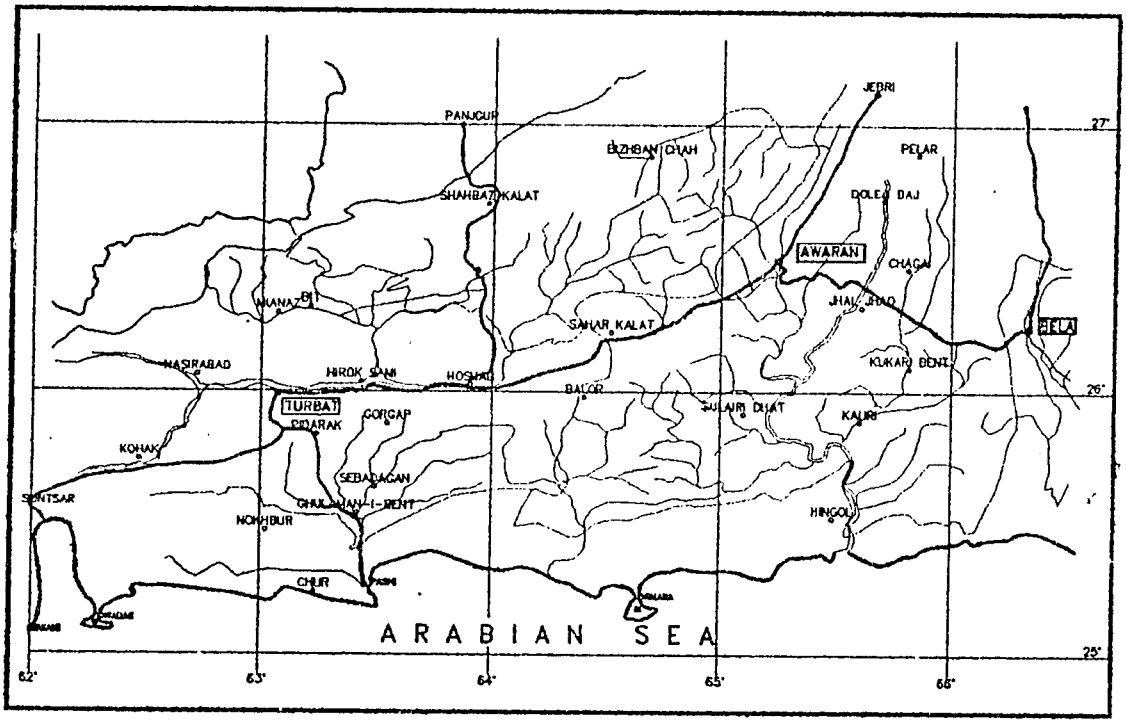
US-AID MISSION TO PAKISTAN

PROJECT DESIGN AND IMPLEMENTATION FUND
(391-0470)

ECONOMIC & FINANCIAL ANALYSIS REPORT

BELA-AWARAN-TURBAT ROAD



BALOCHISTAN AREA DEVELOPMENT PROJECT

IQC-391-0470-1-00-7224

Techno - Consult CONSULTING ENGINEERS

37-K/6, PECHS, Karachi-Pakistan, Tele: 440062, 440063, 440064 TLX: 23711 TECH PK, Cable: "TECHNO" Karachi.

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The economic and financial analysis of the proposed improvement of Awaran-Turbat road (240 K.M) and Bela-Awaran road (35 K.M) were under taken by the consultants on behalf of US Agency for Internatioal Development.

The net conclusion of this analysis was that the proposed road improvement for both the sections combined is feasible. Considering the estimated benefits under base case i.e., savings in user cost, loss avoided on perisnable fruits & vegetables and maintenance cost savings as well as base case with toll tax and four sensitivity tests, the investment on both the sections is economically justified. However, the financial analysis reveals that the investment has an internal rate of return is less than 12%, which is the opportunity cost of capital for the transport sector in Pakistan, at present.

It has been found that the principal link into and out of the Makran Division is the 400 km long Bela-Awaran-Turbat road. This road is the only access for the Makran Division to the commercial market centre of Karachi and large quantity of grains have been exported to the division through this road.

Population of the region (Lasbela, Khuzdar, Turbat, Gwadar and Panjgar has risen from 509,000 in 1972 to around 968,000 in 1981 showing an annual population growth rate of about 8%. A study of projection in population for this region were undertaken by Public Health Engineering Department, Government of Balochistan, which reveals that an annual population growth rate of about 4.8% is expected during 1994 - 2003, the period for which the analysis has been carried out.

For economic and financial analysis of the project the Vehicle User Cost Method has been employed for the unimproved condition and the improved condition of the road. The user costs have been estimated separately for Bela-Awaran and Awaran-Turbat sections, at yearly interval starting from the year 1994 when the project is assumed to have been improved and started to yield benefits.

The current opportunity cost of capital for the transport sector has been estimated to be 12% by the NHB and NTRC which has been used in the analysis to estimate the Net Present Value of the Investment and the Benefit Cost Ratio. All costs and benefits have been discounted to the year 1990 for which the project cost estiatmes were prepared. The Discount Cash Flow Analysis for different cases are indicated in Exhibits E-1 for combined Bela - Turbat road improvement.

Estimates of Net Present Value (NPV) have been derived under several assumptions, namely:

Base Case

Base Case with Toll Tax Inclusive

Sensitivity Test 1:	Construction is delayed by one year
Sensitivity Test 2:	Passenger time cost saving is excluded
Sensitivity Test 3:	Price of fuel increase by 5% per annum
Sensitivity Test 4:	Test 2 and 3 occur simultaneously i.e., passenger time cost saving is excluded and price of fuel increase at the rate of 5% per annum

F.Name: EXHIBITS.WK1 Disk: (AWAR4N - 2)

Exhibit E-1

SUMMARY OF RESULTS

Bela - Turbat

	BASE CASE	BASE CASE WITH TOLL	* SENSITIVITY TEST-1	** SENSITIVITY TEST-2	+ SENSITIVITY TEST-3	++ SENSITIVITY TEST-4
ECONOMIC						
- NPV (Rs. Million)	160.141	-	81.539	73.555	132.095	51.797
- B/C Ratio	1.261	-	1.134	1.120	1.215	1.084
- I R R, %	16.380	-	14.020	14.130	15.710	13.530
FINANCIAL						
- NPV (Rs. Million)	(288.835)	(258.382)	(389.146)	(360.386)	(337.240)	(402.861)
- B/C Ratio	0.772	0.796	0.691	0.715	0.734	0.682
- I R R, %	7.820	8.300	6.820	6.600	6.970	5.810

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INTRODUCTION

CHAPTER - 1

1.0 INTRODUCTION:

1.1 BACKGROUND:

The Makran Division of Balochistan Province is isolated from other areas of the Province and the market Centre of Karachi. The principal link into and out of the Makran Division is the 400 km long Bela-Awaran-Turbat road, which also passes through the neighboring Kalat Division. As shown on the accompanying map, Makran is the south western division of Balochistan 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 sq. km and a population of about 650,000 according to the 1981 census. The Bela-Awaran-Turbat road is the only access for the Makran Division to the commercial market centre of Karachi.

US AID Mission to Pakistan vide contract No.39-0470-1-00-7224-00 has entrusted to Techno-Consult the job of undertaking the Economic and financial feasibility of first 35 k.m of Bela-Awaran road and 240 k.m. Awaran-Turbat road. Delivery order No.004 under the above contract was issued to Techno-Consult on September 17, 1989.

1.2 SCOPE OF WORK:

The work of Economic and Financial Analysis included collection of existing data from various departments of Government of Balochistan. The project cost data and projected traffic data was furnished by M/s Stv/Lyons who carried out preliminary design of the road.

The Techno-Consult also collected field data and carried out Origin/Destination survey of traffic to determine the zone of influence, speed test survey and a sample survey of agricultural house holds in Makran and Kalat Divisions to determine the levels of present agricultural inputs and out puts.

1.3 METHODOLOGY:

In order to achieve the objectives mentioned in the scope of work following methodology was adopted.

1.3.1 Meeting with Concerned Government Officials:

Techno-Consults team visited the following officials of the Government of Balochistan and M/s. Stv-Lyons to obtain necessary technical and economic data from them.

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AT QUETTA:

1. Mr. Mohammad [illegible]
   Director Bureau of [illegible]

2. Mr. Wilbart J. Mart
   Director, Agriculture Department

3. Mr. Azmat
   Superintendent, Excise and
   Taxation Department

4. Mr. Qazi Azmat Essa
   Financial Analyst,
   Public Health Engineering Department

5. Mr. Atta Abbas
   System Analyst,
   BALAD Project, USAID

6. Miss Rukhsana
   Research Officer,
   Planning & Development Department

7. Dr. Faiz
   Liaison Officer, USAID,
   Quetta.

AT KARACHI:

1. Mr. Joe-Smith
   Project Manager
   Stv/Lyons

2. Dr. Irshad Ahmad
   Dy. Project Manager

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[illegible] Origin Destination Survey:

[illegible] vehicles was carried out by M/s Engineering Consultants at Bela only. The Average [illegible] based on a three day survey was available from the A/E firm but the vehicles were not [illegible] according to their make, size, loading capacity etc instead total number of vehicles on road [illegible]. Moreover no O/D survey of passengers was carried out by the firm.

Techno Consult under took an O/D survey with classified count of traffic and passengers at three count stations located at Bela Awaran and Turbat simultaneously for 24 hours. The inquiries were made about the following:-

i) Origin and Destination of Passengers/Goods/Vehicles
ii) Type of Cargo, In Case of Cargo Vehicle

While the stopped vehicles were being interviewed, the other traffic was allowed to pass. After the stopped vehicles were allowed to go, other set of vehicles were stopped and interviewed similarly. While the O/D survey was in progress, another team of enumerators continued the classified count of all traffic passing the count station. Details of O/D survey and traffic count are appended as Annexure A.

1.3.3 Agriculture Household Survey:

An Agriculture economist with a group of enumerator under-took a survey of 50 Agricultural households in Bela, Awaran and Turbat Districts. The households were selected at random covering both the large land holdings as well as small land holdings. Useful information was also obtained from Statistics Wing, Directorate General of Agriculture Department, Balochistan. Details of Agriculture household survey are available in Annexure B.

1.3.4 Traffic Projections and Project Cost:

The data on existing traffic and traffic projection upto the year 2003 was furnished by M/s. Engineering Consultants. The total cost of Construction for both the sections viz the first 35 k.m. of Bela- Awaran and 240 k.m. of Awaran-Turbat road and the Design life was also given by the A/E firm.

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1.3.5 Economic and Financial Analysis:

Based on above studies and data the economic and financial analysis of Bela-Awaran and Awaran-Turbat road has been separately as well as unit (Bela - Turbat) carried out in detail in this report. The sensitivity tests made for the project include:

1) Projection of benefits if construction of the project is delayed by one year

2) Projection of benefits if passenger and crew time cost saving is excluded.

3) Projection of benefits if price of fuel increase at a rate of 5 percent per annum.

4) Test-2 and Test-3 occur simultaneously.

1.4 CONSTRAINTS AND LIMITATION:

The major constraint in carrying out this analysis was that a very short time was available to the consultant. Moreover the construction cost of the project initially given by the A/E firm was not classified according to labor material, Government taxes, equipment, etc a vital information needed to complete this task. However, directives were issued by USAID to the A/E firm to prepare the data required which was given to Techno-Consult on November 14, 1989.

1.5 ACKNOWLEDGMENT:

The consultants gratefully acknowledge the assistance rendered by USAID officers in Islamabad and Quetta in expediously arranging interviews with Provincial Government Officials in Quetta. The consultants received useful informations from various Departments of Government of Balochistan without which this assignment could not be completed in such a short time.

REGIONAL ECONOMY - MAKRAN DIVISION

CHAPTER - 2

2.0 REGIONAL ECONOMY:

2.1 POPULATION:

Makran has three Districts: Turbat, Pangjur and Gawadar. While they share many socio-economic characteristics there are significant differences in the nature of District economics. As per the 1981 District census report, in the total population of Makran Division of 652,000, Turbat's share is 58% whereas 17% and 25% of total population live in Gawadar and Pangjur Districts, respectively. The population of Makran Division has grown from 307,000 persons according to 1972 census of population to around 652,000 according to 1981 census. Area and population by Districts in Makran and Kalat Divisions are given in Exhibit 2.1 Population of cities and main towns of Balochistan is given in Exhibit 2.2. A projection in population for main cities of Balochistan is carried out upto the year 1998 by Public Health Engineering Department, Government of Balochistan. The summary of this population projections is shown in Exhibit 2.3.

2.2 REGIONAL ECONOMY:

Until a few decades ago Makran was an isolated place where most people depended on local resources to make a living. The first wave of out migration was in 1940's when social changes inside Makran took place including the abolition of slavery that resulted in the migration of thousands of its residents to the newly industrialised Karachi. A large number of Makran's labor out migrated to the neighboring persian Gulf States which needed labor for development projects and soldiers for defense.

The economy of Makran Division is based mainly on two items i.e dates and fish. Makran produces 63,000 tons of dates annually. Next important among the crop is barley. The Division is deficient in wheat, rice and pulses. Every year about 50,000 tons of cereals and pulses are transported from Karachi. Before 1977-78 development activities in Agricultural sector in Makran Division were negligible. In 1977-78 the provincial Government implemented several schemes under which the most important is on-farm water management and Ground plant protection. An area of 52,000 hectares was covered under ground plant protection project. The standard of farming is very low. Primitive cropping techniques are followed. Indigenous crop seeds produce low yields. Only a few farmers in the area have introduced mechanization in the farms. Agriculture production in Lasbela, Turbat, Gawadar and Khuzdar is shown in Appendix D.

The main stay of about 80,000 coastal population is fishing. Balochistan coast has great potential for fisheries and as much as 60% Pakistan's catch of marine fish is caught from Balohistan. waters.

AREA AND POPULATION BY DISTRICTS
IN MEKRAN AND KALAT DIVISIONS

DISTRICT	AREA IN SQ - KM	POPLUATION IN THOUSANDS		PERCENTAGE CHANGE IN POPULATION (1972 -81)
		SEPT .72	MARCH .81	
TURBAT DISTRICT	22539	161	378	134.78
GWADAR DISTRICTT	15216	57	161	182.46
PANJGUR DISTRICT	16891	89	113	26.97
KHUZDAR DISTRICT	64891	77	129	67.53
LASBELA DISTRICT	12574	125	187	49.6
KHARAN DISTIRCT	48051	187	371	98.4
KALAT DISTRICT	12517	147	333	126.53

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EXHIBIT 2.1

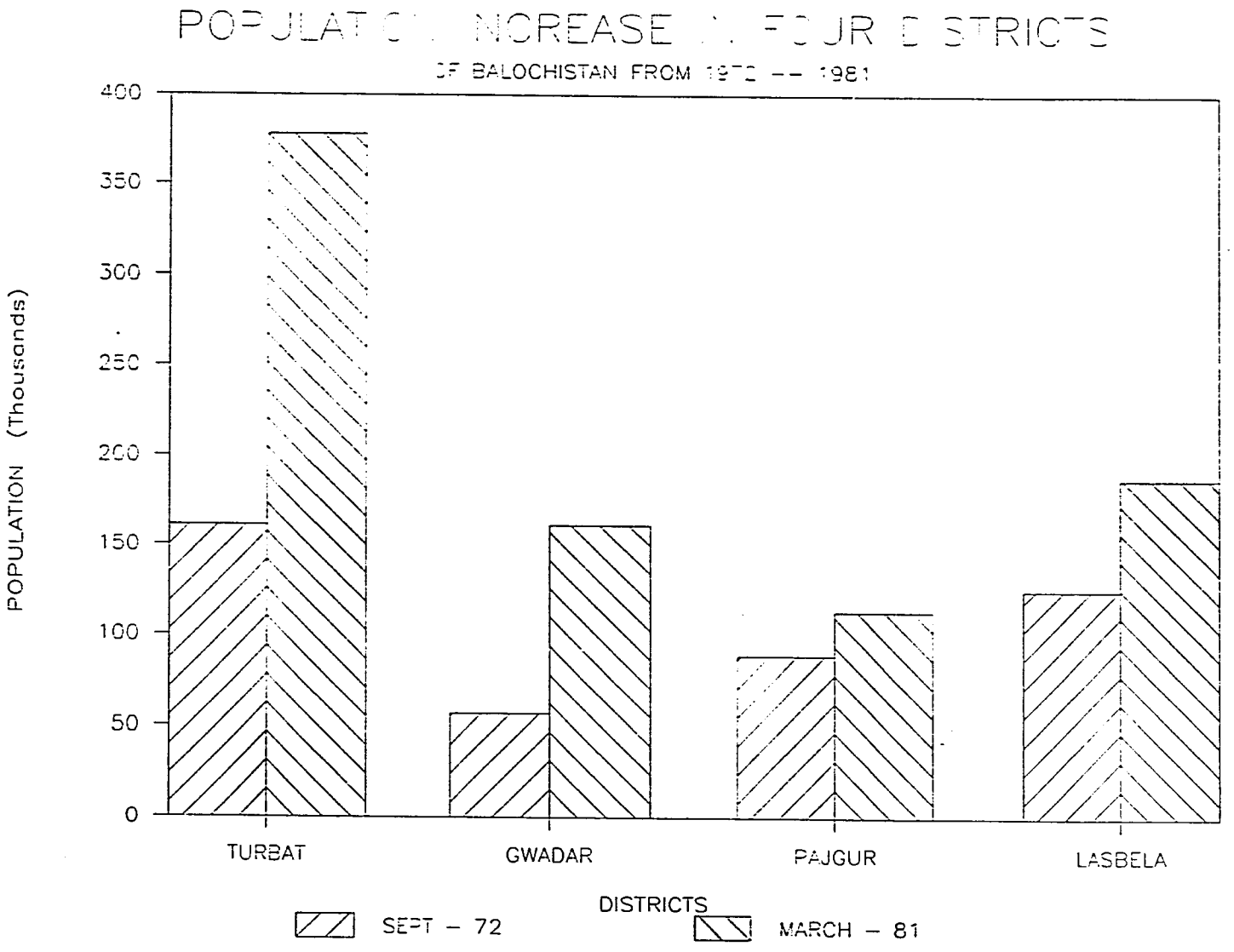

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EXHIBIT 2.2

POPLUATION
(THOUSANDS)

POPULATION OF CITIES AND MAIN TOWNS OF BALOCHISTAN

CITIES & TOWNS	[illegible]	[illegible]	1972	1981
CHAMAN	[illegible]	[illegible]	10	30
GWADAR	-	[illegible]	16	30
JIWANI	-	[illegible]	3	14
KALAT	2	5	6	11
KHARAN	3	3	6	10
KHUZDAR	-	-	3	30
LASBELA	3	3	7	11
LORALAI	4	6	7	11
MACH	[illegible]	5	7	8
MASTUNG	[illegible]	[illegible]	10	17
[illegible]	[illegible]	[illegible]	5	11
[illegible]	[illegible]	[illegible]	16	18
QUETTA CITY & CANTT.	[illegible]	[illegible]	158	285
SIBI	[illegible]	13	20	23
TURBAT	[illegible]	[illegible]	28	52
ZHOB	6	[illegible]	17	33

SOURCE :- POPULATION CENSUS OF PAKISTAN, 1981.

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SUMMARY OF POPULATION PROJECTION

BY

PUBLIC HEALTH ENGINEERING DEPARTMENT

GOVERNMENT OF BALUCHISTAN

EXIBIT 2.3

District	Item		Accumulated Figures in Year								
			1990	1991	1992	1993	1994	1995	1996	1997	1998
	Total Projected Population		(000)								
1 ZHOB			269.5	279.7	290.3	301.4	312.0	324.7	337.0	349.9	363.2
2 Q. SAIFULLAH			191.5	190.4	[illegible]	212.9	220.6	228.5	236.7	245.3	254.1
3 LORALAI			5[illegible].4	5[illegible].2	[illegible]	[illegible]	5[illegible].3	602.7	623.8	645.6	668.2
4 KHOSU			7[illegible].1	8[illegible].0	[illegible]	81.8	82.7	83.6	84.5	85.4	86.3
5 DERA BUGTI			140.0	144.6	149.4	154.3	159.4	164.7	170.1	175.7	181.5
6 KACHHI			327.2	332.5	337.[illegible]	343.2	348.7	354.3	359.9	365.7	371.5
7 ZIARAT			41.4	42.6	43.[illegible]	45.0	46.3	47.6	48.9	50.3	51.7
8 SIBI			72.8	73.1	73.3	73.5	73.7	73.9	74.2	74.4	74.6
9 JAFARABAD			287.9	292.8	297.8	302.9	306.0	313.3	318.6	324.0	329.5
10 TAMBOO			185.3	194.2	203.5	213.3	223.5	234.2	245.5	257.3	269.6
11 PISHIN			400.3	408.4	416.5	424.9	433.3	442.0	450.9	459.9	469.1
12 KHARAN			146.1	149.6	153.2	156.8	160.6	164.5	168.4	172.4	176.6
13 KALAT			458.7	478.[illegible]	498.1	519.0	540.8	563.5	587.2	611.8	637.5
14 KHUZDAR			460.0	472.9	486.1	499.8	513.7	528.1	542.9	558.1	573.7
15 PANJGUR			251.7	266.1	281.2	297.3	314.2	332.1	351.0	371.1	392.2
16 TURBAT			504.1	528.3	553.7	580.3	608.1	637.3	667.9	699.9	733.5
17 GWADAR			76.8	77.7	78.7	79.6	80.6	81.5	82.5	83.5	84.5
18 LASBELA			178.0	180.5	183.0	185.6	188.2	190.8	193.5	196.2	198.9
19 QUETTA			96.5	96.6	96.7	96.8	96.9	97.0	97.1	97.2	97.3
20 CHAGAI			147.4	152.2	157.3	162.4	167.8	173.3	179.1	185.0	191.1
Provincial Total	# of Settlement	small	385.0	385.0	3,850.0	3,850.0	3,850.0	3,850.0	3,850.0	3,850.0	3,850.0
		medium	1,501.0	1,501.0	1,501.0	1,501.0	1,501.0	1,501.0	1,501.0	1,501.0	1,501.0
		large	531.0	531.0	531.0	531.0	531.0	531.0	531.0	531.0	531.0
	Pop in Settlements	small	1,018.3	1,048.7	1,080.1	1,112.6	1,146.2	1,181.0	1,217.1	1,254.3	1,292.9
		medium	2,128.0	2,195.9	2,266.3	2,339.5	2,415.4	2,494.2	2,576.1	2,661.1	2,749.3
		large	1,675.6	1,728.7	1,783.8	1,841.1	1,900.5	1,962.3	2,026.4	2,093.1	2,162.4
	Total Population		4,821.9	4,973.2	5,130.2	5,293.1	5,462.2	5,637.5	5,819.6	6,[illegible]	6,204.7

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2.3 REGIONAL TRANSPORTATION SYSTEM:

Before July 1977, only 17 km of black topped and 2112 km of shingle roads existed in Makran Div. During the period of 1977-1982 [illegible] km of black topped and 2753 km of shingle roads have been constructed at an expenditure of Rs. 1556.94 Million. The details of the roads constructed are as follows:-

BLACK TOPPED:

a) Bela - Awaran - Mand

b) Liari - Lakran

c) Liari - Ormara - Turbat

d) Ushar - Turbat - Buleda

e) Dumb - Sonmiani

f) Airport Road Gawadar

g) Airport Road Turbat

SHINGLE ROADS:

a) Gawadar - Pasni

b) Panjgur - Awaran

c) Liari - Ormara

Exhibit 2.4 shows the details of existing metalled and unmetalled road in four District of interest.

EXIBIT 2.4

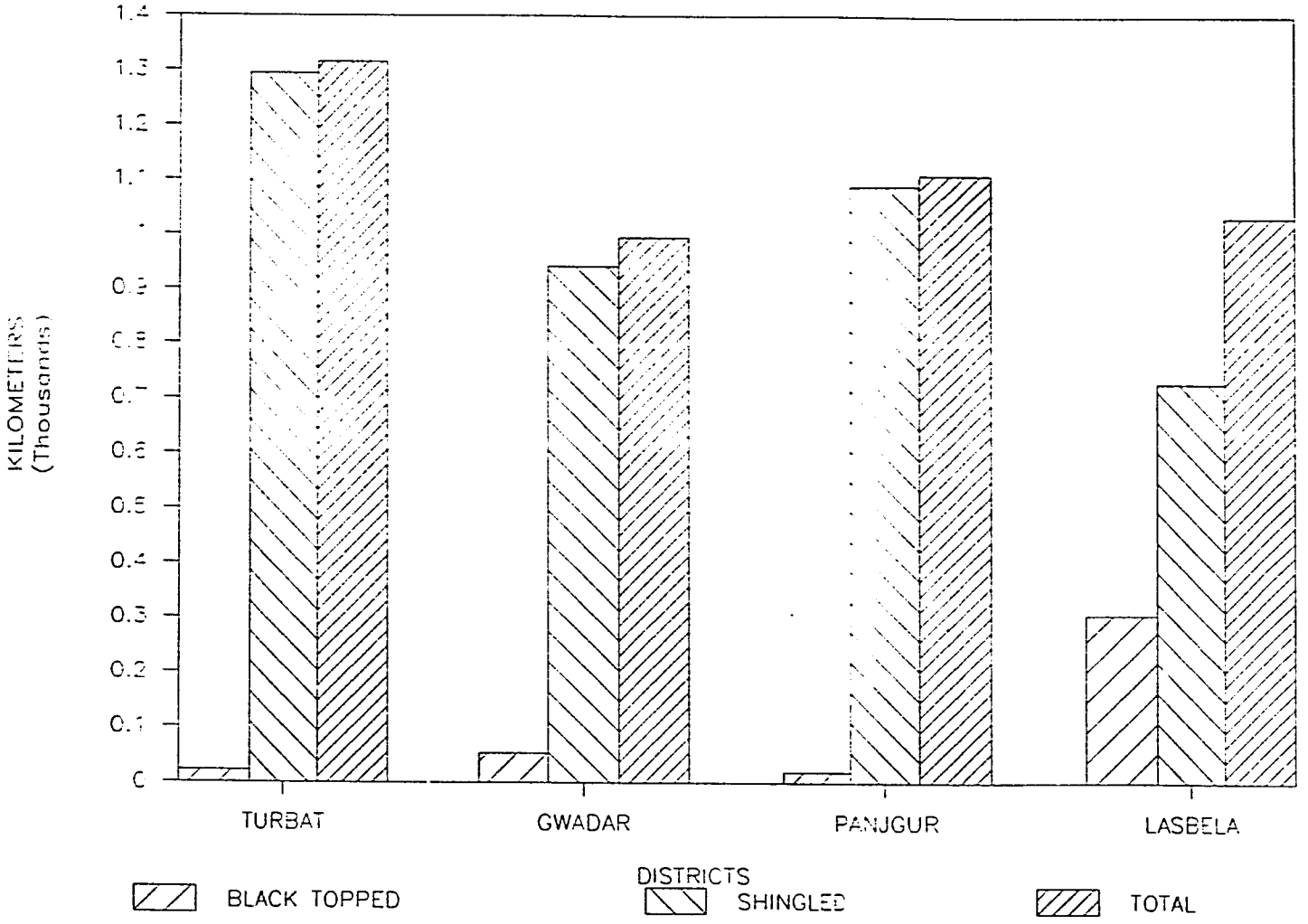
ROAD KILOMETER BY TYPE & BY DISTRICT OF BALOCHISTAN
FOR THE YEAR 1986 - 87

DIVISION/DISTRICT	BLACK TOPPED	SHINGLED	TOTAL
TURBAT DISTRICT	21.72	1293.64	1315.36
GWADAR DISTRICT	53.10	941.27	994.37
PANJGUR DISTRICT	19.31	1089.29	1108.60
TOTAL MAKRAN DIVISION	94.13	3324.20	3418.33
LASBELA DISTRICT	305.71	728.07	1033.78
KHUZDAR DISTRICT	189.86	1611.41	1801.27
KALAT DISTRICT	247.79	552.93	800.72
KHARAN DISTRICT	75.62	1282.37	1357.99
TOTAL KALAT DIVISION	818.98	4144.78	4963.76

Source: Development Statisties of Balochistan

'EXHIBIT 2.4

ROAD KILOMETER IN FOUR DISTRICTS OF BALOCHISTAN 1986 -- 87



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TRAFFIC STUDY

CHAPTER-.

3.0 TRAFFIC STUDY:

3.1 EXISTING DATA:

3.1.1 Traffic Counts:

No published statistics for existing traffic data for inter-city or intra-city of Balochistan is available. The A/E firm under took a traffic count at the road of interest to carryout the preliminary design of the two sections i.e. the first 35 KM of Bela-Awaran road and Awaran-Turbat road. The firm established five count stations at Bela, Awaran, Hoshab, Swami and Turbat and under took the counting of motorized vehicles only needed for the pavement design. Further the data of existing traffic furnished by the firm was classified only in two types of vehicles i.e. Buses and Trucks. Rest of the vehicles were counted under the heading of "Others" giving consultant no choice but to assume a percentage of cars and LCV's in "Others" type of vehicles.

3.1.2 Fuel Consumption:

Statistics of Consumption of Motor Sprit, HOBC and high spirit Diesel (HSD) are available by month and region from the publications of OIL Companies Advisory Committees (OCAC). These statistics for Balochistan and Karachi upto June 89 were collected from OCAC and presented in Exhibit 3.1. The consumption of HSD in Transport sector for the two region is also shown in the Exhibit separately. Further analysis of the exhibit reveals that during last four years consumption of MS + HOBC rose at an annual growth rate of 14.8 percent and of high speed diesel by 53 percent in Balochistan.

Data on consumption of petroleum, oils and lubricants is available at the national level only. This data is published by the Ministry of Petroleum and Natural Resources, Government of Pakistan in their annual "Energy Year Book". Statistics of consumption by the transport sector for the period 1972-73 to 1985-86 are presented in Exhibit 3.2. National Energy Conservation Centre (ENERCON), Ministry of Planning & Development, Government of Pakistan has assigned "Techno-Consult" the job of establishing a Energy data base for consumption of POL products in transport at regional as well as at national level. The Energy Department of Techno-Consult informed that the data is being analysed and will be available some time next year.

3.1.3 Commodity Flows:

Cost reduction in commodity flow is a common source of benefit wherever transport is a factor. Better roads or highways will reduce the cost of moving commodities from the farm to the consumer. For this study cost sa due to commodity flow has been fully explored as Makran imports about 50,000 tons

Exhibit-3.1

Motor Fuel Deliveries by Month for BALOCHISTAN & KARACHI
(in Metric Tons)
Jan 1985 to July 1989

	KARACHI			BALOCHISTAN		
YEAR	M.S.	HOBC	H.S.D. (Transport)	M.S.	HOBC	H.S.D. (Transport)
1985						
JAN.	14006	4547	20154	2000	234	8928
FEB.	12682	4012	18764	1966	216	7835
MAR.	14111	4475	19787	2155	222	9463
APR.	13021	4191	19476	2228	220	9816
MAY.	13169	4128	18478	2308	234	9717
JUN.	13589	4134	28675	2145	212	8524
JUL.	13986	4344	18170	2185	227	9498
AUG.	14749	4552	26391	2227	233	8843
SEP.	13855	4301	23523	2110	222	9852
OCT.	14312	4502	22569	2123	222	11193
NOV.	13370	4267	26224	1955	203	10166
DEC.	14386	4587	23368	1972	223	9132
1986						
JAN.	14126	4604	21271	1878	213	8799
FEB.	13207	4170	21651	1749	176	8140
MAR.	14989	4869	21647	1958	210	9509
APR.	15306	4797	21986	2131	224	10400
MAY.	14073	4294	19259	2060	205	9803
JUN.	15507	4708	21538	2296	249	9752
JUL.	15510	4837	33787	2561	274	10806
AUG.	15069	4583	27696	2558	278	9875
SEP.	14753	4540	32560	2415	251	12286
OCT.	15122	4623	25575	2574	235	11968
NOV.	13003	4092	30087	2711	240	11641
DEC.	13376	4289	28900	2606	252	11025
1987						
JAN.	14499	4555	32738	2545	251	18893
FEB.	14024	4362	30702	2221	214	14117
MAR.	16113	4940	31655	2455	243	14317
APR.	16214	4916	30603	2514	280	16709
MAY.	15807	4702	32422	2317	244	16313
JUN.	15614	4665	31186	2568	285	18313
JUL.	15002	4649	36413	2647	307	18039
AUG.	16333	4937	29055	2543	310	16413
SEP.	14837	4594	31099	2544	306	18712
OCT.	15252	4733	32965	2462	303	17512
NOV.	18089	4617	32793	2476	301	15404
DEC.	16691	5221	36947	2458	344	17885

Contd... 3.1A

Exhibit-3.1A

Motor Fuel Deliveries by Month for BALOCHISTAN & KARACHI
(in Metric Tons)
Jan 1985 to July 1989

	KARACHI			BALOCHISTAN		
YEAR	M.S.	HOBC	H.S.D. (Transport)	M.S.	HOBC	H.S.D. (Transport)
1988						
JAN.	15686	4382	38069	2276	295	22748
FEB.	14762	4616	33370	2253	315	19535
MAR.	16737	5112	36713	2738	389	22886
APR.	15961	4862	31988	2556	336	23666
MAY.	15842	4877	31431	2753	357	22592
JUN.	17487	5255	35205	2816	374	23322
JUL.	16052	4888	31375	2743	358	20283
AUG.	16368	4986	32740	2916	339	23544
SEP.	16201	4914	32716	2844	337	26283
OCT.	14625	4510	35972	3030	371	28226
NOV.	15057	4572	35211	2782	367	26590
DEC.	16500	5071	35226	2640	346	30169
1989						
JAN.	17219	5351	36585	2538	341	35149
FEB.	15625	4781	34961	2386	304	23534
MAR.	17454	5367	36641	2874	372	26862
APR.	17414	5167	38689	2862	372	28800
MAY.	19061	5576	34363	3131	404	27401
JUN.	16623	4943	32616	2915	365	28392
JUL.	17543	5358	36410	3157	398	27599

Source : Oil Companies Advisory Committee
Unpublished Statistics

TABLE - 3·2

FUEL CONSUMPTION IN TRANSPORT SECTOR

(Tons of oil equivalent)

YEAR	MOTOR FUELS	DIESEL OIL
1972 - 73	335918	805427
1973 - 74	330180	799674
1974 - 75	357541	906860
1975 - 76	376650	889666
1976 - 77	399083	967550
1977 - 78	474869	1146274
1978 - 79	539451	1371038
1979 - 80	578741	1544873
1980 - 81	628707	1709134
1981 - 82	651670	1863289
1982 - 83	683823	1796545
1983 - 84	745863	1920878
1984 - 85 (Est)	787996	2029387
1985 - 86 (Est)	828581	2133908

SOURCE| Ministry of Petroleum & Natural Resources. Energy Resources Cell : "Energy Year Book" several issues

(Est) derived from Finance Division. Economic Adviser's Wing : "Pakistan Economic Survey 1985-86" Table 5.1

pulses every year from Karachi*. The benefits realized from saving in transport cost due to improved road have been distributed among consumers. Details of the analysis are given in Chapter 4.

3.1.4 Vehicle Registration/Vehicles on Road:

Data on vehicle registration is published by Federal Bureau of Statistics (FBS) in their annual publication "Pakistan Statistical Year Book" both nationally and provincially. This data is presented in Exhibit 3.3 for the four Districts of interest i.e. Turbat, Gwadar, Lasbela and Khuzdar. The number of vehicles registered by type is available in "Development Statistics of Balochistan 1987-88" but the data available in the book was only upto June 30, 1987. The consultant contacted office of Bureau of statistics in Quetta but their publication for the year 1988-89 was in press and therefore could not be made available. However data of vehicle registration upto Dec. 31, 1988 of 15 districts of Balochistan was obtained from Directorate of Excise and Taxation, and presented in Exhibit 3.4.

3.2 TRAFFIC ESTIMATES AND FUTURE TRAFFIC:

The traffic data furnished by STV/LYONS/EC is based on the assumption that the development traffic on the new road will result in an increase of ten percent of the existing traffic every year. It is also assumed that after the road is completed and opened to traffic in the first year, development traffic generated traffic and directed traffic add to anticipated existing traffic. It is estimated that development traffic is 10%, generated traffic is 20% and diverted traffic is 15%. Total increase in the existing traffic for the first year of road operation is 45%. Thereafter, the annual increase is estimated to be 15%. Exhibit 3.5 and 3.6 show the projected yearly traffic volume from 1993 to 2003 as given by the A/E firm for different sections of the road. This study is based on these projected traffic volume used as basis for roadway pavement, structures and geometric design for the project.

The A/E firm, however, did not provide the consultants the basis of assumptions used by them in determining projected traffic volume. The consultants are, therefore, unable to comment on weather the growth rates assumed by the A/E firm included the growth rate of population which affects the passenger related traffic or the growth in agriculture which would affect the growth in freight traffic.

As required by USAID, the consultant under took a 24 hour traffic count and origin/Destination survey at Bela, Awaran and Turbat count locations on October 11, 1989. The details of the survey are contained in Appendix A.

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* Source: Development Activities in Makran Division.

File Name VEH-REG.WK1 DISK AWARAN-1 WORKSHEET

EXIBIT 3.3

NUMBER OF VEHICLES REGISTERED BY TYPE AND DISTRICT

DESCRIPTION	UPTO 30-6-1986				DURING 1986 - 87 (1-7-86 TO 30-6-87)				TOTAL			
	DISTRICT /DIVISION				DISTRICT /DIVISION							
	TURBAT	GWADAR	LASBELA	KHUZDAR	TURBAT	GWADAR	LASBELA	KHUZDAR	TURBAT	GWADAR	LASBELA	KHUZDAR
Motor Car, Jeep Stn. Vagon	74	26	2489	107	45	7	380	11	119	33	2869	118
Motor Cycles & Scooters	934	36	384	20	23	6	52	5	957	42	436	25
Trucks	7	4	3710	14	3	0	554	3	10	4	4264	17
Delivery Vans	0	0	61	0	0	0	0	0	0	0	61	0
Buses	0	0	258	6	1	0	27	3	1	0	285	9
Taxis	0	0	0	0	0	0	0	0	0	0	0	0
Auto Rickshaws	0	0	0	0	0	0	0	0	0	0	0	0
Others	14	5	2063	36	34	3	379	32	48	8	2442	68
Total	1029	71	8965	183	106	16	1392	54	1135	87	10357	237

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FILE NAME MOT-VEH.WK1 DISK NAME BASHIR -3

MOTOR VEHICLES ON ROAD IN BALOCHISTAN

EXHIBIT 3.4

(1-1-1989 to 31-12-1989)

VEHICLE TYPE/ DESTRICT	M.CYCLE SCOOTER	M.CAR	JEEP	STATION WAGON	TRACTOR	BUS M.BUS	FLYING COACH	M.CAR TAXI	M.CAR RICKSHAW	DELIVERY VAN	TRUCK	AMBULANCWE	OTHER	TOTAL
KALAT	97	73	88	12	65	58	-	-	-	1	36	-	30	460
KHARAN	3	2	-	-	4	-	-	-	-	-	1	-	-	10
KHUZDAR	15	90	3	3	25	6	-	-	-	-	12	-	4	158
LASBELA	46	68	138	127	15	37	-	-	-	21	733	2	1034	2221
GWADAR	4	-	2	2	1	-	-	-	-	-	-	-	1	10
PUNJGUR	5	-	-	-	-	-	-	-	-	-	-	-	-	5
TURBAT	5	-	2	4	3	-	-	-	-	-	-	-	4	18
GHAGAI	45	11	13	20	11	18	-	-	-	1	45	-	32	196
LORALAI	-	-	-	-	-	-	-	-	-	-	-	-	-	0
PISHIN	90	7	10	16	108	2	-	-	-	2	15	-	2	252
QUETTA	964	-	-	-	332	-	-	-	-	-	149	19	6	1470
ZHOB	-	-	-	-	-	-	-	-	-	-	-	-	-	0
KACHHI	80	9	34	-	3	-	-	-	-	-	-	-	2	128
KOHLU	6	-	2	-	1	-	-	-	-	-	-	-	1	10
NASIRABAD	150	10	3	1	5	5	-	-	-	-	13	-	15	202
SIBI	17	16	5	-	2	26	-	-	-	2	8	-	24	100
DERABUGTI	-	-		-	-	-	-	-	-	-	-	-	-	0

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EXIBIT 3.5

TRAFIC PROJECTIONS FOR BELA-AWARAN

YEAR	BUSES	TRUCKS	OTHERS	TOTAL
1993	19	216	36	271
1994	22	248	41	311
1995	25	286	48	359
1996	29	329	55	413
1997	33	378	63	474
1998	38	434	72	544
1999	44	500	83	627
2000	51	575	96	722
2001	58	661	110	829
2002	67	760	127	954
2003	77	874	146	1097

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EXIBIT 3.6

TRAFFIC PROJECTIONS
TURBAT - SWAMI SECTION

YEAR	BUSES	TRUCKS	OTHERS
1993	23	191	157
1994	26	220	181
1995	30	253	208
1996	35	290	239
1997	40	334	275
1998	46	384	316
1999	53	442	363
2000	61	508	418
2001	70	584	480
2002	81	672	552
2003	93	773	635

TRAFIC PROJECTIONS
AWARAN - SWAMI SECTION

YEAR	BUSES	TRUCKS	OTHERS
1993	28	174	32
1994	32	200	37
1995	37	230	42
1996	43	265	49
1997	49	304	56
1998	56	350	64
1999	65	402	74
2000	74	463	85
2001	86	532	98
2002	99	612	112
2003	113	704	129

Source: M/s. STV/LYONS/EC

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ECONOMIC AND FINANCIAL ANALYSIS

CHAPTER-4

ECONOMIC AND FINANCIAL ANALYSIS

4.1 METHODOLOGY:

This study takes into account the Benefits accrued from following sources:

- User Cost Saving
- Maintenance Cost Saving
- Loss Avoided on Perishable Fruits & Vegetables
- Toll Tax

4.2 USER COST SAVING:

User cost is the sum of operating (consumption) cost and time (utilization) cost. The first is a function of speed and geometrics and tend to rise with higher speeds. The latter is related to annual kilometerages achieved and falls as speed increases. Vehicle operating cost and user time cost have been worked out both for economic and financial values. For determining the economic cost of vehicle operation, the elements of custom duty, sales tax, various surcharges of Government of Pakistan are disregarded. However since the vehicle user actually pay these charges, they are included for computing the financial cost of operation.

The utilization cost of passengers and crew has been disregarded in financial costing since the cost of passengers or any loss/gain on this account does not affect public transport operator but it is included for the economic cost of vehicle operation.

The estimation of consumption quantities of fuel, oil, tyre, maintenance labor, parts, depreciation, interest, etc. for four type of vehicles i.e. cars, light commercial vehicles (LCV's), buses and truck are taken from the consumption tables iven in the National Highway Board (NHB) publication "Vehicle Operating Cost" in 1984 for various speeds. The financial and economic cost of vehicles, tyres, fuels, lubricants & labor given in the NHB publication have been updated to the current market prices as prevailing in 1989. Prices of inputs used in this study are shown in Exhibit 4.1 and their consumptions are discussed below.

4.2.1 Fuel Consumption:

The fuel consumption has been adjusted for six possible factors which affect the fuel consumption. These are road roughness, rising and falling gradients, curvature, traffic congestion and speed cycle changes due to bottlenecks.

4.2.2 Oil Consumption:

Oil consumption for cars and LCV's remains almost constant [illegible] ranging from 16 KPH to 96 KPH. It is estimated to be 1.44 litres per 1000 KM for cars and [illegible] litres per 1000 KM for LCV's. In case of buses and truck oil consumption changes with variation in speed. It varies from 7.8 litres per 1000 KM to 4.08 litres per 1000 KM for the speed ranging from 16 KPH to 96 KPH.

4.2.3 Tyre Consumption:

Tyre consumption for cars, LCV's buses and trucks has been calculated on the basis of various average speeds of vehicles taking into account the road roughness, curvature and traffic congestion.

4.2.4 Maintenance Labor & Spare Parts:

The financial cost of skilled labor used on vehicle maintenance has been valued at Rs. 12.5 per hour. Adjustment has been made for skilled labor shadow costing by multiplying with a factor of 1.25 (as determined by the planning commission, Government of Pakistan) to arrive at the economic cost of labor at Rs. 15.63/hour. The maintenance cost of parts has been calculated as percentage of the cost of new vehicles without tyres. The cost of four types of vehicles analysed in this study is separately shown in Exhibit 4.1.

4.2.5 Depreciation, Interest and User Time Cost:

The relationship between depreciation and lifetime kilometerage is curvilinear. The higher the annual kilometerage, the lower the cost of depreciation per KM. The Depreciation and Interest are expressed as a percentage of the value of the purchase price with tyres.

4.2.6 Vehicle Operating Speed:

The existing speeds of different vehicle types were obtained from speed test conducted by the consultants along the project road section. Design speed for improved road was provided by the A/E firm. Future speeds and V/C ratios on both the existing and improved conditions have been derived and are given in Appendix C.

VEHICLE OPERATING COST [illegible]
PHYSICAL PARAMETERS USED [illegible]

DESCRIPTION	UNIT	PRICE PARAMETERS	
		ECONOMIC	FINANCIAL
CAR	#	100,047.00	300,140.00
LCV	#	124,278.00	300,000.00
BUS	#	283,276.00	500,000.00
TRUCK	#	272,679.00	400,000.00
CAR TYRE	#	768.00	1,045.00
LCV TYRE	#	657.00	1,025.00
BUS TYRE	#	1,392.00	2,225.00
TRUCK TYRE	#	1,600.00	2,625.00
GASOLINE	LTR	4.50	7.77
DIESEL	LTR	4.35	4.87
LUBRICANT		25.00	26.75
SKILLED LABOR		15.63	12.5

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4.2.7 User Cost Under Existing Condition of Road*

The estimates of user cost (Economic) in Rs/K.M. for four different types of vehicles under existing conditions are presented in Exhibit 4.2. Exhibits 4.3, 4.4 and 4.5 show the financial cost for Awaran-Turbat section and Economic and financial cost for Bela-Awaran sections, respectively. The estimates are presented at yearly intervals commencing 1994 the first year after completion of construction.

4.2.8 User Cost Under Improved Road Condition:

The Economic and Financial costs following the improvement of road are presented in Exhibits 4.6 and 4.7 in Rupees per kilometer for Awaran Turbat and in Exhibits 4.8 and 4.9 for Bela-Awaran section, respectively.

4.2.9 Cost Saving on Improved Road:

The cost savings in operating and user cost are shown in Exhibit 4.10 through 4.13 in Rupees per kilometer and Rupees in Millions from the year 1994 to the year 2003.

The total savings in economic operating costs in Awaran-Turbat section increase from Rs. 46.823 millions in 1994 to Rs. 212.943 millions in 2003. Total saving in time costs Rs. 20.602 millions in 1994 and Rs. 113.18 millions in 2003. The total financial savings in operating cost of the section increase from Rs. 48.82 millions in 1994 to Rs. 151.50 millions in 2003.

4.3 MAINTENANCE COST SAVING:

The present level of maintenance is almost negative with a total of Rs. 20,000 per year per kilometer have been allocated for the maintenance of a 20 ft. wide shingle road and Rs. 54,000 per year per KM for paved road*. While 25% of the amount is available from Government of Balochistan to meet abnormal repairs and flood damages on as required basis. As a result, with sub-standard maintenance of road and shoulders the wear and tear is increasing day by day and a stage may soon arise when the existing road is likely to become unfit for motorized traffic specially during rainy season.

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* Building and Road Department, Government of Balochistan.

SUMMARY OF PER KM OPERATING AND USER ECONOMIC COST EXBIT 4.2
AWARAN TURBAT ROAD
UNDER IMPROVED CONDITION

		FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PARTS	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS	1994	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	1995	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	1996	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	1997	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	1998	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	1999	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	2000	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	2001	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	2002	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
	2003	0.600	0.037	0.042	0.040	0.020	0.739	0.347	0.178	0.370	0.895	1.634
MINI BUS	1994	0.789	0.055	0.049	0.266	0.043	1.202	0.169	0.099	0.410	0.678	1.879
	1995	0.789	0.055	0.049	0.266	0.043	1.202	0.169	0.099	0.410	0.678	1.879
	1996	0.789	0.055	0.049	0.266	0.043	1.202	0.169	0.099	0.410	0.678	1.879
	1997	0.789	0.055	0.049	0.266	0.043	1.202	0.169	0.099	0.410	0.678	1.879
	1998	0.789	0.055	0.046	0.266	0.043	1.199	0.169	0.099	0.410	0.678	1.877
	1999	0.789	0.055	0.046	0.266	0.043	1.199	0.169	0.099	0.410	0.678	1.877
	2000	0.789	0.055	0.046	0.266	0.043	1.199	0.169	0.099	0.410	0.678	1.877
	2001	0.789	0.055	0.046	0.266	0.043	1.199	0.169	0.099	0.410	0.678	1.877
	2002	0.789	0.055	0.046	0.266	0.043	1.199	0.169	0.099	0.410	0.678	1.877
	2003	0.789	0.055	0.046	0.266	0.043	1.199	0.169	0.099	0.410	0.678	1.877
BUSES	1994	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	1995	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	1996	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	1997	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	1998	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	1999	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	2000	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	2001	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	2002	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
	2003	1.757	0.087	0.261	0.306	0.268	2.679	0.334	0.199	1.060	1.593	4.272
TRUCKS	1994	1.861	0.101	0.222	0.309	0.256	2.749	0.242	0.159	0.160	0.560	3.309
	1995	1.861	0.101	0.222	0.309	0.256	2.749	0.242	0.159	0.160	0.560	3.309
	1996	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187
	1997	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187
	1998	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187
	1999	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187
	2000	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187
	2001	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187
	2002	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187
	2003	1.739	0.101	0.222	0.309	0.256	2.627	0.242	0.159	0.160	0.560	3.187

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EXIBIT 4.3

SUMMARY OF PER KM OPERATING AND USER FINANCIAL COST
AWARAN TURBAT ROAD
UNDER IMPROVED CONDITION

	YEAR	FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PARTS	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS:	1994	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	1995	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	1996	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	1997	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	1998	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	1999	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	2000	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	2001	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	2002	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
	2003	1.03	0.04	0.06	0.03	0.08	1.24	1.02	0.82	0.37	2.21	3.45
MINI BUS	1994	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	1995	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	1996	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	1997	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	1998	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	1999	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	2000	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	2001	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	2002	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
	2003	0.89	0.06	0.07	0.21	0.18	1.41	0.42	0.26	0.15	0.83	2.24
BUSES	1994	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	1995	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	1996	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	1997	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	1998	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	1999	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	2000	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	2001	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	2002	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
	2003	1.98	0.10	0.42	0.24	0.47	3.21	0.57	0.35	0.31	1.22	4.43
TRUCKS	1994	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	1995	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	1996	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	1997	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	1998	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	1999	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	2000	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	2001	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	2002	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89
	2003	2.10	0.11	0.37	0.25	0.35	3.17	0.34	0.23	0.16	0.72	3.89

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SUMMARY OF PER KM OPERATING AND USER ECONOMIC COST — EXIBIT 4.4

BELA - AWARAN SECTION

UNDER IMPROVED CONDITION

	YEAR	FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PART	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS	1994	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	1995	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	1996	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	1997	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	1998	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	1999	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	2000	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	2001	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	2002	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
	2003	0.556	0.035	0.035	0.040	0.250	0.916	0.365	0.312	0.430	1.107	2.023
MINIBUS	1994	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	1995	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	1996	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	1997	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	1998	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	1999	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	2000	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	2001	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	2002	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
	2003	0.794	0.054	0.049	0.266	0.073	1.236	0.168	0.104	0.410	0.682	1.918
BUSES	1994	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	1995	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	1996	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	1997	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	1998	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	1999	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	2000	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	2001	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	2002	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
	2003	1.768	0.089	0.263	0.306	0.267	2.693	0.327	0.197	1.060	1.585	4.278
TRUCKS	1994	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	1995	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	1996	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	1997	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	1998	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	1999	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	2000	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	2001	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	2002	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298
	2003	1.874	0.099	0.222	0.309	0.245	2.749	0.234	0.156	0.160	0.550	3.298

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SUMMARY OF PER KM OPERATING AND USER FINANCIAL COST

BELA - AWARAN - SECTION

UNDER IMPROVED CONDITION

EXIBIT 4.5

	YEAR	FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PARTS	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS	1994	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	1995	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	1996	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	1997	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	1998	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	1999	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	2000	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	2001	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	2002	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610
	2003	0.956	0.038	0.048	0.032	0.075	1.148	1.094	0.937	0.430	2.462	3.610

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SUMMARY OF PER KM OPERATING AND USER ECONOMIC COST EXBIT 4.6
AWARAN TURBAT ROAD
UNDER EXISTING CONDITION

		FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PARTS	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS	1994	0.540	0.035	0.188	0.116	0.651	1.530	0.491	0.449	0.620	1.561	3.091
	1995	0.540	0.035	0.188	0.116	0.651	1.530	0.491	0.449	0.620	1.561	3.091
	1996	0.540	0.035	0.188	0.116	0.651	1.530	0.491	0.449	0.620	1.561	3.091
	1997	0.540	0.035	0.188	0.116	0.651	1.530	0.491	0.449	0.620	1.561	3.091
	1998	0.490	0.035	0.129	0.116	0.651	1.421	0.609	0.505	0.700	1.815	3.236
	1999	0.490	0.035	0.129	0.116	0.651	1.421	0.609	0.505	0.700	1.815	3.236
	2000	0.490	0.035	0.129	0.116	0.651	1.421	0.609	0.505	0.700	1.815	3.236
	2001	0.490	0.035	0.129	0.116	0.651	1.421	0.609	0.505	0.700	1.815	3.236
	2002	0.490	0.035	0.129	0.116	0.651	1.421	0.609	0.505	0.700	1.815	3.236
	2003	0.490	0.035	0.129	0.116	0.651	1.421	0.452	0.562	0.780	1.794	3.215
MINI BUS	1994	0.770	0.054	0.190	0.342	0.604	1.960	0.243	0.142	0.590	0.974	2.934
	1995	0.770	0.054	0.190	0.342	0.604	1.960	0.243	0.142	0.590	0.974	2.934
	1996	0.770	0.054	0.190	0.342	0.604	1.960	0.243	0.142	0.590	0.974	2.934
	1997	0.770	0.054	0.190	0.342	0.604	1.960	0.243	0.142	0.590	0.974	2.934
	1998	0.714	0.054	0.101	0.342	0.604	1.814	0.279	0.162	0.690	1.131	2.945
	1999	0.714	0.054	0.101	0.342	0.604	1.814	0.279	0.162	0.690	1.131	2.945
	2000	0.714	0.054	0.101	0.342	0.604	1.814	0.279	0.162	0.690	1.131	2.945
	2001	0.714	0.054	0.101	0.342	0.604	1.814	0.279	0.162	0.690	1.131	2.945
	2002	0.714	0.054	0.101	0.342	0.604	1.814	0.279	0.162	0.690	1.131	2.945
	2003	1.052	0.054	0.169	0.342	0.604	2.221	0.315	0.183	0.790	1.287	3.508
BUSES	1994	1.348	0.145	0.151	0.449	1.187	3.280	0.558	0.333	1.770	2.661	5.941
	1995	1.348	0.145	0.151	0.449	1.187	3.280	0.558	0.333	1.770	2.661	5.941
	1996	1.348	0.145	0.151	0.449	1.187	3.280	0.558	0.333	1.770	2.661	5.941
	1997	1.348	0.145	0.151	0.449	1.187	3.280	0.558	0.333	1.770	2.661	5.941
	1998	1.502	0.145	0.151	0.449	1.187	3.434	0.642	0.333	2.010	2.986	6.420
	1999	1.502	0.145	0.151	0.449	1.187	3.434	0.642	0.333	2.010	2.986	6.420
	2000	1.502	0.145	0.151	0.449	1.187	3.434	0.642	0.333	2.010	2.986	6.420
	2001	1.502	0.145	0.151	0.449	1.187	3.434	0.642	0.333	2.010	2.986	6.420
	2002	1.502	0.145	0.151	0.449	1.187	3.434	0.642	0.333	2.010	2.986	6.420
	2003	1.502	0.145	0.151	0.449	1.187	3.434	0.642	0.333	2.010	2.986	6.420
TRUCKS	1994	1.517	0.145	0.142	0.429	1.159	3.393	0.429	0.286	0.300	1.016	4.408
	1995	1.517	0.145	0.142	0.429	1.159	3.393	0.429	0.286	0.300	1.016	4.408
	1996	1.517	0.145	0.142	0.429	1.159	3.393	0.429	0.286	0.300	1.016	4.408
	1997	1.517	0.145	0.142	0.429	1.159	3.393	0.429	0.286	0.300	1.016	4.408
	1998	1.517	0.145	0.142	0.429	1.159	3.393	0.509	0.336	0.350	1.195	4.587
	1999	1.517	0.145	0.142	0.429	1.159	3.393	0.509	0.336	0.350	1.195	4.587
	2000	1.517	0.145	0.142	0.429	1.159	3.393	0.509	0.336	0.350	1.195	4.587
	2001	1.517	0.145	0.142	0.429	1.159	3.393	0.509	0.336	0.350	1.195	4.587
	2002	1.517	0.145	0.142	0.429	1.159	3.393	0.509	0.336	0.350	1.195	4.587
	2003	1.517	0.145	0.142	0.429	1.159	3.393	0.588	0.385	0.400	1.373	4.766

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SUMMARY OF PER KM OPERATING AND USER FINANCIAL COST

AWARAN TURBAT ROAD

UNDER EXISTING CONDITION

EXIBIT 4.7

	YEAR	FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PARTS	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS:	1994	0.93	0.04	0.26	0.09	1.95	3.27	1.47	1.35	0.62	3.44	6.71
	1995	0.93	0.04	0.26	0.09	1.95	3.27	1.47	1.35	0.62	3.44	6.71
	1996	0.93	0.04	0.26	0.09	1.95	3.27	1.47	1.35	0.62	3.44	6.71
	1997	0.89	0.04	0.22	0.09	1.95	3.18	1.65	1.43	0.66	3.74	6.93
	1998	0.84	0.04	0.18	0.09	1.95	3.10	1.83	1.52	0.70	4.04	7.15
	1999	0.84	0.04	0.18	0.09	1.95	3.10	1.83	1.52	0.70	4.04	7.15
	2000	0.84	0.04	0.18	0.09	1.95	3.10	1.83	1.52	0.70	4.04	7.15
	2001	0.84	0.04	0.18	0.09	1.95	3.10	1.83	1.60	0.74	4.17	7.27
	2002	0.84	0.04	0.18	0.09	1.95	3.10	1.83	1.64	0.76	4.23	7.33
	2003	0.84	0.04	0.18	0.09	1.95	3.10	1.83	1.68	0.78	4.29	7.39
MINI BUS	1994	0.87	0.13	0.30	0.27	0.87	2.43	0.87	0.50	0.21	1.58	4.01
	1995	0.87	0.13	0.30	0.27	0.87	2.43	0.87	0.50	0.21	1.58	4.01
	1996	0.87	0.13	0.30	0.27	0.87	2.43	0.87	0.50	0.21	1.58	4.01
	1997	0.84	0.13	0.23	0.27	0.87	2.33	0.93	0.54	0.23	1.70	4.03
	1998	0.81	0.13	0.16	0.27	0.87	2.23	1.00	0.57	0.25	1.82	4.05
	1999	0.81	0.13	0.16	0.27	0.87	2.23	1.00	0.57	0.25	1.82	4.05
	2000	0.81	0.13	0.16	0.27	0.87	2.23	1.00	0.57	0.25	1.82	4.05
	2001	0.77	0.13	0.16	0.27	0.87	2.20	1.06	0.61	0.27	1.94	4.14
	2002	0.76	0.13	0.16	0.27	0.87	2.18	1.09	0.63	0.28	2.00	4.18
	2003	0.74	0.13	0.16	0.27	0.87	2.17	1.12	0.65	0.29	2.06	4.23
BUSES	1994	1.51	0.15	0.24	0.36	1.46	3.72	0.98	0.59	0.52	2.09	5.81
	1995	1.51	0.15	0.24	0.40	1.46	3.77	0.98	0.59	0.52	2.09	5.86
	1996	1.51	0.15	0.24	0.45	1.46	3.81	0.98	0.59	0.52	2.09	5.90
	1997	1.45	0.15	0.20	0.45	1.46	3.72	1.06	0.64	0.56	2.26	5.97
	1998	1.40	0.15	0.16	0.45	1.46	3.62	1.13	0.70	0.59	2.42	6.04
	1999	1.40	0.15	0.16	0.45	1.46	3.62	1.13	0.70	0.59	2.42	6.04
	2000	1.40	0.15	0.16	0.45	1.46	3.62	1.13	0.70	0.59	2.42	6.04
	2001	1.40	0.15	0.16	0.45	1.46	3.62	1.13	0.70	0.59	2.42	6.04
	2002	1.40	0.15	0.16	0.45	1.46	3.62	1.13	0.70	0.59	2.42	6.04
	2003	1.40	0.15	0.16	0.45	1.46	3.62	1.13	0.70	0.59	2.42	6.04
TRUCKS	1994	1.70	0.15	0.23	0.34	1.71	4.14	0.43	0.29	0.30	1.02	5.16
	1995	1.70	0.15	0.23	0.34	1.71	4.14	0.43	0.29	0.30	1.02	5.16
	1996	1.70	0.15	0.23	0.34	1.71	4.14	0.43	0.29	0.30	1.02	5.16
	1997	1.66	0.15	0.21	0.34	1.71	4.08	0.47	0.31	0.33	1.11	5.18
	1998	1.61	0.15	0.19	0.34	1.71	4.01	0.51	0.34	0.35	1.19	5.21
	1999	1.61	0.15	0.19	0.34	1.71	4.01	0.51	0.34	0.35	1.19	5.21
	2000	1.61	0.15	0.19	0.34	1.71	4.01	0.51	0.34	0.35	1.19	5.21
	2001	1.61	0.15	0.19	0.34	1.71	4.01	0.55	0.36	0.38	1.28	5.30
	2002	1.61	0.15	0.19	0.34	1.71	4.01	0.57	0.37	0.39	1.33	5.34
	2003	1.61	0.15	0.19	0.34	1.71	4.01	0.59	0.39	0.40	1.37	5.39

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SUMMARY OF PER KM OPERATING AND USER ECONOMIC COST — EXIBIT 4.8

BILA - AWARAN - SECTION

UNDER EXISTING CONDITION

	YEAR	FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PARTS	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS	1994	0.536	0.360	0.118	0.079	0.265	1.358	0.432	0.389	0.540	1.361	2.719
	1995	0.536	0.360	0.118	0.079	0.265	1.358	0.432	0.389	0.540	1.361	2.719
	1996	0.536	0.360	0.118	0.079	0.265	1.358	0.432	0.389	0.540	1.361	2.719
	1997	0.524	0.360	0.109	0.079	0.265	1.336	0.456	0.417	0.580	1.453	2.788
	1998	0.511	0.360	0.099	0.079	0.265	1.314	0.480	0.445	0.620	1.545	2.858
	1999	0.511	0.360	0.099	0.079	0.265	1.314	0.480	0.445	0.620	1.545	2.858
	2000	0.511	0.360	0.099	0.079	0.265	1.314	0.480	0.445	0.620	1.545	2.858
	2001	0.511	0.360	0.099	0.079	0.265	1.314	0.480	0.445	0.620	1.545	2.858
	2002	0.511	0.360	0.099	0.079	0.265	1.314	0.480	0.445	0.620	1.545	2.858
	2003	0.511	0.360	0.099	0.079	0.265	1.314	0.480	0.445	0.620	1.545	2.858
MINIBUS	1994	0.682	0.054	0.099	0.305	0.342	1.481	0.241	0.149	0.590	0.980	2.461
	1995	0.682	0.054	0.099	0.305	0.342	1.481	0.241	0.149	0.590	0.980	2.461
	1996	0.682	0.054	0.099	0.305	0.342	1.481	0.241	0.149	0.590	0.980	2.461
	1997	0.662	0.054	0.088	0.305	0.342	1.450	0.259	0.159	0.640	1.059	2.508
	1998	0.643	0.054	0.076	0.305	0.342	1.419	0.277	0.170	0.690	1.137	2.556
	1999	0.643	0.054	0.076	0.305	0.342	1.419	0.277	0.170	0.690	1.137	2.556
	2000	0.643	0.054	0.076	0.305	0.342	1.419	0.277	0.170	0.690	1.137	2.556
	2001	0.643	0.054	0.076	0.305	0.342	1.419	0.277	0.170	0.690	1.137	2.556
	2002	0.643	0.054	0.076	0.305	0.342	1.419	0.277	0.170	0.690	1.137	2.556
	2003	0.643	0.054	0.076	0.305	0.342	1.419	0.277	0.170	0.690	1.137	2.556
BUSES	1994	1.383	0.128	0.203	0.378	0.726	2.819	0.465	0.282	1.520	2.267	5.086
	1995	1.383	0.128	0.203	0.378	0.726	2.819	0.465	0.282	1.520	2.267	5.086
	1996	1.383	0.128	0.203	0.378	0.726	2.819	0.465	0.282	1.520	2.267	5.086
	1997	1.320	0.134	0.183	0.378	0.726	2.740	0.506	0.305	1.645	2.455	5.196
	1998	1.257	0.139	0.162	0.378	0.726	2.662	0.546	0.327	1.770	2.643	5.306
	1999	1.257	0.139	0.162	0.378	0.726	2.662	0.546	0.327	1.770	2.643	5.306
	2000	1.257	0.139	0.162	0.378	0.726	2.662	0.546	0.327	1.770	2.643	5.306
	2001	1.257	0.139	0.162	0.378	0.726	2.662	0.546	0.327	1.770	2.643	5.306
	2002	1.257	0.139	0.162	0.378	0.726	2.662	0.546	0.327	1.770	2.643	5.306
	2003	1.257	0.139	0.162	0.378	0.726	2.662	0.546	0.327	1.770	2.643	5.306
TRUCKS	1994	1.487	0.137	0.171	0.378	0.715	2.887	0.339	0.234	0.250	0.823	3.709
	1995	1.487	0.137	0.171	0.378	0.715	2.887	0.339	0.234	0.250	0.823	3.709
	1996	1.487	0.137	0.171	0.378	0.715	2.887	0.339	0.234	0.250	0.823	3.709
	1997	1.436	0.141	0.151	0.378	0.715	2.820	0.377	0.257	0.275	0.910	3.730
	1998	1.386	0.145	0.131	0.378	0.715	2.754	0.416	0.281	0.300	0.997	3.751
	1999	1.386	0.145	0.131	0.378	0.715	2.754	0.416	0.281	0.300	0.997	3.751
	2000	1.386	0.145	0.131	0.378	0.715	2.754	0.416	0.281	0.300	0.997	3.751
	2001	1.386	0.145	0.131	0.378	0.715	2.754	0.416	0.281	0.300	0.997	3.751
	2002	1.386	0.145	0.131	0.378	0.715	2.754	0.416	0.281	0.300	0.997	3.751
	2003	1.386	0.145	0.131	0.378	0.715	2.754	0.416	0.281	0.300	0.997	3.751

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SUMMARY OF PER KM OPERATING AND USER FINANCIAL COST

BELA - AWARAN - SECTION

UNDER EXISTING CONDITION

EXIBIT 4.9

	YEAR	FUEL	OIL	TYRE	MAINTENANCE LAB	MAINTENANCE PARTS	TOTAL	DEP	INT	USER TIME	TOTAL TIME	TOTAL USER OP TO COST
CARS	1994	0.922	0.384	0.160	0.063	0.795	2.325	1.296	1.166	0.540	3.002	5.327
	1995	0.922	0.384	0.160	0.063	0.795	2.325	1.296	1.166	0.540	3.002	5.327
	1996	0.922	0.384	0.160	0.063	0.795	2.325	1.296	1.166	0.540	3.002	5.327
	1997	0.900	0.384	0.148	0.063	0.795	2.290	1.368	1.250	0.580	3.198	5.488
	1998	0.879	0.384	0.135	0.063	0.795	2.256	1.440	1.334	0.620	3.394	5.649
	1999	0.879	0.384	0.135	0.063	0.795	2.256	1.440	1.334	0.620	3.394	5.649
	2000	0.879	0.384	0.135	0.063	0.795	2.256	1.440	1.334	0.620	3.394	5.649
	2001	0.879	0.384	0.135	0.063	0.795	2.256	1.440	1.334	0.620	3.394	5.649
	2002	0.879	0.384	0.135	0.063	0.795	2.256	1.440	1.334	0.620	3.394	5.649
	2003	0.879	0.384	0.135	0.063	0.795	2.256	1.440	1.334	0.620	3.394	5.649
MINIBUS	1994	0.763	0.057	0.154	0.244	0.823	2.042	0.582	0.358	0.210	1.150	3.192
	1995	0.763	0.057	0.154	0.244	0.823	2.042	0.582	0.358	0.210	1.150	3.192
	1996	0.763	0.057	0.154	0.244	0.823	2.042	0.582	0.358	0.210	1.150	3.192
	1997	0.742	0.057	0.137	0.244	0.823	2.003	0.625	0.384	0.195	1.204	3.207
	1998	0.720	0.057	0.119	0.244	0.823	1.963	0.668	0.411	0.180	1.258	3.221
	1999	0.720	0.057	0.119	0.244	0.823	1.963	0.668	0.411	0.180	1.258	3.221
	2000	0.720	0.057	0.119	0.244	0.823	1.963	0.668	0.411	0.180	1.258	3.221
	2001	0.720	0.057	0.119	0.244	0.823	1.963	0.668	0.411	0.180	1.258	3.221
	2002	0.720	0.057	0.119	0.244	0.823	1.963	0.668	0.411	0.180	1.258	3.221
	2003	0.720	0.057	0.119	0.244	0.823	1.963	0.668	0.411	0.180	1.258	3.221
BUSES	1994	1.549	0.137	0.324	0.302	1.279	3.591	0.818	0.496	0.450	1.764	5.356
	1995	1.549	0.137	0.324	0.302	1.279	3.591	0.818	0.496	0.450	1.764	5.356
	1996	1.549	0.137	0.324	0.302	1.279	3.591	0.818	0.496	0.450	1.764	5.356
	1997	1.479	0.142	0.292	0.302	1.279	3.494	0.890	0.536	0.485	1.911	5.404
	1998	1.408	0.148	0.259	0.302	1.279	3.396	0.961	0.576	0.520	2.057	5.453
	1999	1.408	0.148	0.259	0.302	1.279	3.396	0.961	0.576	0.520	2.057	5.453
	2000	1.408	0.148	0.259	0.302	1.279	3.396	0.961	0.576	0.520	2.057	5.453
	2001	1.408	0.148	0.259	0.302	1.279	3.396	0.961	0.576	0.520	2.057	5.453
	2002	1.408	0.148	0.259	0.302	1.279	3.396	0.961	0.576	0.520	2.057	5.453
	2003	1.408	0.148	0.259	0.302	1.279	3.396	0.961	0.576	0.520	2.057	5.453
TRUCKS	1994	1.665	0.146	0.280	0.302	1.050	3.444	0.498	0.344	0.250	1.092	4.536
	1995	1.665	0.146	0.280	0.302	1.050	3.444	0.498	0.344	0.250	1.092	4.536
	1996	1.665	0.146	0.280	0.302	1.050	3.444	0.498	0.344	0.250	1.092	4.536
	1997	1.609	0.150	0.248	0.302	1.050	3.359	0.555	0.378	0.275	1.208	4.567
	1998	1.552	0.155	0.215	0.302	1.050	3.274	0.611	0.413	0.300	1.324	4.598
	1999	1.552	0.155	0.215	0.302	1.050	3.274	0.611	0.413	0.300	1.324	4.598
	2000	1.552	0.155	0.215	0.302	1.050	3.274	0.611	0.413	0.300	1.324	4.598
	2001	1.552	0.155	0.215	0.302	1.050	3.274	0.611	0.413	0.300	1.324	4.598
	2002	1.552	0.155	0.215	0.302	1.050	3.274	0.611	0.413	0.300	1.324	4.598
	2003	1.552	0.155	0.215	0.302	1.050	3.274	0.611	0.413	0.300	1.324	4.598

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SUMMARY OF SAVING IN ECONOMIC COST
IN RUPEES/KM AND IN MILLION RUPEES/YEAR
AWARAN - TURBAT SECTION

EXBIT 4.10

SAVING IN VOC RS/KM/VEHCILE	SAVING IN TIME RS/KM/VEHCILE	TOTAL SAVING VOC+TIME	NO. OF VEHICLE ADDT	SAVING IN VOC RS. MILLIONS PER YEAR	SAVING IN TIME RS. MILLIONS PER YEAR	TOTAL SAVING (VOC+TIME) MILLIONS/YEAR
CARS						
0.791	0.666	1.457	145	10.048	8.458	18.506
0.791	0.666	1.457	166	11.503	9.683	21.186
0.791	0.666	1.457	191	13.235	11.141	24.377
0.791	0.666	1.457	220	15.245	12.833	28.078
0.682	0.920	1.602	253	15.121	20.389	35.510
0.682	0.920	1.602	291	17.392	23.452	40.844
0.682	0.920	1.602	335	20.022	26.998	47.020
0.682	0.920	1.602	384	22.951	30.947	53.897
0.682	0.920	1.602	442	26.417	35.621	62.038
0.682	0.899	1.581	508	30.362	40.001	70.363
MINIBUSES						
0.758	0.296	1.055	36	2.392	0.935	3.327
0.758	0.296	1.055	42	2.790	1.091	3.881
0.758	0.296	1.055	48	3.189	1.247	4.436
0.758	0.296	1.055	55	3.654	1.428	5.082
0.615	0.453	1.068	64	3.449	2.540	5.989
0.615	0.453	1.068	73	3.934	2.897	6.831
0.615	0.453	1.068	84	4.527	3.334	7.860
0.615	0.453	1.068	96	5.173	3.810	8.983
0.615	0.453	1.068	111	5.982	4.405	10.387
1.022	0.610	1.632	127	11.369	6.782	18.151
BUSES						
0.601	1.068	1.669	26	1.369	2.432	3.801
0.601	1.068	1.669	30	1.580	2.806	4.386
0.601	1.068	1.669	35	1.843	3.274	5.117
0.601	1.068	1.669	40	2.107	3.742	5.848
0.755	1.392	2.148	46	3.043	5.611	8.654
0.755	1.392	2.148	53	3.506	6.465	9.971
0.755	1.392	2.148	61	4.035	7.441	11.476
0.755	1.392	2.148	70	4.631	8.539	13.169
0.755	1.392	2.148	81	5.358	9.880	15.239
0.755	1.392	2.148	93	6.152	11.344	17.497
TRUCKS						
0.644	0.455	1.099	220	12.412	8.777	21.189
0.644	0.455	1.099	253	14.274	10.094	24.368
0.766	0.455	1.222	290	19.463	11.570	31.033
0.766	0.455	1.222	334	22.416	13.325	35.742
0.766	0.634	1.400	384	25.772	21.334	47.106
0.766	0.634	1.400	442	29.665	24.556	54.221
0.766	0.634	1.400	508	34.094	28.223	62.317
0.766	0.634	1.400	584	39.195	32.446	71.641
0.766	0.634	1.400	672	45.101	37.335	82.436
0.766	0.813	1.579	773	51.880	55.052	106.932

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SUMMARY OF SAVINGS IN FINANCIAL COST
IN RUPEES/KM AND IN MILLION RUPEES/YEAR
AWARAN - TURBAT SECTION

EXIBIT 4.11

	SAVING IN VOC RS/KM/VECHILE	SAVING IN TIME RS/KM/VECHILE	TOTAL SAVING VOC+TIME	NO. OF VEHICLES ADDT	SAVING IN VOC RS. MILLIONS PER YEAR	SAVING IN TIME RS. MILLIONS PER YEAR	TOTAL SAVING VOC+TIME MILLIONS/YEAR
CARS	2.03	1.23	3.26	145	25.74	15.61	41.35
	2.03	1.23	3.26	166	29.47	17.87	47.34
	2.03	1.23	3.26	191	33.90	20.56	54.46
	1.94	1.53	3.47	220	37.45	29.49	66.94
	1.86	1.83	3.69	253	41.23	40.58	81.81
	1.86	1.83	3.69	291	47.42	46.68	94.10
	1.86	1.83	3.69	335	54.59	53.74	108.33
	1.86	1.96	3.82	384	62.58	65.78	128.36
	1.86	2.02	3.88	442	72.03	78.12	150.15
	1.86	2.08	3.94	508	82.79	92.55	175.33
	0.00						
MINIBUSES	1.02	0.75	1.77	36	3.21	2.36	5.58
	1.02	0.75	1.77	42	3.75	2.75	6.51
	1.02	0.75	1.77	48	4.29	3.15	7.43
	0.92	0.87	1.79	55	4.42	4.19	8.61
	0.82	0.99	1.81	64	4.57	5.55	10.12
	0.82	0.99	1.81	73	5.21	6.33	11.55
	0.82	0.99	1.81	84	6.00	7.29	13.29
	0.78	1.11	1.89	96	6.59	9.34	15.93
	0.77	1.17	1.94	111	7.46	11.39	18.85
	0.75	1.23	1.98	127	8.36	13.70	22.06
	0.00						
BUSES	0.51	0.87	1.38	26	1.17	1.97	3.14
	0.56	0.87	1.43	30	1.47	2.28	3.75
	0.60	0.87	1.47	35	1.85	2.66	4.51
	0.51	1.03	1.54	40	1.78	3.62	5.40
	0.41	1.20	1.61	66	2.37	6.94	9.31
	0.41	1.20	1.61	53	1.90	5.58	7.48
	0.41	1.20	1.61	61	2.19	6.42	8.60
	0.41	1.20	1.61	70	2.51	7.36	9.87
	0.41	1.20	1.61	81	2.91	8.52	11.43
	0.41	1.20	1.61	93	3.34	9.78	13.12
	0.00						
TRUCKS	0.97	0.29	1.26	220	18.69	5.64	24.33
	0.97	0.29	1.26	253	21.50	6.49	27.98
	0.97	0.29	1.26	290	24.64	7.44	32.08
	0.91	0.38	1.29	334	26.51	11.18	37.69
	0.84	0.47	1.31	384	28.32	15.86	44.18
	0.84	0.47	1.31	442	32.60	18.26	50.86
	0.84	0.47	1.31	508	37.47	20.98	58.45
	0.84	0.56	1.40	584	43.07	28.69	71.77
	0.84	0.61	1.45	672	49.56	35.65	85.21
	0.84	0.65	1.49	773	57.01	44.03	101.05

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SUMMARY OF SAVING IN ECONOMIC COST

IN RUPEES/KM AND IN MILLION RUPEES/YEAR

BELA - AWARAN SECTION

EXIBIT 4.12

	SAVING IN VOC RS/KM/VEHICLE	SAVING IN TIME RS/KM/VEHICLE	TOTAL SAVING VOC+TIME RS/KM/VEHICLE	NO. OF VEHICLES AADT	SAVING IN VOC RS. MILLIONS PER YEAR	SAVING IN TIME RS. MILLIONS PER YEAR	TOTAL SAVING (VOC+TIME) MILLIONS/YEAR
CARS	0.442	0.253	0.695	33	0.186	0.107	0.293
	0.442	0.253	0.695	38	0.215	0.123	0.338
	0.442	0.253	0.695	44	0.248	0.142	0.391
	0.420	0.345	0.765	50	0.268	0.221	0.489
	0.398	0.437	0.835	58	0.295	0.324	0.619
	0.398	0.437	0.835	66	0.336	0.369	0.704
	0.398	0.437	0.835	77	0.391	0.430	0.822
	0.398	0.437	0.835	88	0.447	0.492	0.939
	0.398	0.437	0.835	102	0.519	0.570	1.088
	0.398	0.437	0.835	117	0.595	0.654	1.248
MINIBUS	0.245	0.298	0.543	8	0.025	0.030	0.056
	0.245	0.298	0.543	10	0.031	0.038	0.069
	0.245	0.298	0.543	11	0.034	0.042	0.076
	0.214	0.377	0.591	13	0.036	0.063	0.098
	0.183	0.456	0.639	14	0.033	0.081	0.114
	0.183	0.456	0.639	17	0.040	0.099	0.139
	0.183	0.456	0.639	19	0.044	0.111	0.155
	0.183	0.456	0.639	22	0.051	0.128	0.179
	0.183	0.456	0.639	25	0.058	0.146	0.204
	0.183	0.456	0.639	29	0.068	0.169	0.237
BUSES	0.126	0.682	0.807	22	0.035	0.192	0.227
	0.126	0.682	0.807	25	0.040	0.218	0.258
	0.126	0.682	0.807	29	0.047	0.253	0.299
	0.047	0.870	0.917	33	0.020	0.367	0.387
	-0.031	1.059	1.027	38	-0.015	0.514	0.499
	-0.031	1.059	1.027	44	-0.017	0.595	0.578
	-0.031	1.059	1.027	51	-0.020	0.690	0.669
	-0.031	1.059	1.027	58	-0.023	0.784	0.761
	-0.031	1.059	1.027	67	-0.027	0.906	0.879
	-0.031	1.059	1.027	77	-0.031	1.041	1.011
TRUCKS	0.138	0.273	0.411	248	0.437	0.866	1.302
	0.138	0.273	0.411	286	0.503	0.998	1.502
	0.138	0.273	0.411	329	0.579	1.148	1.728
	0.072	0.360	0.432	378	0.345	1.739	2.084
	0.005	0.447	0.452	434	0.029	2.479	2.508
	0.005	0.447	0.452	500	0.034	2.856	2.889
	0.005	0.447	0.452	575	0.039	3.284	3.322
	0.005	0.447	0.452	661	0.044	3.775	3.819
	0.005	0.447	0.452	760	0.051	4.340	4.391
	0.005	0.447	0.452	874	0.059	4.991	5.050

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SUMMARY OF SAVING IN FINANCIAL COST
IN RUPEES/KM AND IN MILLIONS RUPEES/YEAR
BETA - AVARAN SECTION

EXIBIT 4.13

	SAVING IN VOC RS/KM/VEHICLE	SAVING IN TIME RS/KM/VEHICLE	TOTAL SAVING VOC+TIME RS/KM/VEHICLE	NO. OF VEHICLES	SAVING IN VOC RS. MILLIONS PER YEAR	SAVING IN TIME RS. MILLIONS PER YEAR	TOTAL SAVING VOC+TIME MILLIONS/YEAR
CARS							
	1.176	0.540	1.717	33	0.496	0.228	0.724
	1.176	0.540	1.717	38	0.571	0.262	0.833
	1.176	0.540	1.717	44	0.661	0.304	0.965
	1.142	0.736	1.878	50	0.729	0.470	1.199
	1.107	0.932	2.039	58	0.820	0.690	1.511
	1.107	0.932	2.039	66	0.934	0.786	1.719
	1.107	0.932	2.039	77	1.089	0.917	2.006
	1.107	0.932	2.039	88	1.245	1.048	2.292
	1.107	0.932	2.039	102	1.443	1.214	2.657
	1.107	0.932	2.039	117	1.655	1.393	3.048
MINIBUSES							
	0.631	0.345	0.975	8	0.064	0.035	0.100
	0.631	0.345	0.975	10	0.081	0.044	0.125
	0.631	0.345	0.975	11	0.089	0.048	0.137
	0.591	0.399	0.990	13	0.098	0.066	0.164
	0.551	0.453	1.004	14	0.099	0.081	0.180
	0.551	0.453	1.004	17	0.120	0.098	0.218
	0.551	0.453	1.004	19	0.134	0.110	0.244
	0.551	0.453	1.004	22	0.155	0.127	0.282
	0.551	0.453	1.004	25	0.176	0.145	0.321
	0.551	0.453	1.004	29	0.204	0.168	0.372
*BUSES							
	0.381	0.531	0.911	22	0.107	0.149	0.256
	0.381	0.531	0.911	25	0.122	0.169	0.291
	0.381	0.531	0.911	29	0.141	0.197	0.338
	0.283	0.677	0.960	33	0.119	0.285	0.405
	0.185	0.823	1.009	38	0.090	0.400	0.490
	0.185	0.823	1.009	44	0.104	0.463	0.567
	0.185	0.823	1.009	51	0.121	0.536	0.657
	0.185	0.823	1.009	58	0.137	0.610	0.747
	0.185	0.823	1.009	67	0.158	0.705	0.863
	0.185	0.823	1.009	77	0.182	0.810	0.992
TRUCKS							
	0.268	0.359	0.628	248	0.850	1.139	1.988
	0.268	0.359	0.628	286	0.980	1.313	2.293
	0.268	0.359	0.628	329	1.127	1.510	2.638
	0.183	0.475	0.659	378	0.886	2.296	3.181
	0.099	0.591	0.690	434	0.547	3.279	3.825
	0.099	0.591	0.690	500	0.630	3.777	4.407
	0.099	0.591	0.690	575	0.724	4.344	5.068
	0.099	0.591	0.690	661	0.833	4.994	5.826
	0.099	0.591	0.690	760	0.957	5.742	6.699
	0.099	0.591	0.690	874	1.101	6.603	7.704

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To maintain this road on absolute minimum basis a sum of Rs. 85,000** per annum would be required for every KM. This would cover the following items of works.

a) Resurfacing of the shoulders once every five years
b) Patch work of shoulders and road pavement
c) Temporary labor during rainy season
d) Maintenance of road structures

The existing road would call for ever increasing maintenance (taken as 10% compound) every year due to increasing traffic over the life of the road. It would therefore, appear that Rs. 85,000 per KM per year, an absolute minimum basis of maintenance of existing road, is the saving and would contribute to the benefits obtained from the project. The saving in the maintenance of the existing road has been quantified in Exhibit 5.1

The improved road would also require maintaining it on preventive basis. This would not only secure the investment and benefits, but would also increase the terminal value of the road at the end of the project life. It is obvious that, due to low traffic volume and modern design and construction techniques, very minor maintenance may be required. There will be two types of maintenance - routine and overlay. Routine maintenance has been estimates as Rs. 25,000 per year per km at current rupee (1990). Overlay will be due after five years from the first benefit year (1994) and estimated as Rs. 1,65,000/km at current rupee (1990). Both the costs are inflated at a rate of 7% per annum for the respective years.

4.4 LOSS AVOIDED ON PERISHABLE FRUITS & VEGETABLES:

The agriculture benefits which could be quantified are the benefits arising from a loss avoided. Presently 2 trucks of fruits and 1 truck of vegetable have been transported daily to Turbat, from Karachi. The loss occur due to the uneven and bumpy road reduces the quality of fruits and vegetables. With improved road and reduction in time required per kilometer, the loss will be avoided and could be transformed into the project benefits. It has been estimated through surveys at Turbat & Bela that 25% of the perishables are wasted/deteriorated due to bumpy road and approximately 15% are wasted due to long travel time from Karachi to Turbat. It has also been estimated that the 25% deteriorated are sold at 50% of the actual price in Turbat market. The calculations of this benefit is included in Exhibit 4.14.

** The maintenance cost of existing road has been taken from "Technical and Economic Feasibility Study". Pakistan National Highway, (PNH), Third IBRD Highway Project, Volume II. Since the study was carried out in 1975, the maintenance cost has been brought to the year 1990. However, the cost of maintenance mentioned in the PNH study additionally included 5 cm AC carpet once every 10 years and maintenance of road side drains which will not be done at the road under study, the maintenance cost for Bela - Awaran - Turbat road has, therefore, been taken 50% of the cost given in PNH study.

CALCULATIONS FOR LOSS AVOIDED ON PERISABLE FRUITS & VEGETABLES

DATA:

No. of Fruit trucks per day from Karachi to Turbat	= 3
No. of Vegetable trucks per day from Karachi to Turbat	= 1
Net weight of perishable commodities per truck	= 10 tonnes
Average selling price of fruits at Turbat	= Rs. 10/kg.
Average selling price of Vegetable at Turbat	= Rs. 8/kg.
Percentage fruit & vegetables wasted/ deteriorated due to bumpy road	= 25%
Percentage of Fruit & Vegetables wasted due to long travel time (3 days from Karachi to Turbat)	= 15%

ASSUMPTION:

Fruits/Vegetables deteriorated due to bumpy road are sold at 50% of the actual price at Turbat.

CALCULATIONS:

Loss/year due to bumpy road

$$= (3 * 10 * 1000 * 0.25 * 10 * 0.5 + 1 * 10 * 1000 * 0.25 * 8 * 0.5) * 365$$

$$= \text{Rs. } 17{,}337{,}500/\text{year}$$

Cont.../2

Loss/year due to long travel time

= (3 * 10 * 1000 * 0.15 * 10 + 1 * 10 * 1000 * 0.15 * 8) * 365

= Rs. 20,805,000

Total loss/year

= 38,142,500

SAY = Rs. 38.143 million for the year 1994 (the first benefit year)

GDP growth rate of 4.45% has been used to project savings beyond 1994.

The other intangible benefits accruing due to this road improvement project are increase in cultivated land, switching to cash crops, and increase in yield due to increase in use of modern agriculture inputs.

4.5 TOLL TAX:

It has long been considered that a system of free roads is more desirable than a system of toll roads. Numerous objections have been made to toll roads. When most of the existing toll roads were built the choice between the toll road and free road or at least between the toll road or an inadequate free road was provided to highway user. A major objection that can be raised for present project is that no alternate free highway is being provided to the users. Since the construction of toll roads is an appropriate method of providing needed highway facilities when federal funds are not available to aid in the construction and maintenance of road, an option of toll tax is also included in this study.

Toll tax for a highway may vary considerably from year to year because of expenditures for capital improvements. The cash income obtained from toll need to be sufficient to pay the administrative expenses, the maintenance and operating expenses, necessary additions and betterments and the debt servicing. To meet the expenses, it has been estimated that a traffic volume of about 5,000 vehicles per day is necessary for a toll road to be self supporting***. For the project under study due to low traffic volume the tax contribution from highway users would not be sufficient and required to be supplemented by federal or provincial aid funds or grants.

In order to determine the toll/k.m. one good attempt is to make mathematical analysis including the factors of running cost, accident cost, running time and speed changes to arrive the toll charge that highway travelers would be willing to pay. However, such an analysis required extensive data collection from field and were therefore, not attempted. Moreover no one so far has devised a way to price the traveler's willingness to pay. For present study the toll tax per k.m. is taken from the Karachi-Hyderabad highway for passenger cars, LCV's, Buses and Trucks as follows:

TYPE OF VEHICLES	RUPEES PER VEHICLE PER K.M.
Passenger Cars	0.07
L C V	0.1
Buses	0.13
Trucks	0.13

***SOURCE: The rise and decline of the Toll Principal in Highway Finance.

The effect of toll tax on cash flows and financial indices in the financial analysis only, as it is a transfer payment within the economy and therefore cannot be accounted in economic analysis, for Awaran-Turbat road are shown in Exhibits 5.7 and for Bela-Awaran road in Exhibits 5.8. The combined analysis of Bela - Turbat road is presented in Exhibit 5.9.

COST - BENEFIT ANALYSIS

CHAPTER - 5

COST - BENEFIT ANALYSIS

5.1 INTRODUCTION:

Cost-benefit analysis involves a numerical comparison of costs and benefits. The costs of a project are relatively easy to quantify, except in cases where significant externalities such as environmental impact are involved. The costs are generally comprise over construction cost, operation and maintenance costs.

The extent to which the benefits of a project can be quantified depends on the nature of the project. The benefits accruing due to this road project are relatively easy to be quantified. The benefits of the project in the agriculture sector (producer & consumer surplus), transport sector (vehicle operating cost saving and user time cost saving) and existing maintenance cost are quantified for the analysis. Salvage value of the road is also taken as a positive cash flow of the project.

Having identified and valued the costs and benefits of the project the next step is to compare the two streams in order to determine whether the project would result in an efficient use of resources from an economic as well as financial point of view. A project must satisfy at least two conditions in order to be acceptable for investment. First, it must yield benefits in excess of costs over its life. Second, the net benefits must be larger than or atleast as large as that resulting from the next alternative project. Three devices are commonly used for comparing cost and benefit streams in arriving at investment.

i) The net present value (NPV), which is the difference between the present values of the cost and benefit streams of a project which have been discounted at a rate equal to the opportunity cost of capital;

ii) The benefit - cost ratio (BCR), which compares the present values of the cost and benefit streams by discounting them at a rate equal to the opportunity cost of capital; and

iii) The internal rate of return (IRR) which is the rate of discussion at which the cost and benefit streams over the life of the project are equalized. IRR can be calculated for economic as well as financial cash flow streams.

5.2 THE DISCOUNT RATE AND THE BENEFIT - COST RATIO:

It has been estimated by National Highway Board (NHB) and National Transport Research Cell (NTRC) that the current opportunity cost of capital for the transport sector is 12 per cent. This rate of time discount has, therefore, been used for appraising the feasibility of improving the road. Therefore, the present value of the costs and benefits have been determined with respect to this discount rate.

1990 has been taken as the first year of the project evaluation period. The construction starts 1991 and will be completed by the year 1993. From the year 1994 onwards the project will start yielding benefits in the form of reduction in vehicle user cost. (Primarily in the form of operating cost saving and user time saving due to higher speeds), producer surplus and consumer surplus.

All costs and benefits are being discounted at a 12 per cent rate to the year 1990 to give the respective present values. The benefit - cost ratio corresponds to the ratio of the present value of benefits to that of costs.

5.3 THE INTERNAL RATE OF RETURN:

An alternative indicator to the benefit - cost ratio of the value of a project in relation to other possible investment is its internal rate of return. The higher the internal rate of return, the greater is the worth of the project to the economy.

5.4 DISCOUNT CASH FLOW ANALYSIS:

The discount flow analyses (Exhibits 5.1-5.6) for the base case and (Exhibits 5.7-5.9) with Toll Tax given the following results:

BASE CASE WITHOUT TOLL TAX

	PRESENT VALUE OF		BENEFIT - COST Ratio	NET PRESENT Value	I R R %
	Cost	Benefits			
Awaran-Turbat					
- Economic	537.268	731.317	1.361	194.049	17.90
- Financial	1124.744	924.594	0.822	(200.150)	8.81
Bela-Awaran					
- Economic	76.804	42.896	0.559	(33.908)	2.31
- Financial	140.928	52.244	0.371	(88.685)	(2.57)
Combined Bela - Turbat					
- Economic	614.072	774.213	1.261	160.141	16.38
- Financial	1265.673	976.838	0.772	(288.835)	7.82

BASE CASE WITH TOLL TAX

	PRESENT VALUE OF		BENEFIT - COST Ratio	NET PRESENT Value	I R R %
	Cost	Benefits			
Awaran-Turbat					
- Financial	1124.744	953.329	0.848	(171.415)	9.30
Bela-Awaran					
- Financial	140.928	55.760	0.396	(85.169)	(1.74)
Combined Bela - Turbat					
- Financial	1265.673	1007.291	0.796	(258.382)	8.30

ECONOMIC ANAYLSIS OF THE PROJECT EXIBIT 5.1

AWARAN - TURBAT ROAD

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	178.689	-	178.689							-178.689
1992	205.609	-	205.609							-205.609
1993	197.335	-	197.335							-197.335
1994	29.662	-	29.662	26.221	20.602	38.143	20.400		105.366	75.704
1995		7.860	7.860	30.147	23.674	39.821	22.440		116.082	108.222
1996		8.415	8.415	37.731	27.232	41.573	24.684		131.220	122.805
1997		9.000	9.000	43.422	37.330	43.402	27.152		151.306	142.306
1998		9.634	9.634	47.385	49.874	45.312	29.868		172.439	162.805
1999		68.040	68.040	54.497	57.370	47.306	32.854		192.027	123.987
2000		11.030	11.030	62.678	65.995	49.387	36.140		214.200	203.170
2001		11.803	11.803	71.950	80.618	51.560	39.754		243.882	232.079
2002		12.629	12.629	82.858	95.664	53.829	43.729		276.080	263.451
2003		13.513	13.513	99.763	113.180	56.197	48.102	183.388	500.630	487.117
RESENT VALUE	482.764	54.504	537.268	196.313	192.957	180.310	119.709	42.028	731.317	194.049

NPV	194.049
B/C Ratio	1.361
EIRR	17.90%

0.000

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FILE NAME: BASCASE1.WK1 DISK: (CHANGE METHODOLOGY)

ECONOMIC ANAYLSIS OF THE PROJECT EXIBIT 5.3

FILE NAME: BASCASE1.WK1 DISK: (CHANGE METHODOLOGY)

FINANCIAL ANAYLSIS OF THE PROJECT EXIBIT 5.2

AWARAN - TURBAT ROAD

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	584.650	-	584.650							-584.650
1992	388.840	-	388.840							-388.840
1993	276.629	-	276.629							-276.629
1994	65.067	-	65.067	48.820	25.580	38.143	20.400		132.943	67.876
1995		7.860	7.860	56.180	29.390	39.821	22.440		147.831	139.971
1996		8.415	8.415	64.680	33.800	41.573	24.684		164.737	156.322
1997		9.000	9.000	70.160	48.480	43.402	27.152		189.194	180.194
1998		9.634	9.634	76.490	68.940	45.312	29.868		220.610	210.976
1999		68.040	68.040	87.140	76.840	47.306	32.854		244.140	176.100
2000		11.030	11.030	100.250	88.420	49.387	36.140		274.197	263.167
2001		11.803	11.803	114.750	111.180	51.560	39.754		317.244	305.441
2002		12.629	12.629	131.960	133.680	53.829	43.729		363.198	350.569
2003		13.513	13.513	151.500	160.060	56.197	48.102	183.388	599.247	585.734
PRESENT VALUE	1070.240	54.504	1124.744	323.583	258.965	180.310	119.709	42.028	924.594	-200.150

NPV	-200.150
B/C Ratio	0.822
FIRR	8.81%

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FILE NAME: BASCASE1.WK1 DISK: (CHANGE METHODOLOGY)

ECONOMIC ANAYLSIS OF THE PROJECT

BELA - AWARAN ROAD

EXIBIT 5.3

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990									
1991	24.907	-	24.907						-24.907
1992	28.851	-	28.851						-28.851
1993	27.305	-	27.305						-27.305
1994	5.188	-	5.188	0.683	1.195	3.780		5.658	0.470
1995		1.227	1.227	0.789	1.377	4.158		6.324	5.097
1996		1.313	1.313	0.908	1.585	4.574		7.067	5.754
1997		1.405	1.405	0.669	2.389	5.031		8.089	6.684
1998		1.503	1.503	0.342	3.398	5.534		9.274	7.771
1999		11.530	11.530	0.391	3.918	6.088		10.397	-1.133
2000		1.721	1.721	0.454	4.514	6.697		11.665	9.944
2001		1.841	1.841	0.520	5.179	7.366		13.065	11.224
2002		1.970	1.970	0.601	5.962	8.103		14.666	12.696
2003		2.108	2.108	0.691	6.855	8.913	25.875	42.334	40.226
PRESENT VALUE	67.970	8.834	76.804	2.532	12.253	22.181	5.930	42.896	-33.908

NPV	-33.908
B/C Ratio	0.559
EIRR	2.31%

0.000

FILE NAME: BASCASE1.WK1 DISK: (CHANGE METHODOLOGY)

FINANCIAL ANAYLSIS OF THE PROJECT EXIBIT 5.4

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FINANCIAL ANAYLSIS OF THE PROJECT

BELA - AWARAN ROAD

EXIBIT 5.4

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990									
1991	69.895	-	69.895						-69.895
1992	48.521	-	48.521						-48.521
1993	35.550	-	35.550						-35.550
1994	8.975	-	8.975	1.517	1.551	3.780		6.848	-2.127
1995		1.227	1.227	1.753	1.789	4.158		7.700	6.473
1996		1.313	1.313	2.018	2.059	4.574		8.651	7.338
1997		1.405	1.405	1.555	3.117	5.031		9.703	8.298
1998		1.503	1.503	1.787	4.450	5.534		11.771	10.268
1999		11.530	11.530	2.068	5.124	6.088		13.280	1.750
2000		1.721	1.721	2.369	5.907	6.697		14.973	13.252
2001		1.841	1.841	2.735	6.779	7.366		16.880	15.039
2002		1.970	1.970	2.735	7.805	8.103		18.643	16.673
2003		2.108	2.108	3.142	8.973	8.913	25.875	46.903	44.795
PRESENT VALUE	132.094	8.834	140.928	8.123	16.009	22.181	5.930	52.244	-88.685

NPV	-88.685
B/C Ratio	0.371
FIRR	-2.57%

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FILE NAME: BASCASE2.WK1

ECONOMIC ANAYLSIS OF THE PROJECT
BELA - TURBAT ROAD

EXIBIT 5.5

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	203.596	-	203.596							-203.596
1992	234.460	-	234.460							-234.460
1993	224.640	-	224.640							-224.640
1994	34.850	-	34.850	26.904	21.797	38.143	24.180		111.024	76.174
1995		9.087	9.087	30.936	25.051	39.821	26.598		122.406	113.319
1996		9.728	9.728	38.639	28.817	41.573	29.258		138.287	128.559
1997		10.405	10.405	44.091	39.719	43.402	32.184		159.396	148.991
1998		11.137	11.137	47.727	53.272	45.312	35.402		181.713	170.576
1999		79.570	79.570	54.888	61.288	47.306	38.942		202.424	122.854
2000		12.751	12.751	63.132	70.509	49.387	42.836		225.864	213.113
2001		13.644	13.644	72.470	85.797	51.560	47.120		256.947	243.303
2002		14.599	14.599	83.459	101.626	53.829	51.832		290.746	276.147
2003		15.621	15.621	100.454	120.035	56.197	57.015	209.264	542.965	527.344
PRESENT VALUE	550.734	63.338	614.072	198.845	205.211	180.310	141.890	47.958	774.213	160.141

NPV	160.141
B/C Ratio	1.261
EIRR	16.38%

0.000

FINANCIAL ANAYLSIS OF THE PROJECT

BELA - TURBAT ROAD

EXISIT 5.6

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	654.545	-	654.545							-654.545
1992	437.361	-	437.361							-437.361
1993	312.179	-	312.179							-312.179
1994	74.042	-	74.042	50.337	27.131	38.143	24.180		139.791	65.749
1995		9.087	9.087	57.933	31.179	39.821	26.598		155.531	146.444
1996		9.728	9.728	66.698	35.859	41.573	29.258		173.388	163.660
1997		10.405	10.405	71.715	51.597	43.402	32.184		198.898	188.493
1998		11.137	11.137	78.277	73.390	45.312	35.422		232.381	221.244
1999		79.570	79.570	89.208	81.964	47.306	38.942		257.420	177.850
2000		12.751	12.751	102.619	94.327	49.387	42.836		289.169	276.418
2001		13.644	13.644	117.485	117.959	51.560	47.120		334.124	320.480
2002		14.599	14.599	134.695	141.485	53.829	51.832		381.841	367.242
2003		15.621	15.621	154.642	169.033	56.197	57.315	209.264	646.151	630.530
PRESENT VALUE	1202.335	63.338	1265.673	331.706	274.974	180.310	141.890	47.958	976.838	-288.835

NPV	-288.835
B/C Ratio	0.772
FIRR	7.82%

BIG 4 MAIN FILE COPY

FILE NAME: BASTOLL1.WK1

FINANCIAL ANAYLSIS OF THE PROJECT
AWARAN - TURBAT ROAD
WITH TOLL TAX

EXIBIT 5.7

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	TOLL TAX	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990											
1991	584.650	-	584.650								-584.650
1992	388.840	-	388.840								-388.840
1993	276.629	-	276.629								-276.629
1994	65.067	-	65.067	48.820	25.580	38.143	20.430	4.000		136.943	71.876
1995		7.860	7.860	56.180	29.390	39.821	22.440	4.610		152.441	144.581
1996		8.415	8.415	64.680	33.800	41.573	24.684	5.290		170.027	161.612
1997		9.000	9.000	70.160	48.480	43.402	27.152	6.090		195.284	186.284
1998		9.634	9.634	76.490	68.940	45.312	29.868	7.000		227.610	217.976
1999		68.040	68.040	87.140	76.840	47.306	32.854	8.050		252.190	184.150
2000		11.030	11.030	100.250	88.420	49.387	36.140	9.270		283.467	272.437
2001		11.803	11.803	114.750	111.180	51.560	39.754	10.640		327.884	316.081
2002		12.629	12.629	131.960	133.680	53.829	43.729	12.250		375.448	362.819
2003		13.513	13.513	151.500	160.060	56.197	48.102	14.070	183.388	613.317	599.804
PRESENT VALUE	1070.240	54.504	1124.744	323.583	258.965	180.310	119.709	28.735	42.028	953.329	-171.415

NPV	-171.415
B/C Ratio	0.848
FIRR	9.30%

FILE NAME: BASTOLL1.WK1

FINANCIAL ANAYLSIS OF THE PROJECT
BELA - AWARAN ROAD
WITH TOLL TAX

EXIBIT 5.8

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING		EXISTING MAINT.	TOLL TAX	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990											
1991	69.895	-	69.895								-69.895
1992	48.521	-	48.521								-48.521
1993	35.550	-	35.550								-35.550
1994	8.975	-	8.975	1.517	1.551		3.780	0.490		7.338	-1.637
1995		1.227	1.227	1.753	1.789		4.158	0.570		8.270	7.043
1996		1.313	1.313	2.018	2.059		4.574	0.648		9.299	7.986
1997		1.405	1.405	1.555	3.117		5.031	0.748		10.451	9.046
1998		1.503	1.503	1.787	4.450		5.534	0.853		12.624	11.121
1999		11.530	11.530	2.068	5.124		6.088	0.982		14.262	2.732
2000		1.721	1.721	2.369	5.907		6.697	1.133		16.106	14.385
2001		1.841	1.841	2.735	6.779		7.366	1.299		18.179	16.338
2002		1.970	1.970	2.735	7.805		8.103	1.493		20.136	18.166
2003		2.108	2.108	3.142	8.973		8.913	1.720	25.875	48.623	46.515
PRESENT VALUE	132.094	8.834	140.928	8.123	16.009	0.000	22.181	3.516	5.930	55.760	-85.169

NPV	-85.169
B/C Ratio	0.396
FIRR	-1.74%

0.000

BEST AVAILABLE COPY

FILE NAME: BASTOLL2.WK1

FINANCIAL ANAYLSIS OF THE PROJECT
BELA - TURBAT ROAD
WITH TOLL TAX

EXIBIT 5.9

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	TOLL TAX	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990											
1991	654.545	-	654.545								-654.545
1992	437.361	-	437.361								-437.361
1993	312.179	-	312.179								-312.179
1994	74.042	-	74.042	50.337	27.131	38.143	24.180	4.490		144.281	70.239
1995		9.087	9.087	57.933	31.179	39.821	26.598	5.180		160.711	151.624
1996		9.728	9.728	66.698	35.859	41.573	29.258	5.938		179.326	169.598
1997		10.405	10.405	71.715	51.597	43.402	32.184	6.838		205.736	195.331
1998		11.137	11.137	78.277	68.940	45.312	35.402	7.853		235.784	224.647
1999		79.570	79.570	89.208	81.964	47.306	38.942	9.032		266.452	186.882
2000		12.751	12.751	102.619	94.327	49.387	42.836	10.403		299.572	286.821
2001		13.644	13.644	117.485	117.959	51.560	47.120	11.939		346.[illegible]3	332.419
2002		14.599	14.599	134.695	141.485	53.829	51.832	13.743		395.584	380.985
2003		15.621	15.621	154.642	169.033	56.197	57.015	15.790	209.263	661.940	646.319
PRESENT VALUE	1202.335	63.338	1265.673	331.706	273.177	180.310	141.890	32.251	47.958	1007.291	-258.382

NPV	-258.382
B/C Ratio	0.796
FIRR	8.30%

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SENSITIVITY ANALYSIS

CHAPTER - 6

SENSITIVITY ANALYSIS

6.1 INTRODUCTION:

A simple method of assessing possible adverse effects is the sensitivity test. The sensitivity test indicates how a possible adverse change in events may affect a project's economic and financial viability. The analysis entails changing the values of key variables and ascertaining how such changes affect the devices for comparing cost and benefit streams in arriving at investment. The results of the analysis help determine where more effort is needed to narrow the range of uncertainty, to firm up estimates, or identify aspects that may require closed attention during project implementation and operation.

For this road project the following four types of sensitivity tests have been carried out:

i) Test 1: Construction is delayed by one year

ii) Test 2: Passenger time cost saving excluded

iii) Test 3: Price increase in the cost of fuel at the rate of five percent per annum.

iv) Test 4: Test 2 & 3 occur simultaneously, i.e. passenger time cost saving is excluded and price increase in the cost of fuel at the rate of 5 percent per annum.

6.2 TEST 1: CONSTRUCTION IS DELAYED BY ONE YEAR:

To test the sensitivity of the proposed investment, it has been assumed that the construction will be delayed by one year and the benefits will start accruing from the year 1995 instead of 1994. The effect of this assumption on the net present value, B/C ratio and Internal rate of return are given in Exhibit 6.1, 6.2 for Combined Bela - Turbat road.

6.3 TEST 2: PASSENGER TIME COST SAVING IS EXCLUDED:

The second set analysis the savings accruing to the project from vehicle operating costs, excluding passenger time cost under different roadway conditions (with and without investment). The discount cash flow analysis under this set of assumption is given in Exhibits 6.3 & 6.4. The base prices of inputs have been used from Exhibits 4.2 through 4.13.

6.3 TEST 3: PRICE CHANGE IN THE COST OF FUEL:

Under this set of assumption, it has been assumed that there will be a price change in the cost of fuel at the rate of 5 percent per annum.

The base prices of inputs have been used from Exhibits 4.2 through 4.13. The NPV, B/C ratio and IRR are given in Exhibits 6.5 & 6.6.

6.5 TEST 4: TEST 2 & 3 OCCUR SIMULTANEOUSLY:

It has been assumed under this set of assumption that passenger time cost saving is excluded and at the same time there will be a price increase in the cost of fuel at the rate of 5 percent per annum. The NPV, B/C ratio and IRR are given in Exhibits 6.7 & 6.8.

6.6 CONCLUSION:

The discount cash flow analysis for the four sensitivity tests indicate that the proposed investments in the road improvement (Bela - Turbat section) are justified economically even at the worst possible option i.e., while test 2 & 3 occur simultaneously (i.e. the passenger time cost saving is excluded and price change in the cost of fuel @ 5% per annum). However, the cash flow analysis for Bela-Turbat (Financial) for base case as well as for all sensitivity tests show that at the opportunity cost of capital of 12% for transport sector, the NPV is negative, B/c ratio is less than 1 and FIRR is less than 12%.

The summary of the results of the sensitivity tests for Bela-Turbat is in Exhibit 6.9.

ECONOMIC ANAYLSIS OF THE PROJECT

BELA - TURBAT ROAD

SENSITIVITY TEST - 1*

EXIBIT 6.1

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	203.596	-	203.596							-203.596
1992	234.460	-	234.460							-234.460
1993	224.640	-	224.640							-224.640
1994	34.850	-	34.850							-34.850
1995		-	-	26.904	21.797	38.143	24.180		111.024	111.024
1996		9.728	9.728	30.936	25.051	39.821	26.578		122.406	112.678
1997		10.405	10.405	38.639	28.817	41.573	29.258		138.287	127.882
1998		11.137	11.137	44.091	39.719	43.402	32.184		159.396	148.259
1999		11.917	11.917	47.727	53.272	45.312	35.402		181.713	169.796
2000		80.404	80.404	54.888	61.288	47.306	38.942		202.424	122.020
2001		13.644	13.644	63.132	70.509	49.387	42.836		225.864	212.220
2002		14.599	14.599	72.470	85.797	51.560	47.120		256.947	242.348
2003		15.621	15.621	83.459	101.626	53.829	51.832		290.746	275.125
2004		16.714	16.714	100.454	120.035	56.197	57.015	209.263	542.964	526.250
PRESENT VALUE	550.734	58.988	609.722	177.540	183.224	160.991	126.687	42.819	691.262	81.539

NPV	81.539
B/C Ratio	1.134
EIRR	14.02%

* Construction of the project is delayed by one year.

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FILE NAME: STEST1-2.WK1

FINANCIAL ANAYLSIS OF THE PROJECT — EXIBIT 6.2

BELA - TURBAT ROAD

SENSITIVITY TEST - [illegible] — (RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	654.545	-	654.545							-654.545
1992	437.361	-	437.361							-437.361
1993	312.179	-	312.179							-312.179
1994	74.042	-	74.042						0.000	-74.042
1995		-	0.000	50.337	27.131	38.143	24.180		139.791	139.791
1996		9.728	9.728	57.933	31.179	39.821	26.598		155.531	145.803
1997		10.405	10.405	66.698	35.859	41.573	29.258		173.388	162.983
1998		11.137	11.137	71.715	51.597	43.402	32.184		198.898	187.761
1999		11.917	11.917	78.277	73.390	45.312	35.402		232.381	220.464
2000		80.404	80.404	89.208	81.964	47.306	38.942		257.420	177.016
2001		13.644	13.644	102.619	94.327	49.387	42.836		289.169	275.525
2002		14.599	14.599	117.485	117.959	51.560	47.120		334.124	319.525
2003		15.621	15.621	134.695	141.485	53.829	51.832		381.841	366.220
2004		16.714	16.714	154.642	169.033	56.197	57.015	209.263	646.150	629.436
PRESENT VALUE	1202.335	58.988	1261.323	296.166	245.513	160.991	126.687	42.819	872.176	-389.146

NPV	-389.146
B/C Ratio	0.691
FIRR	6.82%

* Construction of the project is delayed by one year.

FILE NAME: STEST1-2.WK1

ECONOMIC ANAYLSIS OF THE PROJECT

BELA - TURBAT ROAD

SENSITIVITY TEST - 2*

EXIBIT 6.3

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	203.596	-	203.596							-203.596
1992	234.460	-	234.460							-234.460
1993	224.640	-	224.640							-224.640
1994	34.850	-	34.850	26.904	13.259	38.143	24.180		102.486	67.636
1995		9.087	9.087	30.936	15.232	39.821	26.598		112.587	103.500
1996		9.728	9.728	38.639	17.508	41.573	29.258		126.978	117.250
1997		10.405	10.405	44.091	24.358	43.402	32.184		144.035	133.630
1998		11.137	11.137	47.727	32.858	45.312	35.402		161.299	150.162
1999		79.570	79.570	54.888	37.804	47.306	38.942		178.940	99.370
2000		12.751	12.751	63.132	43.487	49.387	42.836		198.842	186.091
2001		13.644	13.644	72.470	51.750	51.560	47.120		222.900	209.256
2002		14.599	14.599	83.459	60.628	53.829	51.832		249.748	235.149
2003		15.621	15.621	100.454	70.922	56.197	57.015	183.388	467.976	452.355
PRESENT VALUE	550.734	63.338	614.072	198.845	124.555	180.310	141.890	42.028	687.627	73.555

NPV	73.555
B/C Ratio	1.120
EIRR	14.13%

* PASSENGER TIME COST SAVING IS EXCLUDED.

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FILE NAME: STEST2-2.WK1

FINANCIAL ANAYLSIS OF THE PROJECT — EXIBIT 6.4

BELA - TURBAT ROAD

SENSITIVITY TEST - 2* — (RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	654.545	-	654.545							-654.545
1992	437.361	-	437.361							-437.361
1993	312.179	-	312.179							-312.179
1994	74.042	-	74.042	50.337	20.214	38.143	24.180		132.874	58.832
1995		9.087	9.087	57.933	23.234	39.821	26.598		147.586	138.499
1996		9.728	9.728	66.698	26.715	41.573	29.258		164.244	154.516
1997		10.405	10.405	71.715	39.205	43.402	32.184		186.506	176.101
1998		11.137	11.137	78.277	56.476	45.312	35.402		215.467	204.330
1999		79.570	79.570	89.208	63.075	47.306	38.942		238.531	158.961
2000		12.751	12.751	102.619	72.598	49.387	42.836		267.440	254.689
2001		13.644	13.644	117.485	90.229	51.560	47.120		306.394	292.750
2002		14.599	14.599	134.695	107.939	53.829	51.832		348.295	333.696
2003		15.621	15.621	154.642	128.638	56.197	57.015	183.388	579.880	564.259
PRESENT VALUE	1202.335	63.338	1265.673	331.706	209.353	180.310	141.890	42.028	905.287	-360.386

NPV	-360.386
B/C Ratio	0.715
FIRR	6.60%

* PASSENGER TIME COST SAVING IS EXCLUDED.

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FILE NAME: STEST2-2.WK1

ECONOMIC ANAYLSIS OF THE PROJECT

BELA - TURBAT ROAD

SENSITIVITY TEST - 3*

EXIBIT 6.5

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	203.596	-	203.596							-203.596
1992	234.460	-	234.460							-234.460
1993	224.640	-	224.640							-224.640
1994	34.850	-	34.850	26.417	21.797	38.143	24.180		110.537	75.687
1995		9.087	9.087	[illegible]	25.051	39.821	26.598		121.255	112.168
1996		9.728	9.728	36.620	28.817	41.573	29.258		136.268	126.540
1997		10.405	10.405	40.556	39.719	43.402	32.184		155.861	145.456
1998		11.137	11.137	42.960	53.272	45.312	35.402		176.946	165.809
1999		79.570	79.570	48.130	61.288	47.306	38.942		195.666	116.096
2000		12.751	12.751	53.776	70.509	49.387	42.836		216.508	203.757
2001		13.644	13.644	60.775	85.797	51.560	47.120		245.252	231.608
2002		14.599	14.599	69.075	101.626	53.829	51.832		276.362	261.763
2003		15.621	15.621	82.554	120.035	56.197	57.015	183.388	499.189	483.568
PRESENT VALUE	550.734	63.338	614.072	176.729	205.211	180.310	141.890	42.028	746.168	132.095

NPV	132.095
B/C Ratio	1.215
EIRR	15.71%

* PRICE CHANGE IN THE COST FUEL @ 5 PER CENT PER ANNUM.

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FILE NAME: STEST3-2.WK1

FINANCIAL ANAYLSIS OF THE PROJECT — EXIBIT 6.6

BELA - TURBAT ROAD

SENSITIVITY TEST - 3* — (RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	654.545	-	654.545							-654.545
1992	437.361	-	437.361							-437.361
1993	312.179	-	312.179							-312.179
1994	74.042	-	74.042	49.751	27.131	38.143	24.180		139.205	65.163
1995		9.087	9.087	56.544	31.179	39.821	26.598		154.142	145.055
1996		9.728	9.728	58.590	35.859	41.573	29.258		165.280	155.552
1997		10.405	10.405	60.786	51.597	43.402	32.184		187.969	177.564
1998		11.137	11.137	70.339	73.390	45.312	35.402		224.443	213.306
1999		79.570	79.570	78.367	81.964	47.306	38.942		246.579	167.009
2000		12.751	12.751	87.776	94.327	49.387	42.836		274.326	261.575
2001		13.644	13.644	97.493	117.959	51.560	47.120		314.132	300.488
2002		14.599	14.599	108.518	141.485	53.829	51.832		355.664	341.065
2003		15.621	15.621	120.161	169.033	56.197	57.015	183.388	585.794	570.173
PRESENT VALUE	1202.335	63.338	1265.673	289.231	274.974	180.310	141.890	42.028	928.433	-337.240

NPV	-337.240
B/C Ratio	0.734
FIRR	6.97%

* PRICE CHANGE IN THE COST FUEL @ 5 PER CENT PER ANNUM.

FILE NAME: STEST3-2.WK1

ECONOMIC ANAYLSIS OF THE PROJECT

BELA - TURBAT ROAD

SENSITIVITY TEST - 4*

EXIBIT 6.7

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	203.596	-	203.596							-203.596
1992	234.460	-	234.460							-234.460
1993	224.640	-	224.640							-224.640
1994	34.850	-	34.850	26.417	13.259	38.143	24.180		101.999	67.149
1995		9.087	9.087	29.785	15.232	39.821	26.598		111.436	102.349
1996		9.728	9.728	36.620	17.508	41.573	29.258		124.959	115.231
1997		10.405	10.405	41.347	24.358	43.402	32.184		141.291	130.886
1998		11.137	11.137	42.960	32.858	45.312	35.402		156.532	145.395
1999		79.570	79.570	48.130	37.804	47.306	38.942		172.182	92.612
2000		12.751	12.751	53.776	43.487	49.387	42.836		189.486	176.735
2001		13.644	13.644	60.775	51.750	51.560	47.120		211.205	197.561
2002		14.599	14.599	69.075	60.628	53.829	51.832		235.364	220.765
2003		15.621	15.621	82.554	70.922	56.197	57.015	183.388	450.076	434.455
PRESENT VALUE	550.734	63.338	614.072	177.087	124.555	180.310	141.890	42.028	665.870	51.797

NPV	51.797
B/C Ratio	1.084
EIRR	13.53%

* TEST 2 & 3 OCCUR SIMULTANEOUSLY.

FILE NAME: STEST4-2.WK1

FINANCIAL ANAYLSIS OF THE PROJECT
BELA - TURBAT ROAD
SENSITIVITY TEST - 4*

EXIBIT 6.8

(RUPEES IN MILLIONS)

YEAR	CONSTRUCTION COST	MAINT. COST	TOTAL COST	OPERATING COST SAVING	USER TIME COST SAVING	LOSS AVOIDED	EXISTING MAINT.	SALVAGE VALUE	TOTAL BENEFITS	NET BENEFITS
1990										
1991	654.545	-	654.545							-654.545
1992	437.361	-	437.361							-437.361
1993	312.179	-	312.179							-312.179
1994	74.042	-	74.042	49.751	20.214	38.143	24.180		132.288	58.246
1995		9.087	9.087	56.544	23.234	39.821	26.598		146.197	137.110
1996		9.728	9.728	58.590	26.715	41.573	29.258		156.136	146.408
1997		10.405	10.405	60.786	39.205	43.402	32.184		175.577	165.172
1998		11.137	11.137	70.339	56.476	45.312	35.402		207.529	196.392
1999		79.570	79.570	78.367	63.075	47.306	38.942		227.690	148.120
2000		12.751	12.751	87.776	72.598	49.387	42.836		252.597	239.846
2001		13.644	13.644	97.493	90.229	51.560	47.120		286.402	272.758
2002		14.599	14.599	108.518	107.939	53.829	51.832		322.118	307.519
2003		15.621	15.621	120.161	128.638	56.197	57.015	183.388	545.399	529.778
PRESENT VALUE	1202.335	63.338	1265.673	289.231	209.353	180.310	141.890	42.028	862.812	-402.861

NPV	-402.861
B/C Ratio	0.682
FIRR	5.81%

* TEST 2 & 3 OCCUR SIMULTANEOUSLY.

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FILE NAME: STEST4-2.WK1

F.Name: EXHIBITS.WK1 Disk: (AWARAN - 2)

SUMMARY OF SENSITIVITY
TEST RESULTS

Bela - Turbat

Exhibit 6.9

	TEST-1 *	TEST-2 **	TEST-3 +	TEST-4 ++
ECONOMIC				
- NPV (Rs. Million)	81.539	73.555	132.095	51.797
- B/C Ratio	1.134	1.120	1.215	1.084
- I R R, %	14.020	14.130	15.710	13.530
FINANCIAL				
- NPV (Rs. Million)	(389.146)	(360.386)	(337.240)	(402.861)
- B/C Ratio	0.691	0.715	0.734	0.682
- I R R, %	6.820	6.600	6.970	5.810

* Construction of the project is delayed by one year
** Passenger time cost saving is excluded

\+ Price change in the cost of fuel @ 5% per annum
++ Test-2 and Test-3 occur simultaneously

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APPENDICES

LIST OF APPENDICES

Origin/Destination Survey at Bela, Awaran and Turbat	*Appendix - A*
Classified Traffic Count Bela, Awaran and Turbat	*Appendix - A*
Agriculture House Hold Survey at Bela, Khuzdar and Turbat	*Appendix - B*
Vehicle Operating Speed	*Appendix - C*
Agriculture Statistics of Khuzdar, Lasbela, Turbat, Gwadar and Balochistan	*Appendix - D*
Special Development Program of Balochistan for Turbat, Gwadar, Khuzdar and Lasbela	*Appendix - E*

APPENDIX - A

O/D SURVEY & CLASSIFIED TRAFFIC COUNTS

F.NAME: ODFMAWR.WK1 DISK: (AWARAN - 1)

AWARAN - TURBAT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

APPENDIX - A

ORIGIN/DESTINATION SURVEY
FOR AWARAN

DATE:

8.00 A.M.

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried Type	Weight
08.00-09.00	BUS	KARACHI	MUND	60		
	TRUCK	KARACHI	TURBAT	6	CEMENT	300 TONS
	TRUCK	KARACHI	TURBAT	2	MERD.	300 M
	TRUCK	KARACHI	TURBAT	3	ATTA	350 M
09.00-10.00	TRUCK	KARACHI	TURBAT	4	ELE.PIPE	250 TONS
	TRUCK	KARACHI	TURBAT	5	ELE.PIPE	250 TONS
	TRUCK	KARACHI	TURBAT	2	PICKUP	
10.00-11.00	[illegible]					
11.00-12.00	TRUCK	KARACHI	TURBAT	4	EMPTY	
	TRUCK	KARACHI	TURBAT	3	MERD.	250 M
	TRUCK	KARACHI	TURBAT	4	FRUIT	360 M
	TRUCK	TURBAT	KARACHI	2	EMPTY	
	TRUCK	TURBAT	KARACHI	6	DATES	250 M
	TRUCK	TURBAT	KARACHI	3	MAT	210 M
12.00-01.00	TRUCK	KARACHI	TURBAT	3	MERD	310 M
	TRUCK	KARACHI	PASNI	2	MERD	312 M
	TRUCK	KARACHI	TURBAT	5	MERD	300 M
	TRUCK	KARACHI	TURBAT	4	MERD.	300 M
	TRUCK	TURBAT	KARACHI	3	MAT	300 M
	TRUCK	KARACHI	TURBAT	2	MERD.	250 M
	TRUCK	KARACHI	TURBAT	5	MERD.	275 M
	TRUCK	KARACHI	TURBAT	3	MERD.	300 M
01.00-02.00	TRUCK	TURBAT	KARACHI	3	EMPTY	
	TRUCK	TURBAT	KARACHI	2	EMPTY	
	TRUCK	TURBAT	KARACHI	4	SCRAPS	170 TONS
	TRUCK	KARACHI	TURBAT	3	DIESEL	3000 GL.
	TRUCK	KARACHI	PASNI	3	MERD.	250 M
02.00-03.00	BUS	TURBAT	KARACHI	65		
	TRUCK	TURBAT	KARACHI	4	DATES	300 M
	TRUCK	TURBAT	KARACHI	3	PISH	130 M
	TRUCK	TURBAT	KARACHI	4	TYRES	
	TRUCK	TURBAT	KARACHI	5	CEMENT	300 M
03.00-04.00	TRUCK	KARACHI	TURBAT	4	DATES	200 M

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AWARAN - TURABT ROAD PROJECT APPENDIX - A
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
8.00 A.M. FDR AWARAN

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
	TRUCK	J.J.	KARACHI	5	MAT	200 M
04.00-05.00	TRUCK	TURBAT	KARACHI	2	EMPTY	
	TANKER	TURBAT	KARACHI	3	EMPTY	
05.00-06.00	N I L					
06.00-07.00	PICKUP	KARACHI	TURBAT	6		
	TRUCK	KARACHI	PASNI	4	MERD.	300 M
	TRUCK	KARACHI	TURBAT	3	MERD.	250 M
	TRUCK	TURBAT	KARACHI	2	DATES	250 M
	TRUCK	TURBAT	KARACHI	3	DATES	190 M
	TRUCK	TURBAT	KARACHI	2	SCRAPS	210 M
07.00-08.00	PICK-UP	KARACHI	TURABT	4		
	TRUCK	BELA	DANDAR	6	VEGETABLE	150 M
08.00-09.00	PICK-UP	KARACHI	TURABT	3	MERD.	10 M
	TANKER	TURBAT	KARACHI	3	EMPTY	
	TANKER	MOND	KARACHI	2	EMPTY	
	TANKER	KARACHI	GWADAR	3	FUEL	3000 GL.
09.00-10.00	TRUCK	TURBAT	KARACHI	3	MULATTI	150 M
	TRUCK	TURBAT	KARACHI	3	FISH	200 M
	TANKER	TURBAT	KARACHI	4	EMPTY	
	TANKER	TURBAT	KARACHI	3	EMPTY	
	PICK-UP	GWADAR	KARACHI	4		
10.00-11.00	TRUCK	TURBAT	KARACHI	5	MAT	150 M
	BUS	MOND	KARACHI	50		
	TRUCK	TURBAT	KARACHI	2	DATES	140 M
	TRUCK	KARACHI	TURBAT	6	DATES	170 M
11.00-12.00	TRUCK	TURBAT	KARACHI	3	DATES	200 M
	TRUCK	KARACHI	TURBAT	4	EMPTY	
	TRUCK	BULEDA	KARACHI	3	FISH	145 M
	BUS	TURBAT	KARACHI	70		
	PICK-UP	KARACHI	AWARAN	6		
12.00-01.00	TRUCK	TURBAT	KARACHI	3	MAT	210 M

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F.NAME: ODFMAWR.WK1 DISK: (AWARAN - 1)

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

APPENDIX - A

ORIGIN/DESTINATION SURVEY
FOR AWARAN

8.00 A.M. DATE:

Time	Vehicle Type	Origion	Destination	No. of Passen_ers	Commodity Carried	
					Type	Weight
	TRUCK	TURBAT	KARACHI	2	MAT	233 M
	BUS	PASNI	KARACHI	45		
	BUS	MOND	KARACHI	60		
	TANKER	KARACHI	TURBAT	3	FUEL	3000 GL.
01.00-02.00	BUS	TURBAT	KARACHI	70		
	BUS	GWADAR	KARACHI	60		
	TANK	KARACHI	PASNI	4	FUEL	3000 GL.
	TRUCK	HOSHAB	KARACHI	5	MAT	210 M
	PICK-UP	AWARAN	KARACHI	6		
02.00-03.00	TANK	KARACHI	TURBAT	2	PETROL	6000 GL.
	TANK	KARACHI	GWADAR	3	DEISEL	6000 GL.
	TRUCK	GWADAR	KARACHI	4	MURATTI	260 M
03.00-04.00	TRUCK	KARACHI	TURBAT	3	FRUIT	310 M
	TRUCK	KARACHI	TURBAT	4	FRUIT	312 M
	TANK	TURBAT	KARACHI	6	EMPTY	
	TRUCK	TURBAT	KARACHI	6	EMPTY	
04.00-05.00	TRUCK	HOSHAB	KARACHI	2	MAT	230 M
	TANK	PASNI	KARACHI	4	EMPTY	
	TRUCK	GWADAR	KARACHI	3	SCRAP	270 M
	PICK-UP	AWARAN	KARACHI	2		
05.00-06.00	TRUCK	GWADAR	KARACHI	3	MURATTI	310 M
	TRUCK	GWADAR	KARACHI	2	MURATTI	320 M
	TRUCK	KARACHI	TURBAT	2	EMPTY	
	TRUCK	KARACHI	TURBAT	3	EMPTY	
	TRUCK	TURBAT	KARACHI	7	EMPTY	
06.00-07.00	TRUCK	KARACHI	PASNI	3	MERD.	260 M
	TRUCK	KARACHI	PASNI	6	MERD.	240 M
	BUS	KARACHI	GWADAR	65		
	TRUCK	KARACHI	TURBAT	3	PETROL	3000 GL.
07.00-08.00	TRUCK	KARACHI	DANDAR	6	MERD.	160 M
	TRUCK	KARACHI	TURBAT	5	MERD.	210 M
	PICK-UP	KARACHI	TURBAT	2		
	TRUCK	KARACHI	TURBAT	3	MERD.	310 M

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F.NAME: ODFMAWR.WK1 DISK: (AWARAN - 1)

AWARAN - TURABT ROAD PROJECT APPENDIX - A
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
8.00 A.M. FOR AWARAN

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
	PICK-UP	KARACHI	TURBAT	3		
	TRUCK	KARACHI	TURBAT	4	EMPTY	

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F.NAME: ODFMBELA.WKI DISK: (AWARAN - 1)

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
8.00 A.M. FOR BELA

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
08.00-09.00	TRUCK	KARACHI	TURBAT	4	MERD.	250 M
	TRUCK	KARACHI	TURBAT	3	MERD.	300 M
	HIACE	SAMI	KARACHI	15		
	TANKER	KARACHI	TURBAT	5	PETROL	3000 GL.
	TANKER	KARACHI	TURBAT	3	FUEL	3000 GL.
	TRUCK	KARACHI	TURBAT	4	MERD.	275 M
	WAGON	KARACHI	AWARAN	10		
09.00-10.00	TRUCK	KARACHI	TURBAT	3	MERD.	350 M
	TRUCK	KARACHI	GWADAR	5	MERD.	200 M
	TRUCK	TURBAT	KARACHI	3	FISH	275 M
	TRUCK	TURBAT	KARACHI	4	FISH	250 M
	TRUCK	TURBAT	KARACHI	5	MULATTI	300 M
	TRUCK	TURBAT	KARACHI	3	MULATTI	300 M
10.00-11.00	TANKER	KARACHI	TURBAT	5	OIL	6000 GL.
	TANKER	KARACHI	TURBAT	3	PETROL	3500 GL.
	TRUCK	TURBAT	KARACHI	4	MULATTI	250 M
	TRUCK	TURBAT	KARACHI	3	MULATTI	300 M
	HIACE	SAMI	KARACHI	15		
	TRUCK	KARACHI	TURBAT	3	MERD.	275 M
11.00-12.00	BUS	TURBAT	KARACHI	65		
	JEEP	TURBAT	KARACHI	5		
	TRUCK	TURBAT	KARACHI	7	MULATTI	300 M
	TRUCK	TURBAT	KARACHI	5	MULATTI	250 M
12.00-01.00	BUS	KARACHI	TURBAT	55		
	TANKER	KARACHI	TURBAT	3	PETROL	3000 GL.
	TRUCK	KARACHI	TURBAT	[illegible]	MERD.	300 M
	TRUCK	KARACHI	TURBAT	5	MERD.	300 M
01.00-02.00	TRUCK	TURBAT	KARACHI	3	FISH	300 M
	TRUCK	TURBAT	KARACHI	5	MAT	250 M
	BUS	TURBAT	KARACHI	65		
	BUS	KARACHI	TURBAT	70		
02.00-03.00	TRUCK	TURBAT	KARACHI	3	MAT	300 M
	TRUCK	TURBAT	KARACHI	5	ELE.PIPE	20 TONS
	TRUCK	TURBAT	KARACHI	7	ELE.PIPE	15 TONS

F.NAME: ODFMBELA.WK1 DISK: (AWARAN - 1)

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
8.00 A.M. FOR BELA

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
	HIACE	KARACHI	TURBAT	7		
03.00-04.00	TANKER	KARACHI	TURBAT	3	EMPTY	
	TANKER	TURBAT	KARACHI	5	PISH	300 M
	TANKER	TURBAT	KARACHI	7	MULATTI	350 M
04.00-05.00	BUS	TURBAT	KARACHI	50		
	TRUCK	TURBAT	KARACHI	5	FISH	300 M
	TRUCK	TURBAT	KARACHI	3	FISH	250 M
05.00-06.00	BUS	KARACHI	TURBAT	62		
	TRUCK	TURBAT	KARACHI	3	DATES	300 M
	TRUCK	TURBAT	KARACHI	5	DATES	250 M
	HIACE	TURBAT	KARACHI	10		
	TANKER	KARACHI	TURABT	5	PETROL	3000 GL.
06.00-07.00	BUS	KARACHI	TURABT	67		
	TRUCK	TURBAT	KARACHI	5	MULATTI	300 M
	TRUCK	TURBAT	KARACHI	7	MULATTI	275 M
	BUS	TURBAT	KARACHI	52		
	TANK	KARACHI	TURBAT	3	OIL	3500 GL.
07.00-08.00	TRUCK	TURBAT	KARACHI	3	FISH	300 M
	TRUCK	KARACHI	TURBAT	5	MERO.	250 M
	TRUCK	TURBAT	KARACHI	7	MULATTI	300 M
	TRUCK	TURBAT	KARACHI	5	MULATTI	300 M
	TRUCK	TURBAT	KARACHI	3	MULATTI	250 M
08.00-09.00	TRUCK	TURBAT	KARACHI	3	PISH	300 M
	TRUCK	TURBAT	KARACHI	5	MAT	250 M
	TRUCK	TURBAT	KARACHI	5	MAT	250 M
	BUS	TURBAT	KARACHI	50		
	TANKER	KARACHI	TURBAT	3	OIL	3000 GL.
09.00-10.00	HIACE	KARACHI	TURBAT	15		
	TRUCK	KARACHI	TURBAT	4	EMPTY	
	TRUCK	KARACHI	TURBAT	4	EMPTY	
	TRUCK	TURBAT	KARACHI	5	FRUIT	300 M
	BUS	TURBAT	KARACHI	58		

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F.NAME: ODFMBELA.WK1 DISK: (AWARAN - 1)

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
8.00 A.M. FOR BELA

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
10.00-11.00	TRUCK	TURBAT	KARACHI	4	MULATTI	350 M
	TRUCK	TURBAT	KARACHI	5	MULATTI	300 M
	TRUCK	TURBAT	KARACHI	3	MULATTI	250 M
	TRUCK	TURBAT	KARACHI	4	MULATTI	250 M
	TRUCK	TURBAT	KARACHI	5	DATES	250 M
11.00-12.00	TRUCK	TURBAT	KARACHI	3	FISH	300 M
	TRUCK	TURBAT	KARACHI	5	FISH	275 M
	BUS	TURBAT	KARACHI	61		
	TANKER	KARACHI	TURBAT	3	OIL	3000 GL.
12.00-01.00	TRUCK	TURBAT	KARACHI	3	MAT	250 M
	TRUCK	TURBAT	KARACHI	3	MAT	300 M
	TRUCK	TURBAT	KARACHI	5	FISH	350 M
	TRUCK	TURBAT	KARACHI	7	MULATTI	
01.00-02.00	N I L					
02.00-03.00	TRUCK	TURBAT	KARACHI	3	FISH	300 M
	TRUCK	KARACHI	TURBAT	5	MERD.	300 M
	TRUCK	KARACHI	TURBAT	4	MERD.	275 M
	TRUCK	KARACHI	TURBAT	3	MERD.	275 M
03.00-04.00	TRUCK	TURBAT	KARACHI	3	FISH	300 M
	TRUCK	KARACHI	TURBAT	5	MERD.	350 M
	TRUCK	KARACHI	TURBAT	6	MERD.	300 M
04.00-05.00	BUS	TURBAT	KARACHI	63		
	TRUCK	KARACHI	TURBAT	5	MERD.	350 M
	TRUCK	KARACHI	TURBAT	7	MERD.	350 M
	TRUCK	KARACHI	TURBAT	3	MERD.	350 M
05.00-06.00	N I L					240 M
06.00-07.00	TRUCK	TURBAT	KARACHI	5	DATES	300 M
	TRUCK	TURBAT	KARACHI	7	DATES	250 M
	TRUCK	TURBAT	KARACHI	7	SCRPE	17 TONS
07.00-08.00	TRUCK	TURBAT	KARACHI	3	DATES	300 M
	TRUCK	TURBAT	KARACHI	5	MULATTI	250 M

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F.NAME: ODFMBELA.WK1 DISK: (AWARAN - 1)

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
8.00 A.M. FOR BELA

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
	TRUCK	TURBAT	KARACHI	5	MULATTI	300 M

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AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE
8.00 A.M. FOR TURBAT

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
08.00-09.00	TRUCK	KARACHI	TURBAT	4	MERD.	275 M
	TRUCK	KARACHI	TURBAT	3	ELE.PIPE	5 TONS
	TRUCK	KARACHI	TURBAT	5	ELE.PIPE	5 TONS
	HIACE	AWARAN	TURBAT	15		
	BUS	KARACHI	TURBAT	60		
	BUS	KARACHI	TURBAT	54		
	HIACE	HUSHAB	TURBAT	20		
	HIACE	HUSHAB	TURBAT	15		
	HIACE	HUSHAB	TURBAT	18		
09.00-10.00	BUS	KARACHI	TURBAT	60		
	HIACE	SAMI	TURBAT	3	STICKS	10 M
	HIACE	SAMI	TURBAT	15		
	HIACE	SAMI	TURBAT	18		
	MINIBUS	SAMI	TURBAT	25		
	TRUCK	KARACHI	TURBAT	5		
	TRUCK	KARACHI	TURBAT	3	MERD.	300 M
	BUS	KARACHI	TURBAT	75	MERD.	225 M
	HIACE	AWARAN	TURBAT	17		
10.00-11.00	HIACE	AWARAN	TURBAT	15		
11.00-12.00	TRUCK	GWADAR	KARACHI	8	DATES	8000 KG.
	HIACE	TURBAT	MOND	8		
	HIACE	TURBAT	MOND	6		
	HIACE	TURBAT	MOND	12		
	HIACE	TURBAT	MOND	15		
	BUS	KARACHI	TURBAT	35		
	HIACE	TURBAT	MOND	8		
	HIACE	TURBAT	NASIRABAD	7		
	TRUCK	TURBAT	MOND	2	WHEAT	10000 KG
	HIACE	TURBAT	BULIDA	2		
	HIACE	TURBAT	BULIDA	16		
	TANKER	BULIDA	TURBAT	2	OIL	6000 GL.
	TRUCK	TURBAT	KARACHI	2	WHEAT	300 M
	TRUCK	TURBAT	KARACHI	5	WHEAT	300 M
	TRUCK	TURBAT	KARACHI	6	FISH	7600 KG.
	TRUCK	TURBAT	KARACHI	4	FISH	7600 KG.
	BUS	TURBAT	KARACHI	55		
	TRUCK	TURBAT	KARACHI	6	EMPTY	

BEST AVAILABLE COPY

F.Name: ODFMTUR.WK1 Disk: AWARAN - 1

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
8 00 A.M. FOR TURBAT

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried Type	Weight
	TRUCK	TURBAT	KARACHI	4	WHEAT	275 M
	HIACE	TURBAT	SAMI	8		
	TRUCK	TURBAT	KARACHI	4	MERD.	12000 KG.
12.00-01.00	WAGON	HOSHAB	TURBAT	6		
	TRUCK	TURBAT	KARACHI	5	MACHINERY	8 TONS
	TRUCK	TURBAT	KARACHI	3	SAINTRY	10 TONS
	BUS	TURBAT	SAMI	25		
	TANKER	KARACHI	TURBAT	4	OIL	8400 KG
	BUS	TURBAT	KARACHI	50		
	TRUCK	KARACHI	TURBAT	4	MERD.	337 KG.
	TRUCK	TURBAT	KARACHI	4	SEEDS	1.5 M
	TRUCK	KARACHI	TURBAT	6	MERD.	325 M
01.00-02.00	D. CARTS	SUNSIR	TURBAT	2	STICKS	350 KG.
	TRUCK	TURBAT	KARACHI	7	SCRAPS	7 TONS
	JEEP	TURBAT	KARACHI	2		
	TRUCK	KARACHI	TURBAT	3	MERD.	250 M
	TRUCK	TURBAT	KARACHI	2	FISH	220 M
	TRUCK	KARACHI	TURBAT	4	MERD.	300 M
02.00-03.00	TRUCK	KARACHI	TURBAT	3	O I L	6000 GL.
	TRUCK	HOSHAB	KARACHI	5	FISH	303 M
	TRUCK	KARACHI	TURBAT	5	MECD.	300 M
03.00-04.00	N I L					
04.00-05.00	BUS	QUETTA	TURBAT	55		
	TRUCK	KARACHI	TURBAT	4	FUEL	5000 GL.
	TANKER	KARACHI	TURBAT	5	EMPTY	
	HIACE	TURBAT	JAHL JOH	10		
05.00-06.00	TRUCK	TURBAT	KARACHI	3	SCRAPS	8 TONS
	TRUCK	TURBAT	KARACHI	6	SCRAPS	10 TONS
	TRUCK	KARACHI	TURBAT	3	MERD.	230 M
	HIACE	TURBAT	SAMI	15		
	HIACE	TURBAT	AWARAN	13		
06.00-07.00	TRUCK	GWADAR	KARACHI	2	SCRAPS	15 TONS
	TRUCK	TURBAT	KARACHI	4	SCRAPS	10 TONS

BEST AVAILABLE COPY

F.Name: ODFMTUR.WK1 Disk: AWARAN - 1

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY DATE:
FOR TURBAT

8.00 A.M.

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
	BUS	TURBAT	KARACHI	55		
	TANKER	TURBAT	MOND	6	OIL	6000 GL.
	BUS	KARACHI	TURBAT	50		
	BUS	TURBAT	KARACHI	50		
	HIACE	TURBAT	PASNI	15		
	HIACE	TURBAT	GWADAR	17		
07.00-08.00	N I L					
08.00-09.00	N I L					
09.00-10.00	TRUCK	TURBAT	KARACHI	4	SCRAPS	275 M
10.00-11.00	TRUCK	TURBAT	KARACHI	5	FISH	200 M
	TRUCK	KARACHI	TURBAT	3	MERD	325 M
	TRUCK	KARACHI	TURBAT	4	MERD.	200 M
11.00-12.00	TRUCK	KARACHI	TURBAT	6	CEMENT	300 M
	BUS	TURBAT	QUETTA	54		
	TRUCK	KARACHI	TURBAT	2	MERD	250 M
	TRUCK	KARACHI	TURBAT	5	MERD	250 M
	TRUCK	KARACHI	TURBAT	3	MERD	300 M
	TRUCK	KARACHI	TURBAT	5	STEEL	225 M
	TRUCK	KARACHI	TURBAT	2	SANITRY	300 M
12.00-01.00	TRUCK	KARACHI	TURBAT	2	MERD	275 M
	TRUCK	KARACHI	PASNI	4	MERD	300 M
	BUS	TURBAT	KHUZDAR	40		
	TRUCK	KARACHI	MOND	3	MERD	275 M
	TRUCK	KARACHI	TURBAT	7	MERD	300 M
01.00-02.00	N I L					
02.00-03.00	TRUCK	KARACHI	TURBAT	5	CEMENT	250 M
	TRUCK	KARACHI	TURBAT	2	MERD.	300M
03.00-04.00	TRUCK	KARACHI	PASNI	3	MERD	275 M
04.00-05.00	N I L					

BEST AVAILABLE COPY

F.Name: ODFMTUR.WK1 Disk: AWARAN - 1

AWARAN - TURABT ROAD PROJECT
ECONOMIC AND FINANCIAL ANALYSIS

ORIGIN/DESTINATION SURVEY
FOR TURBAT

8.00 A.M. DATE:

Time	Vehicle Type	Origion	Destination	No. of Passengers	Commodity Carried	
					Type	Weight
05.00-06.00	TRUCK	KARACHI	TURBAT	5	ELE.PIPE	200 M
06.00-07.00	TRUCK	KARACHI	TURBAT	3	MERD.	300 M
	TRUCK	KARACHI	TURBAT	4	MERD.	300 M
07.00-08.00	TRUCK	KARACHI	TURBAT	5	MERD.	275 M
	TRUCK	KARACHI	TURBAT	4	MERD.	275 M
	TRUCK	KARACHI	TURBAT	3	MERD.	300 M

BEST AVAILABLE COPY

F.Name: TRFAW-KR.WK1 Disk: (AWARAN - 4)

APPENDIX - E

T A B L E
24 HOURS TRAFFIC COUNT

BELA-AWARAN-TURBAT
S E C T I O N

FROM: AWARAN - KARACHI

FOR: AWARAN

Count Time From	Count Time To	Animal Drawn Vehicles	Bicycles	Motor Cycles and Socoters	Cars and Jeep	Pick ups, Minibuses & Wagons etc.	Passenger Buses	Tractors and Tractor-Trolleys	Trucks/Tankers and Trailers S/1.2	T/1.2-22	T/1.2-22	S/1.2-222	Total Non Motorized	Total Motorized	Total Vehicles
08 A.M	09 A.M	-	-	2	-	2	-	-	-	-	-	-	0	4	4
09 A.M	10 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
10 A.M	11 A.M	-	-	5	1	3	-	-	-	-	-	-	0	9	9
11 A.M	12 Noon	-	-	1	2	2	-	-	3	-	-	-	0	8	8
12 Noon	01 P.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
01 P.M	02 P.M	-	-	3	1	2	-	-	3	-	-	-	0	9	9
02 P.M	03 P.M	-	-	-	-	-	1	-	3	-	-	-	0	4	4
03 P.M	04 P.M	-	-	2	-	-	-	-	2	-	-	-	0	4	4
04 P.M	05 P.M	-	-	1	3	3	-	-	2	-	-	-	0	9	9
05 P.M	06 P.M	-	-	3	-	-	1	-	1	-	-	-	0	5	5
06 P.M	07 P.M	-	-	1	-	1	-	-	3	-	-	-	0	5	5
07 P.M	08 P.M	-	-	-	1	-	-	-	-	-	-	-	0	1	1
08 P.M	09 P.M	-	-	2	-	1	1	-	2	-	-	-	0	6	6
09 P.M	10 P.M	-	-	-	-	-	-	-	4	-	-	-	0	4	4
10 P.M	11 P.M	-	-	-	-	-	1	-	2	-	-	-	0	3	3
11 P.M	12 A.M	-	-	-	-	-	1	-	2	-	-	-	0	3	3
12 A.M	01 A.M	-	-	-	-	1	2	-	2	-	-	-	0	5	5
01 A.M	02 A.M	-	-	-	-	-	2	-	1	-	-	-	0	3	3
02 A.M	03 A.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
03 A.M	04 A.M	-	-	-	-	-	2	-	-	-	-	-	0	2	2
04 A.M	05 A.M	-	-	-	-	1	-	-	4	-	-	-	0	5	5
05 A.M	06 A.M	-	-	-	-	-	-	-	3	-	-	-	0	3	3
06 A.M	07 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
07 A.M	08 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
T O T A L		0	0	20	8	16	11	0	39	0	0	0	0	94	94

F.Name: TRFKR-AW.WK1 Disk: (AWARAN - 4)

T A B L E
24 HOURS TRAFFIC COUNT

BELA-AWARAN-TURBAT
S E C T I O N

FROM: KARACHI - AWARAN FOR: AWARAN

Count Time From	Count Time To	Animal Drawn Vehicles	Bicycles	Motor Cycles and Socoters	Cars and Jeep	Pick ups, Minibuses & Wagons etc.	Passenger Buses	Tractors and Tractor-Trolleys	Trucks/Tankers and Trailers S/1.2	T/1.2-22	T/1.2-22	S/1.2-222	Total Non Motorized	Total Motorized	Total Vehicles
08 A.M	09 A.M	-		2	-	-	1	-	4	-	-	-	0	7	7
09 A.M	10 A.M	-		-	-	2	-	-	3	-	-	-	0	5	5
10 A.M	11 A.M	-	-	-	2	-	1	-	-	-	-	-	0	3	3
11 A.M	12 Noon	-	-	3	-	4	-	-	3	-	-	-	0	10	10
12 Noon	01 P.M	-	-	2	-	-	2	-	7	-	-	-	0	11	11
01 P.M	02 P.M	-	-	-	-	1	-	-	2	-	-	-	0	3	3
02 P.M	03 P.M	-	-	5	-	1	-	-	1	-	-	-	0	7	7
03 P.M	04 P.M	-	-	3	1	-	-	-	2	-	-	-	0	6	6
04 P.M	05 P.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
05 P.M	06 P.M	-	-	2	-	-	-	-	2	-	-	-	0	4	4
06 P.M	07 P.M	-	-	3	-	2	-	-	2	-	-	-	0	7	7
07 P.M	08 P.M	-	-	1	2	3	-	-	1	-	-	-	0	7	7
08 P.M	09 P.M	-	-	-	-	1	-	-	1	-	-	-	0	2	2
09 P.M	10 P.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
10 P.M	11 P.M	-	-	1	-	2	-	-	1	-	-	-	0	4	4
11 P.M	12 A.M	-	-	-	-	-	1	-	-	-	-	-	0	1	1
12 A.M	01 A.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
01 A.M	02 A.M	-	-	-	-	-	1	-	1	-	-	-	0	2	2
02 A.M	03 A.M	-	-	-	-	-	-	-	2	-	-	-	0	2	2
03 A.M	04 A.M	-	-	-	-	-	-	-	2	-	-	-	0	2	2
04 A.M	05 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
05 A.M	06 A.M	-	-	-	-	-	-	-	2	-	-	-	0	2	2
06 A.M	07 A.M	-	-	-	-	-	1	-	3	-	-	-	0	4	4
07 A.M	08 A.M	-	-	-	-	2	1	-	5	-	-	-	0	8	8
T O T A L		0	0	22	5	18	8	0	45	0	0	0	0	98	98

F.Name: TRFBL-KR.WK1 Disk: (AWARAN - 4)

T A B L E
24 HOURS TRAFFIC COUNT

FROM: BELA - KARACHI

BELA-AWARAN-TURBAT
S E C T I O N

FOR: S E L A

Count Time From	Count Time To	Animal Drawn Vehicles	Bicycles	Motor Cycles and Socoters	Cars and Jeep	Pick ups, Minibuses & Wagons etc.	Passenger Buses	Tractors and Tractor-Trolleys	Trucks/Tankers and Trailers S/1.2	T/1.2-22	T/1.2-22	S/1.2-222	Total Non Motorized	Total Motorized	Total Vehicles
08 A.M	09 A.M	-	-	-	-	1	-	-	-	-	-	-	0	1	1
09 A.M	10 A.M	-	-	-	-	-	-	-	4	-	-	-	0	4	4
10 A.M	11 A.M	-	-	-	-	1	-	-	2	-	-	-	0	3	3
11 A.M	12 Noon	-	-	-	1	-	1	-	2	-	-	-	0	4	4
12 Noon	01 P.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
01 P.M	02 P.M	-	-	-	-	-	1	-	2	-	-	-	0	3	3
02 P.M	03 P.M	-	-	-	-	-	-	-	3	-	-	-	0	3	3
03 P.M	04 P.M	-	-	-	-	-	-	-	2	-	-	-	0	2	2
04 P.M	05 P.M	-	-	-	-	-	1	-	2	-	-	-	0	3	3
05 P.M	06 P.M	-	-	-	-	1	-	-	2	-	-	-	0	3	3
06 P.M	07 P.M	-	-	-	-	-	1	-	2	-	-	-	0	3	3
07 P.M	08 P.M	-	-	-	-	-	-	-	4	-	-	-	0	4	4
08 P.M	09 P.M	-	-	-	-	-	1	-	3	-	-	-	0	4	4
09 P.M	10 P.M	-	-	-	-	-	1	-	1	-	-	-	0	2	2
10 P.M	11 P.M	-	-	-	-	-	-	-	5	-	-	-	0	5	5
11 P.M	12 A.M	-	-	-	-	-	1	-	2	-	-	-	0	3	3
12 A.M	01 A.M	-	-	-	-	-	-	-	4	-	-	-	0	4	4
01 A.M	02 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
02 A.M	03 A.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
03 A.M	04 A.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
04 A.M	05 A.M	-	-	-	-	-	1	-	-	-	-	-	0	1	1
05 A.M	06 A.M	-	-	-	-	-	-	-	3	-	-	-	0	3	3
06 A.M	07 A.M	-	-	-	-	-	-	-	3	-	-	-	0	3	3
07 A.M	08 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
T O T A L		0	0	0	1	3	8	0	48	0	0	0	0	60	60

F.Name: TRFKR-BL.WK1 Disk: (AWARAN - 4)

T A B L E
24 HOURS TRAFFIC COUNT

BELA-AWARAN-TURBAT
S E C T I O N

FROM: KARACHI - BELA FOR: B E L A

Count Time From	Count Time To	Animal Drawn Vehicles	Bicycles	Motor Cycles and Socoters	Cars and Jeep	Pick ups, Minibuses & Wagons etc.	Passenger Buses	Tractors and Tractor-Trolleys	Trucks/Tankers and Trailers S/1.2	T/1.2-22	T/1.2-22	S/1.2-222	Total Non Motorized	Total Motorized	Total Vehicles
08 A.M	09 A.M	-	-	-	-	1	-	-	5	-	-	-	0	6	6
09 A.M	10 A.M	-	-	-	-	-	1	-	2	-	-	-	0	3	3
10 A.M	11 A.M	-	-	-	-	-	-	-	3	-	-	-	0	3	3
11 A.M	12 Noon	-	-	-	-	-	-	-	-	-	-	-	0	0	0
12 Noon	01 P.M	-	-	-	-	-	1	-	3	-	-	-	0	4	4
01 P.M	02 P.M	-	-	-	-	1	-	-	-	-	-	-	0	1	1
02 P.M	03 P.M	-	-	-	-	1	1	-	-	-	-	-	0	2	2
03 P.M	04 P.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
04 P.M	05 P.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
05 P.M	06 P.M	-	-	-	-	-	1	-	1	-	-	-	0	2	2
06 P.M	07 P.M	-	-	-	-	-	1	-	1	-	-	-	0	2	2
07 P.M	08 P.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
08 P.M	09 P.M	-	-	-	-	-	1	-	1	-	-	-	0	2	2
09 P.M	10 P.M	-	-	-	-	1	1	-	2	-	-	-	0	4	4
10 P.M	11 P.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
11 P.M	12 A.M	-	-	-	-	-	-	-	1	-	-	-	0	1	1
12 A.M	01 A.M	-	-	-	-	1	-	-	-	-	-	-	0	1	1
01 A.M	02 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
02 A.M	03 A.M	-	-	-	-	-	-	-	3	-	-	-	0	3	3
03 A.M	04 A.M	-	-	-	-	-	-	-	2	-	-	-	0	2	2
04 A.M	05 A.M	-	-	-	-	-	-	-	3	-	-	-	0	3	3
05 A.M	06 A.M	-	-	-	-	-	-	-	-	-	-	-	0	0	0
06 A.M	07 A.M	-	-	-	-	-	1	-	-	-	-	-	0	1	1
07 A.M	08 A.M	-	-	-	-	-	1	-	-	-	-	-	0	1	1
T O T A L		0	0	0	0	5	9	0	29	0	0	0	0	43	43

67

F.Name: TRFKR-TR.WK1 Disk: (AWARAN - 4)

T A B L E

24 HOURS TRAFFIC COUNT

BELA-AWARAN-TURBAT

S E C T I O N

FROM: KARACHI - TURBAT FOR TURBAT

Count Time		Animal Drawn Vehicles	Bicycles	Motor Cycles and Socoters	Cars and Jeep	Pick ups, Minibuses & Wagons etc.	Passenger Buses	Tractors and Tractor-Trolleys	Trucks/Tankers and Trailers				Total Non Motorized	Total Motorized	Total Vehicles
From	To								S/1.2	T/1.2-22	T/1.2-22	S/1.2-222			
08 A.M	09 A.M	-	-	2	-	4	2	-	3	-	-	-	-	11	11
09 A.M	10 A.M	-	-	-	-	5	2	-	2	-	-	-	-	9	9
10 A.M	11 A.M	-	-	2	-	1	-	-	-	-	-	-	-	3	3
11 A.M	12 Noon	-	-	3	2	-	1	-	4	-	-	-	-	10	10
12 Noon	01 P.M	-	-	-	-	2	-	-	3	-	-	-	-	5	5
01 P.M	02 P.M	2	-	2	-	-	-	-	2	-	-	-	2	6	8
02 P.M	03 P.M	-	-	-	-	-	-	-	3	-	-	-	-	3	3
03 P.M	04 P.M	-	-	1	-	2	-	-	-	-	-	-	-	3	3
04 P.M	05 P.M	-	-	-	-	-	1	-	2	-	-	-	-	3	3
05 P.M	06 P.M	-	-	3	-	-	-	-	1	-	-	-	-	4	4
06 P.M	07 P.M	-	-	-	-	-	1	-	1	-	-	-	-	2	2
07 P.M	08 P.M	-	-	-	1	1	-	-	-	-	-	-	-	2	2
08 P.M	09 P.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
09 P.M	10 P.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
10 P.M	11 P.M	-	-	-	-	-	-	-	3	-	-	-	-	3	3
11 P.M	12 A.M	-	-	-	-	-	-	-	5	-	-	-	-	5	5
12 A.M	01 A.M	-	-	-	-	-	-	-	4	-	-	-	-	4	4
01 A.M	02 A.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
02 A.M	03 A.M	-	-	-	-	-	-	-	2	-	-	-	-	2	2
03 A.M	04 A.M	-	-	-	-	-	-	-	1	-	-	-	-	1	1
04 A.M	05 A.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
05 A.M	06 A.M	-	-	-	-	-	-	-	1	-	-	-	-	1	1
06 A.M	07 A.M	-	-	-	-	-	-	-	2	-	-	-	-	2	2
07 A.M	08 A.M	-	-	-	-	-	-	-	3	-	-	-	-	3	3
T O T A L		2	0	13	3	15	7	0	42	0	0	0	2	82	84

BEST AVAILABLE COPY

F.Name: TRFTR-KR.WK1 Disk: (AWARAN - 4)

T A B L E
24 HOURS TRAFFIC COUNT

BELA-AWARAN-TURBAT
S E C T I O N

FROM: TURBAT - KARACHI FOR TURBAT

Count Time From	Count Time To	Animal Drawn Vehicles	Bicycles	Motor Cycles and Socoters	Cars and Jeep	Pick ups, Minibuses & Wagons etc.	Passenger Buses	Tractors and Tractor-Trolleys	Trucks/Tankers and Trailers S/1.2	T/1.2-22	T/1.2-22	S/1.2-222	Total Non Motorized	Total Motorized	Total Vehicles
08 A.M	09 A.M	-	-	4	-	-	-	-	4	-	-	-	-	8	8
09 A.M	10 A.M	-	-	3	-	2	-	-	3	-	-	-	-	8	8
10 A.M	11 A.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
11 A.M	12 Noon	-	-	-	-	9	1	-	6	-	-	-	-	16	16
12 Noon	01 P.M	-	-	2	-	-	2	-	3	-	-	-	-	7	7
01 P.M	02 P.M	-	-	-	1	-	-	-	2	-	-	-	-	3	3
02 P.M	03 P.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
03 P.M	04 P.M	-	-	3	-	-	1	-	2	-	-	-	-	6	6
04 P.M	05 P.M	-	-	-	-	1	-	-	-	-	-	-	-	1	1
05 P.M	06 P.M	-	-	-	-	2	-	-	2	-	-	-	-	4	4
06 P.M	07 P.M	-	-	1	-	2	2	-	2	-	-	-	-	7	7
07 P.M	08 P.M	-	-	3	-	-	-	-	-	-	-	-	-	3	3
08 P.M	09 P.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
09 P.M	10 P.M	-	-	-	-	-	-	-	3	-	-	-	-	3	3
10 P.M	11 P.M	-	-	-	-	2	-	-	1	-	-	-	-	3	3
11 P.M	12 A.M	-	-	-	-	-	1	-	2	-	-	-	-	3	3
12 A.M	01 A.M	-	-	-	-	3	1	-	1	-	-	-	-	5	5
01 A.M	02 A.M	-	-	-	-	1	-	-	-	-	-	-	-	1	1
02 A.M	03 A.M	-	-	-	-	-	-	-	2	-	-	-	-	2	2
03 A.M	04 A.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
04 A.M	05 A.M	-	-	-	-	1	-	-	-	-	-	-	-	1	1
05 A.M	06 A.M	-	-	-	-	-	-	-	-	-	-	-	-	0	0
06 A.M	07 A.M	-	-	-	-	3	-	-	1	-	-	-	-	4	4
07 A.M	08 A.M	-	-	-	-	1	-	-	1	-	-	-	-	2	2
T O T A L		0	0	16	1	27	8	0	35	0	0	0	0	87	87

APPENDIX - B

AGRICULTURAL HOUSEHOLD SURVEY DATA

FILE NAME AWT-AG1.WK1

AWARAN - TURBAT ROAD
Economic-and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 13-10-1989

1. Name of Family Head : Muhammad khan 2. Village : Sharak Turbat

3. Size of Holding: Irrigated : 10 Acre Barani :

4. Source of Irrigation : Karez

5. Major Crops: Date & Rice Minor Crops: Vegetable

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) --- Locals (Rs.)

During Harvest / Sowing 40 to 50

Off Season 40 to 50

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	OKRA	TOMATO	VEGETABLE BALKA	FRUITS Dates
	AREA SOWN (ACRE)		5.0				0.5	0.5	1.0	3.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre		80.00				100.00	100.00	100.00	-
	Fertiliser, Rs/Acre		600.00				300.00	300.00	300.00	-
	Pesticide, Rs/Acre		50.00				100.00	100.00	100.00	-
	Labour, Rs/Acre		2500.00				1250.00	1250.00	1250.00	2500.00
	Transportation of Inputs Rs/K.g.		Already included				Already included	Already included	Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)		0.60				0.80	1.20	0.50	5.00
	Transportation of Outputs to Market Rs/K.g.		0.33				0.33	0.75	0.75	0.75
	Marketed at (City)		Turbat				Local	Local	Karachi	Karachi
	Price Obtained Rs/40 Kg.		A-240.00 B 160.00				200.00	80.00	480	A- 360.00 B- 300.00
	Marketable Surplus (Tonne)		1.00				0.70	1.00	0.5	15.00

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FILE NAME AWT-AG2.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY

Date: 13-10-1989

1. Name of Family Head : LIAQUAT ALI 2. Village : Sharak Turbat

3. Size of Holding: Irrigated : 10 Acre Barani : -

4. Source of Irrigation : KAREZ

5. Major Crops: DATES & RICE Minor Crops: BALKA

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.) 40 to 50 /day

During Harvest / Sowing 40 to 50

Off Season 40 to 50

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE BALKA	FRUITS DATES
	AREA SOWN (ACRE)		5.0						2.0	3.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre		240.00						200.00	-
	Fertiliser, Rs/Acre		650.00						75.00	-
	Pesticide, Rs/Acre		125.00						200.00	-
	Labour, Rs/Acre		2500.00						1200.00	2500.00
	Transportation of Inputs Rs/K.g.									
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)		0.60						0.80	6.00
	Transportation of Outputs to Market Rs/K.g.		0.33						0.75	0.90
	Marketed at (City)		Turbat						Karachi	Karachi
	Price Obtained Rs/40 kg.		200.00						440.00	A = 360 B = 275
	Marketable Surplus (Tonne)		2.50						1.50	15.00

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FILE NAME AUT-AG3.WK1 DISK NAME FIELD DATA

AWARAN TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVLY -

Date: 13-10-1989

1. Name of Family Head : Muhmmad Waris 2. Village : Sharak

3. Size of Holding: Irrigated : 15 Acre Barani :

4. Source of Irrigation : KAREZ

5. Major Crops: DATES & RICE Minor Crops: Vegatable

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) --- Locals (Rs.)

During Harvest / Sowing 40 TO 50

Off Season 40 TO 50

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	TOMATO	VEGATABLE	FRUITS
APLA SOWN (ACRE)		7.00					1.00	2.00	5.00
B. INPUTS PER ACRE									
Seed, Rs/Acre		85.00					100.00	100.00	-
Fertiliser, Rs/Acre		650.00					250.00	250.00	-
Pesticide, Rs/Acre		75.00					150.00	150.00	
Labour, Rs/Acre		2500.00					1300.00	1300.00	2500.00
Transportation of Inputs Rs/K.g.		Already included					Already included	Already included	Already included
C. OUTPUT PER ACRE									
Av. Production (T/Acre)		0.50					1.50	0.60	5.00
Transportation of Outputs to Market Rs/K.g.		0.35					1.70	0.75	0.75
Marketed at (City)		Turbat					Local	Karachi	Karachi
Price Obtained Rs/40 Kg.		A- 260 B- 150					100.00	480.00	375.00
Marketable Surplus (Tonne)		3.00					1.00	1.00	24.00

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FILE NAME AWT-AG4.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 13-10-1989

1. Name of Family Head : Mohammad Bux 2. Village : SHARAK TURBAT

3. Size of Holding: Irrigated : 10 Acer Barani :

4. Source of Irrigation : karez

5. Major Crops: RICE,DATE,BAKLA Minor Crops: Vegatable

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.) 40

During Harvest / Sowing 40 to 50

Off Season 40 to 50

Proprotion of Labour used * N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	BALKA	BAJRA	RAPSEED & MUSTARD	VEGATABLE TOMATO	FRUITS
	AREA SOWN (ACRE)		3.0			4.0			1.0	2.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre (3 Ac)		80.00			200.00			100.00	-
	Fertiliser, Rs/Acre		600.00			600.00			300.00	-
	Pesticide, Rs/Acre		100.00			150.00			100.00	-
	Labour, Rs/Acre		2500.00			1500.00			2500.00	2500.00
	Transportation of Inputs Rs/K.g.		Already included			Already included			Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre) (3 Acer)		0.50			0.60			2.00	6.00
	Transportation of Outputs to Market Rs/K.g.		0.33			0.33			0.50	0.75
	Marketed at (City)		Turbat			Turbat			80 - 100	karachi
	Price Obtained Rs/40 Kg.		160 - 240			180.00			Turbat	360.00
	Marketable Surplus (Tonne)		1.00			2.00			1.50	15.00

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FILE NAME AWT-A05 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 13-10-1989

1. Name of Family Head : JAN MOHAMMAD 2. Village : SHAPAK

3. Size of Holding: Irrigated : 20 Acr Barani :

4. Source of Irrigation : KAREZ

5. Major Crops: DATES & RICE Minor Crops: BALKA & VEGATABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.) 50 /day

During Harvest / Sowing Locals

Off Season Locals

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGATABLE BALKS	FRUITS
	AREA SOWN (ACRE)		10						3	7
B.	INPUTS PER ACRE									
	Seed, Rs/Acre		100.00						-	-
	Fertiliser, Rs/Acre		725.00						600.00	-
	Pesticide, Rs/Acre		175.00						200.00	-
	Labour, Rs/Acre		2500.00						2000.00	2500.00
	Transportation of Inputs Rs/K.g.									
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)		0.60						0.60	5.00
	Transportation of Outputs to Market Rs/K.g.		0.35						0.50	0.75
	Marketed at (City)		TURBAT						KARACHI	KARACHI
	Price Obtained Rs/40 Kg.		240.00						400.00	1 400 2 300
	Marketable Surplus (Tonne)		5.00						1.50	30.00

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FILE NAME AWT-AG6.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 13-10-1989

1. Name of Family Head : SARDAR ABDUL REHMAN 2. Village : ABSAR TURBAT

3. Size of Holding: Irrigated : 30 Acre Barani :

4. Source of Irrigation : T.W.

5. Major Crops: DATES (FRUIT) Minor Crops:

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.) 50/- Per day

During Harvest / Sowing Same

Off Season Same

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	LEMON & MANGO	VEGATABLE A - BALKA B - TOMATO	DATES
	AREA SOWN (ACER)							10	5	15
B	Seed, Rs/Acre								100.00	-
	Fertiliser, Rs/Acre								500.00	-
	Pesticide, Rs/Acre								150.00	-
	Labour, Rs/Acre							6000.00	6000.00	6000.00
	Transportation of Inputs Rs/K.g.								Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)								A 0.8 A 1.2	2.00
	Transportation of Outputs to Market Rs/K.g.								A-0.60 B-0.25	0.60
	Marketed at (City) Price Obtained Rs/40 kg.							Locally Consumed	A Karachi B Turbat A- 480/40 kg	karachi A 360.00
	Marketable Surplus (Tonne)								B- 60/40Kg A: 3.0 B: 0.5	B 120.00 30

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FILE NAME AWT-AG7.WK1

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 13-10-1989

1. Name of Family Head : ROSOOL BUKSH 2. Village : ABSAR TURBAT

3. Size of Holding: Irrigated : 20 ACRE Barani : -

4. Source of Irrigation : Tube Well

5. Major Crops: DATES , BAKLA Minor Crops: VEGETABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) 50/ Locals (Rs.)

During Harvest / Sowing " Same

Off Season " Same

Proprotion of Labour used " N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED &	VEGETABLE A = BAKKA B = TOMTO	FRUITS DATES
	AREA SOWN (ACRE)	-	-	-	-	-	-	-	5.0	15.0
B.	INPUTS PER ACRE									
	SEED RS/Acer									
	Fertiliser, Rs/Acre								100.00	
	Pesticide, Rs/Acre								50.00	
	Labour, Rs/Acre								150.00	
									6000.00	6000.00
	Transportation of									
C.	Inputs Rs/K.g.								A = .80	
									B = 1.2	
	OUTPUT PER ACRE									
									A = .60	2.50
	Av. Production (T/Acre)								B = .25	
	Transportation of Out-									0.65
	puts to Market Rs/k.g.								KAR	KAR
									Local	
	Marketed at (City)									
	Price Obtained Rs/40 Kg.								A = 480/40 Kg	A = 320
	Marketable Surplus (Tonne)								B = 20/40 Kg	B = 120
									A : 2.0	-
									B : 1.0	35

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FILE NAME AWT-AG2.WK1 DISK NAME FIELD DATA

KHARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 13-10-1989

1. Name of Family Head : SHEY ALI MUHMMAD 2. Village : TURBAT

3. Size of holding: Irrigated : 11 ACRE Barani :

4. Source of Irrigation : Tube Well

5. Major Crops: DATES Minor Crops: VEGATABLE / BAKLA

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Lecais (Rs.) LOCAL

During Harvest / Sowing - 50.00

Off Season - 50.00

Proprotion of Labour used - N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	OKRA	VEGATABLE BALKA	FRUITS DATES
	AREA SOWN (ACRE)	-	-	-	-	-	-	1.00	3.00	7.00
B.	INPUTS PER ACRE									
	Seed, Rs/Acre							100.00	100.00	-
	Fertiliser, Rs/Acre							200.00	550.00	-
	Pesticide, Rs/Acre							200.00	225.00	-
	Labour, Rs/Acre							5000.00	6000.00	6000.0
	Transportation of Inputs Rs/k.g.							Already included	Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)							2.00	0.60	3.0
	Transportation of Outputs to Market Rs/k.g.							0.25	0.25	0.6
	Marketed at (City)							Local	Local	
	Price Obtained Rs/40 k.g.							80.00	430.00	A = 360 B = 125
	Marketable Surplus (Tonne)							1.50	1.50	20.0

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FILE NAME AWT-A09.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT R&D
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 13-10-1989

1. Name of Family Head : QADIR BUKSH 2. Village : ABSAR TURBAT

3. Size of Holding: Irrigated : 20 ACRE Barani :

4. Source of Irrigation : TUBE WELL

5. Major Crops: DATES Minor Crops: VEGATABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	TOMATO	VEGATABLE BALKA	FRUITS DATES
	AREA SOWN (ACRE)		-					2.0	5.0	15.0
B.	INPUTS PER ACRE							150.00	125.00	
	Seed, Rs/Acre							300.00	600.00	
	Fertiliser, Rs/Acre							150.00	200.00	
	Pesticide, Rs/Acre							3000.00	6000.00	6000.00
	Labour, Rs/Acre									
	Transportation of Inputs Rs/K.g.							Already included	Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)							1.50	A = .6 T/AC	2.00
	Transportation of Outputs to Market Rs/K.g.							0.30	0.60	0.60
	Marketed at (City)							Local	Karachi	Karachi
	Price Obtained Rs/40 kg.								450.00	A = 360 B = 120
	Marketable Surplus (Tonne)									28.00

FILE NAME ANT-AG10.WK1 DISK NAME FIELD DATA

AWAMI - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 13-10-1989

1. Name of Family Head : DEHKAN MOHAMMAD 2. Village : ABSAR TURBAT

3. Size of Holding: Irrigated : 10 ACRE Barani :

4. Source of Irrigation : Tube Well

5. Major Crops: DATES & BARLEY Minor Crops: VEGATABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & TOMATO	VEGATABLE A = BALKA	FRUITS DATES
	AREA SOWN (ACRE)	-	-	-	-	-	-	2.0	5.0	3.0
	INPUT PER ACRE									
	Seed, Rs/Acre							200.00	100.00	
	Fertiliser, Rs/Acre							300.00	500.00	
	Pesticide, Rs/Acre							100.00	150.00	
	Labour, Rs/Acre							2500.00	5000.00	6000.00
	Transportation of Inputs Rs/K.g.							Already included	Already included	Already included
C.	OUTPUT PER ACRE									2.5 TON
	Av. Production (T/Acre)							1.75	0.60	3.50
	Transportation of Outputs to Market Rs/K.g.							0.50	0.75	0.75
	Marketed at (City)							Local	KARACHI LOCAL	KARACHI
	Price Obtained Rs/40 kg.							60.00	A = 48/40 Kg	A = 360 B = 120
	Marketable Surplus (Tonne)							3.00	2.75	10.00

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AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 13-10-1989

1. Name of Family Head : NAWABZDA NOOR AHMED 2. Village : SAMI TURBAT DISTRICT

3. Size of Holding: Irrigated : 10 ACRE Barani :

4. Source of Irrigation : KAREZ

5. Major Crops: RICE & DATES Minor Crops: VEGETABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	TOMATO	OKRA	VEGETABLE BALKA	FRUITS DATES
	AREA SOWN (ACER)		4'				0.5	0.5	2.0	3.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre		300.00				100.00	125.00	200.00	-
	Fertiliser, Rs/Acre		500.00				300.00	150.00	150.00	-
	Pesticide, Rs/Acre		-				100.00	100.00	100.00	-
	Labour, Rs/Acre		2500				2500.00	2500.00	2500.00	7500.00
	Transportation of Inputs Rs/k.g.		Already included				Already included	Already included	Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)		0.80				2.50	2.00	0.80	8.00
	Transportation of Outputs to Market Rs/k.g.		0.30				0.30	0.30	0.3/0.5	0.75
	Marketed at (City)		TURBAT				TURBAT	TURBAT	TURBAT/BELA	KARACHI
	Price Obtained Rs/40 k.g.		180.00				60.00	140.00	480.00	A : 370 B : 220
	Marketable Surplus (Tonne)		2.50				1.00	1.00	1.50	20.00

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FILE NAME AWT-AG12.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ZONE
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 13-10-1989

1. Name of Family Head : MIR MOHAMMAD AMIN 2. Village : SAMI TURBAT

3. Size of Holding: Irrigated : 12 ACRE Barani :

4. Source of Irrigation : KAREZ

5. Major Crops: DATES Minor Crops: VEGETABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS-

TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	TOMATO	VEGETABLE BALKA	FRUITS DATES
AREA SOWN (ACRE)		4.0					1.0	2.0	5.0
B. INPUTS PER ACRE									
Seed, Rs/Acre		300.00					120.00	120.00	-
Fertiliser, Rs/Acre		500.00					300.00	300.00	-
Pesticide, Rs/Acre		-					50.00	50.00	-
Labour, Rs/Acre		-					1250.00	1250.00	2500.00
Transportation of Inputs Rs/K.g.		Already included					Already included	Already included	Already included
C. OUTPUT PER ACRE									
Av. Production (T/Acre)		0.20					1.20	0.60	5.00
Transportation of Outputs to Market Rs/K.g.		0.3/0.5					0.3 to 0.5	KAR 0.3 to 0.5	0.07 0.70
Marketed at (City)		TURBAT/BELA					TURBAT/BELA	TURBAT/BELA	KARACHI
Price Obtained Rs/40 kg.		150.00					60.00	480.00	A : 320.00 B : 160.00
Marketable Surplus (Tonne)		1.50	TOTAL				1.00	1.00	22.00

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FILENAME AWT-AG13.WK1 DAISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 13-10-1989

1. Name of Family Head : MR. ESSA KHAN 2. Village : SAMI TURBAT

3. Size of Holding: Irrigated : 11 ACER Barani :

4. Source of Irrigation : KAREZ

5. Major Crops: RICE & DATES Minor Crops: VEGETABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	OKRA	VEGETABLE	FRUITS
	AREA SOWN (ACRE)		5.0					1.0	2.0	3.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre		300.00					150.00	100	-
	Fertiliser, Rs/Acre		500.00					250.00	250.00	-
	Pesticide, Rs/Acre		-					100.00	100.00	-
	Labour, Rs/Acre		2500.00					1250.00	1250.00	2500.00
	Transportation of Inputs Rs/K.g.		Already included					Already included	Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)		0.60					1.50	0.80	5.00
	Transportation of Outputs to Market Rs/K.g.		0.30					0.00	0.75	0.75
	Marketed at (City)		TURBAT					LOCAL	KARACHI	KARACHI
	Price Obtained Rs/40 Kg.		160 - 200					160.00	480.00 20 /AC	A : 360.00 B : 300.00
	Marketable Surplus (Tonne)		2.00					1.25	200.00	14.00

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FILE NAME AWT-AG14.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 13-10-1989

1. Name of Family Head : MIR ASAD 2. Village : SAMI TURBAT

3. Size of Holding: Irrigated : 5 ACRE Barani :

4. Source of Irrigation : KAREZ

5. Major Crops: DATES & RICE Minor Crops: VAGETABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE	FRUITS
	AREA SOWN (ACRE)		3.0							2.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre		250.00							-
	Fertiliser, Rs/Acre		480.00							-
	Pesticide, Rs/Acre		50.00							-
	Labour, Rs/Acre		2500.00							2500.00
	Transportation of Inputs Rs/K.g.		Already included							Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)		1.00							5.00
	Transportation of Outputs to Market Rs/K.g.		0.35							0.75
	Marketed at (City)		TURBAT							KARACHI
	Price Obtained Rs/40 Kg.		180.00							A : 380.00 B : 220.00
	Marketable Surplus (Tonne)		0.50							10.00

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FILE NAME AWT-AG15.WK1 DISK NAME FIELD DATA

Awaran - Turbat road
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY

Date: 13-10-1989

1. Name of Family Head : SHAHNAWZ KHAN 2. Village : SAMI TURBA.

3. Size of Holding: Irrigated : 7 ACRE Barani :

4. Source of Irrigation : KAREZ

5. Major Crops: RICE & DATE Minor Crops: VEGETABLE

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.) LOCAL

During Harvest / Sowing 40.00 TO 50.00

Off Season 40.00 TO 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE BALKA	FRUITS DATES
AREA SOWN (ACRE)		2.0						2.0	3.0
B. INPUTS PER ACRE									
Seed, Rs/Acre		250.00						100.00	-
Fertiliser, Rs/Acre		600.00						350.00	-
Pesticide, Rs/Acre		150.00						150.00	-
Labour, Rs/Acre		2500.00						1250.00	2500.00
Transportation of Inputs Rs/k.g.		Already included						Already included	Already included
C. OUTPUT PER ACRE									
Av. Production (T/Acre)		1.50						1.00	4.50
Transportation of Outputs to Market Rs/k.g.		0.35						0.25/0.40	0.65
Marketed at (City)		TURBAT						TURBAT/BELA	DARACHI
Price Obtained Rs/40 Kg.		60 to 200						480.00	A : 375 B : 300
Marketable Surplus (Tonne)		2.00						1.50	13.00

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FILE NAME AWT-AG16.WK1 DISK NAME FIELD DATA

AWARAN - THRDAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 15-10-1989

1. Name of Family Head : Mir Murad Jan 2. Village : Jhaljhao/Awaran

3. Size of Holding: Irrigated : 20 ACRE Barani :

4. Source of Irrigation : Rainfull

5. Major Crops: Barly Minor Crops: Wheat,Jawar,Maoong,Onion

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing Same 30 to 35

Off Season - 30 to 35

Proprotion of Labour used N.A N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MOONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE ONION	FRUITS
	AREA SOWN (ACRE)	5.0		10.0	2.0	2.0			1.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	90.00		100.00	20.00	30.00			200.00	
	Fertiliser, Rs/Acre	100.00		100.00	-	-			200.00	
	Pesticide, Rs/Acre	-		-	-	-			-	
	Labour, Rs/Acre	300.00		900.00	450.00	700.00			3000.00	
	Transportation of Inputs Rs/k.g.	Already included		Already included	Already included	Already included			Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T)	0.50		0.45	0.35	0.25			4.00	
	Transportation of Outputs to Market Rs/k.g.	N.A		0.60	0.60	N.A			0.60	
	Marketed at (City)	Locally Consume		Karachi	Karachi	Locally Consume			Karachi	
	Price Obtained Rs/40 Kg.	100.00		100.00	80.00	-			80.00	
	Marketable Surplus (Tonne)	1.50 -		3.00	0.60	-			3.00	

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FILE NAME AWT-AG17.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 15-10-1989

1. Name of Family Head : Mir Lal Jan 2. Village : Jhaljhao/Awaran

3. Size of Holding: Irrigated : 14 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Barley Minor Crops: Wheat,Jawar,Onain

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 30 to 40

Off Season 30 to 40

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	6	BARLEY	JAWAR	MOONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE	FRUITS
	AREA SOWN (ACRE)	5.0		5.0	2.0	1.0			1.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100.00		80.00	30.00	20.00			150.00	
	Fertiliser, Rs/Acre	120.00		100.00	-	-			200.00	
	Pesticide, Rs/Acre	-		-	-	-			-	
	Labour, Rs/Acre	1000.00		1000.00	500.00	750.00			3500.00	
	Transportation of Inputs Rs/K.g.	Already included		Already included	Already included	Already included			Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T)	0.60		0.50	0.40	0.30			4.00	
	Transportation of Outputs to Market Rs/K.g.	N.A		0.60		N.A			0.30	
	Marketed at (City)	Locally Consume		Karachi	Locally Consume	Locally Consume			Turbat	
	Price Obtained Rs/40 Kg.	-		100.00					60-8000	
	Marketable Surplus (Tonne)	2.00		1.00	1.00	-			3.00	

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FILE NAME AWT-AG18.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 15-10-1989

1. Name of Family Head : Sofi Karim Bux 2. Village : Awaran

3. Size of Holding: Irrigated : 18 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Barley Minor Crops: Wheat,Moong,Onion

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.) 30/day

During Harvest / Sowing

Off Season

Proprotion of Labour used

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MOONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE ONION	FRUITS
	AREA SOWN (ACRE)	5.0		10.0		2.0			1.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100.00		100.00		40.00			200.00	
	Fertiliser, Rs/Acre	120.00		120.00		-			200.00	
	Pesticide, Rs/Acre	-		-		-			-	
	Labour, Rs/Acre	900.00		900.00		900.00			3000.00	
	Transportation of Inputs Rs/K.g.	Already included		Already included		Already included			Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.50		0.45		0.25			4.00	
	Transportation of Outputs to Market Rs/K.g.	N.A		0.60		N.A			0.30	
	Marketed at (City)	Locally Consume		Karachi		Locally Consume			Turbat	
	Price Obtained Rs/40 Kg.	-		100.00		-			70.00	
	Marketable Surplus (Tonne)	-		3.00		-			3.00	

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AWAPAN - TUFEPT FCFD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY

Date: 15-10-1989

Name of Family Head : Fahmat Gull Village : Awaran

Size of Holding: Irrigated : 15 ACRES Barani : -

Source of Irrigation : Tubewell

Major Crops: Barley, Minor Crops: Wheat, Jawar, Moongand Onion

Agricultural Inputs / Outputs

Labour Wages (Daily) Locals (Rs.)

During Harvest / Sowing 20.00

Off Season 30.00

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MOONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE ONION	FRUITS
AREA SOWN (ACRE)	5.0		5.0	2.0	2.0			1.0	
INPUTS PER ACRE									
Seed, Rs/Acre	100.00		20.00	20.00	30.00			150.00	
Fertiliser, Rs/Acre	100.00		100.00	-	-			200.00	
Pesticide, Rs/Acre	-		-	-	-			-	
Labour, Rs/Acre	1000.00		1600.00	500.00	730.00			3000.00	
Transportation of Inputs Rs/m.g.	Already included		Already included	Already included	Already included			Already included	
OUTPUT PER ACRE									
Av. Production (T/Acre)	0.50		0.50	0.35	0.25			4.00	
Transportation of Outputs to Market Rs/m.g.	N.A		[illegible]	0.00	N.A			0.60	
Marketed at (City)	Locally Consume		Karachi	Karachi	Locally Consume			Karachi	
Price obtained Rs/40 kg.	100.00		100.00	80.00	320.00			70.00	
Marketable Surplus (Tonne)	1.50		1.00	0.60	0.40			3.00	

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FILE NAME AWI-AG2D.WK1 DISKNAME FIELD DATA

AWARAN TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY

Date: 15-10-1989

1. Name of Family Head : Mir Rosul Bux 2. Village : Awaran

3. Size of Holding: Irrigated : 12 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Barley,Wheat Minor Crops: Jawar,Moong

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 40.00

Off Season 40.00

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MOONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE	FRUITS
AREA SOWN (ACRE)	5.0		5.0	1.0	1.0				
B. INPUTS PER ACRE									
Seed, Rs/Acre	100.00		80.00	25.00	25.00				
Fertiliser, Rs/Acre	100.00		100.00	-	-				
Pesticide, Rs/Acre			-	-	-				
Labour, Rs/Acre	900.00		900.00	450.00	450.00				
Transportation of Inputs Rs/K.m.	Already included		Already included	Already included	Already included				
C. OUTPUT PER ACRE									
Av. Production (T/Acre)	0.50		0.50	0.40	0.25				
Transportation of Outputs to Market Rs/K.m.	N.A		0.60	0.30	N.A				
Marketed at (City)	Locally Consume		Karachi	Turbat	Locally Consume				
Price Obtained Rs/40 Kg.	-		100.00	80.00	320.00				
Marketable Surplus (Tonne)	1.25		1.50	0.25	0.15				

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FILE NAME AWT-AG21.WK1

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY

Date: 15-10-1989

1. Name of Family Head : Mir Murad Shaka 2. Village :

3. Size of Holding: Irrigated : 15 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Barley,Wheat Minor Crops: Moong,Onion

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 35.00

Off Season 35.00

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MOONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE ONION	FRUITS
AREA SOWN (ACRE)	5.0		5.0	2.0	1.0			2.0	
B. INPUTS PER ACRE									
Seed, Rs/Acre	90.00		80.00	20.00	20.00			200.00	
Fertiliser, Rs/Acre	100.00		100.00	-	-			200.00	
Pesticide, Rs/Acre	-		-	-	-			-	
Labour, Rs/Acre	900.00		900.00	450.00	700.00			3500.00	
Transportation of Inputs Rs/K.g.	Already included		Already included	Already included	Already included			Already included	
C. OUTPUT PER ACRE									
Av. Production (T/Acre)	0.50		0.50	0.35	0.30			3.50	
Transportation of Outputs to Market Rs/K.g.	N.A		0.60	0.60	N.A			0.30	
Marketed at (City)	Locally Consume		Karachi	Karachi	Locally Consume			Turbat	
Price Obtained Rs/40 Kg.	90.00		100.00	80.00	360.00			60.00	
Marketable Surplus (Tonne)	1.50		1.00	0.60	0.20			5.00	

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FILLNAME AUT AG22.WK1

AVARAN - TORBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-1989

1. Name of Family Head : Mr.Mubarak 2. Village : Dela Town

3. Size of Holding: Irrigated : 12 Acre Barani :

4. Source of Irrigation : Barani

5. Major Crops: Wheat Minor Crops: Jawar, Til, Maize, Okra, Paleze

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 40.00

Off Season 40.00

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	RICE	TIL	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE OKRA	PALEZE
AREA SOWN (ACRE)	5.0		1/2	2.0	2.0			1/2	2.0
B. INPUTS PER ACRE									
Seed, Rs/Acre	100.00		100.00	80.00	100.00			120.00	120.00
Fertiliser, Rs/Acre	100.00		125.00		125.00			125.00	100.00
Pesticide, Rs/Acre								-	-
Labour, Rs/Acre	1000.00		1000.00	1000.00	1000.00			2500.00	2500.00
Transportation of Inputs Rs/k.m.	Already included		Already included	Already included	Already included			Already included	Already included
C. OUTPUT PER ACRE									
Av. Production (T/Acre)	0.80		0.22	0.40	5.00			4.00	5.00
Transportation of Outputs to Market Rs/k.m.	N.A		N.A	0.25	0.25			0.25	0.25
Marketed at (City)	Locally Consume		Locally Consume	Hub Town	Hub Town			Hub Town	Hub Town
Price Obtained Rs/40 kg.	100.00			80.00	160.00			120.00	120.00
Marketable Surplus (Tonne)	2.50			0.60	4.00			2.00	8.00

FILE NAME AWT-AG23.WK1

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-1989

1. Name of Family Head : Uaed Ali Khan 2. Village : Bela Twon

3. Size of Holding: Irrigated : 12 ACRE Barani :

4. Source of Irrigation : Barani

5. Major Crops: Wheat,Paleze Minor Crops: Maize, Jawar, Til, Vegetable

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 40.00

Off Season 40.00

Proprotion of Labour used

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	PELEZE	TIL	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE OKRA/TOMATO	FRUITS
	AREA SOWN (ACRE)	5.0	3.0	1.0	1.0	1.0			1.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	80.00	100.00	100.00	50.00	80.00			150.00	
	Fertiliser, Rs/Acre	120.00	150.00	100.00	-	120.00			120.00	
	Pesticide, Rs/Acre	-	-	-	-	-			-	
	Labour, Rs/Acre	1000.00	2500.00	1000.00	1000.00	1000.00			2500.00	
	Transportation of Inputs Rs/K.g.	Already included	Already included	Already included	Already included	Already included			Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.60	5.00	0.22	0.40	5.00			4.00	
	Transportation of Outputs to Market Rs/K.g.	N.A	0.40	0.25	0.25	0.25			0.25	
	Marketed at (City)	Locally Consume	Karachi	Hub Town	Hub Town	Hub Town			Hub Town	
	Price Obtained Rs/40 Kg.	100.00	120.00	400.00	80.00	160.00			160/80	
	Marketable Surplus (Tonne)	1.50	14.00	0.15	0.25	4.00			2.00	

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FILE NAME AWT-AG24.WK1

AWAMI TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-1989

1. Name of Family Head : Mr.Khuda Bux 2. Village : Bela

3. Size of Holding: Irrigated : 5 ACRE Barani :

4. Source of Irrigation : Barani

5. Major Crops: Wheat, Paleze Minor Crops: Vegetable

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 45.00

Off Season 45.00

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	PALEZE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE TOMMATO	OKRA
AREA SOWN (ACRE)	2.0	2.0						1/2	1/2
B. INPUTS PER ACRE									
Seed, Rs/Acre	100.00	100.00						100.00	120.00
Fertiliser, Rs/Acre	100.00	125.00						300.00	100.00
Pesticide, Rs/Acre									
Labour, Rs/Acre	900.00	2500.00						2500.00	2500.00
Transportation of Inputs Rs/K.g.	Already included	Already included						Already included	Already included
C. OUTPUT PER ACRE									
Av. Production (T/Acre)	0.60	4.50						5.00	4.00
Transportation of Outputs to Market Rs/K.g.	N.A	0.40						0.30	0.30
Marketed at (City)	Locally consume	Karachi						Karachi	Karachi
Price Obtained Rs/40 Kg.	N.A	100-150						120-160	120.00
Marketable Surplus (Tonne)	N.A	4.00						2.00	2.00

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FILE NAME AWT-AG25.UK1

AWAMAN TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-1989

1. Name of Family Head : Muhammad Ibrahim 2. Village : Dala Town

3. Size of Holding: Irrigated : 12 ACRE Barani :

4. Source of Irrigation : Irrigated

5. Major Crops: Wheat, Paleze Minor Crops: Maize, Jawar, Vegitable, Til, Chillies

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 40.00

Off Season 40.00

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

TYPE OF CROP	WHEAT	PALEZE	TIL	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE	FRUITS
AREA SOWN (ACRE)	5.0	3.0	1/2	2.0	1			1/2	
B. INPUTS PER ACRE									
Seed, Rs/Acre	80.00	100.00	100.00	20.00	60.00			100.00	
Fertiliser, Rs/Acre	100.00	150.00	80.00	-	100.00			100.00	
Pesticide, Rs/Acre				-	-			-	
Labour, Rs/Acre	1000.00	2500.00	750.00	750.00	750.00			2500.00	
Transportation of Inputs Rs/K.m.	Already included	Already included	Already included	Already included	Already included			Already included	
C. OUTPUT PER ACRE									
Av. Production (T/Acre)	0.60	5.00	0.20	0.35	5.00			4.00	
Transportation of Out-Inputs to Market Rs/K.m.	N.A	0.40	Locally Consume	0.40	0.40			0.40	
Marketed at (City)	Locally	Karachi		Karachi	Karachi			Karachi	
Price Obtained Rs/40 Kg.		80.00		80.00	160.00			80-100	
Marketable Surplus (tonne)	-	14.00	-	0.60	4.00			1.00	

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FILE NAME AWT-AG26.WKI

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-1989

1. Name of Family Head : Mr.Essa 2. Village : Bala Wahi

3. Size of Holding: Irrigated : 7.5 ACRE Barani :

4. Source of Irrigation : Barani

5. Major Crops: Wheat Minor Crops: Paleze, Tomato

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 40.00

Off Season 40.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE TOMMATO	PALEZE
	AREA SOWN (ACRE)	5.0							1/2	2
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	80.00							120.00	120.00
	Fertiliser, Rs/Acre	125.00							300.00	150.00
	Pesticide, Ps/Acre	-							-	-
	Labour, Rs/Acre	900.00							2500.00	2500.00
	Transportation of Inputs Rs/K.g.	Already included							Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.60							5.00	4.00
	Transportation of Outputs to Market Rs/K.g.	N.A							N.A	0.30
	Marketed at (City)	Locally Consume							Locally Consume	Karachi
	Price Obtained Ps/40 Kg.	100.00							100.00	100-120
	Marketable Surplus (Tonne)	2.00							2.00	7.00

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FILE NAME AE1-A027.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-1989

1. Name of Family Head : Mr.Umer 2. Village : Bala

3. Size of Holding: Irrigated : 5.5 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Wheat Minor Crops: Paleze, Okra

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	RAPSEED & MUSTARD	VEGETABLE OKRA	FRUITS PALEZE
	AREA SOWN (ACRE)	3.0			1.0				0.5	1.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100			30				100	100
	Fertiliser, Rs/Acre	200			-				150	200
	Pesticide, Rs/Acre	-			-				-	-
	Labour, Rs/Acre	750			900				2700	2700
	Transportation of Inputs Rs/K.g.	Already included			Already included				Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.8			0.4				5.00	4.00
	Transportation of Outputs to Market Rs/K.g.	N.A			N.A				N.A	0.25
	Marketed at (City)	Locally Consume			Locally Consume				Locally Consume	Hub town
	Price Obtained Rs/40 Kg.	100			80				160	160
	Marketable Surplus (Tonne)	1.00			0.25				2.00	3.00

BEST AVAILABLE COPY

FILE NAME AWT-AG20.WP1

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-19

1. Name of Family Head : Mr.Suleman 2. Village :

3. Size of Holding: Irrigated : 6 ACRE Barani :

4. Source of Irrigation : Barani

5. Major Crops: Wheat Minor Crops: Jawar, Maize, Til Tomato, Okra

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 45.00

Off Season 45.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	TOMMATO	VEGETABLE OKRA	FRUITS
	AREA SOWN (ACRE)	3.0			1.0	1.0		1/2	1/2	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100			50	70		125	125	
	Fertiliser, Rs/Acre	150			-	100		250	125	
	Pesticide, Rs/Acre	-			-	-		-	-	
	Labour, Rs/Acre	900			900	900		2750	2750	
	Transportation of Inputs Rs/K.g.	Already included			Already included	Already included		Already included	Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.6			0.35	4.5		4.5	4.5	
	Transportation of Outputs to Market Rs/K.g.	N.A			N.A	0.25		0.25	0.25	
	Marketed at (City)	Locally Consume			Locally Consume	Hub Town		Hub/bela Town	Hub/bela Town	
	Price Obtained Rs/40 Kg.	110			80	140		120	160	
	Marketable Surplus (Tonne)	1.00			0.25	4.00		2.00	2.00	

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FILE NAME AWT-AG29.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 16-10-1989

1. Name of Family Head : Mr.Ahmed 2. Village : Bela Town

3. Size of Holding: Irrigated : 12 ACRE Barani :

4. Source of Irrigation : Barani

5. Major Crops: Wheat Minor Crops: Paleze, Tomato, Okra

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	TOMMATO	VEGETABLE OKRA	FRUITS PALEZE
	AREA SOWN (ACRE)	5.0			2.0	1.0		1/2	1/2	3.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100.00			30.00	70.00		125.00	125.00	100.00
	Fertiliser, Rs/Acre	100.00			-	100.00		250.00	125.00	150.00
	Pesticide, Rs/Acre	-			-	-		-	-	
	Labour, Rs/Acre	750.00			750.00	700.00		2500.00	2500.00	2500.00
	Transportation of Inputs Rs/K.g.	-			-	-		-	-	-
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.70			0.40	5.00		4.50	4.50	5.00
	Transportation of Outputs to Market Rs/K.g.	N.A			N.A	0.25		0.25	0.25	0.30
	Marketed at (City)	Locally Consumed			Locally Consumed	Hub Twon		Hub Twon	Hub Twon	Karachi
	Price Obtained Rs/40 Kg.	-			-	140.00		80 - 120	12 - 160	120.00
	Marketable Surplus (Tonne)	2.00			4.00	2.00		2.00	2.00	14.00

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FILE NAME AWT-AG30.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 16-10-1989

1. Name of Family Head : Mr.Dost Muhammad 2. Village : Basis Town

3. Size of Holding: Irrigated : 6 ACRE Barani :

4. Source of Irrigation : Barani

5. Major Crops: Wheat Minor Crops: Paleze, Okra, Tomato

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 45.00

Off Season 45.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	TOMATO	VEGETABLE OKRA	FRUITS PALEZE
	AREA SOWN (ACRE)	2.0						1.0	1.0	2.0
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100.00						100.00	125.00	125.00
	Fertiliser, Rs/Acre	100.00						250.00	125.00	125.00
	Pesticide, Rs/Acre	-						-	-	-
	Labour, Rs/Acre	750.00						2750.00	2750.00	2750.00
	Transportation of Inputs Rs/K.g.	Already included						Already included	Already included	Already included
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.80						5.00	4.50	4 - 5.0
	Transportation of Outputs to Market Rs/K.g.	N.A						0.25	0.25	0.25
	Marketed at (City)	Locally consume						Hub twon	Hub twon	Hub twon
	Price Obtained Rs/40 Kg.	-						120.00	120.00	160.00
	Marketable Surplus (Tonne)	-						4.00	4.00	8.00

BEST AVAILABLE COPY

FILENAME AWT-AG31.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 16-10-1989

1. Name of Family Head : Mr.Usman Village :

3. Size of Holding: Irrigated : 4 ACRE Barani : Bela Town

4. Source of Irrigation : Barani

5. Major Crops: Wheat Minor Crops: Tomato, Okra

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 50.00

Off Season 50.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	BAJRA	TOMATO	VEGETABLE OKRA	FRUITS
	AREA SOWN (ACRE)	3.0						0.5	0.5	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100.00						120.00	120.00	
	Fertiliser, Rs/Acre	150.00						300.00	100.00	
	Pesticide, Rs/Acre	-						-	-	
	Labour, Rs/Acre	800.00						2500.00	2500.00	
	Transportation of Inputs Rs/K.g.	Already included						Already included	Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.80						5.00	5.00	
	Transportation of Outputs to Market Rs/K.g.	N.A						N.A	N.A	
	Marketed at (City)	Locally Consume						Locally Consume	Locally Consume	
	Price Obtained Rs/40 kg.	110.00						100 - 120	160 - 200	
	Marketable Surplus (Tonne)	1.50						2.00	2.00	

BEST AVAILABLE COPY

FILE NAME AWT-AG32.WK1 DISK NAME FIELD DATA

AWAKAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY -

Date: 15-10-1989

1. Name of Family Head : Mir Sher Mohammad 2. Village : Jhal Jhoa

3. Size of Holding: Irrigated : 10 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Barley Minor Crops: Wheat, Jawar, Onion, Moong

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 30.00

Off Season 30.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MAIZE	MOONG	RAPSEED & MUSTARD	VEGETABLE ONION	FRUITS
	AREA SOWN (ACRE)	2.0		4.0	2.0		1.0		1.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	80		120	20		30		150	
	Fertiliser, Rs/Acre	125		125	-		-		200	
	Pesticide, Rs/Acre	-		-	-		-		-	
	Labour, Rs/Acre	800		800	450		700		2700	
	Transportation of Inputs Rs/K.g.	ALPEADY INCLUDED		ALPEADY INCLUDED	ALPEADY INCLUDED		ALREADY INCLUDED		ALREADY INCLUDED	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.7		0.5	0.40		0.25		4.5	
	Transportation of Outputs to Market Rs/K.g.	N.A		0.6	0.40		N.A		0.4	
	Marketed at (City)	Locally Consume		Karachi	Turbat		Locally Consume		Turbat	
	Price Obtained Rs/40 Kg.	-		100	80		-		80	
	Marketable Surplus (Tonne)	-		2.00	0.5		-		4.00	

BEST AVAILABLE COPY

FILE NAME AWT-AG33.WK1 DISK NAME FILED DATA

AWAFAN - THEBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 15-10-1989

1. Name of Family Head : Mr.Ali Mohammad 2. Village : Jhal Jhoa

3. Size of Holding: Irrigated : 15 ACRE Barani :

4. Source of Irrigation : Barani

5. Major Crops: Barley, Wheat Minor Crops: Moong, Jawar, Onion

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 35.00

Off Season 35.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MOONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE ONION	FRUITS
	AREA SOWN (ACRE)	5.0		5.0	2.0	2.0			1.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	90.00		80.00	30.00	30.00			150.00	
	Fertiliser, Rs/Acre	120.00		120.00	-	-			200.00	
	Pesticide, Rs/Acre			-	-	-			-	
	Labour, Rs/Acre	1000.00		1000.00	500.00	750.00			3000.00	
	Transportation of Inputs Rs/K.g.	Already included		Already included	Already included	Already included			Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.80		0.50	0.35	0.25			4.00	
	Transportation of Outputs to Market Rs/K.g.	N.A		0.60	N.A	N.A			0.40	
	Marketed at (City)	locally Consumed		Karachi	locally Consumed	locally Consumed			Turbat	
	Price Obtained Rs/40 Kg.	100.00		100.00	80.00	-			80.00	
	Marketable Surplus (Tonne)	2.50		2.00	0.50	-			3.50	

BEST AVAILABLE COPY

FILE NAME AWT-1.534.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 15-10-1989

1. Name of Family Head : MIR Mohammad Jan 2. Village : Awaran

3. Size of Holding: Irrigated : 16 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Wheat, Barlay Minor Crops: Moong, Onion, Jawar

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 35.00

Off Season 35.00

Proprotion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MONG	BAJRA	RAPSEED & MUSTARD	VEGETABLE ONION	FRUITS
	AREA SOWN (ACRE)	5.0		5.0	2.0	2.0			2.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100.00		100.00	40.00	30.00			200.00	
	Fertiliser, Rs/Acre	100.00		100.00	-	-			200.00	
	Pesticide, Rs/Acre	-		-	-	-			-	
	Labour, Rs/Acre	900.00		900.00	750.00	750.00			2500.00	
	Transportation of Inputs Rs/K.g.	Aread/ included		Aready included	Aread/ included	Aready included			Aready included	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.60		0.50	0.40	0.25			4.00	
	Transportation of Outputs to Market Rs/K.g.	N.A		0.60	N.A	N.A			N.A	
	Marketed at (City)	Locally Consume		Karachi	Locally Consume	Locally Consume			Locally Consume	
	Price Obtained Rs/40 kg.	100.00		100.00	80.00	-			60 - 80	
	Marketable Surplus (Tonne)	20.00		1.50	0.50	-			3.50	

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FILE NAME AWT-AG35.WK1 DISK NAME FIELD DATA

AWARAN - TURBAT ROAD
Economic and Financial Analysis
AGRICULTURAL HOUSEHOLD SURVEY - Date: 15-10-1989

1. Name of Family Head : Mr.Dil Murad 2. Village : Awaran

3. Size of Holding: Irrigated : 6 ACRE Barani :

4. Source of Irrigation : Rainfall

5. Major Crops: Barley Minor Crops: Wheat, Moong, Onion

6. Agricultural Inputs / Outputs

A. Labour wages (Daily) Locals (Rs.)

During Harvest / Sowing 40.00

Off Season 40.00

Proportion of Labour used N.A

MAJOR CROPS AND AREAS

	TYPE OF CROP	WHEAT	RICE	BARLEY	JAWAR	MOONG	BAJRA	RAPS & MUSTARD	ONION	FRUITS
	AREA SOWN (ACRE)	2.0		2.0		1.0			1.0	
B.	INPUTS PER ACRE									
	Seed, Rs/Acre	100		120		30			200	
	Fertiliser, Rs/Acre	150		150		-			200	
	Pesticide, Rs/Acre	-		-		-			-	
	Labour, Rs/Acre	850		850		850			3000	
	Transportation of Inputs Rs/K.g.	Already included		Already included		Already included			Already included	
C.	OUTPUT PER ACRE									
	Av. Production (T/Acre)	0.6		0.5		0.35			5.00	
	Transportation of Outputs to Market Rs/K.g.	N.A		N.A		N.A			0.4/0.6	
	Marketed at (City)	Locally consumed		Locally consumed		Locally consumed			Turbat/Karachi	
	Price Obtained Rs/40 Kg.	-		100		300			80 - 100	
	Marketable Surplus (Tonne)	-		0.5		0.25			4.5	

APPENDIX - C

VEHICLE OPERATING SPEED DATA

F.Name: VEHFORM.WK1 Disk: (AWARAN - 1)

Vehicle Type Car

Speedometer: Start 00 + 00 Time Start 8.00 a.m
End 410 + 00 Time End 6.00 p.m

Speed	Speed Changer		Stoppages Time (in sec.)	Remarks
	From	To		
Hilly 30 KPH	Bela post 00 + 00	35 + 00		
Plain 70 KPH				
50/60 KPH	35 + 00	Jhal Jhao 85 + 00		
40 KPH	85 + 00	Awaran 150 + 00		
50 KPH	150 + 00	Turbat 410 + 00		

F.Name: VEHFORM.WK1 Disk: (AWARAN - 1)

Vehicle Type Truck

Speedometer: Start 00 + 00 Time Start 8.00 a.m
End 410 + 00 Time End 6.00 p.m

Speed	Speed Changer		Stoppages Time (in sec.)	R e m a r k s
	From	To		
10 KPH Plain 40 KPH	00 + 00	35 + 00		
25 KPH	35 + 00	85 + 00		
20 KPH	85 + 00	150 + 00		
35 KPH	150 + 00	410 + 00		

F.Name: VEHFORM.WK1 Disk: (AWARAN - 1)

Vehicle Type Toyota/Datsun/Trooper Jeep

Speedometer: Start 00 + 00 Time Start 12.00
End 410 + 00 Time End 24.00

Speed	Speed Changer		Stoppages Time (in sec.)	Remarks
	From	To		
Hilly 30 KPH	Bela 00 + 00	35 + 00		
Plain 60 KPH				
40 KPH	35 + 00	Jhal Jhao 85 + 00		
30 KPH	Jhal Jhao 85 + 00	Awaran 150 + 00		
55 KPH	Awaran 150 + 00	Turbat 410 + 00		

APPENDIX - D

AGRICULTURAL STATISTICS

F.Name: AR&PRGWD.WK1 Disk: (AWARAN - 1)

APPENDIX - D

AGRICULTURE AREA AND PRODUCTION
IN GWADAR DISTRICT
1983-84 to 1987-88

A R E A : HECTARES
PRODUCTION : TONNES

		1983-84	1984-85	1985-86	1986-87	1987-88
WHEAT	Area	4	5	540	370	150
	Production	400	300	300	38000	220
RICE	Area	-	-	-	-	-
	Production	-	-	-	-	-
BARLEY	Area	3000	7000	8000	8000	-
	Production	20	33	51	51	-
JAWAR	Area	260	275	150	280	-
	Production	110	120	66	140	-
MAIZE	Area		-	-	-	-
	Production		-	-	-	-
BAJRA	Area		2	-	48	48
	Production		1	-	25	25
RAPESEED & MUSTARD	Area		-	-	-	-
	Production		-	-	-	-
VEGETABLES (Onions)	Area		2500	2000	3000	-
	Production		26000	20000	35000	-
FRUITS (Dates)	Area		660	66200	67200	990
	Production		6000	500000	503000	7000

F.Name: AR&PROKH.WK1 Disk: (AWARAN - 1)

AGRICULTURE AREA AND PRODUCTION IN KHUZDAR DISTRICT 1983-84 to 1987-88

A R E A : HECTARES
PRODUCTION : TONNES

		1983-84	1984-85	1985-86	1986-87	1987-88
WHEAT	Area	478	528	39800	45630	14350
	Production	22800	65200	4600000	5586000	26700
RICE	Area	1100	1300	133000	133000	400
	Production	1300	1800	185500	185500	520
BARLEY	Area	376200	692500	753000	873500	4067
	Production	2500	5543	5760	5520	4000
JAWAR	Area	298	300	256	256	340
	Production	162	165	146	146	220
MAIZE	Area	-	8	10	10	-
	Production	-	9	11	11	-
BAJRA	Area	-	6	6	-	40
	Production	-	3	3	-	40
RAPESEED & MUSTARD	Area	-	-	-	-	-
	Production	-	-	-	-	-
VEGETABLES (Pot. Onions)	Area	-	36500	38000	42500	1296
	Production	-	529000	277000	1046000	32140
FRUITS (Almonds, Appricot, Pomegranates, Dates, Grapes)	Area	-	1489	152100	153100	1846
	Production	-	22005	1229000	1102200	18150

F.Name: AR&PROTU.WK1 Disk: (AWARAN - 1)

APPENDIX - D

AGRICULTURE AREA AND PRODUCTION IN
TURBAT DISTRICT
1983-84 to 1987-88

A R E A : HECTARES
PRODUCTION : TONNES

		1983-84	1984-85	1985-86	1986-87	1987-88
WHEAT	Area	11	6	110	310	400
	Production	1200	700	19000	42500	700
RICE	Area	700	800	59600	69300	888
	Production	1200	1300	103000	134000	1940
BARLEY	Area	173200	5100	5000	5000	170
	Production	974	48	47	47	85
JAWAR	Area	1015	940	240	199	222
	Production	527	470	123	75	90
MAIZE	Area	-	-	-	-	-
	Production	-	-	-	-	-
BAJRA	Area	-	-	-	-	-
	Production	-	-	-	-	-
RAPESEED & MUSTARD	Area	-	-	-	-	-
	Production	-	-	-	-	-
VEGETABLES (Onions)	Area	-	23200	20000	24600	248
	Production	-	290000	240000	290000	2480
FRUITS (Pomegranates, Dates Grapes)	Area	-	4500	453800	456300	5346
	Production	-	4060	4100000	4164500	45650

F.Name: AR&PRLAS.WK1 Disk: (AWARAN - 1)

AGRICULTURE AREA AND PRODUCTION
IN LASBELA DISTRICT
1983-84 to 1987-88

A R E A : HECTARES
PRODUCTION : TONNES

		1983-84	1984-85	1985-86	1986-87	1987-88
WHEAT	Area	6	5	870	870	800
	Production	1600	1900	153000	174000	1600
RICE	Area	-	-	40	-	55
	Production	-	-	40	-	60
BARLEY	Area	14770	5760	3000	647	1514
	Production	7310	2900	1530	330	520
JAWAR	Area	2	25	20	20	-
	Production	2	26	21	21	-
MAIZE	Area	344	50	50	35	20
	Production	147	-	-	13	7
BAJRA	Area	10	7	7	-	-
	Production	5	3	3	-	-
RAPESEED & MUSTARD	Area	-	7000	7800	7800	59
	Production	-	89000	95000	95000	700
VEGETABLES (Onions)	Area	-	7	700	700	522
	Production	-	5	4000	4200	5735
FRUITS (Dates)	Area	-	-	-	-	-
	Production	-	-	-	-	-

FILE NAME DIS86-88 DISK AWARAN - 1 WORKSHEET

DISTRICT-WISE CONSUMPTION OF CHEMICAL FERTILIZER BY VARIETIES 1986-87

(TONNES)

DIVISION DISTRICT	UREA	D.A.P.	NIRTO PHOS	AMMONIUM SULPHATE	AMMONIUM NITRATE	S.S.P.	S.O.P.	N.P.K. 10:20:20	N.P.K. 13:13:21	T.S.P.	S.O.P TOTAL
BALOCHISTAN	20174	5994	3324	319	749	40	71	16	358	98	31143
KHUZDAR	473	92	90	0	0	0	0	0	40	6	701
LASBELA	321	3	10	0	10	0	0	0	13	0	357
TURBAT	1	18	6	0	0	0	2	0	0	0	27
GWADAR	0	0	0	0	0	0	0	0	0	0	0

DISTRICT-WISE CONSUMPTION OF CHEMICAL FERTILIZER BY VARIETIES 1987 88

(TONNES)

DIVISION DISTRICT	UREA	D.A.P.	NIRTO PHOS	AMMONIUM SULPHATE	AMMONIUM NITRATE	S.S.P.	S.O.P	N.P.K. 10:20:20	N.P.K. 13:13:21	T.S.P.	S.O.P TOTAL
BALOCHISTAN	21331	3963	3985	283	890	60	1157	83	385	495	31634
KHUZDAR	980	157	155	0	0	0	0	0	10	6	1308
LASBELA	634	14	0	0	0	0	0	0	8	0	656
TURBAT	57	24	20	0	0	0	5	0	5	1	113
GWADAR	0	0	0	0	0	0	0	0	0	0	0

FILE NAME AREA8788.WK1 DISK AWARAN - 1 WORHSHEET

CONSUMPTION OF CHEMICAL FERTILER IN RELATION
TO AREA
1987 - 88

PROVINCE DOSTRICT	FERTILEZER CONSUMPTION TONNE	CROPPED AREA HECTARE	CONSUMPTION OF FERTILIZER PER HECTARE IN KG
BALOCHISTAN	15,014	499,637	30.05
KHUZDAR	630	29,261	21.53
LASBELA	305	6,111	49.88
TURBAT	56	14,410	3.91
GWADAR	0	1,454	0.00

APPENDIX - E

SPECIAL DEVELOPMENT PROGRAMME OF BALOCHISTAN FOR FOUR DISTRICTS OF INTEREST

F.Name: AGRI.WK1 Disk: (AWARAN - 4)

APPENDIX - E

SPECIAL DEVELOPMENT PROGRAM OF BALOCHISTAN

AGRICULTURE AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	6.739	8.067	10.059	0.000	61.994
GWADAR	1.500	31.648	5.690	8.863	20.240
KHUZDAR	0.000	0.000	0.000	0.600	5.060
LASBELA	0.000	42.881	41.881	25.911	19.628
TOTAL OF REGION	8.239	82.596	57.630	35.374	106.922
BALOCHISTAN	587.606	744.646	605.617	413.107	1425.147
REGION AS % AGE OF BALOCHISTAN	1.40	11.09	9.52	8.56	7.50

B.D.A. AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	0.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	19.433	0.000	19.433	19.433
LASBELA	0.000	0.000	2.695	0.000	0.000
TOTAL OF REGION	0.000	19.433	2.695	19.433	19.433
BALOCHISTAN	83.292	30.344	53.975	22.433	49.933
REGION AS % AGE OF BALOCHISTAN	0.00	64.04	4.99	86.63	38.92

F.Name: EDUC.WK1 Disk: (AWARAN - 4)

EDUCATION AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	30.000	1.354	12.438	9.618
GWADAR	0.000	0.000	0.389	0.000	0.000
KHUZDAR	0.000	5.000	0.000	36.290	5.300
LASBELA	0.000	0.000	0.506	0.000	0.000
TOTAL OF REGION	0.000	35.000	2.249	48.728	14.918
BALOCHISTAN	280.598	229.931	280.882	524.094	402.720
REGION AS % AGE OF BALOCHISTAN	0.00	15.22	0.80	9.30	3.70

HEALTH AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	2.000	2.003	0.000	6.395	0.000
GWADAR	0.150	0.000	1.170	3.213	0.000
KHUZDAR	0.000	0.000	0.000	2.461	0.000
LASBELA	0.000	5.000	26.990	28.640	28.490
TOTAL OF REGION	2.150	7.003	28.160	40.709	28.490
BALOCHISTAN	131.768	104.094	339.545	526.159	525.030
REGION AS % AGE OF BALOCHISTAN	1.63	6.73	8.29	7.74	5.43

F.Name: INDS.WK1 Disk: (AWARAN - 4)

INDUSTRIES AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	1.012	1.012	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	2.000	2.000
TOTAL OF REGION	0.000	0.000	1.012	3.012	2.000
BALOCHISTAN	46.537	25.140	51.185	62.870	61.958
REGION AS % AGE OF BALOCHISTAN	0.00	0.00	1.98	4.79	3.23

INF.TOUR.SPT AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	0.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	0.000	0.000
TOTAL OF REGION	0.000	0.000	0.000	0.000	0.000
BALOCHISTAN	0.000	0.000	41.038	92.644	58.934
REGION AS % AGE OF BALOCHISTAN	ERR	ERR	0.00	0.00	0.00

F.Name: MANP.WK1 Disk: (AWARAN - 4)

MANPOWER AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	20.000	23.780	23.780	23.780	23.780
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	20.000	7.790	19.875	19.879
TOTAL OF REGION	20.000	43.780	31.570	43.655	43.659
BALOCHISTAN	118.398	105.778	94.194	93.213	119.167
REGION AS % AGE OF BALOCHISTAN	16.89	41.39	33.52	46.83	36.64

OTHER SCH: AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	0.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	0.000	0.000
TOTAL OF REGION	0.000	0.000	0.000	0.000	0.000
BALOCHISTAN	0.000	0.000	0.000	0.000	0.000
REGION AS % AGE OF BALOCHISTAN	ERR	ERR	ERR	ERR	ERR

F.Name: PHE.WK1 Disk: (AWARAN - 4)

P.H.E. AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	5.519	20.770
GWADAR	0.000	0.000	0.000	5.240	5.743
KHUZDAR	0.000	0.000	0.000	4.360	24.380
LASBELA	0.000	0.000	0.000	17.368	24.500
TOTAL OF REGION	0.000	0.000	0.000	32.487	75.393
BALOCHISTAN	0.000	0.000	0.000	396.152	797.269
REGION AS % AGE OF BALOCHISTAN	ERR	ERR	ERR	8.20	9.46

P.P. & H. AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	7.613	7.614	2.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	10.450	7.800	6.500
LASBELA	0.000	0.000	2.823	0.844	1.500
TOTAL OF REGION	0.000	0.000	20.886	16.258	10.000
BALOCHISTAN	0.000	0.000	254.996	426.947	390.105
REGION AS % AGE OF BALOCHISTAN	ERR	ERR	8.19	3.81	2.56

F.Name: QDA.WK1 Disk: (AWARAN - 4)

Q.D.A.

AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	1.700	0.000	0.000	0.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	0.000	0.000
TOTAL OF REGION	1.700	0.000	0.000	0.000	0.000
BALOCHISTAN	109.666	199.222	87.818	102.710	64.110
REGION AS % AGE OF BALOCHISTAN	1.55	0.00	0.00	0.00	0.00

R O A D

AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	3.700	0.000	0.000	0.000	29.200
GWADAR	10.948	5.600	0.000	0.000	20.000
KHUZDAR	11.976	6.251	0.000	0.000	514.500
LASBELA	0.000	24.507	0.000	0.000	28.670
TOTAL OF REGION	26.624	36.358	0.000	0.000	592.370
BALOCHISTAN	492.755	334.965	0.000	0.000	1166.391
REGION AS % AGE OF BALOCHISTAN	5.40	10.85	ERR	ERR	50.79

F.Name: RURAL.WK1 Disk: (AWARAN - 4)

RURAL DEV. AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	1.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	0.000	0.000
TOTAL OF REGION	0.000	0.000	0.000	1.000	0.000
BALOCHISTAN	91.694	125.765	0.000	110.881	109.939
REGION AS % AGE OF BALOCHISTAN	0.00	0.00	ERR	0.90	0.00

SP.PROGRAM AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	0.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	0.000	0.000
TOTAL OF REGION	0.000	0.000	0.000	0.000	0.000
BALOCHISTAN	0.000	370.000	30.000	45.000	20.000
REGION AS % AGE OF BALOCHISTAN	ERR	0.00	0.00	0.00	0.00

F.Name: STUD.WK1 Disk: (AWARAN - 4)

STUD. & RES. AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	0.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	0.000	0.000
TOTAL OF REGION	0.000	0.000	0.000	0.000	0.000
BALOCHISTAN	0.000	18.000	14.000	31.500	0.000
REGION AS % AGE OF BALOCHISTAN	ERR	0.00	0.00	0.00	ERR

S.WELFARE AMOUNT IN MILLIONS

PROJECT AREA	1986	1987	1988	1989	1990
TURBAT	0.000	0.000	0.000	0.000	0.000
GWADAR	0.000	0.000	0.000	0.000	0.000
KHUZDAR	0.000	0.000	0.000	0.000	0.000
LASBELA	0.000	0.000	0.000	0.000	0.000
TOTAL OF REGION	0.000	0.000	0.000	0.000	0.000
BALOCHISTAN	0.000	0.000	11.286	34.674	10.500
REGION AS % AGE OF BALOCHISTAN	ERR	ERR	0.00	0.00	0.00