 7.0 and 12.5 acres.

## 7. Cannabis

Cannabis is a Kharif crop grown on barani land; according to unofficial estimates, over 500 acres are devoted to cannabis, and certain fields are set aside for this purpose. Almost all of the cannabis cultivation is in the Lower Tehsil. Production of cannabis is not reported and cannabis fields are excluded from land use totals even though wheat is grown in the same fields during the Rabi season.

## 8. Other Crops

### a. Fruit

According to information provided by the Assistant Director in Kalaya, the following types of fruit are grown: apples, pears, peaches, persimmons and walnuts. During the winter, a small amount of citrus is grown in low-lying areas. Except in Lower Tehsil, fruit is grown only for domestic consumption, and the trees are not grown in regular orchards. Nurseries have been established in Lower Tehsil, and there is farmer interest in fruit cultivation; but interest is constrained by lack of water for irrigation.

The 1980 Agricultural Census reports a total of 9,638 farms reporting fruit trees, for a total of 202,961 trees, out of which 27% were growing in orchards, and the balance were scattered. The most popular fruit was walnuts, followed by apricots, apples, and pomegranates.

#### b. Soybeans and Peanuts

Eight acres of soybeans and three acres of peanuts were grown in 1990 on an experimental basis in Lower Tehsil. Soybeans are reported to be gaining in popularity; they currently fetch Rs. 200/md. and do not need to be transported to market, since the oil extractors send purchasers to buy the crop in the fields.

#### c. Mustard

Mustard is grown in the Central Tehsil on land previously sown with maize. It is sown in the summer and harvested in the winter, and used as a source of edible oil. Neither the Agriculture Census nor the FATA Agriculture Directorate statistics report information about acreage under mustard in Orakzai Agency.

#### d. Olives

Olive trees grow wild on the mountain slopes throughout the Agency, and the FATA Agriculture Directorate has initiated olive tree grafting and budding. However, limited resources have constrained success.

#### D. Marketing

There are almost no data on marketing of crops. Since most cultivation is of subsistence food grains, there is little commercial farming. Surplus fruit and vegetables, mainly potatoes, are sold in bazaars in the major towns; but it is not known whether middlemen are involved, or how the transaction and transportation of the goods is handled. Soybean oil extractors send purchasers to buy the crop in the fields. Cannabis is efficiently marketed by networks of smugglers.

#### E. Farm Labor

Except in the Lower Tehsil, farmers reported that all the work of cultivation is done by members of the family which owns the land. In the Lower Tehsil, some work is performed by hired workers. The Pakistan Census of Agriculture (1980) reports a total of 364 permanently hired workers for 161 reporting households. As the landholding pattern is characterized by small holdings, there appears to be little need for hired labor.

## F. Farm Power

Income remitted by family members working in the Gulf States has made it possible for some families to invest in tractors. These are used to plow fields, level land, and for transport; they are also rented out to other families. The tractor population in Orakzai Agency in 1986-87 was 27, according to FATA Development Statistics. This number has probably increased in the last three years. Where tractors are not available, fields are plowed by bullocks.

The number of mechanical threshers is not known, but grains are threshed both mechanically and by collective manual effort.

## G. Agricultural Inputs and Services

### 1. Improved Grain Seed

The Agriculture Department buys seed directly from farmers and sells at cost, bearing all the transportation and storage costs. It sold 1,400 kg. of maize seed and 13,800 kg. of wheat seed in 1989-90. To date (December 1990), in the period 1990-91, 2,000 kg. of maize seed and 14,000 kg. of wheat seed have been sold. These figures are only for sales in the Lower Sub-Division; there is no sales depot in the Upper Subdivision, and farmers growing improved varieties reported that they usually use their own seed stocks or procure seed from the Agriculture Department in Hangu.

The most common way of obtaining grain and vegetable seed is through farmer to farmer exchange. Availability of improved seeds does not seem to be a problem, but there is an unmet demand for drought-resistant varieties of grains. Appropriate seed for higher elevations may also be a need.

### 2. Fertilizer

At the moment the Agriculture Department is the major source for provision of fertilizer, which it sells at cost. No transportation costs are involved but the department has to bear storage costs. There are also small shopkeepers who bring fertilizer from Hangu and sell it for profit in the Agency. The beneficiaries of government-provided fertilizer are restricted to Lower Subdivision. In 1988-89, the department sold 400 bags of Urea and 300 bags of Nitrophos. Department sales in 1989-90 were: Urea, 600 bags; DAP, 400 bags; and Nitrophos, 200 bags.

The 1980 Agriculture Census found that 42% of owner-operated farms, 53% of owner-cum-tenant farms, and 29% of tenant farms use some combination of manure and chemical fertilizer. No

information is available on the proportions of manure and chemical fertilizer utilized in this way. Farmers are less likely to use fertilizer on a grain crop than on a cash crop and when they do, they apply it in minimal doses. Another factor affecting fertilizer use is the low level of fruit and vegetable cultivation, which requires fertilizer. Cannabis and poppy, on the other hand, are cash crops which do not need any fertilization. In a survey of sample locations in late 1990, farmers reported using both manure and chemical fertilizer, and did not report any difficulty with access to the latter.

### 3. Agrochemicals

The Agriculture Census of 1980 reported that 10% of owner-farms, 14% of owner-cum-tenant farms, and 11% of tenant farms in the Agency used pesticides. Pesticides are used mainly by farmers growing fruit and vegetables for marketing. The Agriculture Department is the only source for agrochemicals in the Agency; it sells to farmers at the full price, not at the 50% subsidized rate applied in some other Tribal Agencies, because the latter program is designed to promote commercial fruit orchards, of which Orakzai has only a small number. In 1989-90, the Agriculture Department sold pesticides sufficient to spray no more than 72 acres, while in the previous year it sold enough pesticides to spray 650 acres. There is no explanation for this drop in effort.

The Agriculture Department does sell hand sprayers at a 50% discount. From 1988-1990, 40 sprayers were sold.

### 4. Credit

There is no source of institutional credit for Orakzai farmers. Non-institutional credit is available, and outstanding debt totalling Rs. 5,795,000 was reported by all agricultural households in the Agriculture Census. Smallholders with farms under 2.5 acres owed 24% of the debt, and farmers with medium size farms, 2.5-25 acres, owed 54%. Twenty-two percent was owed by livestock holders. Farmers with holdings over 25 acres reported no outstanding debt.

### 5. Agricultural Engineering

The only land-levelling activity observed was terracing by private farmers. Terraced land observed in Upper and Central Tehsils appeared comparatively more level than that observed in Lower Tehsil. There is some demand for tractors to terrace and level land. The Agriculture Engineering Department does not have an office in Orakzai.

## 6. Extension

The Agency has an inadequately staffed extension section, comprising one Assistant Director, four Field Assistants, two Crop Reporters, and ten Budders. These staff are placed as follows:

Kalaya	1 Assistant Director, 1 Field Assistant, 2 Crop Reporters
Bar And Khel	1 Field Assistant, 2 Budders
Story Khel	1 Field Assistant, 3 Budders
Anjani	1 Field Assistant, 4 Budders

Four of the budders are assigned to the olive improvement program, and the remaining six are assigned to two fruit nurseries. Two field assistants look after fruit nursery farms, and one has recently been assigned to take care of the olive improvement program. The fourth field assistant is based at the agriculture office at Kalaya, where he works with the clerical staff and is also involved in the sale of agricultural inputs. One of the crop reporters is assigned to office file work, while the other does crop reporting. There is no office infrastructure to support the assistant director. No staff are assigned specifically to extension services. The existing field staff are supposed to carry out extension activities in addition to their other duties.

Agriculture Department programs are concentrated in Lower Tehsil. The staff can hardly cover Lower Tehsil and part of Central Tehsil. Most of the Central Tehsil is neglected, while the Ismail Zai and Upper Tehsils are not covered at all.

Lack of transportation is a major obstacle to effective outreach and extension activities, particularly when travelling allowances are inadequate, which is especially so for the junior field staff.

There are two fruit nurseries at Barand Khel and Story Khel. The Story Khel nursery is on state-owned land. Barand Khel nursery was initiated at Ziara on leased land in 1979, but had to be shifted to Barand Khel in 1987 due to a dispute on the leased land. These two nurseries are the only institutional source for fruit seedlings in the Agency. Records show that they sell at nominal prices approximately 30,000 seedlings per annum. Each nursery produced 15,000 seedling in 1989-90. Observations of nurseries found that many seedlings had grown into saplings, and had not yet been sold; only the walnut saplings seemed to be selling well.

Since the mid-1980's, Agency extension staff have planted a total of 46 demonstration plots for wheat and 28 demonstration plots for maize. In 1989-90, 10 grain demonstration plots were planted. The purpose of the demonstration plots was to introduce the farmer to approved practices and modern techniques and also promote improved seed. The wheat seed used is Pak 81, while the maize seed is Azam. In 1989-90, the Department approved a program for the improvement of groundnut/soybean cultivation and laid out 20 soybean/groundnut demonstration plots. The purpose was to boost edible oil production. The Agency extension staff have also been involved in working with wild olive trees, spread over a 10 kilometer area, for the last 9 years with limited success.

In 1989 a program was approved for renewed efforts to convert wild olives into economical oil producing trees. Fig. VI.10 shows the locations of agriculture staff and nurseries.

## VII. IRRIGATION, FLOOD PROTECTION AND POTABLE WATER

Farmers draw irrigation water from surface streams and ground water sources. The overall water resources of the area cannot be evaluated due to the lack of hydrological data for this Agency. Some information on the discharge from the Mastura river is available; however, long term data are needed for planning purposes. It has been observed that the ground water potential of Orakzai Agency is limited in those areas where test drilling has been done. However, further test drilling needs to be continued in those areas where surface water is not available. Small dams construction and lift irrigation schemes are potentially feasible inputs for increasing agricultural production in this Agency.

### A. Irrigation

From a sample survey comprising 46,769 acres of cultivated land, the 1981 Agriculture Census suggested that 10,663 acres of this area was canal irrigated. Only 43 acres were irrigated by dugwells, while 14,740 acres were irrigated by spring water and other sources. Sources of irrigation were not known for 1,644 acres. According to a 1988-89 Agriculture Statistics Report of Agriculture Department, Orakzai Agency had 15,709 acres of irrigated area. Out of this, 94 percent was irrigated by private canals and 6 percent by tubewells. According to Agency Agriculture Department sources, the total irrigated area in Orakzai Agency was 16,623 acres in December, 1990. All these statistics do not however show the actual situation on the ground in the absence of a complete and up-to-date survey of the area.

#### 1. Surface Water Irrigation

Orakzai Agency is drained by the Mastura and the Khankai rivers. Surface irrigation is mainly possible on the left and right banks of these rivers. From ancient times, kacha or temporary channels have been taken from these rivers for irrigation purposes. These surface irrigation systems have long been constructed, managed and maintained by the beneficiaries (shareholders) through their elders and Maliks.

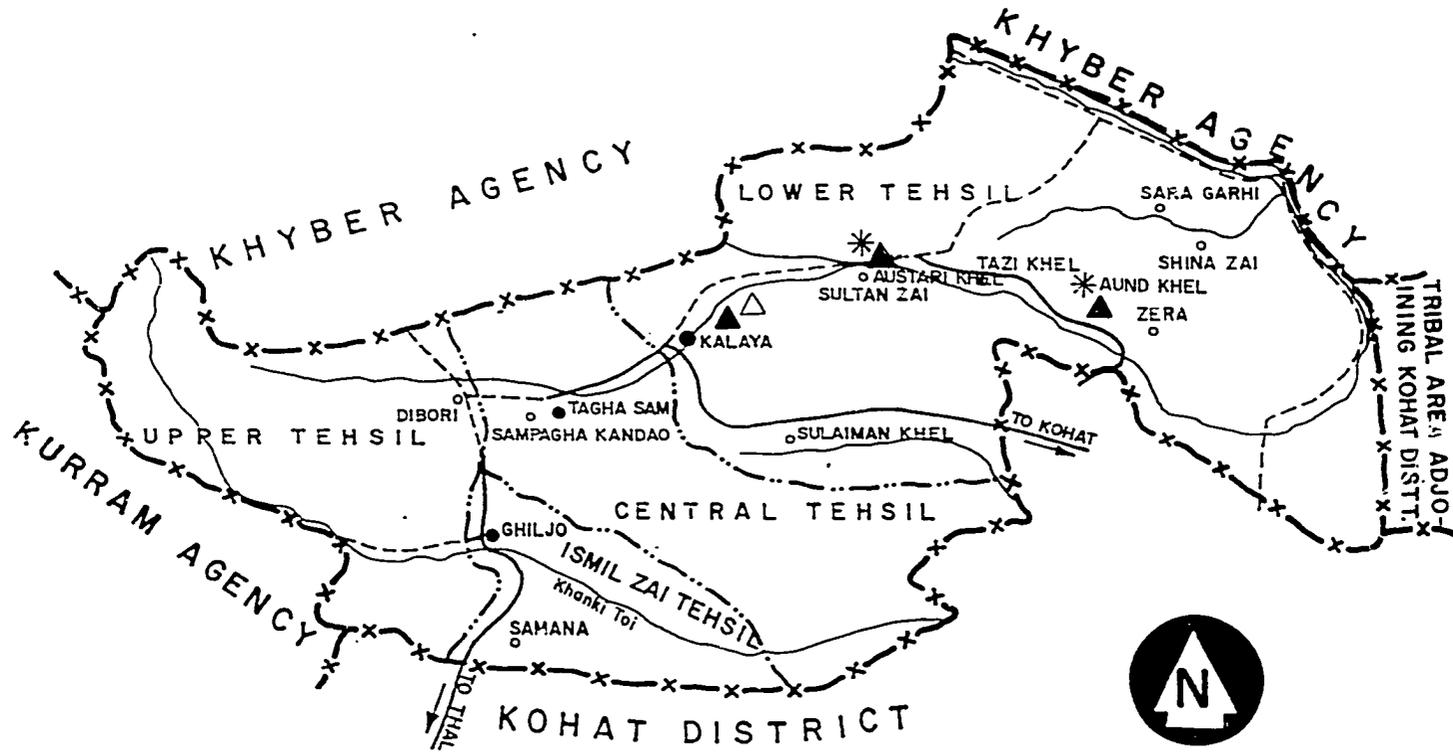
The mean discharge of each tributary is 15 cusecs. During floods, the maximum discharge is 500 cusecs. Floods often destroy the earthen channels and erode farm land.

FATA-DC (FATA Development Corporation) has been involved in the construction and improvement of surface irrigation schemes since 1980-81 mainly in Lower Sub-Division. These schemes generally involve the 1) improvement and rehabilitation of old channels; and 2) construction of new channels and intakes.

Fig. VI-10

# ORAKZAI AGENCY

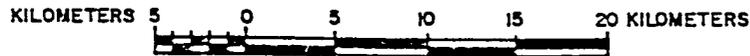
## AGRICULTURE



### REFERENCES

AGENCY BOUNDARY	- x - x -
TEHSIL BOUNDARY	- - - - -
METALLED ROAD	—————
TRACKS	- - - - -
RIVER / NALA	~~~~~
FRUIT NURSERIES	*
FIELD ASSISTANT	▲
ASSISTANT DIRECTOR	△

SCALE 1:333,333



346

Under its improvement and rehabilitation work programmes, earthen channels are given permanent shape through lining with concrete. This saves water and often allows new lands to be irrigated or increases the flow to existing irrigated land.

These schemes are constructed or rehabilitated through local contractors who are often Maliks. The contracts are awarded by the Political Agent. After completion, the schemes are handed over to the beneficiaries for management and maintenance. Since 1980-81, 19 schemes are reported to have been completed. Of these schemes, 11 were improvements to existing surface schemes, and 8 new schemes were constructed. The number of farm families benefitting from these schemes is not available. These 19 schemes have a command area of 5,761 acres. Out of this, 2869 acres consisted of previously irrigated acreage, while 2892 acres of new land can now be irrigated due to FATA-DC efforts.

FATA-DC has spent an average of 1.235 million rupees on each scheme. The total cost of 19 schemes has been Rs. 23 million. The average per acre cost of these schemes was Rs. 4000. However, per acre cost varies and for some schemes it runs as high as Rs. 12000/Acre.

Field visits to two surface irrigation schemes showed the following facts. One irrigation scheme near Kalaya was not operating because it was damaged by heavy floods in the Mastura river. Prior to this flooding the scheme irrigated 250 acres of land where wheat, hashish, corn and other crops were cultivated. Another scheme at Kalat was irrigating 300 acres of land, where hashish, wheat, corn, french beans, etc. were cultivated.

## 2. Ground Water

According to FATA-DC statistics in Orakzai Agency, as of September 1, 1990, 22 testwells have been drilled. Of these, 7 have been abandoned, 11 have been energized and 4 testwells are in the process of conversion to tubewells. These testwells/tubewells are only in Lower Sub-Division. Good prospects for ground water development exist in Feroz Khel and on the plain that lies on the right side of the Mastura river.

The successful tubewells are located in the Kalaya, Feroz Khel, and Mishti plains. Out of 11 operating tubewells, 9 are in Upper Orakzai subdivision and 2 are in Lower Orakzai subdivision. In Upper Orakzai, 3 are in Kalaya, 1 in Ailim Khan Khel, 1 in Kadda and 4 in Feroz Khel while 2 are in the Mishti area in Lower Orakzai. Four testwells drilled in the Tanda plains will be converted to tubewells after successful yield tests. These four are being funded by USAID. Of the abandoned wells, 2 are in Feroz Khel, 4 are in Mishti and one at Chapri.

Analysis of a list of beneficiaries of seven tubewells show that seven tubewells benefit 81 farmers. The average number of beneficiaries per tubewell is around 12 farmers. The highest number of beneficiaries for a tubewell is 17 while the lowest number is 6. The number of beneficiaries and the area irrigated varies from area to area, depending on the land holding pattern and the discharge of the well. FATA-DC should develop criteria concerning minimum numbers of beneficiary farmers and cultivable acreage/cusec of water.

A field visit to three of the above-mentioned tubewells revealed that although the main beneficiaries were the owners of the land on which the tubewell was drilled, more than 30 other farmers benefited to some extent from each tubewell. Tubewells mainly operate during the cropping seasons, but during other seasons these are used for drinking water. Water from tubewells was mainly used for crops such as hashish, wheat, corn and vegetables.

Average cost per tubewell of the completed schemes is around four lakh rupees. This figure also includes the cost of drilling abandoned wells. According to FATA-DC officials, the average pumpage of a tubewell is seven hours per day. Average electricity charges for operating a tubewell are two thousand rupees a month, a cost which FATA-DC pays. A FATA-DC-funded staff of one operator and one security guard per tubewell costs 2500 rupees per month.

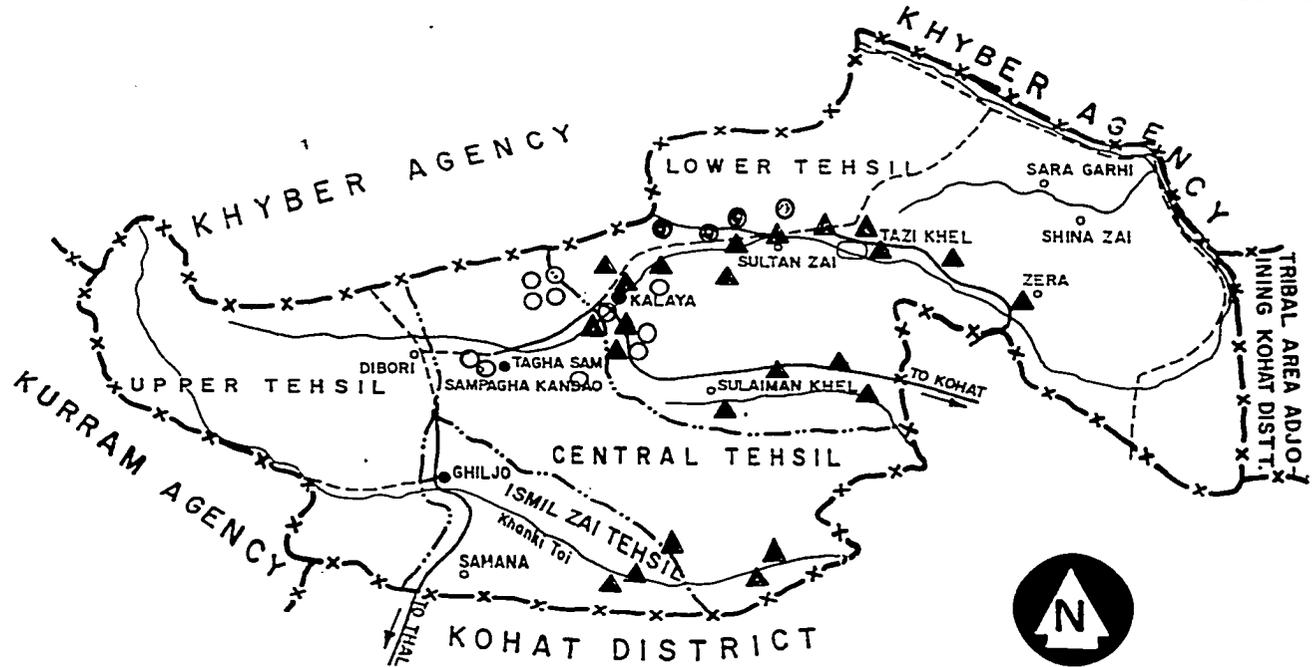
The estimated capital cost of drilling a tubewell is 0.75 million rupees. The operational cost is 5 percent of the capital cost and the average command area is 100 acres. The cost per acre of culturable command area is Rs. 7,500. The annual operation and maintenance for a tubewell is approximately 7% of the capital cost. However, when the economic analysis is carried out for the tubewell life of 20 years, the internal rate of return equals 22% which is greater than the present opportunity rate prevailing in the country.

The Government has recently adopted a new policy which will require local beneficiaries to pay the electricity charges and salaries of the tubewell staff. Four testwells in Tanda area will be converted into tubewells if the locals agree to pay the operational costs. FATA-DC is negotiating with the beneficiary farmers of the area through the Political Agent. The Government has now realized that in some instances, locals ask for facilities only to get jobs and not because the community as a whole desires that facility or service. Some of the farmers interviewed complained about the new policy of payment of recurrent costs by beneficiaries. The beneficiary farmers say that part of recurrent costs, either payment of electricity

Fig. VII-5

# ORAKZAI AGENCY

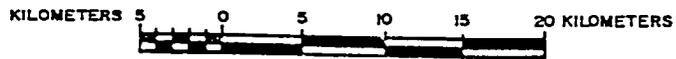
## SURFACE IRRIGATION



### REFERENCES

AGENCY BOUNDARY	-x-x-
TEHSIL BOUNDARY	- - - - -
METALLED ROAD	—————
TRACKS	- - - - -
RIVER / NALA	~~~~~
SURFACE IRRIGATION SCHEME	▲
TUBEWELL	○
TESTWELL	●
FLOOD PROTECTION SCHEME	□

SCALE 1:333,333



360

charges or the salaries of staff should be borne by the government. As a private good (irrigation systems are owned by their shareholders), it is difficult to see why a government with very limited revenues should pay any part of the O&M cost.

### 3. Small Dams

The idea of constructing small dams is a new one for this area. The purposes of small dams are as follows:

1. Irrigation of land and increase in agriculture produce;
2. Flood protection;
3. Increasing the level of the ground water table;
4. Generation of power supply;
5. Provision of drinking water; and
6. Increase in afforestation of the area.

Three small dams have been proposed for implementation in the following areas of Orakzai Agency:

1. Toda China Bland Khel
2. Sepai Lalpura Area
3. Sateroz in Chapper Mishti Area

Surveys have been completed by FATA-DC for the proposed dam sites, but consultants have not yet been hired for preparing feasibility studies. For small dams construction FATA-DC needs a hydrometrological database for planning, designing and implementation of these projects. Such information does not currently exist.

### B. Flood Protection

FATA-DC has completed one flood protection scheme at a cost of 1.028 million rupees. According to FATA-DC statistics, this scheme protects the land of 800 inhabitants on 200 acres of area which includes 80 houses. This scheme is located in the Chin Jana area of Tazi Khel village.

The Local Government and Rural Development Department (LG&RDD) is much more involved in flood protection schemes than FATA-DC. Table VII.I shows the statistics for the last few years. Flood protection is an acute need in some parts of the Agency due to deforestation, friable soils and lack of watershed management. In some areas, as noted earlier, considerable arable land has been lost.

Table VII.1

S.No	Sector	Years	Targets	Achieved
1	Flood	1985-86	17	17
2	Protection	1986-87	38	38
3	Bunds	1987-88	24	24
4		1988-89	11	11

Acumulative list of flood diversion structures (bunds) with locations built over the years by LG&RD is not available. LG&RD should be mapping its flood protection schemes so that a replacement program can be put in place. Generally, bunds last only 10-12 years.

### C. Staffing

FATA-DC has a field office at Hangu. The technical staff of the Division are shown in Table VII.2.

Table VII.2

S.No	Designation	Number
1.	Executive Engineer	1
2.	Assistant Engineer (Civil)	2
3.	Assistant Engineer (Mechanical)	1
4.	Sub Engineer	4
5.	Draftsman	1
6.	Tracer	2

The Local Government and Rural Development Department also has its Agency Office at Hangu. The office staff of the Assistant Director is shown in Table VII.3.

Table VII.3

S.No.	Staff Position	Number
1.	Assistant Director	1
2.	Assistant Engineer	1
3.	Sub Engineer	1
4.	Office Assistant	1
5.	Senior Clerk	1
6.	Junior Clerk	2
7.	Work Munshi	1
8.	Driver	1
9.	Security Guard	2

#### D. Potable Water

The Public Health Engineering Department (PHED) is located at Hangu. It has been operating in the Agency since 1973-74. As of November 1990, the Department had completed 31 schemes while 8 were under construction. These schemes are located in the following areas:

Locations	Completed	Under Construction	Completed but awaiting electricity
Lower Sub-Division	25 schemes	8 schemes	3
Upper Sub-Division	7 schemes	1 scheme	-

Potable water for Agency inhabitants is provided through four separate sources. These sources are spring water, infiltration gallery, tubewells and open wells. Table VII.4 lists the locations of PHED potable water schemes and Fig VII.5 shows the locations of these schemes. There is one Afghan refugee scheme at Ghaljo, Upper Tehsil headquarters, and it supplies water only to the camps of Afghan refugees.

It is difficult for PHED to provide drinking water to Upper Sub-Division due to local disputes. Also, almost the entire area of Upper Sub-division lacks easy access to drinking water because of high population density and inadequate surface resources. According to the PHED Sub-Divisional Officer (SDO), each scheme in Upper Sub Division draws women and girls from a 2-4 mile radius, a long distance to carry water.

An average of 1,026 individuals benefit from each scheme. Thirty three thousand beneficiaries have access to 32 completed PHED provided potable water schemes in Upper and Lower Sub-Divisions. The total cost for all completed schemes is 10,483,188 Rupees (\$ 499,199) or an average of 268,799 Rupees (\$12,200) per scheme.

There are three infiltration galleries, and fifteen schemes that carry water from springs. An infiltration gallery was added in recent years to supply more water to new areas of Wam Pana, Ibrahimio and Mirako Bala. Most systems do not have pumps and electricity to raise the water to the supply points but are gravity fed. At present, only four to five schemes are operating through electrified pumps. The voltage fluctuations and load shedding do not affect the water supply of most beneficiaries. PHED pays the electricity charges. Because villagers are not responsible for paying the electricity charges consumed for pumping water, conserving power is not generally a concern. Five of the schemes

in Lower Sub-Division are tubewells with distribution systems consisting of stand posts and sometimes community tanks. These tubewells are only for drinking purposes. Of these five tubewells, electricity has not yet been provided at Lal Mela, Ladi Bandi and Biland Khel, so these schemes are not operational.

As of August 1990, under-construction schemes were as following:

Locations	Springs	Tubewells	Open Wells
Lower Sub-Division	6	1	1
Upper Sub-Division	1	-	-

Water supply schemes are built by local contractors. All the community tanks are made of steel and therefore, no leaking has been reported by the Department. P.H.E.D is responsible for maintenance and repairs but at present, P.H.E.D has no staff to carry out repairs. P.H.E.D, however, bids tenders annually for a one year maintenance contract for the repair of all faulty systems. This contract is awarded after competitive bidding. Repairs and maintenance are carried out according to the agreement.

An SDO is placed at Hangu with his staff. The SDO reports to the Executive Engineer based at Peshawar.

Researchers visited five potable water schemes in the Agency. At each scheme listed below, no problems were observed, and no complaints were heard from the concerned beneficiaries. Table VII.6 shows the schemes visited by the researchers in November 1990.

**Table VII.6**

Locations	Beneficiaries	Schemes
Karez	1,560	Spring
Mirako Bala	1,362	Infiltration Gallery
Kalaya	4,000	Spring
Ladi Bandi	2,070	Tubewell
Panzari	2,500	Tubewell

PHED employs a security guard and an operator on each scheme. This measure is useful to protect the scheme but entails increasing Departmental recurrent costs. The community should be able to assume responsibility for the scheme if it values the water system.

Table VII.4

## List of schemes in Orakzai

## Lower Sub-Division

Tubewells:	Locations	Status
	Panzari	Completed
	Feroz Khel	Completed
	Sangara	U n d e r construction
	Ladi Banda	Electricity not provided
	Lal Mela Septran	Electricity not provided
<b>Springs:</b>		
	Taranghi	Completed
	Karez	Completed
	Terahi	Completed
	Kalaya	Completed
	Khawa Stori Khel	Completed
	Kadda Alat Khel	Completed
	Zera	Completed
	Dappa	Completed
	Khinsar	Completed
	Toor Khouri	Completed
	Abishal	Completed
	Mir Mela	Completed
	Shammar Zone 1	Completed
	Shammar Zone 2	Completed
	Shammar Zone 3	Completed
	Badgar	Completed
	Und Khel	U n d e r Construction
	Sultanzai	" " "
	Mirozai	" " "
	Darand	" " "
	Pulosai	" " "
	Dara Mani Khel	" " "
<b>Infiltration Galleries:</b>		
	Wam Pana	Completed
	Ibrahimo	Completed
<b>Open Wells:</b>		
	Said Khalil Mander Khel	Completed
	Zaridar	Completed
	Karghen	Completed
	Milasar	Completed
	Sepaya	Completed
	Mishti	U n d e r Construction

## List of schemes in Orakzai

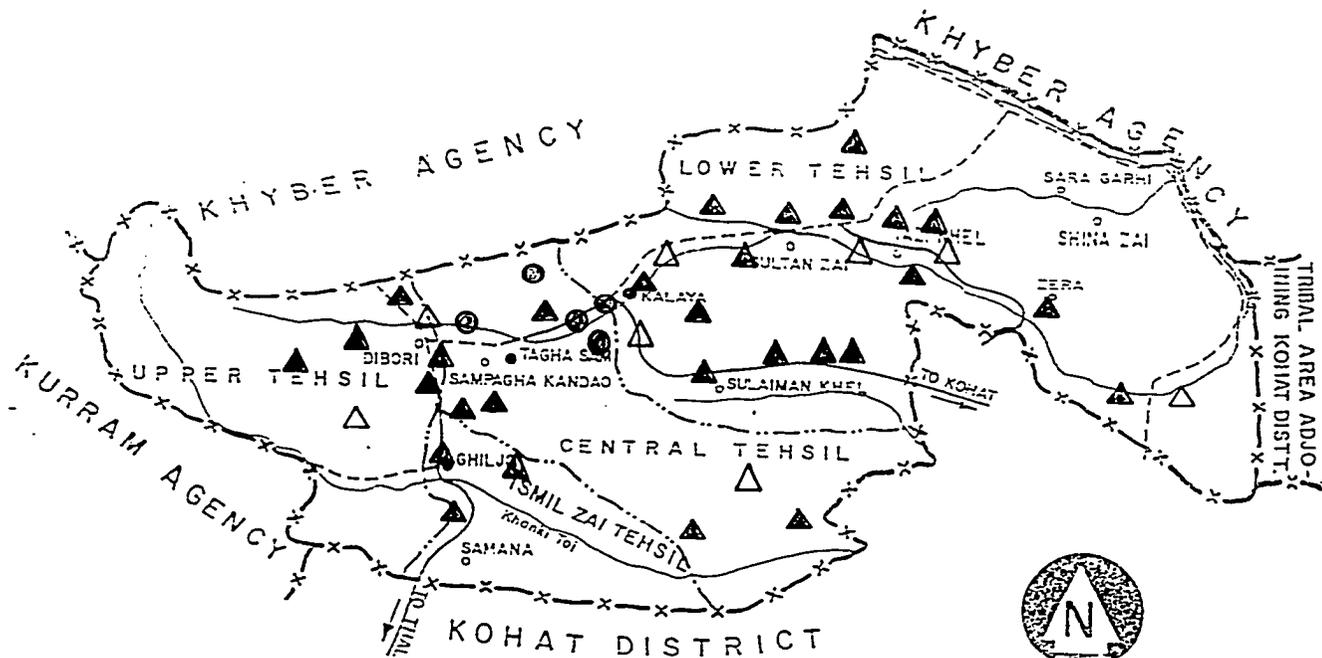
## Upper Sub-Division

Tubewell:	Locations	Status
	Bilund Khel	Electricity not provided
<b>Springs:</b>		
	Darga Rabi Khel(Samana)	Completed
	Sarrah Khawa	Completed
	Khuwaga Sarai	Completed
	Ghiljo	Completed
(Afghan)	Khawaga Khizer	Completed
	Ghotak Khan Kai	U n d e r Construction
<b>Open Well:</b>		
	Thallai Chan	Completed

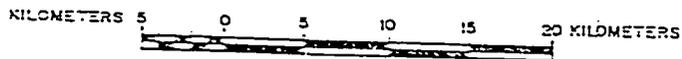
Fig. VII-6

# ORAKZAI AGENCY

## POTABLE WATER



SCALE 1:333,333



### LEGEND

Agency Boundary	-x-x-
Tehsil Boundary	---
Notified Road	====
Tracks	- - - -
Potable Water Supply Completed Schemes	▲
Potable Water Supply Ongoing Schemes	△
Tubewells	●

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### VIII. ANIMAL HUSBANDRY

Animals play a vital role in boosting family income, particularly when times are difficult and harvests are poor. Sheep and goats appear to comprise the majority of livestock in Orakzai Agency. They are kept for milk and meat consumption by the owners and are generally not sold for commercial purposes. They graze on wild grass in summer and in winter, some grass is stored for fodder purposes. They also feed on maize and wheat stalks. Cows and buffaloes are also kept but in smaller numbers. Mules are kept and used for carrying water, goods and firewood. They are also used for construction purposes. In addition, poultry are kept for egg production, and sometimes eggs and chickens are sold within the local community. Some people in the area indicate an interest in establishing poultry farms for marketing chicken and eggs. Animal husbandry could be developed on a commercial basis provided the people were made aware of marketing and husbandry techniques and better economical breeds were introduced to the area. An operation of this scale would require better education and veterinary facilities, and an awareness of potential economic gains.

A livestock census was conducted in 1986. The results for Orakzai are presented below, in Table VIII.1, although the Census introduction recommends taking the Census Tribal Agency findings with a grain of salt.

Table VIII.1 1986 Animal Census

Type of Animal	Numbers as of 1986
Cattle	80,918
Buffaloes	24,491
Sheep	104,401
Goats	143,912
Camels	130
Horses	60
Mules	4,860
Poultry	569,479

Based on these numbers, there are 68 sheep per square kilometer and 94 goats per square kilometer in Orakzai Agency. Estimates of Afghan Refugee owned animals are not available.

Twenty-two veterinary facilities are located in the Agency, but only two veterinarians are posted to Orakzai.

A list of locations and staff is shown in Table VIII.2

Table VIII.2

Placement of Veterinary Facilities

Locations Assistants	Veterinary Officers	Compounder	Stock
Mishti Bazar			1
Mishti Shekban			1
Mishti Chapper		1	
Ahmed Khel			1
Ghiljo			1
Lal Pura			1
Kurez	1		1
Kadda	1		1
Dar Samana			1
Utman Khe?			1
Daboori			1
Und Khel			1
Sera Mela			1
Shakar Tangi			1
Feroz Khel			1
Ali Khel (Ghundi Mela)			1
Dobandi			1
Biland Khel			1
Zankha Khel			1
Naka Mela			1
Kata Kanri			1

Placement of Insemination Facility

Locations	Inseminator
Kadda	1

The Agency has no veterinary hospital. It has fifteen veterinary dispensaries and six veterinary centers which are served by two veterinarians, one veterinary compounder and twenty stock assistants. There is one artificial insemination center with one inseminator. At present, five compounder positions are vacant at Mishti Bazar, Ghaljo, Daboori, Kadda, and Kurez. All facilities are under the supervision of the animal husbandry office at Hangu. Fig. VIII. 3 shows facility locations.

According to the Commissioner of Afghan Refugees in Peshawar, there are no veterinary facilities in the Agency organized to provide assistance to Afghan refugees. Thus, it is highly probable that the Livestock and Dairy Development Department is providing assistance to Refugee-owned animals, but the Department has no records to show what percentage of these animals are refugee-owned.

Refugee-owned animals are said to have brought various diseases to the Ghaljo area of Agency. The most common of all is worm infestation. The predominant diseases are anthrax (in sheep and goats), and the biggest health problem in animals is liver fluke, which affects cattle and small ruminants.

Vaccinations should be an important part of the work of these facilities but the level of effort seems low. The Department could not provide 1988-1989 data on vaccinations, but data for previous years are as follows:

Vaccinations	1986-87	1987-88
Poultry	135,257	15,746
Animals (all types)	19,461	11,213

It is possible that data for year 1987-88 may not be accurate given the sharp drop in vaccinations of poultry. However, there may have been problems with vaccine supply. Cold chain maintenance may also have been a problem.

The total number of animals treated at Agency facilities for 2 years is as follows:

Table VIII.3

	Animals Treated	1986-87	1987-88
a)	Outdoor patients	84,000	23,291
b)	No. of animals castrated	6,252	9,824
c)	Owner supplied drugs	-	-
d)	Artificial Insemination	53	73
e)	Drenched with anti-liver fluke	8,227	6,032

The data for animals treated in 1988-89 were not available in the Department.

Like other Agencies, in order to promote improved breeds of sheep and goats, a small number of beetle bucks have been distributed. No efforts have been made to improve the nutritional status of animals.

The artificial insemination statistics appear to be poorly maintained by the Agency. The number of artificial inseminations declined from 73 in 1987-88 to 39 in 1988-89. This is either due to poor inseminations performance, lack of semen supply and/or a lack of public interest. In 1988-89, 21 cows and 18 buffaloes were inseminated, with only 3 to 4 pregnancies resulting. One problem is that farmers often over work pregnant animals leading the animals to miscarry. However, Orakzai does appear to be less successful with inseminations than other Agencies.

Supervision of facilities is very difficult with no transport. The Director is based at Hangu. He has no car. The record of department achievement discussed above suggests that there are serious management and/or supply problems.

Research officers visited two dispensaries, both located in Lower Tehsil of the Agency. The findings are as follows:

#### Karez Dispensary

This Dispensary was established in 1975. On the day of the visit in autumn 1990, only five patients came for treatment by early afternoon. The veterinary officer maintains a good record of animals treated on a daily basis. The Officer has been at this post for the last two years. According to the Officer, most tribesmen bring their animals from 2 P.M. to 6 P.M., after working in the fields. The daily average of patients is about twenty to twenty five.

At present, the staff includes one Veterinary Officer, one Guard, and two Water Carriers.

At the time of the visit, medical supplies were available, but the condition of the dispensary was unsatisfactory. There was no electricity, the roof leaked, and there was only one potable water connection which the officer only acquired after two years of complaining. The officer has no transportation. The dispensary is missing some basic equipment such as:

- a) Cattle Crust
- b) Mouth Gauge
- c) Tooth Raspers

The officer pointed out that the Governor Inspection Team had also recommended that such basic equipment be supplied. Planning is under way for this year to establish an artificial insemination facility in the dispensary. Total animals treated from July 1989 to May 1990 at Karez are listed below in table VIII. 4.

Table VIII. 4

Month	Number of Animals Treated			Castrated	
	Cow/Buffalo Sheep/Goat	Sheep/Goat	Others	Cow/Buffalo	Sheep/Goat
July	170	339	73	-	5
Aug	176	534	-	-	-

Month	Number of Animals Treated			Castrated	
	Cow/Buffalo Sheep/Goat	Sheep/Goat	Others	Cow/Buffalo	Sheep/Goat
Sept	108	184	101	14	5
Oct	860	151	41	23	20
Nov	62	248	15	9	2
Dec	75	224	51	-	-
Jan	80	218	17	-	-
Feb	137	159	198	-	-
Mar	146	293	205	6	17
Apr	104	219	74	13	36
May	193	252	98	3	27
Monthly Average:					
	192	256	79	6	10

#### Kadda Dispensary and Artificial Insemination Center

This was established in 1986. The building is in good condition. The researcher recorded nine patients at the time of the visit. The daily average is around 30 to 40 patients.

At present, the staff includes one Veterinary Officer, one Inseminator and one Staff Assistant/Compounder. Both the veterinary officer and the inseminator have motor bikes for transportation.

The Veterinary Officer has been at this post for the past four years and is trying to obtain a transfer to the settled areas. The statistics at Kadda are not impressive. As mentioned earlier, only 39 animals (cows & buffaloes) were inseminated in 1988-1989, but only 3 to 4 pregnancies resulted. At the time of the visit, all other medical supplies were available except for semen. The Department headquarters in Peshawar decided to reduce the semen supply due to poor performance. Local farmers may prefer to take their animals for insemination to the Hangu veterinary facility, where insemination may produce a higher number of pregnancies.

The only necessary equipment which the station did not have was the Dystokia set, which is used for newly born calves.

The numbers of animals treated from May 1989 to May 1990 at Kadda are noted below in Table VIII. 5.

Table VIII. 5

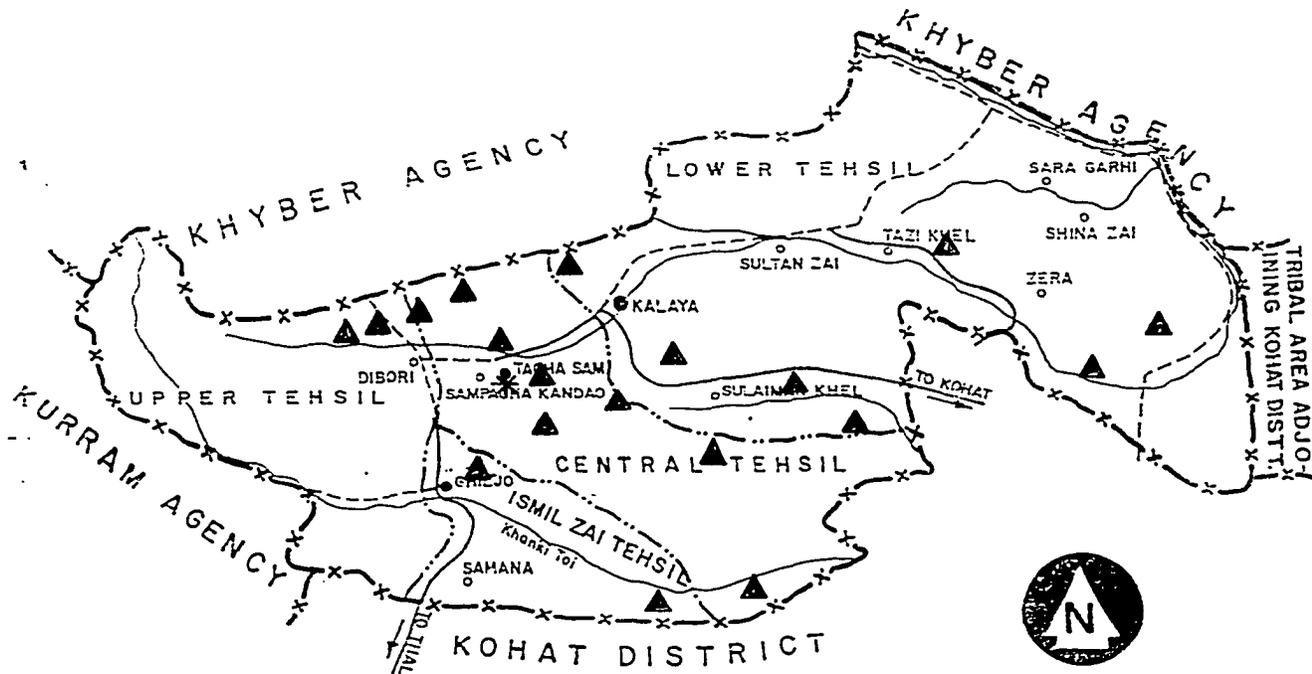
Month	Number of Animals Treated			Castrated		
	Cow/Buffalo	Sheep/Goat	Mule	Cow/Buffalo	Sheep/Goat	
May	40	55	30	80	115	
June	235	150	133	120	200	
July	490	196	430	50	100	
Aug	110	182	60	30	20	
Sept	200	445	50	10	15	
Oct	200	361	100	17	18	
Nov	120	253	60	4	9	
Dec	80	97	70	-	5	
Jan	93	45	41	-	-	
Feb	112	132	29	-	-	
Mar	231	160	43	1	14	
Apr	295	184	63	4	17	
May	268	74	43	8	9	
Monthly Average:						
	190	179	88	25	40	

There are two principal markets for animals in Orakzai at Ghaljo and Feroz Khel. Both markets take place once a week.

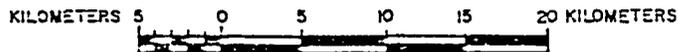
Fig.VIII-6

# ORAKZAI AGENCY

# ANIMAL HUSBANDRY



SCALE 1:333,333



LEGEND

Agency Boundary	- x - x -
Tehsil Boundary	- . . . -
Mettled Road	—
Tracce	- - - -
Dispensaries, Centers	▲
A. I. Centers	*

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## IX. FORESTRY

### A. Forest Resources

The Agency has eight substantially forested areas. The total area under forest as of 1990 was about 1,318 acres. These forests are privately-owned by different tribes and they can cut the trees as they wish. The main forested areas are:

- 1) Bar Ahmed Khel
- 2) Mani Khel
- 3) And Khel
- 4) Uri Khel
- 5) Mala Khel
- 6) Mishi Area
- 7) Sheik Khan
- 8) Ali Khel

The following species are indigenous to the Agency:

- 1) Quercus Incuna (Rhin-local name)
- 2) Acacia Modesta (Pulhai)
- 3) Olea Cuspidata (Kao)
- 4) Pinus Wallichiana (Kail) at a higher elevation

The areas most affected by deforestation are:

- 1) Ali Khel
- 2) And Khel
- 3) Uri Khel
- 4) Mala Khel
- 5) Mishi Area
- 6) Sheik Khan

Central Tehsil and the right bank of the Mastura River in the Lower Tehsil are also well-forested, but the reasons appear to differ. In Central Tehsil there was no road until recently; and in the Lower Tehsil, the minority Shia community which lives on the right bank of the Mastura prohibits the cutting of immature trees. A fine of Rs. 5,000 is imposed on anyone who cuts a sapling in that area. On the left bank, where the Sunni community has no tree protection policy, the hills adjoining the inhabited areas have been denuded.

At present, no logging operations are conducted by the Forest Department. Perhaps private commercial logging is under way but the FATA II Division has no record of this. The Assistant Political Agent Orakzai was unable to give any information pertaining to private logging.

## B. Forestry Department Activities

Forestry Department staff in the Agency consist of one forester at each nursery. Each forester is responsible for at least five to six block plantations and forestry guards for each nursery and block plantation. The Forestry office responsible for Orakzai is at Hangu in Kohat. It has three nurseries located outside of the Agency on Kohat-Parachinar road about 20 Km from Kohat. River side plantations consist of about six linear miles which are owned by the Forest Department. Table IX.1 shows the locations of nurseries.

Table IX.1

	Location	Species	No. of Species	Remarks:
1)	Raisan	Eucalyptus	14,552	Six Kanals are Gov't land, & three Kanals are privately-owned. Privately-owned land is rented at the rate of Rs.600 per annum for each Kanal.
		Polahi	1,700	
		Robinia	20,965	
		Sanatha	1,386	
		Sheeshum	1,315	
		Tacoma	210	
		Kachnar	45	
		Botkisurs	420	
		Gledetshina	1,600	
		Cynophyua	953	
		Chir	115,202	
		Poplar	2,500	

Total plants sold from year 1980 through autumn 1990 were 24,036 at a total cost of Rs. 5,198. These nurseries are at main Kohat-Parachinar road which is easily accessible from Orakzai. These nurseries sell plants to all farmers irrespective of domicile.

	Location	Species	No. of Species	Remarks:
2)	Kharasha	Eucalyptus	6,610	Privately-Owned. Three acres are rented at the rate of Rs. 400 per annum for each Kanal.
		Sterculia	100	
		Sanatha	6,700	
		Iple Iple	700	
		Acacia Cynophyta	10,700	
		Ailanthus	73,845	
		Chir Pine	96,500	
		Robinia	58,800	
		Parkinsonian	2,400	
		Bathe Bush	2,500	
		Persian Pine	400	
		Nuric	55,000	

Location	Species	No. of Species	Remarks:
	Gledetulix	6,500	
	Sheesham	1,250	
	Walnut	7,500	
	Poplar	3,000	
	Bekauin	1,300	
	Apple Snickers	54,000	
	Acacia Selosina	240	
	Casorina	930	
	Casorina Coning Obea	800	
	Atreplex Memolaria	400	
	Sarie	400	

Total plants sold at Karascha from year 1988 through 1990 are 6,238 at a cost of Rs. 2,236.

Location	Species	No. of Species	Remarks:
3) SDP	Walnut	10,300	Privately-Owned.
Kharasha	Aesculus	960	One acre is rented at a cost of Rs. 400 per annum for each Kanal. This is a new nursery.
	Ailuntrus	4,900	
	Robinia	4,500	
	Apple Snickers	10,650	
	Chir	75,000	

The Department has also established block plantations on privately-owned land. Table IX.2 (a) shows released block plantations and Table IX.2 (B) shows block plantations which are maintained by the Department as of November 1990.

Table IX.2 (a)

Nos.	Locations	Acres	Remarks
1	Tabisaly	15	Released to the owner
2	Khulai	45	"
3	Kaskio Sam	50	"
4	Nanizai	50	"
5	Akhurwal	4	"
6	Tangi China	10	"
7	Faqiri Mela	50	"
8	Surghudar	10	"
9	Nagharosam	20	"
10	Mirako II	20	"
11	Mirako I	10	"
12	Dargai	30	"
13	Khinsar	37	"

Nos.	Locations	Acres	Remarks
14	Suleman Khel	30	"
15	Khura Mela	20	"
16	Lal Mela	15	"
17	Sarai No. I	15	"
18	Sarai No. II	20	"
19	Alam Mirozai	25	"
20	Malangi Dak	16	"
21	Ahmed Khel	25	"
22	Char Khel	20	"
23	Anjani	28	"
24	Shamar	60	"
25	And Khel Bar	30	"
26	Assu Dara	120	"
27	Lal Bas Garhi II	78	"
28	Sonpog	212	"
29	Chappar Mishti	70	"
Total:		1,135 Acres	

Table IX.2 (b)

	Locations	Acres	Remarks
1	Kalaya H.Q.	35	Maintained by the Dept.
2	Samana	40	"
3	Inzaro Mela	25	"
4	Mishti Mela	165	"
5	Sara Mela	70	"
6	Abishal	35	"
7	Darra Mela	15	"
8	Lal Bas Garhi I	12	"
9	Lar And Khel	40	"
10	Lerhi	40	"
11	Zera	25	"
12	Nari Kadda	76	"
13	Kandi Mishti	16	"
14	Awitang	350	"
15	Jandrak	45	"
16	Sandalai	34	"
17	Nazano	150	"
18	Chero Mela		"
19	Sarlo		"
Total :		1,173 Acres	

About 435 plants are provided per acre for a plantation. The Forestry Department usually maintains the plantation for four to five years before releasing it to the owners.

Researchers visited three block plantations which have been relinquished to the owners:

About 435 plants are provided per acre for a plantation. The Forestry Department usually maintains the plantation for four to five years before releasing it to the owners.

Researchers visited three block plantations which have been relinquished to the owners:

**Abishal**

This plantation was established in December 1985. It consists of 45 acres planted with 19,575 Chir and Persian Pines. The plantation is well maintained. As of this writing, about ninety five to ninety seven percent of the species still exist and have an average height of 5 feet. It was released to the owner in January 1990. Forestry Department expenditures during those five years totalled Rs. 142,250.

**Malako I**

This was established in January 1985. Planting was performed on 10 acres with apple, walnut and peach trees. At present, the status of the plantation is very good; almost 99% of the trees still exist and have an average height of 10 to 11 feet. The plantation was released to the owner in March 1989. These trees should bear fruit in two years' time. Total Department's investment during those four years totalled Rs. 48,840.

**Nagharicsam**

This was established in 1985. The plantation consists of 20 acres, on which 8,700 Eucalyptus and Polahi exist. At present, 95 percent of the Eucalyptus and around 99 percent of Polahi trees are surviving. The average height of the trees is 12 to 13 feet. The Forest Department released the plantation to the owner in March 1989. Total investment during those four years totalled to Rs. 92,690.

**C. Sericulture**

The Sericulture Department is trying to promote the raising of silk cocoons as a cottage industry to supplement farm income. It manages one Mulberry nursery and one farm in the Agency. The nursery was established in 1977 at Karez. Mulberry leaves are the only foods silk worms eat. The exotic varieties of mulberry are best suited for qualitative and quantitative yield of silk. Government land of one Kanal and 10 Marlas is devoted to the nursery which contains 5,000 to 6,000 plants. The plants are distributed to interested farmers.

The staffing pattern at Karez includes three supervisors, one gardener, and one guard.

The farm was established in 1977 at Kadda. Government land of two Kanals is planted with 500 plants of Japan Mulberry. The staff at Kadda consists of three supervisors, one inspector, and one gardener.

Sericulture supervisors are responsible for the propagation and distribution of mulberry plants and silk seed. The Sericulture Department has involved 100 families in cocoon production and trained 270 people from 1987-88 through 1988-89. The number of families fluctuates every year due to the availability of funds for silk worm seeds.

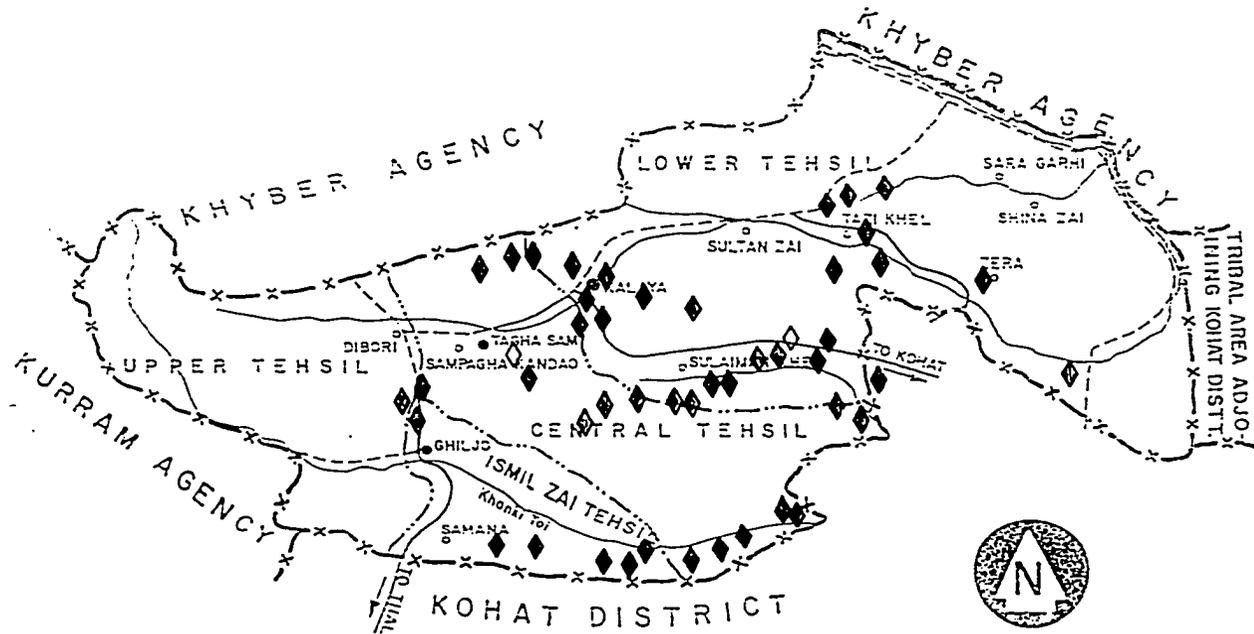
Each packet can produce an average of 10 kg of dry cocoons, so 1000 kg. of dry cocoons can be sold. The Department bought 308 dry cocoons at the rate of Rs. 180 per kilogram. The rest were sold to dealers in the Punjab for export. Department sells silk worm seed.

In 1990, 64 seed packets were distributed to farmers. Out of approximately 640 kg of dry cocoons, the Department bought about 270 kg at the rate of Rs. 200/- per kilogram. The rest were sold to private dealers in the Punjab for export at the same rate. Each family with one seed packet could in theory then earn around Rs.2000 minus seed packet costs (around Rs.150/packet) and transport. This is not a bad profit for 5 weeks work.

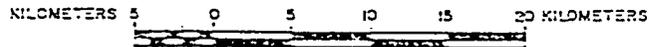
Fig. IX-3

# ORAKZAI AGENCY

## FORESTRY



SCALE 1:322,333



### LEGEND

Agency Boundary	-x-x-
Tehsil Boundary	-.-.-.-
Metalled Road	====
Tracks	- - - -
Block Plantation.....	◆
Forest Nurseries.....	*
Sericulture.....	◇

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## X. COMMUNICATIONS

### A. Roads

The Communication and Works Department (C&W) is responsible for the construction and maintenance of roads in Orakzai Agency. As of April 1990, the C&W Department had reportedly completed 228 Km paved roads (actual length) out of which 24 Km were under construction. About 234 Km (actual length) of shingled roads have been completed or are in process (162 Km are under construction). Fig. X.1 shows the location of roads in the Agency. While these kilometers are funded by Orakzai's allocation, several roads are actually outside the Agency and provide access to the Agency. Table X.2 give the details of roads inside and outside of the Agency and Table X.3 shows roads under construction inside and outside of the Agency. Fig. X.1 shows the location of roads inside the Agency.

Currently the quickest way to enter the Agency from distant cities in Pakistan is to fly to Kohat via Peshawar. From Kohat, one take the paved Kohat-Parachinar road which runs parallel to Orakzai Agency. There are four main entry points to the Agency on the Kohat-Parachinar road. These points are at Kacha Pacca-Mari Bala, Jazora-Wam Panra, Hangu-Shahu Khel, and Kacha Pacca Khai-Zargarai roads. The first intersection is at Kacha Pacca, which is a forty minute drive from Kohat to Kacha Pacca and Marai Bala. There are two roads from Marai Bala. One turns west and connects Boya Sera Mela to Kalaya Kalat. This paved road is 48.27 Km and it takes about two hours to drive from Boya to Kalat. About 8.27 Km of this road (from Marie Bala to Boya Sera Mela) are outside of the Agency. The other road from Marai Bala turns north and connects Marai-Daulatzai. This paved road is 41.89 Km, of which approximately 7.89 Km run outside the Agency boundary. It is around an hour and forty five minute drive. Both of these roads form a loop in Central Tehsil and meet at Mishti Mela. Another road runs from Mishti Mela to Mirbak. This paved road is about 15.06 Km and takes about twenty minutes to drive.

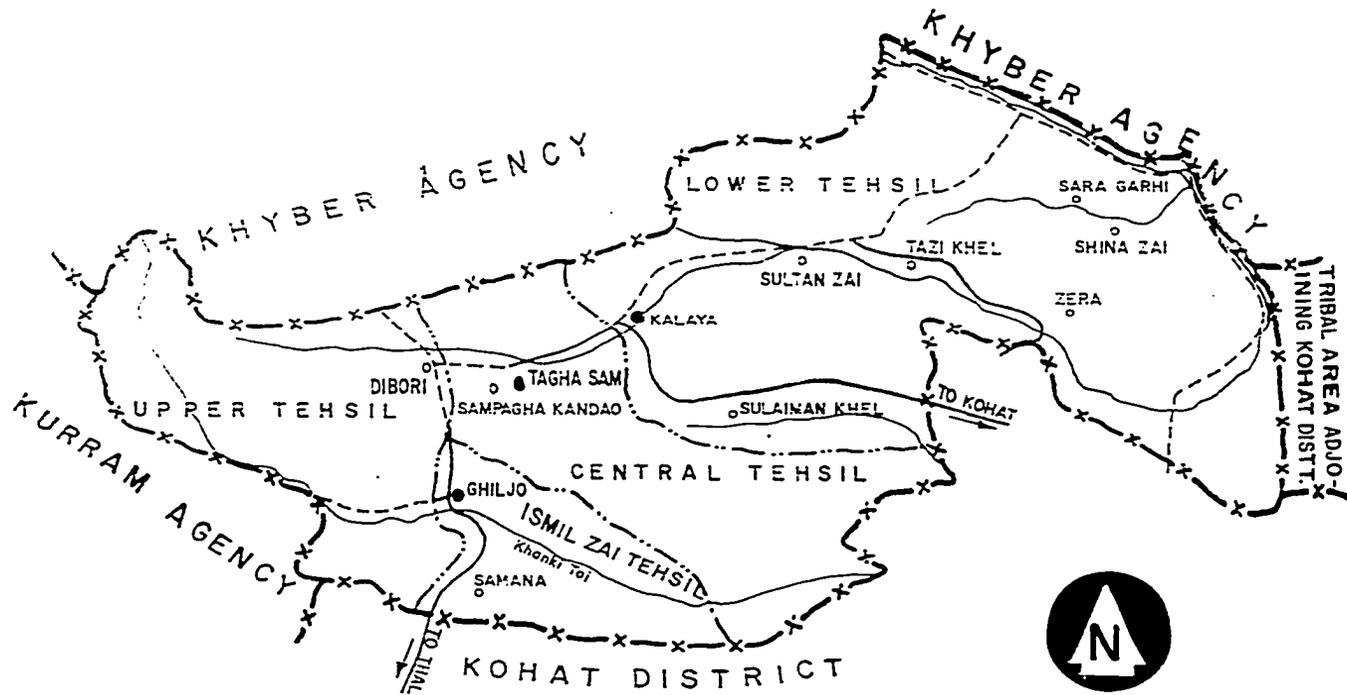
Five Km from Kacha Pacca, a shingled road goes to the southeast of the Agency and joins Mitha Khan-Palosai road. This shingled road of 16.79 Km is under construction and takes about half an hour to drive.

From Kacha Pacca-Mari Bala road at Und Khel, a shingled road goes north to Khawaja Khazir. The length of this under-construction road is 13 Km and it takes about twenty five minutes to drive. At present, 4 Km of the road is complete. The work was stopped by the original contractor. The Political Agent has since nominated another contractor. The total cost of the road from Und Khel to Khawaja Khazir is Rs. 2.998 million. The completion date is set for June 1991.

# ORAKZAI AGENCY

Fig. X-1(a)

ROADS



## REFERENCES

AGENCY BOUNDARY	--x-x--
TEHSIL BOUNDARY	-.-.-.-.-
METALLED ROAD	—————
TRACKS	- - - - -
RIVER / NALA	~~~~~
AGENCY HEADQUARTER	●
TEHSIL HEADQUARTER	●
OTHER LOCALITIES	○

SCALE 1:333,333



SSC

On the same Kacha Pacca-Mari Bala road at Zera, an under construction shingled road leads to Oblan. This 35.82 Km road is one hour drive from one end to the other. About Rs. 83,847 million have been allocated to cover the cost. The second road from Ublan is Oblan-Chappari road of 25.44 Km. This is also an under-construction shingle road and takes fifty minutes to drive. Total allocations for construction of this road are Rs. 10.5 million.

The second intersection on Kohat-Parachinar road is at Jazora. This is about a thirty minute drive from Kohat. Jazora to Wam Pana is 8.85 Km paved road and it is outside of the Agency. At Wam Pana, two roads take different directions. One goes to Chappara Mishti in the northeast and is 10.46 Km in length. This paved road is about 2 Km inside and the rest is outside of the Agency. The driving time on this road is not more than fifteen minutes. The other road leads to Darran. This paved road is 12.87 km out of which about 7 Km is inside the Agency and about 5.87 Km is outside of the Agency. From Darran to Mishti Mela, there is a 32.5 Km shingled road. It is a one hour drive. The estimated cost of this under construction road is Rs. 44,528 million and the expected date of completion is June 1992.

The third intersection on the Kohat-Parachinar road is at Hangu where two roads lead to Agency from different directions. One goes to Shahu Khel. This paved road of 11.25 Km enters the Agency from the southeast via Shahu Khel. At present, black topping and improvement of this road is taking place. The scheduled date for completion is June 1991. The total cost of the Hangu-Shahu Khel road is Rs. 7.387 million. From Shahu Khel to Ghiljo, a shingled road is under construction. Work on this road started back in January 1985. About 18 miles of the road are complete except for the final dressing and some side drains. Out of 32 Km, 4 Km is outside of the Agency. Driving time on this road is not more than forty minutes. The estimated completion date of Shahu Khel-Ghiljo road is June 1991. Work stopped due to local disputes a year back (1989). The estimated cost of this 32 Km road is Rs. 16.625 million.

The second road from Hangu leads to Pathar Band. This shingled road is 12.87 Km and is outside of the Agency. From Pathar Band it connects Samana Fort Lockhart. This paved road of 10.46 Km is outside of the Agency. From Samana Fort Lockhart it meets Sampogha Kandao. At present, blacktopping is taking place on this 12.87 Km road. This road is also outside of the Agency and runs parallel to the southwest of the Agency's boundary.

The fourth and final access to the Agency on Kohat-Parachinar road is via Kacha Pacca Kahi. From Kacha Pacca Kahi to Zargari (in upper Tehsil) is a 12 Km long paved road and it takes no more than fifteen minutes to drive it. This road is outside of the Agency. From Zargari, 25.75 Km paved road leads to Ghiljo.

Approximately 8 Km of this road is outside of the Agency. This road takes about thirty five minutes to drive. From Ghiljo, two roads take different directions and meet at Dibori. One goes straight north. This paved road is 19.20 Km and takes no more than twenty five minutes to drive. The second road to Dibori is via Khanki. This shingled road is 20.85 Km and driving it takes around forty minutes. From Daburi, a metalled road of 11.26 Km connects at Kadda. From Daburi near Zakhtan, an under construction shingled road of 25.75 Km will links Khairadin Kandao in the northwest with Zakhtan. Of the total 25.75 Km, only 6 Km of road is complete and the rest of the project has been dropped by the administration due to local disputes.

Several completed roads measuring in total 100.87 Km are outside of the Agency. Since these roads lead into the Agency, they are therefore maintained by the Agency administration.

The only entrance from a Tribal Agency is through Khyber Agency via the Tirah road. This road enters the Agency from the northeast but the area was inaccessible in December 1990.

The commercial roads are the Marai to Daulatzai road a one and a half hour drive and the Boya Sera Mela to Kalaya Kalat road, also a one and a half hour drive. Both roads meet at Mishti Mela which is located in Central Tehsil of the Agency.

All eight bridges in the Agency are recently built and are in good condition. A 3-span bridge from Tazi Khel to Chinjana Sultanzai is under construction. This is a single lane bridge. Total cost is about Rs. 8 million and the completion date is June 1992. Table X. 4 shows the lengths and locations of the bridges.

#### B. Air

There is no commercial air service to the Agency.

#### C. Telephone, Telegraph and Post Offices

According to the 1986 FATA Development Statistics, only 99 legal telephone connections, 1 telephone exchange and 1 public call office were recorded. The report also mentions ten post offices and no telegraph office in the Agency.

Table X. 1 (b)

Roads status in Orakzai  
as of April 1990

Approximate Kms.			
Name of Roads	Inside Agency	Outside Agency	Total Length
<b>Metalled Roads</b>			
Boya Sera Mela-Kalaya Kalat	48.27	-	48.27
Marai-Daulatzai	34.00	7.89	41.89
Mirbak-Mishti Mela	15.06	-	15.06
Kadda-Daburi	11.26	-	11.26
Jowzara-Wampanra	-	8.85	8.85
Wampanra-Darran	7.00	5.87	12.87
Wampanra-Chappra Mishti	2.00	8.46	10.46
Pat Darband-Fort Lock Hart	-	10.46	10.46
Zargari-Ghiljo	17.75	8.00	25.75
Ghiljo-Daburi	19.20	-	19.20
	-----		
Total Km.	154.54	49.53	204.07
	-----		
<b>Shingled Roads</b>			
Gurguri-Mangali		27.35	27.35
Ashikali-Kurram Piequet		4.88	4.88
Ishakali-Piequet		.80	.80
Scout Fort Link		5.03	5.03
Thall By Pass Ring		6.44	6.44
Dhallan-Nave Dhand		6.84	6.84
Ghiljo-Daburi via Khanki		20.85	20.85
	-----		
Total Km.	20.85	51.34	72.19
	-----		

Table X.2

**Roads Under Construction in Orakzai  
as of April 1990**

Name of Roads	Approximate Kms.		Total Length
	Inside Agency	Outside Agency	
<b>Metalled Roads</b>			
Samana Sarmalo	-	13.00	13.00
Hangu Shahu Khel	-	11.25	11.25
Total Km.	-	24.25	24.25

	Approximate Kms.		Total Length
	Inside Agency	Outside Agency	
<b>Shingled Roads</b>			
Shahu Khel to Ghiljo	28.00	4.00	32.00
Darren to Mishti Mela	32.50	-	32.50
Zakhtan to Khairdin	6.00	-	6.00
Und Khel to Khawaja	13.00	-	13.00
Oblan to Chappari	25.44	-	25.44
Mitha Khan to Palossai	-	16.79	16.79
Oblan to Zera	35.82	-	35.82
Total Km.	140.76	20.79	161.55

**TOTAL KM OF ROADS**

<b>Metalled Roads</b>			
Existing	154.54	49.53	204.07
U/Construction	-	24.25	24.25
Total Km.	154.54	73.78	228.32
<b>Shingled Roads</b>			
Existing	20.85	51.34	72.19
U/Construction	140.76	20.79	161.55
Total Km.	161.61	72.13	233.74

Table X. 3

## Bridges in Orakzai

Name of Bridges	Year of Construction	Stream	Width in Meters
Ghiljo-Daburi	1979-80	Kadi Nullah	8.53
Marai-Daulatzai	1979-80	Mastura	7.31
Boya Sera Mela	1979-80	Dargai Nullah	3.56
Kalaya-Kalat	1980-81	Khander Kadda	7.31
Kalaya-Kalat	1979-80	Kadda Nullah	7.31
Kalaya-Kalat	1980-81	Mastura Nullah	9.76
Kadda-Daburi	1981-82	Mastura Nullah	7.31
Zargari-Ghaljo	1984-85	Khanki Toi	6.09

XI. EDUCATION

A. Primary Level

Most primary schools offer classes I-IV. A few offer class V, but we have counted class V enrollments as a part of middle schools enrollments since the majority of class IV students would have to switch to a middle school if they wanted to attend class V.

1. Girls' Primary Education

The first girl's primary school in the Agency opened in 1974-75, at Kurez, Lower Sub-Division. Now this school has been upgraded to a high school. The number of schools in each tehsil for the last 4 years is as follows:

Table XI.1

Year	Tehsil	Number of Girls' Primary Schools
1986-87	Lower	20
	Central	3
	Ismailzai	3
	Upper	2
	-----	-----
	Total	28
1987-88	Lower	23
	Central	3
	Ismailzai	3
	Upper	2
	-----	-----
	Total	31
1988-89	Lower	26
	Central	7
	Ismailzai	5
	Upper	6
	-----	-----
	Total	44
1989-90	Lower	26
	Central	7
	Ismailzai	5
	Upper	6
	-----	-----
	Total	44

The above figures indicate progress in establishing new schools. Some of these schools have also been upgraded to middle level schools. Almost 60 percent of the schools were in Lower Tehsil in 1989-90, with the remainder were divided among the other three tehsils. There are also two middle schools and one high school in the Agency offering primary classes for girl students. These schools are also located in Lower Tehsil.

Tehsil	Percentage of Agency population %	Percentage of Agency Girls Primary Schools %
Lower	20	60
Central	29	16
Ismailzai	14	11
Upper	37	14

Table XI.2 shows class wise enrollments for 10 years. These data also include enrollments of primary sections of middle and high schools.

Table XI.2 (a)

Girls Primary Level Enrollments

Class	Ig	Is	II	III	IV	Total
1980-1981	63	41	41	21	6	172
1981-1982	112	57	42	12	5	228
1982-1983	118	110	99	32	30	389
1983-1984	38	84	60	25	12	219
1984-1985	121	120	25	19	19	304
1985-1986	165	99	45	24	3	336
1986-1987	180	72	50	33	15	350
1987-1988	472	61	32	17	14	596
1988-1989	320	100	69	30	15	534
1989-1990	441	112	60	39	22	674

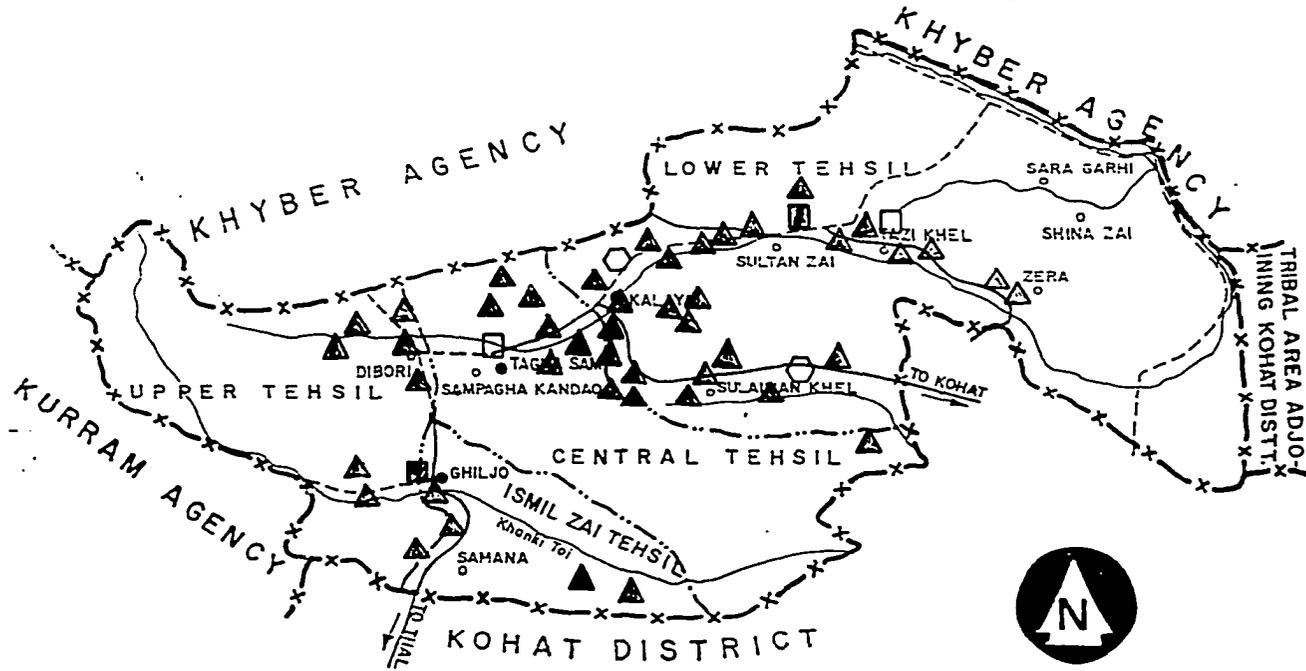
These statistics give a clear indication of a gradual dropout rate from class to class. Another phenomena may be the transfer of students to other places. The number of students has increased substantially from 1986-87 to 1987-88 but enrollments dropped in 1988-89. This drop in enrollments has occurred even with the addition of 11 new schools in 1988-89.

Using 1981 Census data for the number of males aged 5 to 9 and assuming there would be approximately the same number of females (in fact, there would be more), we can derive a female

Fig. XI-2 (b)

# ORAKZAI AGENCY

## GIRLS SCHOOLS



### LEGEND

Agency Boundary	---
Tehsil Boundary	- - - -
Metalled Road	====
Tracks	----
Primary School	▲
Middle School	□
Middle School under const.	◻
High School	⬡

SCALE 1:333,333



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participation rate of roughly 1 percent by taking 2.8 percent as the annual population growth rate. This female participation is not uniform throughout the Agency. Lower Tehsil has more female participation than combined participation of the other three tehsils. Although more schools are being opened, population growth does consume a considerable portion of new places.

Most of these schools do not have staff residential quarters. New schools are now designed to include residential quarters. There is no electricity in any of the schools and no piped water supply.

Recruitment of female teachers is a serious problem in the Agency. According to the Agency Education Officer, 45 percent of sanctioned positions are vacant. Most of the teachers belong to Peshawar or Kohat. Some of these teachers are trained as part of the Agency's quota but later on they obtain transfers to the settled areas. This problem will persist until numerous Agency-domiciled teachers are available.

According to Agency Education Officers, approximately 30 percent of schools admit children under 5 years of age. In some newly opened schools children of over 9 years of age are admitted in class 1.

There were five Mohalla Schools for girls in 1990. Details of these schools are given in section on alternate education.

## 2. Boys' Primary Education

The first primary school for boys in Orakzai opened in 1948. Since then the number of primary schools for boys has grown to 138 in 1989-90. In addition, there are 11 high and 14 middle schools with primary sections. Details concerning these schools on a tehsil-wise basis for the last 4 years are given below:

Table IX.3

Year	Tehsils	%age of Agency Population	Number of schools
1986-87	Lower	20	58
	Central	29	32
	Ismailzai	14	22
	Upper	37	13
	Total		<u>125</u>

Year	Tehsils	%age of Agency Population	Number of schools
1987-88	Lower	20	58
	Central	29	33
	Ismailzai	14	23
	Upper	37	12
	Total		126
1988-89	Lower	20	58
	Central	29	33
	Ismailzai	14	23
	Upper	37	12
	Total		126

Table XI.4 shows enrollments over time. Using 1981 Census data and 2.8 percent annual population growth rate, the number of males aged 5-9 are estimated to equal 45,000. Total primary enrollments for the year 1988-89 were 7075. This indicates an approximate participation rate of eligible males of 16 percent.

All the sanctioned positions for teachers are occupied and no post is vacant. Almost 70 percent of teachers are trained. In some instances, untrained teachers are recruited and later on trained. Generally there are three teachers in a primary school. Two teachers teach various subjects while a theology teacher teaches religion.

Most of the school buildings have no electricity and no residential quarters for staff.

Table XI.4

Boys' Primary Level Enrollments

Class	I	II	III	IV	TOTAL
1980-81	2219	643	510	371	3743
1981-82	2370	520	556	354	3800
1982-83	2176	684	494	413	3767
1983-84	2180	706	618	535	4039
1984-85	2430	800	704	545	4479
1985-86	2602	769	695	526	4592
1986-87	3571	1077	789	565	6012
1987-88	5938	1045	763	397	8143
1988-89	5231	1590	1177	898	8896
1989-90	4348	1178	899	650	7075

A comparison of boys' primary education facilities in three Tribal Agencies with Orakzai follows:

Table XI.5

Agency	# of Primary Schools & Sections on 1989-90	Enrollm.	Estima- ted Pop. in 1989	Area sq. km
Kurram	213	17943	385,553	3,380
SWA	256	13503	395,000	6,619
NWA	238	15492	305,000	4,707
Orakzai	160	8896	472,851	1,538

Orakzai Agency has the lowest number of primary schools and sections compared to the other Agencies, while it has a larger population than North Waziristan and a slightly smaller population than Kurram and South Waziristan Agencies.

Orakzai also has a smaller area making it easier to provide access to schools.

#### B. Middle Level

All middle schools offer fifth class while only a few primary schools do. Fifth class is therefore counted with middle level enrollments in this assessment. We are considering middle level as including fifth class through eighth class.

##### 1. Girls' Middle Education

Very few girls have the opportunity to extend their education beyond fourth class. In December 1990, only two middle schools for girls were functioning. Both are in Lower Tehsil of Orakzai Agency.

Table XI.6

#### Girls Middle Level Enrollments

Class	V	VI	VII	VIII	Total
1980-81	1	-	-	-	1
1981-82	18	-	-	-	18
1982-83	3	-	-	-	3
1983-84	-	-	-	-	-
1984-85	2	-	-	-	2
1985-86	5	-	-	-	5
1985-87	1	3	-	--	4
1987-88	2	-	-	--	2
1988-89	-	1	-	3	4
1989-90	-	-	1	3	4

Enrollment in middle classes is very low. There are few schools and there are problems recruiting teachers. Parents may not be very interested in sending their daughters. Only the Lower Tehsil population has access to these schools. The participation rate is negligible.

## 2. Boys' Middle Education

As of late 1990, there were 14 middle schools for boys in Orakzai Agency, of which 11 also offered high school classes. All 11 high schools had a middle section. Number of schools with middle sections for the last 4 years is given as follow:

Table XI.7

Year	Tehsils	Number of middle schools/sections
1986-87	Lower	8
	Central	4
	Ismailzai	2
	Upper	-
	Total	14
1987-88	Lower	8
	Central	4
	Ismailzai	2
	Upper	-
	Total	14
1988-89	Lower	8
	Central	2
	Ismailzai	2
	Upper	-
	Total	12

These middle schools are mainly located in Lower Tehsil while Upper Tehsil has none. Enrollment in middle classes for the last 10 years is given in Table XI-8.

Table XI.8

Class	Boys' Middle Schools Enrollments				TOTAL
	V	VI	VII	VIII	
1980-81	279	135	101	65	580
1981-82	309	148	123	78	658

Class	V	VI	VII	VIII	TOTAL
1982-83	300	149	131	75	655
1983-84	461	267	151	88	907
1984-85	558	283	219	128	1188
1985-86	345	283	221	128	977
1986-87	438	319	366	268	1391
1987-88	335	429	302	258	1324
1988-89	285	471	361	329	1446
1989-90	198	158	113	73	542

The participation rate of age eligible male children from 10-14 years is roughly 3 percent, but this does not represent a uniform distribution throughout the Agency. Upper Tehsil's population has no access to middle classes. In boys' middle classes, teachers are usually available.

A comparison of Boys' middle schools facilities in Orakzai Agency with three other Tribal Agencies is as follows:

Table XI.9

Agency	Number of Middle Schools & Sections in 1989-90	Enroll.	Estima- ted Pop. in 1989	Area sq. km.
Kurram	43	3527	385,553	3,380
SWA	54	3421	395,000	6,619
NWA	55	3529	305,000	4,707
Orakzai	12	1446	472,891	1,538

Orakzai has a smaller number of middle schools and sections than the other three Agencies.

#### E. Secondary Level

Secondary schools include 9th and 10th classes. All high schools in the Agency offer the lower grades as well. Here we are counting high school enrollments as being class 9 and class 10 enrollments.

##### 1. Girls' Secondary Education

There is only one (planned) secondary school for girls in Lower Tehsil, and this is supposed to start functioning in 1990-91. The middle school at Kurez has been upgraded to high school status. Teachers are not yet available to start the added grades.

## 2. Boys' Secondary Education

The first secondary school for boys was established at Kalaya in 1974. In 1989-90, there were 11 secondary schools in Orakzai Agency. The number of schools in each tehsil for the last 4 years is as follows:

Table XI.10

Year	Tehsil	Number of Schools
1986-87	Lower	4
	Central	1
	Ismailzai	4
	Upper	-
	Total	9
1987-88	Lower	4
	Central	1
	Ismailzai	4
	Upper	-
	Total	9
1988-89	Lower	6
	Central	2
	Ismailzai	4
	Upper	1
	Total	13
1989-90	Lower	6
	Central	2
	Ismailzai	4
	Upper	1
	Total	13

There is again uneven distribution of educational facilities among the various tehsils. Twenty percent of the Lower Tehsil population has access to 50 percent of the Agency's secondary schools, while 39 percent of the Agency's Upper Tehsil population has no secondary school. There is a strong need to open secondary schools in Upper Tehsil and to motivate students to continue their education.

Enrollment in high school for the last 10 years is given in Table XI-12. The participation rate of males aged 15-19 is less than 1 percent.

Table XI.12

## Boys' Secondary School Enrollments

Year	Class 9	Class 10
1980-81	52	22
1981-82	58	26
1982-83	35	32

Year	Class 9	Class 10
1983-84	44	38
1984-85	--	--
1985-86	37	45
1986-87	141	144
1987-88	164	132
1988-89	144	186
1989-90	116	145

A comparison of Orakzai Agency secondary school facilities with three other Tribal Agencies follows:

Table XI.13

Agency	# of Secondary Schools & Sections 1989-90	Enroll.	Estima- ted Pop. in 1990	Area sq. km.
-----	-----	-----	-----	-----
Kurram	18	909	385,553	3,380
South Waziristan	17	741	395,000	6,619
North Waziristan	16	1202	305,000	4,707
Orakzai	12	330	472,851	1,538

#### D. Higher Secondary

There is one higher secondary school at Kalaya with classes 11 and 12. This school has primary, middle and high school sections. This school started functioning in 1989-90.

#### E. Alternate Education

##### 1. Mohalla and Mosque Schools

Orakzai has 5 mohallah schools for girls. One part-time teacher is assigned to each school. There were 16 mosque schools for boys in Orakzai as of late 1990. In each mosque school, there is one trained and one theology teacher assigned on a part-time basis. There are roughly 800 students enrolled in these schools.

## 2. Adult Literacy Centers

There are four adult literacy centers in Orakzai Agency. Three are located in Lower Tehsil, one each at Palase, Ahmad Khel and Said Khel Bara. One is located at Ghaljo of Upper Tehsil. This program is operated in primary schools and is conducted by school teachers. The teacher is paid Rs. 250/- per month. The course is of nine months' duration. Generally, teachers motivate people to attend this course. Each program has roughly 10 participants. This program rotates to other areas where there is interest.

## 3. Industrial Homes

There are six Industrial Homes operating in the Orakzai Agency. These are located at Kalaya, Samana, Chauntra, Mirbag, Taghasan, and Nawa Kali. Researchers visited all of them. The Industrial Home at Kalaya has an enrollment of 20 students taught by an untrained teacher. At Samana Industrial Home, five students are taught by a teacher. At Chauntra, the 14 students enrolled are actually primary school students and there is no teacher. Mirbag Industrial Home has an enrollment of 24 students who are instructed by a trained teacher. At Taghasan Industrial Home, 10 students of the same family are taught by an untrained teacher. The Industrial Home at Nawa Kali is closed. All these Industrial Homes are located in a room at the village girls' primary school.

## F. Vocational Training

There is one technical education center at Kalaya which is functioning.

## G. Administration of Agency Education

One Agency Educational Officer is in charge of Agency education operations. There are two Assistant Education Officers, one for female and two for male education. There is one literacy supervisor who supervises mosque schools, mohallah schools and the adult literacy program. He also acts as Assistant Education Officer (AEO). The AEO conducts inspection of schools, examinations and administrative duties, etc. It is very difficult to manage all these schools with these few staff. There is only one 9 year old jeep which is used by the AEO. Staff generally use private transport and pay with their own money. AEOs usually conduct surprise visits every month. The AEO states that teachers are usually present, because parents complain about teachers who are frequently absent.

## XII. HEALTH

The Agency is provided with the following facilities:

- o 2 civil hospitals
- o 16 Basic Health Units
- o 2 Rural Health Centers
- o 10 civil dispensaries

Fig XII.1 shows the locations of these facilities. In addition, some of the facilities have EPI centers with designated staff, including mobile and outreach teams.

The Agency Surgeon and his Field Senior Medical Officer (FSMO), are stationed at Hangu and are responsible for supervising the above-mentioned facilities. Owing to considerable distances, insecurity and lack of government funding for transportation, it is difficult to supervise these far flung and remote facilities.

A partly functional malaria control program exists in the Agency, hindered by the lack of staff and proper funding. The Agency does not have a leprosy control program.

The main problem in providing health care to the Agency population is the shortage of professional staff and of female health care workers in particular. The hardship allowance (Rs. 200 per month for medical officers and similar specialists; Rs. 75 per month for health technicians and those with equivalent or lesser training) is too small to attract staff. Raising the allowance might help with recruitment but this is a higher level policy decision and requires the allocation of similar amounts for similar areas. Such a decision would be of some consequence for the department's recurrent costs.

Other reasons making Tribal Areas postings unpopular include difficult living conditions and the uncertain law and order situation.

Recruiting female health care professionals is the most problematic. There are no lady health visitors (LHVs) or women medical officers in the whole of the Agency. Many women prefer to go to Kohat or Hangu, and many others are referred to facilities outside the Agency where female health care professionals are available.

Laboratory technicians are not available in the Agency, and only one radiographer is available, at Kalaya civil hospital.

Under-staffing means that a good referral system cannot be established. Patients visiting a dispensary who needs to be

referred to a physician must be sent to a distant hospital, or out of the Agency. Generally, people who have the means to leave the Agency do so for serious illnesses. Many go to Hangu, Kohat or Peshawar out of necessity or preference.

The staffing problem is one that cannot be easily solved without more financial incentives to work in Agency. The Health Department is also considering a proposal to limit the first three years of government service of a graduating physician to that Agency where he is domiciled.

The problem is not only restricted to staff recruitment and posting, but also lack of professionalism. Staff absenteeism can be high.

Data on caseloads were obtained from the Agency Surgeon's office.

#### A. Hospitals

There are two hospitals in the Agency. These are staffed and located as follows:

##### I. Civil Hospital Kalaya, Lower Sub-Division

Table XII.2 (a) Staffing

Name of Post	Sanctioned Positions	Occupied	Vacant
Medical Officer	11	2	9
Women Medical Officer	2	-	2
Compounder	10	8	2
Lady Assistant	2	-	2
Radiographer	2	1	1
O.T. Assistant	1	1	-
Anesthesia Assistant	1	1	1
Junior Clerk	1	-	1
Class IV staff	26	26	-

Almost 60 percent of the technical posts are vacant. The hospital has 38 beds, classified as:

- 10 surgical
- 10 medical
- 10 obstetrical
- 8 pediatrics

The hospital does not admit patients due to the shortage of physicians. The Hospital has a blood bank, laboratory and a dental unit but lacks the professionals to run them. The hospital also has an anesthesia unit but no oxygen. Statistics on outdoor patients were as follows:

Table XII.2 (b) Case Loads (out door)

Year	Male	Female	Male Child	Female Child	Total
1988	1502	921	-		2423
1989	832	540	462	296	2130
1990	-	-			2264

The hospital has no potable water supply connection, nor is there any latrine in O.P.D. In terms of living quarters, the hospital is relatively well equipped with three bungalows for medical officers and two quarters each for dispensers and the nursing staff. Two quarters need repair, and the overall sanitation system needs to be improved. The facility also has an Oral Rehydration Therapy (ORT) program and some necessary furnishings; e.g., chairs, demonstration tables and ORS were provided by USAID.

2. Civil Hospital, Samana, Upper Sub-Division:

Table XII.3 (a) Staffing

Name of Post	Sanctioned	Working	Vacant
Medical Officer	1	1	
Women Medical Officer	1	1	MO is working instead of WMO.
Compounders	4	4	-
Lady Assistant	1	-	1
Class-IV servants	12	12	-

The hospital has 40 beds classified as:

10	Medical
10	Surgical
10	Female
10	Tuberculosis

Table XII.3 (b) Case Load (out patients)

Years	Male	Female	Male Child	Female Child	Total	Population
1988	947	362	315	169	1793	20,000
1989	1382	609	626	367	2984	
1990	1041	480	450	250	2221	

Assuming a 6-7 day stay per patient, bed utilization in 1990 was close to 100 per cent.

During a November 1990 visit to Samana Hospital, the only appointed medical officer was absent and had been so for the last four days. Three out of four dispensers were missing and the EPI team was not present. Only one Dai was present. Sanitation facilities were poor and medical facilities were not properly maintained.

The out-door patient (OPD) count for 17 November 1990 was 9 patients, with 13 attending on 18 November 1990. Major complaints arose from conditions such as diarrhea, constipation, vomiting, injuries, uterine tract infection, PUO (fever of unknown origin), and Bronchitis.

Samana Civil Hospital serves an approximate population of 20,000. The building is located near the main road and is easily accessible. The hospital does not have an electrical power connection, nor is there any potable water supply connection. It has a total of 16 residential quarters, all of which need serious repair and are unfit for living. Only one latrine exists, and this is in the female ward. Three EPI cover the area on foot because transportation has not been provided. A technician fully functional lab is available but no technicians to run it. USAID has provided limited equipment for the Oral Rehydration Therapy program.

#### B. Rural Health Centers

The following table shows status and location of these facilities in each Sub-Division:

Table XII.4 (a) Staffing

1) - Rural Health Center, Kurez		Sancd.	Working	Vacant
Name of Post				
Medical Officer		2	1	1
Women Medical Officer		1	-	1

Name of Post	Sancd.	Working	Vacant
Medical Technicians	4	4	-
Class-IV servants	7	6	1
Lady Health Visitor	1	-	1
Lady Assistant	1	-	1

Although the facility has 10 beds, no patients are admitted.

The facility has one Medical Officer and needs a WMO and an LHV. There are six staff residential quarters and all of them are in good condition, with electricity available. It also has an out-of-order potable water supply system for which the tank needs to be fixed. An EPI program with four staff members was attached to

the facility, but no staff member was present on the day of the visit. The EPI team has been provided with a motorcycle for outreach activities. The register, however, showed that only 14 children had been inoculated the day before with DPT and Polio.

Table XII.4 (b) Case Load (out patients)

Location	Male	Female	Male Child	Female Child	Total	Area Population
1988	525	773	-	-	1298	20,000
1989	1182	776	693	479	3130	-
1990	-	-	-	-	4159	-

On the day of USAID researchers' visit, the outdoor patients' register at Rural Health Center, Kurez showed 23 patients at noon. They suffered from a variety of ailments including amoebic dysentery, pneumonia, arthritis and ear infection.

The above figures show a significant increase in case loads during the 3 year period, although the facility is not equipped with a dental unit or laboratory and does not have a stock of medicines. The center seems to have a functional ORT program, and has been provided with equipment by USAID. According to center figures, 2-3 packets of ORS were given per patient with diarrhea. The medical officer at the facility complained about the shortage of medicines.

## 2) Rural Health Center, Ghaljo

Table XII.5 (a) Staffing

Name of Post	Sanctioned	Working	Vacant
Women Medical Officer	1	0	1
Medical Officer	2	2	-
Lady Health Visitor	1	-	1
Medical Assistant	3	1	2

Table XII.5 (b) Case Load (out door)

Year	Male	Female	Male Child	Female Child	Total	Population of the Area
1988	1981	1689	-	-	3670	20,000
1989	1167	1055	1018	628	3869	-
1990	1202	820	998	563	3583	-

During a field visit to the Rural Health Center, Ghaljo, it was observed that the RHC, Kurez seemed to be in much better condition than the one at Ghaljo. Although the RHC, Ghaljo had two Medical Officers one of whom was occupying a W.M.O post, the facility has neither electricity nor potable water. It has two private rooms and two four bedded male and female wards but no indoor patients. It is also equipped with a dental unit and x-ray equipment but there are no qualified staff to operate these.

Laboratory equipment is also present. The facility has six residential staff quarters, all in deteriorating condition. There is no sanitation system on the premises and the building's roof needs to be repaired and a drainage system installed to prevent further damage.

Thirty-eight deliveries by a Da'i had been conducted from January 1990 to October 10, 1990. Minor surgery had also been conducted and a total of 558 minor operations including incisions, and circumcisions and 647 cases of minor surgery had been performed from January to November 1990.

The center has a serious shortage of staff, and an LHV is needed for deliveries and training of local Dai's. Supply of anesthesia is also needed as most minor surgeries are being performed without administering any anaesthetic.

## C. Basic Health Units

A description of the Agency's BHUs in terms of staffing and case load in 1988 is given in Table XII.6.

Table XII.6

UPPER SUB-DIVISION:		Staffing and Case Loads			1988	
Location	Staff	Male	Female	Total	Population	
BHU Mulla Khel	2 Medical Techn. 1 Dai	499	360	850	20,000	
BHU Swarokot	2 Medical Techn.	115	138	253	15,000	
BHU Saiful Dara	2 Medical Techn. 1 Dai	275	119	394	10,000	
LOWER SUB-DIVISION						
Location	Staff	Male	Female	Total	Population	
BHU Takhtak	1 Medical Techn.	147	180	327	15,000	
BHU Mithu	2 Medical Techn. 1 Dai	1391	1016	2407	7,000	
BHU Utman Khel	-	1225	932	2157	10,000	
BHU Kadda	1 Technician 1 Dai	1677	1446	3123	6,000	
BHU Kasha	2 Medical Technicians 3 class III servants	235	149	384	8,000	
BHU Mishti Mela	2 Technicians 1 Dai	1244	1176	2420	15,000	
BHU Darran	1 Medical Technician 3 class IV servants	345	309	654	6,000	
BHU Zorchappar	2 Medical Technicians 1 Dai	491	421	912	6,000	
BHU Payo Khel	2 Medical Technicians 1 Dai	230	158	382	8,000	
BHU Karghan	2 Medical Technicians 1 Dai	Newly established		-	-	
BHU Anjani	2 Medical Technicians 1 Dai	865	433	1498	7,000	

U Char ela	1 Medical Techn. 1 Dai	1364	1023	2396	8,000
U Suleman el	1 Medical Technician 1 Dai	1540	1483	3023	15,000

Not a single physician has been assigned to any BHU. Usually staff of every BHU consists of medical technicians and dais. Even some of the BHUs do not have dais posted there. BHU at Utman Khel even has no medical staff assigned to it. There seems to be no proportional relationship between BHU staff and the population it covers. Some of the BHUs with fewer staff has more work load than other BHUs with more staff and lesser population to cover.

BHUs do not function as referral centers. Generally patients are referred to hospitals when greater expertise or better facilities are required.

#### D. Dispensaries

All dispensaries are staffed with one compounder. Dai's are attached to some units. The following table shows the status of these facilities in 1988.

Table XII.7

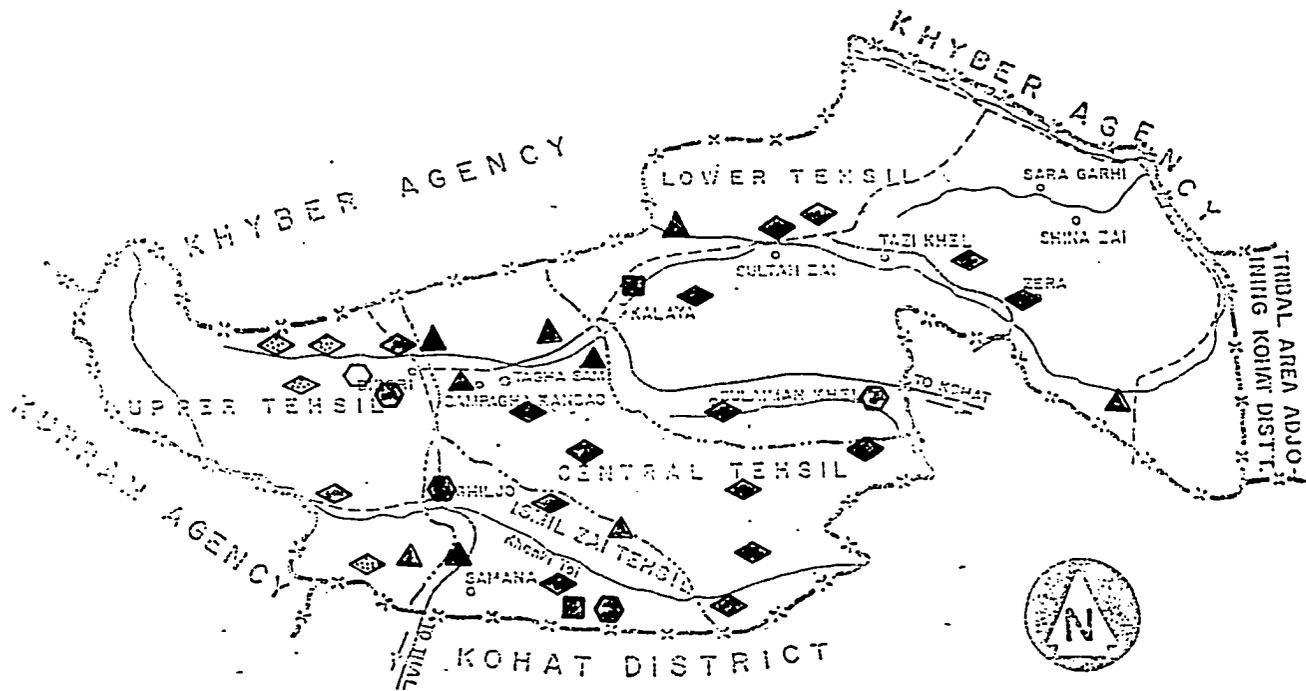
#### Upper Sub-Division

Location	Staff	Male	Female Child	Total	Population
Civil Disp. Indali Khel	1 Compounder	740	713	1453	5,000
Civil Disp. Chawaga Sari	1 Compounder 1 Dai	301	238	509	5,000
Civil Disp. Badan	1 Compounder	107	117	224	5,000
Civil Disp. Musa Mela	1 Compounder	199	180	379	5,000
Civil Disp. Biland Khel	1 Compounder 1 Dai	709	140	110	5,000

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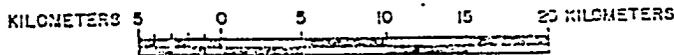
# ORAKZAI AGENCY

## HEALTH FACILITIES



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SCALE 1:333,333



Agency Boundary	—x—x—
Tehsil Boundary	- - - - -
Metalled Road	====
Tracks	- - - - -
Hospitals	▲
Dispensaries	△
Basic Health Unit	◆
Rural Health Center	⬠
Basic Health Unit under Construction	◆
Rural Health Center under Construction	⬠

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## Lower Sub-Division

Location	Staff	Male	Female Child	Total	Population
Civil Disp. Jalaka	1 Compounder 1 Dai	1158	882	2040	4,000
Civil Disp. Magor	1 Compounder 1 Dai	115	135	250	5,000
Civil Disp. Molosai	1 Compounder 1 Dai	598	494	1092	4,000
Civil Disp. Mool	1 Compounder	100	80	180	4,000
Civil Disp. Marik	1 Compounder	99	77	176	3,000

Each dispensary seems to cover a population ranging from 3000 to 5000 persons with the same number of staff. Load varies from dispensary to dispensary. Civil dispensary Biland Khel had a work load of 110 patients while the civil dispensary at Jalaka covered a load of 2040 patients. Three of the above mentioned dispensaries even do not have dais assigned to them.

#### E. Oral Rehydration Therapy (ORT) and EPI services.

##### 1. ORT

Agency authorities had no record of distribution by health unit that was readily available. The only available information was on 2300 packets of ORS, issued to various medical centers in the Agency in 1989. Details of patients provided with ORT were not available with the Agency Surgeon.

##### 2. EPI Orakzai

The following supervisory staff are available in Orakzai Agency for EPI:

Staff strength as of 1990	Positions	Available
FSMO	1	1
Supt vaccination	1	0
FSV	2	1
Senior Clerk	1	1
Junior EPI technician	20	20
Driver	2	2

All staff members are based at Hangu. Mobile teams of junior EPI technicians visit field locations and operate at different EPI outlets. Two vehicles are assigned for the field duty. Every Agency EPI office is given an annual as well as monthly targets, which they try to achieve. A comparative analysis of seven Tribal Agencies in terms of achievements for the month of May 1991 is as follows:

Agency	Percentage achievements of targets
Bajaur	78.9
Khyber	98.6
Kurram	56.4
Mohmand	99.4
Orakzai	50.8
North Waziristan	79.5
South Waziristan	90.6

According to the Deputy Director EPI, results are not very encouraging for the Orakzai because of inadequate communication, severe cold weather, ethnic and tribal clashes, non-availability of electricity and migration of people. Achievements for the Orakzai Agency in terms of targets for five months of the year 1991 are as follows:

Yearly target	Monthly target	Jan	Feb	Mar	Apr	May
17358	1447	22.4%	21.2%	32%	32.3%	50.8%

Details regarding targets and achievement results in the field of immunization for the years 1988-89 and 90 are given in Table XII.8 and XII.9.

## XII.8

## EPI ORAKZAI YEARWISE PROJECTED POPULATION/TARGET AND VACCINATION PERFORMED

## I. 0-11 MONTHS CHILDREN AND WOMEN

YEAR	PROJECT POPULATION	0-11			POLIOMYELITIS			DPT			45%	TT (PL+CBA)			MEASLES
		3.6%	BCG		I	II	III	I	II	III	TARGET	I	II	III	
1988	438,000	15,700	5,970	5,664	4,378	4,607	5,661	4,378	4,607	19,800	12,143	9,103	1,309	2,757	
1989	455,000	16,200	7,833	9,494	7,901	12,214	9,494	7,901	12,214	20,200	17,809	12,232	4,836	4,873	
1990	468,080	16,860	12,339	12,123	9,487	9,176	12,123	9,487	9,176	21,060	11,302	9,633	4,531	6,351	

## II 12-23 MONTHS CHILDREN

YEAR	BCG	POLIOMYELITIS			BOOSTER			DPT			BOOSTER			MEASLES
		I	II	III	I	II	III	I	II	III	I	II	III	
1988	4,920	5,731	4,340	4,499		596	5,731	4,340	4,499	594			5,856	
1989	6,874	7,372	6,326	6,634		1,040	7,372	6,326	6,634	1,040			6,216	
1990	7,822	7,574	5,975	4,732		2,224	7,574	5,975	4,732	2,224			6,442	

## III 2-4 YEARS CHILDREN

YEAR	BCG	POLIOMYELITIS			BOOSTER			DPT			BOOSTER			DT			
		I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	
1988	4,717	5,154	4,371	-		1,312	-	-	-	-		5,154	4,371	1,312			
1989	1,603	1,722	1,641	-		687	-	-	-	-		1,722	1,641	687			
1990	-	-	-	-		-	-	-	-	-		-	-	-			

0-11 MONTHS CHILDREN = 3.6% OF THE TOTAL POPULATION

12-23 MONTHS CHILDREN = 3.4% OF THE TOTAL POPULATION

PL (PREGNANT LADIES) = 4.5% OF THE TOTAL POPULATION

CBA (CHILD BEARING AGE (15-45 YEARS)) = 16.5% OF THE TOTAL POPULATION

DPT = STANDS FOR DYPHTHERIA, PERTUSSIS, TETANUS

DT = STANDS FOR DYPHTHERIA, TETANUS

TT = STANDS FOR TETANUS TOXOID

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The above table shows a break up chart of children of various ages and treatment provided. Section I contains the population of Orakzai Agency and estimated 3.6 percent of population between the age of 0-11 months (a GOP standard). BCG is given against tuberculosis (one complete dose). Three doses of Poliomyelitis and DPT are given against Polio and tetanus respectively. 45 percent target group consist of ladies of child bearing age between 15-45 years. This group is given Tetnus Taxide. In the same way, certain number of patients are given doses against measles. Similarly section II and III explains number of patients of different age groups treated against various diseases.

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TABLE XII.9

## EPI ORAKZAI IMMUNIZATION PERFORMED YEARWISE (ALL AGE GROUPS)

YEAR	POLIOMYELITIS			BOOSTER			DPT*			BOOSTER			DT**			TT*** (PL-CBA)			MEASLES
	BCG	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III			
1988	15,607	16,549	13,089	9,106	1,908	11,395	8,718	9,106	594	5,154	4,371	1,312	12,143	9,103	1,309	8,613			
1989	16,310	18,588	15,868	18,848	1,727	16,866	14,535	18,848	1,040	1,722	1,641	687	17,809	12,232	4,836	11,089			
1990	20,161	19,697	15,462	13,508	2,224	19,697	14,219	13,908	2,224	-	-	-	11,302	9,633	4,531	12,793			

Table XII.9 shows a comparative analysis of treatment against various diseases for the last three years. In most of the cases, number of patients treated goes up as the time passes.

NOTE: Projected population and target estimation is difficult due to controversial population statistical report.

**F. Malaria Control**

There is a malaria control program which is restricted to house spraying. The number of houses sprayed by year is given below:

1987	5310	houses	sprayed
1988	2268	"	" "
1989	2148	"	" "

Between 1987 and 1989 there has been a decrease of more than 50% in the number of houses sprayed. According to the Agency Surgeon's office, this can be attributed to the fact that the supply of Malathion has been decreased by the government.

**G. Private Practitioners**

There are no qualified registered medical practitioners serving in a private capacity in the Agency.

### XIII. ELECTRIFICATION

As of June 1990, WAPDA had brought electricity to 141 Orakzai villages via 146 transformers. WAPDA plans to electrify 23 more villages in (1990-91) under the ADP. Fig. XIII.1 shows electricity grid.

There are 172 km. of high tension lines and 151 km. of low tension lines.

	High Tension Lines	Low Tension Lines
Kalaya	127 km.	110 km.
Head Quarters, Kalaya	45 km.	40 km.
	-----	-----
	172 km.	150 km.

The Agency has two grid stations, each of 66 kv rating. One is located at Kalaya via Kohat and the other is at Headquarters Kalaya via Hangu. Both feed 11 kilowatts of electricity.

The number of transformers and their capacity is as follows:

	25 KVA	50 KVA	100 KVA	200 KVA
Kalaya	17	15	75	1
Headquarters, Kalaya	3	5	28	1

At least six illegal transformers are supplying electricity to various parts of the Agency.

WAPDA supervises Orakzai's electricity operations from its Hangu office. The staffing pattern at Hangu is as follows:

	Station	On Duty	Vacant
1.	SDO	1	0
2.	LSI	3	2
3.	LSII	3	-
4.	LMI	17	3
5.	LMII	12	-
6.	ALM	45	8
7.	S/C	2	-
8.	J/C	3	2
9.	M/R	4	2
10.	BD	3	1

Eighteen positions are vacant in the Hangu office. The staff has only one pick-up for transportation.



The Central part of Orakzai Agency is completely electrified. Those villages which are not yet electrified in central Orakzai are Daulatzai, Khoz, Tepzi and Mir Ahmad.

The figures for legal and illegal connections are listed below:

	<b>Number of connections</b>	
	<b>Legal</b>	<b>Illegal</b>
Residential	1,624	2,500
Commercial	6	50
Irrigation	9	-
Industrial	8	-
	-----	-----
	1,647	3,000
	-----	-----

There are 1,453 more illegal connections than there are legal ones. This is very costly for WAPDA.

As in other Agencies, WAPDA has difficulty collecting payment of bills even for the legal connections. As of March 1990, WAPDA was owed the following:

- 1) Bills outstanding from government agencies: Rs. 126,575
  - 2) Bills outstanding from private consumers : Rs.5,429,155
- =====
- Rs.5,555,730
- =====

The Department has taken some action to recover outstanding revenues from tribesmen. The Departmental staff meet every month with the P.A., Orakzai to seek assistance in recovering the outstanding arrears from tribesmen. Secondly, the Department has established a special group to collect outstanding bills by force. The group consists of one Grade II Officer, one Lineman I, and one Assistant Lineman. The Political Agent approves the actions taken by the Department.

Frequent problems in the flow of electricity occur due to illegal work on electrical lines. In addition, installation of illegal substandard transformers on lines by tribesmen creates frequent disturbances, in the electrical supply. Also, tribesmen do not allow sub divisional staff to cut tree branches which impede lines. Load shedding in the Agency takes place almost every day for two to three hours through out the year.

#### XIV. INVESTMENT IN DEVELOPMENT

Total investment allocations for Orakzai Agency from 1971-72 to 1988-89 were Rs. 568.891 millions. Orakzai Agency ranks sixth among all Agencies in terms of total allocations, and only Mohmand Agency received a smaller total allocation than Orakzai Agency. Table XIV.1 shows FATA-DC, Planning and Development, and MNA/Senators' allocations. In 1974-75, schemes were started in the power, health, education and housing sectors. After that, schemes were gradually initiated in agriculture, communications, rural development, irrigation and forestry. The initial investment allocations in 1974-75 were 3.079 million rupees which rose to Rs.16.673 million in 1976-1977. After that, there was a gradual increase which led to a total allocation of Rs. 92.395 million rupees in 1988-89.

Table XIV.2 shows allocation trends over time. Table XIV.3 shows sector-wise allocations from 1973 to 1989. Analysis of all sectors shows that in the infrastructure development sectors such as power and communications, allocations gradually increased over time. In basic human needs categories, such as education, health and potable water, the allocations rose many times from a very low base in 15 years. In the irrigation sector too, allocations also increased; but in agriculture and rural development, the allocations have been almost constant in spite of inflation. This shows that agriculture and rural development schemes have not been a priority of the government in this Agency.

In the water sector (irrigation), Orakzai Agency is sixth among all Tribal Agencies and FRs in term of allocations. The irrigation sector's share of total allocations from 1978-79 to 1988-89 has ranged from one percent to 22 percent. Most years, its share was above 10 percent. This shows that irrigation system development is a priority of the government in this Agency as compared to the other sectors although its low ranking vis-a-vis other Tribal Agencies may indicate lesser potential for implementing surface irrigation schemes.

In comparing all Tribal Agencies, investment in agriculture in Orakzai Agency is in the last position. As compared to allocations in other sectors, the agriculture sector's share was 13.38 percent in 1975-76 when investment in this sector was initiated. After that, for the last 13 years, agriculture's share in total Agency allocations has been less than 6 percent and most years equal to or less than 3 percent.

In Orakzai Agency, the allocations for the agriculture extension component were in the range of Rs.0.2 millions to Rs.0.339 millions from 1985-86 to 1988-89. For agriculture

Table XIV.1

FATA-DC, P&D AND MNA/SENATOR  
 YEAR/SECTORWISE ADP ALLOCATION  
 Agency: ORAKZAI

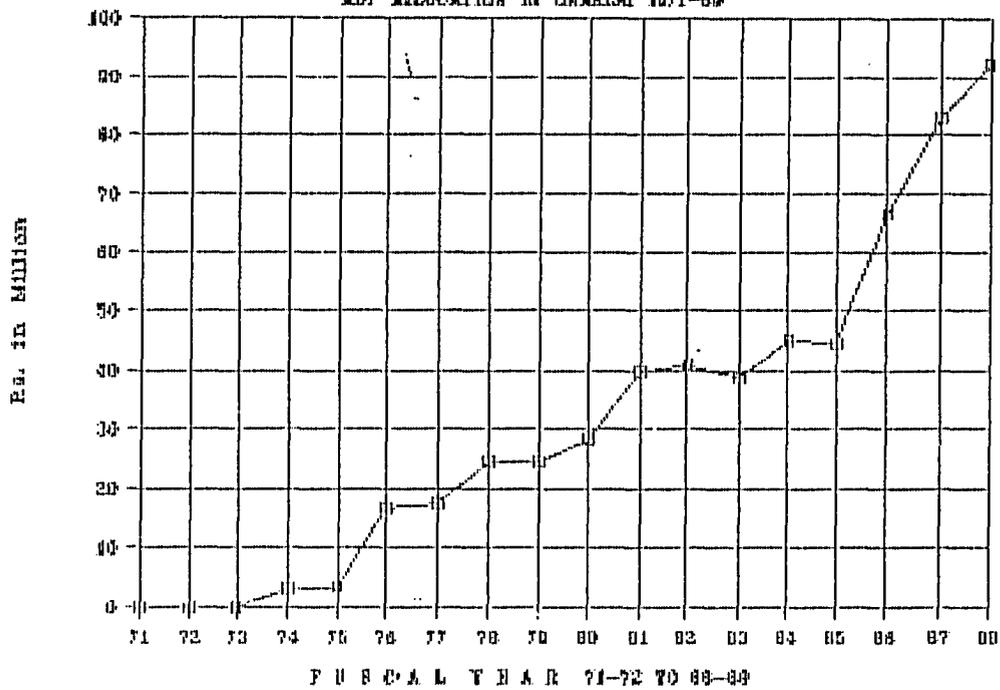
YEAR/SEC	AGRI	POWER	COMMUNI	HEALTH	EDUCAT	PP&H	INDUS	RURDEV	P&D	WATER	FOREST	RESDEV	MINERAL	TOTAL
71-72														0.000
72-73														0.000
73-74														0.000
74-75		2.000		0.173	0.905	0.001								3.079
75-76	0.458	1.500		0.300	0.363	0.801								3.422
76-77	0.239	1.500	10.948	0.600	0.436	2.950								16.673
77-78	0.320	2.013	8.014	0.670	2.170	4.260	0.090							17.467
78-79	1.139	1.500	12.764	0.679	4.816	2.906		0.481		0.200				24.485
79-80	1.422	1.642	12.537	1.401	1.434	3.336				2.738				24.510
80-81	0.823	3.000	12.173	1.944	3.433	3.825				3.041				28.239
81-82	1.359	4.200	15.493	3.342	3.415	5.566		1.121		5.293				39.789
82-83	1.535	4.132	14.374	2.264	2.612	9.376		1.177		5.546				41.016
83-84	1.983	5.100	7.400	1.898	6.388	5.750		1.520		8.716				38.755
84-85	2.754	4.200	12.302	2.506	8.319	8.478		2.106		4.217				44.882
85-86	1.393	3.732	15.029	3.245	11.910	5.284		1.707	3.323	0.803			0.100	44.526
86-87	2.117	8.938	23.452	3.753	8.081	6.072		1.707	3.323	7.420			0.821	66.484
87-88	2.500	13.920	27.232	3.750	9.519	8.969		1.800	3.322	11.657			0.500	83.169
88-89	0.885	14.804	29.715	7.851	18.449	10.984		1.007		5.844	1.400		1.456	92.395
TOTAL	18.927	72.181	199.433	34.376	82.980	78.558	0.090	12.626	9.968	55.475	1.400	0.000	2.877	568.891

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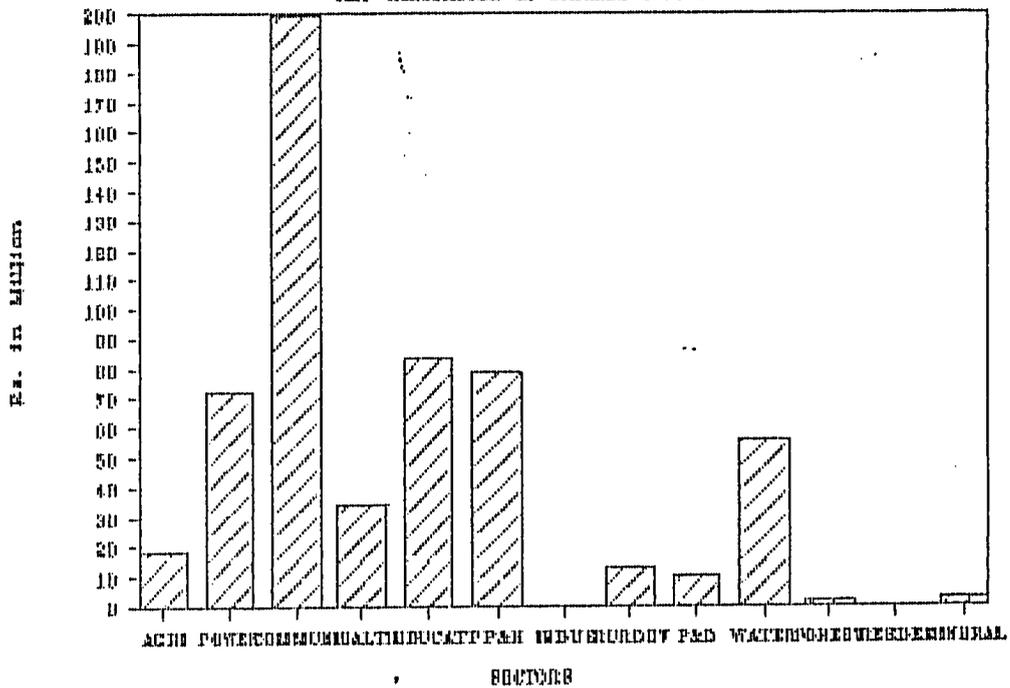
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## FATA-DC, P&amp;D &amp; MNA/SENATOR PROGRAM

ADP ALLOCATION IN DRAZEL 1971-89



FATA-DC, P&D & MNA/SENATOR PROGRAM  
 ADP ALLOCATION in GRANTS 1971-80



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research there were no allocations in 1985-86. In 1986-87, Rs. 0.529 millions were allocated for research while the following year this amount was reduced to 0.254 million rupees. In 1988-89, the allocations were 0.260 million rupees. Earlier and more substantial investment in agriculture extension and research might have precluded Agency farmers' turning to the growing of hashish on substantial acreage. Agriculture has been a sector of serious under investment as it has been in all Tribal Agencies.

The Animal Husbandry component of agriculture investment received 0.283 million rupees in 1985-86. The following year the allocation rose slightly to 0.292 million rupees, and in 1987-88 the allocation rose further to 0.397 million rupees. In the year 1988-89, the allocations almost doubled to 0.709 million rupees from the previous year or far more than was invested in agriculture extension that year.

Forestry allocations were included in agriculture allocations in the ADP until 1988-89. In 1985-86, 0.86 million rupees were allocated to the forestry sector. The following year, 1.339 million rupees were allocated. In 1987-88, the allocation was 1.299 million rupees which was further reduced to 0.397 million in 1988-89. Comparing these allocations with that of agriculture extension and research reveals that the forestry sector is a higher priority of government than extension and research.

In the power sector, Orakzai Agency allocations stand in second position when compared with other Tribal Agencies and FRs. This may have something to do with the Agency's physical location near the settled area and the relatively greater ease of extending the electricity grid to it. Electrification in the Agency started in 1974-75 with an allocation of 2 million rupees. Until 1985-86, the annual allocation remained below 5 million rupees. In 1986-87, the allocation rose to 8.938 million rupees which further increased to 13.920 million rupees in 1987-88, and 14.804 million rupees in 1988-89. The share of the power sector in the total Agency allocations was round 65 percent of total investment in 1974-75 when this sector was initiated. This high percentage was partly due to the fact that at that time total Agency allocations were small and investment was being made in only a few sectors. The following year, the power sector gained 44 percent of total investment. From 1976-77 to 1988-89, the power sector's share of total Agency allocations remained below 16 percent. Although the percentage of total annual investment decreased, allocations in terms of millions of rupees increased, which helped in the construction of the grid and the extension of power transmission lines.

In communications, Orakzai Agency ranks fourth among all Tribal Agencies and FRs. Investment in this sector was initiated in 1976-77 with an amount of around 11 million rupees. This amount decreased to 8 million rupees the following year. From 1978-79 to 1985-86, yearly allocations remained below 15 million rupees. In 1986-87, the allocation rose to 23.452 million rupees, and then rose again to a peak of 29.715 million rupees in 1988-89.

From 1976-77 to 1988-89, the percentage of the communications sector's share of total Agency allocations ranged from 19 percent at minimum to 65 percent at maximum. This shows that in terms of percentage share as well as rupee amount, the government spent lot of money on the construction of roads.

Total health allocations in Orakzai Agency ranks seventh among all Agencies and FRs. In the health sector, total allocations in 1974-75 were 0.173 million rupees. This amount gradually increased to 3.342 million rupees in 1981-82. For the following three years, the allocations decreased. From 1985-86, the allocations again started rising until 1988-89 when the allocations were 7.851 million rupees.

Education sector investment in Orakzai Agency was also in seventh position when compared with other Tribal Agencies and FRs. In 1974-75, the education sector was initiated with an allocation of 0.905 million rupees. These allocations rose to 11.910 million rupees in 1985-86. The allocation dropped to 8.881 million rupees the following year which again gradually increased to 18.449 million rupees in 1988-89. The percentage allocated to education has ranged from 6 percent at minimum to 29 percent at maximum. For most of the years, education gained more than 10 percent of total investment. The amounts invested in recent years and the share of total investment devoted to education indicate that education has become a growing priority of the government.

With respect to potable water, investment of 1.534 million rupees in 1985-86 jumped to 6.363 million rupees in 1986-87. In 1987-88, the allocation was 2.971 million rupees which further increased to 3.671 million rupees in 1988-89. The analysis shows that in 1985-86, 3.5 percent of total Agency allocation went to potable water sector while the following year the share increased to 9.6 percent. In 1987-88 and 1988-89, the share of potable water was 3.6 and 4 percent respectively.

In rural development schemes, Orakzai Agency stands in second position among all Tribal Agencies and FRs. The percentage of investment in small rural development schemes has never been more than 4 percent of the total Agency allocations.

Mineral exploration development was initiated in 1985-86 with an investment of 0.100 million rupees, but it never received more than one percent share of annual Agency allocations. Political circumstances may inhibit development or exploitable deposits have not as yet been identified.

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