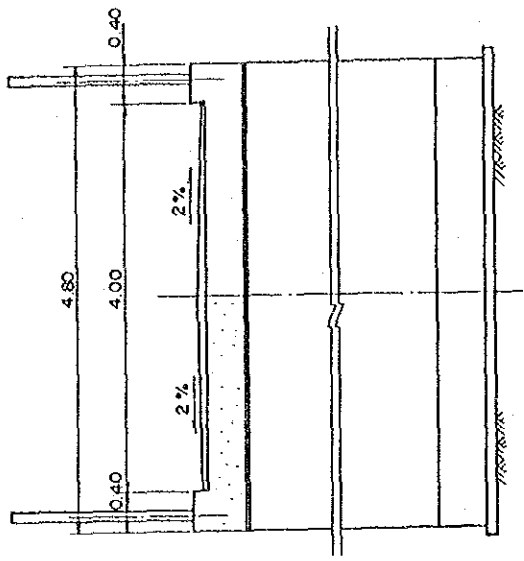
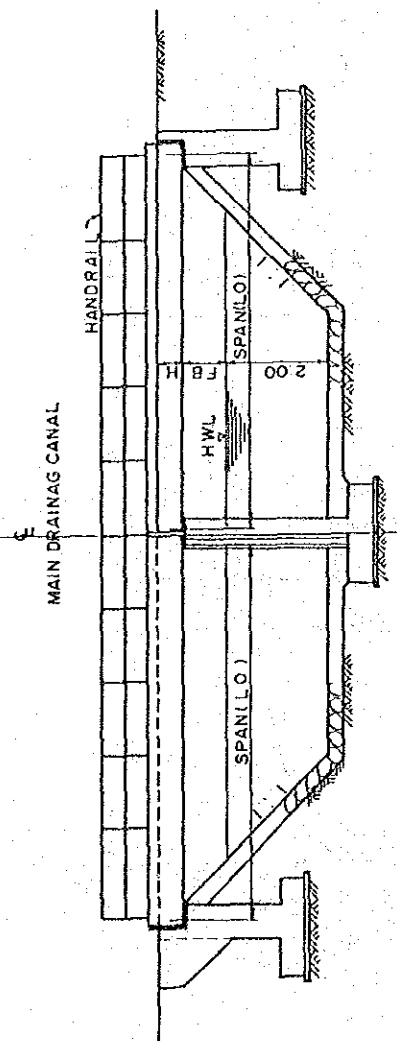


A-A SECTION
SCALE 1:50

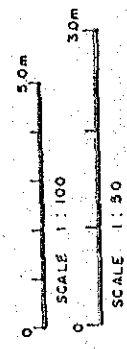


PLAN
SCALE 1:100

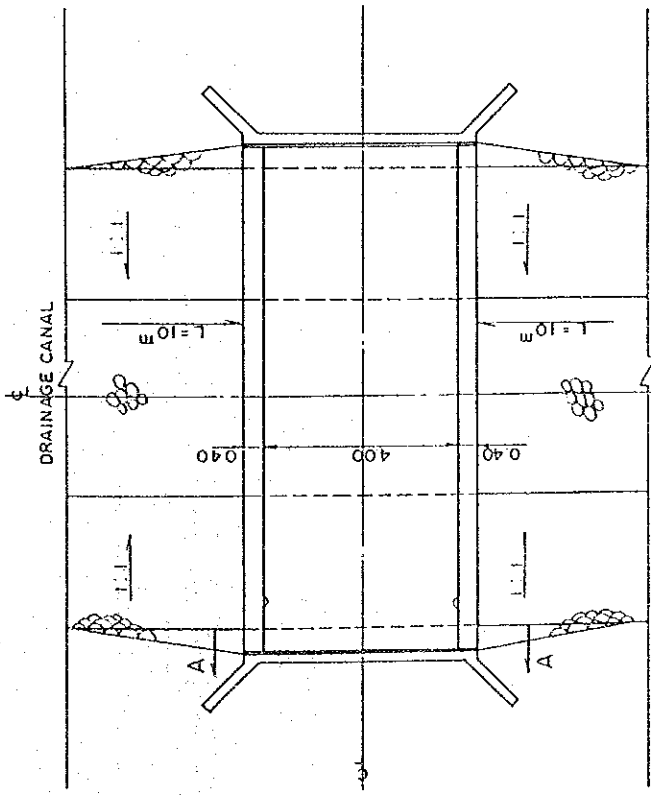


PROFILE
SCALE 1:100

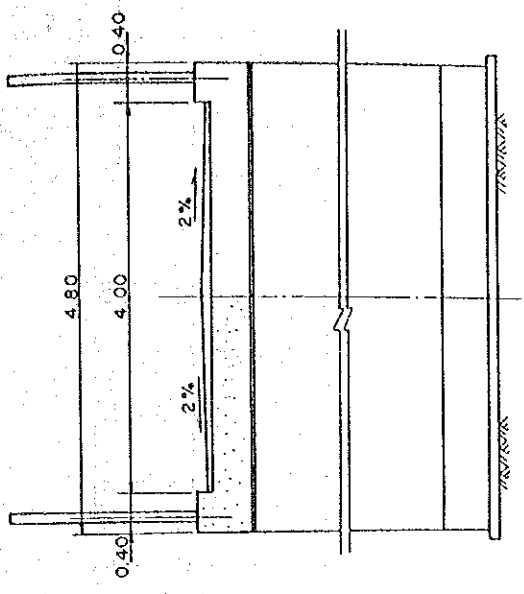
	KARZ	HARAZ	SPAN	Fb	H
	LOW	LOW	8.00 x 2	1.00	0.48
			5.50 x 2	0.70	0.34



ISLAMIC REPUBLIC OF IRAN
MINISTRY OF AGRICULTURE
CASPIAN SEA COASTAL AREA
AGRICULTURAL DEVELOPMENT PROJECT
TYPICAL BRIDGE
(2 SPANS)
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) EXHIBIT - E-13

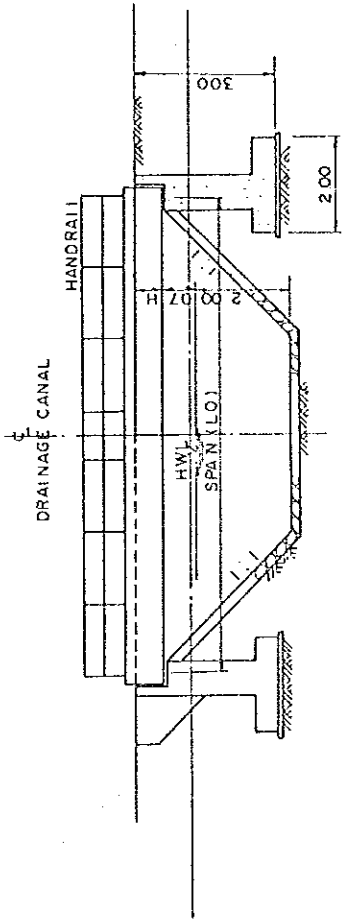
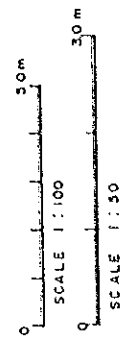


PLAN
SCALE 1:100



A-A SECTION
SCALE 1:50

KARI	MIDDLE	HARAZ	"	"	"
SPAN	100.0 ^m	H	0.58 ^m		
			8.0	0.48	

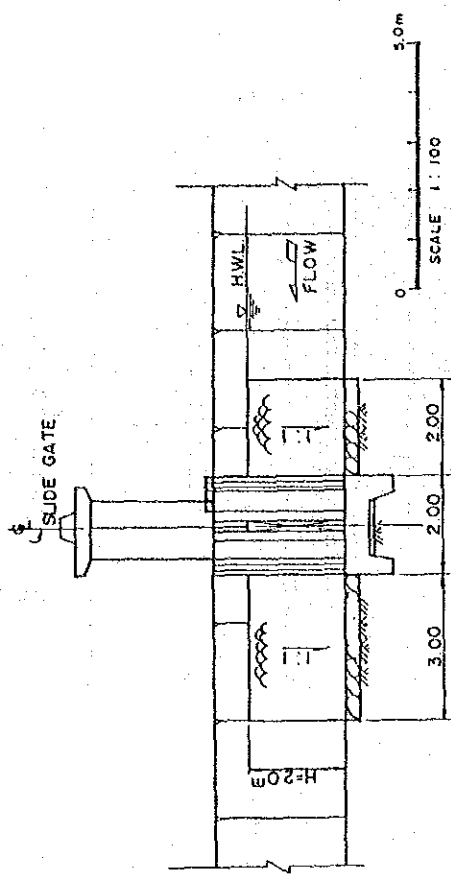
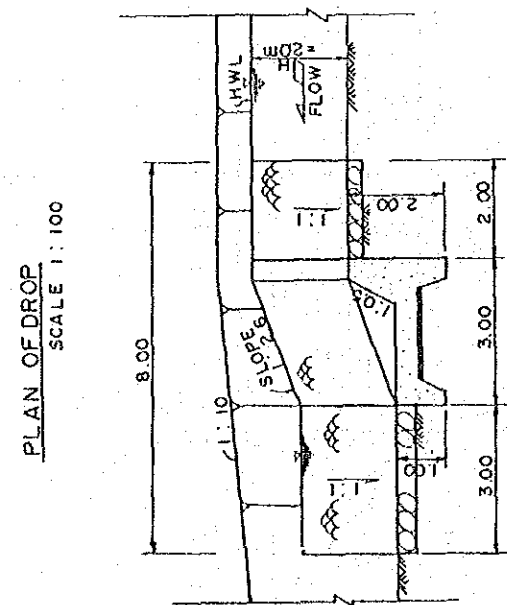
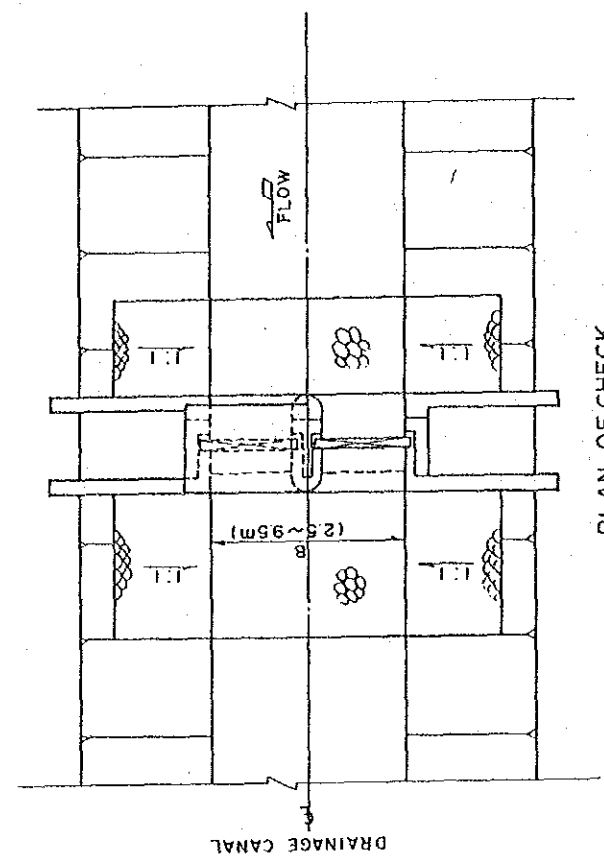
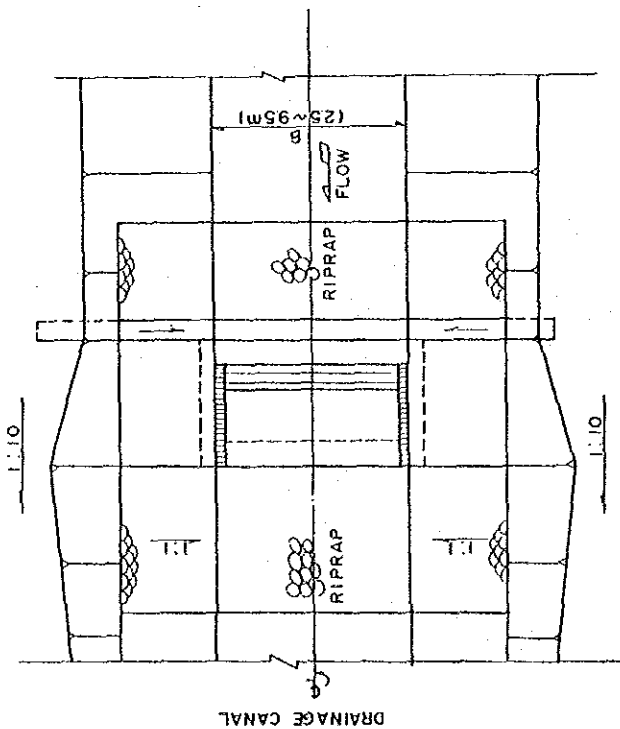


PROFILE
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ISLAMIC REPUBLIC OF IRAN
MINISTRY OF AGRICULTURE
CASPIAN SEA COASTAL AREA
AGRICULTURAL DEVELOPMENT PROJECT

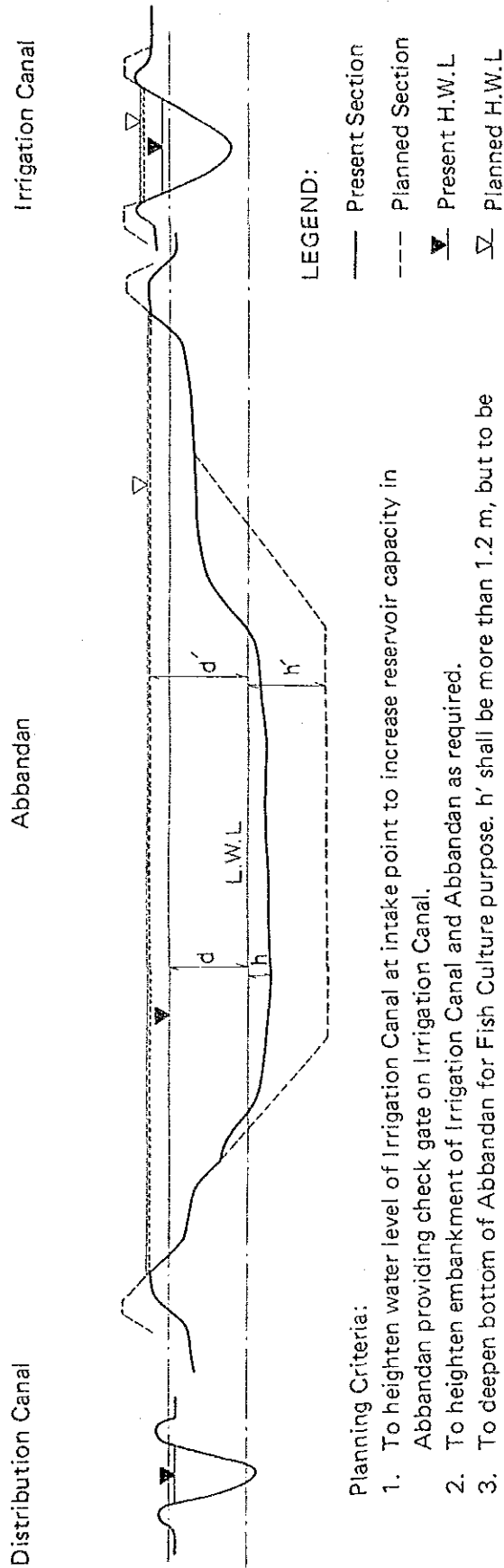
TYPICAL BRIDGE
(1 SPAN)

JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA) EX-107
E-113



ISLAMIC REPUBLIC OF IRAN
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AGRICULTURAL DEVELOPMENT PROJECT
JICA
JICA
EXHIBIT
E.T.O.

EXHIBIT E.I.II. PRELIMINARY IDEA FOR ABBANDAN REHABILITATION



Planning Criteria:

1. To heighten water level of Irrigation Canal at intake point to increase reservoir capacity in Abbandan providing check gate on Irrigation Canal.
2. To heighten embankment of Irrigation Canal and Abbandan as required.
3. To deepen bottom of Abbandan for Fish Culture purpose. h' shall be more than 1.2 m, but to be decided by the kind of Fish to be cultured.
4. To provide spillway on suitable portion of surrounding dike of Abbandan to protect dike against over topping due to flooding in rainy season.
5. To provide intake facility to Distribution Canal.

APPENDIX E. 2.

COST ESTIMATE

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Table E.2.1 Material Cost

(Unit: Rials)

<u>Item</u>	<u>Unit</u>	<u>Cost</u>	<u>Code No.</u>
Portland Cement (ordinary)	ton	4,450	413002
Portland Cement (Sulfate resisting)	"	5,550	413003
Mixture of river sand and gravel	cu.m	600	413005
Washed river sand	"	800	413006
Washed broken sand	"	1,000	413007
Washed river gravel	"	640	413008
Washed broken gravel	"	720	413009
Crushed stone	"	900	413010
River cobble stone	"	600	413011
Stoney material	"	450	413018
Tar	ton	2,500	413020
Round bar	"	46,000	413021
Deformed bar	"	50,500	413022
Steel Material	"	50,000	413023
Timber	cu.m	32,000	413024
Log	"	28,000	413025
Prefabricated concrete except pipes	"	6,000	413031
Brick (22 x 11 x 6 cm)	pc.	9	-
Concrete block	"	75	-
Gasoline	lit.	30	-
Diesel	"	3	-
Electric power	kWH	8	-
Land acquisition (paddy)	sq.m	1,000	-
(upland)	"	2,000 - 10,000	-

Table E.2.2 Labor Wage

(Unit: Rials)

<u>Item</u>	<u>Unit</u>	<u>Wage</u>	<u>Remarks</u>
Worker	day	2,300	
Skilled worker	"	3,150	
Smith	"	4,000	
Carpenter	"	4,350	
Mason	"	5,500	
Plasterer	"	4,000	
Welder	"	5,000	
Concrete worker	"	3,150	
Driver	"	4,000	
Operator (Heavy equipment)	"	5,500	
Foreman	"	5,500	
Engineer (Civil)	month	150,000	
Engineer (Survey)	"	100,000	
Technician	"	80,000	
Secretary	"	60,000	

Table E.2.3 Unit Construction Cost (1)

Item	Unit	Cost	Remarks (Code No.)
(Earth Work by Machinery)			
Stripping	Bull 21t	m ³	37 403002
Excavation and Hauling	Bull 21t	"	52 403011
	(L = 20m)		
"	(20 < L ≤ 50m)	"	85 403015
Loading and Hauling	T.S 1.5m ³	"	94 403031
	(L ≤ 500m)		403032
"	+D.T 10t	"	108 403031
	(L = 1.50km)		- 403033
Excavation, Loading and Hauling	Bull 15t + T.S 1.5m ³	"	166 403036
	(L ≤ 500m)+ D.T 10t	"	180 403036
"	(L ≤ 1.5km) "	"	403033
"	(L ≤ 5.5km) "	"	236 "
"	(L ≤ 10.5km) "	"	306 "
Spreading	M.G 3.1m	"	40 403049
Spreading and Compaction	M.G		403037
	S.F.R	"	121 403045
	T.R		
Compaction	T.R 14t	"	28 403003
Canal Excavation	B.H 0.6m ³	"	251 403018
Land Leveling	Bull 16t	"	173 403050-1
Onfarm Work of Case A (Highland)		ha	302,000 -
"	(Middle)	"	335,000 -
"	(Low)	"	265,000 -
(Earth Work by Manpower)			
Excavation	(H ≤ 2.0m, Hard Soil)	m ³	967 402003
Refilling		"	750 402015
			402016
Loading and Hauling	(L = 50m)	"	290 402012

Table E.2.3 Unit Construction Cost (2)

Item	Unit	Cost	Remarks (Code No.)
Slope trimming (cut area)	m ²	39	402020
" (embankment area)	"	46	402021
Gravel pavement (t = 0.15m)	m ³	876	-
(Concrete Work)			
Lean Concrete (Cement: 150 kg/m ³) 4,283 + 731 + 848 = 5,862	m ³	5,862	406002 406012 406016
Reinforced Concrete (Cement: 300 kg/m ³) 5,303 + 731 + 848 x 1/3 + 787 + 1,038 = 8,142	m ³	8,142	406005 406012 406016 406023 406021
Form (Wood) 1,582 + 396 + 382 = 2,360	m ²	2,360	408004 408012 408013-1
Reinforcement bar	kg	116	409002 409002-1
Steel Slide Gate	"	211	409022
(Stone Work)			
Dry Masonry 2,100 + 864/2 + 327 = 2,860	m ³	2,860	405002 405019, 21
Wet Masonry 2,764 + 864/2 + 327 = 3,520	"	3,520	405007 405019, 21
Gabion	"	4,044	405004
(Canal Work)			
Main Drainage Canal			
1) Haraz Left B = 5.00m, H = 2.70m(New)	m	6,502	
(low land) " " (Improvement)	"	4,168	

Table E.2.3 Unit Construction Cost (3)

Item	Unit	Cost	Remarks (Code No.)
(Middle land)			
B = 2.50m, H = 2.70m (New)	m	4,526	
" " (Improvement)	"	2,199	
2) Haraz Right/Kari			
B = 9.50m, H = 5.00m (New)	"	11,697	
(Low land)			
B = 9.50m, H = 3.00m (Improvement)	"	9,342	
(Middle land)			
B = 4.00m, H = 2.70m (New)	"	5,598	
" " (Improvement)	"	3,244	
Drop (B = 5.00m, H = 1.00m) Haraz left	place	541,000	
" (B = 2.50m, H = 1.00m) "	"	437,000	
" (B = 9.50m, H = 1.00m) Kari, Haraz right	"	735,000	
" (B = 4.00m, H = 1.00m) "	"	498,000	
Bridge (W = 4.00m, L = 5.5m x 2) Haraz left	place	2,349,000	
" (W = 4.00m, L = 8.0m) Haraz left	"	1,711,000	
" (W = 4.00m, L = 8.0m x 2) Kari, Haraz right	"	3,057,000	
" (W = 4.00m, L = 10.0m) Kari, Haraz right	"	1,595,000	
Check (B = 5.00m, Gate 1.65 ^m x2.0 ^m x 3 ^{PCS})	place	1,488,000	
" (B = 2.5m, " 1.25 x2.0 x 2)	"	791,000	
" (B = 9.5m, " 1.9 x2.0 x 5)	"	2,434,000	
" (B = 4.0m, " 2.0 x2.0 x 2)	"	1,225,000	
Spillway for abbandan	place	4,239,000	
Intake (Haraz left Q = 4.0 m ³ /s)	place	11,369,000	
" (Haraz right Q = 2.0 ")	"	10,424,000	
" (Kari Q = 2.0 ")	"	3,195,000	

Table E.2.3 Unit Construction Cost (4)

Item	Unit	Cost	Remarks (Code No.)
Intake (Kari Q = 1.0 m ³ /s)	place	1,518,000	
Settling basin (Kari Rud, Q = 40.0 m ³ /s)	"	229,996,000	
(Zanne Mard, Q = 3.5 ")	"	22,425,000	
(Sag Rud, Q = 1.5 ")	"	18,193,000	
Division Works at Secondary Canal			
Haraz left (High) Q ₁ /Q ₂ = 2.5 m ³ /s / 0.5 m ³ /s	place	1,263,000	Jet flow
Haraz left (Middle) Q ₁ /Q ₂ = 2.0 " / 0.5 "	"	923,000	"
Haraz right (High) Q ₁ /Q ₂ = 2.0 " / 0.5 "	"	1,265,000	"
Haraz right (Middle) Q ₁ /Q ₂ = 1.5 " / 0.5 "	"	847,000	"
Kari (High) Q ₁ /Q ₂ = 1.5 " / 0.5 "	"	1,131,000	"
Haraz, Kari (Low) Q ₁ /Q ₂ = 1.0 " / 0.5 "	"	706,000	Parshall flume + Gate
Division works at tertiary canal			
High, Middle, Low land Q ₁ /Q ₂ = 0.25/0.25	place	1,082,000	Parshall flume + Gate
Division works at fourth canal			
High Q = 0.08 cu.m/s	place	378,000	Parshall flume + Gate
Middle Q = 0.12 "	"	490,000	
Low Q = 0.20 "	"	563,000	

Note: T.S : Tractor Shovel T.R : Tire Roller
D.T : Dump Truck B.H : Back Hoe
M.G : Motor Grader Bull : Bulldozer
S.F.R: Sheeps Foot Roller

Table E.2.4 Price Index

Year	Table A		Table B			
	General Index (Construction)	Escalation rate	Civil Index	Escalation rate	Building Index	Escalation rate
(1977) 1356	282.1	-	269.8	-	306.8	-
(1978) 1357	312.9	0.109	304.7	0.129	339.5	0.107
(1979) 1358	345.2	0.103	340.5	0.117	377.5	0.112
(1980) 1359	413.6	0.198	406.1	0.193	451.8	0.197
(1981) 1360	474.5	0.147	460.2	0.155	519.7	0.150
(1982) 1361	-	-	-	-	-	-
(1983) 1362	-	-	-	-	-	-
(1984) 1363	-	-	-	0.077	-	0.111
(1985) 1364	-	-	-	0.077	-	0.111
Average	-	0.139	-	<u>0.121</u>	-	0.131

(Adopted)

Source; Ministry of Planning and budget

Table E.2.5 Breakdown of Project Cost

(Unit: 1,000 Rials)

Items	Haraz Left			Haraz Right			Kari			Project Area (Total)
	High	Middle	Low	High	Middle	Low	High	Middle	Low	
1. Civil Works										
1.1 Area Drainage										
1) Main Drainage Canal	-	659,500	1,146,900	-	424,500	865,700	-	1,072,700	2,141,000	6,310,100
2) Abbandan Improvement	-	112,800	195,800	-	35,600	65,300	-	207,700	201,800	819,000
3) Dike (Sabel)	-	-	-	-	-	-	-	56,700	98,200	152,900
Sub-total of 1.1	-	772,100	1,342,700	-	460,100	931,000	-	1,337,100	2,441,000	7,284,000
1.2 Land Improvement										
1) Intake	157,000	35,000	-	144,500	32,100	-	85,500	56,200	29,500	540,200
2) Settling Basin	-	-	-	40,600	-	-	230,000	-	-	270,600
3) Division Works	296,800	290,700	225,800	162,400	147,400	126,000	365,700	231,800	258,800	2,105,400
4) Canal Improvement	-	15,500	19,800	-	11,600	-	-	33,800	-	80,700
5) On-farm works	5,412,000	4,380,500	3,502,200	1,995,600	2,509,200	1,446,900	5,547,500	6,597,200	3,242,500	30,433,400
6) Pipe drainage	-	314,800	317,100	-	180,500	131,400	-	459,300	294,100	1,697,200
Sub-total of 1.2	5,866,400	5,056,500	4,064,900	2,345,100	2,880,800	1,704,300	4,228,500	7,178,300	3,824,700	35,127,500
1.5 Rural Road Improvement	264,200	296,700	324,500	146,000	146,000	134,400	229,500	442,700	355,700	2,317,700
1.4 Animal Husbandry Facilities	424,800	488,700	496,200	248,100	281,900	205,000	439,800	718,000	458,600	3,759,100
Sub-total of 1.1 to 1.4	4,555,400	6,594,000	6,228,500	2,757,200	3,768,800	2,972,700	4,897,800	9,676,100	7,058,000	48,488,500
2. Engineering and Administration	685,500	989,100	934,200	410,600	565,300	445,900	754,700	1,451,400	1,058,800	7,273,500
Sub-total of 1 to 2	5,238,700	7,583,100	7,162,500	3,147,800	4,334,100	3,418,600	5,632,500	11,127,500	8,116,800	55,761,600
3. Physical Contingency	785,800	1,157,500	1,074,400	472,200	650,100	512,800	844,900	1,669,100	1,217,500	8,564,500
Sub-total of 1, 2 to 3	6,024,500	8,720,600	8,236,900	3,620,000	4,984,200	3,931,400	6,477,400	12,796,600	9,334,300	64,125,900
4. Price Escalation	1,506,100	2,180,100	2,059,200	905,000	1,246,100	982,800	1,619,500	3,199,200	2,376,300	16,074,100
Total (April, 1986)	7,530,600	10,900,700	10,296,100	4,525,000	6,230,300	4,914,200	8,096,700	15,995,800	11,710,600	80,200,000

Table E.2.6 Disbursement Schedule

(Unit: 1,000 Riials)

Item	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
	1	2	3	4	5	6	7	8	9	10	11	12	
Total Cost													
1. Area Drainage													
1.1 Right Bank	185,800	185,760	185,760	2,629,510	2,672,640	2,685,930	-	-	-	-	-	-	
1.2 Left Bank	76,050	76,050	76,050	1,089,200	1,089,450	1,089,200	-	-	-	-	-	-	
Sub-total of 1	261,850	261,810	261,810	3,718,710	3,762,090	3,775,130	-	-	-	-	-	-	
2. Land Improvement													
2.1 Haraz Left High	93,440	93,440	93,440	505,570	505,570	505,570	505,570	505,570	505,570	505,570	505,570	505,570	
2.2 " Middle	120,610	120,610	120,610	-	-	-	-	413,710	413,710	630,960	630,960	630,960	
2.3 " Low	97,320	97,320	97,320	-	333,790	333,790	509,180	509,180	509,180	509,180	509,180	509,180	
2.4 Haraz Right High	56,210	56,210	56,210	155,740	155,740	256,840	256,840	256,840	256,840	256,840	256,840	256,840	
2.5 " Middle	69,000	69,000	69,000	-	-	-	-	188,640	188,640	271,470	271,470	271,470	
2.6 " Low	40,830	40,830	40,830	-	114,320	187,820	187,820	187,820	187,820	187,820	187,820	187,820	
2.7 Kari High	101,550	101,550	101,550	153,560	214,360	396,710	396,710	396,710	396,710	396,710	396,710	396,710	
2.8 " Middle	171,930	171,930	171,930	-	-	-	260,720	363,900	673,470	673,470	673,470	673,470	
2.9 " Low	91,570	91,570	91,570	-	142,350	197,250	417,220	417,220	417,220	417,220	417,220	417,220	
Sub-total of 2	842,260	842,260	842,260	614,870	1,266,110	1,677,980	2,534,060	3,039,590	3,549,160	3,649,240	3,649,240	3,649,240	
3. Rural Road Improvement	83,380	83,380	83,380	1,192,700	1,194,560	1,194,100	-	-	-	-	-	-	
4. Animal Husbandry Facilities	-	-	135,130	155,130	2,071,440	1,936,430	1,936,170	-	-	-	-	-	
Grand Total	1,187,490	1,187,450	1,322,580	5,661,410	8,294,200	8,583,640	4,270,230	3,039,590	3,349,160	3,649,240	3,649,240	3,649,240	
Item	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Area Drainage													
1.1 Right Bank	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2 Left Bank	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Land Improvement													
2.1 Haraz Left High	305,570	305,570	305,570	305,570	305,570	305,570	305,570	305,570	305,570	305,570	305,550	-	-
2.2 " Middle	630,960	630,960	630,960	630,960	630,960	630,960	630,960	413,710	413,440	-	-	-	-
2.3 " Low	509,180	509,180	509,180	509,180	333,790	334,670	-	-	-	-	-	-	-
2.4 Haraz Right High	256,840	256,840	256,840	256,840	256,750	155,740	155,660	-	-	-	-	-	-
2.5 " Middle	271,470	271,470	271,470	271,470	271,470	271,470	271,470	271,470	271,470	271,440	188,640	188,630	-
2.6 " Low	187,820	187,820	187,820	187,820	187,820	187,820	138,930	-	-	-	-	-	-
2.7 Kari High	396,710	396,710	396,710	396,710	396,710	396,710	396,710	214,360	153,220	-	-	-	-
2.8 " Middle	673,470	673,470	673,470	673,470	673,470	673,470	673,470	673,470	673,470	673,470	363,900	260,240	-
2.9 " Low	417,220	417,220	417,220	417,220	417,220	417,220	417,220	163,530	163,520	-	-	-	-
Sub-total of 2	3,649,240	3,649,240	3,649,240	3,649,240	3,473,760	3,373,630	2,989,990	2,224,560	2,041,830	1,403,730	1,250,460	552,540	449,070
3. Rural Road Improvement	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Animal Husbandry Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	3,649,240	3,649,240	3,649,240	3,649,240	3,473,760	3,373,630	2,989,990	2,224,560	2,041,830	1,403,730	1,250,460	552,540	449,070

APPENDIX E.3.

PROJECT ECONOMY

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Table E.3.1 Price of Agricultural Machines

<u>Kinds</u>	<u>Price</u> <u>(in Japan)</u> Thousand Yen	<u>Exchanged</u> <u>price</u> *2 Thousand Rls	<u>Local</u> <u>price</u> Thousand Rls	<u>Decided</u> <u>price</u> Thousand Rls
Transplanter (2 rows plant) (self-running)	304 *1	122	-	164 *3
Combine (2 rows reap) (self-running)	1,364 *1	546	-	655 *3
Country - elevator				460,000 *4 Building 60,000 Machinery 400,000
Cooperative seedling facilities	(Equipment) 33,000		(Building) 9,000	22,000 *5

Note: *1 ... Evaluated standard price of fixed assets for agricultural and livestock industry.
(Ministry of Agriculture, Forestry and Fishery of Japan 1985)

*2 ... Exchanged rate; 1 Rls = 2.5 Yen

*3 ... This price is decided at 1.2 times of the exchanged price.

*4 ... This is the roughly estimated price based on the second stage field work.

*5 ... 1) Price of building (steel frame 300 m²) is local price.

2) Price of equipment is that of actual samples in Japan.

Table E.3.2 Costs of Machines (per hours)

Kind of Machine	Price of Machine Thousand Rls	Fixed Costs			Machine requirement hours per hectare	Machine working areas per Year ha	Machine requirement hours per Year ha	Fixed costs per hour Rls	Fluctu- rated costs per hour Rls	Costs of machines per hour Rls		
		Depre- cisation Rls	Capital interest Rls	Repair Rls							Garage Rls	Total Rls
With Project												
Transplanter (2 rows plant) (self-running)	164	29,520	7,216	16,400	820	53,956	18	7.9(*1)	142	380	1	380
Combine (2 rows reap) (self-running)	655	117,900	28,820	65,500	3,275	215,495	36	Amol-3 6.2 Tarom 7.0	223	966	6	970
Without Project												
Transplanter (2 rows plant) (self-running)	164	29,520	7,216	16,400	820	53,956	25	5.0	125	432	1	430
Combine (2 rows reap) (self-running)	655	117,900	28,800	65,500	3,275	215,495	39	Amol-3 5.5 Tarom 6.2	215	1,002	6	1,010
Thresher (power)	80	9,000	3,520	8,000	400	20,920	27	2.0	54	387	5	390

Note: *1 ... The working areas are estimated as 80 percent of possible working areas in anticipation of the losses with cooperative working.

Table E.3.3 Costs of Cooperative Seedling Facilities and Country-elevator

(Unit: Thousand Rls)

Items	Cooperative seedling facilities	Country-elevator
1. Fixed costs		
1) Depreciation	<u>1,996</u>	<u>25,800</u>
a. Building	412 (life years 24 years)	1,800 (life years 30 years)
b. Equipment	1,584	24,000 (life years 15 years)
c. Interval parts	1,260 (life years 8 years)	
d. Seeding boxes	324 (life years 5 years)	
2) Capital interest	<u>968</u>	<u>20,240</u>
a. Building	396	2,640
b. Equipment	572	17,600
3) Repair	<u>1,750</u>	<u>43,000</u>
a. Building	450	3,000
b. Equipment	1,300	40,000
<u>Sub-total</u>	<u>4,714 = 4,700</u>	<u>89,040 = 89,000</u>
2. Flucturated costs		
1) Labor costs	<u>400</u>	<u>2,250</u>
Male	50 man-day x 3,000 Rls = 150,000 Rls	1. Receipt of goods 6 man-day x 60 day x 3,000 Rls = 1,080 Rls
Female	125 x 2,000 = 250,000 Rls	2. Drying 3 x 60 x 3,000 = 540
		3. Milling 1 x 210 x 3,000 = 630
2) Fuel costs	<u>4</u> 0.05 t x 18,000 box x 4.0 Rls/t = 3,600 Rls	<u>640</u> 20 t (cleaned rice) x 8,000 t x 4.0 Rls/t = 640 thousand Rls (* from the actual results in Japan)
3) Electric power rates	<u>32</u> 0.22 kWh/box x 18,000 boxes x 8.0 Rls/kWh = 31,680 Rls	<u>1,400</u> 400,000 bag (20 kg/bag) x 0.45 kWh x 8 Rls/kWh = 1,400 (* from the actual results in Japan)
4) Others	<u>468</u> Seed costs etc.	-
<u>Sub-total</u>	<u>904</u>	<u>4,290</u>
Total	<u>5,618 = 5,620/100 ha</u> + 56,200 Rls/ha	<u>93,290 = 93,300/8,000t + 11,600 Rls/t</u>

Table E.3.4 Production Cost in Rice Production (per hectare) (1)

Middle Land and Low Land

Variety Amol 3

(Unit: Rls)

<u>Items of Costs</u>	<u>Present</u>	<u>Without Project</u>	<u>With Project</u>	<u>Note</u>
Seed bedding Transplanting Harvesting Threshing Milling	271,118	27,118	213,134	These are the costs of items related with farm mechanization system (small type).
Others	179,740	186,840	180,340	These are the additional costs to the others of rice production costs at present as the below; 1) Additional inputs of material goods by progress of farm technical standards in the future. 1. Fertilizer (per hectare) a. the future *1 7,700 Rls b. at present *2 5,500 <u>2,200</u> 2. Pesticide (per hectare) a. the future 19,300 Rls b. at present 15,300 <u>4,000</u> 2) Addition of water management costs. (additional collection by the district water office) <u>43,500 thousand Rls - 900 Rls/ha</u> 3) Seed cost (6,500 Rls = 50 kg x 130 Rls) 1. With project except seed costs 2. Without project..... the same at present
<u>Total</u>	<u>450,858</u>	<u>457,958</u>	<u>393,474</u>	

Note: *1 the general fertilization standards

*2 farm economic survey.

Table E.3.4 Production Cost in Rice Production (per hectare) (2)

Middle Land and Low Land
Variety Tarom

(Unit: Rls)

<u>Items of Costs</u>	<u>Present</u>	<u>Without Project</u>	<u>With Project</u>	<u>Note</u>
Seed bedding Transplanting Harvesting Threshing Milling	249,321	249,321	177,207	These are the costs of items related with small mechanization system.
Others	153,136	160,536	148,536	These are the additional costs to the others of rice production costs at present as the below; 1) Additional inputs of material goods by progress of farm technical standards in the future. 1. Fertilizer (per hectare) a. the future 5,600 Rls b. at present 3,000 <u>2,600</u> 2. Pesticide a. the future 13,500 Rls b. at present 9,600 <u>3,900</u> 2) Addition of water management costs (additional collection by the district water office) <u>43,500 thousand Rls - 900 Rls/ha</u> 3) Seed costs (12,000 Rls = 50 kg x 240 Rls) 1. With project exclude seed costs 2. Without project the same at present.
<u>Total</u>	<u>402,457</u>	<u>409,857</u>	<u>325,743</u>	

Table E.3.4 Production Cost in Rice Production (per hectare) (3)

<u>High Land</u>			(Unit: RIs)
<u>Variety-Amol 3</u>			
<u>Items of Costs</u>	<u>Present</u>	<u>Without Project</u>	<u>Note</u>
Seed bedding	271,118	253,533	This is the same with the case of Middle Land and Low Land.
Transplanting		213,134	
Harvesting			
Threshing			
Milling			
Others	179,740	180,340	1) Fertilizer
			2) Pesticide
			3) Water management
			About the above these are the same with the case of Middle Land and Low Land.
			4) Seed costs
			These are excepted in the case of without Project, too.
<u>Total</u>	<u>450,858</u>	<u>433,873</u>	<u>393,474</u>

Table E.3.4 Production Cost in Rice Production (per hectare) (4)

<u>High Land</u>			(Unit: Rls)
<u>Variety Tarom</u>			
<u>Items of Costs</u>	<u>Present</u>	<u>Without Project</u>	<u>With Project</u>
Seed bedding	249,321	217,199	177,207
Transplanting			
Harvesting			
Threshing			
Milling			
Others	153,136	148,536	148,536
			1) Fertilizer
			2) Pesticide
			3) Water management
			About the above these are the same with the case of Middle Land and Low Land.
			4) Seed costs
			These are excepted in the case of without Project, too.
<u>Total</u>	<u>402,457</u>	<u>365,735</u>	<u>325,743</u>

Table E.3.5 Labor Requirement by Operation (per hectare) in Rice Production

Operation	Kind of Machine	Field working capacity				Operating hours of machine per hectare	Practical working hours per hectare	Total Labor Hours	Note			
		Logical working capacity		Field Working Capacity								
		Width m	Speed km/hr	Efficiency %	Capacity ha/hr					Working times hr	rate %	hr
With #1 Project	Transplanter (2 rows plant) (self-running)	0.6	2.0	0.120	70	0.084	1	11.9	65	18.3	36.6	2
		0.65	1.2	0.078	55	0.043	1	23.2	65	35.7	107.1	3
Without Project	Transplanter (2 rows plant) (self-running)	0.6	2.0	0.120	52	0.062	1	16.1	65	24.8	74.4	3
		0.65	1.2	0.078	50	0.039	1	25.6	65	39.4	157.6	4
With #1 Project	Harvesting and Threshing (self-running)	0.6	2.0	0.120	52	0.062	1	16.1	65	24.8	74.4	3
		0.65	1.2	0.078	50	0.039	1	25.6	65	39.4	157.6	4

Note: #1 Labor requirements with Project in High Land are also adopted with Project in Middle Land and Low Land.

Table E.3.6 Possible Working Areas per One Number of Machine in Rice Production (I)

Kind of Machine	Field working capacity				Fields working capacity per day				Possible working days					
	Logical working capacity		Practical working hours		Practical Field working capacity		Possible Working days		Possible Working days		Possible working areas per			
	Work Width	Work Speed	Field Working Capacity	Field Working hours	Field Working hours	Field Working capacity	Working days	Working days	Working days	Working days	Working times	Working number		
	m	Km/hr	ha/hr	ha/hr	hr	per day	per day	rate	rate	rate	hr	ha		
With Transplanter Project (2 rows plant) (self-running)	0.6	2.0	0.120	70	0.084	10	6.5	6.5	0.55	20	90	18	1	9.9
Combine (2 rows reap) (self-running)	0.65	1.2	0.078	55	0.043	12	7.8	7.8	0.34	Amol 3 Tarom 30	75	23	1	7.8
Without Transplanter Project (2 rows plant) (self-running)	0.6	2.0	0.120	52	0.062	10	6.5	6.5	0.40	20	90	18	1	7.2
Combine (2 rows reap) (self-running)	0.65	1.2	0.078	50	0.039	12	7.8	7.8	0.30	Amol 3 Tarom 30	75	23	1	6.9
											85	26	1	7.8

Table E.3.6 Possible Working Areas per One Number of Machine in Rice Production (2)

Middle Land and Low Land	Field working capacity		Fields working capacity per day		Possible working days		Possible working areas per							
	Logical working capacity	Practical working hours	Working hours per day	Working days	Working days	Working times		number						
Kind of Machine	Work Width m km/hr	Working Capacity ha/hr	Field Working Efficiency %	Field Working Capacity ha/hr	Working hours per day	Practical Field working capacity per day	Working days	Working times	Working areas per number					
With Transplanter Project (2 rows plant) (self-running)	0.6	2.0	0.120	70	0.084	10	65	6.5	0.55	20	90	18	1	9.9
Combine (2 rows reap) (self-running)	0.65	1.2	0.078	55	0.043	12	65	7.8	0.34	Amol 3 Tarom 30	75	23	1	7.8
Without Transplanter Project (2 rows plant) (self-running)														
Combine (2 rows reap) (self-running)														

Working with man power

Working with man power

Table E.3.7 Reduced Production Cost by Mechanization in Rice Production (per hectare) (2)

Operation (Machines) Working means	Without Project										With Project														
	Requirement hours					Costs					Requirement hours					Costs									
	Man power	Ma- chine	Ma- chine	Ma- chine	Ma- chine	Man power	Ma- chine	Ma- chine	Ma- chine	Ma- chine	Man power	Ma- chine	Ma- chine	Ma- chine	Man power	Ma- chine	Ma- chine	Ma- chine	Man power	Ma- chine	Ma- chine				
Seed bedding	24	-	24	-	250	-	6,000	-	6,000	Cooperative seeding facilities	-	-	-	-	-	-	-	-	-	-	-	-	56,200	-50,200	
Trans-planting	119	73	192	-	333	-	63,936	-	63,936	Trans-planter (2 rows plant)	-	-	36.6	18.3	333	380	12,188	6,954	19,142	44,794	-	-	-	-	-
Harvesting	213	116	329	-	375	-	123,375	-	123,375	Combine (2 rows reap)	-	-	107.1	35.7	375	970	40,163	34,629	74,792	90,613	-	-	-	-	-
Threshing	104	22	126	27	250	390	31,500	10,530	42,030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	-	-	-	-	-	-	-	-	235,341	-	-	-	-	-	-	-	-	-	-	-	-	-	150,134	85,207	
Milling	-	-	-	-	-	-	-	-	35,777	Country-elevator	-	-	-	-	-	-	-	-	-	-	-	-	63,000	-27,223	
Sub-total	-	-	-	-	-	-	-	-	271,118	-	-	-	-	-	-	-	-	-	-	-	-	-	213,134	57,984	
Others	-	-	-	-	-	-	-	-	186,840	-	-	-	-	-	-	-	-	-	-	-	-	-	180,340	6,500	
Production Cost	-	-	-	-	-	-	-	-	457,958	-	-	-	-	-	-	-	-	-	-	-	-	-	393,474	64,484	

Table E.3.8 Price of Rice

(Unit: Rial/kg)

Variety	Rice Committee		Babol ARTSC	Amol Market	
	1984	1985	1983	1984	1985-Nov.
Tarom - 1st grade(1)	-	-			415
Tarom - 2nd grade(2)	-	-	260	300	370
Tarom - broken rice	-	-	-	-	130 - 150
Amol-3 (3)	190	200	175	180	190 - 230
Amol-3 - broken rice	-	-	-	-	75
Gerdi - Shastak	-	-	-	-	160
Abkenari	-	-	-	-	220 - 240
Mesbah	-	-	-	-	250 - 300

- Notes: (1) Tarom 1st grade less than 5% of broken rice ratio
- (2) Tarom 2nd grade 5 - 20% of broken rice ratio
- (3) Price of Amol-2 is same as Amol-3.
- (4) Official price of Amol-3 in 1985 season is 230 rials/kg without mixture of broken rice. Each 1.0% of broken rice ratio, 2.0 rials is reduced, e.g., 15.0% of broken rice ratio becomes 200 rials/kg. If the broken rice ratio is more than 40%, the governmental agency refuse to procure.
- (5) For economic analysis of this study, the prices of rice are applied:
- Tarom ; 320 rials/kg
Amol-3 ; 190 rials/kg

Table E.3.9 Gross Production Value in Rice Production (per hectare)

Variety	Present			Without Project			With Project		
	Sub-Project Yield/ha ton	Price/kg Rls	Gross production value Rls	Yield/ha ton	Price/kg Rls	Gross production value Rls	Yield/ha ton	Price/kg Rls	Gross production value Rls
Amol-3 High Land	6.7	190	827,450	8.4	190	1,037,400	8.4	190	1,037,400
Middle, Low land	6.7	190	827,450	7.4	190	913,900	8.4	190	1,037,400
Tarom High Land	3.5	320	728,000	4.2	320	873,600	4.2	320	873,600
Middle, Low Land	3.5	320	728,000	3.9	320	811,200	4.2	320	873,600

Note: 1. Yield (per hectare) in the Middle and Low Lands

Variety	Present Yield	Increase production quantity		Target Yield
		(1) by uplevelling of farming techniques	(2) With project	
Amol-3	6.7 ton	0.7 ton	1.0 ton	8.4 ton
Tarom	3.5	0.4	0.3	4.2

(*1) Increased production quantity by progress of farm technical standard is estimated with 10% of present yield.

2. Increased production quantity in High Land with Project is only that which is based on uplevelling of farming techniques, as land condition in High Land is good in drainage.

Table E.3.10 Incremental Net Production Value in Rice Production (per hectare)

(Unit: RIs)

Area Variety Items	High Land				Middle land and Low Land				
	Amol-3		Tarom		Amol-3		Tarom		
	Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project	
Gross Production	1,037,400	1,037,400	873,600	873,600	913,900	1,037,400	811,200	873,600	-
Production Cost	435,873	393,474	365,735	325,743	457,958	393,474	409,857	325,743	-
Net Production Value	603,527	643,926	507,865	547,857	455,942	643,926	401,343	547,857	-
Incremental Net Production Value	-	40,339	-	39,992	-	39,992	-	187,984	146,514
		<u>40,339</u>		<u>39,992</u>		<u>39,992</u>		<u>187,984</u>	<u>146,514</u>

Table E.3.11 Incremental Net Production Value in Rice Production (Project)

(Unit: Thousand RIs)

Project Area	Areas						Net Production Value						Incremental Net Production Value
	Without Project			With Project			Without Project			With Project			
	Variety Amol 3	Variety Tarom	ha	Variety Amol 3	Variety Tarom	ha	Variety Amol 3	Variety Tarom	Sub-total	Variety Amol 3	Variety Tarom	Sub-total	
Haraz High Land	3,953	2,636	6,096	1,524	2,385,742	1,538,732	3,724,474	3,925,373	834,934	4,760,307	1,035,833		
River Middle Land Left	5,356	3,570	7,051	1,763	2,442,025	1,432,795	3,874,820	4,540,322	965,872	5,506,194	1,631,374		
Bank Low Land	5,502	3,668	7,122	1,781	2,508,593	1,472,126	3,980,719	4,586,041	975,733	5,561,774	1,581,055		
Sub-total	14,811	9,874	20,269	5,068	7,356,360	4,243,653	11,580,013	13,051,736	2,776,539	15,828,275	4,248,262		
Haraz High Land	2,687	1,791	3,569	892	1,621,677	909,586	2,531,263	2,298,172	488,688	2,786,860	255,597		
River Middle Land Right	3,085	2,056	4,042	1,011	1,406,581	825,161	2,231,742	2,602,749	553,883	3,156,632	924,890		
Bank Low Land	2,275	1,517	2,946	736	1,037,268	608,837	1,646,105	1,897,006	403,223	2,300,229	654,124		
Sub-total	8,047	5,364	10,557	2,639	4,065,526	2,343,584	6,409,110	6,797,927	1,445,794	8,243,721	1,834,611		
Kari High Land	4,590	3,060	6,341	1,585	2,770,189	1,554,067	4,324,256	4,085,135	868,353	4,951,488	627,232		
River Middle Land	7,897	5,265	10,296	2,574	3,600,574	2,113,071	5,713,645	6,629,862	1,410,184	8,040,046	2,326,401		
Bank Low Land	4,846	3,231	6,593	1,648	2,209,495	1,296,739	3,506,234	4,245,404	902,868	5,148,272	1,642,038		
Sub-total	17,333	11,556	23,230	5,807	8,580,258	4,963,877	13,544,135	14,958,401	3,181,405	18,139,806	4,595,671		
All High Land	11,230	7,487	16,006	4,001	6,777,608	3,802,385	10,579,993	10,306,680	2,192,275	12,498,655	1,918,662		
Area Middle Land	16,338	10,891	21,389	5,348	7,449,180	4,371,027	11,820,207	13,772,933	2,929,939	16,702,872	4,882,665		
Low Land	12,623	8,416	16,661	4,165	5,755,356	3,377,702	9,133,058	10,728,451	2,281,824	13,010,275	3,877,217		
Total	40,191	26,794	54,056	13,514	19,982,144	11,551,114	31,533,258	34,808,064	7,604,038	42,211,802	10,678,544		

Table E.3.12 Incremental Net Production Value (Project)

<u>Project Area</u>		(Unit: Thousand Rls)		
	<u>Sub-Area</u>	<u>Rice</u>	<u>Animal Husbandry</u>	<u>Total</u>
Haraz River Left Bank	High Land	1,035,833	810,660	<u>1,846,493</u>
	Middle Land	1,631,374	932,620	<u>2,563,994</u>
	Low Land	1,581,055	946,980	<u>2,528,025</u>
	<u>Sub-total</u>	<u>4,248,262</u>	<u>2,690,250</u>	<u>6,938,512</u>
Haraz River Right Bank	High land	255,597	473,480	<u>729,077</u>
	Middle land	924,890	538,050	<u>1,462,940</u>
	Low Land	654,124	394,570	<u>1,048,694</u>
	<u>Sub-total</u>	<u>1,834,611</u>	<u>1,406,100</u>	<u>3,240,711</u>
Kari Rud	High land	627,232	839,360	<u>1,466,592</u>
	Middle Land	2,326,401	1,363,060	<u>3,689,461</u>
	Low Land	1,642,038	875,230	<u>2,517,268</u>
	<u>Sub-total</u>	<u>4,595,671</u>	<u>3,077,650</u>	<u>7,673,321</u>
All Areas	High Land	1,918,662	2,123,500	4,042,162
	Middle land	4,882,665	2,833,730	7,716,395
	Low land	3,877,217	2,216,770	6,093,987
	<u>Total</u>	<u>10,678,544</u>	<u>7,174,000</u>	<u>17,852,544</u>

Table E.3.13 Construction Cost Schedule (1)

Haraz River Left Bank (Unit: Thousand Rls)

Years	High Land										Middle Land					Low Land				
	Area Drainage		Land Improvement		Rural Road		Livestock Facilities		Sub-total		Area Drainage		Land Improvement		Rural Road		Livestock Facilities		Sub-total	
1 1987	-	93,440	9,610	-	103,050	27,750	120,610	10,790	-	159,150	48,300	97,320	11,800	-	157,420					
2 1988	-	93,440	9,610	-	103,050	27,750	120,610	10,790	-	159,150	48,300	97,320	11,800	-	157,420					
3 1989	-	93,440	9,610	15,450	118,500	27,750	120,610	10,790	17,770	176,920	48,300	97,320	11,800	18,050	175,470					
4 1990	-	305,570	135,310	15,450	456,330	397,560	-	152,010	17,770	567,340	691,640	-	166,280	18,050	875,970					
5 1991	-	305,570	136,280	233,830	675,680	397,630	-	153,210	269,030	819,870	691,820	333,790	167,160	273,160	1,465,930					
6 1992	-	305,570	136,280	219,090	660,940	397,560	-	153,210	252,070	802,840	691,640	333,790	167,160	255,930	1,448,520					
7 1993	-	305,570	-	218,380	523,950	-	-	-	251,260	251,260	-	509,180	-	255,110	764,290					
8 1994	-	305,570	-	-	305,570	-	413,710	-	-	413,710	-	509,180	-	-	509,180					
9 1995	-	305,570	-	-	305,570	-	413,710	-	-	413,710	-	509,180	-	-	509,180					
10 1996	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
11 1997	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
12 1998	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
13 1999	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
14 2000	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
15 2001	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
16 2002	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
17 2003	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	509,180	-	-	509,180					
18 2004	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	333,790	-	-	333,790					
19 2005	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	334,670	-	-	334,670					
20 2006	-	305,570	-	-	305,570	-	630,960	-	-	630,960	-	-	-	-	-					
21 2007	-	305,570	-	-	305,570	-	413,710	-	-	413,710	-	-	-	-	-					
22 2008	-	305,570	-	-	305,570	-	413,440	-	-	413,440	-	-	-	-	-					
23 2009	-	305,570	-	-	305,570	-	-	-	-	-	-	-	-	-	-					
		6,391,700	436,700	702,200	7,530,600	1,276,000	8,326,000	490,800	807,900	10,900,700	2,220,000	6,719,800	536,000	820,300	10,296,100					

Table E.3.13 Construction Cost Schedule (2)

(Unit: Thousand RIs)

Years	High Land										Middle Land										Low Land										
	Area Drainage		Land Improvement		Rural Road		Livestock Facilities		Sub-total		Area Drainage		Land Improvement		Rural Road		Livestock Facilities		Sub-total		Area Drainage		Land Improvement		Rural Road		Livestock Facilities		Sub-total		
1 1987	-	56,210	-	56,210	5,310	-	-	61,520	16,730	69,000	5,310	-	-	91,040	33,840	40,830	4,890	-	-	40,830	40,830	40,830	4,890	-	-	79,560	-	-	-	79,560	
2 1988	-	56,210	-	56,210	5,310	-	-	61,520	16,730	69,000	5,310	-	-	91,040	33,840	40,830	4,890	-	-	40,830	40,830	40,830	4,890	-	-	86,940	-	-	-	86,940	
3 1989	-	56,210	-	56,210	5,310	9,020	9,020	70,540	16,730	69,000	5,310	10,250	10,250	101,290	33,840	40,830	4,890	7,380	-	-	40,830	40,830	40,830	4,890	7,380	550,020	-	-	-	550,020	
4 1990	-	155,740	-	155,740	74,870	9,020	9,020	239,630	234,250	-	74,870	10,250	10,250	319,370	473,760	-	68,880	7,380	-	-	-	68,880	68,880	68,880	7,380	775,320	-	-	-	775,320	
5 1991	-	155,740	-	155,740	75,300	136,600	136,600	367,640	237,290	-	75,300	155,180	155,180	467,770	479,910	116,320	69,330	111,760	-	-	116,320	116,320	116,320	69,330	104,700	844,820	-	-	-	844,820	
6 1992	-	256,840	-	256,840	75,300	127,880	127,880	460,020	238,810	-	75,300	145,390	145,390	459,500	482,980	187,820	69,320	104,700	-	-	187,820	187,820	187,820	69,320	104,700	292,200	-	-	-	292,200	
7 1993	-	256,840	-	256,840	-	127,580	127,580	384,420	-	-	-	144,930	144,930	144,930	-	187,820	-	104,380	-	-	187,820	187,820	187,820	-	104,380	187,820	-	-	-	187,820	
8 1994	-	256,840	-	256,840	-	-	-	256,840	-	188,640	-	-	-	188,640	-	187,820	-	-	-	-	188,640	188,640	188,640	-	-	187,820	-	-	-	187,820	
9 1995	-	256,840	-	256,840	-	-	-	256,840	-	188,640	-	-	-	188,640	-	187,820	-	-	-	-	188,640	188,640	188,640	-	-	187,820	-	-	-	187,820	
10 1996	-	256,840	-	256,840	-	-	-	256,840	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
11 1997	-	256,840	-	256,840	-	-	-	256,840	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
12 1998	-	256,840	-	256,840	-	-	-	256,840	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
13 1999	-	256,840	-	256,840	-	-	-	256,840	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
14 2000	-	256,840	-	256,840	-	-	-	256,840	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
15 2001	-	256,840	-	256,840	-	-	-	256,840	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
16 2002	-	256,840	-	256,840	-	-	-	256,840	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
17 2003	-	256,750	-	256,750	-	-	-	256,750	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
18 2004	-	155,740	-	155,740	-	-	-	155,740	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	187,820	-	-	-	187,820	
19 2005	-	155,660	-	155,660	-	-	-	155,660	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	139,760	-	-	-	139,760	
20 2006	-	-	-	-	-	-	-	-	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	-	-	-	-	-	-
21 2007	-	-	-	-	-	-	-	-	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	-	-	-	-	-	-
22 2008	-	-	-	-	-	-	-	-	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	-	-	-	-	-	-
23 2009	-	-	-	-	-	-	-	-	-	271,470	-	-	-	271,470	-	187,820	-	-	-	-	271,470	271,470	271,470	-	-	-	-	-	-	-	-
24 2010	-	-	-	-	-	-	-	-	-	188,640	-	-	-	188,640	-	187,820	-	-	-	-	188,640	188,640	188,640	-	-	-	-	-	-	-	-
25 2011	-	-	-	-	-	-	-	-	-	188,860	-	-	-	188,860	-	187,820	-	-	-	-	188,860	188,860	188,860	-	-	-	-	-	-	-	-
Total		3,873,500		3,873,500	241,400	410,100	410,100	4,525,000	760,540	4,762,260	241,400	466,000	466,000	6,230,300	1,538,170	2,818,230	222,200	335,600	335,600	6,230,300	1,538,170	2,818,230	222,200	335,600	4,914,200	4,914,200	4,914,200	4,914,200	4,914,200	4,914,200	

Table E.3.13 Construction Cost Schedule (3)

(Unit: Thousand Rls)

Years	High Land										Middle Land					Low Land				
	Area Drainage	Land Improvement		Rural Road		Livestock Facilities		Sub-total		Area Drainage		Land Improvement		Rural Road		Livestock Facilities		Sub-total		
1 1987	-	101,350	8,340	-	109,690	48,690	171,930	16,100	-	236,720	88,730	91,570	12,140	-	192,440	-	-	-	-	-
2 1988	-	101,350	8,340	-	109,690	48,690	171,930	16,100	-	236,720	88,730	91,570	12,140	-	192,440	-	-	-	-	-
3 1989	-	101,350	8,340	15,990	125,680	48,690	171,930	16,100	26,110	262,830	88,730	91,570	12,140	16,680	209,120	-	-	-	-	-
4 1990	-	153,560	117,700	15,990	287,250	681,680	-	226,860	26,110	934,650	1,242,300	-	171,060	16,680	1,430,040	-	-	-	-	-
5 1991	-	214,360	118,340	242,090	574,790	690,540	-	228,320	395,240	1,314,100	1,258,440	142,330	172,160	252,480	1,825,410	-	-	-	-	-
6 1992	-	396,710	118,340	226,830	741,880	694,970	-	228,320	370,310	1,293,600	1,266,500	197,250	172,160	236,560	1,872,470	-	-	-	-	-
7 1993	-	396,710	-	226,200	622,910	-	260,720	-	369,130	629,850	-	417,220	-	235,800	653,020	-	-	-	-	-
8 1994	-	396,710	-	-	396,710	-	363,900	-	-	363,900	-	417,220	-	417,220	417,220	-	-	-	-	-
9 1995	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
10 1996	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
11 1997	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
12 1998	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
13 1999	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
14 2000	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
15 2001	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
16 2002	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
17 2003	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
18 2004	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
19 2005	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	417,220	-	417,220	417,220	-	-	-	-	-
20 2006	-	396,710	-	-	396,710	-	673,470	-	-	673,470	-	143,110	-	143,110	143,110	-	-	-	-	-
21 2007	-	214,360	-	-	214,360	-	673,470	-	-	673,470	-	143,110	-	143,110	143,110	-	-	-	-	-
22 2008	-	153,200	-	-	153,200	-	673,470	-	-	673,470	-	-	-	-	-	-	-	-	-	-
23 2009	-	-	-	-	-	-	673,470	-	-	673,470	-	-	-	-	-	-	-	-	-	-
24 2010	-	-	-	-	-	-	362,520	-	-	362,520	-	-	-	-	-	-	-	-	-	-
25 2011	-	-	-	-	-	-	258,860	-	-	258,860	-	-	-	-	-	-	-	-	-	-
Total		6,990,200	379,400	727,100	8,096,700	2,213,360	11,863,840	731,800	1,186,900	15,995,800	4,032,430	6,324,370	551,800	758,200	11,667,800					

Table E.3.14 Operation and Maintenance Cost by Works

(Unit: Thousand Rls)

Sub-project	Area		Land Improvement	Rural Road	Animal Husbandry Facilities		Total
	Drainage						
Haraz	-		32,474	3,402	27,346	63,222	
River Left Bank	7,219		40,134	3,820	31,460	82,633	
	12,558		31,934	4,178	31,943	80,613	
Haraz	-		19,539	1,880	15,971	37,390	
River Right Bank	4,591		22,970	1,880	18,148	47,589	
	9,351		13,325	1,730	13,068	37,474	
Kari Rud	-		35,162	2,955	28,312	66,429	
	12,163		57,473	5,700	46,220	121,556	
	23,848		29,900	4,296	29,522	87,566	
Project Area	69,730		282,911	29,841	241,990	624,472	

Note: 1) Area Drainage Cost of area drainage x 0.0083, Farm pond spill way x 0.0012, River bank embankment x 0.0052
 2) Land Improvement .. Intake facilities x 0.052, Sand track x 0.0052, diversion x 0.0052, canal repair x 0.0083, land consolidation x 0.0067
 3) Rural Road Cost of rural road x 0.01
 4) Livestock Facilities Cost of livestock facilities x 0.05
 5) General Expenditures [1) + 2) + 3) + 4)] x 0.03

Table E.3.15 Operation and Maintenance Cost Schedule

Project Area		(Unit: Thousand Rio)									
Years	Haraz River Left Bank			Haraz River Right Bank			Karl Rud			Total	
	High Land	Middle Land	Low Land	High Land	Middle Land	Low Land	High Land	Middle Land	Low Land		
1	1987	0	0	0	0	0	0	0	0	0	
2	1988	0	0	0	0	0	0	0	0	0	
3	1989	0	0	0	0	0	0	0	0	0	
4	1990	0	0	0	0	0	0	0	0	0	
5	1991	2,753	3,672	5,569	1,464	2,153	3,688	1,825	5,942	9,367	36,433
6	1992	15,029	18,292	23,968	8,490	10,339	12,470	13,825	27,994	29,752	160,159
7	1993	26,704	32,243	41,651	15,673	18,558	21,616	25,890	48,646	49,510	280,491
8	1994	37,243	42,499	54,587	22,228	24,619	26,548	37,420	65,462	61,433	372,039
9	1995	38,867	44,626	57,110	23,576	25,538	27,480	39,706	67,359	63,497	387,759
10	1996	40,490	46,753	59,632	24,924	26,457	28,413	41,569	70,750	65,560	404,548
11	1997	42,114	49,924	62,155	26,272	27,835	29,346	43,644	74,141	67,623	423,054
12	1998	43,738	53,094	64,678	27,621	29,213	30,279	45,719	77,532	69,686	441,560
13	1999	45,361	46,265	67,201	28,969	30,591	31,211	47,793	80,923	71,749	460,063
14	2000	46,985	59,436	69,724	30,317	31,969	32,144	49,868	84,313	73,812	478,568
15	2001	48,609	62,506	72,246	31,665	33,348	33,077	51,942	87,704	75,875	496,972
16	2002	50,232	65,777	74,769	33,013	34,726	34,010	54,017	91,095	77,938	515,577
17	2003	51,856	68,947	77,292	34,361	36,104	34,942	56,091	94,486	80,001	534,080
18	2004	53,480	72,118	78,952	35,710	37,482	35,875	58,166	97,877	82,064	551,724
19	2005	55,104	75,288	80,613	36,550	38,860	36,808	60,240	101,268	84,128	568,859
20	2006	56,727	78,459	80,613	37,390	40,239	37,474	62,350	104,659	86,191	584,102
21	2007	58,351	80,546	80,613	37,390	41,617	37,474	64,460	108,050	86,878	595,379
22	2008	59,975	82,633	80,613	37,390	42,995	37,474	65,620	111,441	87,566	605,707
23	2009	61,598	82,633	80,613	37,390	44,373	37,474	66,429	114,889	87,566	612,965
24	2010	63,222	82,633	80,613	37,390	45,751	37,474	66,429	118,388	87,566	619,466
25	2011	63,222	82,633	80,613	37,390	46,670	37,474	66,429	120,234	87,566	622,231
26	2012	63,222	82,633	80,613	37,390	47,589	37,474	66,429	121,556	87,566	624,472
27	2013	63,222	82,633	80,613	37,390	47,589	37,474	66,429	121,556	87,566	624,472
28	2014	63,222	82,633	80,613	37,390	47,589	37,474	66,429	121,556	87,566	624,472
29	2015	63,222	82,633	80,613	37,390	47,589	37,474	66,429	121,556	87,566	624,472
50	2036	63,222	82,633	80,613	37,390	47,589	37,474	66,429	121,556	87,566	624,472

Table E.3.16 Benefit Schedule

(Unit: Thousand Rls)

Project Area	Haraz River Left Bank			Haraz River Right Bank			Kari Rud			
	High Land	Middle Land	Low Land	High Land	Middle Land	Low Land	High Land	Middle Land	Low Land	
1 1987	-	-	-	-	-	-	-	-	-	
2 1988	-	-	-	-	-	-	-	-	-	
3 1989	-	-	-	-	-	-	-	-	-	
4 1990	-	-	-	-	-	-	-	-	-	
5 1991	41,061	21,235	-	10,426	-	-	11,632	-	-	
6 1992	260,647	67,397	10,259	44,662	31,350	24,751	13,982	39,259	14,994	20,138
7 1993	612,342	136,825	20,518	133,986	69,044	35,511	52,433	95,965	16,285	67,967
8 1994	1,176,483	220,102	30,777	289,879	113,007	55,957	115,354	168,667	29,516	173,692
9 1995	1,929,860	322,028	45,297	467,684	163,313	96,268	188,763	254,454	99,617	317,176
10 1996	2,902,824	425,432	136,521	667,398	213,620	149,988	262,172	340,241	242,276	390,867
11 1997	4,023,963	540,653	294,004	867,112	263,926	229,207	335,581	426,028	427,979	664,558
12 1998	5,205,802	654,951	474,338	1,066,826	314,232	314,037	408,990	511,816	645,657	838,249
13 1999	6,469,762	826,121	676,894	1,266,540	364,539	405,041	482,399	597,603	863,335	1,011,940
14 2000	7,630,177	884,655	879,450	1,466,254	414,845	496,046	555,808	683,390	1,081,013	1,359,322
15 2001	8,842,365	999,876	1,082,006	1,665,968	465,151	587,050	629,217	769,178	1,298,691	1,533,013
16 2002	10,056,338	1,116,205	1,284,562	1,865,682	515,457	678,592	702,626	854,965	1,516,369	1,706,704
17 2003	11,266,740	1,230,503	1,487,118	2,065,396	565,764	769,059	776,035	940,752	1,734,047	1,880,395
18 2004	12,452,149	1,342,954	1,689,674	2,242,358	616,070	858,449	849,444	1,026,540	1,951,725	2,054,086
19 2005	13,617,920	1,467,962	1,892,230	2,396,567	660,033	946,763	922,853	1,112,327	2,169,403	2,227,777
20 2006	14,655,153	1,548,100	2,094,786	2,484,205	697,727	1,029,696	988,269	1,198,114	2,387,081	2,362,871
21 2007	15,542,210	1,631,192	2,274,265	2,528,025	718,651	1,107,788	1,031,217	1,285,355	2,604,759	2,376,298
22 2008	16,183,331	1,705,052	2,430,688	"	729,077	1,183,726	1,048,694	1,359,511	2,822,430	2,497,968
23 2009	16,788,532	1,754,108	2,519,552	"	"	1,249,980	"	1,416,217	3,041,345	2,517,268
24 2010	17,213,422	1,799,592	2,563,994	"	"	1,317,849	"	1,442,390	3,261,483	"
25 2011	17,502,634	1,828,213	"	"	"	1,375,785	"	1,466,592	3,449,646	"
26 2012	17,709,723	1,842,985	"	"	"	1,423,791	"	"	3,592,305	"
27 2013	17,811,483	1,846,493	"	"	"	1,450,608	"	"	3,661,175	"
28 2014	17,852,544	"	"	"	"	1,462,940	"	"	3,689,461	"
50 2036	17,480,230	1,651,220	2,563,994	2,528,025	676,247	1,462,940	1,048,694	1,342,383	3,689,461	2,517,268

Table E.3.17. Sub-Area Cost and Benefit (FIRR, B/C) (1)

YEAR	PROJECT COST		RETURN	6 %		8 %		10 %	
	CAPITAL	TOTAL		(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	103.100	103.100	-103.100	103.100	0.0	103.100	0.0	103.100	0.0
2 1988	103.100	103.100	-103.100	91.759	0.0	88.392	0.0	85.207	0.0
3 1989	118.500	118.500	-118.500	99.495	0.0	94.065	0.0	89.031	0.0
4 1990	456.300	456.300	-456.300	361.433	0.0	335.945	0.0	311.660	0.0
5 1991	675.700	675.700	-675.700	507.017	15.842	461.777	14.428	421.297	13.164
6 1992	660.900	675.900	-608.500	476.485	47.515	425.933	42.474	381.530	38.046
7 1993	524.000	550.700	-413.500	346.249	90.980	321.326	78.822	282.598	70.700
8 1994	305.600	342.800	-122.700	219.079	138.095	188.920	118.916	159.920	102.679
9 1995	305.600	344.500	-22.000	203.911	190.593	172.337	161.081	146.103	136.560
10 1996	305.600	346.100	79.300	193.262	237.543	160.312	197.044	133.438	164.012
11 1997	305.600	347.700	193.000	183.166	284.837	149.123	221.898	121.866	189.514
12 1998	305.600	349.300	305.500	173.593	325.519	138.713	260.111	111.299	208.705
13 1999	305.600	351.000	475.100	164.565	387.313	129.063	303.758	101.673	239.294
14 2000	305.600	352.600	532.100	157.957	391.309	120.947	301.208	92.852	232.972
15 2001	305.600	354.200	645.700	147.797	417.229	111.660	315.213	84.794	239.371
16 2002	305.600	355.800	760.400	140.061	439.395	103.856	325.811	77.434	242.821
17 2003	305.600	357.500	875.000	132.765	459.971	96.622	332.569	70.731	243.851
18 2004	305.600	359.100	983.000	125.811	484.520	89.865	336.088	64.588	241.454
19 2005	305.600	360.700	1107.300	119.218	465.202	83.579	340.157	58.974	240.034
20 2006	305.600	362.300	1185.800	112.969	482.714	77.732	332.146	53.855	230.119
21 2007	305.600	364.000	1267.200	107.075	479.836	72.317	326.051	49.189	220.429
22 2008	305.600	365.600	1359.500	101.458	473.184	67.350	318.641	44.513	209.469
23 2009	305.600	367.200	1454.200	96.134	459.255	62.941	298.771	41.009	195.910
24 2010	0.0	63.200	1736.400	91.609	444.473	59.947	283.800	38.417	182.709
25 2011	0.0	63.200	1828.200	87.226	425.978	57.273	266.954	36.833	168.739
26 2012	0.0	63.200	1843.000	83.892	405.120	54.545	249.181	35.303	154.641
27 2013	0.0	63.200	1846.500	81.106	382.915	51.912	231.161	33.850	140.850
28 2014	0.0	63.200	1846.500	78.364	361.241	49.326	214.038	32.483	128.046
29 2015	0.0	63.200	1846.500	75.664	340.794	46.783	198.184	31.044	116.405
30 2016	0.0	63.200	1846.500	73.004	321.504	44.281	183.503	29.622	105.823
31 2017	0.0	63.200	1846.500	70.381	303.306	41.816	168.911	28.293	96.203
32 2018	0.0	63.200	1846.500	67.794	286.138	39.385	153.325	26.993	87.457
33 2019	0.0	63.200	1846.500	65.239	269.941	37.046	143.671	25.721	79.507
34 2020	0.0	63.200	1846.500	62.716	254.662	34.817	134.881	24.474	72.279
35 2021	0.0	63.200	1846.500	60.223	240.247	32.673	126.990	23.249	65.708
36 2022	0.0	63.200	1846.500	57.757	226.649	30.598	119.639	22.045	59.135
37 2023	0.0	63.200	1846.500	55.318	213.820	28.585	112.073	20.859	54.304
38 2024	0.0	63.200	1846.500	52.904	201.717	26.630	104.142	19.690	49.368
39 2025	0.0	63.200	1846.500	50.513	190.299	24.742	96.142	18.536	44.880
40 2026	0.0	63.200	1846.500	48.145	179.528	22.909	88.098	17.396	40.800
41 2027	0.0	63.200	1846.500	45.797	169.366	21.138	80.702	16.270	37.091
42 2028	0.0	63.200	1846.500	43.469	159.779	19.424	72.472	15.154	33.719
43 2029	0.0	63.200	1846.500	41.159	150.735	17.769	64.474	14.049	30.654
44 2030	0.0	63.200	1846.500	38.867	142.203	16.138	56.476	12.954	27.867
45 2031	0.0	63.200	1846.500	36.592	134.154	14.540	48.448	11.887	25.334
46 2032	0.0	63.200	1846.500	34.332	126.561	12.983	40.488	10.848	23.031
47 2033	0.0	63.200	1846.500	32.087	119.497	11.468	32.596	9.834	20.937
48 2034	0.0	63.200	1846.500	29.855	112.939	9.992	24.722	8.844	19.034
49 2035	0.0	63.200	1846.500	27.637	106.863	8.555	16.850	7.884	17.303
50 2036	0.0	63.200	1846.500	25.433	100.263	7.148	8.920	6.953	15.730
TOTAL	7531.200	2641.700	56409.500	4594.943	126649.530	3767.018	8057.678	3152.263	5356.956

UNIT : MILLION MILLION RIALS
 BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.75 (6%), 2.14 (8%), 1.70 (10%)
 INTERNAL RATE OF RETURN (IRR) = 15.4 %

Table E.3.17 Sub-Area Cost and Benefit (FIRR, B/C) (2)

(UNIT : MILLION RIYALS)

YEAR	PROJECT COST		O & M	TOTAL	BENEFITS	RETURN	6 %		8 %		10 %	
	CAPITAL	0 & M					(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	159.200	0.0	0.0	159.200	0.0	-159.200	159.200	0.0	159.200	0.0	159.200	0.0
2 1988	159.200	0.0	0.0	159.200	0.0	-159.200	141.888	0.0	136.488	0.0	131.570	0.0
3 1989	170.900	0.0	0.0	170.900	0.0	-170.900	173.991	0.0	135.666	0.0	128.400	0.0
4 1990	567.300	0.0	0.0	567.300	0.0	-567.300	449.356	0.0	416.983	0.0	387.675	0.0
5 1991	819.900	3.700	0.0	823.600	0.0	-823.600	615.445	0.0	560.529	0.0	511.593	0.0
6 1992	802.800	18.300	10.300	821.100	20.300	-810.800	578.846	7.361	517.234	6.491	463.492	5.814
7 1993	251.300	32.200	30.800	283.500	30.800	-263.000	198.545	13.834	165.420	11.962	145.481	10.520
8 1994	413.700	42.500	45.300	456.200	30.800	-425.400	286.288	19.324	266.472	16.640	212.822	14.369
9 1995	413.700	44.600	47.800	458.300	45.300	-413.000	271.269	26.343	229.585	22.661	194.365	19.212
10 1996	631.000	46.800	51.000	677.800	136.500	-541.300	378.484	76.222	313.954	63.526	261.325	52.627
11 1997	631.000	49.900	53.100	680.900	136.500	-544.400	339.693	154.777	271.667	188.352	217.978	151.128
12 1998	631.000	53.100	56.300	684.100	136.500	-547.600	339.991	154.777	271.667	188.352	217.978	151.128
13 1999	631.000	56.300	59.400	687.300	136.500	-550.800	322.237	137.361	252.721	248.897	199.089	196.076
14 2000	631.000	59.400	62.500	690.400	136.500	-553.900	305.359	119.100	235.056	299.438	181.806	231.603
15 2001	631.000	62.500	65.600	693.500	136.500	-557.000	289.377	92.837	218.622	341.094	166.021	259.026
16 2002	631.000	65.600	68.700	696.600	136.500	-560.100	273.297	66.566	203.391	374.966	151.646	279.370
17 2003	631.000	68.700	71.800	699.700	136.500	-563.200	258.922	40.291	191.163	401.921	138.474	294.219
18 2004	631.000	71.800	74.900	702.800	136.500	-566.300	246.331	14.068	175.952	422.850	126.461	303.912
19 2005	631.000	74.900	78.000	705.900	136.500	-569.400	235.446	185.860	153.660	438.450	115.488	309.595
20 2006	413.700	80.500	83.600	493.900	2274.300	1780.400	145.286	69.011	98.117	451.808	66.742	307.333
21 2007	413.400	82.600	85.700	493.900	2274.300	1780.400	145.286	69.011	98.117	451.808	66.742	307.333
22 2008	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
23 2009	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
24 2010	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
25 2011	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
26 2012	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
27 2013	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
28 2014	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
29 2015	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
30 2016	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
31 2017	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
32 2018	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
33 2019	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
34 2020	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
35 2021	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
36 2022	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
37 2023	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
38 2024	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
39 2025	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
40 2026	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
41 2027	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
42 2028	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
43 2029	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
44 2030	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
45 2031	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
46 2032	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
47 2033	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
48 2034	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
49 2035	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
50 2036	0.0	82.600	85.700	82.600	2319.000	2319.000	21.932	674.544	15.194	447.110	10.147	298.607
TOTAL	10895.100	3305.800	3305.800	14200.900	88351.100	74350.200	647.190	15491.264	5270.493	9315.883	4375.626	6074.318

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.39 (6%), 1.81 (8%), 1.39 (10%)
INTERNAL RATE OF RETURN (IRR) = 12.7 %

Table E.3.17 Sub-Area Cost and Benefit (FIRR, B/C) (3)

(UNIT : MILLION RIALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	6 %		8 %		10 %	
	CAPITAL	D & M				(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	157.400	0.0	157.400	0.0	-157.400	157.400	0.0	157.400	0.0	157.400	0.0
2 1988	157.400	0.0	157.400	0.0	-157.400	140.086	0.0	134.945	0.0	130.083	0.0
3 1989	175.500	0.0	175.500	0.0	-175.500	147.354	0.0	139.318	0.0	131.856	0.0
4 1990	276.000	0.0	276.000	0.0	-276.000	693.876	0.0	643.887	0.0	598.322	0.0
5 1991	1471.500	0.0	1471.500	0.0	-1471.500	1099.595	0.0	1001.480	0.0	913.689	0.0
6 1992	1448.500	5.600	1454.100	44.700	-1442.800	1038.060	31.512	927.928	28.169	851.192	25.332
7 1993	764.300	41.700	806.000	134.000	-672.000	536.039	89.118	470.295	78.188	413.608	68.764
8 1994	509.200	54.600	563.800	290.000	-273.800	353.738	181.931	304.605	156.679	263.019	135.288
9 1995	509.200	57.100	566.300	467.700	-98.600	335.195	276.833	283.282	233.968	240.168	198.352
10 1996	509.200	59.600	568.800	667.400	98.600	317.618	376.676	283.466	309.337	219.299	257.314
11 1997	509.200	62.200	571.400	867.100	295.700	301.009	456.782	245.065	371.887	200.274	303.916
12 1998	509.200	64.700	573.900	1066.800	492.900	285.214	530.173	227.905	423.444	182.864	339.919
13 1999	509.200	67.200	576.400	1266.500	690.100	270.242	593.172	211.943	445.693	166.964	366.864
14 2000	509.200	69.700	578.900	1466.300	887.400	256.032	648.565	197.094	499.232	152.444	398.127
15 2001	509.200	72.200	581.400	1666.000	1084.600	242.601	693.173	183.283	543.197	139.184	398.852
16 2002	509.200	74.800	584.000	1865.700	1281.700	229.893	734.437	170.466	544.583	127.097	406.036
17 2003	333.800	77.300	411.100	2065.400	1654.300	152.670	767.089	113.109	588.219	81.335	408.634
18 2004	334.700	79.000	413.700	2242.400	1828.700	144.940	785.685	103.599	541.164	74.409	403.322
19 2005	0.0	80.600	80.600	2396.600	2316.000	20.640	792.132	18.676	555.337	13.179	391.870
20 2006	0.0	80.600	80.600	2484.200	2403.600	23.132	774.600	17.293	532.967	11.981	369.267
21 2007	0.0	80.600	80.600	2528.000	2447.400	25.709	743.640	16.012	502.208	10.892	341.616
22 2008	0.0	80.600	80.600	2528.000	2447.400	22.367	701.548	14.836	445.008	9.902	310.561
23 2009	0.0	80.600	80.600	2528.000	2447.400	21.101	661.838	13.728	400.563	9.001	282.328
24 2010	0.0	80.600	80.600	2528.000	2447.400	19.907	624.376	12.711	368.670	8.183	264.627
25 2011	0.0	80.600	80.600	2528.000	2447.400	18.780	589.035	11.769	369.139	7.439	253.329
26 2012	0.0	80.600	80.600	2528.000	2447.400	17.717	553.694	10.897	341.795	6.783	242.118
27 2013	0.0	80.600	80.600	2528.000	2447.400	16.714	524.240	10.090	316.477	6.148	192.835
28 2014	0.0	80.600	80.600	2528.000	2447.400	15.768	499.567	9.333	293.035	5.589	175.304
29 2015	0.0	80.600	80.600	2528.000	2447.400	14.876	476.372	8.633	271.359	5.084	159.368
30 2016	0.0	80.600	80.600	2528.000	2447.400	14.034	440.164	8.010	251.230	4.619	144.880
31 2017	0.0	80.600	80.600	2528.000	2447.400	13.239	415.249	7.417	232.621	4.199	131.709
32 2018	0.0	80.600	80.600	2528.000	2447.400	12.490	391.745	6.867	215.390	3.818	119.736
33 2019	0.0	80.600	80.600	2528.000	2447.400	11.785	368.571	6.359	199.435	3.470	108.811
34 2020	0.0	80.600	80.600	2528.000	2447.400	11.116	348.652	5.886	184.662	3.155	98.935
35 2021	0.0	80.600	80.600	2528.000	2447.400	10.487	328.917	5.451	170.984	2.868	89.959
36 2022	0.0	80.600	80.600	2528.000	2447.400	9.893	310.300	5.048	158.318	2.607	81.781
37 2023	0.0	80.600	80.600	2528.000	2447.400	9.333	292.736	4.674	146.591	2.370	74.347
38 2024	0.0	80.600	80.600	2528.000	2447.400	8.805	276.166	4.328	135.733	2.155	67.588
39 2025	0.0	80.600	80.600	2528.000	2447.400	8.307	260.534	4.007	125.678	1.939	61.444
40 2026	0.0	80.600	80.600	2528.000	2447.400	7.836	245.787	3.710	116.369	1.781	55.858
41 2027	0.0	80.600	80.600	2528.000	2447.400	7.393	231.875	3.435	107.749	1.639	50.780
42 2028	0.0	80.600	80.600	2528.000	2447.400	6.974	218.750	3.181	99.738	1.472	46.164
43 2029	0.0	80.600	80.600	2528.000	2447.400	6.580	206.368	2.945	92.378	1.338	41.967
44 2030	0.0	80.600	80.600	2528.000	2447.400	6.207	194.687	2.727	85.535	1.216	38.132
45 2031	0.0	80.600	80.600	2528.000	2447.400	5.856	183.667	2.525	79.199	1.106	34.684
46 2032	0.0	80.600	80.600	2528.000	2447.400	5.524	173.271	2.338	73.332	1.005	31.531
47 2033	0.0	80.600	80.600	2528.000	2447.400	5.212	163.464	2.165	67.900	0.914	28.664
48 2034	0.0	80.600	80.600	2528.000	2447.400	4.917	154.211	2.005	62.871	0.831	26.056
49 2035	0.0	80.600	80.600	2528.000	2447.400	4.638	145.482	1.856	58.214	0.755	23.689
50 2036	0.0	80.600	80.600	2528.000	2447.400	4.376	137.248	1.719	53.902	0.687	21.536
TOTAL	10296.300	3388.900	13685.200	94830.800	81145.600	7099.294	18580.732	6007.658	11950.145	5181.311	8003.191

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.62 (6%), 1.99 (8%), 1.55 (10%)
 INTERNAL RATE OF RETURN (IRR) = 14.0 %

Table E.3.17. Sub-Area Cost and Benefit (FIRR) (4)

(UNIT : MILLION MIDDLE RIYALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	6 %		8 %		10 %	
	CAPITAL	O & M				(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	61.500	0.0	61.500	0.0	-61.500	61.500	0.0	61.500	0.0	61.500	0.0
2 1988	61.500	0.0	61.500	0.0	-61.500	54.735	0.0	52.776	0.0	50.826	0.0
3 1989	70.500	0.0	70.500	0.0	-70.500	59.193	0.0	55.965	0.0	52.968	0.0
4 1990	239.600	0.0	239.600	0.0	-239.600	189.786	0.0	176.113	0.0	163.651	0.0
5 1991	367.600	1.500	369.100	10.400	-358.700	275.814	7.772	251.204	7.078	229.183	6.458
6 1992	460.000	8.300	468.300	31.400	-437.100	330.276	22.136	295.235	19.787	264.457	17.723
7 1993	384.400	15.700	399.100	64.000	-331.100	266.091	55.889	233.455	40.261	205.316	35.408
8 1994	256.800	22.200	279.000	113.000	-166.000	175.049	70.898	150.736	61.051	130.156	52.716
9 1995	256.800	23.500	280.300	163.300	-117.100	165.970	96.658	140.270	81.691	118.918	69.256
10 1996	256.800	24.900	281.700	213.600	-68.100	157.301	117.274	130.482	98.339	108.608	82.353
11 1997	256.800	26.300	283.100	263.900	-19.200	149.135	139.021	121.417	113.183	99.226	92.496
12 1998	256.800	27.600	284.400	314.200	29.400	141.340	150.150	112.960	124.774	90.620	100.115
13 1999	256.800	29.000	285.800	364.500	78.700	133.996	170.894	105.089	141.224	82.787	109.584
14 2000	256.800	30.300	287.100	414.800	127.700	126.966	183.469	97.747	146.652	69.066	111.367
15 2001	256.800	31.700	288.500	465.200	176.700	120.183	194.114	90.948	146.652	69.066	111.367
16 2002	256.800	33.000	289.800	515.500	225.700	114.020	202.928	84.591	150.571	63.070	112.189
17 2003	256.800	34.400	291.200	565.800	274.600	108.143	210.121	78.703	152.920	57.613	111.942
18 2004	256.800	35.700	292.500	616.100	323.500	61.057	215.351	47.898	154.180	34.426	110.413
19 2005	155.700	36.600	192.300	668.000	467.700	63.559	218.143	44.559	152.932	31.443	107.617
20 2006	0.0	37.400	37.400	697.700	660.300	11.662	217.550	8.024	149.692	5.559	103.710
21 2007	0.0	37.400	37.400	714.700	681.300	11.002	211.414	7.430	142.776	5.054	97.120
22 2008	0.0	37.400	37.400	729.100	691.700	10.379	202.333	6.879	134.113	4.595	89.569
23 2009	0.0	37.400	37.400	729.100	691.700	9.791	190.881	6.370	124.113	4.177	81.426
24 2010	0.0	37.400	37.400	729.100	691.700	9.237	180.376	5.898	114.980	3.797	74.024
25 2011	0.0	37.400	37.400	729.100	691.700	8.714	169.883	5.461	106.463	3.452	67.294
26 2012	0.0	37.400	37.400	729.100	691.700	8.221	160.368	5.057	98.577	3.138	61.177
27 2013	0.0	37.400	37.400	729.100	691.700	7.756	151.896	4.682	91.275	2.853	55.615
28 2014	0.0	37.400	37.400	729.100	691.700	7.317	142.638	4.335	84.514	2.594	50.359
29 2015	0.0	37.400	37.400	729.100	691.700	6.903	134.564	4.014	78.254	2.358	45.663
30 2016	0.0	37.400	37.400	729.100	691.700	6.512	126.947	3.717	72.857	2.143	41.785
31 2017	0.0	37.400	37.400	729.100	691.700	6.143	119.762	3.441	67.090	1.949	37.986
32 2018	0.0	37.400	37.400	729.100	691.700	5.796	112.983	3.187	62.121	1.771	34.533
33 2019	0.0	37.400	37.400	729.100	691.700	5.468	106.338	2.951	57.519	1.610	31.394
34 2020	0.0	37.400	37.400	729.100	691.700	5.158	100.555	2.732	53.258	1.464	28.540
35 2021	0.0	37.400	37.400	729.100	691.700	4.866	94.863	2.530	49.313	1.331	25.845
36 2022	0.0	37.400	37.400	729.100	691.700	4.591	89.493	2.342	45.661	1.210	23.587
37 2023	0.0	37.400	37.400	729.100	691.700	4.331	84.428	2.169	42.478	1.100	21.442
38 2024	0.0	37.400	37.400	729.100	691.700	4.086	79.649	2.008	39.147	1.000	19.493
39 2025	0.0	37.400	37.400	729.100	691.700	3.854	75.141	1.859	36.247	0.909	17.721
40 2026	0.0	37.400	37.400	729.100	691.700	3.636	70.887	1.722	33.582	0.826	16.110
41 2027	0.0	37.400	37.400	729.100	691.700	3.430	66.875	1.594	31.076	0.751	14.645
42 2028	0.0	37.400	37.400	729.100	691.700	3.236	63.090	1.474	28.774	0.683	13.314
43 2029	0.0	37.400	37.400	729.100	691.700	3.053	59.519	1.367	26.643	0.621	12.104
44 2030	0.0	37.400	37.400	729.100	691.700	2.880	56.150	1.265	24.669	0.564	11.003
45 2031	0.0	37.400	37.400	729.100	691.700	2.717	52.971	1.172	22.842	0.513	10.003
46 2032	0.0	37.400	37.400	729.100	691.700	2.563	49.973	1.085	21.150	0.466	9.094
47 2033	0.0	37.400	37.400	729.100	691.700	2.418	47.145	1.005	19.583	0.424	8.267
48 2034	0.0	37.400	37.400	729.100	691.700	2.281	44.476	0.930	18.133	0.386	7.515
49 2035	0.0	37.400	37.400	729.100	691.700	2.152	41.989	0.861	16.789	0.350	6.832
50 2036	0.0	37.400	37.400	729.100	691.700	2.030	39.584	0.797	15.546	0.319	6.211
TOTAL	4524.500	1540.400	6064.900	27941.000	21276.100	2933.580	5397.156	2424.939	3887.858	2047.404	2349.552

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.94 (6%), 1.44 (8%), 1.15 (10%)
INTERNAL RATE OF RETURN (IRR) = 11.4 %

Table E.3.17 Sub-Area Cost and Benefit (FIRR, B/C) (5)

(UNIT : MILLION RIYALS)

YEAR	CAPITAL		D & M	TOTAL	BENEFITS	RETURN	6 %		8 %		10 %	
	(COST)	(BENEFITS)					(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	91.000	0.0	0.0	91.000	0.0	-91.000	91.000	0.0	91.000	0.0	91.000	0.0
2 1988	91.000	0.0	0.0	91.000	0.0	-91.000	80.990	0.0	78.018	0.0	75.207	0.0
3 1989	101.300	0.0	0.0	101.300	0.0	-101.300	85.034	0.0	80.415	0.0	76.108	0.0
4 1990	319.400	0.0	0.0	319.400	0.0	-319.400	252.995	0.0	234.769	0.0	218.155	0.0
5 1991	467.800	2.200	0.0	470.000	0.0	-470.000	351.213	0.0	319.875	0.0	291.834	0.0
6 1992	459.500	10.300	0.0	469.800	24.800	-445.000	331.192	17.483	296.055	15.628	265.191	13.999
7 1993	144.900	18.600	0.0	163.500	35.500	-128.000	108.758	23.410	95.401	20.714	83.902	18.217
8 1994	188.600	24.600	0.0	213.200	56.000	-157.200	133.783	35.135	115.186	30.255	99.460	26.125
9 1995	188.600	25.500	0.0	214.100	96.300	-117.800	126.726	57.000	107.104	48.174	90.800	40.841
10 1996	271.500	24.500	0.0	296.000	150.000	-148.000	166.403	83.760	138.032	69.479	114.893	57.832
11 1997	271.500	27.800	0.0	299.300	229.200	-70.100	157.469	120.741	128.365	98.301	104.904	80.334
12 1998	271.500	29.200	0.0	300.700	314.000	13.300	149.440	156.050	119.413	124.695	95.813	100.051
13 1999	271.500	30.600	0.0	302.100	405.000	102.900	141.638	189.882	111.082	148.919	87.509	117.515
14 2000	271.500	32.000	0.0	303.500	496.000	192.500	134.240	219.384	103.331	168.870	79.922	130.614
15 2001	271.500	33.300	0.0	304.800	587.100	282.300	127.134	244.980	96.086	185.080	72.968	140.549
16 2002	271.500	34.700	0.0	306.200	678.600	372.400	120.536	267.132	89.378	198.079	66.639	147.685
17 2003	271.500	36.100	0.0	307.600	768.100	461.500	114.234	285.321	83.136	207.866	60.858	152.165
18 2004	271.500	37.500	0.0	309.000	858.400	549.400	108.238	300.740	77.328	214.816	55.577	154.393
19 2005	271.500	38.900	0.0	310.400	948.800	636.400	102.593	312.935	71.924	219.387	50.754	154.812
20 2006	271.500	40.200	0.0	311.700	1029.700	718.000	97.191	321.972	66.875	220.923	46.333	153.061
21 2007	271.500	41.600	0.0	313.100	1107.800	794.700	92.192	325.872	62.800	220.074	42.310	149.700
22 2008	271.500	43.000	0.0	314.500	1183.700	869.200	87.277	328.490	57.850	217.735	38.636	145.416
23 2009	271.500	44.400	0.0	315.900	1250.000	934.100	82.704	327.854	53.803	212.897	35.280	139.601
24 2010	188.600	45.800	0.0	234.400	1317.800	1083.400	57.893	325.476	36.965	207.819	23.798	133.793
25 2011	188.600	46.700	0.0	235.300	1375.800	1140.200	54.896	320.567	34.602	200.894	21.745	126.984
26 2012	0.0	47.600	0.0	47.600	1423.800	1376.200	10.663	312.373	6.356	192.503	3.994	119.467
27 2013	0.0	47.600	0.0	47.600	1450.000	1403.000	10.816	300.816	5.959	181.599	3.631	110.651
28 2014	0.0	47.600	0.0	47.600	1463.900	1415.300	9.312	286.195	5.318	169.573	3.001	101.445
29 2015	0.0	47.600	0.0	47.600	1462.900	1415.300	8.785	269.996	5.109	157.012	3.001	92.223
30 2016	0.0	47.600	0.0	47.600	1463.900	1415.300	8.288	254.713	4.730	145.382	2.728	83.839
31 2017	0.0	47.600	0.0	47.600	1462.900	1415.300	7.819	240.396	4.380	134.613	2.480	76.217
32 2018	0.0	47.600	0.0	47.600	1462.900	1415.300	7.376	226.694	4.056	124.642	2.255	69.288
33 2019	0.0	47.600	0.0	47.600	1462.900	1415.300	6.959	213.863	3.755	115.409	2.050	62.990
34 2020	0.0	47.600	0.0	47.600	1462.900	1415.300	6.565	201.567	3.477	106.860	1.863	57.263
35 2021	0.0	47.600	0.0	47.600	1462.900	1415.300	6.193	190.337	3.219	98.945	1.694	52.058
36 2022	0.0	47.600	0.0	47.600	1462.900	1415.300	5.843	179.564	2.981	91.615	1.540	47.325
37 2023	0.0	47.600	0.0	47.600	1462.900	1415.300	5.512	169.400	2.760	84.829	1.400	43.023
38 2024	0.0	47.600	0.0	47.600	1462.900	1415.300	5.200	159.812	2.556	78.546	1.273	39.112
39 2025	0.0	47.600	0.0	47.600	1462.900	1415.300	4.908	150.766	2.366	72.727	1.157	35.556
40 2026	0.0	47.600	0.0	47.600	1462.900	1415.300	4.628	142.232	2.191	67.340	1.052	32.324
41 2027	0.0	47.600	0.0	47.600	1462.900	1415.300	4.366	134.181	2.029	62.352	0.956	29.335
42 2028	0.0	47.600	0.0	47.600	1462.900	1415.300	4.119	126.586	1.879	57.733	0.869	26.714
43 2029	0.0	47.600	0.0	47.600	1462.900	1415.300	3.886	119.421	1.739	53.457	0.790	24.285
44 2030	0.0	47.600	0.0	47.600	1462.900	1415.300	3.666	112.661	1.611	49.497	0.718	22.078
45 2031	0.0	47.600	0.0	47.600	1462.900	1415.300	3.458	106.284	1.491	45.831	0.653	20.071
46 2032	0.0	47.600	0.0	47.600	1462.900	1415.300	3.263	100.269	1.381	42.436	0.594	18.246
47 2033	0.0	47.600	0.0	47.600	1462.900	1415.300	3.078	94.593	1.279	39.293	0.540	16.587
48 2034	0.0	47.600	0.0	47.600	1462.900	1415.300	2.904	89.239	1.184	36.582	0.491	15.079
49 2035	0.0	47.600	0.0	47.600	1462.900	1415.300	2.739	84.188	1.096	33.687	0.446	13.709
50 2036	0.0	47.600	0.0	47.600	1462.900	1415.300	2.584	79.422	1.015	31.192	0.406	12.462
TOTAL	6230.600	1859.500	8090.100	49432.700	41342.600	3497.714	8609.443	2822.190	5304.057	2329.475	3404.884	

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.46 (6%), 1.88 (8%), 1.46 (10%)
INTERNAL RATE OF RETURN (IRR) = 15.3 %

Table E.3.17 Sub-Area Cost and Benefit (FIRR, B/C) (6)

(UNIT : MILLION RIALS)

YEAR	PROJECT COST		RETURN	6 %		8 %		10 %	
	CAPITAL	O & M		(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	79.600	0.0	-79.600	79.600	0.0	79.600	0.0	79.600	0.0
2 1988	79.600	0.0	-79.600	70.844	0.0	68.244	0.0	65.785	0.0
3 1989	86.900	0.0	-86.900	72.983	0.0	68.984	0.0	65.289	0.0
4 1990	550.000	0.0	-550.000	435.453	0.0	404.267	0.0	375.659	0.0
5 1991	775.300	3.700	-779.000	582.117	0.0	530.175	0.0	483.699	0.0
6 1992	844.800	12.500	-843.300	684.366	9.870	540.246	8.822	483.926	7.903
7 1993	292.200	21.600	-261.400	208.696	34.849	183.100	30.575	161.030	26.890
8 1994	187.800	26.500	-185.800	115.400	72.404	115.780	62.347	99.973	53.835
9 1995	187.800	27.500	-188.600	137.437	111.751	107.704	94.447	91.309	80.070
10 1996	187.800	28.400	-188.200	150.726	116.143	100.143	121.450	83.355	101.090
11 1997	187.800	29.300	-188.500	114.367	176.792	93.111	143.934	76.093	117.627
12 1998	187.800	30.300	-190.900	108.590	203.263	86.611	162.421	69.494	130.321
13 1999	187.800	31.200	-199.000	102.677	226.171	80.526	177.379	63.437	139.736
14 2000	187.800	32.100	-199.900	97.243	245.834	74.868	189.352	57.907	146.361
15 2001	187.800	33.100	-200.900	92.173	262.547	69.377	205.084	52.882	150.627
16 2002	187.800	34.000	-221.800	87.312	276.380	64.742	205.084	48.271	152.908
17 2003	187.800	34.900	-223.700	82.704	288.183	60.189	209.731	44.061	153.530
18 2004	187.800	35.900	-223.700	78.373	297.387	55.981	212.564	40.235	152.774
19 2005	139.800	36.800	-176.600	58.370	305.036	40.921	213.849	28.876	150.904
20 2006	0.0	37.500	950.800	11.034	308.183	8.846	212.040	5.574	146.907
21 2007	0.0	37.500	993.800	11.034	303.369	7.450	204.876	5.067	139.363
22 2008	0.0	37.500	1011.200	10.407	291.026	6.898	192.901	4.607	128.831
23 2009	0.0	37.500	1011.200	9.818	274.353	6.387	178.612	4.188	117.119
24 2010	0.0	37.500	1011.200	8.242	249.012	5.914	165.382	3.807	106.472
25 2011	0.0	37.500	1011.200	8.738	244.352	5.476	153.131	3.461	96.793
26 2012	0.0	37.500	1011.200	8.243	230.321	5.070	141.788	3.147	87.994
27 2013	0.0	37.500	1011.200	7.776	217.472	4.695	131.285	2.860	79.994
28 2014	0.0	37.500	1011.200	7.336	205.163	4.347	121.561	2.600	72.722
29 2015	0.0	37.500	1011.200	6.921	185.550	4.025	112.556	2.364	66.111
30 2016	0.0	37.500	1011.200	6.529	182.595	3.727	104.219	2.149	60.101
31 2017	0.0	37.500	1011.200	6.160	172.259	3.451	96.499	1.954	54.637
32 2018	0.0	37.500	1011.200	5.811	162.509	3.195	89.351	1.776	49.670
33 2019	0.0	37.500	1011.200	5.482	153.310	2.958	82.732	1.615	45.155
34 2020	0.0	37.500	1011.200	5.172	144.633	2.739	76.604	1.468	41.050
35 2021	0.0	37.500	1011.200	4.879	136.446	2.536	70.930	1.334	37.318
36 2022	0.0	37.500	1011.200	4.603	128.723	2.348	65.676	1.213	33.926
37 2023	0.0	37.500	1011.200	4.342	121.673	2.175	60.811	1.103	30.842
38 2024	0.0	37.500	1011.200	4.097	114.533	2.013	56.306	1.003	28.038
39 2025	0.0	37.500	1011.200	3.865	108.078	1.864	52.136	0.911	25.489
40 2026	0.0	37.500	1011.200	3.646	101.961	1.726	48.274	0.829	23.172
41 2027	0.0	37.500	1011.200	3.440	96.190	1.598	44.698	0.753	21.065
42 2028	0.0	37.500	1011.200	3.245	90.745	1.480	41.387	0.685	19.150
43 2029	0.0	37.500	1011.200	3.061	85.609	1.370	38.321	0.623	17.409
44 2030	0.0	37.500	1011.200	2.888	80.735	1.269	35.483	0.566	15.827
45 2031	0.0	37.500	1011.200	2.724	76.191	1.173	32.854	0.514	14.388
46 2032	0.0	37.500	1011.200	2.570	71.879	1.088	30.421	0.468	13.080
47 2033	0.0	37.500	1011.200	2.425	67.810	1.007	28.167	0.425	11.891
48 2034	0.0	37.500	1011.200	2.288	63.972	0.933	26.081	0.387	10.810
49 2035	0.0	37.500	1011.200	2.158	60.351	0.864	24.149	0.351	9.827
50 2036	0.0	37.500	1011.200	2.036	56.945	0.800	22.360	0.319	8.954
TOTAL	4914.000	1580.300	3223.300	3431.134	7461.418	2923.454	4771.778	2529.005	3178.653

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.17 (6%), 1.63 (8%), 1.26 (10%)
INTERNAL RATE OF RETURN (IRR) = 11.9 %

Table E.3.17. Sub-Area Cost and Benefit (FIRR, B/C) (7)

(UNIT : MILLION MILLION RIJALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	6 %		8 %		10 %	
	CAPITAL	O & M				(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	109.700	0.0	109.700	0.0	-109.700	109.700	0.0	109.700	0.0	109.700	0.0
2 1988	109.700	0.0	109.700	0.0	-104.700	97.633	0.0	94.050	0.0	90.561	0.0
3 1989	125.700	0.0	125.700	0.0	-125.700	105.540	0.0	99.785	0.0	94.440	0.0
4 1990	287.300	0.0	287.300	0.0	-287.300	227.509	0.0	211.174	0.0	196.230	0.0
5 1991	574.800	1.800	576.600	11.600	-565.000	430.871	8.568	392.425	7.895	358.025	7.203
6 1992	741.900	13.300	755.200	39.300	-716.400	532.742	27.705	476.221	24.866	426.575	22.184
7 1993	622.900	25.900	648.800	45.700	-553.100	431.492	63.644	378.570	55.240	332.939	49.110
8 1994	396.700	37.400	434.100	168.700	-265.400	272.362	105.845	234.532	91.144	202.512	78.700
9 1995	396.700	39.700	436.400	234.500	-181.900	288.137	150.439	218.310	127.314	185.078	107.934
10 1996	396.700	41.600	438.300	340.200	-98.100	248.747	189.968	202.019	157.379	168.985	131.163
11 1997	396.700	43.600	440.300	476.000	-14.300	231.947	224.414	188.838	182.705	154.324	149.312
12 1998	396.700	45.700	442.400	511.800	69.400	219.862	254.352	175.684	203.244	140.964	163.077
13 1999	396.700	47.800	444.500	547.600	153.100	208.401	280.182	163.443	219.758	128.757	173.105
14 2000	396.700	50.000	446.700	683.400	236.700	197.579	302.273	152.045	232.673	117.631	179.963
15 2001	396.700	51.900	448.600	757.200	320.500	187.132	320.965	141.419	247.486	107.393	184.143
16 2002	396.700	54.000	450.700	855.000	404.300	177.413	336.873	131.554	249.569	98.087	186.076
17 2003	396.700	56.100	452.800	940.800	488.000	168.030	349.385	122.379	254.271	89.585	186.135
18 2004	396.700	58.200	454.900	1026.500	571.600	159.374	359.634	113.839	256.823	81.819	184.628
19 2005	396.700	60.200	456.900	1112.300	655.400	151.014	367.636	105.870	257.316	74.708	181.873
20 2006	396.700	62.400	459.100	1198.100	739.000	143.152	373.860	98.500	257.952	68.243	178.693
21 2007	214.400	64.500	278.900	1285.400	1066.500	87.042	377.276	55.406	255.355	31.689	173.700
22 2008	153.200	65.000	218.200	1359.500	1140.700	60.719	377.276	40.247	250.070	26.879	167.012
23 2009	0.0	66.400	66.400	1416.200	1349.800	17.384	370.765	11.309	241.204	7.416	158.162
24 2010	0.0	66.400	66.400	1442.400	1377.000	16.400	356.250	10.471	227.469	6.741	146.844
25 2011	0.0	66.400	66.400	1468.600	1400.200	15.471	341.724	9.696	214.153	6.129	135.364
26 2012	0.0	66.400	66.400	1466.600	1400.200	14.596	322.382	8.978	198.290	5.571	123.059
27 2013	0.0	66.400	66.400	1466.600	1400.200	13.770	304.234	8.213	183.602	5.065	111.872
28 2014	0.0	66.400	66.400	1466.600	1400.200	12.970	286.919	7.697	170.002	4.605	101.701
29 2015	0.0	66.400	66.400	1466.600	1400.200	12.235	270.678	7.177	157.409	4.186	92.456
30 2016	0.0	66.400	66.400	1466.600	1400.200	11.561	255.358	6.599	145.749	3.805	84.031
31 2017	0.0	66.400	66.400	1466.600	1400.200	10.907	240.903	6.010	134.953	3.459	76.410
32 2018	0.0	66.400	66.400	1466.600	1400.200	10.289	227.268	5.438	124.957	3.145	69.464
33 2019	0.0	66.400	66.400	1466.600	1400.200	9.707	214.404	4.890	115.701	2.859	63.149
34 2020	0.0	66.400	66.400	1466.600	1400.200	9.158	202.288	4.350	107.150	2.599	57.408
35 2021	0.0	66.400	66.400	1466.600	1400.200	8.639	190.819	3.819	99.195	2.363	52.189
36 2022	0.0	66.400	66.400	1466.600	1400.200	8.150	180.018	3.291	91.847	2.148	47.445
37 2023	0.0	66.400	66.400	1466.600	1400.200	7.689	169.828	2.765	85.044	1.953	43.132
38 2024	0.0	66.400	66.400	1466.600	1400.200	7.254	160.216	2.235	78.744	1.775	39.211
39 2025	0.0	66.400	66.400	1466.600	1400.200	6.843	151.147	1.707	72.911	1.614	35.646
40 2026	0.0	66.400	66.400	1466.600	1400.200	6.456	142.582	1.207	67.511	1.467	32.406
41 2027	0.0	66.400	66.400	1466.600	1400.200	6.090	134.521	0.710	62.510	1.334	29.460
42 2028	0.0	66.400	66.400	1466.600	1400.200	5.746	126.906	0.260	57.879	1.233	26.782
43 2029	0.0	66.400	66.400	1466.600	1400.200	5.420	119.723	0.266	53.592	1.102	24.347
44 2030	0.0	66.400	66.400	1466.600	1400.200	5.114	112.946	0.277	49.622	1.002	22.134
45 2031	0.0	66.400	66.400	1466.600	1400.200	4.824	106.523	0.280	45.947	0.911	20.121
46 2032	0.0	66.400	66.400	1466.600	1400.200	4.551	100.522	1.926	42.543	0.824	18.292
47 2033	0.0	66.400	66.400	1466.600	1400.200	4.294	94.832	1.783	39.397	0.753	16.829
48 2034	0.0	66.400	66.400	1466.600	1400.200	4.050	89.464	1.651	36.474	0.684	15.118
49 2035	0.0	66.400	66.400	1466.600	1400.200	3.821	84.400	1.529	33.772	0.622	13.743
50 2036	0.0	66.400	66.400	1466.600	1400.200	3.605	79.623	1.416	31.271	0.566	12.494
TOTAL	8096.700	2679.400	10776.100	52665.800	41889.700	4944.950	9008.021	4042.029	6295.195	3367.141	4172.696

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.00 (6%), 1.56 (8%), 1.24 (10%)
INTERNAL RATE OF RETURN (IRR) = 12.1 %

Table E.3.17 Sub-Area Cost and Benefit (FIRR, B/C) (8)

YEAR	PROJECT COST		TOTAL	BENEFITS		RETURN	6 %		8 %		10 %	
	CAPITAL	O & M		(COST)	(BENEFITS)		(COST)	(BENEFITS)	(COST)	(BENEFITS)		
1 1987	236.700	0.0	236.700	0.0	-236.700	236.700	0.0	236.700	0.0	236.700	0.0	
2 1988	236.700	0.0	236.700	0.0	-236.700	210.642	0.0	202.932	0.0	195.820	0.0	
3 1989	262.800	0.0	262.800	0.0	-262.800	220.532	0.0	208.619	0.0	197.446	0.0	
4 1990	934.700	0.0	934.700	0.0	-934.700	740.372	0.0	687.033	0.0	638.415	0.0	
5 1991	1314.100	5.900	1320.000	0.0	-1320.000	986.385	0.0	898.372	0.0	819.619	0.0	
6 1992	1593.600	28.000	1321.600	15.000	-1306.600	931.681	10.574	832.835	9.553	746.022	8.667	
7 1993	629.900	48.600	678.500	16.300	-662.200	451.244	10.840	395.900	9.511	348.180	8.365	
8 1994	263.900	65.500	329.400	28.500	-299.900	266.671	18.509	177.865	15.938	153.669	13.762	
9 1995	673.500	67.400	740.900	99.600	-641.300	438.544	58.954	370.636	49.825	314.216	42.240	
10 1996	673.500	70.800	744.300	242.300	-502.000	415.617	135.500	344.757	112.352	286.962	93.118	
11 1997	673.500	74.100	747.600	428.000	-319.600	393.830	335.667	320.835	183.363	282.032	150.013	
12 1998	673.500	77.500	751.000	645.700	-105.300	373.238	350.897	298.234	256.418	239.294	205.742	
13 1999	673.500	80.900	754.400	863.300	-108.900	353.656	404.754	277.593	317.436	218.525	250.070	
14 2000	673.500	84.300	757.800	1081.000	323.200	335.180	478.134	258.003	368.041	199.555	284.664	
15 2001	673.500	87.700	761.200	1298.700	537.500	317.827	541.910	239.964	409.408	182.228	310.903	
16 2002	673.500	91.100	764.600	1516.400	751.800	300.987	596.934	223.182	442.627	166.402	330.017	
17 2003	673.500	94.500	768.000	1731.000	966.000	285.215	643.956	207.569	468.651	151.947	343.068	
18 2004	673.500	97.900	771.400	1953.700	1180.300	270.260	683.778	193.044	488.416	138.745	351.036	
19 2005	673.500	101.300	774.800	2169.400	1394.600	256.086	717.028	179.532	502.682	126.688	354.720	
20 2006	673.500	104.700	778.200	2387.100	1608.900	242.651	744.324	166.943	512.154	115.677	354.833	
21 2007	673.500	108.100	781.600	2604.800	1833.200	229.316	766.231	155.271	517.465	105.620	351.995	
22 2008	673.500	111.400	785.000	2822.400	2037.500	217.819	783.248	144.377	519.160	96.424	346.727	
23 2009	673.500	114.900	788.400	3041.300	2252.900	206.405	796.221	134.278	517.987	88.049	339.654	
24 2010	362.500	118.400	480.900	3261.500	2780.600	193.775	805.539	75.839	514.344	48.825	331.133	
25 2011	120.200	120.200	240.400	3449.600	3070.500	183.332	803.771	55.356	503.711	34.990	318.391	
26 2012	0.0	121.600	121.600	3592.300	3470.700	267.730	789.644	16.441	485.693	10.203	301.421	
27 2013	0.0	121.600	121.600	3661.200	3599.600	252.217	759.235	15.223	458.341	9.276	279.275	
28 2014	0.0	121.600	121.600	3689.500	3567.900	237.789	721.797	14.095	427.671	8.432	255.849	
29 2015	0.0	121.600	121.600	3689.500	3567.900	22.443	680.941	13.051	395.992	7.666	232.590	
30 2016	0.0	121.600	121.600	3689.500	3567.900	21.172	642.399	12.084	366.659	6.969	211.445	
31 2017	0.0	121.600	121.600	3689.500	3567.900	19.574	606.036	11.189	339.499	6.335	192.223	
32 2018	0.0	121.600	121.600	3689.500	3567.900	18.843	571.733	10.361	314.352	5.759	174.749	
33 2019	0.0	121.600	121.600	3689.500	3567.900	17.777	539.371	9.593	291.066	5.236	158.262	
34 2020	0.0	121.600	121.600	3689.500	3567.900	16.771	508.842	8.882	269.506	4.760	144.421	
35 2021	0.0	121.600	121.600	3689.500	3567.900	15.821	480.039	8.225	249.585	4.327	131.232	
36 2022	0.0	121.600	121.600	3689.500	3567.900	14.926	452.868	7.615	231.058	3.934	119.356	
37 2023	0.0	121.600	121.600	3689.500	3567.900	14.081	427.234	7.051	213.943	3.576	108.506	
38 2024	0.0	121.600	121.600	3689.500	3567.900	13.284	403.052	6.529	198.095	3.251	98.642	
39 2025	0.0	121.600	121.600	3689.500	3567.900	12.532	380.238	6.045	183.422	2.956	89.674	
40 2026	0.0	121.600	121.600	3689.500	3567.900	11.823	358.715	5.597	169.835	2.687	81.522	
41 2027	0.0	121.600	121.600	3689.500	3567.900	11.153	338.411	5.183	157.255	2.443	74.111	
42 2028	0.0	121.600	121.600	3689.500	3567.900	10.522	319.256	4.799	145.606	2.221	67.574	
43 2029	0.0	121.600	121.600	3689.500	3567.900	9.927	301.185	4.443	134.831	2.019	61.249	
44 2030	0.0	121.600	121.600	3689.500	3567.900	9.365	284.137	4.114	124.834	1.835	55.681	
45 2031	0.0	121.600	121.600	3689.500	3567.900	8.835	268.054	3.810	115.587	1.668	50.619	
46 2032	0.0	121.600	121.600	3689.500	3567.900	8.335	252.882	3.527	107.025	1.517	46.017	
47 2033	0.0	121.600	121.600	3689.500	3567.900	7.863	238.568	3.266	99.098	1.379	41.834	
48 2034	0.0	121.600	121.600	3689.500	3567.900	7.418	225.064	3.024	91.757	1.253	38.031	
49 2035	0.0	121.600	121.600	3689.500	3567.900	6.998	212.325	2.800	84.960	1.139	34.374	
50 2036	0.0	121.600	121.600	3689.500	3567.900	6.602	200.307	2.593	78.667	1.036	31.431	
TOTAL	15896.300	4793.200	20689.500	121769.500	101080.100	9190.730	20500.704	7476.933	12453.307	6213.715	7869.964	

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.23 (6%), 1.67 (8%), 1.27 (10%)
INTERNAL RATE OF RETURN (IRR) = 11.9 %

Table E.5.17 Sub-Area Cost and Benefit (FIRR, B/C) (9)

(UNIT : MILLION RIALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	6 %		8 %		10 %	
	CAPITAL	O & M				(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	192.400	0.0	192.400	0.0	-192.400	192.400	0.0	192.400	0.0	192.400	0.0
2 1988	192.400	0.0	192.400	0.0	-192.400	171.235	0.0	164.952	0.0	159.008	0.0
3 1989	209.100	0.0	209.100	0.0	-209.100	175.565	0.0	165.990	0.0	157.100	0.0
4 1990	1430.000	0.0	1430.000	0.0	-1430.000	1132.697	0.0	1051.094	0.0	976.712	0.0
5 1991	1825.400	9.400	1834.800	0.0	-1834.800	1371.075	0.0	1248.737	0.0	1139.271	0.0
6 1992	1872.500	29.800	1902.300	20.100	-1882.200	1341.054	14.170	1198.776	12.666	1073.804	11.346
7 1993	653.000	49.500	702.500	68.000	-634.500	467.205	45.224	409.903	39.677	360.496	34.895
8 1994	417.200	61.400	478.600	173.700	-304.900	500.282	108.982	258.574	93.845	223.272	81.033
9 1995	417.200	63.500	480.700	317.200	-163.500	284.528	187.732	240.471	158.680	203.845	134.525
10 1996	417.200	65.600	482.800	490.900	8.100	269.596	274.119	233.331	227.383	186.142	189.265
11 1997	417.200	67.600	484.800	684.600	179.800	253.389	350.106	207.924	285.037	169.521	232.940
12 1998	417.200	69.700	486.900	838.200	351.300	241.977	416.564	193.356	332.863	155.143	267.079
13 1999	417.200	71.700	488.900	1011.900	523.000	229.278	474.424	179.769	372.076	141.619	293.115
14 2000	417.200	73.800	491.000	1185.600	694.600	217.173	524.399	167.168	403.654	129.297	312.209
15 2001	417.200	75.900	493.100	1359.300	866.200	205.756	587.196	155.447	428.512	118.646	325.410
16 2002	417.200	77.900	495.100	1533.000	1037.900	194.397	603.469	144.516	447.472	107.750	333.630
17 2003	417.200	80.000	497.200	1706.700	1209.500	184.645	633.818	134.379	461.272	98.370	337.666
18 2004	417.200	82.100	499.300	1880.400	1381.100	174.930	658.798	124.931	470.573	89.805	338.212
19 2005	417.200	84.200	501.400	2054.100	1552.800	165.689	678.919	116.159	475.965	81.968	335.867
20 2006	413.100	86.200	229.300	2227.800	1998.500	71.438	694.652	49.196	477.978	34.085	331.154
21 2007	0.0	86.900	230.000	2362.500	2132.900	67.657	695.074	45.691	469.409	31.081	319.306
22 2008	0.0	87.600	237.600	2376.300	2288.700	24.310	659.450	16.113	437.103	10.762	291.924
23 2009	0.0	87.600	249.200	2498.000	2410.400	22.934	633.964	14.920	425.453	9.783	278.978
24 2010	0.0	87.600	260.800	2517.300	2428.700	21.636	611.734	13.835	396.982	8.894	255.576
25 2011	0.0	87.600	272.400	2517.300	2428.700	20.411	586.542	12.791	367.376	8.085	232.342
26 2012	0.0	87.600	284.000	2517.300	2429.700	19.236	563.342	11.844	340.349	7.350	211.220
27 2013	0.0	87.600	295.600	2517.300	2429.700	18.166	542.011	10.967	315.138	6.682	192.018
28 2014	0.0	87.600	307.200	2517.300	2429.700	17.188	522.473	10.154	291.794	6.075	174.582
29 2015	0.0	87.600	318.800	2517.300	2429.700	16.188	484.598	9.302	270.180	5.522	158.693
30 2016	0.0	87.600	330.400	2517.300	2429.700	15.253	438.301	8.706	250.167	5.020	144.267
31 2017	0.0	87.600	342.000	2517.300	2429.700	14.389	423.491	8.061	231.636	4.564	131.152
32 2018	0.0	87.600	353.600	2517.300	2429.700	13.575	390.086	7.464	214.478	4.149	119.229
33 2019	0.0	87.600	365.200	2517.300	2429.700	12.806	358.006	6.911	198.591	3.772	108.390
34 2020	0.0	87.600	376.800	2517.300	2429.700	12.084	327.176	6.399	183.881	3.429	98.536
35 2021	0.0	87.600	388.400	2517.300	2429.700	11.398	297.525	5.925	170.260	3.117	89.579
36 2022	0.0	87.600	400.000	2517.300	2429.700	10.752	268.986	5.486	157.648	2.834	81.435
37 2023	0.0	87.600	411.600	2517.300	2429.700	10.144	241.497	5.080	145.971	2.576	74.032
38 2024	0.0	87.600	423.200	2517.300	2429.700	9.570	214.997	4.703	135.158	2.342	67.302
39 2025	0.0	87.600	434.800	2517.300	2429.700	9.028	189.431	4.355	125.146	2.129	61.184
40 2026	0.0	87.600	446.400	2517.300	2429.700	8.517	164.747	4.032	115.876	1.936	55.622
41 2027	0.0	87.600	458.000	2517.300	2429.700	8.035	140.894	3.734	107.293	1.760	50.565
42 2028	0.0	87.600	469.600	2517.300	2429.700	7.580	117.864	3.457	99.345	1.600	45.968
43 2029	0.0	87.600	481.200	2517.300	2429.700	7.151	95.695	3.201	91.987	1.454	41.789
44 2030	0.0	87.600	492.800	2517.300	2429.700	6.746	73.843	2.964	85.173	1.322	37.990
45 2031	0.0	87.600	504.400	2517.300	2429.700	6.364	52.890	2.744	78.964	1.202	34.537
46 2032	0.0	87.600	516.000	2517.300	2429.700	6.004	33.538	2.541	73.022	1.093	31.397
47 2033	0.0	87.600	527.600	2517.300	2429.700	5.664	15.272	2.353	67.613	0.993	28.543
48 2034	0.0	87.600	539.200	2517.300	2429.700	5.344	1.359	2.179	62.605	0.903	25.948
49 2035	0.0	87.600	550.800	2517.300	2429.700	5.041	144.859	2.017	57.967	0.821	23.589
50 2036	0.0	87.600	562.400	2517.300	2429.700	4.756	136.667	1.868	53.674	0.746	21.445
TOTAL	11667.400	3675.500	15342.900	90735.800	75392.900	804.685	1697.421	687.288	10707.993	5940.069	7045.465

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.10 (6%), 1.56 (8%), 1.19 (10%)
INTERNAL RATE OF RETURN (IRR) = 11.4 %

Table E.3.18(1) Gross Production Value in Rice Production (per hectare)
(B Type Development)

Variety	Present			Without Project			With Project		
	Sub-Project	Yield/ha ton	Price/kg Rls	Yield/ha ton	Price/kg Rls	Gross production value	Yield/ha ton	Price/kg Rls	Gross production value
Amol-3	High Land	6.7	190	8.2	190	1,012,700	8.2	190	1,012,700
	Middle, Low land	6.7	190	7.4	190	913,900	8.2	190	1,012,700
Tarom	High Land	3.5	320	4.1	320	852,800	4.1	320	852,800
	Middle, Low Land	3.5	320	3.9	320	811,200	4.1	320	852,800

Note: 1. Yield (per hectare) in the Middle and Low Lands

Variety	Present Yield	Increase production quantity (1) by uplevelling of farming techniques	(2) With project	Target Yield
Amol-3	6.7 ton	0.7 ton	0.78 ton	8.2 ton
Tarom	3.5	0.4	0.24	4.1

(*1) Increased production quantity by progress of farm technical standard is estimated with 10% of present yield.

2. Increased production quantity in High Land with Project is only that which is based on uplevelling of farming techniques, as land condition in High Land is good in drainage.

Table E.3.18.(3) Incremental Net Production Value in Rice Production
(B Type Development)

(Unit: Thousand Rls)

Project Area	Areas						Without Project			With Project			Net Production Value			Incremental Net Production Value			
	Without Project		With Project		Without Project		With Project		Without Project		With Project		Net Production Value						
	Variety	ha	Variety	ha	Variety	ha	Variety	ha	Variety	ha	Variety	ha	Amol 3	Sub-total	Variety		ha	Amol 3	Sub-total
Haraz High Land	3,953	2,636	6,096	1,524	1,897,547	1,174,246	3,071,793	3,172,517	739,836	3,912,353	840,560								
River Left Bank	5,356	3,570	7,051	1,763	2,442,025	1,432,795	3,874,820	4,540,322	965,872	5,506,194	1,631,374								
Low Land	5,502	3,668	7,122	1,781	2,508,593	1,472,126	3,980,719	4,586,041	975,733	5,561,774	1,581,055								
<u>Sub-total</u>	<u>14,811</u>	<u>9,874</u>	<u>20,259</u>	<u>5,068</u>	<u>6,848,165</u>	<u>4,079,167</u>	<u>10,927,332</u>	<u>12,298,880</u>	<u>2,681,441</u>	<u>14,980,321</u>	<u>4,052,989</u>								
Haraz High Land	2,687	1,791	3,559	892	1,289,833	797,828	2,087,661	1,857,400	433,028	2,290,428	202,767								
River Right Bank	3,085	2,056	4,042	1,011	1,406,581	825,161	2,231,742	2,502,911	532,855	3,055,766	804,024								
Low Land	2,275	1,517	2,946	736	1,037,268	608,837	1,646,105	1,897,006	403,223	2,300,229	654,124								
<u>Sub-total</u>	<u>8,047</u>	<u>5,364</u>	<u>10,557</u>	<u>2,639</u>	<u>3,733,682</u>	<u>2,231,826</u>	<u>5,965,508</u>	<u>6,357,155</u>	<u>1,390,134</u>	<u>7,747,289</u>	<u>1,781,781</u>								
Kari High Land	4,590	3,060	6,341	1,585	2,656,816	1,490,419	4,147,235	3,926,512	835,385	4,761,897	614,662								
River Middle Land	7,897	5,265	10,296	2,574	3,600,574	2,113,071	5,713,645	6,629,862	1,410,184	8,040,046	2,326,401								
Low Land	4,846	3,231	6,593	1,648	2,209,495	1,296,739	3,506,234	4,082,557	868,590	4,951,147	1,444,913								
<u>Sub-total</u>	<u>17,333</u>	<u>11,556</u>	<u>23,230</u>	<u>5,807</u>	<u>8,013,393</u>	<u>4,772,933</u>	<u>12,786,326</u>	<u>14,175,287</u>	<u>3,082,501</u>	<u>17,257,788</u>	<u>4,471,462</u>								
All Areas	11,230	7,487	16,006	4,001	5,390,704	3,335,197	8,725,901	8,329,938	1,942,313	10,272,251	1,546,350								
Middle Land	16,338	10,891	21,389	5,348	7,449,180	4,371,027	11,820,207	13,772,933	2,929,939	16,702,872	4,882,665								
Low Land	12,623	8,416	16,661	4,165	5,755,356	3,377,702	9,133,058	10,728,451	2,281,824	13,010,275	3,877,217								
<u>Total</u>	<u>40,191</u>	<u>26,794</u>	<u>54,056</u>	<u>13,514</u>	<u>18,595,240</u>	<u>11,083,926</u>	<u>29,679,166</u>	<u>32,831,322</u>	<u>7,154,076</u>	<u>39,985,398</u>	<u>10,306,232</u>								

Table E.3.18.(4) Incremental Net Production Value
(B Type Development)

<u>Project Area</u>		(Unit: Thousand Rls)		
	<u>Sub-Area</u>	<u>Rice</u>	<u>Animal Husbandry</u>	<u>Total</u>
Haraz River Left Bank	High Land	840,560	810,660	<u>1,651,220</u>
	Middle Land	1,631,374	932,620	<u>2,563,994</u>
	Low Land	1,581,055	946,980	<u>2,528,025</u>
	<u>Sub-total</u>	<u>4,052,989</u>	<u>2,690,250</u>	<u>6,743,239</u>
Haraz River Right Bank	High land	202,767	473,480	<u>676,247</u>
	Middle land	804,024	538,050	<u>1,342,074</u>
	Low Land	654,124	394,570	<u>1,048,694</u>
	<u>Sub-total</u>	<u>1,781,781</u>	<u>1,406,100</u>	<u>3,187,881</u>
Kari Rud	High land	614,662	839,360	<u>1,454,022</u>
	Middle Land	2,326,401	1,363,060	<u>3,689,461</u>
	Low Land	1,444,913	875,230	<u>2,320,143</u>
	<u>Sub-total</u>	<u>4,471,462</u>	<u>3,077,650</u>	<u>7,549,112</u>
All Areas	High Land	1,546,350	2,123,500	3,669,850
	Middle land	4,882,665	2,833,730	7,716,395
	Low land	3,877,217	2,216,770	6,093,987
	<u>Total</u>	<u>10,306,232</u>	<u>7,174,000</u>	<u>17,480,232</u>

Table E.3.19(1) Gross Production Value in Rice Production (per hectare)
(C Type Development)

Variety	Present				Without Project				With Project					
	Sub-Project		Yield/ha		Price/kg		Gross production value		Yield/ha		Price/kg		Gross production value	
	ton	Rls	ton	Rls	ton	Rls	ton	Rls	ton	Rls	ton	Rls	ton	Rls
Amol-3	High Land	6.7	190	827,450	7.9	190	975,650	7.9	190	975,650	7.9	190	975,650	
	Middle, Low land	6.7	190	827,450	7.4	190	913,900	7.9	190	975,650	7.9	190	975,650	
Tarom	High Land	3.5	320	728,000	4.0	320	832,000	4.0	320	832,000	4.0	320	832,000	
	Middle, Low Land	3.5	320	728,000	3.9	320	811,200	4.0	320	832,000	4.0	320	832,000	

Note: 1. Yield (per hectare) in the Middle and Low Lands

Variety	Present Yield	Increase production quantity of farming techniques	(1) by uplevelling of farming techniques	(2) With project	Target Yield
Amol-3	6.7 ton	0.7 ton	0.49 ton	7.9 ton	
Tarom	3.5	0.4	0.15	4.0	

(*1) Increased production quantity by progress of farm technical standard is estimated with 10% of present yield.

2. Increased production quantity in High Land with Project is only that which is based on uplevelling of farming techniques, as land condition in High Land is good in drainage.

Table E.3.19.(2) Incremental Net Production Value in Rice Production (per hectare)
(C Type Development)

(Unit: Rls)

Area Variety	High Land				Middle Land and Low Land				
	Amol-3		Tarom		Amol-3		Tarom		
	Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project	
Gross Production	975,650	975,650	892,000	832,000	913,900	975,650	811,200	832,000	-
Production Cost	433,873	427,523	365,733	359,484	457,958	427,523	409,857	359,484	-
Net Production Value	<u>541,777</u>	<u>548,127</u>	<u>466,265</u>	<u>472,516</u>	<u>455,942</u>	<u>548,127</u>	<u>401,343</u>	<u>472,516</u>	-
Incremental Net Production Value	-	-	6,350	-	-	-	92,185	-	71,173
			<u>6,350</u>				<u>92,185</u>		<u>71,170</u>

Table E.3.19.(3) Incremental Net Production Value in Rice Production
(C Type Development)

(Unit: Thousand Rls)

Project Area	Area						Net Production Value						Incremental Net Production Value
	Without Project			With Project			Without Project			With Project			
	Variety Amol 3	Variety Tarom	ha	Variety Amol 3	Variety Tarom	ha	Variety Amol 3	Variety Tarom	Sub-total	Variety Amol 3	Variety Tarom	Sub-total	
Haraz High Land	3,953	2,636	6,096	1,524	1,897,547	1,174,246	3,071,793	3,172,517	739,836	3,912,353	840,560		
River Middle Land	5,356	3,570	7,051	1,763	2,442,025	1,432,795	3,874,820	4,540,322	965,872	5,506,194	1,631,374		
Bank Low Land	5,502	3,668	7,122	1,781	2,508,593	1,472,126	3,980,719	4,586,041	975,733	5,561,774	1,581,055		
Sub-total	14,811	9,874	20,269	5,068	6,848,165	4,079,167	10,927,332	12,298,880	2,681,441	14,980,321	4,052,989		
Haraz High Land	2,687	1,791	3,569	892	1,289,833	797,828	2,087,661	1,857,400	433,028	2,290,428	202,767		
River Middle Land	3,085	2,056	4,042	1,011	1,406,581	825,161	2,231,742	2,215,529	477,714	2,693,243	461,501		
Bank Low Land	2,275	1,517	2,946	736	1,037,268	608,837	1,646,105	1,897,006	403,223	2,300,229	654,124		
Sub-total	8,047	5,364	10,557	2,639	3,733,682	2,231,826	5,965,508	6,357,155	1,390,134	7,747,289	1,781,781		
Kari High Land	4,590	3,060	6,341	1,585	2,486,756	1,426,771	3,913,527	3,475,673	748,938	4,224,611	311,084		
River Middle Land	7,897	5,265	10,296	2,574	3,600,574	2,113,071	5,713,645	6,629,862	1,410,184	8,040,046	2,326,401		
Bank Low Land	4,846	3,231	6,593	1,648	2,209,495	1,296,739	3,506,234	3,613,801	778,706	4,392,507	886,273		
Sub-total	17,333	11,556	23,230	5,807	8,013,393	4,772,933	12,786,326	14,115,287	3,082,501	17,257,788	4,471,462		
All High Land	11,230	7,487	16,006	4,001	5,390,704	3,335,197	8,725,901	8,329,938	1,942,313	10,272,251	1,546,350		
River Middle Land	16,338	10,891	21,389	5,348	7,449,180	4,371,027	11,820,207	13,772,933	2,929,939	16,702,872	4,882,665		
Bank Low Land	12,623	8,416	16,661	4,165	5,755,356	3,377,702	9,133,058	10,728,451	2,281,824	13,010,275	3,877,217		
Total	40,191	26,794	54,056	13,514	18,595,240	11,083,926	29,679,166	34,831,322	7,154,076	39,985,398	10,306,232		

Table E.3.19. (4) Incremental Net Production Value
(C Type Development)

<u>Project Area</u>		(Unit: Thousand RIs)		
	<u>Sub-Area</u>	<u>Rice</u>	<u>Animal Husbandry</u>	<u>Total</u>
Haraz River Left Bank	High Land	840,560	810,660	<u>1,651,220</u>
	Middle Land	1,631,374	932,620	<u>2,563,994</u>
	Low Land	1,581,055	946,980	<u>2,528,025</u>
	<u>Sub-total</u>	<u>4,052,989</u>	<u>2,690,250</u>	<u>6,743,239</u>
Haraz River Right Bank	High land	202,767	473,480	<u>676,247</u>
	Middle land	461,501	538,050	<u>999,551</u>
	Low Land	654,124	394,570	<u>1,048,694</u>
	<u>Sub-total</u>	<u>1,781,781</u>	<u>1,406,100</u>	<u>3,187,881</u>
Kari Rud	High land	311,084	839,360	<u>1,150,444</u>
	Middle Land	2,326,401	1,363,060	<u>3,689,461</u>
	Low Land	886,273	875,230	<u>1,761,503</u>
	<u>Sub-total</u>	<u>4,471,462</u>	<u>3,077,650</u>	<u>7,549,112</u>
All Areas	High Land	1,546,350	2,123,500	3,669,850
	Middle land	4,882,665	2,833,730	7,716,395
	Low land	3,877,217	2,216,770	6,093,987
	<u>Total</u>	<u>10,306,232</u>	<u>7,174,000</u>	<u>17,480,232</u>

Table E.3.20.(1) Sub-Area Cost and Benefit, Kari Rud High Land (Ejbar Kola, B Type Development)

(UNIT : MILLION MILLION RIALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE		10 %	
	CAPITAL	O & M				(COST)	(BENEFITS)		(COST)
1 1987	109.700	0.0	109.700	0.0	-109.700	109.700	0.0	109.700	0.0
2 1988	109.700	0.0	109.700	0.0	-109.700	94.050	0.0	90.661	0.0
3 1989	125.700	0.0	125.700	0.0	-125.700	97.833	0.0	94.440	0.0
4 1990	285.500	0.0	285.500	0.0	-285.500	105.540	0.0	192.801	0.0
5 1991	572.000	1.800	573.800	11.600	-562.300	226.143	0.0	356.348	7.203
6 1992	736.600	13.800	750.400	39.300	-711.100	423.833	27.705	423.583	22.184
7 1993	617.600	25.700	643.300	96.000	-547.300	477.834	63.846	390.117	78.700
8 1994	423.600	37.200	460.800	168.700	-292.100	342.911	105.845	192.946	107.934
9 1995	391.400	39.400	430.800	254.500	-176.300	294.992	130.639	152.361	131.163
10 1996	391.400	41.700	433.100	340.200	-92.900	241.620	139.968	182.703	149.312
11 1997	391.400	43.500	434.900	476.000	-8.700	228.967	224.914	133.179	163.077
12 1998	391.400	45.400	436.800	511.300	75.000	217.679	173.460	127.106	173.105
13 1999	391.400	47.900	439.300	547.500	153.300	205.125	161.587	121.738	173.105
14 2000	391.400	49.500	440.900	623.300	242.500	195.013	150.110	232.673	116.204
15 2001	391.400	51.600	443.000	769.200	326.200	184.851	139.683	242.486	184.143
16 2002	391.400	53.800	445.200	855.000	410.700	175.175	129.892	249.569	98.846
17 2003	391.400	55.700	447.100	940.300	493.700	166.640	120.638	256.883	186.076
18 2004	391.400	57.800	449.200	1025.500	577.300	157.377	112.413	258.271	88.458
19 2005	391.400	59.800	451.200	1112.300	661.100	149.130	104.550	257.033	80.794
20 2006	391.400	61.900	453.300	1285.400	744.400	141.344	97.256	250.070	73.776
21 2007	216.500	64.300	280.800	1285.400	1005.100	32.451	53.684	253.355	173.700
22 2008	151.300	65.200	216.500	1359.500	1142.500	60.820	39.916	26.653	167.012
23 2009	0.0	66.300	66.300	1416.200	1300.200	17.279	11.781	281.204	7.371
24 2010	0.0	66.000	66.000	1442.400	1376.400	16.301	10.408	227.469	6.701
25 2011	0.0	66.000	66.000	1454.000	1354.000	15.378	9.617	212.513	6.092
26 2012	0.0	66.000	66.000	1454.000	1343.000	14.508	8.923	192.586	5.538
27 2013	0.0	66.000	66.000	1454.000	1335.000	13.651	8.282	182.024	5.034
28 2014	0.0	66.000	66.000	1454.000	1328.000	12.812	7.650	168.541	4.577
29 2015	0.0	66.000	66.000	1454.000	1323.000	12.011	7.084	156.057	4.161
30 2016	0.0	66.000	66.000	1454.000	1318.000	11.492	6.599	144.497	3.782
31 2017	0.0	66.000	66.000	1454.000	1314.000	10.851	6.073	132.794	3.459
32 2018	0.0	66.000	66.000	1454.000	1310.000	10.228	5.623	122.283	3.126
33 2019	0.0	66.000	66.000	1454.000	1308.000	9.647	5.207	114.707	2.842
34 2020	0.0	66.000	66.000	1454.000	1308.000	9.102	4.821	108.210	2.583
35 2021	0.0	66.000	66.000	1454.000	1308.000	8.577	4.464	98.343	2.349
36 2022	0.0	66.000	66.000	1454.000	1308.000	8.101	4.133	91.058	2.135
37 2023	0.0	66.000	66.000	1454.000	1308.000	7.683	3.827	84.313	1.941
38 2024	0.0	66.000	66.000	1454.000	1308.000	7.210	3.544	78.068	1.765
39 2025	0.0	66.000	66.000	1454.000	1308.000	6.802	3.281	72.285	1.604
40 2026	0.0	66.000	66.000	1454.000	1308.000	6.417	3.038	66.931	1.458
41 2027	0.0	66.000	66.000	1454.000	1308.000	6.054	2.815	61.973	1.328
42 2028	0.0	66.000	66.000	1454.000	1308.000	5.711	2.605	57.382	1.205
43 2029	0.0	66.000	66.000	1454.000	1308.000	5.388	2.412	53.132	1.096
44 2030	0.0	66.000	66.000	1454.000	1308.000	5.083	2.233	49.196	0.996
45 2031	0.0	66.000	66.000	1454.000	1308.000	4.793	2.063	45.552	0.906
46 2032	0.0	66.000	66.000	1454.000	1308.000	4.524	1.915	42.178	0.823
47 2033	0.0	66.000	66.000	1454.000	1308.000	4.268	1.773	39.053	0.748
48 2034	0.0	66.000	66.000	1454.000	1308.000	4.026	1.641	36.161	0.680
49 2035	0.0	66.000	66.000	1454.000	1308.000	3.798	1.520	33.482	0.618
50 2036	0.0	66.000	66.000	1454.000	1308.000	3.583	1.407	31.002	0.562
TOTAL	8013.200	2862.400	10875.600	5238.500	41662.900	4496.166	4005.478	6273.890	4160.591

BENEFIT COST RATIO BY DISCOUNT RATE (5%) = 2.01 (65%) = 1.57 (8%) = 1.25 (10%)
INTERNAL RATE OF RETURN (IRR) = 12.1%

Table E.3.20.(2) Sub-Area Cost and Benefit, Haraz Right Bank Middle Land (Barik Mahalleh, B Type Development)

(UNIT : MILLION MILLION RIALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	6 %		3 %		10 %	
	CAPITAL	O & M				(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	91.000	0.0	91.000	0.0	-91.000	91.000	0.0	91.000	0.0	91.000	0.0
2 1988	91.000	0.0	91.000	0.0	-91.000	80.990	0.0	78.018	0.0	75.207	0.0
3 1989	101.300	0.0	101.300	0.0	-101.300	85.054	0.0	80.415	0.0	76.108	0.0
4 1990	319.400	0.0	319.400	0.0	-319.400	252.995	0.0	234.749	0.0	218.155	0.0
5 1991	467.800	0.0	467.800	0.0	-467.800	351.138	0.0	319.807	0.0	291.772	0.0
6 1992	459.500	13.200	472.700	22.800	-446.900	331.122	16.073	295.992	14.366	265.135	12.870
7 1993	144.900	18.300	163.200	32.200	-131.000	108.538	21.415	95.276	18.734	83.748	16.524
8 1994	183.700	24.300	208.000	51.000	-157.000	130.503	31.998	112.378	27.554	97.034	23.792
9 1995	183.700	25.200	208.900	83.600	-125.300	123.649	52.443	104.503	44.322	88.595	37.575
10 1996	264.000	26.100	290.100	134.200	-155.900	161.992	77.171	134.373	64.014	111.847	53.783
11 1997	264.000	27.500	291.500	210.700	-80.800	153.560	110.995	125.020	90.366	102.170	73.820
12 1998	264.000	28.300	292.300	283.500	-4.300	143.314	143.377	116.276	114.568	93.296	91.926
13 1999	264.000	30.200	294.200	373.800	77.600	137.934	174.316	108.178	136.711	85.220	107.698
14 2000	264.000	31.500	295.500	453.100	157.500	130.702	200.365	100.607	154.230	77.815	119.290
15 2001	264.000	32.900	296.900	533.200	241.300	123.885	224.575	93.596	169.665	71.076	128.843
16 2002	264.000	34.300	298.300	622.900	324.400	117.426	245.127	80.473	190.735	59.275	135.420
17 2003	264.000	35.600	299.600	703.900	406.300	111.263	262.150	73.376	197.148	54.138	141.695
18 2004	264.000	37.000	301.000	787.100	486.800	105.855	276.006	70.047	202.198	45.144	140.441
19 2005	264.000	38.300	302.300	868.300	566.000	99.816	286.990	62.159	202.708	41.216	137.295
20 2006	264.000	39.700	303.700	944.800	641.100	94.697	294.599	60.501	201.837	37.641	133.376
21 2007	264.000	41.000	305.000	1016.300	711.000	89.719	298.868	56.340	199.707	34.364	127.997
22 2008	264.000	42.400	306.400	1085.700	779.300	85.029	301.294	52.467	195.201	31.230	122.767
23 2009	264.000	43.700	307.700	1146.100	838.400	80.357	300.032	36.082	190.693	21.201	116.443
24 2010	183.700	45.100	228.800	1209.200	980.400	66.810	294.833	30.341	184.219	3.935	109.566
25 2011	183.700	46.000	229.700	1281.500	1031.900	53.321	293.938	5.871	166.664	3.578	101.351
26 2012	0.0	46.900	46.900	1305.300	1258.900	10.309	287.035	5.436	155.370	2.252	93.068
27 2013	0.0	46.900	46.900	1331.300	1284.400	9.726	276.076	5.034	144.047	2.957	84.607
28 2014	0.0	46.900	46.900	1342.100	1295.200	9.175	262.362	4.611	133.377	2.684	76.916
29 2015	0.0	46.900	46.900	1342.100	1295.200	8.656	247.701	4.316	123.497	2.443	69.924
30 2016	0.0	46.900	46.900	1342.100	1295.200	7.704	230.433	3.996	114.349	2.221	63.567
31 2017	0.0	46.900	46.900	1342.100	1295.200	6.868	207.975	3.700	105.879	2.019	57.783
32 2018	0.0	46.900	46.900	1342.100	1295.200	6.102	185.097	3.428	98.036	1.836	52.325
33 2019	0.0	46.900	46.900	1342.100	1295.200	5.431	174.620	3.172	90.774	1.669	47.759
34 2020	0.0	46.900	46.900	1342.100	1295.200	4.856	164.736	2.937	84.050	1.517	43.417
35 2021	0.0	46.900	46.900	1342.100	1295.200	4.323	154.412	2.720	77.824	1.379	39.470
36 2022	0.0	46.900	46.900	1342.100	1295.200	3.833	146.615	2.518	72.080	1.254	35.882
37 2023	0.0	46.900	46.900	1342.100	1295.200	3.383	138.316	2.332	66.722	1.140	32.620
38 2024	0.0	46.900	46.900	1342.100	1295.200	2.966	130.487	2.155	61.780	1.036	29.645
39 2025	0.0	46.900	46.900	1342.100	1295.200	2.582	123.101	1.999	57.403	0.942	26.959
40 2026	0.0	46.900	46.900	1342.100	1295.200	2.231	116.133	1.851	52.966	0.856	24.508
41 2027	0.0	46.900	46.900	1342.100	1295.200	1.902	109.560	1.714	49.043	0.779	22.280
42 2028	0.0	46.900	46.900	1342.100	1295.200	1.602	103.358	1.587	45.410	0.708	20.275
43 2029	0.0	46.900	46.900	1342.100	1295.200	1.327	97.508	1.469	42.046	0.643	18.413
44 2030	0.0	46.900	46.900	1342.100	1295.200	1.077	91.989	1.360	38.932	0.585	16.739
45 2031	0.0	46.900	46.900	1342.100	1295.200	0.847	86.782	1.260	36.048	0.532	15.218
46 2032	0.0	46.900	46.900	1342.100	1295.200	0.633	81.870	1.166	33.378	0.483	13.834
47 2033	0.0	46.900	46.900	1342.100	1295.200	0.434	77.236	1.080	30.965	0.439	12.577
48 2034	0.0	46.900	46.900	1342.100	1295.200	0.246	72.864	1.000	28.616	0.400	11.333
49 2035	0.0	46.900	46.900	1342.100	1295.200	0.070	68.795	0.929	26.567	0.377	10.200
50 2036	0.0	46.900	46.900	1342.100	1295.200	0.000	65.000	0.867	24.700	0.350	9.100
TOTAL	6105.700	1432.700	7538.400	433.600	3745.100	3443.368	7897.795	2780.617	4865.567	2298.029	3123.363

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 3.29 (6%), 1.75 (8%), 1.36 (10%)
INTERNAL RATE OF RETURN (IRR)

Table E.3.20.(5)

Sub-Area Cost and Benefit, Kari Rud Low Land
(Suteh, B Type Development)

(UNIT : MILLION MILLION RIJALS)

YEAR	PROJECT COST		O & M	TOTAL	BENEFITS		RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE		INTERNAL RATE OF RETURN (IRR)	BENEFIT COST RATIO BY DISCOUNT RATE (B/C)
	CAPITAL	O & M			(BENEFITS)	(COST)		8 %	10 %		
1 1987	192.400	0.0	0.0	192.400	0.0	0.0	-192.400	192.400	0.0	172.400	0.0
2 1988	192.400	0.0	0.0	192.400	0.0	0.0	-192.400	164.952	0.0	159.003	0.0
3 1989	209.100	0.0	0.0	209.100	0.0	0.0	-209.100	175.465	0.0	157.100	0.0
4 1990	1430.000	0.0	0.0	1430.000	0.0	0.0	-1430.000	1132.497	0.0	976.772	0.0
5 1991	1822.700	9.360	0.0	1832.060	0.0	0.0	-1832.060	1368.982	0.0	1137.532	0.0
6 1992	1358.400	29.500	18.600	1397.900	18.600	18.600	-1379.300	1337.952	23.112	1196.003	10.499
7 1993	653.400	31.700	62.600	747.700	62.600	62.600	-685.100	448.983	41.633	393.976	32.124
8 1994	407.600	61.000	180.100	648.600	180.100	180.100	-468.500	294.008	100.449	253.171	74.688
9 1995	407.600	63.000	292.300	762.600	292.300	292.300	-470.300	273.450	173.013	235.418	199.582
10 1996	407.600	65.100	452.400	824.700	452.400	452.400	-372.300	263.956	252.660	203.549	182.248
11 1997	407.600	67.000	612.500	1087.100	612.500	612.500	-475.100	250.018	321.963	189.305	174.621
12 1998	407.600	69.100	772.600	1249.300	772.600	772.600	-476.700	238.908	372.963	166.612	214.680
13 1999	407.600	71.100	932.700	1411.400	932.700	932.700	-478.700	228.436	437.292	148.918	246.177
14 2000	407.600	73.200	1252.900	1733.700	1252.900	1252.900	-480.800	217.561	552.167	126.611	270.173
15 2001	407.600	75.300	1412.000	1994.900	1412.000	1412.000	-482.800	206.882	589.604	105.580	329.932
16 2002	407.600	77.400	1572.100	2277.100	1572.100	1572.100	-484.900	196.200	612.254	88.332	342.357
17 2003	407.600	79.400	1732.200	2564.300	1732.200	1732.200	-487.000	185.521	629.622	76.530	340.514
18 2004	407.600	81.400	1892.300	2856.500	1892.300	1892.300	-489.100	174.842	647.015	65.823	323.841
19 2005	407.600	83.400	2052.400	3148.700	2052.400	2052.400	-491.200	164.163	664.408	55.922	295.968
20 2006	407.600	85.400	2212.500	3440.900	2212.500	2212.500	-493.300	153.484	681.801	45.922	282.748
21 2007	407.600	87.400	2372.600	3733.100	2372.600	2372.600	-495.400	142.805	700.194	35.922	259.110
22 2008	407.600	89.400	2532.700	4025.300	2532.700	2532.700	-497.500	132.126	718.587	25.922	235.555
23 2009	407.600	91.400	2692.800	4317.500	2692.800	2692.800	-499.600	121.447	736.980	15.922	219.674
24 2010	407.600	93.400	2852.900	4609.700	2852.900	2852.900	-501.700	110.768	755.373	8.022	194.141
25 2011	407.600	95.400	3013.000	4901.900	3013.000	3013.000	-503.800	100.089	773.766	0.022	176.976
26 2012	407.600	97.400	3173.100	5194.100	3173.100	3173.100	-505.900	89.410	792.159	6.022	160.387
27 2013	407.600	99.400	3333.200	5486.300	3333.200	3333.200	-508.000	78.731	810.552	4.022	146.261
28 2014	407.600	101.400	3493.300	5778.500	3493.300	3493.300	-510.100	68.052	828.945	2.022	132.965
29 2015	407.600	103.400	3653.400	6070.700	3653.400	3653.400	-512.200	57.373	847.338	0.022	120.877
30 2016	407.600	105.400	3813.500	6362.900	3813.500	3813.500	-514.300	46.694	865.731	0.022	109.889
31 2017	407.600	107.400	3973.600	6655.100	3973.600	3973.600	-516.400	36.015	884.124	0.022	99.899
32 2018	407.600	109.400	4133.700	6947.300	4133.700	4133.700	-518.500	25.336	902.517	0.022	90.817
33 2019	407.600	111.400	4293.800	7239.500	4293.800	4293.800	-520.600	14.657	920.910	0.022	82.735
34 2020	407.600	113.400	4453.900	7531.700	4453.900	4453.900	-522.700	4.000	939.303	0.022	75.653
35 2021	407.600	115.400	4614.000	7823.900	4614.000	4614.000	-524.800	0.000	957.696	0.022	68.571
36 2022	407.600	117.400	4774.100	8116.100	4774.100	4774.100	-526.900	0.000	976.089	0.022	62.489
37 2023	407.600	119.400	4934.200	8408.300	4934.200	4934.200	-529.000	0.000	994.482	0.022	56.407
38 2024	407.600	121.400	5094.300	8700.500	5094.300	5094.300	-531.100	0.000	1012.875	0.022	50.325
39 2025	407.600	123.400	5254.400	8992.700	5254.400	5254.400	-533.200	0.000	1031.268	0.022	44.243
40 2026	407.600	125.400	5414.500	9284.900	5414.500	5414.500	-535.300	0.000	1049.661	0.022	38.161
41 2027	407.600	127.400	5574.600	9577.100	5574.600	5574.600	-537.400	0.000	1068.054	0.022	32.079
42 2028	407.600	129.400	5734.700	9869.300	5734.700	5734.700	-539.500	0.000	1086.447	0.022	26.000
43 2029	407.600	131.400	5894.800	10161.500	5894.800	5894.800	-541.600	0.000	1104.840	0.022	20.000
44 2030	407.600	133.400	6054.900	10453.700	6054.900	6054.900	-543.700	0.000	1123.233	0.022	14.000
45 2031	407.600	135.400	6215.000	10745.900	6215.000	6215.000	-545.800	0.000	1141.626	0.022	8.000
46 2032	407.600	137.400	6375.100	11038.100	6375.100	6375.100	-547.900	0.000	1160.019	0.022	2.000
47 2033	407.600	139.400	6535.200	11330.300	6535.200	6535.200	-550.000	0.000	1178.412	0.022	0.000
48 2034	407.600	141.400	6695.300	11622.500	6695.300	6695.300	-552.100	0.000	1196.805	0.022	0.000
49 2035	407.600	143.400	6855.400	11914.700	6855.400	6855.400	-554.200	0.000	1215.198	0.022	0.000
50 2036	407.600	145.400	7015.500	12206.900	7015.500	7015.500	-556.300	0.000	1233.591	0.022	0.000
TOTAL	11530.400	3628.600	15159.000	69596.600	24855.600	24855.600	69596.600	7379.625	16067.325	10194.260	6731.561

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.01 (5%), 1.50 (8%), 1.14 (10%)
INTERNAL RATE OF RETURN (IRR) = 11.1%

Table E.3.21.(1) Sub-Area Cost and Benefit, Kari Rud High Land (Ejbar Kola, C Type Development)

(UNIT : MILLION MILLION RIALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE		10 %	
	CAPITAL	O & M				(COST)	(BENEFITS)	(COST)	(BENEFITS)
1 1987	109.700	0.0	109.700	0.0	-109.700	109.700	0.0	109.700	0.0
2 1988	109.700	0.0	109.700	0.0	-109.700	97.633	0.0	94.050	0.0
3 1989	125.700	0.0	125.700	0.0	-125.700	103.540	0.0	99.785	0.0
4 1990	231.500	0.0	231.500	0.0	-231.500	183.747	0.0	172.365	0.0
5 1991	495.600	1.400	497.000	9.200	-487.800	371.389	6.875	338.511	6.261
6 1992	593.800	11.000	594.800	31.100	-563.700	419.313	21.924	374.826	19.598
7 1993	464.900	20.500	485.400	75.900	-409.500	323.821	50.678	283.277	44.287
8 1994	238.700	29.700	268.400	133.500	-134.900	163.999	145.009	125.126	122.121
9 1995	238.700	31.500	270.200	201.300	-68.900	159.922	119.150	135.168	114.592
10 1996	238.700	33.000	271.700	269.200	-2.500	151.717	150.321	123.890	124.692
11 1997	238.700	34.800	273.500	337.100	63.600	143.972	177.582	117.214	144.577
12 1998	238.700	36.700	275.400	405.000	130.173	135.618	201.275	109.167	172.837
13 1999	238.700	37.500	276.200	472.300	194.200	128.632	221.670	101.706	173.849
14 2000	238.700	39.000	277.700	540.700	262.400	123.094	239.155	94.731	184.089
15 2001	238.700	41.200	279.900	608.600	328.700	118.794	253.951	88.277	191.858
16 2002	238.700	42.300	281.000	676.500	395.000	114.813	266.306	82.158	197.466
17 2003	238.700	44.500	283.200	744.300	463.100	105.172	276.411	76.981	201.163
18 2004	238.700	46.700	285.400	812.200	527.400	98.730	284.554	71.272	203.254
19 2005	238.700	47.800	286.500	880.100	593.600	94.694	290.890	66.366	203.932
20 2006	238.700	49.500	288.200	948.000	659.800	89.864	295.597	61.884	203.994
21 2007	133.000	51.000	184.000	1017.000	832.900	84.404	298.162	56.573	203.035
22 2008	0.0	52.000	52.000	1075.700	932.900	82.404	298.519	56.573	203.035
23 2009	0.0	52.000	52.000	1120.500	1067.800	77.957	293.350	51.926	190.841
24 2010	0.0	52.000	52.000	1141.200	1088.500	73.016	281.839	47.311	175.969
25 2011	0.0	52.000	52.000	1150.400	1097.700	68.557	268.048	42.854	161.981
26 2012	0.0	52.000	52.000	1150.400	1097.700	63.699	252.876	38.422	155.538
27 2013	0.0	52.000	52.000	1150.400	1097.700	58.841	238.562	34.017	144.017
28 2014	0.0	52.000	52.000	1150.400	1097.700	53.983	225.059	29.564	133.349
29 2015	0.0	52.000	52.000	1150.400	1097.700	49.126	212.320	25.237	123.472
30 2016	0.0	52.000	52.000	1150.400	1097.700	44.268	200.302	20.910	114.326
31 2017	0.0	52.000	52.000	1150.400	1097.700	39.410	188.264	16.584	105.857
32 2018	0.0	52.000	52.000	1150.400	1097.700	34.552	176.269	12.257	98.016
33 2019	0.0	52.000	52.000	1150.400	1097.700	29.694	164.278	7.930	90.756
34 2020	0.0	52.000	52.000	1150.400	1097.700	24.836	152.283	3.603	84.033
35 2021	0.0	52.000	52.000	1150.400	1097.700	19.978	140.288	0.276	77.808
36 2022	0.0	52.000	52.000	1150.400	1097.700	15.120	128.293	0.000	72.045
37 2023	0.0	52.000	52.000	1150.400	1097.700	10.262	116.298	0.000	66.708
38 2024	0.0	52.000	52.000	1150.400	1097.700	5.404	104.303	0.000	61.757
39 2025	0.0	52.000	52.000	1150.400	1097.700	0.546	92.308	0.000	57.192
40 2026	0.0	52.000	52.000	1150.400	1097.700	0.000	80.313	0.000	52.955
41 2027	0.0	52.000	52.000	1150.400	1097.700	0.000	68.318	0.000	48.718
42 2028	0.0	52.000	52.000	1150.400	1097.700	0.000	56.323	0.000	44.481
43 2029	0.0	52.000	52.000	1150.400	1097.700	0.000	44.328	0.000	40.244
44 2030	0.0	52.000	52.000	1150.400	1097.700	0.000	32.333	0.000	36.007
45 2031	0.0	52.000	52.000	1150.400	1097.700	0.000	20.338	0.000	31.770
46 2032	0.0	52.000	52.000	1150.400	1097.700	0.000	8.343	0.000	27.533
47 2033	0.0	52.000	52.000	1150.400	1097.700	0.000	0.348	0.000	23.296
48 2034	0.0	52.000	52.000	1150.400	1097.700	0.000	0.000	0.000	19.059
49 2035	0.0	52.000	52.000	1150.400	1097.700	0.000	0.000	0.000	14.822
50 2036	0.0	52.000	52.000	1150.400	1097.700	0.000	0.000	0.000	10.585
TOTAL	5460.800	2126.000	7586.800	41410.900	33223.500	3535.298	7607.426	2940.313	4963.988
				BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.70 (10%)				2458.867	
				INTERNAL RATE OF RETURN (IRR) = 12.7%				3291.847	

Table E.3.21.(2) Sub-Area Cost and Benefit, Haraz Right Bank Middle Land
(Barik Mahalleh, C Type Development)

(UNIT : MILLION MIDDLE RIALS)

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE			(BENEFITS)	(COST)	10 % (BENEFITS)
	CAPITAL	C & M				6 % (COST)	8 % (COST)	10 % (COST)			
1 1987	91,000	0.0	91,000	0.0	-91,000	91,000	0.0	91,000	0.0	91,000	0.0
2 1988	91,000	0.0	91,000	0.0	-91,000	30,990	0.0	78,012	0.0	75,207	0.0
3 1989	101,300	0.0	101,300	0.0	-101,300	85,054	0.0	101,300	0.0	76,108	0.0
4 1990	319,400	0.0	319,400	0.0	-319,400	252,995	0.0	234,769	0.0	218,155	0.0
5 1991	467,800	1,300	469,100	0.0	-468,500	350,914	0.0	319,603	0.0	291,585	0.0
6 1992	459,500	8,700	468,200	17,000	-451,200	330,064	11,984	293,046	10,713	284,288	9,596
7 1993	144,900	15,700	160,600	34,000	-136,600	106,809	15,961	91,709	14,034	82,414	11,316
8 1994	132,000	20,800	152,800	38,000	-114,800	95,869	23,842	82,553	20,530	71,283	17,277
9 1995	132,000	21,600	153,600	46,000	-107,600	90,916	29,666	76,808	33,047	65,112	27,991
10 1996	185,600	23,400	209,000	103,000	-106,000	116,706	57,515	96,109	47,709	80,579	54,993
11 1997	189,600	23,500	213,100	136,900	-76,200	110,679	82,584	90,109	67,292	73,639	68,474
12 1998	186,600	24,700	211,300	176,900	-34,400	105,011	106,800	83,211	85,340	67,327	80,209
13 1999	186,600	25,900	212,500	216,900	64,400	99,630	129,823	78,136	101,816	61,524	89,218
14 2000	186,600	27,000	213,600	338,800	125,200	84,477	149,854	72,723	115,349	56,248	89,218
15 2001	186,600	28,200	214,800	400,300	186,000	80,830	187,282	67,714	125,350	46,987	95,950
16 2002	186,600	29,300	215,900	483,800	247,900	84,990	182,576	82,070	135,980	42,923	100,938
17 2003	186,600	30,500	217,100	575,500	308,700	80,625	195,287	58,676	142,109	42,923	100,938
18 2004	186,600	31,700	218,300	674,800	376,500	76,481	194,374	54,630	138,840	39,264	99,787
19 2005	186,600	32,800	219,400	784,700	447,300	72,316	223,777	50,238	149,850	35,874	105,742
20 2006	186,600	34,000	220,600	904,000	519,000	68,785	239,515	47,330	151,044	32,791	109,647
21 2007	186,600	35,200	221,800	1,035,000	595,000	65,216	259,582	44,043	150,325	29,959	102,955
22 2008	186,600	36,400	223,000	1,178,700	675,700	61,857	284,396	41,001	148,726	27,383	99,335
23 2009	186,600	37,500	224,100	1,330,000	759,000	58,870	312,475	38,168	145,983	25,029	95,330
24 2010	186,600	38,600	225,200	1,490,000	835,000	56,136	340,424	36,904	142,026	17,321	91,436
25 2011	186,600	39,700	226,300	1,660,000	910,000	54,007	367,931	35,972	137,200	15,648	88,723
26 2012	0.0	40,200	40,200	977,000	932,400	52,337	394,793	34,435	131,499	13,373	81,608
27 2013	0.0	40,200	40,200	991,000	951,400	50,936	421,631	33,033	124,137	12,066	75,669
28 2014	0.0	40,200	40,200	999,000	959,400	49,865	448,517	31,785	115,869	10,788	69,317
29 2015	0.0	40,200	40,200	999,000	959,400	48,819	475,406	30,699	107,286	9,534	63,016
30 2016	0.0	40,200	40,200	999,000	959,400	47,888	502,300	29,699	99,339	8,284	57,287
31 2017	0.0	40,200	40,200	999,000	959,400	47,063	529,198	28,791	91,381	7,094	52,079
32 2018	0.0	40,200	40,200	999,000	959,400	46,344	556,102	27,925	85,168	6,041	43,041
33 2019	0.0	40,200	40,200	999,000	959,400	45,729	583,011	27,119	73,018	5,174	39,129
34 2020	0.0	40,200	40,200	999,000	959,400	45,210	610,924	26,366	67,609	4,431	35,971
35 2021	0.0	40,200	40,200	999,000	959,400	44,785	639,842	25,666	62,601	3,800	32,337
36 2022	0.0	40,200	40,200	999,000	959,400	44,455	669,765	25,018	57,964	3,212	29,398
37 2023	0.0	40,200	40,200	999,000	959,400	44,218	700,692	24,412	53,670	2,664	26,725
38 2024	0.0	40,200	40,200	999,000	959,400	44,073	732,624	23,844	49,695	2,147	24,296
39 2025	0.0	40,200	40,200	999,000	959,400	44,019	765,561	23,312	46,014	1,671	22,087
40 2026	0.0	40,200	40,200	999,000	959,400	44,056	799,504	22,813	42,605	1,219	20,079
41 2027	0.0	40,200	40,200	999,000	959,400	44,173	834,453	22,344	39,449	0,734	18,254
42 2028	0.0	40,200	40,200	999,000	959,400	44,369	870,408	21,904	36,527	0,207	16,594
43 2029	0.0	40,200	40,200	999,000	959,400	44,643	907,371	21,494	33,821	0,607	15,086
44 2030	0.0	40,200	40,200	999,000	959,400	45,000	945,342	21,112	31,316	0,532	13,714
45 2031	0.0	40,200	40,200	999,000	959,400	45,443	984,321	20,766	28,996	0,501	12,468
46 2032	0.0	40,200	40,200	999,000	959,400	45,975	1,024,308	20,452	26,849	0,456	11,334
47 2033	0.0	40,200	40,200	999,000	959,400	46,600	1,065,303	20,172	24,860	0,414	10,304
48 2034	0.0	40,200	40,200	999,000	959,400	47,321	1,107,306	19,926	23,018	0,377	9,367
49 2035	0.0	40,200	40,200	999,000	959,400	48,138	1,150,327	19,713	21,313	0,342	8,516
50 2036	0.0	40,200	40,200	999,000	959,400	49,053	1,194,364	19,525	19,713	0,309	7,767
TOTAL	4815,600	1570,500	6386,100	33745,500	27359,400	2371,765	5371,867	2359,695	3616,477	1973,039	2320,996

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.64 (6%), 1.54 (8%), 1.18 (10%)
INTERNAL RATE OF RETURN (IRR) = 11.3%

Table E.3.21.(3) Sub-Area Cost and Benefit, Kari Rud Low Land (Suteh, C Type Development)

(UNIT: MILLION MILLION RIALS)

YEAR	PROJECT COST			RETURN	BENEFITS		PRESENT WORTH VALUE BY DISCOUNT RATE		INTERNAL RATE OF RETURN (IRR)
	CAPITAL	C & M	TOTAL		(COST)	(BENEFITS)	(COST)	(BENEFITS)	
1 1987	192.400	0.0	192.400	-192.400	192.400	0.0	192.400	0.0	192.400
2 1988	192.400	0.0	192.400	-192.400	171.235	0.0	164.952	0.0	159.008
3 1989	209.100	0.0	209.100	-209.100	175.565	0.0	165.990	0.0	157.100
4 1990	1430.000	0.0	1430.000	-1430.000	1132.697	0.0	1051.094	0.0	976.712
5 1991	1786.000	7.700	1793.700	-1793.700	1375.438	0.0	1207.153	0.0	1101.332
6 1992	1783.000	24.500	1807.500	-1793.700	1274.576	14.100	1159.350	8.885	1020.574
7 1993	445.200	26.300	471.500	-471.500	471.500	47.600	275.117	27.774	241.935
8 1994	209.400	50.800	260.200	-260.200	169.128	123.500	176.231	65.643	121.293
9 1995	209.400	52.300	261.700	-261.700	154.901	221.900	130.916	111.006	92.410
10 1996	209.400	54.000	263.400	-263.400	147.003	343.500	191.810	122.004	159.108
11 1997	209.400	55.800	265.200	-265.200	139.600	465.000	244.959	113.655	199.122
12 1998	209.400	57.400	266.800	-266.800	132.593	586.600	291.526	105.951	232.948
13 1999	209.400	58.400	267.800	-267.800	125.577	709.100	331.989	98.470	260.369
14 2000	209.400	60.800	270.200	-270.200	118.551	831.600	420.722	91.393	223.849
15 2001	209.400	62.400	271.800	-271.800	113.444	1072.300	447.648	85.693	256.482
16 2002	209.400	64.200	273.600	-273.600	107.703	1196.300	476.139	79.862	348.408
17 2003	209.400	65.900	275.300	-275.300	102.238	1315.800	488.649	74.406	260.328
18 2004	209.400	67.500	276.900	-276.900	97.022	1437.400	468.593	69.795	258.533
19 2005	209.400	69.300	278.700	-278.700	92.116	1558.900	451.746	64.579	254.897
20 2006	82.900	70.900	153.800	153.800	97.956	1500.300	535.766	351.320	22.862
21 2007	83.200	71.500	154.700	154.700	46.095	1562.900	489.161	311.130	330.349
22 2008	0.0	72.100	72.100	72.100	20.809	1747.400	48.923	13.262	321.422
23 2009	0.0	72.100	72.100	72.100	18.878	1761.500	461.166	300.014	8.052
24 2010	0.0	72.100	72.100	72.100	17.808	1761.500	435.063	11.370	277.791
25 2011	0.0	72.100	72.100	72.100	16.800	1761.500	410.437	10.528	237.214
26 2012	0.0	72.100	72.100	72.100	15.849	1761.500	387.205	9.742	238.162
27 2013	0.0	72.100	72.100	72.100	14.942	1761.500	365.788	9.076	220.320
28 2014	0.0	72.100	72.100	72.100	14.085	1761.500	344.612	8.358	204.185
29 2015	0.0	72.100	72.100	72.100	13.307	1761.500	325.106	7.738	189.061
30 2016	0.0	72.100	72.100	72.100	12.584	1761.500	306.704	7.165	175.056
31 2017	0.0	72.100	72.100	72.100	11.893	1761.500	289.344	6.634	162.084
32 2018	0.0	72.100	72.100	72.100	11.173	1761.500	272.966	6.143	150.083
33 2019	0.0	72.100	72.100	72.100	10.540	1761.500	257.515	5.688	138.966
34 2020	0.0	72.100	72.100	72.100	9.844	1761.500	242.939	5.267	128.672
35 2021	0.0	72.100	72.100	72.100	9.381	1761.500	229.188	4.877	119.141
36 2022	0.0	72.100	72.100	72.100	8.850	1761.500	216.216	4.515	110.316
37 2023	0.0	72.100	72.100	72.100	8.349	1761.500	203.977	4.181	102.144
38 2024	0.0	72.100	72.100	72.100	7.876	1761.500	192.431	3.871	94.578
39 2025	0.0	72.100	72.100	72.100	7.431	1761.500	181.539	3.594	87.572
40 2026	0.0	72.100	72.100	72.100	7.010	1761.500	171.264	3.319	81.085
41 2027	0.0	72.100	72.100	72.100	6.613	1761.500	161.570	3.073	75.079
42 2028	0.0	72.100	72.100	72.100	6.239	1761.500	152.424	2.845	69.518
43 2029	0.0	72.100	72.100	72.100	5.886	1761.500	143.797	2.635	64.368
44 2030	0.0	72.100	72.100	72.100	5.553	1761.500	135.657	2.440	59.600
45 2031	0.0	72.100	72.100	72.100	5.238	1761.500	127.979	2.259	55.146
46 2032	0.0	72.100	72.100	72.100	4.942	1761.500	120.735	2.091	51.098
47 2033	0.0	72.100	72.100	72.100	4.662	1761.500	113.901	1.937	47.313
48 2034	0.0	72.100	72.100	72.100	4.399	1761.500	107.454	1.793	43.808
49 2035	0.0	72.100	72.100	72.100	4.159	1761.500	101.372	1.660	40.743
50 2036	0.0	72.100	72.100	72.100	3.914	1761.500	95.634	1.537	37.958
TOTAL	8699.500	3010.200	11709.700	52715.900	6462.624	12194.784	5597.595	7739.770	4919.315

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.38 (8%), 1.04 (10%)
INTERNAL RATE OF RETURN (IRR) = 10.3%

APPENDIX F

VILLAGE SURVEY- 1364

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INTERPRETATION

The Village Survey - 1364 was conducted by Iranian staffs to clarify the situations in the Project Area in 1364. The survey is covering 485 villages on 22 survey items as follows. Since some villages were not identified on their exact locations, 444 and 406 villages were able to be identified in Dehstan and in the Sub-areas, respectively.

Survey Items on the Village Survey - 1364

<u>Item No.</u>	<u>Survey Item</u>
(1)	Population of Deh (village)
(2)	Number of Household
(3)	Number of Farming Household
(4)	Number of Non-farming Household
(5)	Land belonging to Deh
(6)	Source of Irrigation Water & Irrigated Area
(7)	Variety, Area & Yield of Rice, in 1362 & 1363
(8)	Cropping Calendar for Paddy in 1363
(9)	Kind, Cropping Area & Yield of 2nd Crops in 1362 & 1363
(10)	Kind, Cropping Area & Yield of Upland Crops in 1362 & 1363
(11)	Kind, Area & Yield of Orchard in 1362 & 1363
(12)	Situation of Animal Husbandry
(13)	Number of Agri-machinery, etc.
(14)	Situation of Rice Mill
(15)	Manner of Use of Rice By-product
(16)	Situation of Rural Industries Other than Rice Mill
(17)	Social Infrastructure
(18)	Rural Cooperative
(19)	Land Ownership
(20)	Manner of Operation & Maintenance of Irrigation Facilities
(21)	Inundation Problem
(22)	State 5 Shortages/Problems of Deh in Order to Their Priority

The result of the survey has been compiled by the JICA team using computer. Followings are showing the relation ship between the compiled table and the survey item;

Table	Concerned Survey Items
F.3. Population & Household	(1), (2), (3), (4)
F.4. Number of Land Ownership	(19)
F.5. Land Belonging to Deh & Cropping Area of Paddy	(5), (7)
F.6. Situation of Animal Husbandry & Number of Agri-machinery	(12), (13)
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F.11. Water Shortage on Irrigation by Villages	(20)
F.12. Number of Village Mirabs	(20)
F.13. Experience of Village Mirabs	(20)
F.14. Number of Beneficiary Who Pays to Mirab	(20)
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TABLE F.1. List of Villages by Dehstan (1)

VILLAGE CODE	VILLAGE NAME	VILLAGE CODE	VILLAGE NAME	VILLAGE CODE	VILLAGE NAME
** (1) DEHSTAN AHLAMROSTAGH		9.	RAYUDEH SOFLA	20.	SORKH RUD SHARGHI
1.	10 ALADABUHI	10.	BAYUDEH OLIA	21.	SORKH RUD GHARBI
2.	20 AMU MAHALEH	11.	JURA KOLA	22.	SIAH KOLA
3.	30 AHLAM	12.	CHAMR AFRA	23.	SIRJARUDAN
4.	32 BEHSHTI MAHALEH	13.	DARIA SAR	24.	SHAH KOLA KALIJI OLIA
5.	40 BUNDEH	14.	RUD BAR	25.	SHAH KOLA KALIJI SOFLA
6.	41 BURJANDEH	15.	RUD PUSHT	26.	ISLAM ABAD (SHAH MAHALEH)
7.	42 TAJ KANAR	16.	ZAGHOEH	27.	SHEIKH ABAD
8.	43 TAJNAR	17.	ZANGI KOLA	28.	SHIR MAHALEH
9.	44 TALARAM	18.	SIAH RUD SAR	29.	ABUDOLLAH ABAD
10.	50 TARSJAB	19.	ALANDEH SHARGHI	30.	AZIM ABAD
11.	60 TALKASAR	20.	ALANDEH GHARBI	31.	ALAVI KOLA MIR
12.	70 JUNI KOLA	21.	ALI ABAD	32.	KARDGAR MAHALEH
13.	71 HARABDEH	22.	GOL-MAHZ OLIA	33.	KABUD KOLA
14.	80 HASAN ABAD	23.	MOTOKHILJ	34.	KACHAP SOFLA
15.	90 HOSSEIN ABAD	24.	MIAN GOLMARZ SOFLA	35.	KACHAP OLIA
16.	91 KHESHTI SAR	25.	MASER ABAD	36.	KACHAP GELVA
17.	92 KHORDON KOLA	26.	YANGHIL	37.	KONSI MARZ
18.	100 RAHAMAN ABAD	** (3) DEHSTAN HARAZ PEI JUNUBI		38.	GOL MAHALEH
19.	102 DAR KOLA	1.	330 ESKI MAHALEH	39.	FARAMADEH
20.	110 SANG KETI	2.	350 OJI ABAD	40.	MARZANGU
21.	111 SURAFH MAZU SOFLA	3.	390 BISHEH MAHALEH	41.	MARICH MAHALEH
22.	120 SURAKH MAZU OLIA	4.	420 PASHA KOLA	42.	MOALEM KOLA
23.	121 SAJAR KOLA	5.	610 GHADI MAHALEH	43.	MOLLA KOLA
24.	130 SPARFTI	6.	620 GHORGUSH	44.	MIRDEH SOFLA
25.	140 SHURSTAGH	7.	820 MIAN RUD	45.	MIRDEH OLIA
26.	141 SHUHIA	8.	780 HENMAT ABAD	46.	SHAH KETI
27.	150 ESHGH ABAD	** (4) DEHSTAN DABU SHOMALI		47.	NAVAI MAHALEH
28.	160 KERCHAK LALIJANI	1.	540 EZZAT ABAD	48.	VASKUS
29.	170 KERCHAK NAVAI	2.	700 VAZIK	49.	VARZ MAHALEH
30.	180 KOLA SAFA	3.	760 AHANGAR KOLA DABU	50.	VALEM SOFLA
31.	190 KULVDEH	4.	770 ABULHASAN ABAD	51.	VALEM OLIA
32.	210 GALEFSH POL	5.	810 EZBARAN	52.	VALIK SOFLA
33.	211 GELIRD	6.	860 AFRA SARA	53.	HOSSEIN ABAD (SHARRA)
34.	220 GILA PEI	7.	920 BONER KANAR	** (5) DEHSTAN DABU JUNUBI	
35.	230 GHASSAB KETI	8.	950 BISHEH MAHALEH BOZORG	1.	280 AHANGAR KOLA
36.	231 MAHMUD ABAD	9.	960 BISHEH MAHALEH KUCHAK	2.	370 BAKHTIAR KETI
37.	240 MASUM SHORGH I APAD	10.	1030 TAZEH ABAD/ABASSABAD	3.	430 JAFAR ABAD
38.	250 MIR ALAMDEH	11.	1040 TARTVIJAN SOFLA	4.	510 SETIDIN KOLA
39.	260 NAMUS DEH	12.	1050 TARTVIJAN OLIA	5.	520 SANG BAST
40.	261 YUSEF ABAD	13.	1080 HAJI KOLA	6.	580 KOLA MAHALEH
** (2) DEHSTAN HARAZ PEI SHOMALI		14.	1130 CHAK SAR	7.	600 KELJKAN
1.	270 AREH	15.	1150 HAJI ABAD	8.	650 MIANRUD KHOROBEBE
2.	290 AMI MAHALEH	16.	1190 DARVISH ABAD	9.	680 NODEH
3.	300 ORMAK KOLA	17.	1270 ZARD AB	10.	NO KOLA
4.	310 ASADOLLAH ABAD	18.	1280 ZANGI KOLA SOFLA	11.	HEHEH PAK
5.	320 ESHKANDEH	19.	1290 ZANGI KOLA OLIA	12.	ABDANG SAH
6.	340 AFRA TAKHAT			13.	ABSARAFI (GOLZAVAN)
7.	360 OURETEH DASHI			14.	ABULHASAN ABAD
8.	380 BISHEH KOLA				

TABLE F.1. List of Villages by Dehstan (2)

* VILLAGE CODE	* VILLAGE NAME *	* VILLAGE CODE	* VILLAGE NAME *	* VILLAGE CODE	* VILLAGE NAME *
15.	790	ABU MAHALEH	66.	1700	KAMANGAR KOLA
16.	800	ARDISHIR MAHALEH SURAK	67.	1720	KOHNEHDAN
17.	820	ESPAHI KOLA OLIA / SOFLA	68.	1740	GHARA KOLA
18.	830	ESKI MAHALEH	69.	1760	LATI KOLA
19.	840	ASHRAF ABAD	70.	1770	MAHUT KOLA
20.	850	ESHKAK KOLA	71.	1780	MAJID ABAD
21.	870	AMIN ABAD SURAK	72.	1790	MAHMAD ABAD
22.	880	OJAK	73.	1820	MUSA MAHALEH
23.	890	BARIK MAHALEH	74.	1830	MOTAHER SOFLA
24.	900	BAMER KOLA	75.	1840	MOTAHER OLIA
25.	910	BANSAR KOLA	76.	1870	MAMURZ KETI
26.	920	BUR MAHALEH	77.	1880	MUZI KETI SOFLA
27.	940	BLISHEH MAHALEH	78.	1890	MUZI KETI OLIA
28.	970	BINAMAD	79.	1900	MIAN MUD
29.	980	PASPA KOLA (HESHTEL)	80.	1930	NAIJ ABAD
30.	1000	PALHAM KETI	81.	1940	MARGES MARZ
31.	1010	PUL KIADEN	82.	2020	YUSEF ABAD
32.	1020	TAZEH ABAD	83.	2060	ALU
33.	1060	TAMESK			
34.	1070	TANHA KOLA			
35.	1100	JAZIN			
36.	1110	JAMSHID ARAD	** (6) DEHSTAN DASHT SAR		
37.	1140	HAJI ABAD	1.	2030	AMANGAR KOLA DASHTSAR
38.	1170	HASAN ABAD	2.	2040	EJIBAR KOLA
39.	1180	HOSSEIN ABAD	3.	2070	ALLAH RAJ
40.	1200	DONGPIA	4.	2090	BAGHBAN KOLA
41.	1210	DOTIREH	5.	2100	RGZMINAN
42.	1220	DIV KOLA SOFLA	6.	2110	GURAN
43.	1240	ZIAR KOLA	7.	2120	YUR MAHALEH
44.	1250	DIEH	8.	2130	PASHA KOLA
45.	1260	DIYU KOLA	9.	2140	POIN HESHTEL
46.	1280	SERAJ MAHALEH DARU	10.	2150	PULAK SOFLA
47.	1300	SOLTAN ABAD	11.	2160	PULAK OLIA
48.	1360	RAFI ABAD	12.	2170	TORK KOLA
49.	1380	REIS ABAD	13.	2180	CHAREH
50.	1390	SHANEM BAND	14.	2200	MALAL KHOR MAHALEH
51.	1400	SHARIAT ABAD	15.	2210	KHONI SAR
52.	1450	SHARIAT KOLA	16.	2220	DAVUD KOLA
53.	1460	SHAMR KETI	17.	2230	DARZI KOLA
54.	1480	SOORAT KOLA	18.	2240	DARVISH KHEIL
55.	1500	TOOLEH SARA	19.	2250	BILIRAN
56.	1510	TAHER ABAD	20.	2260	ROSTAMDAR MAHALEH
57.	1520	ALI KOLA AHI	21.	2270	RASH KOLA
58.	1530	EMADIEH (ESPIARI)	22.	2280	RUDBAR DASHT
59.	1570	GHEIS KOLA	23.	2290	ZUVARAK
60.	1590	KASHI MAHALEH	24.	2300	ZIA RUD
61.	1610	KARATI	25.	2310	SALAM MAHALEH
62.	1630	KORSI KOLA SOFLA	26.	2320	SHANEM KOLA
63.	1640	KORSI KOLA OLIA	27.	2330	SHANEM KOLA
64.	1650	KELTIG SAR	28.	2340	TOOLEH KOLA
65.	1690		29.	2350	ARAS KHEIL
			30.	2352	FIRUZ KOLA SOFLA

* VILLAGE CODE	* VILLAGE NAME *	* VILLAGE CODE	* VILLAGE NAME *
31.	FIRUZ KOLA VASATI	31.	FIRUZ KOLA
32.	FIRUZ KOLA OLIA	32.	FIRUZ KOLA OLIA
33.	GHALEH KOSHI	33.	GHALEH KOSHI
34.	GHALIAN KOLA	34.	GHALIAN KOLA
35.	KAMANGAR KOLA	35.	KAMANGAR KOLA
36.	KETI POSHT SOFLA	36.	KETI POSHT SOFLA
37.	KETI POSHT OLIA	37.	KETI POSHT OLIA
38.	KONSI	38.	KONSI
39.	KORD KHEIL HESHTEL	39.	KORD KHEIL HESHTEL
40.	KOM KOLA	40.	KOM KOLA
41.	KOM DARREH	41.	KOM DARREH
42.	GALESH KOLA	42.	GALESH KOLA
43.	MAHMADABAD(CZIA RUN)	43.	MAHMADABAD(CZIA RUN)
44.	MEHOI KHEIL	44.	MEHOI KHEIL
45.	MILEH	45.	MILEH
46.	NAJJOR MAHALEH	46.	NAJJOR MAHALEH
47.	NEZAM ABAD	47.	NEZAM ABAD
48.	VASTA KOLA	48.	VASTA KOLA
49.	VASFOL	49.	VASFOL
50.	HARUN KOLA SOFLA	50.	HARUN KOLA SOFLA
51.	HARUN KOLA OLIA	51.	HARUN KOLA OLIA
52.	HESHTEL OLIA	52.	HESHTEL OLIA
53.	HENDU KOLA	53.	HENDU KOLA

* (7) DEHSTAN POIN AHIABAN LITI KUH	* VILLAGE CODE	* VILLAGE NAME *
1.	200	KUSEHZAR
2.	2620	AGHUZ KETI
3.	2630	AMARI KETI
4.	2640	ESLAM ABAD(SIAH MAHALEH)
5.	2650	ANJI POL
6.	2660	ANSARI MAHALEH
7.	2670	BAMTI
8.	2680	PISHKUN
9.	2690	TAZEH ABAD
10.	2700	TAJANJAR SOFLA
11.	2710	TAJANJAR OLIA
12.	2720	CHARGAZ
13.	2740	DARAKA PEI
14.	2750	RUKESH
15.	2760	ZARUNDEH
16.	2770	ZARUNDEH
17.	2780	SACJI MAHALEH - NARM
18.	2790	SARHANG KETI
19.	2800	SIAH LASH
20.	2810	SHIR MAHALEH
21.	2820	GHAJAR MAHALEH
22.	2830	KAJEB MAHALEH
23.	2840	KORD KETI
24.	2850	KALAK SAR SHORGH
25.	2860	KALAK SAR POIN(GHARBI)

TABLE F.1. List of Villages by Dehstan (4)

* VILLAGE * CODE	* VILLAGE NAME *	* VILLAGE * CODE	* VILLAGE NAME *
25.	TARI MAHALEH	1.	PEKHIN
26.	CHAMAZIN	2.	JALI KOLA
27.	HAJI KOLA	3.	JUJ MAHALEH SURAK
28.	KHORJI KOLA	4.	HAJI ABAQ DABU (SOFLA)
29.	DARZI KOLAI BOZORG	5.	SANGSAR
30.	DARZI KOLAI KUCHAR	6.	RAF ABAQ
31.	MASIR MAHALEH	7.	SHAH SURAK
32.	ALI ABAQ (ALLAH SHAH)	8.	ESPIAK BOA
33.	TOGHAN	9.	BAZIYAK KOLA
34.	KAMANGAR	10.	HOSSEIN ABAQ
35.	LOTFALI ABAQ	11.	MOZUZ
36.	MANASEH KOLA	12.	MOALEM KOLA
37.	NAVAT KOLA	13.	CHAYUS MAHALEH
38.	VARMTON	14.	ASHIT
		15.	2980
** (14) DEHSTAN SASI KALAM		16.	3060
1.	SAADAT MAHALEH	17.	DARUN SAR OLIA-SOFLA
2.	SHEIKH MAHALEH	18.	DARKEH KOLA SOFLA
3.	AGHA MALEK	19.	DARKEH KOLA OLIA
4.	EKTEJ KOLA	20.	SAHRI
5.	ALLAH CHAL	21.	DARZI MAHALEH
6.	POIN AHMAD CHALEPAI	22.	SAADAT MAHALEH DARZI KOLA
7.	KHORSSANJ MAHALEH	23.	MOSKAT KOLA
8.	4140	24.	YUR MAHALEH BAROLSAR
9.	4150	25.	FULAD KOLA
10.	HARZEH REZA	26.	ISLAM ABAQ
11.	DARZI KOLA SHISH POL	27.	FIRUZ ABAQ
12.	DALAVAR KOLA	28.	TAVAKOL
	SHUB KOLA	29.	KUNAR
** (15) DEHSTAN GANJ AFZUZ		30.	NEHNDAR KOLA
1.	4050	31.	VASH MAHALEH
	NOUSHIRAVAN KOLA	32.	GHASSAB ZALKAN
		33.	GHASSAB KOLA MIANDEH
		34.	MULEH KOLA
		35.	TIR KOLA ATAIUN
		36.	KHOPMAN KOLA
		37.	DAYUD KOLA
		38.	GALESH MAHALEH
		39.	NOUJESH ATAIAN
		40.	KARON
		41.	KARRUD KOLA POIN
			KARRUD KOLA BALA

TABLE F.2. List of Villages by Sub-Area (1)

* VILLAGE CODE	* VILLAGE NAME	* VILLAGE CODE	* VILLAGE NAME	* VILLAGE CODE	* VILLAGE NAME
** (1)	HARAZ LEFT BANK LOW LAND	** (2)	HARAZ LEFT BANK MIDDLE LAND	** (3)	HARAZ LEFT BANK HIGH LAND
10.	ALADMUN	1.	TALARAM	1.	TAJNAK
30	AHLAM	70	JUNI KOLA	102	DAR KOLA
40	BUNDEH	80	HASAN ABAD	180	KOLA SAVA
41	RIRJANDEH	90	HOSSEIN ABAD	231	MARMUD ABAD
42	TAJ KANAR	92	KHOROON KOLA	240	MASUM SHORGH ABAD
50	TARSIAB	110	SANG KETI	280	AMANGAR KOLA
60	TALIX SAR	140	SHURSTAGH	330	ESKI MAHALEH
71	HARABEHEH	141	SHUMIA	370	BAKHITAR KETI
91	KHESHT SAR	150	ESHGH ABAD	430	JAFAR ABAD
100	RAHMAN ABAD	160	KERCHAK LALIJANI	580	KOLA MAHALEH
111	SURAKH MAZU SOFLA	170	KERCHAK NAVAI	600	KELJAN
120	SURAKH MAZU OLIA	190	KULUDEH	610	GHADI MAHALEH
121	SATAR KOLA	200	KUSENZAR	620	GHOROGH
130	SHARFTI	210	GALESH POL	650	MIHPUD KHOROBCH
15.	YUSSEF ABAD	211	GELIRO	680	NOBEH
380	BISHAH KOLA	220	GILA PEI	690	NO KOLA
440	JURA KOLA	230	GHASSAB KETI	710	HESEH PAK
450	CHARR AFRA	250	MIR ALAMDEH	1110	JAMSHID ABAD
480	DARIA SAR	260	NAMUS DEH	1180	HOSSEIN ABAD
20.	RUD POSHT	310	ASADOLLAH ABAD	1700	KANANGAR KOLA
530	SIAH RUD SAR	320	ESHKANDEH	1900	MIAN RUD
540	EZZAT ABAD	340	AFRA TAKHAT	2630	AMAH KETI
550	ALAMDEH SHARGHI	390	BISHAH MAHALEH	2650	ANJLI POL
560	ALAMDEH GHARBI	400	BAYUDEH SOFLA	2680	ANSARI MAHALEH
570	ALI ABAD	410	BAYUDEH OLIA	2700	PISHKUN
590	GOL-MARZ OLIA	420	PASIA KOLA	2710	TAJANJAR SOFLA
660	MIAN GOLMARZ SOFLA	470	RUD RAR	2730	TAJANJAR OLIA
720	YAMCHI	490	ZAGHDEH	2750	CHANGAZ
770	ABULHASAN ABAD	500	ZANGI KOLA	2760	RUKESH
1080	HAJI KOLA	510	SEIDDIN KOLA	2770	ZARUNDEH
1130	CHAK SAR	520	SANG BAST	2780	SARHANG KETI
1190	DARVISH ABAD	640	MIAN RUD	2790	SHIR MAHALEH
1260	ZANGI KOLA SOFLA	670	NASER ABAD	2810	GHAJAR MAHALEH
1290	ZANGI KOLA OLIA	700	VAZIK	2830	KASEH MAHALEH
1320	SORKH RUD GHARBI	720	HENMAT ABAD	2840	KORO KETI
1340	SIAH KOLA	1020	TAEZ ABAD	2850	KALAK SAR SHORGH
1430	SHAM KOLA KALIJI SOFLA	1030	TAEZ ABAD/ABASSABAD	2860	KALAK SAR POIN(GHARBI)
1490	SHIR MAHALEH	1270	ZAND AB	2870	KUKDEH
1820	MOALEM KOLA	1380	RAFI ABAD	2880	GOLAN
1860	MOLLA KOLA	1420	SHAM KOLA KALIJI OLIA	2890	MAR KETI
		1470	SHEIKH ABAD	2900	MARANDEH
		1540	ABUDOLLAH ABAD	2910	MASKUN
		1580	ALAVI KOLA MIN	2940	VALJSEH
		1630	KARATI	2960	AGHUZ BON
		1710	KONSI MARZ		
		1750	FAKAMADEH		
		1910	MIRDEH SOFLA		
		1920	MIRDEH OLIA		
		1990	VALEM SOFLA		
		2000	VALEM OLIA		
		2740	DARKA PEI		
		2800	SIAH LASH		
		2920	NO ABAD		

TABLE F.2. List of Villages by Sub-Area (2)

* VILLAGE * * VILLAGE NAME * * VILLAGE CODE		* VILLAGE * * VILLAGE NAME * * VILLAGE CODE		* VILLAGE * * VILLAGE NAME * * VILLAGE CODE	
47.	2970	OSKU MAHALEM	4.	760	AHANGAR KOLA DABU
48.	2990	TOSKA BON	5.	820	ESPAHI KOLA OLIJA / SOFLA
49.	3000	TELIRAN	6.	840	ASHRAF ABAD
50.	3030	KHAS KOLA	7.	880	QJAK
51.	3040	KHOSHK RUD	8.	890	BAKIK MAHALEM
52.	3050	DARAZAN	9.	940	BISHEH MAHALEM
53.	3090	DIVNOZ	10.	980	PASHA KOLA (HESHTEL)
54.	3100	RAZKEH	11.	1010	PUL KIADAH
55.	3110	SUTEH KOLA	12.	1050	TARVIJAN OLIJA
56.	3130	AALI JANGAL	13.	1060	TANESH
57.	3140	KARCHI KOLA	14.	1140	HAJI ABAD
58.	3150	KASEM DEH	15.	1210	DOTIREH
59.	3170	MAHMAD ABAD	16.	1220	DIV KOLA SOFLA
60.	3180	MARZAN KOLA	17.	1230	DIV KOLA OLIJA
61.	3190	MEKHORAN	18.	1260	OLIVU KOLA
62.	3200	MERDI ABAD	19.	1300	SENAJ MAHALEM DABU
63.	3220	NOGARDAN	20.	1390	REIS ABAD
64.	3230	VARANDEH	21.	1400	SHARHEH BAND
			22.	1480	SHAHR KETI
			23.	1500	SORAT KOLA
			24.	1520	TAHER ABAD
			25.	1530	ALI KOLA AHI
			26.	1560	AZIM ABAD
			27.	1570	EMADTEN (ESPARI)
			28.	1620	KABUD KOLA
			29.	1640	KORSI KOLA SOFLA
			30.	1650	KORSI KOLA OLIJA
			31.	1770	MAHUT KOLA
			32.	1790	MAHMAD ABAD
			33.	1930	NATIJ ABAD
			34.	2010	VALIK SOFLA
			35.	2020	YUSEF ABAD
			36.	2190	HOSSEIN ABAD
			37.	2690	TAJEH ABAD
			* * (6) HARAZ RIGHT BANK HIGH LAND		
			1.	750	ABSARAFI (GOLZAVAN)
			2.	800	ARDISHIR MAHALEM SURAK
			3.	930	BUR MAHALEM SURAK
			4.	1120	JUJ MAHALEM SURAK
			5.	1720	KONNEHDAN
			6.	1760	LAILI KOLA
			7.	2060	ALU
			8.	2110	BURAH
			* * (5) HARAZ RIGHT BANK MIDDLE LAND		
1.	270	AREM			
2.	290	AMI MAHALEM			
3.	740	ASDANG SAR			
			* * (4) HARAZ RIGHT BANK LOW LAND		
1.	810	EZBARAN			
2.	920	BONEH KANAR			
3.	960	BISHEH MAHALEM KUCHAK			
4.	1310	SORKH RUD SHARGHI			
5.	1350	SIRJAKUDAN			
6.	1600	KARDGAK MAHALEM			
7.	1660	KACHAP SOFLA			
8.	1670	KACHAP OLIJA			
9.	1680	KACHAP GELVA			
10.	1730	GOL MAHALEM			
11.	1800	MARZANGU			
12.	1810	MARICH MAHALEM			
13.	1960	NAVAT MAHALEM			
14.	1970	VASKUS			
15.	1980	VARZ MAHALEM SHARGHI			
16.	3560	FERIDON KANAR SHARGHI			
17.	3570	MIAN MAHALEM FERIDON KANAR			
			* * (7) KARI RUD LOW LAND		
			1.	790	ABU MAHALEM
			2.	930	BISHEH MAHALEM BOZORG
			3.	970	BINAHAD
			4.	1100	JAZIN
			5.	1240	ZIAR KOLA
			6.	1510	TOOLEH SARA
			7.	3400	ESFANDIAR MAHALEM
			8.	3410	OJAK SAR
			9.	3420	KHOSHK RUD
			10.	3440	SAADAT MAHALEM RUDBAST
			11.	3450	SAADAT MAHALEM DARZI KOLA
			12.	3460	GHADI MAHALEM
			13.	3470	KARI KOLA
			14.	3480	KALEH BAST
			15.	3490	KIKHA MAHALEM
			16.	3500	GAVAZUN MAHALEM
			17.	3520	FULAD KOLA
			18.	3540	TAJAL DOULEH
			19.	3550	REKUN
			20.	3561	FERIDON KANAR GHARB

TABLE F.2. List of Villages by Sub-Area (3)

* VILLAGE CODE	* VILLAGE NAME	* VILLAGE CODE	* VILLAGE NAME	* VILLAGE CODE	* VILLAGE NAME
21.	3590 HEIDAR KOLA	29.	3730 MASHAQI KOLA	75.	4630 DAHAK
22.	3610 SUTEH	30.	3740 MIAN RUD	76.	4640 ZARGAR MAHALEH
23.	3620 FERH	31.	3750 ABBSHURCHI	77.	4650 SUREH MAHALEH
24.	3630 HOLLA KOLA	32.	3760 BALA BESRA	78.	4660 SANGCHI
25.	3640 MEHLBAN	33.	3770 POIN BESRA	79.	4670 MASIR MAHALEH
26.	3650 ARCHI	34.	3780 PICHA KOLA	80.	4680 ALI ABAD(CALLAH SHAH)
27.	3650 DOGHI KOLA	35.	3790 TELIKARAN	81.	4730 KAMANGAR
28.	3870 RAZ KANAK	36.	3830 TAVAKOL	82.	4750 LOIFALI ABAD
29.	3880 ZAHED KOLA	37.	3840 DARZI KOLA	83.	4780 MUZIRIJ
30.	3890 SHAREH	38.	3860 RAH KOLA	84.	4790 MIAN DASTEH
31.	3900 SHARAHAN(SHARMEH KOLA)	39.	3920 SHAHYD ABUDOLLAH(SHAH ABUDOLLAH)	85.	4800 NAVAI KOLA
32.	3920 KARFU KOLA	40.	3930 GHADI KOLA	86.	4810 NO DAHAK
33.	3990 MIANBAL	41.	3940 KATI SAR	87.	4820 VARMTON
34.	4030 VALIK RUD POSHT	42.	3960 KALANGAH	88.	4830 HALAL KOLA BALA
		43.	3980 MARZBAL	89.	4840 HALAL KOLA POIN
		44.	4050 NOSHJIRAVAN KOLA		
		45.	4060 SAADAT MAHALEH		
		46.	4070 SHEIKH MAHALEH		
		47.	4080 TURK MAHALEH		
		48.	4100 EKTEJ KOLA		
		49.	4120 POIN AHMAD CHALEPAI		
		50.	4130 KHORSSANI MAHALEH		
		51.	4150 HAMZEH KOLA SHISH POL		
		52.	4170 DALAVAR KOLA		
		53.	4190 GHASSAB KOLA MIANDEH		
		54.	4200 MATI KOLA		
		55.	4210 SHUB KOLA		
		56.	4220 BALA AHMAD CHALEMPAI		
		57.	4280 CHENAR BON		
		58.	4320 DAVID KOLA		
		59.	4330 DAPVISH KHAK		
		60.	4390 GARNICH		
		61.	4450 AND KOLA RALA 6 POIN		
		62.	4470 ANDI KOLA		
		63.	4480 BABULKAN SOFLA		
		64.	4490 BABULKAN OLIA		
		65.	4520 TARI MAHALEH		
		66.	4530 TAJNAK		
		67.	4540 CHAMAZIN		
		68.	4550 HAJI KOLA		
		69.	4560 KHORJI KOLA		
		70.	4570 KHORJUN KOLA BALA		
		71.	4590 KHORJUN KOLA POIN		
		72.	4600 KHALIL KOLA		
		73.	4610 DARZI KOLA(BOZORG		
		74.	4620 DARZI KOLA(KUCHAK		
** (8) KARI RUD MIDDLE LAND					
1.	780 ABULHASAN ARAD				
2.	830 ESKI MAHALEH				
3.	900 BAKHR KOLA				
4.	910 BANSAR KOLA				
5.	990 PERHIN				
6.	1070 TANHA KOLA				
7.	1090 JALI KOLA				
8.	1150 HAJI AHAD				
9.	1160 HAJI AHAD DABU (SOFLA)				
10.	1170 HASAN ASAD				
11.	1200 DONGRIA				
12.	1250 DIEH				
13.	1330 SANGSAR				
14.	1360 SOLTAN ABAD				
15.	1450 SHARIAT ABAD				
16.	1780 MAJID ABAD				
17.	1830 MOTAMER SOFLA				
18.	1840 MOTAMER OLIA				
19.	1870 MAMURZ KETI				
20.	1880 MUZI KETI SOFLA				
21.	1890 MUZI KETI OLIA				
22.	1940 NARGES MARZ				
23.	2100 BOZMINAN				
24.	2210 MIANRUD LITIKUH				
25.	2680 BARIK KOLA				
26.	3690 BULEH KOLA				
27.	3700 DARVISH KHEIL				
28.	3720 GOLEH KOLA				
** (9) KARI RUD HIGH LAND					
1.	1610 KASHI MAHALEH				
2.	1690 KELIG SAR				
3.	1820 MUSA MAHALEH				
4.	2030 AHANGAR KOLA DASHTSAR				
5.	2040 EJIBAR KOLA				
6.	2070 ALLAH KAJ				
7.	2080 BAZIAR KOLA				
8.	2090 BAGHRAN KOLA				
9.	2200 HALAL KHOP MAHALEH				
10.	2240 DARVISH KHEIL				
11.	2250 BILIRAN				
12.	2260 ROSTAMDAR MAHALEH				
13.	2290 ZUVAKAK				
14.	2330 SHANEH KOLA				
15.	2350 ABAD KHEIL				
16.	2352 FIRUZ KOLA SOFLA				
17.	2360 FIRUZ KOLA VASATTI				
18.	2370 FIRUZ KOLA OLIA				
19.	2380 GHALEH KOSHI				
20.	2390 GHALTAN KOLA				
21.	2450 KOM KOLA				
22.	2460 KOM DARREH				
23.	2490 MAHMADABAD(ZIA RUN)				
24.	2520 MILEH				
25.	2540 NEZAM ABAD				
26.	2550 VASTA KOLA				
27.	2560 VASKOL				

TABLE F.2. List of Villages by Sub-Area (4)

* VILLAGE CODE	* VILLAGE NAME	**	* VILLAGE NAME	* VILLAGE CODE	* VILLAGE NAME	* VILLAGE CODE	* VILLAGE NAME	
28.	2370		HARUN KOLA SOFLA	1.	20	47.	3640	XALAGAR SARA
29.	2580		HARUN KOLA OLIA	2.	32	48.	3670	MANGHARPAI
30.	3510		NOSRAT KOLA	3.	300	49.	3710	SHAKSHIR MAHALEH
31.	3910		SHARIAT KOLA (SHAH KOLA)	4.	350	50.	3770	ESBU KOLA
32.	4110		ALLAH CHAL	5.	360	51.	3780	OUK SAR
33.	4160		DARZI KOL AGHA SHAFI	6.	630	52.	3970	KUNAR
34.	4180		REXAAJ	7.	850	53.	4000	NEMUDAR KOLA
35.	4260		TANESAK ATAIUN	8.	860	54.	4010	NETI KOLA
36.	4290		CHANG MIAN	9.	870	55.	4020	VASH MAHALEH
37.	4300		KHOPMAN KOLA	10.	1000	56.	4040	GHASSAB ZALKAN
38.	4340		ZAHED KOLA	11.	1040	57.	4090	AGHA MALEK
39.	4350		SORAK KOLA	12.	1370	58.	4140	HAMIEH REZA
40.	4360		TORGHCHI KOLA	13.	1410	59.	4230	BALA BAZIAR
41.	4370		KAZEM BETGI	14.	1440	60.	4240	MULEH KOLA
42.	4420		MOZAFAR FOLA	15.	1460	61.	4250	TIR KOLA ATAIUN
				16.	1550	62.	4270	KHATIB
				17.	1590	63.	4310	LULUK
				18.	1740	64.	4380	GOLEMAZAR
				19.	1950	65.	4410	GALESH MAHALEH
				20.	2050	66.	4430	NOUDEH ATAIAN
				21.	2210	67.	4440	YAGHI KOLA
				22.	2300	68.	4460	IMAN ABAD
				23.	2320	69.	4500	BARSEMNAH
				24.	2400	70.	4310	BIZI KOLA BALA & POIN
				25.	2480	71.	4320	PAHMEH VAR
				26.	2500	72.	4690	TOGHAN
				27.	2510	73.	4700	KARON
				28.	2530	74.	4710	GARDAN BARI
				29.	2620	75.	4720	KAKRUD KOLA POIN
				30.	2640	76.	4740	KAKRUD KOLA BALA
				31.	2670	77.	4760	MOTE KEH
				32.	2720	78.	4770	MANASEH KOLA
				33.	2930	79.		
				34.	2950			
				35.	2980			
				36.	3010			
				37.	3020			
				38.	3060			
				39.	3070			
				40.	3080			
				41.	3120			
				42.	3160			
				43.	3430			
				44.	3520			
				45.	3580			
				46.	3620			

TABLE F.3. (1) ***** POPULATION & HOUSEHOLD *****

NAME OF DEHSTAN	NO. OF VILLAGE	POPULATION	NO. OF HOUSEHOLD	OWN LAND RESIDENT	NON-RESIDENT	CROP-SHARING FULL-TIME	LAND-LESS	TOTAL (1)+(2)	MERCHANT	TEACHER	VERIFICATION	BUILDING	TECHNICIAN	FACILITY	OTHER REV. ORG.	TOTAL				
																	(1)	(2)	(1)+(2)	
(1) DEHSTAN AHLAMROSTAGH	40	35181	6321	3562	271	141	409	288	3850	726	123	191	113	343	3	35	706	2	141	2383
(2) DEHSTAN HARAZ PEI SHOMALI	26	15696	2508	2064	196	77	329	244	2308	30	15	30	18	7	8	0	1	0	25	134
(3) DEHSTAN HARAZ PEI JUNUBI	8	3615	640	347	25	28	36	57	404	4	4	10	5	13	0	0	3	0	3	42
(4) DEHSTAN DABU SHOMALI	53	44777	8094	6177	173	425	1692	1408	7585	213	142	146	702	289	0	0	10	161	19	1682
(5) DEHSTAN DABU JUNUBI	83	27105	4662	3893	313	119	694	555	4448	68	29	43	158	83	5	2	1	39	50	478
(6) DEHSTAN DASHT SAR	53	40531	6614	4619	735	456	258	503	5122	121	46	142	75	235	9	167	7	14	194	1010
(7) DEHSTAN POIN KHIABAN LITI KUH	37	13566	2243	1804	5	79	120	359	2163	51	36	27	118	82	4	0	35	9	0	362
(8) DEHSTAN BALA KHIABAN LITI KUH	21	17486	2598	1243	3	16	21	1339	2582	36	30	34	155	60	0	0	732	0	26	1073
(9) FERIDON KANAR	3	6785	1050	350	1	0	400	300	650	0	0	0	0	0	0	0	0	0	0	0
AMOL SUB-TOTAL	324	204742	34730	24059	1722	1341	3959	5053	29112	1249	425	623	1344	1112	29	204	1495	225	458	7164
(10) DEHSTAN RUD BAST	7	8891	1604	495	0	0	684	319	814	47	40	67	34	156	81	0	0	0	0	425
(11) DEHSTAN JALAL AZRAK SHOMALI	8	7603	1163	637	0	0	419	107	744	11	7	14	7	23	0	0	41	0	0	103
(12) DEHSTAN JALAL AZRAK JUNUBI	54	43870	6278	2168	16	0	3138	927	3095	210	100	107	301	279	15	4	33	9	0	1058
(13) DEHSTAN LALEH ABAD	38	26621	5142	2062	18	0	1518	754	2836	249	75	124	202	205	34	19	21	0	6	935
(14) DEHSTAN SASI KALAM	12	13457	2373	1015	0	0	861	497	1512	84	43	61	87	43	0	0	31	0	0	349
(15) DEHSTAN GANJ AFZUZ	1	850	140	40	0	0	65	35	75	9	6	15	4	3	1	0	0	0	0	38
8ABOL SUB-TOTAL	120	101292	16700	6437	34	0	6685	2639	9076	610	271	388	635	709	131	23	126	9	6	2908
T O T A L	444	306034	51430	30496	1756	1341	10644	7692	38188	1859	696	1011	1979	1821	160	227	1621	234	464	10072
- NOT AVAILABLE -	41	18860	3234	1413	108	29	766	763	2176	104	36	75	127	249	23	1	77	31	13	736
T O T A L	485	324894	54664	31909	1864	1370	11410	8455	40364	1963	732	1086	2106	2070	183	228	1698	265	477	10808

TABLE F.3. (2) ***** POPULATION & HOUSEHOLD *****

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN HOUSEHOLD	NON-RESIDENT	LAND	CROP SHARING	FULL-TIME	PART-TIME	LESS TIME	TOTAL	TEA-CHER	CLERK	DRIVER	BUILDING	TECHNICIAN	FAC-TORY	OTHER ORG.	REVO.	TOTAL	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1.	10	0	300	293	17	0	41	1	294	0	1	1	0	0	0	0	0	0	0	6
2.	20	2000	380	40	3	0	4	12	52	65	15	30	12	25	0	0	181	0	0	328
3.	30	1239	215	193	8	0	30	17	210	0	2	2	0	1	0	0	0	0	0	5
4.	32	550	90	12	1	0	0	0	12	5	1	12	0	30	0	0	15	0	0	78
5.	40	660	95	89	27	3	16	2	91	0	0	0	0	0	0	0	0	0	0	1
6.	41	1160	165	156	0	4	35	4	160	0	0	1	0	0	0	0	0	0	0	1
7.	42	520	100	95	0	0	0	5	100	1	5	0	2	6	0	0	0	0	0	16
8.	43	325	60	49	0	17	0	7	56	1	1	2	0	0	0	0	0	0	0	4
9.	44	500	72	56	0	8	0	4	60	0	2	3	0	0	0	0	0	0	0	5
10.	50	427	71	66	14	0	4	1	67	0	0	2	0	0	1	0	0	0	0	4
11.	60	950	163	148	40	0	15	0	148	3	2	3	0	6	0	0	0	0	0	15
12.	70	480	81	80	7	0	1	1	81	0	0	0	0	0	0	0	0	0	0	0
13.	71	575	85	83	65	0	3	2	85	0	0	0	0	0	0	0	0	0	0	0
14.	80	180	35	24	4	4	3	6	30	0	0	0	0	0	0	0	0	0	0	0
15.	90	115	24	17	0	1	5	7	22	0	0	0	0	0	0	0	0	0	0	0
16.	91	1700	280	184	2	0	15	7	191	3	0	0	1	0	0	0	0	0	0	1
17.	92	750	120	108	0	4	0	0	111	1	4	0	0	0	0	0	0	0	0	89
18.	100	426	80	10	1	0	0	0	10	0	0	6	1	63	0	10	0	0	0	76
19.	102	660	87	84	0	0	19	3	87	0	0	0	6	2	0	0	0	0	0	0
20.	110	385	55	59	3	3	9	10	49	0	0	0	0	1	0	0	0	0	0	3
21.	111	4200	850	120	1	0	20	10	130	50	20	80	30	25	0	0	495	0	0	70
22.	120	1700	230	135	0	0	30	10	145	10	0	10	5	25	0	35	0	0	0	85
23.	121	1000	143	104	0	12	0	10	114	2	10	5	0	0	0	0	0	0	0	17
24.	130	410	60	57	6	0	13	3	60	0	0	0	0	0	0	0	0	0	0	0
25.	140	366	50	41	17	1	0	6	47	0	0	0	0	0	0	0	0	0	0	0
26.	141	1050	203	140	19	30	10	12	152	10	7	0	4	0	0	0	0	0	0	21
27.	150	302	56	41	4	5	13	6	47	0	1	1	2	0	0	0	0	0	0	4
28.	160	340	55	44	6	6	4	1	45	0	1	0	2	1	0	0	0	0	0	4
29.	170	450	46	35	1	1	7	3	38	1	3	0	2	1	0	0	0	0	0	7
30.	180	600	98	84	0	10	0	4	88	0	0	0	0	0	0	0	0	0	0	0
31.	190	1135	220	86	0	5	0	10	98	49	6	10	15	17	0	0	0	0	0	117
32.	210	976	175	157	3	3	16	19	166	0	3	1	1	0	0	0	0	0	0	15
33.	211	1240	153	121	4	15	25	11	132	5	10	0	0	0	0	0	0	0	0	3
34.	220	850	92	88	0	0	10	10	59	0	2	1	0	0	0	0	0	0	0	11
35.	230	4000	97	77	10	3	4	6	93	517	20	15	25	130	0	0	0	0	0	707
36.	231	4000	800	73	0	0	10	20	59	0	2	1	0	0	0	0	0	0	0	4
37.	240	350	65	59	0	2	0	0	59	0	2	0	0	0	0	0	0	0	0	4
38.	250	560	132	111	0	0	12	17	128	0	2	0	2	0	0	0	0	0	0	4
39.	260	650	103	81	0	4	0	4	85	0	1	2	5	1	0	0	0	0	0	14
40.	261	750	135	80	8	0	40	55	135	0	0	0	0	1	0	0	0	0	0	0
SUB TOTAL	35181	6321	3562	271	141	409	288	726	3850	113	191	343	3	35	706	2	141	2383	0	0

** (1) DEHSTAN AHLAMROSTAGH

** (2) DEHSTAN HARAZ PEI SHOMALI

TABLE F.3. (3)

POPULATION & HOUSEHOLD

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN LAND RESIDENT	NON-RESIDENT	CROP SHARING	FULL-TIME	PART-TIME	LAND-LESS	TOTAL	MER-CHANT	TEACHER	VER	BUILDING	TECHNICIAN	FAC-TORY	OTHER ORG.	REVO.	OTHER	TOTAL	
																				(1)
3.	300	550	73	73	2	0	25	0	73	0	0	0	0	0	0	0	0	0	0	0
4.	310	180	30	30	17	0	12	0	30	0	0	0	0	0	0	0	0	0	0	0
5.	320	500	70	68	13	0	19	2	70	0	0	0	0	0	0	0	0	0	0	0
6.	340	171	21	16	4	2	5	1	17	0	0	0	1	0	0	0	0	1	0	2
7.	360	240	42	35	11	0	2	0	35	7	0	0	0	0	0	0	0	0	0	7
8.	380	1720	315	190	12	0	35	83	273	6	4	20	2	0	0	0	0	10	0	42
9.	400	475	75	70	9	3	15	0	70	0	4	0	0	0	0	0	0	2	0	22
10.	410	710	96	86	0	2	15	4	90	2	0	0	0	0	0	0	0	0	0	8
11.	440	860	135	134	24	0	17	1	135	0	0	0	0	0	0	0	0	0	0	0
12.	450	300	47	45	13	0	12	2	47	0	0	0	0	0	0	0	0	0	0	0
13.	460	310	71	22	4	11	0	13	35	3	0	0	4	7	0	0	0	0	0	0
14.	470	845	165	134	0	17	0	26	142	2	0	3	0	1	0	0	0	0	0	25
15.	480	760	136	95	0	10	0	3	121	0	3	0	1	0	0	0	0	0	0	9
16.	490	490	69	66	15	0	14	3	69	0	0	0	0	0	0	0	0	0	0	5
17.	500	650	103	81	0	0	20	21	102	0	0	0	1	0	0	0	0	0	0	10
18.	530	720	100	88	5	0	6	12	100	0	0	0	0	0	0	0	0	0	0	10
19.	550	240	46	30	15	0	12	9	39	0	0	1	0	0	0	0	0	0	0	7
20.	560	550	70	70	0	0	0	0	70	0	0	0	0	0	0	0	0	0	0	0
21.	570	1015	150	115	20	22	27	10	125	0	0	0	1	0	0	0	0	0	0	2
22.	590	600	105	74	0	3	0	15	89	10	3	0	0	0	0	0	0	0	0	15
23.	630	545	85	72	15	3	18	10	82	0	0	0	0	0	0	0	0	0	0	0
24.	650	380	50	49	6	0	5	0	49	0	0	0	0	0	0	0	0	0	0	0
25.	670	270	45	36	0	3	0	6	42	0	3	2	0	0	0	0	0	0	0	1
26.	730	455	70	60	13	0	4	10	70	0	0	0	1	0	0	0	0	0	0	0
SUB TOTAL	15696	2508	2064	196	77	329	244	2308	30	15	30	18	7	8	0	1	0	25	0	134

(3) DEHSTAN HARAZ PEI JUNUBI

1.	330	700	120	88	4	0	0	27	115	1	2	0	3	0	0	0	0	0	0	6
2.	350	780	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.	390	240	40	36	4	0	2	4	40	0	0	0	0	0	0	0	0	0	0	0
4.	420	295	52	48	4	3	1	1	49	0	0	0	0	0	0	0	0	0	0	0
5.	610	450	86	56	0	15	15	15	71	1	1	3	0	3	0	0	0	2	0	13
6.	620	670	85	41	2	19	0	4	45	2	1	7	2	10	0	0	0	0	0	22
7.	640	300	54	48	2	4	8	1	49	0	0	0	0	0	0	0	0	0	0	1
8.	720	160	35	30	9	0	10	5	35	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL	3615	640	347	25	28	36	57	404	4	4	10	5	13	0	3	0	0	3	0	42

(4) DEHSTAN DABU SHOMALI

1.	540	270	52	38	0	0	8	10	48	3	0	0	0	0	0	0	0	0	0	4
2.	700	480	80	73	1	2	0	4	77	0	0	0	0	0	0	0	0	0	0	1
3.	760	1450	240	170	0	40	0	30	200	23	1	0	17	10	0	0	0	8	0	59
4.	770	350	60	55	0	1	3	4	59	2	0	0	4	4	0	0	0	0	0	10
5.	810	3000	408	205	0	0	173	174	379	2	2	11	1	1	0	10	0	0	0	29
6.	860	300	43	40	15	0	3	3	43	0	0	0	0	0	0	0	0	1	0	4

TABLE F.5. (4) ***** POPULATION & HOUSEHOLD *****

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN LAND RESIDENT	NON-RESIDENT	CROP FULL-TIME	SHARING PART-TIME	LAND-LESS	TOTAL (1)+(2)	CHANT	TEACHER	CLERK	VER	BUILDING	TECHNICIAN	FAC-TORY	OTHER	REVO. ORG.	TOTAL	
7.	920	1108	210	0	0	5	5	215	10	6	1	8	4	0	0	0	0	7	36
8.	950	1460	177	0	30	30	23	200	17	6	5	23	7	0	0	0	0	0	59
9.	960	817	94	0	0	73	99	193	6	2	2	13	10	0	0	0	8	0	41
10.	1030	600	100	0	0	100	5	100	1	1	1	12	5	0	0	0	1	0	21
11.	1040	300	41	0	0	13	1	42	0	0	0	2	1	0	0	0	0	0	3
12.	1050	340	54	3	0	16	3	57	0	0	0	4	0	0	0	0	0	0	4
13.	1080	479	110	7	0	23	5	110	0	2	2	10	5	0	0	0	7	0	26
14.	1130	500	56	0	0	18	29	85	5	2	5	12	3	0	0	0	3	0	26
15.	1150	0	109	1	0	11	6	109	2	0	0	15	6	0	0	0	0	0	9
16.	1190	160	33	0	0	17	29	33	1	1	3	3	1	0	0	0	0	0	9
17.	1270	1180	177	5	0	15	28	205	7	2	11	25	9	0	0	0	5	0	59
18.	1280	320	41	6	0	20	9	50	0	0	0	7	2	0	0	0	0	0	9
19.	1290	1250	200	0	0	92	45	200	6	3	1	25	14	0	0	0	6	0	55
20.	1310	1830	154	0	132	36	44	198	12	1	1	31	0	0	0	0	8	0	52
21.	1320	2000	280	10	0	40	40	320	16	8	5	30	10	0	0	0	12	0	81
22.	1340	150	32	3	0	23	9	32	1	0	0	0	1	0	0	0	1	0	3
23.	1350	450	89	0	0	16	1	90	2	5	4	25	9	0	0	0	0	0	45
24.	1420	620	78	9	0	25	3	81	0	2	0	9	0	0	0	0	7	0	18
25.	1430	415	45	6	0	5	0	45	0	3	1	9	1	0	0	0	0	0	14
26.	1440	530	80	76	0	29	4	80	0	0	0	12	2	0	0	0	0	0	14
27.	1470	0	49	5	0	1	1	49	0	0	0	4	1	0	0	0	0	0	5
28.	1490	2000	360	0	0	50	20	400	10	15	8	20	20	0	0	0	3	0	76
29.	1540	1270	215	0	0	18	25	240	6	3	4	31	13	0	0	0	7	0	64
30.	1560	160	27	0	0	6	0	27	0	0	0	4	0	0	0	0	0	0	4
31.	1580	760	125	16	0	20	10	125	1	1	3	10	0	0	0	0	3	0	18
32.	1600	1900	325	142	0	134	183	325	16	2	5	5	9	0	0	19	0	0	56
33.	1620	800	140	136	0	34	4	140	0	0	4	11	1	0	0	0	0	0	16
34.	1660	900	150	135	0	40	15	150	10	6	1	30	8	0	0	0	8	0	56
35.	1670	640	85	0	0	30	30	115	9	4	4	11	8	0	0	0	0	0	44
36.	1680	720	179	170	0	70	9	179	12	8	0	30	8	0	0	0	0	0	66
37.	1710	420	62	16	0	30	3	65	1	1	1	12	3	0	0	0	1	0	19
38.	1730	650	127	115	0	38	12	127	1	2	2	13	11	0	0	0	0	0	29
39.	1750	550	85	80	0	2	5	85	0	2	2	19	4	0	0	0	0	0	27
40.	1800	1520	315	170	0	0	25	195	10	5	0	23	11	0	0	0	1	0	50
41.	1810	2500	370	0	0	20	30	400	0	6	3	39	25	0	0	0	0	0	16
42.	1850	2500	526	370	0	100	26	426	8	11	45	39	25	0	0	15	0	0	143
43.	1860	1780	300	300	0	200	0	300	6	5	1	24	16	0	0	0	15	0	67
44.	1910	28	26	26	0	4	4	28	0	0	0	5	0	0	0	0	0	0	6
45.	1920	202	36	29	0	4	7	36	0	0	0	8	0	0	0	0	1	0	9
46.	1950	756	138	98	0	60	40	138	6	0	0	21	5	0	0	0	0	0	32
47.	1960	1400	235	40	0	70	195	235	4	4	1	36	16	0	0	0	7	0	68
48.	1970	1200	235	224	0	15	11	235	2	2	0	28	16	0	0	0	4	0	54
49.	1980	730	150	90	0	35	60	150	2	4	2	2	2	0	0	0	2	0	14
50.	1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51.	2000	300	41	41	0	12	0	41	0	0	1	7	4	0	0	0	2	0	14
52.	2010	300	53	48	6	20	5	53	3	3	3	2	3	0	0	0	1	0	15

TABLE F.3.(5) POPULATION & HOUSEHOLD *****

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN-LAND RESIDENTS (1)	NON-RESIDENTS (1)	CROP SHARING LAND-FULL-TIME (2)	PART-TIME (2)	LAND-LESS (2)	TOTAL (2)	TEA-CHANT	MER-CHER	NUMBER OF NON FARMING HOUSEHOLD	BUILD-ING	TECH-NIC	FAC-TORY	OTHER ORG.	REVO.	TOTAL
53.	3600	280	70	23	0	0	0	47	70	0	2	0	0	0	0	0	2
SUB TOTAL	44777	8094	6177	173	425	1692	1408	7585	213	142	144	702	289	0	10	161	1682
** (5) DEHSTAN DABU JUNUBI																	
1.	280	350	47	44	0	2	1	45	0	1	1	0	0	0	0	0	2
2.	370	200	29	26	9	0	0	26	0	0	0	3	0	0	0	0	3
3.	430	260	37	36	0	10	1	37	0	0	0	0	0	0	0	0	0
4.	510	307	62	33	0	0	25	58	0	1	3	0	0	0	0	0	4
5.	520	650	75	54	24	19	0	54	0	2	0	0	0	0	0	0	2
6.	580	120	20	17	0	0	3	20	0	2	3	0	0	0	0	0	3
7.	600	500	60	40	0	5	15	55	0	0	4	0	0	0	0	0	4
8.	650	100	17	12	13	5	2	12	0	0	0	0	0	0	0	0	0
9.	680	0	45	38	13	3	9	40	0	0	0	0	0	0	0	0	0
10.	690	366	72	60	3	0	4	64	0	0	0	0	0	0	0	0	2
11.	710	53	13	8	2	1	0	10	0	1	1	0	0	0	0	0	3
12.	740	238	59	59	0	0	0	59	0	0	0	0	0	0	0	0	0
13.	750	220	36	30	10	4	9	32	4	0	0	7	0	0	0	0	16
14.	780	42	9	7	0	1	0	7	0	0	0	0	0	0	0	0	1
15.	790	250	53	30	0	3	23	53	0	0	0	3	0	0	0	1	17
16.	800	200	33	32	10	0	7	33	0	0	0	1	0	0	0	1	2
17.	820	327	61	43	0	0	0	50	1	0	3	0	0	0	0	0	5
18.	830	110	22	22	0	0	0	22	0	0	0	0	0	0	0	0	0
19.	840	150	24	22	0	0	0	24	0	0	0	0	0	0	0	0	0
20.	850	510	80	51	0	0	29	80	3	0	0	0	0	0	0	0	7
21.	870	71	10	9	6	0	4	10	0	0	0	1	0	0	0	0	1
22.	880	750	123	118	5	1	30	123	3	0	0	4	0	0	0	1	8
23.	890	400	60	56	0	0	4	60	4	0	0	4	0	0	0	0	12
24.	900	350	57	44	0	8	4	48	1	0	0	0	0	0	0	0	10
25.	910	0	197	194	0	0	3	197	0	0	0	0	0	0	0	0	1
26.	930	160	29	20	4	0	7	29	0	0	0	0	0	0	0	0	1
27.	940	270	40	32	0	0	0	40	0	0	0	2	0	0	0	0	6
28.	970	650	132	103	0	0	13	132	3	0	3	3	0	0	0	4	21
29.	980	520	103	87	0	2	0	93	0	1	0	0	0	0	0	0	8
30.	1000	250	40	38	6	0	10	40	0	0	0	0	0	0	0	0	0
31.	1010	370	52	51	0	0	40	52	0	0	0	2	0	0	0	0	16
32.	1020	270	46	36	0	0	5	39	0	0	0	0	0	0	0	0	4
33.	1050	90	12	9	0	0	0	12	0	0	0	0	0	0	0	0	1
34.	1070	568	89	60	8	1	0	85	0	0	0	0	0	0	0	0	4
35.	1100	380	75	70	0	0	20	75	0	1	0	0	0	0	0	0	3
36.	1110	350	52	42	8	0	10	52	0	2	0	5	0	0	0	0	10
37.	1140	304	58	49	0	4	10	53	0	0	1	0	0	0	0	0	8
38.	1170	328	215	38	1	10	1	27	0	0	0	0	0	0	0	0	1
39.	1180	274	42	26	0	0	4	40	0	0	0	0	0	0	0	0	4
40.	1200	740	112	108	0	1	0	109	1	0	0	0	0	0	0	0	2
41.	1210	600	110	100	0	34	10	110	4	0	1	0	0	0	0	0	14

TABLE F.5. (6) POPULATION & HOUSEHOLD *****

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN LAND REST-DENT (1)	NON-RESID.	CROP SHARING		POPULATION & HOUSEHOLD		TOTAL (1)+(2)	MER-CHANT	TEACHER	CLERK	DRIVER	NUMBER OF NON FARMING HOUSEHOLD				TOTAL		
					FULL-TIME	PART-TIME	LAND-LESS	<						>	TECHNICIAN	FAC-TORY	OTHER		REVO. ORG.	
42. 1220	360	74	61	0	0	22	13	74	0	0	0	3	0	0	0	0	0	0	0	4
43. 1230	350	100	78	0	0	37	22	100	22	1	0	0	0	0	0	0	0	0	0	37
44. 1240	220	24	22	0	0	4	2	24	0	0	0	0	0	0	0	0	0	0	0	7
45. 1250	398	67	52	11	0	5	5	57	0	0	0	0	0	0	0	0	0	0	0	5
46. 1260	286	45	33	0	3	0	5	38	0	1	1	0	0	0	0	0	0	0	0	4
47. 1300	330	50	40	0	0	20	10	50	6	1	1	1	0	0	0	0	0	0	0	11
48. 1360	90	12	12	10	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0
49. 1380	250	27	20	0	0	7	7	27	0	0	0	0	0	0	0	0	0	0	0	3
50. 1390	285	50	41	0	0	0	8	49	0	1	0	0	0	0	0	0	0	0	0	1
51. 1400	500	59	44	0	0	9	9	53	1	2	0	0	0	0	0	0	0	0	0	6
52. 1450	95	17	15	0	0	0	2	17	0	0	0	0	0	0	0	0	0	0	0	0
53. 1460	800	124	113	9	6	0	4	117	0	0	0	0	0	0	0	0	0	0	0	1
54. 1480	175	23	23	10	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0
55. 1500	175	36	31	11	0	10	5	36	0	0	0	0	0	0	0	0	0	0	0	0
56. 1510	230	52	25	0	0	7	27	52	0	0	0	0	10	0	0	0	0	0	0	13
57. 1520	59	10	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0
58. 1530	800	135	110	0	0	63	25	135	1	3	2	2	21	0	0	0	0	0	0	42
59. 1570	285	52	45	0	0	0	2	47	0	0	0	0	7	0	0	0	0	0	0	18
60. 1590	700	110	102	6	0	40	8	110	1	0	0	0	0	0	0	0	0	0	0	1
61. 1610	271	36	34	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	1
62. 1630	132	15	15	6	0	0	0	15	0	0	0	0	1	0	0	0	0	0	0	1
63. 1640	500	80	65	0	0	15	15	80	0	0	0	0	0	0	0	0	0	0	0	0
64. 1650	300	55	40	0	0	15	15	55	0	0	0	0	0	0	0	0	0	0	0	0
65. 1690	600	96	75	0	0	0	13	88	0	0	0	0	0	0	0	0	0	0	0	0
66. 1700	500	90	76	0	0	0	14	90	10	3	0	0	1	0	0	0	0	0	0	1
67. 1720	670	120	97	13	0	25	23	120	1	4	2	2	7	0	0	0	0	0	0	34
68. 1740	500	74	64	20	0	18	10	74	1	0	0	0	13	0	0	0	0	0	0	18
69. 1760	300	40	39	3	0	14	1	40	0	0	0	0	0	0	0	0	0	0	0	25
70. 1770	200	39	30	8	0	0	1	36	0	0	0	0	2	0	0	0	0	0	0	6
71. 1780	150	20	16	0	0	0	2	18	0	0	0	0	0	0	0	0	0	0	0	1
72. 1790	160	20	17	8	0	0	2	20	0	0	0	0	0	0	0	0	0	0	0	0
73. 1820	204	38	28	22	0	10	3	35	0	0	0	0	2	0	0	0	0	0	0	3
74. 1850	540	84	63	13	8	13	7	70	0	0	0	0	0	0	0	0	0	0	0	7
75. 1840	735	94	66	3	6	14	14	50	0	0	0	0	0	0	0	0	0	0	0	8
76. 1870	360	53	49	0	0	0	4	53	0	0	0	0	0	0	0	0	0	0	0	0
77. 1880	315	51	51	2	0	15	2	53	1	0	0	0	2	0	0	0	0	0	0	10
78. 1890	230	34	32	0	0	12	2	34	0	1	0	0	4	0	0	0	0	0	0	8
79. 1900	163	25	19	0	0	0	2	21	0	0	0	0	0	0	0	0	0	0	0	2
80. 1930	322	57	48	0	0	0	4	52	0	0	0	0	0	0	0	0	0	0	0	2
81. 1940	450	57	50	3	0	0	4	54	0	0	0	0	2	0	0	0	0	0	0	3
82. 2020	170	26	26	4	0	15	0	26	0	0	0	0	0	0	0	0	0	0	0	2
83. 2060	350	64	64	8	0	4	0	64	0	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL	27105	4662	3893	313	119	694	555	4448	68	29	43	158	83	5	2	1	39	50	478	

TABLE F.3 (8)

**** POPULATION & HOUSEHOLD ****

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN LAND RESIDENT (1)	NON-RESIDENT	CROP SHARING FULL-TIME	LAND-LESS PART-TIME	TOTAL (2)	MERCHANTS		TEACHERS		CLERK VER	NUMBER OF NON FARMING HOUSEHOLD				TOTAL	
								<	>	TECHNICAL	OTHER		REVO.	OTHER	ORG.			
47. 2540	500	100	72	53	14	8	173	2	1	4	2	0	0	0	0	4	13	
48. 2550	311	515	461	5	25	10	468	10	1	5	2	0	0	0	0	3	21	
49. 2560	278	41	30	19	1	0	37	0	0	0	0	1	0	0	0	2	3	
50. 2570	1600	163	100	11	19	4	134	1	0	1	0	0	0	0	0	7	10	
51. 2580	550	86	66	0	6	14	72	1	0	2	1	3	0	0	0	1	8	
52. 2590	325	61	52	7	5	5	52	0	0	0	0	0	0	0	0	3	4	
53. 2600	1500	243	169	19	12	14	169	6	4	33	4	5	2	0	0	7	62	
SUB TOTAL	40531	6614	4619	735	456	258	5122	121	46	142	75	235	9	167	7	14	194	1010

** (7) DEHSTAN POIN KHIABAN LITI KUH

1. 200	548	100	88	5	10	13	89	0	1	0	0	0	0	0	0	0	0	1
2. 2620	240	41	37	0	0	0	41	0	2	0	2	0	0	0	0	0	0	4
3. 2630	120	21	18	0	0	1	21	0	1	0	0	0	0	0	0	0	0	2
4. 2640	300	50	46	0	0	0	50	0	1	0	1	1	0	0	0	0	0	5
5. 2650	270	42	42	0	0	0	42	1	1	0	1	2	0	0	0	0	0	5
6. 2660	55	9	2	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
7. 2670	150	30	27	0	0	0	30	1	0	3	1	0	0	0	0	0	0	10
8. 2680	230	35	31	0	0	15	35	0	0	1	2	6	0	0	0	0	0	9
9. 2690	400	51	46	0	0	13	51	0	0	0	0	2	0	0	0	0	0	3
10. 2700	450	76	55	0	6	0	70	0	1	0	3	8	0	0	0	0	0	12
11. 2710	858	130	89	0	0	0	130	2	4	1	3	4	0	0	0	0	0	25
12. 2730	520	75	53	0	0	4	75	4	1	4	2	5	0	0	0	0	0	17
13. 2740	210	37	34	0	0	3	37	0	0	0	3	1	0	0	0	0	0	4
14. 2750	326	48	37	0	0	2	48	0	1	0	0	1	0	0	0	0	0	2
15. 2760	200	28	26	0	0	0	28	0	0	0	0	1	0	0	0	0	0	2
16. 2770	0	26	14	0	0	0	26	4	2	2	3	4	0	0	0	0	0	9
17. 2780	1185	190	150	0	28	0	162	4	0	2	20	1	0	0	0	0	0	29
18. 2790	250	40	33	0	2	0	38	0	0	0	0	5	0	0	0	0	0	6
19. 2800	450	80	80	0	0	16	80	0	0	0	0	0	0	0	0	0	0	0
20. 2810	60	14	13	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0
21. 2820	200	33	16	0	14	0	19	0	0	0	0	0	0	0	0	0	0	0
22. 2830	235	53	46	0	0	7	53	0	0	0	8	1	0	0	0	0	0	9
23. 2840	123	18	18	0	0	0	18	0	0	0	1	0	0	0	0	0	0	2
24. 2850	200	35	7	0	0	0	35	13	2	0	2	0	0	0	0	0	0	19
25. 2860	1000	130	57	0	0	0	130	20	3	1	14	5	0	0	0	0	0	38
26. 2870	800	150	150	0	0	6	150	0	0	2	7	9	3	0	0	0	0	21
27. 2880	320	63	61	0	0	15	63	0	0	2	4	8	0	0	0	0	0	13
28. 2890	210	40	36	0	0	4	40	0	1	0	1	2	0	0	0	0	0	4
29. 2900	230	40	33	0	0	4	40	2	0	0	1	0	0	0	0	0	0	3
30. 2910	400	50	45	0	0	3	50	0	2	3	1	2	0	0	0	0	0	8
31. 2920	294	62	59	0	0	3	62	2	2	1	1	2	1	0	0	0	0	9
32. 2930	912	109	109	0	0	15	109	0	1	2	10	0	0	0	0	0	0	13
33. 2940	500	88	53	0	1	0	98	1	1	1	5	0	0	0	0	0	0	8
34. 2950	500	88	53	0	10	0	78	1	1	0	17	4	0	0	0	0	0	28
35. 2960	420	65	45	0	6	0	59	0	2	0	3	6	0	0	0	0	0	16

TABLE F.3 (9)

POPULATION & HOUSEHOLD

VILLAGE CODE POPU- LATION NO.OF HOUSE- HOLD OWN LAND RESI- DENT NON- RESI- DENT CROP SHARING LAND- LESS FULL- TIME PART- TIME TEA- CHANT MER- CHER TOTAL NUMBER OF NON FARMING HOUSEHOLD CLERK VER DRI- BUILD- ING TECH- NIC FAC- TORY OTHER ORG. REVO. ORG. OTHER TOTAL

36. 3140	150	25	19	0	2	0	4	23	0	1	0	0	0	0	0	0	0	0	0	0	2
37. 3230	250	60	30	0	0	0	30	60	0	1	0	2	1	0	0	0	0	0	0	0	4
SUB TOTAL	13566	2243	1904	5	79	120	359	2163	51	36	27	118	82	4	0	35	9	0	0	362	

** (8) DEHSTAN BALA KHIABAN LITI KUH

1. 2970	7000	620	43	0	6	0	571	614	3	0	0	22	13	0	0	532	0	0	0	0	570
2. 2990	700	135	100	0	0	0	35	135	1	5	1	1	0	0	0	27	0	0	0	0	35
3. 3000	600	96	46	0	0	2	50	96	0	3	0	3	0	0	0	50	0	0	0	0	56
4. 3010	200	39	30	0	0	3	9	39	1	0	1	0	1	0	0	1	0	0	0	0	6
5. 3020	700	136	61	0	0	0	75	136	1	1	0	1	0	0	0	72	0	0	0	0	75
6. 3030	400	82	65	0	4	0	17	82	0	2	1	4	10	0	0	0	0	0	0	0	17
7. 3040	400	60	46	0	0	0	10	56	0	0	0	0	2	0	0	0	0	0	0	0	2
8. 3050	800	160	65	0	0	0	95	160	15	5	1	30	5	0	0	13	0	0	0	26	95
9. 3090	311	63	38	0	0	0	25	63	0	1	2	4	3	0	0	0	0	0	0	0	10
10. 3100	1500	257	71	0	0	0	186	257	5	1	3	18	13	0	0	20	0	0	0	0	60
11. 3110	640	125	118	0	0	0	7	125	0	3	0	7	3	0	0	0	0	0	0	0	13
12. 3130	52	10	10	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
13. 3150	750	140	90	0	0	10	50	140	0	4	1	6	1	0	0	0	0	0	0	0	12
14. 3160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15. 3170	700	110	62	0	0	0	48	110	1	0	0	6	4	0	0	0	0	0	0	0	14
16. 3180	1030	210	131	0	0	6	79	210	5	2	3	17	0	0	0	5	0	0	0	0	32
17. 3190	440	112	97	0	0	0	15	112	1	1	4	7	10	0	0	12	0	0	0	0	31
18. 3200	200	40	23	0	0	0	17	40	0	0	1	3	2	0	0	0	0	0	0	0	6
19. 3210	88	15	14	0	0	0	1	15	0	0	0	0	0	0	0	0	0	0	0	0	0
20. 3220	350	63	49	0	0	0	14	63	0	0	5	5	2	0	0	0	0	0	0	0	12
21. 3240	605	125	84	0	6	0	35	119	3	2	5	16	1	0	0	0	0	0	0	0	27
SUB TOTAL	17486	2598	1243	3	16	21	1339	2582	36	30	34	155	60	0	0	732	0	26	0	1073	

** (9) FERIDON KANAR

1. 3360	3000	500	200	0	0	0	200	300	0	0	0	0	0	0	0	0	0	0	0	0	0
2. 3361	1685	250	50	0	0	0	100	150	0	0	0	0	0	0	0	0	0	0	0	0	0
3. 3370	2100	300	100	1	0	0	100	200	0	0	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL	6785	1050	350	1	0	0	400	650	0	0	0	0	0	0	0	0	0	0	0	0	

** (10) DEHSTAN RUD BAST

1. 3400	215	28	6	0	0	0	3	25	0	0	1	0	5	0	0	0	0	0	0	0	6
2. 3410	2000	330	134	0	0	23	105	239	16	7	21	12	50	6	0	0	0	0	0	0	112
3. 3440	1030	197	67	0	0	100	30	97	1	4	5	2	30	1	0	0	0	0	0	0	43
4. 3460	180	38	16	0	0	3	17	33	0	0	0	0	8	6	0	0	0	0	0	0	14
5. 3480	2850	535	150	0	0	250	110	260	20	20	30	11	25	50	0	0	0	0	0	0	156
6. 3490	866	126	41	0	0	36	38	79	5	2	4	4	8	14	0	0	0	0	0	0	37
7. 3500	1750	350	81	0	0	269	0	81	5	7	6	5	30	4	0	0	0	0	0	0	57
SUB TOTAL	8891	1604	495	0	0	684	319	814	47	40	67	34	156	81	0	0	0	0	0	0	425

TABLE F.3. (10)

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN LAND RESIDENT (1)	CROP SHARING FULL-TIME	POPULATION & HOUSEHOLD		MER-CHANT	TEA-CHER	CLERK VER	NUMBER OF BUILDING	NON-FARMING TECHNIC	FAC-OTHER	REVO. OTHER	TOTAL	
					(1)	(2)									
1. 3590	580	95	73	0	20	2	75	0	0	0	0	0	0	0	0
2. 3610	2150	332	120	0	172	40	160	8	3	5	17	0	0	0	77
3. 3630	1400	170	70	0	77	23	93	3	4	0	0	0	0	0	12
4. 3640	512	75	52	0	18	5	57	0	0	0	0	0	0	0	0
5. 3650	350	50	49	0	0	1	50	0	0	2	0	0	0	0	2
6. 3660	1690	275	149	0	100	26	175	0	0	0	5	0	0	0	8
7. 3670	624	120	100	0	20	62	100	0	0	0	0	0	0	0	0
8. 3990	297	46	24	0	12	10	34	0	0	0	1	0	0	0	4
SUB TOTAL	7603	1163	637	0	419	107	744	11	7	14	7	23	0	41	103

** (11) DEHSTAN JALAL AZRAK SHOMALI

** (12) DEHSTAN JALAL AZRAK JUNUSI

1. 3420	1300	235	60	0	40	133	193	8	4	5	7	0	0	0	29
2. 3470	560	95	27	0	36	27	54	1	0	1	4	7	0	0	13
3. 3540	220	46	12	0	22	12	24	0	0	0	1	1	0	0	9
4. 3550	250	45	26	0	13	6	32	0	0	0	0	0	0	0	0
5. 3680	630	140	35	0	60	45	80	4	2	1	2	16	0	0	25
6. 3690	800	140	44	0	86	10	54	3	4	1	10	12	0	0	31
7. 3700	1450	180	95	0	78	7	102	1	2	4	6	10	0	1	24
8. 3710	160	27	6	16	16	5	11	0	0	1	0	1	0	0	3
9. 3720	400	75	25	0	40	10	35	0	3	1	6	5	0	0	3
10. 3730	460	90	20	0	63	7	27	0	2	1	9	2	0	0	17
11. 3740	170	25	10	0	15	0	10	0	2	1	0	2	0	0	14
12. 3750	658	120	66	0	20	34	100	1	1	0	5	0	0	0	5
13. 3760	650	80	37	0	28	15	52	1	1	0	7	2	0	0	7
14. 3780	285	37	30	0	7	0	30	1	0	2	3	2	0	0	19
15. 3790	590	140	70	0	60	10	80	0	3	0	4	4	0	0	6
16. 3800	495	175	19	0	53	3	22	0	1	0	6	2	0	0	15
17. 3810	1230	250	10	0	150	90	100	5	0	1	4	2	0	0	10
18. 3820	1250	250	35	0	149	66	101	17	0	1	8	8	0	0	34
19. 3840	650	100	30	0	50	30	50	3	0	1	6	2	0	0	12
20. 3850	685	110	30	0	50	30	60	3	0	2	5	2	0	0	20
21. 3860	446	80	30	0	41	3	33	3	0	2	3	3	0	0	10
22. 3870	770	135	60	0	35	40	100	3	5	2	4	3	0	0	15
23. 3880	564	176	56	0	20	0	56	2	1	0	3	4	0	0	12
24. 3890	700	130	10	0	90	3	13	5	10	0	0	0	0	0	9
25. 3900	470	74	10	0	64	0	10	0	0	0	4	0	0	0	4
26. 3910	315	96	41	0	54	5	46	1	0	0	5	3	0	0	7
27. 3920	530	110	54	0	54	2	56	2	0	0	2	4	0	0	7
28. 3930	610	112	30	0	41	33	65	20	0	5	3	4	0	0	36
29. 3940	450	73	13	0	50	10	23	0	0	1	7	2	0	0	7
30. 3950	708	164	50	0	14	1	51	0	0	0	4	2	0	0	9
31. 3960	600	115	16	0	95	4	20	1	0	0	0	0	0	0	20
32. 3980	563	88	0	0	87	1	1	0	0	0	3	3	0	0	19
33. 4010	300	44	35	0	17	0	35	2	1	0	3	3	0	0	3
34. 4030	475	64	47	0	17	0	47	0	3	0	1	0	0	0	6

TABLE F.3. (11)

***** POPULATION & HOUSEHOLD *****

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN RESIDENT	LAND NON-RESIDENT	CROP FULL-TIME	SHARING PART-TIME	LAND-LESS	TOTAL	MER-GRANT	TEA-CHER	CLERK	DRIVER	BUILDING	TECHNICIAN	FAC-TORY	OTHER	REVO. ORG.	TOTAL
			(1)	(2)	(1)+(2)													
35. 4080	981	200	44	116	40	84	7	1	5	19	12	0	0	0	0	0	0	38
36. 4200	1275	220	80	115	25	105	7	11	3	17	21	0	0	0	0	0	0	59
37. 4500	1350	190	120	49	21	141	6	1	10	3	11	0	0	0	0	0	0	31
38. 4510	1138	225	40	163	22	62	0	1	0	2	2	0	0	0	0	0	0	5
39. 4520	270	45	40	3	2	42	1	5	0	5	0	0	0	0	0	0	0	11
40. 4540	1500	250	65	155	30	95	8	4	0	8	6	0	0	0	0	0	0	27
41. 4580	1280	60	18	41	1	19	0	1	1	2	6	0	0	0	0	0	0	12
42. 4590	1000	120	80	20	20	100	0	1	1	3	15	0	0	0	0	0	0	20
43. 4600	600	100	30	60	10	40	7	0	2	10	3	0	0	0	0	0	0	22
44. 4630	570	100	66	34	0	66	0	5	9	7	10	0	0	0	0	0	0	32
45. 4640	480	85	33	36	14	49	9	0	0	1	10	0	3	0	0	0	0	23
46. 4650	180	28	25	0	3	28	0	2	0	1	2	0	0	0	0	0	0	5
47. 4660	400	45	25	20	0	25	4	6	2	2	9	0	0	0	0	0	0	15
48. 4710	722	123	47	65	11	58	4	0	1	2	9	0	0	0	0	0	0	16
49. 4760	500	81	41	21	19	60	8	3	3	2	2	0	0	19	0	0	0	37
50. 4780	10000	520	88	397	35	123	32	22	17	22	28	0	0	11	0	0	0	132
51. 4790	720	110	20	69	21	41	5	0	1	11	10	0	4	0	0	0	0	31
52. 4810	620	113	40	43	30	70	3	1	2	6	3	0	0	0	0	0	0	15
53. 4830	480	73	53	18	2	55	15	2	3	10	2	0	0	0	0	0	0	32
54. 4840	410	68	54	9	5	59	7	0	0	19	5	0	2	0	0	0	0	33
SUB TOTAL	43870	6278	2168	3138	927	3095	210	100	107	301	279	15	4	33	9	0	0	1058

** (13) DEMSTAN LALEH AB4U

1. 3770	300	50	28	16	6	34	2	0	0	5	0	0	0	0	0	0	0	7
2. 4180	20	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
3. 4220	1530	235	185	15	35	220	50	8	25	2	41	4	0	0	0	0	0	127
4. 4230	1005	132	60	62	30	90	2	2	16	4	3	0	0	0	0	0	0	33
5. 4240	1250	220	100	70	50	150	4	2	0	13	5	6	0	6	0	0	0	36
6. 4260	1123	233	88	112	33	121	13	3	13	13	5	0	0	0	0	0	0	47
7. 4280	1200	170	70	65	35	105	2	1	6	15	5	1	0	0	0	0	0	30
8. 4290	760	100	18	73	9	27	6	3	0	2	2	3	0	7	0	0	0	23
9. 4310	450	95	25	48	20	45	3	0	0	3	0	0	0	0	0	0	0	6
10. 4330	827	129	60	53	16	76	4	1	3	17	16	4	0	0	0	0	0	45
11. 4340	660	106	66	23	17	83	0	1	2	0	0	0	0	0	0	0	0	3
12. 4350	1420	195	135	30	30	165	13	2	5	4	14	0	11	0	0	0	0	49
13. 4360	390	87	45	10	22	77	5	0	0	4	1	0	0	0	0	0	0	20
14. 4370	365	88	53	10	25	78	9	0	4	4	4	0	4	0	0	0	0	25
15. 4380	500	98	61	17	20	81	0	0	0	4	0	0	0	0	0	0	0	6
16. 4390	300	54	40	14	0	40	0	0	4	5	2	0	0	0	0	0	0	11
17. 4400	125	19	12	6	0	12	0	0	0	1	2	0	0	0	0	0	0	3
18. 4420	424	80	52	17	11	63	0	1	0	1	1	0	0	0	0	0	0	3
19. 4440	390	60	27	23	10	37	1	1	0	0	3	0	0	0	0	0	0	9
20. 4450	2520	145	110	38	37	107	20	1	2	2	9	0	0	0	0	0	0	38
21. 4460	2520	368	110	133	125	235	29	10	1	20	5	12	0	0	0	0	0	77
22. 4470	1460	260	130	116	14	144	10	8	7	10	5	0	0	0	0	0	0	40

TABLE F.5. (12)

POPULATION & HOUSEHOLD

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN RESIDENT	NON-RESIDENT	CROP FULL-TIME	SHARING PART-TIME	LAND-LESS	TOTAL (1)+(2)	TEA-CHANT	CLERK	DRIVER	NON-FARMING	TECHNICIAN	FACTORY	OTHER	REVENUE	OTHER	TOTAL
23. 4480	225	35	10	0	0	21	4	14	3	0	1	6	2	0	2	0	0	14
24. 4490	396	88	44	0	0	36	8	52	1	2	4	5	0	0	0	0	0	13
25. 4530	600	90	37	0	0	48	5	42	5	2	1	7	0	0	1	0	0	16
26. 4550	600	95	61	0	0	26	8	69	1	2	1	7	0	0	0	0	0	15
27. 4560	717	133	10	0	0	89	35	45	3	6	3	0	0	0	0	0	0	21
28. 4570	435	70	36	0	0	24	10	46	0	0	0	3	0	0	0	0	0	4
29. 4610	1240	149	90	0	0	41	18	108	11	2	5	7	9	0	2	0	0	36
30. 4620	197	35	0	0	0	18	11	11	35	4	1	1	0	0	2	0	0	43
31. 4670	470	63	26	0	0	33	4	30	0	1	0	6	2	0	0	0	0	9
32. 4680	447	70	40	0	0	10	20	60	2	3	0	10	0	0	0	0	0	30
33. 4690	508	90	20	0	0	50	20	40	3	1	2	11	0	4	0	0	0	24
34. 4730	778	120	62	0	0	42	16	78	3	2	3	5	0	0	0	0	0	15
35. 4750	156	26	13	0	0	13	0	13	0	1	0	1	0	0	1	0	0	3
36. 4770	469	870	68	0	0	17	2	70	1	1	2	4	0	0	0	0	0	25
37. 4800	796	150	82	0	0	60	8	90	4	0	2	11	5	0	0	0	0	22
38. 4820	646	114	45	0	0	39	30	75	4	2	4	4	3	0	0	0	0	17
SUB TOTAL	26621	5142	2082	18	0	1518	754	2836	249	75	124	202	34	19	21	0	6	935

** (14) DEHSTAN SASI KALAM

1. 4060	580	90	50	0	0	25	15	65	0	2	5	2	4	0	0	0	0	13
2. 4070	350	60	30	0	0	15	15	45	1	3	3	3	0	0	1	0	0	11
3. 4090	1350	300	120	0	0	160	20	140	0	1	0	0	0	0	0	0	0	1
4. 4100	660	95	45	0	0	47	3	48	12	2	4	1	4	0	0	0	0	23
5. 4110	900	137	60	0	0	57	20	80	8	1	1	7	0	0	0	0	0	17
6. 4120	1540	305	100	0	0	150	55	155	25	10	20	20	15	0	0	0	0	90
7. 4130	1500	320	100	0	0	100	120	220	2	8	1	5	0	0	0	0	0	16
8. 4140	260	36	20	0	0	12	4	24	0	0	0	0	2	0	0	0	0	2
9. 4150	1100	230	50	0	0	50	130	180	5	4	13	15	3	0	30	0	0	70
10. 4160	1900	230	170	0	0	45	15	185	6	1	1	6	0	0	0	0	0	14
11. 4170	760	120	70	0	0	50	0	70	17	6	8	7	10	0	0	0	0	48
12. 4210	2557	450	200	0	0	150	100	300	8	5	5	21	5	0	0	0	0	44
SUB TOTAL	13457	2373	1015	0	0	861	497	1512	84	43	61	87	43	0	31	0	0	349

** (15) DEHSTAN GANJ AFZUJ

1. 4050	850	140	40	0	0	65	35	75	9	6	15	4	3	1	0	0	0	38
SUB TOTAL	850	140	40	0	0	65	35	75	9	6	15	4	3	1	0	0	0	38

TABLE F.5. (13)

POPULATION & HOUSEHOLD *****

VILLAGE CODE	POPULATION	NO. OF HOUSEHOLD	OWN LAND RESIDENT	NON-RESIDENT	CROP SHARING	LAND-LESS	TOTAL	TEA-CHANT	CLERK	DRIVER	BUILDING	TECHNICIAN	FAC-TORY	OTHER	REVO.	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1. 590	130	21	18	10	1	6	21	0	2	2	0	0	0	0	0	2
2. 1090	405	64	64	0	0	28	64	0	0	0	0	0	0	0	0	0
3. 1120	180	30	20	34	0	14	30	0	1	2	1	0	0	0	0	0
4. 1160	630	122	108	0	0	31	122	5	1	2	6	0	0	0	20	0
5. 1330	150	23	20	0	0	8	23	0	0	0	2	3	0	0	0	0
6. 1370	400	65	48	16	0	22	65	0	1	1	5	1	0	0	0	0
7. 1410	410	61	61	0	0	0	61	0	0	0	0	0	0	0	0	0
8. 1550	330	48	47	0	0	0	48	3	0	1	4	0	0	0	2	0
9. 2050	560	87	38	6	15	1	59	1	0	0	4	0	0	0	4	0
10. 2080	527	114	77	10	0	37	114	0	0	0	1	0	0	0	0	0
11. 2190	120	15	5	17	1	2	6	0	0	0	0	0	0	0	0	0
12. 2460	400	62	47	11	5	12	50	2	1	1	1	0	0	0	0	0
13. 2500	820	148	99	14	0	48	132	0	8	1	1	0	0	0	0	0
14. 2720	0	12	10	0	0	2	12	0	0	0	0	0	0	0	0	0
15. 2980	260	40	11	0	1	0	39	0	0	1	4	0	0	0	0	0
16. 3050	2000	200	25	0	0	0	200	10	0	0	6	0	0	0	0	0
17. 3070	49	17	15	0	0	0	17	1	0	0	0	0	0	0	0	0
18. 3080	170	37	33	0	4	0	33	0	2	2	0	0	1	0	0	0
19. 3120	120	27	11	0	2	0	25	0	0	0	1	0	0	0	0	0
20. 3430	195	37	19	0	0	15	19	1	0	0	8	0	0	0	0	0
21. 3450	425	69	18	0	0	16	29	3	0	0	2	0	0	0	0	0
22. 3510	460	84	20	0	0	42	41	0	1	0	22	0	0	0	0	0
23. 3520	900	184	11	0	0	65	69	16	1	26	3	53	0	0	60	0
24. 3530	1500	250	77	0	0	77	96	12	7	5	5	100	0	0	0	0
25. 3580	160	35	0	0	0	0	0	0	2	0	0	0	0	0	0	0
26. 3620	1500	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27. 3830	123	22	15	0	0	7	15	1	0	0	0	0	0	0	0	0
28. 3970	190	25	12	0	0	11	2	2	1	3	0	0	0	0	0	0
29. 4000	250	40	24	0	0	12	28	0	0	0	3	0	0	0	0	0
30. 4020	318	56	3	0	0	36	17	1	0	0	4	3	0	4	0	0
31. 4040	550	95	65	0	0	19	11	8	7	4	3	5	0	0	0	0
32. 4190	700	90	30	0	0	50	40	1	0	3	1	0	0	0	0	0
33. 4250	300	65	22	0	0	38	37	4	0	0	6	3	0	0	0	0
34. 4270	8	17	8	0	0	0	8	0	1	0	0	4	0	0	0	0
35. 4300	300	40	30	0	0	5	35	0	0	0	6	0	0	0	7	0
36. 4320	700	113	50	0	0	57	56	1	0	0	0	0	0	0	0	0
37. 4410	313	53	3	0	0	28	23	0	0	0	1	0	0	0	0	0
38. 4430	700	100	60	0	0	39	61	7	1	2	5	0	0	0	0	0
39. 4700	0	50	44	0	0	0	50	6	0	0	0	0	0	0	0	0
40. 4720	1000	200	100	0	0	60	140	15	4	10	40	10	0	0	0	0
41. 4740	527	115	55	0	0	15	45	4	3	1	4	2	0	0	0	0
SUB TOTAL	18860	3234	1413	108	29	766	2176	104	36	75	127	249	23	1	77	736

** - NOT AVAILABLE -

TABLE F.4. (1)

***** NUMBER OF LAND OWNERSHIP *****

(1) NO. OF HOUSEHOLD
(2) AREA (HA)

NAME OF DEHSTAN	NO. OF LANDLESS NO. OF VILLAGE HOUSEHOLD		LESS THAN 0.5		0.5 - 1.0		1.0 - 2.0		2.0 - 3.0		3.0 - 5.0		MORE THAN 5.0		T O T A L
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	
(1) DEHSTAN AHLAMROSTAGH	40	2446	453	308.0	832	650.6	1231	1784.0	787	1666.1	484	1833.6	113	873.8	6346 7116.1
(2) DEHSTAN HARAZ PEI SHOMALI	26	395	234	174.1	547	422.8	1351	1184.2	443	1053.5	262	877.6	72	595.2	3904 4307.1
(3) DEHSTAN HARAZ PEI JUNUBI	8	68	59	51.5	82	70.4	141	205.7	87	237.6	72	280.0	25	218.5	534 1063.7
(4) DEHSTAN DABU SHOMALI	53	1076	1483	529.5	1763	1394.8	1558	2195.5	998	2267.7	544	1984.3	185	1541.0	7607 9914.8
(5) DEHSTAN DABU JUNUBI	83	690	477	195.4	814	676.7	1265	5957.9	788	2128.0	500	2018.0	144	864.3	4678 11840.3
(6) DEHSTAN DASHT SAR	53	1440	475	341.7	1001	593.9	1642	2084.0	1146	2292.8	660	2047.5	187	1364.2	6551 8724.1
(7) DEHSTAN POIN KHIABAN LITI KUMH	37	423	102	32.0	259	192.6	696	826.7	456	976.6	296	9330.0	81	576.4	2313 11934.3
(8) DEHSTAN BALA KHIABAN LITI KUMH	21	1302	171	57.5	300	169.8	512	566.8	195	321.5	66	202.5	0	0.0	2546 1318.1
(9) FERIDON KANAR	3	250	64	21.0	110	92.5	343	485.0	183	404.0	85	328.0	15	2852.0	1050 4182.5
AMOL SUB-TOTAL	324	8090	3518	1710.7	5708	4264.1	8739	15289.8	5083	11347.5	2969	18903.5	822	8885.4	34929 60401.0
(10) DEHSTAN RUD BAST	7	319	115	40.0	457	246.0	187	286.0	149	336.5	64	219.5	41	381.0	1332 1509.0
(11) DEHSTAN JALAL AZRAK SHOMALI	8	117	158	99.0	327	281.0	269	356.0	146	366.5	67	298.0	19	137.0	1103 1537.5
(12) DEHSTAN JALAL AZRAK JUNUBI	54	923	892	299.2	1460	1032.1	1493	1798.0	919	2106.0	477	1702.5	144	1038.0	6308 8175.8
(13) DEHSTAN LALEH ABAD	38	766	541	199.6	937	653.4	1090	1382.5	700	1686.0	273	957.5	85	390.5	4392 5269.5
(14) DEHSTAN SASI KALAM	12	437	313	126.0	400	300.0	508	800.0	368	990.0	173	687.0	26	151.0	2225 3054.0
(15) DEHSTAN GANJ AFZUZ	1	35	57	22.0	9	6.0	27	40.0	4	10.0	8	32.0	1	30.0	141 140.0
BAGOL SUB-TOTAL	120	2597	2076	785.8	3590	2518.5	3574	4862.5	2286	5495.0	1062	3896.5	316	2127.5	15501 19685.8
T O T A L	444	10687	5394	2496.5	9298	6782.6	12313	20152.3	7369	16842.5	4031	22800.0	1138	11012.9	50430 80086.7
- NOT AVAILABLE -	41	706	369	142.8	385	303.0	633	936.6	331	797.3	254	969.5	107	605.9	2785 3750.1
T O T A L	485	11393	5963	2639.3	9683	7085.6	12946	21088.9	7700	17634.8	4285	23769.5	1245	11618.8	53215 83836.7