

Socio-Economic Survey of the Makran Division of Baluchistan

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SOCIO-ECONOMIC SURVEY OF THE MAKRAN DIVISION OF BALUCHISTAN

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FOREWARD

This monograph presents the findings of a research endeavor sponsored by the USAID/Government of Pakistan Baluchistan Area Development Project (BALAD). The purpose of the research was to collect information on the socio-economic conditions of Makran Division for use by Baluchistan's Planning and Development Department in project planning. The data was also to serve as baseline indicators to measure the impact of BALAD Project activities on the recipient population.

This survey and analysis, conducted over an 18 month period, represents a pioneering effort, a milestone in survey research in Baluchistan. Data was collected in two of Makran's three districts, Gwadar and Turbat. An analysis was then made of broad social and economic variables, including ethnicity and cultural practices, employment, family income and expenditure levels and finally agriculture, livestock and fishing activities. Considerably more data was collected than is found in this volume. All of the data, nevertheless, is recorded and entered into the Provincial Planning and Development Department Computer System's files and is available for further analysis.

The actual fieldwork and data collection proved to be difficult at the best of times. USAID is particularly grateful for the dedication and professionalism of Dr. Nek Buzdar who authored this report and directed the survey enumerators. USAID would also like to extend its appreciation to the survey enumerators and most importantly, to the people of Makran who gave hours of their time and provided the information upon which this monograph is written.



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TABLE OF CONTENTS

	<u>Page</u>
I. <u>INTRODUCTION</u>	1
A. <u>Introduction and Methodology</u>	1
B. <u>Makran Division</u>	3
1. Geographical Location	3
2. Climate	3
3. History	3
4. Resources and Economic Activities	4
5. Tribal Composition	4
6. Religion	5
7. Cooperation Among Individuals and Groups	6
8. Code of Honor	6
9. Status of Women in Makran	7
II. <u>DETAILED SURVEY FINDINGS</u>	8
A. <u>Social Organization and Employment</u>	8
1. Population and Family Size	8
2. Major Professions and Employment	8
3. Labor Mobility	10
4. Social Organization	11
a. Ethnic and Tribal Composition of Villages	11
b. Basis of Leadership	11
c. Marriage and Bridal Payments	12
B. <u>Availability of Basic Services</u>	14
1. Transport, Health, Schools and Communication	14
2. Educational Levels in Makran	15
C. <u>Household Income and Consumption Expenditure</u>	17
1. Household Income	17
2. Annual Household Consumption Expenditure	19
D. <u>Agriculture</u>	20
1. Land Ownership and Tenure System	21
a. Land Ownership	21
b. Land Tenure System	22

2.	Cropping Patterns and Intensity	24
a.	Cropping Patterns	24
b.	Cropping Intensity	26
3.	Use of Agricultural Inputs	26
a.	Draft Animals	26
b.	Agricultural Labor	26
c.	Seeds	27
d.	Fertilizer/Manure	27
e.	Insecticides/Pesticides	27
f.	Irrigation Water	27
4.	Average Crop Yields	28
5.	Marketing of Agricultural Produce	29
6.	Animal Raising	29
E.	<u>Fisheries</u>	31
1.	Fish Varieties	31
2.	Fishing Gear	31
3.	Fishery Production Costs	32
4.	Yearly Output and Value of Fish and Other Marine Products	33
5.	Marketing of Fish and Other Marine Products	33
F.	<u>Problems, Conclusion and Recommendations</u>	35
1.	Problems	35
2.	Conclusion	36
3.	Recommendations	37
III.	<u>ANNEXES</u>	
I.	List of Villages Surveyed	38
II.	Names of Survey Staff	40
III.	English and Baluchi Names of Makran Coast Fish	41
IV.	<u>BIBLIOGRAPHY</u>	45
V.	<u>MAPS</u>	

-1-

I. INTRODUCTION

A. Introduction and Methodology

As part of the development of the USAID-supported Baluchistan Area Development Project (BALAD) it was decided to conduct a socio-economic survey of the Makran Division to fill some of the enormous gaps in primary data related to the project area.

Originally the survey was to be undertaken by BALAD's Project Planning and Management Unit (PPMU) in 1986. However, staffing constraints made this infeasible, and instead the survey was carried out by consultants from December 1986 to July 1987.

The objectives of the survey were:

1. To collect statistically valid socio-economic data from a random sample of the population of Makran Division. Makran was chosen because it was the focus of the Baluchistan Area Development Project, but the survey could easily be replicated in other divisions of the province.

2. To make the data available to (a) the Baluchistan Planning and Development Department for their use in project planning and (b) BALAD managers and evaluators to measure and increase the impact of project activities.

3. To train the provincial Planning and Development Department staff in baseline data collection, compilation and analysis.

The survey collected data on the following topics: occupation and employment, transportation and travel, health and education, communications, family income and expenditure, agricultural inputs and production and fisheries inputs and production along the Makran coast.

A questionnaire was prepared using inputs from censuses and other statistical documents. The questionnaire had four sections:

- a. Social, ethnic and cultural questions.
- b. Employment, family income and expenditure.
- c. Agricultural and livestock activities.
- d. Fisheries inputs and production.

The questionnaire was pretested both in Makran and in villages surrounding Quetta as part of the training of the enumeration staff.

Makran has three districts: Turbat, Panjgur and Gwadar. While they share many socio-economic characteristics, there are significant differences in the nature of the district economies. A stratified random

sampling procedure was therefore adopted. Table 1 shows the population from which the stratified sample was taken.

Table 1
Population of Makran by District
(000s)

<u>District</u>	<u>Population</u>	<u>Urban</u>	<u>Rural</u>	<u>Pct. of Total</u>
Turbat	379	327	52	58
Gwadar	112	69	43	17
Panjgur	161	151	10	25

Source: "1981 District Census Reports",
Population Census Organization,
Statistics Division, May 1983.

Since Gwadar and Turbat together represent 75 percent of the Division's total population, it was decided to limit the survey to these two districts. Also, all three major economic activities found in Makran (e.g. agriculture and livestock, fishing, commerce and trade) are adequately represented in the two selected districts. The elimination of Panjgur also simplified the survey work since most of the Turbat and Gwadar population centers lie within 100 miles of Turbat town.

Table 2 shows the sub-divisions of the two districts. Turbat and Gwadar sub-divisions were selected for the survey. Turbat sub-division contains 70% of the district population, both urban and rural; most areas are readily accessible from Turbat town. Gwadar is the larger of the two sub-divisions in its district, and it contains the more diversified economy.

Table 2
Sub Divisions of Turbat and Gwadar
(000s)

<u>Sub Division</u>	<u>Population</u>	<u>Percentage</u>
<u>Turbat District.</u>		
Dasht	27 (all rural)	7
Tump	87 (all rural)	23
Turbat	265 (rural and urban)	70
<u>Gwadar District</u>		
Gwadar	57	51
Pasni	55	49

Source: "1981 District Census Reports"
Population Census Organization,
Statistics Division May 1983.

The population to be surveyed was defined as all the households in Turbat and Gwadar subdivisions. The sampling frame was the tehsil (i.e. subdistrict) registers of households. There are 32,000 households in Turbat and 8,500 in Gwadar according to the 1981 census. Each element (e.g. household) was assigned a number. After initially going for a 5 percent sample, it was decided that the high sampling variances uncovered during the pretesting justified a larger 7.5 percent sample size. A total of 2,400 households from Turbat and 638 households from Gwadar were surveyed. They were selected by using a computer to select random numbers.

B. Makran Division

1. Geographic Location: As shown on the accompanying map, Makran is the southwestern division of Baluchistan province. It borders Iran to the west, Kalat Division to the north and east and the Arabian Sea to the south. It has an area of about 55,000 square kilometers and a population of about 650,000 according to the 1981 census. Most of Makran consists of bare, rugged and scorched mountains. Three main ranges run from east to west parallel to the sea: the Makran coastal, the Makran central and the Siahan ranges, the latter one separating Makran from Kharan, a former princely state, to the north. Between the mountain ranges lie valleys which form natural divisions between the three administrative districts of Makran. The main valleys are named after the semi-perennial rivers running through them: Dasht, Kech and Rakhshan.

2. Climate: Each of the Makran natural divisions has a unique climate. The coastal Gwadar district has a moderate coastal climate and remains pleasant most of the year. The Central Kech valley gets extremely hot in summer and temperatures often exceed 50 degrees centigrade (122 degrees fahrenheit). The northern Panjgur valley, because of its elevation (3,000 - 4,500 feet) has a temperate and pleasant climate in summer while winters are cold. Although Makran does not fall into the southwest monsoon ranges, there is usually some rain in July and August (Bashaam). The winter rains, which come from the north west (Mediterranean), usually fall between November and March and are called Bahargah. The mean annual rainfall in the three Makran districts varies from 100 millimeters in the south to 200 millimeters in the north.

3. History: Makran has historically been the most important area of Baluchistan because of its strategic location between India and the Middle East. Famous Iranian kings including Kaikaus and Kai Khusrau ruled this area and Alexander the Great passed through Makran in 325 B.C. In the fifth century A.D. when the King of India gave his daughter in marriage to Bahrami-i-Gor, the ruler of Iran, he gave Makran as a portion of her dowry. Makran remained part of the Sassanian Empire for two centuries before being conquered by the Chach rulers of Sind. Around 640 AD the Muslim Arabs conquered Makran and when they later occupied Sind, they incorporated Makran into their empire. During the centuries that followed, Iranians, Ghaznavids, Ghorids, Seljuk Turks and others

temporarily occupied Makran but effective internal authority was exercised by local chiefs. Towards the beginning of the sixteenth century, the Portuguese found their way to India and captured several places along the coast of Makran. They fought battles with the Kalmati Baluch and in 1581 AD they burned Pasni and Gwadar. Naseer Khan, the Baluch ruler of Kalat, conquered Makran in about 1750 AD and from then until the creation of Pakistan, it remained under the domination of the rulers of Kalat. In 1970 it became a district of Baluchistan and in 1986 was formed as a separate division with 3 districts (Gwadar, Turbat, Panjgur).

4. Resources and Economic Activities: Makran has 5.5 million hectares of land and a 400 kilometer coast along the Arabian Sea. Although most of Makran consists of unproductive mountains, the valleys in between the ranges are fertile and productive when irrigated. The rivers (Rakhshan, Kech, Nihing and Dasht) are among Makran's most precious resources. Hundreds of Karezes* and Kaurjos** use the rivers as their source and provide irrigation to thousands of hectares. In coastal Gwadar most people depend on fishing for a livelihood, making the sea the second most important resource of Makran. During 1985-86, about 17,500 hectares was under various agriculture crops and over 74,000 metric tons of fish were produced. A few people depend on livestock, mainly in the northeastern and northwestern areas of the division. The number of people engaged in trade and services is small but economically important, especially because of the remittances sent back by Makranis working in the Gulf.

5. Tribal Composition: It is generally agreed that all major Baluch tribes in the course of migration from the Middle East first entered Pakistan via Makran and lived there for many years before migrating further east. However, today the typical Baluch tribal organization common to other parts of Baluchistan is non-existent in Makran. Concepts of tribalism and tribal organization involving ethnic and political units with their own hierarchical leadership and a common and contiguous territory, are almost unknown. In Makran the population is divided into three main categories: the former ruling and dominant class called "Hakim", the middle class composed of various tribes of mainly Baluch origin called "Baluch" and the lower class consisting of village and farm labor, domestic servants, artisans (lori) and former slaves called collectively as "Hizmatgar".

* (A karez is a long, horizontal and slightly sloping underground tunnel carrying water from an aquifer at a higher elevation to locations at lower elevations)

** (A kaurjo is a river channel which carries water diverted from semi-perennial rivers to fields for irrigation)

The dominant classes consist of members of the Gichki, Nausherwani, Mirwani and Bizenjo tribes, which traditionally owned most land and other property in Makran. Although some changes have since taken place, up to about a half century ago it was the custom that if a member of the dominant classes killed a common Baluch, no blood compensation could be claimed. Hakims would not intermarry with Baluch and sometimes took the lives of the Hizmatgar without cause.

The Baluch form the middle class and generally own some land. They have been locally organized under community leaders (Kahuda) who settle their disputes and deal with the dominant class chief and the government on their behalf. The main Baluch tribes found in Makran are Rind, Kiazai, Hot, Kalmati, Rais, Sangur, Puzh, Gorgezh, Kahudai, Dashti, Rakhshani, Kohi, Mazarzai, Sajidi, Barr, Kashani, Isazai, Wadela, Askani, Noohani, Damani, Lundi, Kattawar, Kallagi, Sami, Korak, Perozai, Bangizia, Mirazai, Shahizai, Omarzai, Goahramzai and Siah Pad.

The Hizmatgar are represented by the Meds, Darzadag/Nakib, Loris and Golam. They engage mainly in menial and artisan work. The Meds along the coast are mainly fishermen, the Darzadag are generally landless wage laborers and Loris do blacksmith, carpentry and other artisan work. The Golam work as agricultural laborers as well as domestic servants. Traditionally these classes could not sit at the same mat and eat with the Baluch. Even today, the Baluch never give their daughters in marriage to any of these classes. If a Baluch marries the daughter of a Hizmatgar, the bridal price paid is far less than that paid for a Baluch bride. A half century ago, although Baluch would pay blood compensation to the Hizmatgar classes (unlike the Hakim) the payments would be a small portion of what they would pay for a Baluch. The Darzadag consider themselves superior to the Loris, Meds and Golam. The Golam (former slaves) still work mainly as domestic servants and until about three decades ago, the Hakim would still demand numbers of them in Labb (bridal price) for their daughters.

6. Religion: Historically, Makran has been the bastion of the Zikri sect of Islam. This sect flourished in Makran in the early 18th century when the Buledai and Gichki rulers embraced it. The main reason behind the invasion of Makran by Naseer Khan of Kalat was to stop the spread of this new sect. In recent times, many have converted to Sunni Islam while others have migrated elsewhere. Nevertheless, it is estimated that approximately one-fourth of the Makran population are members of the Zikri community. The Zikris call themselves Muslims, but their beliefs and practices are somewhat different from mainstream Islam. The sect is said to be of Indian origin and founded by Muhammad of Jaunpur around the end of the 15th century. Zikris recognize Muhammad but do not believe he was the last prophet. They believe in a different interpretation of the Qur'an and instead of praying five times daily they resort to "Zikr", repeating names of God and his Mehdi, Muhammad of Jaunpur. They do not believe in fasting during Ramzan and perform their annual pilgrimage at Koh Murad near Turbat instead of at Mecca.

7. Cooperation Among Individuals and Groups: Like other Baluch, Makranis customarily raise contributions among themselves on certain occasions. In Makran, this system is called Bijjar. Bijjar is raised for marriages (Seer), circumcision (Burruk or Tahur), the destruction of a house by a fire (Aas) and when fines (Malaam) and compensation (Hon Badal/Mayar) have to be paid. The person concerned visits his relatives, friends, neighbors and fellow tribesmen and requests their assistance, which is given in the form of cash or animals such as sheep and goats. Giving is voluntary but in some cases chiefs and other members of dominant classes demand Bijjar from members of their own tribes and poor subjects as a right. Cooperation is evident in other spheres of life as well. The karezes and kaurjos, the main means of irrigation, are cooperatively constructed, maintained and managed throughout the irrigated agricultural areas of Makran. In the rainfed agricultural areas, embankments to divert and store flood waters are cooperatively constructed and repaired. In the coastal fishing villages reciprocal assistance is provided in the making of local boats and nets. People voluntarily participate in cooperative activities but sanctions and sometimes punishment are faced by non-cooperating individuals. For instance, if a karez co-shareowner refuses to participate in or contribute to the annual or bi-annual karez cleaning and maintenance work, water to his fields is stopped and there have been cases of burning the offender's standing crops. An individual with just one pair of bullocks is unable to construct or repair embankments on his land alone; he must cooperate and seek other's cooperation in this work. It is important to contribute towards a genuine Bijjar because everybody needs to get married, and everybody can expect incidental and emergency expenses due to a killing or fire. In fact, giving in Bijjar and participation in other cooperative activities is tantamount to buying insurance and investing for one's future.

8. Code of Honor: The people of Makran are bound to the following code of honor:

- a. To be hospitable and provide food and protection to guests even if they are strangers. This must be done at the cost of one's life and starvation of one's family, if required. (Mihmandari);
- b. To fight to the death for a person who has entered one's house and sought refuge (Bahoti);
- c. To take revenge when a close relative is killed (Hon Badal or Ber);
- d. To punish adulterers, both men and women, by death (Siahkari);
- e. To refrain, during fights, from killing a woman, a minor and/or a member of an Hizmatgar group like a Lori or a Golam (Baluch Mardi);

f. To pardon any offense including murder, if a woman of the offender's family comes to the aggrieved family and asks for forgiveness (Bakhsh/Bashk);

g. To stop fighting if a woman with the Quran on her head intervenes (Niam Kapag).

9. Status of Women in Makran: Women in Makran occupy a much stronger position than their sisters in other parts of Baluchistan. Relatively higher bridal prices are paid and the wife has full control over what she acquires from her husband.

Unlike in most other parts of Baluchistan, the Muslim law of inheritance is followed. Thus a woman receives a portion of her parent's property and is entitled to a share in her husband's property if he predeceases her. Generally a woman's relative economic strength makes her the more important person in the household. The husband, having already given away most of his property as bridal payment, remains more or less dependent on his wife. If a husband is not on good terms with his wife and wants to remarry, generally he cannot afford to do so, because higher bridal payments will be demanded from him. It may be mentioned that among most Baluch and Pathan tribes the customary Labb (bridal price) is received and kept by the girl's father or other guardian; the girl does not receive any of it. Also in most places other than Makran, women do not inherit any portion of the parents' or husband's property. Unlike the rest of Baluchistan, many Makrani men trace their ancestry to and even adopt the name of their mother's tribe. By contrast, among other Baluch tribes it is common to say that a woman has no identity or tribe of her own. Her identity and her tribe is the same as her husband's.

In other respects, women in Makran follow typical Baluch tradition. One of these is the custom of "Bajai" according to which a widow, if she wants to remarry must choose the brother or other close relatives of her deceased husband. If she marries an outsider she has to abandon the bridal payment given by the first husband; if she does not remarry she remains in possession of her bridal payment. In Makran if the wife dies childless, half of her property including what she received as bridal price, will go to her relations on the father's side.

Certain semi-nomadic tribes living along the Iranian border and the coast were not covered under this survey. But they are said to follow an inheritance system significantly different from the rest of Makran as well as from all other known Muslim societies around the world. Their system of inheritance allows a daughter an equal share with a son. This deviation from the normal Islamic inheritance system is justified as follows: a son is strong and tough. He can maintain himself by farming and raising sheep and goats as well as by robbery, theft and cattle lifting. Since such opportunities are not available to daughters who are weaker and more delicate, they should at least get a share equal to the sons'.

II. DETAILED SURVEY FINDINGS

A. Social Organization and Employment

1. Population and Family Size: The 3,038 sample families had a total population of 17,936. Of this 10,936 (almost 61%) were 12 years of age and older. The following table shows details regarding family size.

Table 3
Family Size

<u>Number of Family Members</u>	<u>Number of families</u>	<u>% of Total</u>
1-3	181	6
4-6	1905	63
7-9	828	27
Above 9	124	4

Most families (63%) have 4-6 members, while the number of relatively small and relatively large families is remarkably small. Families with 4-9 members constitute about 90% of the sampled population. There may be several reasons for this relatively large (by Baluchistan standard) family size. First, the selection of Turbat and Gwadar sub-Divisions might have introduced a bias for the larger family size found in the mainly agricultural villages in the Kech Valley and fishing villages along the coast. By comparison families in areas devoted to animal raising and rainfed agriculture may tend to have fewer members. Second, the family system in Makran can be termed joint or extended. This combined with the non-nomadic and settled nature of the population, compared to rest of Baluchistan, is more conducive to larger family sizes.

2. Major Professions and Employment: The major professions pursued in Makran are crop and animal raising, fishing, trade and employment in business and government within and outside the country. Small scale cloth and leather embroidery work, manufacture of rugs and tents, salt manufacture and fish processing are undertaken by only small, statistically insignificant numbers of individuals. In the sampled population a little less than half the workage members (49%), of which all were women, were engaged in household work, while 14% were employed as unskilled labor and domestic help, 12% were engaged in crop raising, 6% in white collar government and business jobs, 3% in fishing, 2% in animal raising and 2% were involved in trade. Of the total workage respondents, 5% indicated that they had been actively seeking employment and were unable to get any jobs while 4% of the workage population were not actively seeking jobs but still indicated that they were unemployed and dependent on their families and relatives. Thus unemployment among the 10,936 workage members of the 3,038 families comes to 8.8%.

Working members (e.g. the labor force) constituted about 61% of the total population. This is high compared to the figure of about 40% for "normal" populations. However, in Makran a boy or girl becomes a working member of the family at the early age of 12 since very few children attend schools. Also in Makran, as in all subsistence societies, men and women have no retirement age and generally continue working until death. The Makrani labor force includes those working in the Gulf/Middle East countries as soldiers, policemen and domestic servants. Among the traditional pursuits/professions, the largest numbers were engaged in crop farming followed by fishing and animal raising.

The data yielded the following picture of a typical Makrani family. There were six (5.9) members, of whom four (3.60) were adult workage members while two (2.30) were minors. Assuming that each family engages in all Makran professions, the average family had 1.77 members engaged in household work, 0.21 in fishing, 0.42 in crop raising, 0.07 in animal raising, 0.07 in trade 0.23 by government and business, 0.52 as laborers and 0.31 were unemployed. The small fractions indicate that the sampled populations followed many and varied professions. The matrix in the following table shows the number of families engaged in different professions/combination of professions.

Table 4

<u>Occupations/ Trade</u>	<u>Fisherman</u>	<u>Farming</u>	<u>Animal raising</u>	<u>Blue Col.job</u>	<u>White Col.job</u>	<u>Trade</u>
Fisherman	339	6	7	14	12	8
Farming		1003	100	65	22	26
Animal raising			281	30	25	7
Blue collar job				707	43	
White collar job					139	39
Trade						165

The following table shows the numbers and percentages of the families employed in the main economic activities.

Table 5
Main Economic Activities

<u>Activity</u>	<u>No. of families</u>	<u>Percent</u>
Fishing	339	11
Farming	1003	33
Animal raising	281	9
Blue collar job	707	23
White collar job	139	5
Trade	165	5

The largest number of families were engaged in farming, followed by those engaged in blue collar jobs. The blue collar jobs included unskilled labor within and outside the country, soldiers and domestic help. Relatively smaller numbers were engaged in government and business.

3. Labor Mobility: Until a few decades ago Makran was an isolated place where most people depended on local resources to make a living. The first large scale exodus of Makranis was in the 1930s and 1940s when social changes inside Makran including the abolition of slavery resulted in the migration of thousands of poor and landless Makranis to the newly industrialized Karachi. A second wave of outmigration, albeit of temporary nature, started in the sixties when neighboring Persian Gulf states suddenly became oil rich and needed labor for development projects and soldiers for defense. Although the Makranis who moved to Karachi are now permanently settled there, those in the Gulf countries have maintained their contacts with Makran.

In gathering data on the location of work and labor mobility only the major earner of the family was considered. The survey asked if the major earner worked in the village, in local towns, in towns and cities close to Makran or in the Persian Gulf. The results are shown in the following table.

Table 6
Places of Work and Labor Mobility in Makran

<u>Place of work</u>	<u>No. of major earners</u>	<u>Percent</u>
Village of residence	2097	69
Turbat/Gwadar	537	18
Karachi/Quetta	40	1
Gulf/Middle East	364	12

The sizeable majority of Makranis still engage in local pursuits and work within their home villages. Turbat and Gwadar towns provide opportunities to the rural unemployed for petty government jobs, construction work and jobs in service industries and trade. Therefore

the second highest percentage of major earners goes to these towns in search of work. Quetta, the capital of Baluchistan, does not have any significant industries or job market, while Karachi jobs are competitive and require skills that most Makranis do not possess. Therefore fewer major earners seek work in Quetta or Karachi.

Most Gulf jobs for Makranis have been in the Sultanate of Muscat and Oman, which has traditional and historical links with the region. In 1958 when Gwadar and surrounding areas, formerly ruled by Oman, were merged into Pakistan, it was agreed between the two governments that the Sultanate of Muscat and Oman would recruit soldiers for its army from this area. This was done every year until 1982-1983 when the practice was discontinued for domestic Omani considerations. Thousands of largely unskilled workers from Makran still go to Oman and other Gulf Sheikdoms, although many have also been returning during the last couple of years. Close to 12% of the families surveyed had their major bread earners working in the Gulf/Middle East.

4. Social Organization: According to the original survey plan, comprehensive and detailed information on the social life in Makran was to be collected. However, on the advice of the local Deputy Commissioner at Turbat most questions regarding religious sects and ethnic and racial groups were dropped from the questionnaire for reasons of political sensitivity. The remaining topics covered in the survey were ethnic and tribal composition of villages, the basis of the leadership and marriage customs and payments.

a. Ethnic and Tribal Composition of Villages: More than a hundred villages mainly in the Kech Valley and the Gwadar/Jiwani coastal areas were covered by this socio-economic survey. In general there were no hostilities or open conflicts between different ethnic and religious groups. However, tribal/ethnic/religious background and position is still important in inter-marriages, and behaviour during local elections. Marriages between the former dominant classes and the Baluch are still rare as are marriages between the Baluch and the lower classes. There are no cases of Namazi-Zikri (the two main religious sects found in Makran) marriages except where pre-conversion blood relations exist. Education and jobs (particularly in the Gulf/Middle East countries) have weakened but not eliminated the traditional classes. In the past elections the Darzadag of Turbat had their own representative contesting against a Baluch candidate. Similar cases were observed elsewhere. The survey revealed that 95 percent of the villages had mixed (ethnic, religious and tribal) populations. Only in 5 percent of the cases were the villages inhabited by a single tribal or ethnic group.

b. Basis of Leadership: Five main criteria, age, heredity, education, wealth and tribal affiliation, were mentioned as determining leadership in families and villages. The results are summarized in the following table:

Table 7
Basis of Leadership

<u>Criterion</u>	<u>No. of Respondents</u>	<u>Percentage</u>
Age	889	29
Heredity	1767	58
Education	67	2
Wealth	101	3
Tribal Affiliation	214	8

An overwhelming majority indicated that the most important factor determining leadership was heredity. Within the family the most important factor was age; even in determining village leadership, age was the second most important factor. Tribal territories, hierarchical leadership and in general tribalism of the type existing in most other areas in Baluchistan does not exist in Makran. Those few areas which are inhabited by the same tribe and where some form of nominal tribal system existed in the past, are now without any such system. Yet, tribal, ethnic and religious affiliations play an important role in determining leadership. In the survey tribal affiliations was the third highest ranked category. The reasons for this may be that in recent times the previously lower and oppressed classes particularly the Darzadag/Nakeeb, Lori and Med have united against other groups. On the other hand the former dominant classes also needed solidarity in their ranks to protect their traditional privileged positions. The data show that education and wealth, by themselves, are not sufficient conditions for leadership, although they strengthen and consolidate leadership attained mainly on the basis of heredity, age and tribal affiliation. The patterns of the present local leadership as well as those of the leadership representing Makran in Quetta and Islamabad do not contradict the survey findings.

c. Marriage and Bridal Payments: Marriage customs in Makran are somewhat similar to the rest of Baluchistan but in certain respects quite different from those in other regions of Pakistan. Most marriages are arranged by the parents and the bride (Dishtar) and bridegroom (Zamat) are not consulted. Once the parents of the groom agree on a suitable match, the father of the groom, along with local elders, approaches the father of the bride and asks her to give his daughter in marriage to his son. The girl's father consults his family and relatives and if he finally agrees to the marriage proposal, the bridal price (Labb) as well as wedding time and arrangements are fixed.

Among almost all Baluch and Pushtoon tribes in the north and east of Baluchistan the bridal price is paid in cash and most of it is taken away and kept by the father or other guardians of the bride. In Makran "Labb" or "Jahaz" consists of landed property, ornaments and cash, all of which become the personal property of the bride. Traditionally the bridal price in Makran consisted of land and other property (Mirat), ornaments,

usually gold (Sohr), clothes and expenses for guests (Pardash/Pas-o-daan) and slaves or servile dependents (Bandag). Although formally no slavery exists in Makran today, limited exchange of Bandag is still customary among rich ruling families.

The Makran District Gazetteer, written around 1905, states that the system of exchange of Labb among Gichkis of Kech was as follows:-

"(1) Two hangams of land and water with date trees; (2) 100 pieces of gold (in Makran 3 1/2 Sohr or pieces of gold are equal to 1 Tola which in turn is equal to 0.41 ounces or 11.64 grams); (3) Twelve dresses (six silk and six cotton), 12 articles of bedding, mattresses, 12 mosquito curtains etc; (4) Twelve "Bandag" (slaves six male and six female); (5) 60 Maunds (two tons) of grain and 60 sheep as wedding expenses (Pas-o-daan)."

To this day marriages generally take place within the same class or group of tribes. Thus the former ruling tribes of Gichki, Mirwari, Nausherwani, Mohammad Hasani and Bezanjo marry each other and the bridal price is generally very high. Among the Baluch the Labb is lower but if a Baluch wants to get married to a girl from the a superior tribe/class he has to pay higher Labb. Labb among the Darzadag/ Nakeeb, Lori and Med is the lowest, therefore many poorer Baluch prefer to marry girls from these tribes. In the towns of Turbat, Gwadar, Panjgur and Pasni some people have in recent times started giving their daughters in marriage for minimal or no bridal price at all. There have been instances of Makranis, particularly Darzadag/Nakeeb, giving their daughters in marriage to Sindhis and Punjabis.

The survey included questions about the three present day components of Labb, e.g. land, gold and pardash, the latter including all expenses for clothes, the wedding party and cash payments. Each family head was asked about Labb payments in the immediate family or close relatives within the last five years. The results of the survey are given in the following table.

Table 8
Bridal Payments/Labb.

<u>Expense category</u>	<u>Average expenditure (Rs)</u>	<u>Standard Deviation</u>
Pardash	10,700	7,600
Sohr (gold)	18,500	12,900
Mirat (Land)	8,200	15,900

The relatively high standard deviations from the mean show a large variability in Labb expenses. This may be because the survey covered Turbat and Gwadar towns which have large poor labor populations on the one hand, and the villages of Pedark, Sami and Shahrak with big Gickki and Bezanjo landlords on the other. Because no agricultural land is available in the coastal fishing areas, Yakdar (boats) were sometimes

given there as bridal price. But in general, today, the bridal price is generally confined to cash money and gold.

The Pardash (expenses and dresses) as well as Sohr (ornaments) are paid at the time of marriage but landed property (Mirat) is not always immediately transferred to the bride/wife's name. Only if the relationship between the husband and wife is not good, will she demand that the land be transferred to her name. If she dies before her husband all her property including what she received as bridal payment is equally divided between her husband and her children. If the wife dies without leaving any children, half of her property goes to her heirs on her father's side.

Divorce among Baluch happens only rarely and under extremely serious conditions. In Makran, there are theoretically no obstacles to obtaining a divorce and women can ask for divorce. But if the woman demands divorce she loses the bridal payment while if the husband divorces her he has to legally transfer the landed part of Labb to the wife if he has not already done so. A divorced woman is not considered inferior in status and can always get married again. Adultery (Siah Kari) is punishable by death. Should she escape death, she loses all her bridal payment. If the woman is killed and the man adulterer escapes, he has to pay a huge "shame fine" (Malam) and compensation for loss of respect/honor (Mayar) to the father or brother of the woman.

B. Availability of Basic Services

1. Transport, Health, Schools and Communications: The number of villages included in the sample survey was 138. These included villages with as few as 10 huts to various villages of Turbat town which now has an estimated population of close to 100,000. In the survey the indicators of main road, main market, school, hospitals/clinics and post office/ telephones/telegraph were used to determine availability of basic services. The obvious assumption was that the closer these facilities were to the village the more accessible they were to the respondents. The results are shown in the following table:

Table 9
Accessibility of Basic Facilities

<u>Indicator</u>	<u>Mean Distance</u> (KM)	<u>Standard Deviation</u> (KM)
Main Road	1.5	3.2
Main Market	22.1	32.0
Hospital/Dispensary/Clinic	5.8	15.1
Post Office/Telegraph/ Telephone.	14.0	29.2

Although less than 100 kms. of paved roads, tracks and dirt roads exist throughout the Division, most of the populated areas of Makran lie in valley oases or coastal areas with vehicular access for most of the year. For the survey the fair weather dirt roads between Turbat and the towns of Gwadar, Pasni, Mand and Hoshab as well as those linking coastal villages were defined as main roads. However, only markets in the main towns of Turbat and Gwadar were defined as main markets. The data reveal that although most villages were situated on or near the roads linking main towns and villages, they were at some distance from the main markets. Similarly, although the distances of most villages from hospitals/clinics were not great, they were considerably farther from post and telegraph/telephone offices.

Turbat town and its suburbs consist of more than two dozen villages and in the survey all were recorded separately if they had sample family residents. A similar procedure was followed for Gwadar. Thus any of the facilities available in Turbat and Gwadar Towns were considered facilities available to all the villages. This fact might have introduced a bias in the data as most of the villages away from the main towns had little access to these facilities which were concentrated in and around Turbat and Gwadar. The following table gives details of the facilities available to families in the survey area:

Table 10
Distance from the Basic Facilities

Distance (Kms.)	Number and Percentage of Families located from			
	Main Road	Main Market	Hospital/ Clinic	Post Office/ T.Phone/T.G.
	No.: %	No.: %	No.: %	No.: %
0-5	2880:95	1513:50	2439:82	1828:66
6-10	112:4	311:10	177:6	261:9
11-20	38:1	324:11	104:4	166:6
21-30	4:0.12	90:3	43:1	31:1
31-50	2:0.07	288:10	95:3	127:5
51-100	2:0.07	394:13	89:3	247:9
100+	0:0	118:4	11:0.38	99:4

The table shows that 95 percent of all survey villages were within five kms. of a main road while less than 2 percent were more than 10 kms. from a main road. However, only 50% of villages were within five kms. of a main market. A large majority of villages (82%) are within five kms. of a hospital or clinic, but about 350 families live more than 20 kms. from the nearest medical center. Many people surveyed (from almost 350 families) lived more than 50 kms. from the nearest post office, telephone or telegraph.

2. Educational levels in Makran: In the survey any member of the family with at least primary education was considered literate. Under this definition the sampled population had a literacy rate of 22.1

percent, which is high by Baluchistan standards. Both Turbat and Gwadar Sub-Divisions lie close to the Divisional headquarters of Turbat, and as is always the case, schooling and other facilities are concentrated close to the administrative headquarters. The following table shows details of educational levels by sex and grade.

Table 11
Literacy in Makran

Education Level	Percent of total	Percent of male	Percent of female within level	Percent of male within level	Percent of female
Primary	56	54	74	84	16
Middle	23	23	19	90	10
High	12	14	5	94	6
College	7	8	1	98	2
University	2	1	1	95	5

More than half the literate people in the sampled population were educated only to the primary level while less than 2 percent had attended University. In absolute numbers out of a total sampled population of 17,936 there were three women with University degrees, five with college degrees, 28 with high school diplomas, 93 with middle school and 363 with a primary education. Although there are now three girls' high schools in Makran, most high school and higher education is obtained outside the Division. Parents working in Quetta, Karachi or the Gulf educate their female children there. A girls' school at Mand, 70 miles west of Turbat is run by local female teachers who received their education in Kuwait.

Separate information was collected about the availability of schooling facilities. A maximum distance of five kilometers was considered as walking distance and a family residing within a five kilometer radius of a school was assumed to have access to educational facilities. Under this definition 90% of the families surveyed had access to educational facilities. Details are given in the following table:

Table 12
Accessibility to Educational Facilities

Educational Facility	Total number of families within 5 kms.	Percent of families within 5 kms.	Percent of total families
Primary	1180	43	39
Middle	770	28	25
High	707	26	23
College	70	3	2

On first sight the above data seem inconsistent with provincial data, since it is common knowledge that Baluchistan has the least educated people and the fewest educational facilities in the country. However, Makran is in many respects drastically different and unrepresentative of Baluchistan. The main reason that Baluchistan in general is economically the least developed with the least access to modern facilities, including education, is because the province is extremely sparsely populated. Small settlements with 5-20 families can lie dozens, sometimes even hundreds, of miles from each other. This is not the case in Makran. Most of Makran's population lives in two valleys where almost adjacent villages make up a single populated strip. Almost 90 percent of the people of Panjgur district (Rakhshan Valley) live in a strip about 15 miles long on both sides of the Rakshan river. About the same percentage of the Turbat district population live in the 70 mile long oases strip between Turbat and Mand on the Iran border. The third Makran district of Gwadar has about 90 percent of its population living in the fishing villages of Jiwani, Pishukan, Gwadar and Pasni. The data in the above table should be read with this background in mind.

C. Household Income and Consumption Expenditure

1. Household Income: In the sampled population the major occupations were crop and animal raising, fishing, government/industry jobs and labor and trade. Because of the joint family system a large number of families had members engaged in more than one enterprise. Along the coast, particularly in the Jiwani area, large numbers of interviewees were engaged in fishing and animal raising; others were engaged in fishing and crop raising while still others were engaged in fishing and labor/government jobs. There were cases where the same family had members engaged in fishing, animal raising, crop raising, trade and labor. Of course, the socio-economic conditions over most of the study area are such that all the enterprises have to be small scale; the human and natural resource bases as well as the prevailing technology do not provide conditions conducive for large scale economic activities. Mean net annual income from the various enterprises are shown in the following table. The family income figures are from all sources.

Table 13
Annual Income from Various Sources
in Makran per household

<u>Main Source of Income</u>	<u>Avg Net Annual Income</u> <u>Rs.</u>	<u>Median Income</u> <u>Rs.</u>
Crop Raising	36,800	32,000
Animal Raising	7,700	5,000
Services (Industry/Govt. Labor, Local and Foreign)	27,000	20,000
Trade and Commerce.	11,800	9,000
Fishing	19,800	19,600

The average net annual income of the 3,038 families taken together is Rs.21,132 with a median income of Rs.14,000. The table shows large variations in both median and average annual incomes among the various groups. On the lowest extreme is the group of families mainly involved in animal raising with a median income of only 5000 rupees, while the group on the other extreme i.e the crop raisers, have a median income of about 32,000 rupees. Traders have a relatively low median income of Rs.9000. Fishermen and those involved in the service sector have similar incomes, roughly equivalent to the mean income of all families taken together.

One reason for the large variation in income may be that the crop raising families generally live in the valleys close to Turbat and other towns. They have access to schools, roads and hospitals as well as to information regarding job opportunities within and outside the country. Few of these facilities are available to animal raisers. Accessibility and exposure enable the agricultural families to engage in many professions including jobs in the Gulf/Middle East where even an unskilled laborer nets more than Rs.100,000 a year. The data show that no families mainly involved in animal raising had members working in the Gulf/Middle East. The huge difference between local and Gulf wages paid may therefore explain much of the income differences in the survey.

Because of low rainfall and lack of good rangeland the number of animals raised by a family is generally small and animal productivity is very low. On the other hand although the land holdings are small, intensive cultivation of vegetables and fodder along with date palm trees makes per unit land productivity very high. Thus agriculture is far more lucrative than animal raising in Makran.

Details of various income levels are shown in the following table.

Table 14
Annual Net Income Levels

<u>Annual Family Income (Rs)</u>	<u>Percent of Total Families</u>
0-10,000	17
10,001 - 20,000	26
20,001 - 30,000	21
30,001 - 40,000	15
40,001 - 50,000	9
Over 50,000	12

More than 40 percent of the families have annual incomes below 20,000 rupees while close to 50 percent lie in the income range of Rs.10,000 - 30,000. Those with income levels of less than Rs.10,000 and more than Rs.50,000 constitute respectively 17 percent and 12 percent of the total families. The income distribution gap between the richest 20 percent and the poorest 20 percent is about the same as the national average as

reported in the latest (1987-88) national economic survey. The average income of the richest 20 percent households is about six times that of the 20 percent poorest households. Given the median income of Rs. 14,000 and an average family size of six members, the per capita income of the sampled population is Rs.2,333 or about \$133 (at the rate of Rs.17.5 to the dollar).

2. Annual Household Consumption Expenditure: As noted earlier, over 20 percent of all household members had at least primary level education. Yet not a single household kept any records of household expenditures. The survey enumerators were all male and they interviewed only male members of the households in all cases; some data was probably provided second hand and therefore somewhat inaccurate, particularly for food items, usually bought by women and children. For most necessities of life including staples and other food items monthly and sometimes weekly expenditure were estimated by the interviewee; the enumerators used these estimates to arrive at annual figures. Although wheat (and to a lesser extent rice) is a staple throughout Makran, supplementary food consumption patterns are sometimes drastically different in different areas of the Division. While fish makes up the most important component of the diet in the coastal Gwadar district, only dried fish (and that only occasionally) is available to the interior Makranis. While dry date constitutes an important food item throughout the year in the interior, date consumption in coastal Makran is limited. Baklik (broad beans special to Makran) are a luxury and the most cherished food item in the Turbat/Panjgur areas, but consumption along the coast is negligible.

In the sampled population the mean annual consumption expenditure was about Rs. 26,000 with a standard deviation of about Rs. 14,000. The dispersion is relatively high and 68 percent of all households had consumption expenditure ranging from Rs.12,100 to Rs.40,000 per year. The following table shows different levels of annual consumption expenditure:

Table 15
Annual Consumption Expenditure of Households

<u>Annual Expenditure (Rs)</u>	<u>Total Households</u>	<u>Percent of Households</u>
0-10,000	154	5
10001-20000	906	30
20001-30000	1012	33
30001-40000	578	19
40001-50000	287	9
50001-60000	61	2
Over 60000	40	1

The expenditure patterns follow a more or less normal distribution with about 62 percent of the households incurring expenditures between rupees 20,000 and 50,000 per year. Over 90% of the households lie in the expenditure range of 10,000 to 50,000 rupees per annum. A meager 3.3 percent of the households surveyed reported consumption expenditures of over 50,000 rupees per year.

The main items of consumption were wheat bread, rice, fish, vegetables, meat, dried pulses/beans, dates, sugar, tea, vegetable oil and ghee, salt and spices, poultry and eggs, clothing, shoes and sanitary items.

Several explanations can be given for the fact that expenditures appear to exceed incomes:

a. In all household income and expenditure surveys of this type, interviewees tend to exaggerate expenditure figures showing minimum income;

b. According to the Government of Baluchistan Bureau of Statistics cost of living estimates, living expenses in Makran are 45% higher than the Baluchistan average;

c. It is rare for a family in Makran to be dependent on just one source of income. Many sources of income were most probably not revealed, particularly when smuggling of goods into or out of the country was involved.

D. Agriculture: Most of Makran's agriculture is practised in the two northern districts of Turbat and Panjgur. Only a small area of Gwadar district is under rainfed crops. Rakhshan valley in Panjgur and Kech valley in Turbat contain most of the irrigated land since the majority of the over 500 karez systems are located in these two valleys.

According to the Baluchistan Agriculture Department, there were a total of 17,591 hectares under various crops in Makran during 1985-86. Of this about 13,000 hectares (about 74 percent of the total area) were under irrigated crops and almost all of this lies in the Kech and Rakhshan valleys. Barani (Rainfed), Khushkaba (bunded) and Sailaba (flood water diversion) agriculture is limited to Dasht (between Turbat and Gwadar district), Kolwa (Hoshab and surrounding areas) and to parts of Gichk and Rakhsan valleys in Panjgur district.

Traditionally Makran has been an area characterized by almost complete monoculture (i.e. date growing). The fruit was used by local population as a staple throughout the year, and any surplus production was bartered with the people of neighboring areas in exchange for wheat, barley and sorghum. It is known that many Makranis would live for years on end on dates alone, eating the dried fruit and making bread out of the ground stones.

Dates are still the most important and predominant crop in Makran. Even today when a new karez is constructed for irrigation, the first crop grown all over the field is dates. The young date trees require much care and intensive use of water and other inputs. However, after the trees are five or six years old they require minimal work and care except at the time of artificial pollination and harvest. Date trees continue to grow and produce even after 100 years. Drought years and resulting karez water fluctuations do not adversely affect production or cause any permanent damage. Thus traditionally dates afforded a security unmatched by any other crop.

Besides dates, wheat, barley, rice pulses, vegetables and fodder and, to a limited extent, citrus, banana and mango are raised in Makran. Very low (less than 100 mm) rainfall and very high temperatures are not conducive to large scale pasture and range vegetation for animals. Historically the rangelands of coastal Kclanch and Kolwa (near Hoshab) as well as Zamuran and Buleda supported large numbers of animals. These ranges have recently deteriorated and few animals are raised there now. The natural conditions combined with high demand for meat animals in neighboring Iran and the Gulf Sheikhdoms, encourage the smuggling of animals to those countries and have made Makran an animal-scarce area. As a result all meat prices in Makran are 20 percent to 40 percent higher than in the rest of Baluchistan.

1. Land Ownership and Tenure System

a. Land Ownership: In the main valleys of Makran as well as in the coastal areas there is plenty of fertile and arable land. Historically the land was free and viewed as "God's land". If somebody could provide irrigation he could take for free as much land as he needed. Throughout the centuries the people of Makran cooperated and contributed labor and money to construct karez and kaurjo irrigation systems. The only prerequisites for the construction of karez were the availability of underground water aquifers at the head of the karez and the non-existence of previous agriculture at the mouth/outlet. No price was ever paid for the land as it had no value without water and there was plenty of land in Makran. In areas outside the main valleys people would cultivate patches of land in years of good rainfall and if they had to put embankments (bunds) for this purpose they would establish some sort of ownership rights. These rights were similar to those that were established when a karez or kaurjo was constructed and the area under its command was demarcated for the exclusive use of those owning the karez or kaurjo.

In recent times land has attained some value, particularly around urban centers like Turbat where the government has put claims on all unused land and has proclaimed it state land. In rainfed and animal raising areas as well as in irrigated and urban areas local people have started excluding other groups from occupation and use of land resources.

In the karez and kaurjo irrigated areas of Kech valley (Turbat and surrounding areas) small land holdings ranging from 1/8th of an acre to about five acres are normal. There are two main reasons behind the small land holdings in these irrigated areas. First, the people of Makran have generally been poor and karez or kaurjo construction and maintenance costs are very high. Therefore many contributors and share holders were required for each karez which on average commands a maximum area of 150 acres. Most karezes in Makran are owned by dozens of people, sometimes by more than a hundred shareholders. The same is true for kaurjos. Second, most karezes and kaurjos in Makran were first constructed generations ago. As the Muslim law of inheritance requires, the irrigated land shares (which were small to begin with) have been further fragmented and redistributed.

Different factors have affected land ownership in the rainfed areas. The low annual Makran rainfall (100-150 milimeters) cannot support large scale, economically viable agriculture and animal raising. However, even a subsistence standard of living requires a relatively large land area because the land carrying capacity is extremely low. Therefore in the rainfed and animal raising areas relatively large landholdings have developed.

The following table includes both irrigated and rainfed holdings.

Table 16
Landholding Sizes

<u>Landholding size</u>	<u>No. of Owners</u>	<u>Percent of Total</u>
Under 1.0 acres	80	8
1 to under 2 acres	132	13
2 " 4 "	265	26
4 " 8 "	274	28
8 " 12 "	114	11
12 " 20 "	57	6
20 " 50 "	41	4
50 " 100 "	18	2
Over 100 "	22	2

Most land owners had holdings of between four to eight acres. Those with holdings between two to eight acres constituted about 54% of the total land owners surveyed. Less than 4% of the total holdings exceeded 50 acres.

b. Land Tenure System: Traditionally in areas where slavery existed, the male slaves (Bandag) worked on the owner's lands. The Darzadag/Nakeeb classes also mainly worked the land but had some tenancy or share cropping arrangements with the owners. Also traditionally the Baluch themselves were not good crop cultivators; they excelled and took pride in being good shepherds. In Makran the Darzadag

in Kech (Turbat) and Nakeeb in Panjgur areas made the best "Dehkan", i.e. wise and hard working farmers.

During the last two to three decades Makran has seen drastic changes in its socio-economic structure in general and its agricultural economy in particular. Thousands of young men, particularly from the poorer and lower classes, left Makran and headed for the neighboring Gulf states to become soldiers, unskilled laborers and domestic servants. More than anywhere else in Baluchistan, Makran was a class ridden society and the changes of the last three decades (mainly brought about by migrations but also by education and general exposure to the outside world) have upset the existing socio-economic systems. In the karez irrigated areas of Kech (Turbat) and Panjgur even the richest landlords generally do not own more than 10 acres. "Waja" in Baluchi literally means "Master" and a Waja with even one acre of land will consider it beneath his dignity to work on his land and dirty his hands. Once the lower cultivating classes found work opportunities elsewhere they no longer cared to work as tenants on small tracts of land with relatively meager to negligible incomes. There is therefore a current severe scarcity of agricultural labor in Makran which might have long term adverse effects on the local agricultural economy. In Makran an agricultural laborer needs special skills. Date cultivation requires cutting and planting of suckers, artificial pollination and picking of fruit in ways and at times that can be learnt only after many years of experience. Labor surplus from other areas of Baluchistan and the country are not able to fill the vacuum created by the outmigration of local labor. As a result most owners of irrigated land in Makran have either started working on the land themselves or are employing temporary wage laborers to perform specific jobs (sowing, harvesting or karez cleaning) under their supervision. In the dry crop areas of Makran land is mostly self cultivated and crop raising is mostly supplemented by animal raising.

The land tenure system on an average farm in the surveyed area is given in the following table:

Table 17
Land Tenure Systems

<u>Total Land Owned (acres)</u>	Percent of Total Area Cultivated	Percent of Total Self- Cultivated Area	Percent of Cultivated Area given to Rent/Tenancy/ Share Cropping
19.86	42.00	87.27	12.74

Most tenants in Makran have some share cropping arrangements with the owners. The arrangements systems vary between the rainfed and irrigated areas, and in different regions. The most common systems follow:

(1) In irrigated areas the cost of all inputs is borne by the owner and the output except that of fruit trees is shared on the basis of 1/2 to the tenant and 1/2 to the owner. In case of fruit trees the tenant/share cropper gets only 1/4 of the produce. If the tenant pays for all inputs then, except for fruit trees, the produce is divided between the owner and the tenant on the basis of 1/3rd to the former and 2/3rd to the latter.

(2) In rainfed areas produce is shared on the basis of 3/4th to the owner and 1/4th to the tenant while the inputs are paid for by the owner.

Agricultural labor generally receives higher wages than unskilled labor working in building and construction. During 1986-87 the average wage for six months work in irrigated areas was Rs.10,000.

2. Cropping Patterns and Intensity

a. Cropping Patterns: There is still no scarcity of good fertile agricultural land in Makran but there has always been an acute shortage of irrigation water. These natural conditions limit and determine the cropping patterns and intensity. The cropping patterns are different in the rainfed and irrigated areas of Makran.

(1) Rainfed Agriculture: Rainfed agriculture in Makran, as elsewhere, consists of the following three types:

(a) Barani: (Haurapi) when crops are grown as a result of direct rainfall without bund or diversion efforts. This system is rare and practiced only in the central Hoshab/Buleda and northern Panjgur areas. Barley in winter and usually fodder sorghum in summer are the crops grown under this system.

(b) Khushkaba: Under this system small bunds or earthen embankments are constructed to trap and store rain water. Immediately after the waters subside and dry up, the land is plowed and crops sown. This type of agriculture is common throughout Makran but predominant in the northern parts of the division. Wheat and barley in winter and sorghum, mung/mash beans and pulses in summer are the main crops grown under this system.

(c) Sailaba (Flood Diversion): Under this system diversion structures are constructed over the main and branch rivers so that flood waters are diverted and led to the fields for irrigation. The Sailaba systems are more common in central Turbat and southern Gwadar districts. The reasons that these systems are more successful in these areas are twofold. First, the main rivers have large catchment areas in the north and east which can carry flood waters even when Makran itself does not get rain. The central and southern areas are less mountainous and steep and the river beds are less deep, so that the river waters can

be easily harnessed and the temporary diversions structures can better check the river flow. Second, as one gets closer to the sea, underground water becomes unusable and karezes cannot be constructed. To sustain human, animal and plant life, local people are prepared to make the significant sacrifices involved in constructing large and durable conversion and storage structures.

Two types of sailaba systems are in use in Makran. The first is both an irrigation and a storage system. River water is diverted to a large bund. A bund of this type at village Nalaint about 40 miles north east of Gwadar was first constructed three generations ago and it has never been breached. This bund not only provides drinking water for the village but also irrigates an orchard of mango, citrus, banana and chiku (the English name is sapodilla; the taste is somewhat similar to Kiwi fruit). Similar bunds are found all over Dasht and Kolanch. After rain, flood waters fill the bund for direct use. If it does not rain for more than a year, the bund waters dry up. Wells are dug beneath and above the structure up to 20 feet, where sweet water is still found due to the bund water seepage of previous years. Bitter and brackish water is at deeper levels. But before deeper water is needed i.e. after about two years there is always more rain which fills the bund once again.

The second type of Sailaba system is mainly for irrigation purposes, as the river flood water is diverted and large areas are flood irrigated just once. Farmers construct small bunds and the flood waters fill each farmer's banded fields before proceeding to the next farmer's fields. In this way, the cooperatively constructed diversion dams irrigate all area fields each time it rains and there is a flood in the river.

Wheat, barley and rape seed are the main winter crops and sorgham, cotton, pulses and beans are the summer crops grown under the two Sailaba systems. During 1985-86 only 26 percent of the cultivated area in Makran was rainfed, the remainder being irrigated.

(?) Irrigated Agriculture: The main means of irrigation in Makran are karezes and kaurjos, which draw their source from major rivers. The kaurjos take diverted perennial water directly from the rivers while karezes take water from underground aquifers which are mainly river-fed. In recent times dozens of kaurjos have dried up due to changes in the river courses; today there is only one major kaurjo (Ginna) within a 10 mile radius of Turbat where there used to be dozens. Most karez systems in Makran are located on the banks and run parallel to the three main rivers of Rakhshan, Kech and Nihing, the former in Panjgur and the two latter in Turbat District. The two main types of seasonal irrigated crops are:

Winter Crops (Rabi) : wheat, barley, rape seed, gram, peas and beans, winter vegetables and winter fodders.

Summer crops (Kharif): rice, sorgham, sesamum, mash and mung beans, onion, chilies, melons, summer vegetables and summer fodders.

h. Cropping Intensity: Since the land holdings in the irrigated areas are small and the karez or kaurjo irrigation water is available throughout the year, the irrigated cropping intensity is high. On the other hand, rainfall is scanty, unreliable and untimely, therefore in the rainfed and flood irrigated areas the cropping intensity is very low. The following table presents the cropping intensity in the irrigated and rainfed areas combined.

Table 18
Mean Cropping Intensity in Makran

<u>Mean Cultivated Area</u> <u>Acres/farm</u>	<u>Area under</u> <u>Summer Crops</u> <u>Acres/farm</u>	<u>Area under</u> <u>Winter Crops</u> <u>Acres/farm</u>	<u>Cropping Intensity</u>
8.34	5.68	4.96	127.58%

This cropping intensity is high by Baluchistan standards which is, on average, around 80%. The main reason behind seems to be the higher percentage (74%) of the total area under irrigated agriculture in Makran.

3. Use of Agricultural Inputs: Agriculture in Makran is still generally primitive and very few modern inputs and techniques are used.

a. Draft Animals: Bullocks are the main source of draft power for farm work from preparatory plowing to sowing and threshing. However, because of the scarcity of fodder in Makran, it would be more economical to use tractors for these purposes. But for various reasons including small and fragmented holdings and the fact that date palm trees are omnipresent in the fields, tractor usage is not common. Generally fodder, vegetables and cereals are intercropped with date palm trees which are closely planted on the edges of the fields. Thus in the karez and kaurjo irrigated areas plowing is mainly by bullock while in the rainfed areas bullocks and occasionally donkeys and tractors are used for plowing.

b. Agricultural Labor: As mentioned elsewhere in the report, the opening up of the Middle Eastern labor markets in recent years has resulted in a mass exodus of Makrani agricultural labor to the Gulf countries. Severe shortages of agricultural labor have developed in Makran and although higher wages are offered, no labor capable of performing the various specialized agricultural operations like hand pollination of dates is available. The breakup of traditional social systems, resulting in owners working their own land, and the return of

some labor from the Middle East, is slowly easing the situation but the shortages remain serious.

c. Seed: Makran is still largely a date growing area. A 100 acre government date farm at Turbat was established many years ago with the stated objectives of conducting research on local date varieties and introducing improved varieties from other parts of Pakistan and the world. These objectives have never been realized, and the date farm manager from the Agricultural Extension Services merely looks after and disposes of the dates as well as fodder and other crops grown on the farm. There are hundreds of local date palm varieties and some of them are considered to be the best in the world. Some of the important date varieties grown in Makran include: Halini, Begum Jangi, Ape dandan, Chapshuk, Muzavati, Sabzo, Dandari, Haragi, Siah dap, Goani, Shakari, Irdiki, Siah Ganok, Dashtiari, Rogini, Ap rogin, Masudi, Kaleri, Hussaini, Kunaro, Peshna, Washna, Gogna, Sunt girrag, Musali.

For wheat, imported seed such as Pak-81 and Panwan are used on a small scale. For other crops there are no imported and improved seed. For cereal, vegetable and fodder crops the per acre expenditure on seed averaged Rs. 200.

d. Fertilizer/Manure: In the karez and kaurjo irrigated areas of Makran manure and fertilizer are used, particularly on fodder and vegetable crops. On average a load of manure and a bag each of urea and DAP per acre per crop is used. These are valued on average at Rs.1200 per acre/year. The local Agriculture Department and private companies sell fertilizer at Turbat.

e. Insecticides/Pesticides: No farmer interviewed had used insecticides and pesticides during the previous year although the local Agricultural Extension Department had insecticides/pesticides as well as spraying equipment available and was prepared to provide services for nominal charges.

f. Irrigation Water: The main sources of irrigation in Makran are rainfall, kaurjo, karez and occasional tubewells. Because of the lack of electric power and strong opposition by karez farmers, tubewells are not popular in Makran. Rainfall is not only scarce (100-150 mm) but also unreliable and usually untimely. The main sources of irrigation are, therefore, the kaurjo and karez systems. Dozens of kaurjos have in recent times been abandoned because of the excessive expense involved in reconstructing them after the semi-perennial rivers changed course. The karez system is considered the only economically viable irrigation source.

It is not common in Makran to sell water, so there is no well established water market. However, in areas close to Turbat town there have in recent times been some transactions in this connection. An average karez system with a mean flow of one cusec irrigates about 150 acres in

Makran. If this karez is divided into 28 Hangams, each Hangam will irrigate 5.36 acres. This Hangam of water can be sold for Rs.3000 per year. Thus enough water to irrigate one acre of land for a year is valued at 560 rupees.

Costs of production per hectare of irrigated land are shown in the table below.

Table 19
Annual Agricultural Production Costs in Rupees
(Average of All Crops/Hectare)

<u>Plowing</u>	<u>Seeds</u>	<u>Labor</u>	<u>Fertilizer</u>	<u>Water</u>	<u>Total</u>
988	494	12,350	2,964	1,383	18,179

The above figures pertain to irrigated agriculture only and are averaged over all crops including cereals, fodder and vegetables. In the rainfed areas there are no water and fertilizer expenses and labor charges are relatively lower.

4. Average Crop Yields: Crop yields differ from area to area and between the irrigated and rainfed areas. The owners of 102 irrigated farms in the Kech(Turbat) area were interviewed about their crop yields during the previous year. The karezes which commanded these farms were Pughush at Shahrak, Goanaki at Shahrak, Phulabad at Sami, Kalan at Sami, Tump at Shahi Tump, Sari Kahn at Sari Kahn and Karez Hotabad at Hotabad. The following average yields per hectare were recorded. (Note: These production figures are estimates made by farmers after the concept of a hectare was explained to them).

Table 20
Average Crop Yields in Makran (1986-87)

<u>Crop</u>	<u>Average Yield (Kgha)</u>
Wheat	2,143
Barley	1,557
Rice	3,186
Tomato	4,657
Brinjal(egg plant)	3,500
Okra	3,400
Ballik (broad beans)	4,014
Date Palm	85 (per tree)
Fodder	16,279

In Makran there are two types of land measurement. In irrigated areas the universal land measure is called a Hangam. A Hangam is both a quantity of water and a certain amount of land. Each karez in Makran is divided into a number of Hangams even before its construction is

completed. Karezes are mostly joint and cooperative endeavors and the members contribute for construction and all later expenses on the basis of the number or fraction of Hangams owned. Most karezes are divided into 14 Hangams; this means that each Hangam owner has the right to 12 hours of the karez water every 7th day. Owning half a Hangam would mean six hours and a quarter Hangam three hours of the karez water every week. A Hangam of land is the amount of land irrigated by one Hangam of water. This is the only land measurement used in irrigated areas of Makran and since each karez has a different quantity and flow of water, a Hangam of land will be different in each karez command area.

The land measurement used in the rainfed agricultural areas is called Jupt. This term is also used in most other parts of Baluchistan. Jupt in Baluchi means "a pair". A Jupt is an amount of land which can be plowed and sowed by a pair of bullocks in a cropping year. So a Jupt, like a Hangam, will be different from place to place depending on land structure and the quality of the pair of bullocks, etc. (This information will explain the difficulties faced by both farmers and interviewers in arriving at input and output estimates for a standard land measure like acre or hectare).

5. Marketing of Agriculture Produce: Most agricultural produce in Makran is locally consumed. Small land holdings, outdated technology and lack of capital constrain large scale commercial production. All agriculture in Makran except for a few vegetables, fodder and date fruit can be characterized as subsistence. A growing urban population (particularly in Turbat) and unbearably high meat prices have increased the demand for vegetables in these urban centers. Although a large part of the local vegetable demand is fulfilled by producers from other parts of Baluchistan and Sind, local vegetable production is increasing every year.

The most important exported crop is the date. The main market for Makran dates has always been Karachi. In recent years big companies such as Lipton and others from Karachi which have date packing and export businesses have been purchasing Makran dates. Representatives of these companies travel to Makran long before the date fruit is ripe. They contract for the standing crop of the date orchards and pay a certain percentage of the agreed price in advance. From this stage on the company is responsible for agricultural operations, including picking, packing and transportation of the product to Karachi. This system relieves farmers from some financial worries and from the troubles of middle men and commission agents in the wholesale Karachi markets.

6. Animal Raising: Animal raising is no longer an important activity in Makran. In the sample only families living in Kolwa (east of Hoshab) and Zamuran (along the border with Iran) were mainly engaged in animal raising. But because of logistic problems and local administration restrictions on travel to these areas, few large flock-owning, exclusively animal raising families could be included in

the study. Those covered in the survey mostly had other economic occupations along with animal raising. Some families, particularly in the urban centers, had less than a dozen sheep and goats but still considered themselves as primarily animal raisers because their other jobs such as daily wage labor were considered temporary and part time. In Kolwa and Dasht areas some people raised camels but the flocks (unlike those of a hundred years ago when they exceeded one hundred head) were only between 10-20 animals. Since the introduction of motor cycles and scooters, horses have become rare in Makran. The average number of animals owned by a family in Makran is shown in the following table:

Table 21
Animal Raising in Makran

<u>Type of Animal</u>	<u>Average Number Owned/Family</u>
Cattle Male	5.74
Cattle Female	5.73
Sheep Male	3.42
Sheep Female	4.01
Goat Male	12.58
Goat Female	30.28
Camel Male	0.80
Camel Female	0.50
Horse Male	0.01
Horse Female	0.03
Donkey Male	1.61
Donkey Female	0.47
Poultry Male & Female	2.71

As shown, except for goats, the number of animals raised is on average too small even for subsistence living. Most animal raising families in Makran specialize in either goats, sheep, cattle or camel. This has brought down the numbers when averaged over all animal raising families. Horses and donkeys are kept mostly for self transportation. Poultry is raised for self consumption.

The Baluchistan/Makran District Gazetteer (1906) described a large part of the Kech and Dasht valleys as some of the best rangeland in Baluchistan where hundreds of thousands of animals were raised. Probably because of overstocking and overgrazing, this formerly productive rangeland is today nothing more than wasteland. There are signs of soil erosion and depleted vegetation throughout the region. In the arid zones of the world only goats and camels are hardy enough to survive the food scarcity and drought. If goats and camels are seen to be replacing other animals over time it is a clear sign of depletion of vegetation resources. If erosion and depletion of reasources continue at the present rate goats may well be the only animals that can survive not only in Makran but all over Baluchistan.

E. Fisheries

Marine fisheries have the potential to be one of the most important source of increased income for the people of Baluchistan. Starting about 20 miles west of Karachi and ending at the Iran border nearly 400 miles farther west is the historic Makran coast. Most of this Northern Arabian sea coast lies in Makran Division, the remainder lying in Kalat Division. During 1985 marine fish production on the Makran coast was 91,300 metric tons valued at nearly 300 million rupees.

During recent years efforts have been made to modernize the fishing industry in Baluchistan. A modern fish harbor is under construction at Pasni, another is planned for Gwadar and efforts are underway to provide advanced fishing equipment to local fishermen. A modern and efficient fishing industry will not only improve income levels of local fishermen but will also earn valuable foreign exchange for the country.

1. Fish varieties: Annex 3 gives the English as well as Baluchi names for the many varieties of fish available off the Makran coast.

2. Fishing Gear: The 1906 Makran Gazetteer, lists the various fishing boats used in Makran at the time as the Mahi-Kush, Batel, Yakdar and Hori. The Yakdar was imported from Malabar (India); all the other types were manufactured locally. These boats could be rowed or fitted with sails. Fish were mostly caught with nets, but sometimes hooks and lines and occasionally harpoons were used. The nets were mostly made locally from cotton thread (Bandik), the cotton being produced in the Kolanch and Dasht areas of Makran. The different hooks and lines used for catching different type of fish were also mostly manufactured locally. All fishing lines were water proofed with a paste made of the pods of Geeshtar (*Leptadenia Spartium*).

Things have not drastically changed since that time. The main difference has been the introduction and installation of motors in some boats. Yakdar are still mainly used for fishing and many of these boats are still without motors. Today nets are imported and made of nylon; the production of cotton in Makran is disappearing. The Fisheries Department maintains two well-equipped boat manufacturing workshops at Pasni and Gwadar. These workshops are rented out to local contractors who employ traditional boat makers and construct Yakdar as well as launches in the facilities. The workshop manager at Pasni indicated that his annual output was two big launches and 15-20 Yakdars. Other boats and launches are imported from Karachi.

The survey showed the following use of the fishing gear:

Table 22
Fishing Equipment Utilized

<u>Fishing Equipment</u>	<u>Numbers of Fishermen</u>	<u>Numbers of Equipment</u>	<u>Average Equipment per Fishermen</u>
Nets	339	709	2.09
Boats	339	365	1.08
Motors	339	315	0.93

The table shows that on average, each fisherman had over 2 nets and at least one boat for fishing operations. Some fishermen had more than one boat. Fifty boats had no motors; 86 percent of boats had motors, the rest were fitted with sails or were simply rowed to and from the fishing grounds.

Fishermen were interviewed about the cost of the equipment they were using. The following table shows the average prices as estimated by the fishermen.

Table 23
Average Value of Fishing Equipment
in Makran (1986-87)

<u>Fishing Equipment</u>	<u>Average value (Rs.)</u>
Nets	5437.00
Boats	36580.00
Motors	11051.00

3. Fishery Production Costs: The main fishery costs are for family and hired labor, operation and maintenance of equipment and depreciation. In addition fishermen pay licensing fees to the Fisheries Department and occasional marketing costs and interest payments on loans. Fishery costs are shown below:

Table 24
Costs of Production in Fisheries
(Rs./Fisherman Family/Year)

<u>Labor Family:Hired</u>	<u>O. M. Costs Nets:Boats:Motors</u>	<u>Depreciation Nets:Coats:Mtrs</u>	<u>Lcsg.fee</u>	<u>Mkt</u>	<u>Int</u>	<u>Total</u>
16600 :2616	470 :1455 :6223	1306:4685 :1358	25:974:68			35781

In most cases only family labor was involved in the fishing operation. Shadow wages were assigned to family labor in calculating the average costs in the above table. The operation and maintenance costs included

equipment repairs as well as diesel and other oils for motors. The depreciation costs were calculated at a flat rate of 10 percent per year for all motors, boats and nets. The depreciation costs in the above table deviate slightly from the 10 percent rate because they are averaged on a family basis.

4. Yearly Output and Value of Fish and Other Marine

Products: According to the Government of Baluchistan. Directorate of Fisheries reports, different types of fish and their quantities obtained in Makran during 1985 were as follows:

<u>Species Group</u>	<u>Production (MT)</u>
Salmon, Trout and Similar Species	300
Teleostean Flat Fish	3,900
Cod, Hake, Haddock and Similar Species	NA
Herring, Sardine and Similar Species	15,100
Tuna, True Mackerel and Similar species	10,600
Other Marine Teleostean (Perch, Croakers, Bass)	41,000
Elasmobranches (Shark, Skate, Ray)	19,500
Crustaceans	900

The survey interviewed 339 fishermen, who reported a total catch for the previous year of almost 12,400 tons. This comes to 36.5 tons per fisherman per year. Government of Baluchistan statistics do not estimate the total number of provincial fishermen. But if both production figures are realistic, the 339 fishermen surveyed in the Gwadar/Jiwani area were responsible for about 13.5 percent of the total Makran catch. More probably the Government figures are underestimated, particularly since only a small fraction of the boats and launches along the Makran coast are registered with the Department of Fisheries in Baluchistan. The 12,400 ton catch required 709 nets, 365 boats and 315 motors used by 339 fishing families. These data show that a family of two working members with two nets, one boat and one motor can catch on average, 36.5 tons of fish. The value of this amount of fish makes up the total gross income of an average fisherman in Makran.

5. Marketing of Fish and Other Marine Products: The 1906 Makran/ Baluchistan Gazetteer indicates that air bladders obtained in Makran from Kirr and other fish were sold in England for use in Isinglass manufacture. Also exported from Makran were shark fins to China and salt fishmaws to India, Zanzibar and the coast of Africa. The export of all types of fish to other parts of Pakistan and to different countries of the world continues to this day. Many of the fish, particularly Paghas (shark) are not eaten locally and are caught exclusively for export to many non-Muslim countries of the Far East and Africa.

According to Baluchistan Fisheries Directorate statistics, since 1973 local consumption of the total fish catch has varied between 10-15 percent, the remaining 85-80 percent being exported to other places within and outside of Pakistan. The fishermen themselves named Sri Lanka, Singapore and Hongkong besides Karachi as major fish markets.

Local Khojas (businessmen, mainly from Karachi) have traditionally financed fishing enterprises in Makran. They provided boats and nets and received a share of the daily catch as compensation. At Gwadar the Khoja financiers received 5 percent of the total catch for providing boats and received 50 percent of what remained as compensation for nets. The remainder was divided so that the skipper (Nahuda), the mate (Sarhang) and the two sailors (Janshoo) each received respectively 37.5 percent, 25 percent, and 18.8 percent of the fish. The shares of the skipper, the mate and the sailors were again bought by the Khoja businessmen to whom they mostly owed money.

Although this system still operates to a limited extent, today the Agricultural Development Bank of Pakistan with branches in all the major coastal towns, has largely replaced Khojas as the main lending institution. Loans are advanced at 12 percent interest and are generally available for the purchase of nets, boats and motors. In our survey 27 percent of the fishermen worked on boats owned by others while 73 percent had their own boats, although many of the latter owed money to ADBP or friends and relatives.

Presently there are various systems of sharing the catch in Makran. The most common of these are as follows:

a. When the boat and equipment are owned by a financier, the catch, after deducting the diesel and other motor oil charges, is equally divided between the crew and the owner. The Nahuda (Skipper), the Sarhang (Mate) and the Janshoo (Sailor) all get equal share from their half of the catch. The Nahuda also claims a share (Pati) from the boat owner equal to what he has received from his companion crew. From this share he gives 20 percent to Sarhang.

b. Half of the catch is allocated to the crew and the motor engine and the second half is allocated to the boat and nets. In this case the crew get only 1/4th of the catch but they do not share the oil and other expenses.

c. When Nahuda receives no share from elsewhere then his share among the crew is determined on the basis of 2/3rd for him and 1/3rd for the Janshoo.

Local fish are also bought by big launches and ships equipped with storage, processing and curing systems. These vessels take the fish directly to Karachi. There, part of it is locally marketed and the rest is exported. Local representatives of fishing businesses provide the

fishermen with advance money for their expenses, so they are forced to sell their catch to them. From among those surveyed not a single fisherman sold directly to the Karachi or foreign markets. The fish sold in Turbat and other parts of Makran is not necessarily for local or immediate consumption. A large part of it is salted, cured, dried and either sold locally or sent to other parts of Makran or Karachi. The following table records the final destination of the Makran fish.

Table 25
Marketing of Fish

<u>Market</u>	<u>Percent of Total Fishermen</u>	<u>Percent of Catch Marketed</u>
Local	43	36
Turbat/Gwadar/Pasni etc.	29	12
Karachi/Overseas	27	52

The obvious discrepancies between the percentage of fishermen marketing their produce in a particular market and the actual percentage of the production sold in the same market need further elaboration. The sea coastal area covered in the Makran Socio-Economic survey includes fishermen big and small, independent and attached to big businessmen, subsistence fishermen and those linked to commercial enterprises. The above figures show that the vast majority of the surveyed fishermen are small subsistence fishermen who sell to local dealers and middlemen. Those selling to ships and launches who directly sell in Karachi markets are fewer in number but have relatively large scale commercial enterprises. These facts explain why only 27 percent of the fishermen sell their produce to Karachi businessmen, while about 52 percent of the total catch is marketed in Karachi.

F. Problems, Conclusion, and Recommendations

1. Problems: The following were problems faced during the survey. They are included here to provide guidelines for potential future surveys in Makran or elsewhere in Baluchistan:

a. The recruitment and retention of enumeration staff was a continuous problem throughout the survey. A lengthy search in Quetta and Makran was required to find Baluchi speaking graduates who were willing and available to work and who also fulfilled minimum educational requirements. Some of those found, recruited and trained proved to be unreliable companions at best. Because of the temporary nature of the job, many enumerators continued searching for more permanent jobs elsewhere. Once they found such jobs they left usually without prior notice. This not only caused delays but also adversely affected quality, as replacements were untrained and inexperienced.

b. As the questionnaire was comprehensive and long and the sample size relatively large, an enumeration staff of 26 was barely adequate to complete the survey within the required time. But survey management was a huge task beyond the capacity of one or two persons. Initially survey supervisors were expected to effectively administer the survey work in the field. Unfortunately qualified and experienced supervisors could not be found; those appointed were the best available but did not perform to expectations. Because of the politically tense environment and the presence of forces opposing the non-residents, the field enumerators and supervisors had to spend considerable time explaining the data collection objectives, time which could more productively have been used to check the accuracy and completeness of the enumerators' work.

c. For various reasons enumerators and supervisors could not be assigned in predetermined places for the entire duration of the survey. Such a fixed assignment would have enabled the staff to concentrate on data collection rather than on daily repeated explanations and efforts to achieve the acceptance and cooperation of the local community.

d. Being Baluch and reasonably well acquainted with local customs, the enumerators made every effort to collect complete, genuine and accurate data. But in some cases, particularly with respect to agriculture, they faced impossible situations. In Makran there are no standard land and water measurements. For accurate figures the enumerators had to measure the land as well as the karez or Kaurjo water flow. Lacking time and appropriate measuring skills the enumerators made rough estimates. The data on agricultural inputs and outputs per acre are based on each individual enumerator's judgment. Since Makran is an unsettled area, there are no land ownership records with any Government department.

e. For accuracy, completeness and consistency, the data should have been checked periodically in the field and at the time of survey completion before compilation and analysis. Although some limited and random checks were made, there were simply not enough people or time to do a fully satisfactory job. No separate staff was provided to perform the data checking and transfer work. Enumeration staff withdrawn from the field to do this work were inexperienced and clocked the time needed to succeed.

2. Conclusion: This survey was the first of its kind carried out anywhere in Baluchistan. Because of its comprehensive nature some data has not yet been analyzed and interpreted in detail. All the data have, however, been recorded and entered into the Provincial Planning and Development Department computer system files and are available for further analysis and interpretation. This data constitutes a wealth of basic and first hand information that can be used for future planning and development as well as monitoring and evaluation by the Provincial Government, USAID and any other donor agencies.

What has been achieved through the Makran Socio-Economic survey is of extreme importance and could appropriately and deservedly be called a milestone in the field of data collection for economic planning and development in Baluchistan. Makran is undoubtedly one of the most remote, neglected and economically least developed regions of Baluchistan. Probably because of its actual past and present deprivation, it is also the most politically charged and active. Because all outsiders are regarded with suspicion and because this was the first survey of its kind, there was intense and serious opposition from all political groups, particularly students organizations. Because of this at least as much time was spent explaining to the people the reasons, utility and importance of such surveys as on gathering actual field data. These explanations, involving the dedicated work of survey enumerators were extremely valuable. Those with whom contacts were made were convinced that data collection about an area's human and natural resources and technology as well as people's social attitudes towards development were a vital first step on the way to development. It is hoped that this survey not only achieved its primary data gathering objective but also opened way for additional surveys in future. At this point the level of interpretation and analysis has been kept simple and preliminary. If more advanced and detailed statistical analysis are required these can easily be performed.

3. Recommendations: Since it was a general, rather than a focused survey, it is not possible to make specific recommendations. In general, the findings provide a useful basis for future planning and development and for comparing future situations to the present in monitoring and evaluation of the development projects in Makran.

Recommendations regarding the conduct of future surveys are implicit in the discussion of the problems above. Recruiting staff who are fluent in Baluchi and other local languages will be vital since people without local language skills cannot gain the confidence of the interviewee. However, hiring local people is not always possible, because local graduates generally do not possess the experience and qualifications required for this type of work.

Another recommendation concerns the positioning of the survey staff in the field. It proved extremely costly in terms of time and resources to move enumerators from village to village and area to area; it would have been better if enumerators were allotted households to be surveyed in a few adjacent villages where they could stay for the duration of the survey. The enumerators would have been accepted by the villagers within the first few weeks and thereafter could have concentrated on the survey work alone. The decision to form groups of surveyors to move in a procession of jeeps from village to village was unwise and expensive. Staying in one area as much as possible, keeping a low profile and trying to become a part of the local society during the stay in the field are the keys to success.

ANNEX - I

List of villages surveyed:

A. Turbat Sub-Division

- | | |
|-------------------------------|-------------------------|
| 1. Aspi Bazar | 2. Absar |
| 3. Kalati Absar | 4. Baluchi Absar |
| 5. Ali Abad | 6. Korjo-sar |
| 7. New Kothwali | 8. Tanzag |
| 9. Beendak Tanzag | 10. Sami |
| 11. Grinach | 12. Peri-kahn |
| 13. Kosh Kalat | 14. Shakahni Bazar |
| 15. Chah Sar | 16. Nok Abad |
| 17. Gokdan | 18. Kahn Pusht |
| 19. Jammak | 20. Shahi Tump |
| 21. Pedrak | 22. Dandel-a-dan (Sami) |
| 23. Dashti Bazar | 24. Jusak |
| 25. Sari Kallag | 26. Solani |
| 27. Bahman | 28. Koshk |
| 29. Shahrak | 30. Mullai Bazar |
| 31. Danni Sar | 32. Dramacole |
| 33. Dan chopadam (Nasir Abad) | 34. Kalag (Sami) |
| 35. Kikin | 36. Meeri Bazar(N'abad) |
| 37. Hoth Abad | 38. Daramakol Peedrak |
| 39. Gushtang | 40. Haji A. Salam Ward. |
| 41. Singani Sar | 42. Sari-kahn |
| 43. Malik Abad | 44. Maliki Bagh |
| 45. Meeri | 46. Meeri Bug |
| 47. Meeri Dal Bazar | 48. Hospital Mohala |
| 49. Meeri Zoor Bazar | 50. Dad Karim Mohala |
| 51. Mir Dura Mohala Turbat | 52. Bull Hoshab |
| 52. Hoshab | 54. Bidrang |
| 55. Garrok (Hoshab) | 56. Parkatag(Hoshab) |
| 57. Khuda Bazar(Nasirabad) | 58. Balgather(Hoshab) |
| 59. Dagari Kahn | 60. Sad Abad |
| 61. Geebun | 62. Bit Buleda |
| 63. Buleda | 64. Shey-kahn |
| 65. Alandur Buleda | 66. Koshk Buleda |
| 67. Grawak Buleda | 68. Chib Buleda |
| 69. Manaz Buleda | 70. Bulo Buleda |
| 71. Kor-a-pusht Buleda | 72. Raees Bazar Turbat |
| 73. Sajjak (Hoshab) | 74. Ginnah Turbat |
| 75. Nodiz/Dal Bazar | 76. Khair Abad |
| 77. Lalleen | 78. Kaur Nihing |
| 79. Menoo Turbat | 80. Nazim Abad |
| 81. Nasir Abad | 82. Churbuk Turbat |
| 83. Nodiz | 84. Loap Balgather |
| 85. Sorag Bazar Turbat | |

B. Gwadar Sub-Division

- | | | | |
|------|------------------------|------|---------------------|
| 87. | Suntsar | 88. | Dalsar |
| 89. | Puttan | 90. | Maiting |
| 91. | Hujjat Abad | 92. | Kaliro |
| 93. | Dumb | 94. | Samati |
| 95. | Kalattoo | 96. | Gubd |
| 96. | Majjo | 97. | Chattan |
| 98. | Chillo Dap | 99. | Sisadi |
| 100. | Zehran Dad Mohd Bazar | 101. | Zehran L. M. Bazar |
| 102. | Sahjee | 103. | Pishukan |
| 104. | Dashti Para | 105. | Bressi Ward |
| 106. | Konraki Ward | 107. | Ganzee |
| 108. | Parthok | 109. | Jiwani |
| 110. | Kohsar Bazar | 111. | Raisi Bazar |
| 112. | Shazada Bazar | 113. | Thalsar Bazar |
| 114. | Gatri Bazar | 115. | Bandary |
| 16. | Okar | 117. | Panvan |
| 118. | Ganz | 119. | Gwadar |
| 120. | Usmani Ward | 121. | Ismaili Ward |
| 122. | Majid Ward | 123. | Tobagh Ward |
| 124. | Sheikh Umar Ward | 125. | Mir Lal Daksh Ward |
| 126. | Zahur Shah Hashmi Ward | 127. | Komadi Ward |
| 128. | Master Zareef Ward | 129. | Capton Murad Baluch |
| 130. | Gazarwan | 131. | Kamari Ward |
| 132. | Mulla Band Ward | 133. | Kolgari Ward |
| 134. | Baluch Ward | 135. | Sohrabi Ward |
| 136. | Saleh Mohd Ward | 137. | Sur Bunder |
| 138. | Niguar Sharif | | |

ANNEX II

List of Survey Staff

Khair Muhammad, Quetta
Ayatullah, Mand (Turbat)
Bashir Ahmed, Turbat
Muhammad Ibrahim, Hotabad
Abdul Baqi, Panjgur
Muhammad Shoab, Panjgur
Syed Muhammad, Turbat
Mumtaz Ahmed, Turbat
Muhammad Ali, Turbat
Abdul Rehman, Buleda
Abdul Malik, Panjgur
Muhammad Iqbal, Gwadar
Imam Bakhsh, Gwadar
Tariq Rehman, Quetta
Sultan Ahmed, Mastung
Muhammad Aslam Zehri, Khuzdar
Hussain Ali, Turbat
Muhammad Ibrahim, Mashkey
Abdul Hamid, Panjgur
Khurshid Ahmed, Panjgur
Muhammad Ilyas, Panjgur
Muhammad Rahim, Quetta
Naseer Ahmed, Khuzdar
Ghulam Nabi, Turbat
Irshad Ahmed, Turbat
Abdul Ghafoor, Mashkey
Nabi Dad, Turbat

ANNEX III

Fish Varieties Produced

<u>English</u>	<u>Name of Fish</u>	<u>Baluchi</u>
Shark		Paghas
Rays		Pitan
Cleids		Kolgar
Mulletts		Marbo
Small Spanish Mackerals		Kalgon
Tunas Mackerals		Ahur
Marline		Aspi Mahi
Dolphin Fish		Amlooshk
Queen fishes		Sarrum
Travellies		Gishram
Seads		Bucoo
Grunts		Kumpoo/Ululu
Emperors		Gadier
King Soldiers		Soroo
Large croakers		Kirr/Soli
Small croakers		Mushko
Barracudas		Kund
Thread		Gwanzee
Hairtails		Tinji
Pomfrets		Poplet/Tigalum
Flate fish		Swasoo
Whinghed Shark		Dokzai, Dokan
Scalloped Hammerhead		Buther
Marbled Catshark		Pagas
Cape Catshark		Pagas
Bigeye Houndshark		Zaid
Starspotted Smoothhead		Bapha
Hooktooth Shark		Tikki Pishi
Spinner Shark		Shid
Bull Shark		Bagore Warok
Sandbar Shark		Warok
Pigeye Shark		Warok
Broadfin Shark		Gusso
Sliteye Shark		Tailago
Zebra Shark		Pishi
Sandtiger Shark		Dantani
White Spotted Guitar Fish		Zahro
Guitar Fish		Paalore
Brown electric ray]		
Numb Fish/Shock Fish]		
Saw Fish		
Mantaray		Botan
Scaly Stingray		Suddo
		Kareenj
		Uther/Pittan

Ribbon-tailed Ray	Pittan/Shiki
Cowray	Dolunt
Ten Pounder	Mushk/Murri
Indo-Pacific Tarpan	Baga/Nar
Rainbow Sardine	Pasali
White Sardine	Kasha
Blue Stripe Herring	Kasha
Indian Ilisha	Beechum
Gizzard Shad	Goi
Sardine/Sardinella	Luger
Hilsa Shad	Palwar
Anchovy/Thryssa	Padani
Dorab Wolf-herring	Pashanth
Eel	Ala Lainduk
Starry Moray	Riami Sang
Conger	Sang
Threadfin Sea Cat	Bagai
Engraved Sea Cat Fish	Siah Gosh
Black Tip Sea Cat Fish	Gallo
Spotted Cat Fish	Aasi
Giant Cat Fish	Kupago
Eel Cat Fish	Rohila
Milk Fish	Murra
Lantern Fish	Murra
Lizard Fish	Bambala
Flat Toad Fish	Gallo
Smooth Angler/Black Mouth Angler	Gallo
Shortfin Flying Fish	Jirri
Blackbarred Half Beak	Murrant
Flat Needle Fish	Aalore
Red Coat/Soldier Fish	Sore Mahi -- Kolonto
Chines Trumpet Fish/ Crested Pipe Fish	Aalore
Sea Horse	Asp
Crocodile Flathead	Khuker
Bartail Flathead	Khuker
Wasp Fish/Sting Fish/ Plaintail Turkey Fish	Bheel Aalari
Nakedhead Galaxy Perchlet	Khasa
Barramundi	Dangeri
Peacock Grouper	Nambo
Gold Hind	Lotari
Razor Fish	Nambo
Six Blotch Hind	Kolancho
Haney Comb Grouper	Golori
Tardoore	Portuk
Stone Fish	Bheel Aalari
Orient Flying Gurnard	Jirri
Spotted Coral Tront	Golori
Moontail Sea bass	Klancho
Red Mouth Grouper	Gazi Gwazi
Fourlined Terapan	Kabalooshk

Small Scaled Terapan
Silver Sillago
False Trevally
Cobia
Line Shark Sucker
Indian Thread Fin
African Pampano
Shrimp
Lobster
Black Fin Scad
Blue Trevally
Malabar Trevally
Short Fin Scad
Arabian Scad
Seem Pilot Fish
Black Pamfret
Talamy Queen Fish
Gazdani Double Spotted Queen Fish
Big Eye Scad
African Pampano
Large Spotted Dart
Common Dolphin Fish
Moon Fish
Pony Fish
Whip Fin Silver/Biddy
Mangroove Red Snapper
Black and White Snapper
Japanese thread Fin Bream
Triple Tail
Painted Sweet Lips
Harry Hotlips
Small Spotted Grunter
Banded Grunt
Sordid Rubber Hip
Red Spot Emperor/Small Tooth Emperor
Long Spine Sea Bream
King Soldier
Amoy Croaker
Goaty Croaker
Grey Fin Croaker
Belongers Croaker
Southern Meagre
Tiger Tooth Croaker
Half Mourning Croaker
Two Bearded Croaker
Goat Fish
Blue Sea Chub
Spade Fish
Southern Meagre
Tiger Tooth Croaker

Gouruk
Hashoor
Chilanker
Sanglore
Liching
Ushtar/Patar
Siah Patar
Madag
Kikata
Bakoi
Galbat
Patar
Seem
Talagi
Zar Kawook
Siah Tigalum
Saarum
Saaram Aalari
Chumma
Sonaph
Sanph
Amrushk
Mit
Mit
Madro
Kunla
Gazi Gawazi
Kolonto
Gazi Gawazi
Lunti
Kumpo
Alola
Paalari
Chippil
Gadir
Gwatak
Soroo
Bliola
Tont
Mundsar Tont
Baddi Pandasi
Soli
Mushka/Pandari
Soli
Tant
Kolanto
Nawar
Raimi Sarrando
Soli
Mushka/Pandasi

Half Mourning Croaker	Soli
Sickle Fish	Sarando
Bat Fish	Dateera
Demoi Sella/Yellow Tailed Anemone Fish	Banore
Keeled Mullet	Murbo
Large Scale Mullet	Mundi
Great Barracuda	Kund
Four Finger Thread Fin	Gwanz
Indian Thread Fin	Gwanz
Paradise Thread Fin	Gwanz
Sand Smelt	Goloi
Dusky Spine Foot	Mahpari
Surgeon Fish	Dateera
Wahoo	Bagari
Kawakawa	Ulus
Skip Jack Tuna	Ahur/Kishki
Indian Mackerel	Bangra
Striped Bonito	Chunki/Dantani
Spanish Mackerel	Gore
King Mackerel	Kulgan
Long tail Tuna	Ahur
Large Head Hairtail	Tinji
Sword Fish/Spear Fish/Sail Fish	Asp
Silver Pomfret	Pitho
Silver Pomfret	Wanug
Indian Ariomma	Swaso
Round Head Tongue Sole	Swaso
Leopard Blow Fish	Toora
Tripod Fish	Toora
Trigger Fish	Dateera
Unicorn Leather Jacket	Toora
Longhorn Cow Fish	Toora
Keyhole Limpet and other (Mollusca)	Kuchki
Mantin Shrimp (crustacea)	Daryai Bot
Kuruma Shrimp	Jaira
Indian White Shrimp	Madag
Jinga Shrimp	Kalari
Kiddi Shrimp	Kiddi
Moon Crab	Kukry

ANNEX IV

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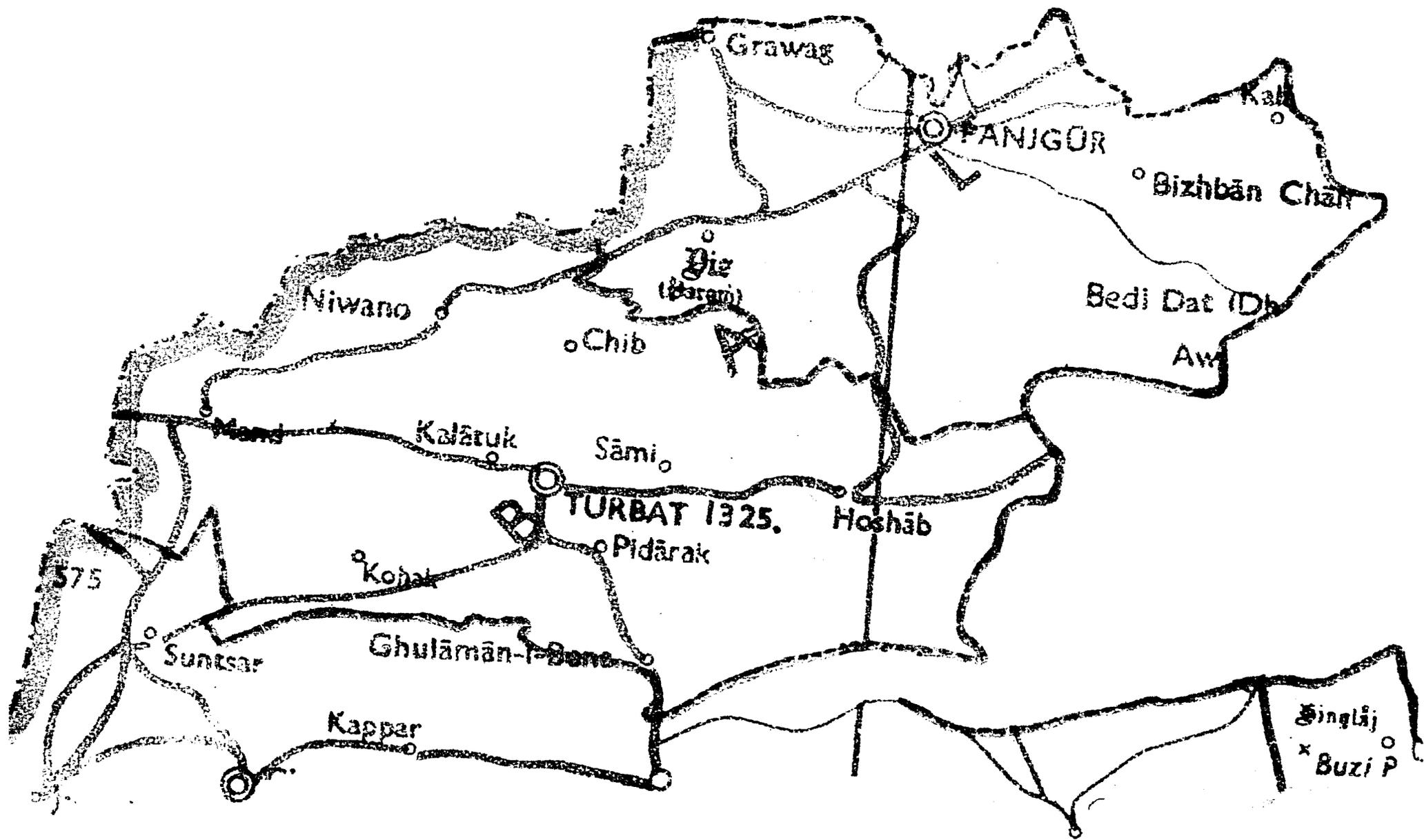
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