10.2.5 COST ESTIMATION DATA OF QAZVIN IRRIGATION PROJECT

SUMMARY OF PROJECT COST
QAZVIN IRRIGATION PROJECT

Unit: US $

No.	Description	Amount	Amount
1	Construction Direct Cost		
	Temporary Works	1,354,000	
	Qazvin North Canal	3,237,000	Rehabilitation L=94.00m
	Qazvin Central Canal	32,109,000	New construction. Main canal L=125 km.
	Sub-total	36,700,000	
	CONTRACT AMOUNT	36,700,000	FC=17,010,200, LC=19,689,800
	Engineering & Administration	1,800,000	
	Othrs cost	3,000,000	
	PROJECT COST	41,500,000	

Notes: Others cost includes the cost for land acqusition,enveronmental mitigation ,ets.

DISBERSEMENT SCHEDULE OF ALMOUT WATER DIVERSION/QAZVIN IRRIGATION PROJECT

		Items	Project Cost	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Construction Cost											
	1	Almout Water Diversion Project										
		Diversion Dam Works	4,600						1,300	1,300	1,300	700
		Pipeline Works	15,700						4,500	4,500	4,500	2,200
		Tunnel Division I	19,200					4,000	4,500	4,500	4,500	1,700
		Tunnel Division II	30,700				5,700	5,000	5,000	5,000	5,000	5,000
		Tunnel Division III	30,800				5,800	5,000	5,000	5,000	5,000	5,000
		Tunnel Division IV	12,300							4,300	4,000	4,000
		O & M Building	2,500								1,000	1,500
		Sub-total	115,800	0	0	0	11,500	14,000	20,300	24,600	25,300	20,100
	2	Qazvin Irrigation Project										
		Temporary Works	1,354				354	1,000				
		Rehabilitation Works	3,237	800	1,000	805	632					
		Central Canal Works	32,109				5,000	5,000	6,000	6,000	6,000	4,109
		Sub-total	36,700	800	1,000	805	5,986	6,000	6,000	6,000	6,000	4,109
	Construction Cost Total		152,500	800	1,000	805	17,486	20,000	26,300	30,600	31,300	24,209
2		Other Cost										
	1	Engineering /Administration										
		Almout	5,800		700	700	800	800	800	800	800	400
		Qazvin	1,800		300	300	200	200	200	200	200	200
		Sub-total	7,600	0	1,000	1,000	1,000	1,000	1,000	1,000	100	600
	2	Land Aqusition										
		Almout	2,000			1,000	1,000					
		Qazvin	3,000			1,500	1,500					
		Sub-total	5,000			2,500	2,500					
		Total	12,600	0	1,000	3,500	3,500	1,000	1,000	1,000	1,000	600

BILL OF QUANTITY
ON
THE REHABILITATION OF EXISTING GAZVIN NORTH CANAL

Unit: US $

No.	Description	Specifications	Unit	Quantity	Unit Price	Amount	Remarks
1	Existing Main Canal Rehabilitation						
	Lining concrete	Replacement	cu.m.	17,856.00	13.75	245,520.00	
	Dimolishing of Existing Concrete		cu.m.	17,856.00	3.86	68,924.16	
	Excavation		cum	30,000.00	0.78	23,400.00	
	Amil gate	Repearing,paintin	set	133.00	1476.00	196,308.00	
	Arch gate 100 liter	Repearing,paintin	set	25.00	132.00	3,300.00	
	Arch gate 200 liter	Repearing,paintin	set	20.00	150.00	3,000.00	
	Arch gate 400 liter	Repearing,paintin	set	15.00	200.00	3,000.00	
	Arch gate 600 liter	Repearing,paintin	set	15.00	350.00	5,250.00	
	Arch gate 1,000 liter	Repearing,paintin	set	15.00	500.00	7,500.00	
	Sub-total					556,202.16	
	Existing Secondary Canal						
	Lining concrete	Repearing	cu.m.	19641.60	13.75	270,072.00	
	Dimorishing of existing concrete		cu.m	19641.60	3.86	75,816.58	
	Arch gate 50 liter	Repearing,paintin	set	100.00	100.00	10,000.00	
	Arch gate 100 liter	Repearing,paintin	set	70.00	132.00	9,240.00	
	Arch gate 200 liter	Repearing,paintin	set	50.00	150.00	7,500.00	
	Arch gate 400 liter	Repearing,paintin	set	30.00	200.00	6,000.00	
	XX gate	Repearing,paintin	set	200.00	150.00	30,000.00	
	Sub-total					408,629	
	Existing Terciary Canal						
	Excavation		cu.m.	476,900	0.78	371,982.00	
	Backfill		cu.m.	757600	1.32	1,000,032.00	
	Turn-out gate	Repearing,paintin	set	200	100	20,000.00	
	Sub-total					1,392,014	
2	Rehabilitation of Existing Groundwater Facilities						
	Replacement of pump		set	20	12000.00	240,000	
	Replacement of well & pump		set	32	20000.00	640,000	
	Sub-total					880,000	
	TOTAL					3,236,845	
						3,237,000	

BILL OF QUANTITY
ON
QAZVIN CENTRAL CANAL

Unit: US $

No.	Description	Specifications	Unit	Quantity	Unit Price	Amount	Remarks
1	Main canal						
	Canal type C-1	Q=2.5 cum/s	m.	8,800	36.92	324,896	
	Canal type C-2	Q=0.5 cum/s	m.	7,200	28.46	204,912	
	Canal type C-3	Q=20.0 cum/s	m.	9,000	68.88	619,920	
	Canal type C-4	Q=15.0 cum/s	m.	10,000	62.33	623,300	
	Canal type C-5	Q=14.0 cum/s	m.	11,000	58.22	640,420	
	Canal type C-6	Q=12.0 cum/s	m.	15,000	56.05	840,750	
	Canal type C-7	Q=10.0 cum/s	m.	5,000	52.13	260,650	
	Canal type C-8	Q=9.0 cum/s	m.	16,000	49.77	796,320	
	Canal type C-9	Q=7.0 cum/s	m.	13,000	46.01	598,130	
	Canal type C-10	Q=6.0 cum/s	m.	11,000	42.35	465,850	
	Canal type C-11	Q=5.0 cum/s	m.	8,000	42.35	338,800	
	Canal type C-12	Q=3.0 cum/s	m.	11,000	36.92	406,120	
	Gate for water level	Arch type	set	10.00	12,328	123,280	
	Sub-total					6,243,348.00	
2	Secondary canal						
	Canal S-1 & S-2	4.00 cu.m./s	m.	14,000.00	35.37	495,180	
	Canal S-2	3.00 cu.m./s	m.	8,000.00	33.54	268,320	
	Canal S-3	1.50 cu.m./s	m.	15,000.00	28.56	428,400	
	Canal S-4-1	10.00 cu.m./s	m.	4,000.00	52.52	210,080	
	Canal S-4-2	1.00 cu.m./s	m.	15,000.00	27.01	405,150	
	Canal S-5	0.60 cu.m./s	m.	13,000.00	25.49	331,370	
	Canal S-6	1.90 cu.m./s	m.	18,000.00	30.14	542,520	
	Canal S-7	0.90 cu.m./s	m.	15,000.00	27.01	405,150	
	Canal S-8	0.20 cu.m./s	m.	3,000.00	22.41	67,230	
	Canal S-9	0.20 cu.m./s	m.	10,000.00	22.41	224,100	
	Canal S-10	2.40 cu.m./s	m.	10,000.00	33.24	332,400	
	Canal S-11	2.50 cu.m./s	m.	10,000.00	33.24	332,400	
	Canal L-21	3.00 cu.m./s	m.	15,000.00	33.54	503,100	
	Sluice gate	1.2m x 1.0m	set	2.00	3,205	6,410	
	Sluice gate	1.1m x 0.80m	set	2.00	2,750	5,500	
	Distributor	For canal mouth	set	10.00	1,915	19,150	
	Distributor	For tertiary	set	600.00	228	136,800	
	Sub-total					4,713,260.00	
3	Ground water Recharge Pond at Shahin Tape						
	Total cost		L.S.		947000.00	947,000	
	Sub-total					947,000	
4	On farm cost		ha	44,900	450.00	20,205,000	
	Sub-total					20,205,000	
	TOTAL					32,108,608	
						32,109,000	

Table 10.4.1.1 International Market Price Projections of Agricultural Products and Chemical Fertilizers

(Unit: US$/metric ton)

Year	Wheat	Rice	Maize	Soybeans	Oranges	Cotton	Sugar	Urea (46,0,0)	TSP (Triple Superphosphate) (0,46,0)	MOP (Muriate of Potash) (0,0,60)
1998	126.1	304.2	102.0	243.3	442.4	1,445.0	196.7	103.1	173.1	116.9
1999	112.0	248.4	90.2	201.7	430.8	1,171.0	138.1	77.8	154.5	121.6
2000	119.0	243.9	97.6	214.6	243.9	1,205.0	131.2	87.8	138.5	119.5
2001	122.7	249.5	99.7	215.0	280.4	1,237.0	138.7	90.8	138.5	117.2
2002	126.5	255.1	101.7	215.4	322.3	1,270.0	146.7	94.0	138.5	114.9
2003	130.4	261.0	103.9	215.8	370.5	1,304.0	155.1	97.2	138.6	112.6
2004	134.4	266.9	106.1	216.2	425.9	1,339.0	163.9	100.5	138.6	110.5
2005	138.6	273.0	108.3	216.6	489.6	1,375.0	173.3	104.0	138.6	108.3
2006	136.9	271.3	106.5	215.4	483.5	1,377.0	175.4	104.7	136.9	106.0
2007	135.2	269.6	104.8	214.3	477.5	1,379.0	177.5	105.3	135.2	103.8
2008	133.6	267.9	103.1	213.1	471.6	1,382.0	179.6	106.0	133.6	101.6
2009	131.9	266.2	101.4	211.9	465.7	1,384.0	181.8	106.6	131.9	99.5
2010	130.3	264.5	99.7	210.8	459.9	1,386.0	184.0	107.3	130.3	97.4

Source: "Global Commodity Markets, A Comprehensive Review and Price Forecast", World Bank, April 2000.

Wheat: US No.1 hard red winter, FOB Gulf ports.
Rice: Thai 5% broken, milled, FOB Bangkok.
Maize: US No.2 yellow, FOB US Gulf ports.
Soybeans: US soybeans, CIF Rotterdam.
Oranges: CIF Paris.
Cotton: Middling 1-3/32 inch, CIF Northern Europe.
Sugar: Raw, FOB Caribbean ports.
Urea: Bagged, FOB Eastern Europe.
TSP: Bulk, FOB US Gulf ports.
MOP: FOB Vancouver.

Table 10.4.1.2 Price Structure of Wheat

Price Structure	Unit	Financial Price		Conversion Factor	Economic Price	
		1378 (1999)	1389 (2010)		1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni*	US$/metric ton	205.2	238.7		205.2	238.7
Import taxes	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rls.1,750)	Rials/metric ton	359,100	417,700		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)**	Rials/metric ton	-	-		1,005,500	1,169,600
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (105%)***	Rials/metric ton	377,100	438,600	0.97	365,800	425,400
Ex-mill price	Rials/metric ton	959,000	1,079,100		1,587,400	1,811,100
Milling ratio	%	90	90		90	90
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	851,500	959,600		1,417,400	1,618,700

Note: 1) * The CIF price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) ** The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).
3) *** including the milling cost.
4) The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
5) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Farm household survey.

Table 10.4.1.3 Price Structure of Barley

Price Structure	Unit	Financial Price		Conversion Factor	Economic Price	
		1378 (1999)	1389 (2010)		1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni*	US$/metric ton	166.6	170.3		166.6	170.3
Import taxes (Rials 7,000/ton)	US$/metric ton	4	4	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	298,600	305,000		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)**	Rials/metric ton	-	-		816,300	834,500
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (125%)***	Rials/metric ton	373,300	381,300	0.97	362,100	369,900
Ex-mill price	Rials/metric ton	894,700	909,100		1,394,500	1,420,500
Milling ratio	%	90	90		90	90
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	793,600	806,600		1,243,800	1,267,200

Note: 1) * The CIF price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) ** The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).
3) *** including the milling cost.
4) The 1389 (2010) price was estimated based on the Food and Agricultural Policy Institute's projected international market price (1378: 1999 constant price). For base data, reference was made to "World Agricultural Outlook 2000".
5) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Farm household survey.

Table 10.4.1.4 Price Structure of Maize

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni*	US$/metric ton	167.3	184.9		167.3	184.9
Import taxes	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	292,800	323,600		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)**	Rials/metric ton	-	-		819,800	906,000
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (105%)	Rials/metric ton	307,400	339,800	0.97	298,200	329,600
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	811,400	874,600		1,322,800	1,440,400

Note: 1) * The CIF price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) ** The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).
3) The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
4) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Qazvin Agricultural Office.

Table 10.4.1.5 Price Structure of Cotton

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Exported		
Farmgate price	Rials/metric ton	2,900,000	2,733,700	0.97	2,813,000	2,651,700

Note: The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".

Source: Qazvin Agricultural Organization.

Table 10.4.1.6 Price Structure of Sugar Beets (Raw Sugar)

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni*	US$/metric ton	270.6	360.5		270.6	360.5
Import taxes	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	473,600	630,900		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)**	Rials/metric ton	-	-		1,325,900	1,766,500
Transport/handling costs from port to farmers through processors (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (120%)***	Rials/metric ton	568,300	757,100	0.97	551,300	734,400
Ex-mill price	Rials/metric ton	1,264,700	1,610,800		2,093,300	2,717,000
Processing Rate	%	15	15		15	15
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	178,100	230,000		302,700	396,300

Note: 1) * The CIF price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) * *The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).
3) *** including the processing cost.
4) The 1378 (1999) and 1389 (2010) pricse were estimated based on the World Bank's projected international market price of raw su
(1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
5) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.
Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Farm household survey.

Table 10.4.1.7 Price Structure of Sunflower Seeds

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Exported		
FOB price*	US$/metric ton	842.4	793.6		842.4	793.6
Export duties	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials8,000)	Rials/metric ton	6,739,200	6,348,800		-	-
Equivalent to Rials for economic analysis (US$1=Rls.8,000)	Rials/metric ton	-	-		6,739,200	6,348,800
Transport/handling costs from farmers to Maku through marketing agents (630 km)	Rials/metric ton	104,000	104,000	0.97	100,900	100,900
Other marketing margin (67%)	Rials/metric ton	4,515,300	4,253,700	0.97	4,379,800	4,126,100
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	2,131,500	2,002,700		2,269,800	2,133,100

Note: 1) * The FOB price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) The 1389 (2010) price was estimated based on the World Bank's projected international market price of soybean oil
(1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.
Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Qazvin Agricultural Organization.

Table 10.4.1.8 Price Structure of Beans (Navy, Kidney and Pinto Varieties)

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Exported		
Farmgate price	Rials/metric ton	4,320,000	4,517,600	0.97	4,190,400	4,382,100

Note: The 1389 (2010) price was estimated based on the World Bank's projected international market price of soybeans (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
Source: Qazvin Agricultural Organization.

Table 10.4.1.9 Price Structure of Potatoes

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Exported		
FOB price*	US$/metric ton	121.7	129.8		121.7	129.8
Export duties	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials8,000)	Rials/metric ton	973,600	1,038,400		-	-
Equivalent to Rials for economic analysis (US$1=Rls.8,000)	Rials/metric ton				973,600	1,038,400
Transport/handling costs from farmers to Astara through marketing agents (320 km)	Rials/metric ton	52,800	52,800	0.97	51,200	51,200
Other marketing margin (32%)	Rials/metric ton	311,600	332,300	0.97	302,300	322,300
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	620,800	664,900		631,400	676,200

Note: 1) * The FOB price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) The 1389 (2010) price was estimated based on the World Bank's projected international price of fruits (orange) (1378: 1999 constant price) due to large price fluctuations. For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.
Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Qazvin Agricultural Organization.

Table 10.4.1.10 Price Structure of Onions

Price Structure	Unit	Financial Price		Conversion Factor	Economic Price	
		1378 (1999)	1389 (2010)		1378 (1999)	1389 (2010)
Trade status				Exported		
FOB price*	US$/metric ton	85.4	91.2		85.4	91.2
Export duties	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials8,000)	Rials/metric ton	683,200	729,600			
Equivalent to Rials for economic analysis (US$1=Rls.8,000)	Rials/metric ton				683,200	729,600
Transport/handling costs from farmers to Astara through marketing agents (320 km)	Rials/metric ton	52,800	52,800	0.97	51,200	51,200
Other marketing margin (35%)	Rials/metric ton	239,100	255,400	0.97	231,900	247,700
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	402,900	433,000		411,400	442,000

Note: 1) * The FOB price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) The 1389 (2010) price was estimated based on the World Bank's projected international price of fruits (orange) (1378: 1999 constant price) due to large price fluctuations. For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Qazvin Agricultural Organization.

Table 10.4.1.11 Price Structure of Water melons

Price Structure	Unit	Financial Price		Conversion Factor	Economic Price	
		1378 (1999)	1389 (2010)		1378 (1999)	1389 (2010)
Trade status				Exported		
FOB price*	US$/metric ton	72.1	77.0		72.1	77.0
Export duties	US$/metric ton	0	0		0	0
Equivalent to Rials for financial analysis (US$1=Rials8,000)	Rials/metric ton	576,800	616,000			
Equivalent to Rials for economic analysis (US$1=Rls.8,000)	Rials/metric ton				576,800	616,000
Transport/handling costs from farmers to Astara through marketing agents (320 km)	Rials/metric ton	52,800	52,800	0.97	51,200	51,200
Other marketing margin (25%)	Rials/metric ton	144,200	154,000	0.97	139,900	149,400
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	391,400	420,800		397,000	426,700

Note: 1) * The FOB price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) The 1389 (2010) price was estimated based on the World Bank's projected international price of fruits (orange) (1378: 1999 constant price) due to large price fluctuations. For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Qazvin Agricultural Organization.

Table 10.4.1.12 Price Structure of Alfalfa

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Farmgate price	Rials/metric ton	690,000	690,000	0.97	669,300	669,300

Source: 1) Qazvin Agricultural Organization.
2) Farm household survey.

Table 10.4.1.13 Price Structure of Grapes

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Exported		
FOB price*	US$/metric ton	219.6	234.5		219.6	234.5
Export duties	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials8,000)	Rials/metric ton	1,756,800	1,876,000		-	-
Equivalent to Rials for economic analysis (US$1=Rls.8,000)	Rials/metric ton	-	-		1,756,800	1,876,000
Transport/handling costs from farmers to Astara through marketing agents (320 km)	Rials/metric ton	52,800	52,800	0.97	51,200	51,200
Other marketing margin (38%)	Rials/metric ton	667,600	712,900	0.97	647,600	691,500
Transport/handling costs from farmers to consuming areas (Qazvin and Tehran: 70 km)	Rials/metric ton	11,600	11,600	0.97	11,300	11,300
Farmgate price	Rials/metric ton	1,048,000	1,121,900		1,069,300	1,144,600

Note: 1) * The FOB price was calculated by adding 20% (inflation rate) up from the figure in 1377.
2) The 1389 (2010) price was estimated based on the World Bank's projected international price of fruits (orange) (1378: 1999 constant price) due to large price fluctuations. For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.
Source: 1) "Foreign Trade Statistical Yearbook 1377", Customs Administration Office.
2) Qazvin Agricultural Organization.

Table 10.4.1.14 Price Structure of Urea (NPK: 46,0,0)

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni	US$/metric ton	180.0	248.3		180.0	248.3
Import taxes	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	315,000	434,500		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)*	Rials/metric ton	-	-		882,000	1,216,700
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (15%)	Rials/metric ton	47,300	65,200	0.97	45,900	63,200
Farmgate price	Rials/metric ton	564,800	702,200		1,144,000	1,496,000

Note: 1) * The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).
2) The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".
3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.
Source: Agricultural Supporting Services Company, Tehran.

Table 10.4.1.15 Price Structure of Potassium Chloride (Muriate of Potash) (NPK: 0,0,60)

Price Structure	Unit	Financial Price		Conversion Factor	Economic Price	
		1378 (1999)	1389 (2010)		1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni	US$/metric ton	165.7	132.7		165.7	132.7
Import taxes	US$/metric ton	0	0		0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	290,000	232,200		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)*	Rials/metric ton	-	-		811,900	650,200
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (15%)	Rials/metric ton	43,500	34,800	0.97	42,200	33,800
Farmgate price	Rials/metric ton	556,300	489,800		1,070,200	900,100

Note: 1) * The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).

2) The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".

3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: Agricultural Supporting Services Company, Tehran.

Table 10.4.1.16 Price Structure of Triple Superphosphate (NPK: 0,46,0)

Price Structure	Unit	Financial Price		Conversion Factor	Economic Price	
		1378 (1999)	1389 (2010)		1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni	US$/metric ton	205.7	173.5		205.7	173.5
Import taxes	US$/metric ton	0	0		0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	360,000	303,600		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)*	Rials/metric ton	-	-		1,007,900	850,200
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (15%)	Rials/metric ton	54,000	45,500	0.97	52,400	44,100
Farmgate price	Rials/metric ton	636,800	571,900		1,276,400	1,110,400

Note: 1) * The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).

2) The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".

3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: Agricultural Supporting Services Company, Tehran.

Table 10.4.1.17 Price Structure of Ammonium Phosphate (NPK: 11,50,0)

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni	US$/metric ton	172.0	160.0		172.0	160.0
Import taxes	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	301,000	280,000		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)*	Rials/metric ton	-	-		842,800	784,000
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (15%)	Rials/metric ton	45,200	42,000	0.97	43,800	40,700
Farmgate price	Rials/metric ton	569,000	544,800		1,102,700	1,040,800

Note: 1) * The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).

2) The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".

3) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Source: Agricultural Supporting Services Company, Tehran.

Table 10.4.1.18 Price Structure of Ammonium Nitrate (NPK: 34,0,0)

Price Structure	Unit	Financial Price		Conversion	Economic Price	
		1378 (1999)	1389 (2010)	Factor	1378 (1999)	1389 (2010)
Trade status				Imported		
CIF price at ports of Bandar-e-Abbas or Bandar-e-Emam Khomeyni	US$/metric ton	133.0	183.5		133.0	183.5
Import taxes	US$/metric ton	0	0	0	0	0
Equivalent to Rials for financial analysis (US$1=Rials1,750)	Rials/metric ton	232,800	321,100		-	-
Equivalent to Rials for economic analysis (US$1=Rls.4,900)*	Rials/metric ton	-	-		651,700	899,200
Transport/handling costs from port to farmers through marketing agents (1,350 km)	Rials/metric ton	222,800	222,800	0.97	216,100	216,100
Other marketing margin (15%)	Rials/metric ton	34,900	48,200	0.97	33,900	46,800
Farmgate price	Rials/metric ton	490,500	592,100		901,700	1,162,100

Note: 1) This table is based on the price structure of urea.

2) * The shadow exchange rate used for economic analysis was estimated at Rls.4,900/US$ (average rate of Rls.1,750/US$ and Rls.8,000/US$).

3) The 1389 (2010) price was estimated based on the World Bank's projected international market price (1378: 1999 constant price). For base data, reference was made to "Global Commodity Market, World Bank, April 2000".

4) Transport/handling costs were calculated based on Rials 150/km-ton plus 10% of the transport cost.

Table 10.4.1.19 Summary of Financial and Economic Prices of Agricultural Commodities and Inputs

Commodities	Unit	Financial Price	Economic Price
Wheat	Rials/kg	850*/960**	1,420*/1,620**
Barley	Rials/kg	790*/810**	1,240*/1,270**
Maize	Rials/kg	810*/870**	1,320*/1,440**
Cotton	Rials/kg	2,900*/2,730**	2,810*/2,650**
Sugar Beets	Rials/kg	180*/230**	300*/400**
Sunflower Seeds	Rials/kg	2,130*/2,000**	2,270*/2,130**
Beans	Rials/kg	4,320*/4,520**	4,190*/4,380**
Potatoes	Rials/kg	620*/660**	630*/680**
Onions	Rials/kg	400*/430**	410*/440**
Water Melons	Rials/kg	390*/420**	400*/430**
Alfalfa	Rials/kg	690*/690**	670*/670**
Grapes	Rials/kg	1,050*/1,120**	1,070*/1,140**
Urea (46,0,0)	Rials/kg	560*/700**	1,140*/1,500**
Potassium Chloride (0,0,60)	Rials/kg	560*/490**	1,070*/900**
Triple Superphosphate (0,46,0)	Rials/kg	640*/570**	1,280*/1,110**
Ammonium Phosphate (11,50,0)	Rials/kg	570*/540**	1,100*/1,040**
Ammonium Nitrate (34,0,0)	Rials/kg	490*/590**	900*/1,160**

Note: * denotes the without project case (present case), while ** implies the future without project case and the future with project case.

Table 10.4.1.20 Standard Conversion Factor

Item	1371 (1992/93)	1372 (1993/94)	1373 (1994/95)	1374 (1995/96)	1375 (1996/97)	1376 (1997/98)	Total
Export Value (billion rials)	10,131	24,299	29,376	37,684	52,329	51,744	205,563
Export Duties (billion rials)	0	0	0	0	0	0	0
Import Value (billion rials)	13,728	27,965	30,766	32,056	39,879	50,577	194,971
Import Taxes (billion rials)	1,245	1,123	1,284	1,250	2,934	4,289	12,125
Standard Coversion Factor	0.95	0.98	0.98	0.98	0.97	0.96	0.97

Note: 1) Import taxes comprise customs duties, order registration fees, and others.
2) SCF = (export value + import value) (export value - export duties + import value + import taxes).
Source: "Iran Statistical Yearbook, 1377", Statistical Center of Iran.

Table 10.4.2.1 Conversion Factor of Direct Construction Works

Item	(1) Proportion (%)	Traded Goods 1.0*	Skilled Labour 0.97*	Unskilled Labour 0.485*	Non-traded Goods 0.97*	Transfer Payments 0*	(2) Item-wise Conversion Factors	(1) x (2)
1. Almout Water Diversion Project								
- Almout and Andah-rud Diversion Dam	3.0	37.0 (0.37)	13.8 (0.134)	5.9 (0.029)	23.3 (0.226)	20.0 (0)	100.0 (0.759)	0.023
- Tunnel and Pipeline	71.3	56.4 (0.564)	10.7 (0.104)	4.6 (0.022)	8.3 (0.081)	20.0 (0)	100.0 (0.771)	0.550
- O/M Building	1.6	36.6 (0.366)	10.5 (0.102)	4.5 (0.022)	28.4 (0.275)	20.0 (0)	100.0 (0.757)	0.012
2. Qazvin Irrigation Project								
- Rehabilitation and Central Canal Constructio	24.1	32.8 (0.328)	10.0 (0.097)	6.2 (0.030)	31.0 (0.301)	20.0 (0)	100.0 (0.756)	0.182
3. Total	100.0	-	-	-	-	-		0.767

Note: 1) Figures in parenthesis indicate proportions multiplied by the respective conversion factors.
2) * indicates conversion factors.

Table 10.4.2.2 Breakdown of Project Cost

Item	Financial Cost	Conversion Factor	Economic Cost
1. Direct Construction Works			
(US$)	152,500,000	0.767	116,967,500
(million rials*)			573,140.8
2. Engineering and Administration			
(US$)	7,600,000	0.97	7,372,000
(million rials*)			36,122.8
3. Land Acquisition			
(US$)	5,000,000	0.97	4,850,000
(million rials*)			23,765.0
Total			
(US$)	165,100,000	-	129,189,500
(million rials*)			633,028.6

Note: * A shadow exchange rate of US$ 1 = Rials 4,900 has been adopted.

Table 10.4.2.3 Annual O & M Cost

Currency	Financial Cost	Conversion Factor	Economic Cost
US$	719,882	0.97	698,286
Million Rials*			3,421.6

Note: * A shadow exchange rate of US$ 1 = Rials 4,900 has been adopted.

Table 10.4.2.4 Replacement Cost of Equipment

Equipment	Replacement Period	Financial Cost	Conversion Factor	Economic Cost
Gates for the Dam				
(US$)	every 25 years	443,845	0.97	430,530
(million rials*)				2,109.6
Gates for the Qazvin Irrigation Area				
(US$)	every 25 years	135,190	0.97	131,134
(million rials*)				642.6

Note: * A shadow exchange rate of US$ 1 = Rials 4,900 has been adopted.

Table 10.4.3.1 Commodity Prices

Crop	Financial Terms			Economic Terms		
	W/O (Present) Rials/ha	FW/O Rials/ha	FW Rials/ha	W/O (Present) Rials/ha	FW/O Rials/ha	FW Rials/ha
Wheat	850	960	960	1,420	1,620	1,620
Barley	790	810	810	1,240	1,270	1,270
Maize	810	870	870	1,320	1,440	1,440
Cotton	2,900	2,730	2,730	2,810	2,650	2,650
Sugar Beets	180	230	230	300	400	400
Oilseeds	2,130	2,000	2,000	2,270	2,130	2,130
Pulses	4,320	4,520	4,520	4,190	4,380	4,380
Potatoes	620	660	660	630	680	680
Onions	400	430	430	410	440	440
Water Melons	390	420	420	400	430	430
Forage Crops	690	690	690	670	670	670
Grapes	1,050	1,120	1,120	1,070	1,140	1,140
Urea	560	700	700	1,140	1,500	1,500
AP	570	540	540	1,100	1,040	1,040
AN	490	590	590	900	1,160	1,160

Note: W/O, FW/O and FW imply the without project case (present case), the future without project case, and the future with project case, respectively.

Source: (1) Qazvin Agricultural Organization.
(2) Agricultural Supporting Services Company, Tehran.
(3) Farm household survey.

Table 10.4.3.2 Crop Yields

Crop	Financial Terms			Economic Terms		
	W/O (Present) kg/ha	FW/O kg/ha	FW kg/ha	W/O (Present) kg/ha	FW/O kg/ha	FW kg/ha
Wheat	3,000	3,000	3,500	3,000	3,000	3,500
Barley	2,700	2,700	3,000	2,700	2,700	3,000
Maize	6,500	6,500	6,700	6,500	6,500	6,700
Cotton	2,400	2,400	2,550	2,400	2,400	2,550
Sugar Beets	28,800	28,800	32,500	28,800	28,800	32,500
Oilseeds	1,400	1,400	1,450	1,400	1,400	1,450
Pulses	1,200	1,200	1,400	1,200	1,200	1,400
Potatoes	14,900	14,900	16,300	14,900	14,900	16,300
Onions	18,700	18,700	20,000	18,700	18,700	20,000
Water Melons	25,800	25,800	27,100	25,800	25,800	27,100
Forage Crops	14,900	14,900	16,500	14,900	14,900	16,500
Grapes	6,000	6,000	6,300	6,000	6,000	6,300

Note: W/O, FW/O and FW imply the without project case (present case), the future without project case, and the future with project case, respectively.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Information Department, Ministry of Agriculture.
(2) Qazvin Agricultural Organization.
(3) Farm household survey.

Table 10.4.3.3 Per Hectare Crop Budget under Without Project Case (Financial Terms) (1/2)

Item	Unit	Wheat		Barley		Maize		Cotton		Sugar Beets		Oilseeds		Pulses	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output															
(1) Yield	kg/ha	3,000		2,700		6,500		2,400		28,800		1,400		1,200	
(2) Unit price	Rials/kg		850		790		810		2,900		180		2,130		4,320
(3) Production value	Rials/ha		2,550,000		2,133,000		5,265,000		6,960,000		5,184,000		2,982,000		5,184,000
(4) By-product value	Rials/ha		230,600		143,800		125,800		30,400		29,200		0		121,900
Total	Rials/ha		2,780,600		2,276,800		5,390,800		6,990,400		5,213,200		2,982,000		5,305,900
Input Costs															
(1) Seeds/seedlings	Rials/ha	206 kg	173,000	110 kg	86,900	23 kg	184,000	79 kg	632,000	15 kg	33,800	15 kg	48,900	99 kg	396,000
(2) Fertilizer															
- Manure	Rials/ha	0.8 tons	18,300	1.4 tons	33,600	0.7 tons	17,700	0.8 tons	15,300	2.7 tons	19,000		0	14 tons	265,100
- Urea (46,0,0)	Rials/ha	122 kg	68,300	131 kg	73,400	286 kg	160,200	192 kg	107,500	277 kg	155,100	283 kg	158,500	98 kg	54,900
- Ammonium phosphate (11,50,0)	Rials/ha	124 kg	70,700	104 kg	59,300	187 kg	106,600	168 kg	95,800	210 kg	119,700	159 kg	90,600	119 kg	67,800
- Ammonium nitrate (34,0,0)	Rials/ha	10 kg	4,900		0		0	2.4 kg	1,200	17 kg	8,300	3.8 kg	1,900		0
(3) Agro-chemicals	Rials/ha	0.59 kg	5,000	0.45 kg	2,800	2.5 kg	175,200	2.6 kg	69,500	11.6 kg	212,900	1.2 kg	24,000	0.7 kg	6,900
(4) Land preparation	Rials/ha		230,600		234,200		146,400		401,300		192,500		173,000		610,900
(5) Watering															
- Irrigation fee	Rials/ha		102,000		85,300		210,600		278,400		207,400		119,300		207,400
- Others	Rials/ha		93,300		112,600		197,500		147,200		134,300		234,200		636,100
(6) Hired Labour	Rials/ha	9 md	180,000	10 md	200,000	9 md	180,000	28 md	560,000	6 md	120,000	16 md	320,000	39 md	780,000
(7) Others	Rials/ha		795,900		786,300		919,600		1,511,500		2,121,400		1,009,200		1,817,500
Total	Rials/ha		1,742,000		1,674,400		2,297,800		3,819,700		3,324,400		2,179,600		4,842,600
Net Value	Rials/ha		1,038,600		602,400		3,093,000		3,170,700		1,888,800		802,400		463,300

Note: Oilseeds and pulses are represented by sunflower seeds, and navy, kidney and pinto beans, respectively.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.

(2) Qazvin Agricultural Organization.

(3) Farm household survey.

Table 10.4.3.3 Per Hectare Crop Budget under Without Project Case (Financial Terms) (2/2)

Item	Unit	Vegetables						Water Melons		Forage Crops		Grapes	
		Potatoes		Onions		Average							
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output													
(1) Yield	kg/ha	14,900		18,700				25,800		14,900		6,000	
(2) Unit price	Rials/kg		620		400				390		690		1,050
(3) Production value	Rials/ha		9,238,000		7,480,000		8,359,000		10,062,000		10,281,000		6,300,000
(4) By-product value	Rials/ha		0		0		0		30,100		0		0
Total	Rials/ha		9,238,000		7,480,000		8,359,000		10,092,100		10,281,000		6,300,000
Input Costs													
(1) Seeds/seedlings	Rials/ha	2,693 kg	3,097,000	8.5 kg	1,147,500		2,122,300	5.6 kg	84,000	40 kg	400,000		262,500
(2) Fertilizer													
- Manure	Rials/ha	3.5 tons	81,300	1.2 tons	27,400		54,400		0	5 tons	158,500	4 tons	81,200
- Urea (46,0,0)	Rials/ha	330 kg	184,800	149 kg	83,400		134,100	317 kg	177,500	400 kg	224,000		0
- Ammonium phosphate (11,50,0)	Rials/ha	200 kg	114,000	231 kg	131,700		122,900	283 kg	161,300		0		0
- Ammonium nitrate (34,0,0)	Rials/ha		0		0		0	20 kg	9,800		0		0
(3) Agro-chemicals	Rials/ha	0.8 kg	21,200	2.0 kg	126,600		73,900	2.7 kg	57,500		150,000		40,000
(4) Land preparation	Rials/ha		280,700		450,200		365,500		447,700		220,000		200,000
(5) Watering													
- Irrigation fee	Rials/ha		369,500		299,200		334,400		402,500		411,200		252,000
- Others	Rials/ha		257,200		250,200		253,700		244,600		225,500		144,900
(6) Hired Labour	Rials/ha	32 md	640,000	21 md	420,000		530,000	29 md	580,000	36 md	720,000	24 md	480,000
(7) Others	Rials/ha		2,456,400		1,252,500		1,854,500		2,583,900		1,150,000		86,400
Total	Rials/ha		7,502,100		4,188,700		5,845,700		4,748,800		3,659,200		1,547,000
Net Value	Rials/ha		1,735,900		3,291,300		2,513,300		5,343,300		6,621,800		4,753,000

Note: (1) Vegetables and forage crops are represented by potatoes and onions, and alfa-alfa, respectively.
(2) Alfalfa is harvested three times a year.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.
(2) Qazvin Agricultural Organization.
(3) Farm household survey.

Table 10.4.3.4 Per Hectare Crop Budget under Future Without Project Case (Financial Terms) (1/2)

Item	Unit	Wheat		Barley		Maize		Cotton		Sugar Beets		Oilseeds		Pulses	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output															
(1) Yield	kg/ha	3,000		2,700		6,500		2,400		28,800		1,400		1,200	
(2) Unit price	Rials/kg		960		810		870		2,730		230		2,000		4,520
(3) Production value	Rials/ha		2,880,000		2,187,000		5,655,000		6,552,000		6,624,000		2,800,000		5,424,000
(4) By-product value	Rials/ha		230,600		143,800		125,800		30,400		29,200		0		121,900
Total	Rials/ha		3,110,600		2,330,800		5,780,800		6,582,400		6,653,200		2,800,000		5,545,900
Input Costs															
(1) Seeds/seedlings	Rials/ha	206 kg	173,000	110 kg	86,900	23 kg	184,000	79 kg	632,000	15 kg	33,800	15 kg	48,900	99 kg	396,000
(2) Fertilizer															
- Manure	Rials/ha	0.8 tons	18,300	1.4 tons	33,600	0.7 tons	17,700	0.8 tons	15,300	2.7 tons	19,000		0	14 tons	265,100
- Urea (46,0,0)	Rials/ha	122 kg	85,400	131 kg	91,700	286 kg	200,200	192 kg	134,400	277 kg	193,900	283 kg	198,100	98 kg	68,600
- Ammonium phosphate (11,50,0)	Rials/ha	124 kg	67,000	104 kg	56,200	187 kg	101,000	168 kg	90,700	210 kg	113,400	159 kg	85,900	119 kg	64,300
- Ammonium nitrate (34,0,0)	Rials/ha	10 kg	5,900		0		0	2.4 kg	1,400	17 kg	10,000	3.8 kg	2,200		0
(3) Agro-chemicals	Rials/ha	0.59 kg	5,000	0.45 kg	2,800	2.5 kg	175,200	2.6 kg	69,500	11.6 kg	212,900	1.2 kg	24,000	0.7 kg	6,900
(4) Land preparation	Rials/ha		230,600		234,200		146,400		401,300		192,500		173,000		610,900
(5) Watering															
- Irrigation fee	Rials/ha		115,200		87,500		226,200		262,100		265,000		112,000		217,000
- Others	Rials/ha		93,300		112,600		197,500		147,200		134,300		234,200		636,100
(6) Hired Labour	Rials/ha	9 md	180,000	10 md	200,000	9 md	180,000	28 md	560,000	6 md	120,000	16 md	320,000	39 md	780,000
(7) Others	Rials/ha		795,900		786,300		919,600		1,511,500		2,121,400		1,009,200		1,817,500
Total	Rials/ha		1,769,600		1,691,800		2,347,800		3,825,400		3,416,200		2,207,500		4,862,400
Net Value	Rials/ha		1,341,000		639,000		3,433,000		2,757,000		3,237,000		592,500		683,500

Note: Oilseeds and pulses are represented by sunflower seeds, and navy, kidney and pinto beans, respectively.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.

(2) Qazvin Agricultural Organization.

(3) Farm household survey.

Table 10.4.3.4 Per Hectare Crop Budget under Future Without Project Case (Financial Terms) (2/2)

Item	Unit	Vegetables						Water Melons		Forage Crops		Grapes	
		Potatoes		Onions		Average							
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output													
(1) Yield	kg/ha	14,900		18,700				25,800		14,900		6,000	
(2) Unit price	Rials/kg		660		430				420		690		1,120
(3) Production value	Rials/ha		9,834,000		8,041,000		8,937,500		10,836,000		10,281,000		6,720,000
(4) By-product value	Rials/ha		0		0		0		30,100		0		0
Total	Rials/ha		9,834,000		8,041,000		8,937,500		10,866,100		10,281,000		6,720,000
Input Costs													
(1) Seeds/seedlings	Rials/ha	2,693 kg	3,097,000	8.5 kg	1,147,500		2,122,300	5.6 kg	84,000	40 kg	400,000		262,500
(2) Fertilizer													
- Manure	Rials/ha	3.5 tons	81,300	1.2 tons	27,400		54,400		0	5 tons	158,500	4 tons	81,200
- Urea (46,0,0)	Rials/ha	330 kg	231,000	149 kg	104,300		167,700	317 kg	221,900	400 kg	280,000		0
- Ammonium phosphate (11,50,0)	Rials/ha	200 kg	108,000	231 kg	124,700		116,400	283 kg	152,800		0		0
- Ammonium nitrate (34,0,0)	Rials/ha		0		0		0	20 kg	11,800		0		0
(3) Agro-chemicals	Rials/ha	0.8 kg	21,200	2.0 kg	126,600		73,900	2.7 kg	57,500		150,000		40,000
(4) Land preparation	Rials/ha		280,700		450,200		365,500		447,700		220,000		200,000
(5) Watering													
- Irrigation fee	Rials/ha		393,400		321,600		357,500		433,400		411,200		268,800
- Others	Rials/ha		257,200		250,200		253,700		244,600		225,500		144,900
(6) Hired Labour	Rials/ha	32 md	640,000	21 md	420,000		530,000	29 md	580,000	36 md	720,000	24 md	480,000
(7) Others	Rials/ha		2,456,400		1,252,500		1,854,500		2,583,900		1,150,000		86,400
Total	Rials/ha		7,566,200		4,225,000		5,895,900		4,817,600		3,715,200		1,563,800
Net Value	Rials/ha		2,267,800		3,816,000		3,041,600		6,048,500		6,565,800		5,156,200

Note: (1) Vegetables and forage crops are represented by potatoes and onions, and alfa-alfa, respectively.
(2) Alfalfa is harvested three times a year.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.
(2) Qazvin Agricultural Organization.
(3) Farm household survey.

Table 10.4.3.5 Per Hectare Crop Budget under Future With Project Case (Financial Terms) (1/2)

Item	Unit	Wheat		Barley		Maize		Cotton		Sugar Beets		Oilseeds		Pulses	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output															
(1) Yield	kg/ha	3,500		3,000		6,700		2,550		32,500		1,450		1,400	
(2) Unit price	Rials/kg		960		810		870		2,730		230		2,000		4,520
(3) Production value	Rials/ha		3,360,000		2,430,000		5,829,000		6,961,500		7,475,000		2,900,000		6,328,000
(4) By-product value	Rials/ha		269,000		159,800		129,700		32,300		33,000		0		142,200
Total	Rials/ha		3,629,000		2,589,800		5,958,700		6,993,800		7,508,000		2,900,000		6,470,200
Input Costs															
(1) Seeds/seedlings	Rials/ha	240 kg	201,600	122 kg	96,400	24 kg	192,000	84 kg	672,000	17 kg	38,300	16 kg	52,200	116 kg	464,000
(2) Fertilizer															
- Manure	Rials/ha	0.9 tons	21,400	1.6 tons	37,300	0.7 tons	18,200	0.9 tons	16,300	3.0 tons	21,400		0	16 tons	309,300
- Urea (46,0,0)	Rials/ha	142 kg	99,400	146 kg	102,200	295 kg	206,500	204 kg	142,800	313 kg	219,100	293 kg	205,100	114 kg	79,800
- Ammonium phosphate (11,50,0)	Rials/ha	145 kg	78,300	116 kg	62,600	193 kg	104,200	179 kg	96,700	237 kg	128,000	165 kg	89,100	139 kg	75,100
- Ammonium nitrate (34,0,0)	Rials/ha	12 kg	7,100		0		0	2.6 kg	1,500	19 kg	11,200	3.9 kg	2,300		0
(3) Agro-chemicals	Rials/ha	0.69 kg	5,800	0.5 kg	3,100	2.6 kg	180,600	2.8 kg	73,800	13.1 kg	240,300	1.2 kg	24,900	0.8 kg	8,100
(4) Land preparation	Rials/ha		269,000		260,200		150,900		426,400		217,200		179,200		712,700
(5) Watering															
- Irrigation fee	Rials/ha		134,400		97,200		233,200		278,500		299,000		116,000		253,100
- Others	Rials/ha		108,900		125,100		203,600		156,400		151,600		242,600		742,100
(6) Hired Labour	Rials/ha	11 md	220,000	11 md	220,000	9 md	180,000	30 md	600,000	7 md	140,000	17 md	340,000	46 md	920,000
(7) Others	Rials/ha		928,600		873,700		947,900		1,606,000		2,393,900		1,045,200		2,120,400
Total	Rials/ha		2,074,500		1,877,800		2,417,100		4,070,400		3,860,000		2,296,600		5,684,600
Net Value	Rials/ha		1,554,500		712,000		3,541,600		2,923,400		3,648,000		603,400		785,600

Note: Oilseeds and pulses are represented by sunflower seeds, and navy, kidney and pinto beans, respectively.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.

(2) Qazvin Agricultural Organization.

(3) Farm household survey.

Table 10.4.3.5 Per Hectare Crop Budget under Future With Project Case (Financial Terms) (2/2)

Item	Unit	Vegetables						Water Melons		Forage Crops		Grapes	
		Potatoes		Onions		Average							
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output													
(1) Yield	kg/ha	16,300		20,000				27,100		16,500		6,300	
(2) Unit price	Rials/kg		660		430				420		690		1,120
(3) Production value	Rials/ha		10,758,000		8,600,000		9,679,000		11,382,000		11,385,000		7,056,000
(4) By-product value	Rials/ha		0		0		0		31,600		0		0
Total	Rials/ha		10,758,000		8,600,000		9,679,000		11,413,600		11,385,000		7,056,000
Input Costs													
(1) Seeds/seedlings	Rials/ha	2,946 kg	3,387,900	9.1 kg	1,228,500		2,308,200	5.9 kg	88,500	44 kg	440,000		275,600
(2) Fertilizer													
- Manure	Rials/ha	3.8 tons	88,900	1.3 tons	29,300		59,100		0	6 tons	175,500	4 tons	85,300
- Urea (46,0,0)	Rials/ha	361 kg	252,700	159 kg	111,300		182,000	333 kg	233,100	440 kg	308,000		0
- Ammonium phosphate (11,50,0)	Rials/ha	219 kg	118,300	247 kg	133,400		125,900	297 kg	160,400		0		0
- Ammonium nitrate (34,0,0)	Rials/ha		0		0		0	21 kg	12,400		0		0
(3) Agro-chemicals	Rials/ha	0.9 kg	23,200	2.1 kg	135,400		79,300	2.8 kg	60,400		166,100		42,000
(4) Land preparation	Rials/ha		307,100		481,500		394,300		470,300		243,600		210,000
(5) Watering													
- Irrigation fee	Rials/ha		430,300		344,000		387,200		455,300		455,400		282,200
- Others	Rials/ha		281,400		267,600		274,500		256,900		249,700		152,100
(6) Hired Labour	Rials/ha	35 md	700,000	22 md	440,000		570,000	30 md	600,000	40 md	800,000	25 md	500,000
(7) Others	Rials/ha		2,687,200		1,339,600		2,013,400		2,714,100		1,273,500		90,700
Total	Rials/ha		8,277,000		4,510,600		6,393,900		5,051,400		4,111,800		1,637,900
Net Value	Rials/ha		2,481,000		4,089,400		3,285,100		6,362,200		7,273,200		5,418,100

Note: (1) Vegetables and forage crops are represented by potatoes and onions, and alfa-alfa, respectively.
(2) Alfalfa is harvested three times a year.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.
(2) Qazvin Agricultural Organization.
(3) Farm household survey.

Table 10.4.3.6 Per Hectare Crop Budgets under Without Project Case (Economic Terms) (1/2)

Item	Unit	Wheat		Barley		Maize		Cotton		Sugar Beets		Oilseeds		Pulses	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output															
(1) Yield	kg/ha	3,000		2,700		6,500		2,400		28,800		1,400		1,200	
(2) Unit price	Rials/kg		1,420		1,240		1,320		2,810		300		2,270		4,190
(3) Production value	Rials/ha		4,260,000		3,348,000		8,580,000		6,744,000		8,640,000		3,178,000		5,028,000
(4) By-product value	Rials/ha		223,700		139,500		122,000		29,500		28,300		0		118,200
Total	Rials/ha		4,483,700		3,487,500		8,702,000		6,773,500		8,668,300		3,178,000		5,146,200
Input Costs															
(1) Seeds/seedlings	Rials/ha	206 kg	167,800	110 kg	84,300	23 kg	17,800	79 kg	613,000	15 kg	32,800	15 kg	47,400	99 kg	384,100
(2) Fertilizer															
- Manure	Rials/ha	0.8 tons	17,800	1.4 tons	32,600	0.7 tons	17,200	0.8 tons	14,800	2.7 tons	18,400		0	14 tons	257,100
- Urea (46,0,0)	Rials/ha	122 kg	139,100	131 kg	149,300	286 kg	326,000	192 kg	218,900	277 kg	315,800	283 kg	322,600	98 kg	111,700
- Ammonium phosphate (11,50,0)	Rials/ha	124 kg	136,400	104 kg	114,400	187 kg	205,700	168 kg	184,800	210 kg	231,000	159 kg	174,900	119 kg	130,900
- Ammonium nitrate (34,0,0)	Rials/ha	10 kg	9,000		0		0	2.4 kg	2,200	17 kg	15,300	3.8 kg	3,400		0
(3) Agro-chemicals	Rials/ha	0.59 kg	4,900	0.45 kg	2,700	2.5 kg	169,900	2.6 kg	67,400	11.6 kg	206,500	1.2 kg	23,300	0.7 kg	6,700
(4) Land preparation	Rials/ha		223,700		227,200		142,000		389,300		186,700		167,800		592,600
(5) Watering															
- Irrigation fee	Rials/ha		98,900		82,700		204,300		270,000		201,200		115,700		201,200
- Others	Rials/ha		90,500		109,200		191,600		142,800		130,300		227,200		617,000
(6) Hired Labour	Rials/ha	9 md	87,300	10 md	97,000	9 md	87,300	28 md	271,600	6 md	58,200	16 md	155,200	39 md	378,300
(7) Others	Rials/ha		772,000		762,700		892,000		1,466,200		2,057,800		978,900		1,763,000
Total	Rials/ha		1,747,400		1,662,100		2,253,800		3,641,000		3,454,000		2,216,400		4,442,600
Net Value	Rials/ha		2,736,300		1,825,400		6,448,200		3,132,500		5,214,300		961,600		703,600

Note: Oilseeds and pulses are represented by sunflower seeds, navy, kidney and pinto beans, respectively.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.

(2) Qazvin Agricultural Organization.

(3) Farm household survey.

Table 10.4.3.6 Per Hectare Crop Budgets under Without Project Case (Economic Terms) (2/2)

Item	Unit	Vegetables						Water Melons		Forage Crops		Grapes	
		Potatoes		Onions		Average							
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output													
(1) Yield	kg/ha	14,900		18,700				25,800		14,900		6,000	
(2) Unit price	Rials/kg		630		410				400		670		1,070
(3) Production value	Rials/ha		9,387,000		7,667,000		8,527,000		10,320,000		9,983,000		6,420,000
(4) By-product value	Rials/ha		0		0		0		29,200		0		0
Total	Rials/ha		9,387,000		7,667,000		8,527,000		10,349,200		9,983,000		6,420,000
Input Costs													
(1) Seeds/seedlings	Rials/ha	2,693 kg	3,004,100	8.5 kg	1,113,100		2,058,600	5.6 kg	81,500	40 kg	388,000		254,600
(2) Fertilizer													
- Manure	Rials/ha	3.5 tons	78,900	1.2 tons	26,600		52,800		0	5 tons	153,800	4 tons	78,800
- Urea (46,0,0)	Rials/ha	330 kg	376,200	149 kg	169,900		273,100	317 kg	361,400	400 kg	456,000		0
- Ammonium phosphate (11,50,0)	Rials/ha	200 kg	220,000	231 kg	254,100		237,100	283 kg	311,300		0		0
- Ammonium nitrate (34,0,0)	Rials/ha		0		0		0	20 kg	18,000		0		0
(3) Agro-chemicals	Rials/ha	0.8 kg	20,600	2.0 kg	122,800		71,700	2.7 kg	55,800		145,500		38,800
(4) Land preparation	Rials/ha		272,300		436,700		354,500		434,300		213,400		194,000
(5) Watering													
- Irrigation fee	Rials/ha		358,400		290,200		324,300		390,400		398,900		244,400
- Others	Rials/ha		249,500		242,700		246,100		237,300		218,700		140,600
(6) Hired Labour	Rials/ha	32 md	310,400	21 md	203,700		257,100	29 md	281,300	36 md	349,200	24 md	232,800
(7) Others	Rials/ha		2,382,700		1,214,900		1,798,800		2,506,400		1,115,500		83,800
Total	Rials/ha		7,273,100		4,074,700		5,674,100		4,677,700		3,439,000		1,267,800
Net Value	Rials/ha		2,113,900		3,592,300		2,852,900		5,671,500		6,544,000		5,152,200

Note: (1) Vegetables and forage crops are represented by potatoes and onions, and alfa-alfa, respectively.
(2) Alfalfa is harvested three times a year.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.
(2) Qazvin Agricultural Organization.
(3) Farm household survey.

Table 10.4.3.7 Per Hectare Crop Budgets under Future Without Project Case (Economic Terms) (1/2)

Item	Unit	Wheat		Barley		Maize		Cotton		Sugar Beets		Oilseeds		Pulses	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output															
(1) Yield	kg/ha	3,000		2,700		6,500		2,400		28,800		1,400		1,200	
(2) Unit price	Rials/kg		1,620		1,270		1,440		2,650		400		2,130		4,380
(3) Production value	Rials/ha		4,860,000		3,429,000		9,360,000		6,360,000		11,520,000		2,982,000		5,256,000
(4) By-product value	Rials/ha		223,700		139,500		122,000		29,500		28,300		0		118,200
Total	Rials/ha		5,083,700		3,568,500		9,482,000		6,389,500		11,548,300		2,982,000		5,374,200
Input Costs															
(1) Seeds/seedlings	Rials/ha	206 kg	167,800	110 kg	84,300	23 kg	178,500	79 kg	613,000	15 kg	32,800	15 kg	47,400	99 kg	384,100
(2) Fertilizer															
- Manure	Rials/ha	0.8 tons	17,800	1.4 tons	32,600	0.7 tons	17,200	0.8 tons	14,800	2.7 tons	18,400		0	14 tons	257,100
- Urea (46,0,0)	Rials/ha	122 kg	183,000	131 kg	196,500	286 kg	429,000	192 kg	288,000	277 kg	415,500	283 kg	424,500	98 kg	147,000
- Ammonium phosphate (11,50,0)	Rials/ha	124 kg	129,000	104 kg	108,200	187 kg	194,500	168 kg	174,700	210 kg	218,400	159 kg	165,400	119 kg	123,800
- Ammonium nitrate (34,0,0)	Rials/ha	10 kg	11,600		0		0	2.4 kg	2,800	17 kg	19,700	3.8 kg	4,400		0
(3) Agro-chemicals	Rials/ha	0.59 kg	4,900	0.45 kg	2,700	2.5 kg	169,900	2.6 kg	67,400	11.6 kg	206,500	1.2 kg	23,300	0.7 kg	6,700
(4) Land preparation	Rials/ha		223,700		227,200		142,000		389,300		186,700		167,800		592,600
(5) Watering															
- Irrigation fee	Rials/ha		111,700		84,900		219,400		254,200		257,100		108,600		210,500
- Others	Rials/ha		90,500		109,200		191,600		142,800		130,300		227,200		617,000
(6) Hired Labour	Rials/ha	9 md	87,300	10 md	97,000	9 md	87,300	28 md	271,600	6 md	58,200	16 md	155,200	39 md	378,300
(7) Others	Rials/ha		772,000		762,700		892,000		1,466,200		2,057,800		978,900		1,763,000
Total	Rials/ha		1,799,300		1,705,300		2,521,400		3,684,800		3,601,400		2,302,700		4,480,100
Net Value	Rials/ha		3,284,400		1,863,200		6,960,600		2,704,700		7,946,900		679,300		894,100

Note: Oilseeds and pulses are represented by sunflower seeds, navy, kidney and pinto beans, respectively.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.

(2) Qazvin Agricultural Organization.

(3) Farm household survey.

Table 10.4.3.7 Per Hectare Crop Budgets under Future Without Project Case (Economic Terms) (2/2)

Item	Unit	Vegetables						Water Melons		Forage Crops		Grapes	
		Potatoes		Onions		Average							
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output													
(1) Yield	kg/ha	14,900		18,700				25,800		14,900		6,000	
(2) Unit price	Rials/kg		680		440				430		670		1140
(3) Production value	Rials/ha		10,132,000		8,228,000		9,180,000		11,094,000		9,983,000		6,840,000
(4) By-product value	Rials/ha		0		0		0		29,200		0		0
Total	Rials/ha		10,132,000		8,228,000		9,180,000		11,123,200		9,983,000		6,840,000
Input Costs													
(1) Seeds/seedlings	Rials/ha	2,693 kg	3,004,100	8.5 kg	1,113,100		2,058,600	5.6 kg	81,500	40 kg	388,000		254,600
(2) Fertilizer													
- Manure	Rials/ha	3.5 tons	78,900	1.2 tons	26,600		52,800		0	5 tons	153,700	4 tons	78,800
- Urea (46,0,0)	Rials/ha	330 kg	495,000	149 kg	223,500		359,300	317 kg	475,500	400 kg	600,000		0
- Ammonium phosphate (11,50,0)	Rials/ha	200 kg	208,000	231 kg	240,200		224,100	283 kg	294,300		0		0
- Ammonium nitrate (34,0,0)	Rials/ha		0		0		0	20 kg	23,200		0		0
(3) Agro-chemicals	Rials/ha	0.8 kg	20,600	2.0 kg	122,800		71,700	2.7 kg	55,800		145,500		38,800
(4) Land preparation	Rials/ha		272,300		436,700		354,500		434,300		213,400		194,000
(5) Watering													
- Irrigation fee	Rials/ha		381,600		312,000		346,800		420,400		398,900		260,700
- Others	Rials/ha		249,500		242,700		246,100		237,300		218,700		140,500
(6) Hired Labour	Rials/ha	32 md	310,400	21 md	203,700		257,100	29 md	281,300	36 md	349,200	24 md	232,800
(7) Others	Rials/ha		2,382,700		1,214,900		1,798,800		2,506,400		1,115,500		83,800
Total	Rials/ha		7,403,100		4,136,200		5,769,800		4,810,000		3,582,900		1,284,000
Net Value	Rials/ha		2,728,900		4,091,800		3,410,200		6,313,200		6,400,100		5,556,000

Note: (1) Vegetables and forage crops are represented by potatoes and onions, and alfa-alfa, respectively.
(2) Alfalfa is harvested three times a year.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.
(2) Qazvin Agricultural Organization.
(3) Farm household survey.

Table 10.4.3.8 Per Hectare Crop Budgets under Future With Project Case (Economic Terms) (1/2)

Item	Unit	Wheat		Barley		Maize		Cotton		Sugar Beets		Oilseeds		Pulses	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output															
(1) Yield	kg/ha	3,500		3,000		6,700		2,550		32,500		1,450		1,400	
(2) Unit price	Rials/kg		1,620		1270		1,440		2,650		400		2,130		4,380
(3) Production value	Rials/ha		5,670,000		3,810,000		9,648,000		6,757,500		13,000,000		3,088,500		6,132,000
(4) By-product value	Rials/ha		260,900		155,000		125,800		31,300		32,000		0		137,900
Total	Rials/ha		5,930,900		3,965,000		9,773,800		6,788,800		13,032,000		3,088,500		6,269,900
Input Costs															
(1) Seeds/seedlings	Rials/ha	240 kg	195,600	122 kg	93,500	24 kg	186,200	84 kg	651,800	17 kg	37,200	16 kg	50,600	116 kg	450,100
(2) Fertilizer															
- Manure	Rials/ha	0.9 tons	20,800	1.6 tons	36,200	0.7 tons	17,700	0.9 tons	15,800	3.0 tons	20,800		0	16 tons	300,000
- Urea (46,0,0)	Rials/ha	142 kg	213,000	146 kg	219,000	295 kg	442,500	204 kg	306,000	313 kg	469,500	293 kg	439,500	114 kg	171,000
- Ammonium phosphate (11,50,0)	Rials/ha	145 kg	150,800	116 kg	120,600	193 kg	200,700	179 kg	186,200	237 kg	246,500	165 kg	171,600	139 kg	144,600
- Ammonium nitrate (34,0,0)	Rials/ha	12 kg	13,900		0		0	2.6 kg	3,000	19 kg	22,000	3.9 kg	4,500		0
(3) Agro-chemicals	Rials/ha	0.69 kg	5,600	0.5 kg	3,000	2.6 kg	175,200	2.8 kg	71,600	13.1 kg	233,100	1.2 kg	24,200	0.8 kg	7,900
(4) Land preparation	Rials/ha		260,900		252,400		146,400		413,600		210,700		173,800		691,300
(5) Watering															
- Irrigation fee	Rials/ha		130,400		94,300		226,200		270,100		290,000		112,500		245,500
- Others	Rials/ha		105,600		121,300		197,500		151,700		147,100		235,300		719,800
(6) Hired Labour	Rials/ha	11 md	106,700	11 md	106,700	9 md	87,300	30 md	291,000	7 md	67,900	17 md	164,900	46 md	446,200
(7) Others	Rials/ha		900,700		847,500		919,500		1,557,800		2,322,100		1,013,800		2,056,800
Total	Rials/ha		2,104,000		1,894,500		2,599,200		3,918,600		4,066,900		2,390,700		5,233,200
Net Value	Rials/ha		3,826,900		2,070,500		7,174,600		2,870,200		8,965,100		697,800		1,036,700

Note: Oilseeds and pulses are represented by sunflower seeds, navy, kidney and pinto beans, respectively.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.

(2) Qazvin Agricultural Organization.

(3) Farm household survey.

Table 10.4.3.8 Per Hectare Crop Budgets under Future With Project Case (Economic Terms) (2/2)

Item	Unit	Vegetables						Water Melons		Forage Crops		Grapes	
		Potatoes		Onions		Average							
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Value of Output													
(1) Yield	kg/ha	16,300		20,000				27,100		16,500		6,300	
(2) Unit price	Rials/kg		680		440				430		670		1,140
(3) Production value	Rials/ha		11,084,000		8,800,000		9,942,000		11,653,000		11,055,000		7,182,000
(4) By-product value	Rials/ha		0		0		0		30,700		0		0
Total	Rials/ha		11,084,000		8,800,000		9,942,000		11,683,700		11,055,000		7,182,000
Input Costs													
(1) Seeds/seedlings	Rials/ha	2,946 kg	3,286,300	9.1 kg	1,191,700		2,239,000	5.9 kg	85,800	44 kg	426,800		267,300
(2) Fertilizer													
- Manure	Rials/ha	3.8 tons	86,200	1.3 tons	28,400		57,300		0	6 tons	170,200	4 tons	82,700
- Urea (46,0,0)	Rials/ha	361 kg	541,500	159 kg	238,500		390,000	333 kg	499,500	440 kg	660,000		0
- Ammonium phosphate (11,50,0)	Rials/ha	219 kg	227,800	247 kg	256,900		242,400	297 kg	308,900		0		0
- Ammonium nitrate (34,0,0)	Rials/ha		0		0		0	21 kg	24,400		0		0
(3) Agro-chemicals	Rials/ha	0.9 kg	22,500	2.1 kg	131,300		76,900	2.8 kg	58,600		161,100		40,700
(4) Land preparation	Rials/ha		297,900		467,100		382,500		456,200		236,300		203,700
(5) Watering													
- Irrigation fee	Rials/ha		417,400		333,700		375,600		441,600		441,700		273,700
- Others	Rials/ha		273,000		259,600		266,300		249,200		242,200		147,500
(6) Hired Labour	Rials/ha	35 md	339,500	22 md	213,400		276,500	30 md	291,000	40 md	388,000	25 md	242,500
(7) Others	Rials/ha		2,606,600		1,299,400		1,953,000		2,632,700		1,235,300		88,000
Total	Rials/ha		8,098,700		4,420,000		6,259,500		5,047,900		3,961,600		1,346,100
Net Value	Rials/ha		2,985,300		4,380,000		3,682,500		6,635,800		7,093,400		5,835,900

Note: (1) Vegetables and forage crops are represented by potatoes and onions, and alfa-alfa, respectively.
(2) Alfalfa is harvested three times a year.

Source: (1) "Agricultural Production Costs, 1376/77 and 1377/78", Agricultural Statistics and Informaiton Department, Ministry of Agriculture.
(2) Qazvin Agricultural Organization.
(3) Farm household survey.

Table 10.4.3.9 Summary of Per Hectare Agricultural Benefits

(Unit: Rials)

Crop	Crop Production	Financial Terms				Economic Terms			
		Without Project (Present)	Future Without Project	Future With Project	Benefits	Without Project (Present)	Future Without Project	Future With Project	Benefits
Wheat	Return	2,780,600	3,110,600	3629000	518,400	4,483,700	5,083,700	5,930,900	847,200
	Cost	1,742,000	1,769,600	2074500	304,900	1,747,400	1,799,300	2,104,000	304,700
	Net Return	1,038,600	1,341,000	1,554,500	213,500	2,736,300	3,284,400	3,826,900	542,500
Barley	Return	2,276,800	2,330,800	2,589,800	259,000	3,487,500	3,568,500	3,965,000	396,500
	Cost	1,674,400	1,691,800	1,877,800	186,000	1,662,100	1,705,300	1,894,500	189,200
	Net Return	602,400	639,000	712,000	73,000	1,825,400	1,863,200	2,070,500	207,300
Maize	Return	5,390,800	5,780,800	5,958,700	177,900	8,702,000	9,482,000	9,773,800	291,800
	Cost	2,297,800	2,347,800	2,417,100	69,300	2,253,800	2,521,400	2,599,200	77,800
	Net Return	3,093,000	3,433,000	3,541,600	108,600	6,448,200	6,960,600	7,174,600	214,000
Cotton	Return	6,990,400	6,582,400	6,993,800	411,400	6,773,500	6,389,500	6,788,800	399,300
	Cost	3,819,700	3,825,400	4,070,400	245,000	3,641,000	3,684,800	3,918,600	233,800
	Net Return	3,170,700	2,757,000	2,923,400	166,400	3,132,500	2,704,700	2,870,200	165,500
Sugar Beets	Return	5,213,200	6,653,200	7,508,000	854,800	8,668,300	11,548,300	13,032,000	1,483,700
	Cost	3,324,400	3,416,200	3,860,000	443,800	3,454,000	3,601,400	4,066,900	465,500
	Net Return	1,888,800	3,237,000	3,648,000	411,000	5,214,300	7,946,900	8,965,100	1,018,200
Oilseeds	Return	2,982,000	2,800,000	2,900,000	100,000	3,178,000	2,982,000	3,088,500	106,500
(Sunflower seeds)	Cost	2,179,600	2,207,500	2,296,600	89,100	2,216,400	2,302,700	2,390,700	88,000
	Net Return	802,400	592,500	603,400	10,900	961,600	679,300	697,800	18,500
Pulses	Return	5,305,900	5,545,900	6,470,200	924,300	5,146,200	5,374,200	6,269,900	895,700
(Navy, kidney and	Cost	4,842,600	4,862,400	5,684,600	822,200	4,442,600	4,480,100	5,233,200	753,100
pinto beans)	Net Return	463,300	683,500	785,600	102,100	703,600	894,100	1,036,700	142,600
Potatoes	Return	9,238,000	9,834,000	10,758,000	924,000	9,387,000	10,132,000	11,084,000	952,000
	Cost	7,502,100	7,566,200	8,277,000	710,800	7,273,100	7,403,100	8,098,700	695,600
	Net Return	1,735,900	2,267,800	2,481,000	213,200	2,113,900	2,728,900	2,985,300	256,400
Onions	Return	7,480,000	8,041,000	8,600,000	559,000	7,667,000	8,228,000	8,800,000	572,000
	Cost	4,188,700	4,225,000	4,510,600	285,600	4,074,700	4,136,200	4,420,000	283,800
	Net Return	3,291,300	3,816,000	4,089,400	273,400	3,592,300	4,091,800	4,380,000	288,200
Water Melons	Return	10,092,100	10,866,100	11,413,600	547,500	10,349,200	11,123,200	11,683,700	560,500
	Cost	4,748,800	4,817,600	5,051,400	233,800	4,677,700	4,810,000	5,047,900	237,900
	Net Return	5,343,300	6,048,500	6,362,200	313,700	5,671,500	6,313,200	6,635,800	322,600
Forage Crops	Return	10,281,000	10,281,000	11,385,000	1,104,000	9,983,000	9,983,000	11,055,000	1,072,000
(Alfalfa)	Cost	3,659,200	3,715,200	4,111,800	396,600	3,439,000	3,582,900	3,961,600	378,700
	Net Return	6,621,800	6,565,800	7,273,200	707,400	6,544,000	6,400,100	7,093,400	693,300
Grapes	Return	6,300,000	6,720,000	7,056,000	336,000	6,420,000	6,840,000	7,182,000	342,000
	Cost	1,547,000	1,563,800	1,637,900	74,100	1,267,800	1,284,000	1,346,100	62,100
	Net Return	4,753,000	5,156,200	5,418,100	261,900	5,152,200	5,556,000	5,835,900	279,900

Table 10.4.3.10 Agricultural Benefits in the First Year of Cultivation in Benefit Area

Crop	Case	Cropped Area	Financial Benefits (million rials)	Economic Benefits (million rials)
Wheat	Present	22,817	23,697.7	62,434.2
	FW/O	22,817	30,597.6	74,940.2
	FW	33,296	51,757.9	127,419.3
	Increment	10,479	21,160.3	52,479.1
	Project Benefits	10,479	8,683.9	27,671.9
Barley	Present	11,368	6,848.1	20,751.1
	FW/O	11,368	7,264.2	21,180.9
	FW	17,389	12,380.5	36,003.1
	Increment	6,021	5,116.3	14,822.3
	Project Benefits	6,021	1,168.1	7,691.8
Maize	Present	2,111	6,529.3	13,612.2
	FW/O	2,111	7,247.1	14,693.8
	FW	2,736	9,688.6	19,627.8
	Increment	625	2,441.6	4,933.9
	Project Benefits	625	1,468.7	3,262.4
Cotton	Present	1,380	4,375.6	4,322.9
	FW/O	1,380	3,804.7	3,732.5
	FW	1,408	4,114.7	4,039.9
	Increment	28	310.1	307.4
	Project Benefits	28	42.7	42.3
Sugar Beets	Present	1,868	3,528.3	9,740.3
	FW/O	1,868	6,046.7	14,844.8
	FW	2,890	10,541.2	25,906.5
	Increment	1,022	4,494.5	11,061.7
	Project Benefits	1,022	2,193.6	13,948.6
Oilseeds (Sunflower seeds)	Present	487	390.8	468.3
	FW/O	487	288.5	330.8
	FW	913	550.3	636.5
	Increment	426	261.8	305.7
	Project Benefits	426	10.0	0.8
Pulses (Navy, kidney and pinto beans)	Present	1,462	677.3	1,028.7
	FW/O	1,462	999.3	1,307.2
	FW	1,973	1,548.7	2,044.2
	Increment	511	549.4	737.0
	Project Benefits	511	-259.8	-111.0
Potatoes	Present	1,786	3,100.3	3,775.4
	FW/O	1,786	4,050.3	4,873.8
	FW	2,184	5,416.4	6,517.7
	Increment	398	1,366.1	1,643.9
	Project Benefits	398	131.1	305.9
Onions	Present	2,355	7,751.0	8,459.9
	FW/O	2,355	8,986.7	9,636.2
	FW	2,440	9,976.4	10,685.4
	Increment	85	989.7	1,049.3
	Project Benefits	85	201.4	222.7
Water Melons	Present	2,355	12,583.5	13,356.4
	FW/O	2,355	14,244.2	14,867.6
	FW	2,753	17,512.9	18,266.0
	Increment	398	3,268.6	3,398.4
	Project Benefits	398	1,623.6	1,711.0
Forage Crops (Alfalfa)	Present	9,906	65,595.6	64,824.9
	FW/O	9,906	65,040.8	63,399.4
	FW	12,377	90,018.1	87,792.8
	Increment	2,471	24,977.3	24,393.4
	Project Benefits	2,471	12,345.6	12,064.4
Grapes	Present	23,305	110,768.7	120,072.0
	FW/O	23,305	120,165.2	129,482.6
	FW	29,241	158,429.3	170,646.1
	Increment	5,936	38,264.0	41,163.5
	Project Benefits	5,936	23,785.0	26,115.4
Total	Present	81,200	245,846.2	322,846.3
	FW/O	81,200	268,735.3	353,289.8
	FW	109,600	371,935.0	509,585.3
	Increment	28,400	103,199.7	156,295.6
	Project Benefits	28,400	51,393.9	92,926.2

Note: Achievement of target yields is assumed to be 80%.

Table 10.4.3.11 Agricultural Benefits in the Second Year of Cultivation in Benefit Area

Crop	Case	Cropped Area	Financial Benefits (million rials)	Economic Benefits (million rials)
Wheat	Present	22,817	23,697.7	62,434.2
	FW/O	22,817	30,597.6	74,940.2
	FW	33,296	51,758.3	127,419.9
	Increment	10,479	21,160.7	52,479.7
	Project Benefits	10,479	12,486.8	33,887.0
Barley	Present	11,368	6,848.1	20,751.1
	FW/O	11,368	7,264.2	21,180.9
	FW	17,389	12,380.7	36,003.5
	Increment	6,021	5,116.6	14,822.7
	Project Benefits	6,021	2,727.5	10,079.2
Maize	Present	2,111	6,529.3	13,612.2
	FW/O	2,111	7,247.1	14,693.8
	FW	2,736	9,689.2	19,628.7
	Increment	625	2,442.2	4,934.9
	Project Benefits	625	1,841.1	3,873.3
Cotton	Present	1,380	4,375.6	4,322.9
	FW/O	1,380	3,804.7	3,732.5
	FW	1,408	4,115.4	4,040.6
	Increment	28	310.8	308.1
	Project Benefits	28	62.3	61.4
Sugar Beets	Present	1,868	3,528.3	9,740.3
	FW/O	1,868	6,046.7	14,844.8
	FW	2,890	10,542.0	25,907.8
	Increment	1,022	4,495.3	11,063.0
	Project Benefits	1,022	2,960.9	22,686.4
Oilseeds (Sunflower seeds)	Present	487	390.8	468.3
	FW/O	487	288.5	330.8
	FW	913	550.6	636.8
	Increment	426	262.1	306.0
	Project Benefits	426	133.5	51.9
Pulses (Navy, kidney and pinto beans)	Present	1,462	677.3	1,028.7
	FW/O	1,462	999.3	1,307.2
	FW	1,973	1,549.3	2,044.8
	Increment	511	550.1	737.6
	Project Benefits	511	70.8	209.4
Potatoes	Present	1,786	3,100.3	3,775.4
	FW/O	1,786	4,050.3	4,873.8
	FW	2,184	5,417.4	6,518.8
	Increment	398	1,367.1	1,645.0
	Project Benefits	398	559.3	747.0
Onions	Present	2,355	7,751.0	8,459.9
	FW/O	2,355	8,986.7	9,636.2
	FW	2,440	9,977.3	10,686.3
	Increment	85	990.6	1,050.1
	Project Benefits	85	274.5	297.5
Water Melons	Present	2,355	12,583.5	13,356.4
	FW/O	2,355	14,244.2	14,867.6
	FW	2,753	17,514.0	18,267.2
	Increment	398	3,269.8	3,399.6
	Project Benefits	398	2,077.9	2,176.0
Forage Crops (Alfalfa)	Present	9,906	65,595.6	64,824.9
	FW/O	9,906	65,040.8	63,399.4
	FW	12,377	90,019.3	87,793.9
	Increment	2,471	24,978.4	24,394.5
	Project Benefits	2,471	15,158.8	14,796.1
Grapes	Present	23,305	110,768.7	120,072.0
	FW/O	23,305	120,165.2	129,482.6
	FW	29,241	158,430.0	170,646.8
	Increment	5,936	38,264.7	41,164.3
	Project Benefits	5,936	27,973.4	30,378.7
Total	Present	81,200	245,846.2	322,846.3
	FW/O	81,200	268,735.3	353,289.8
	FW	109,600	371,943.5	509,595.1
	Increment	28,400	103,208.4	156,305.5
	Project Benefits	28,400	66,326.8	119,243.9

Note: Achievement of target yields is assumed to be 90%.

Table 10.4.3.12 Agricultural Benefits in the Third Year of Cultivation in Benefit Area

Crop	Case	Cropped Area	Financial Benefits (million rials)	Economic Benefits (million rials)
Wheat	Present	22,817	23,697.7	62,434.2
	FW/O	22,817	30,597.6	74,940.2
	FW	33,296	51,758.6	127,420.5
	Increment	10,479	21,161.0	52,480.3
	Project Benefits	10,479	16,289.6	40,102.1
Barley	Present	11,368	6,848.1	20,751.1
	FW/O	11,368	7,264.2	21,180.9
	FW	17,389	12,381.0	36,003.9
	Increment	6,021	5,116.8	14,823.1
	Project Benefits	6,021	4,287.0	12,466.5
Maize	Present	2,111	6,529.3	13,612.2
	FW/O	2,111	7,247.1	14,693.8
	FW	2,736	9,689.8	19,629.7
	Increment	625	2,442.8	4,935.9
	Project Benefits	625	2,213.5	4,484.1
Cotton	Present	1,380	4,375.6	4,322.9
	FW/O	1,380	3,804.7	3,732.5
	FW	1,408	4,116.1	4,041.2
	Increment	28	311.5	308.8
	Project Benefits	28	81.9	80.4
Sugar Beets	Present	1,868	3,528.3	9,740.3
	FW/O	1,868	6,046.7	14,844.8
	FW	2,890	10,542.7	25,909.1
	Increment	1,022	4,496.0	11,064.3
	Project Benefits	1,022	3,728.3	33,424.2
Oilseeds (Sunflower seeds)	Present	487	390.8	468.3
	FW/O	487	288.5	330.8
	FW	913	550.9	637.1
	Increment	426	262.4	306.3
	Project Benefits	426	257.0	179.4
Pulses (Navy, kidney and pinto beans)	Present	1,462	677.3	1,028.7
	FW/O	1,462	999.3	1,307.2
	FW	1,973	1,550.0	2,045.4
	Increment	511	550.7	738.2
	Project Benefits	511	401.4	529.8
Potatoes	Present	1,786	3,100.3	3,775.4
	FW/O	1,786	4,050.3	4,873.8
	FW	2,184	5,418.5	6,519.9
	Increment	398	1,368.2	1,646.1
	Project Benefits	398	987.4	1,188.1
Onions	Present	2,355	7,751.0	8,459.9
	FW/O	2,355	8,986.7	9,636.2
	FW	2,440	9,978.1	10,687.2
	Increment	85	991.5	1,051.0
	Project Benefits	85	347.6	372.3
Water Melons	Present	2,355	12,583.5	13,356.4
	FW/O	2,355	14,244.2	14,867.6
	FW	2,753	17,515.1	18,268.4
	Increment	398	3,270.9	3,400.8
	Project Benefits	398	2,532.2	2,641.0
Forage Crops (Alfalfa)	Present	9,906	65,595.6	64,824.9
	FW/O	9,906	65,040.8	63,399.4
	FW	12,377	90,020.4	87,795.0
	Increment	2,471	24,979.6	24,395.6
	Project Benefits	2,471	17,972.1	17,527.8
Grapes	Present	23,305	110,768.7	120,072.0
	FW/O	23,305	120,165.2	129,482.6
	FW	29,241	158,430.7	170,647.6
	Increment	5,936	38,265.4	41,165.0
	Project Benefits	5,936	32,161.8	34,641.9
Total	Present	81,200	245,846.2	322,846.3
	FW/O	81,200	268,735.3	353,289.8
	FW	109,600	371,951.9	509,605.0
	Increment	28,400	103,216.8	156,315.4
	Project Benefits	28,400	81,259.8	147,637.6

Note: Achievement of target yields is assumed to be 100%.

Table 10.4.3.13 Summary of Agricultural Benefits at Full Development in Benefit Area

Crop	Achievement of Target Yields (%)	Incremental Cropped Area (ha)	Financial Benefit (million rials)	Economic Benefit (million rials)
Wheat	80	10,479	8,683.9	27,671.9
	90	10,479	12,486.8	33,887.0
	100	10,479	16,289.6	40,102.1
Barley	80	6,021	1,168.1	7,691.8
	90	6,021	2,727.5	10,079.2
	100	6,021	4,287.0	12,466.5
Maize	80	625	1,468.7	3,262.4
	90	625	1,841.1	3,873.3
	100	625	2,213.5	4,484.1
Cotton	80	28	42.7	42.3
	90	28	62.3	61.4
	100	28	81.9	80.4
Sugar Beets	80	1,022	2,193.6	13,948.6
	90	1,022	2,960.9	22,686.4
	100	1,022	3,728.3	33,424.2
Oilseeds (Sunflower seeds)	80	426	10.0	0.8
	90	426	133.5	51.9
	100	426	257.0	179.4
Pulses (Navy, kidney and pinto beans)	80	511	-259.8	-111.0
	90	511	70.8	209.4
	100	511	401.4	529.8
Potatoes	80	398	131.1	305.9
	90	398	559.3	747.0
	100	398	987.4	1,188.1
Onions	80	85	201.4	222.7
	90	85	274.5	297.5
	100	85	347.6	372.3
Water Melons	80	398	1,623.6	1,711.0
	90	398	2,077.9	2,176.0
	100	398	2,532.2	2,641.0
Forage Crops (Alfalfa)	80	2,471	12,345.6	12,064.4
	90	2,471	15,158.8	14,796.1
	100	2,471	17,972.1	17,527.8
Grapes	80	5,936	23,785.0	26,115.4
	90	5,936	27,973.4	30,378.7
	100	5,936	32,161.8	34,641.9
Total	80	28,400	51,393.9	92,926.2
	90	28,400	66,326.8	119,243.9
	100	28,400	81,259.8	147,637.6

Table 10.4.4.1 Flow of Project Benefit in Economic Terms

(Unit: million rials)

No.	Year		Benefit	Total
1	1382	2003	0	0
2	1383	2004	0	0
3	1384	2005	0	0
4	1385	2006	0	0
5	1386	2007	0	0
6	1387	2008	0	0
7	1388	2009	0	0
8	1389	2010	0	0
9	1390	2011	0	0
10	1391	2012	92,926.2	92,926.2
11	1392	2013	119,243.9	119,243.9
12	1393	2014	147,637.6	147,637.6
13	1394	2015	147,637.6	147,637.6
14	1395	2016	147,637.6	147,637.6
15	1396	2017	147,637.6	147,637.6
16	1397	2018	147,637.6	147,637.6
17	1398	2019	147,637.6	147,637.6
18	1399	2020	147,637.6	147,637.6
19	1400	2021	147,637.6	147,637.6
20	1401	2022	147,637.6	147,637.6
21	1402	2023	147,637.6	147,637.6
22	1403	2024	147,637.6	147,637.6
23	1404	2025	147,637.6	147,637.6
24	1405	2026	147,637.6	147,637.6
25	1406	2027	147,637.6	147,637.6
26	1407	2028	147,637.6	147,637.6
27	1408	2029	147,637.6	147,637.6
28	1409	2030	147,637.6	147,637.6
29	1410	2031	147,637.6	147,637.6
30	1411	2032	147,637.6	147,637.6
31	1412	2033	147,637.6	147,637.6
32	1413	2034	147,637.6	147,637.6
33	1414	2035	147,637.6	147,637.6
34	1415	2036	147,637.6	147,637.6
35	1416	2037	147,637.6	147,637.6
36	1417	2038	147,637.6	147,637.6
37	1418	2039	147,637.6	147,637.6
38	1419	2040	147,637.6	147,637.6
39	1420	2041	147,637.6	147,637.6
40	1421	2042	147,637.6	147,637.6
41	1422	2043	147,637.6	147,637.6
42	1423	2044	147,637.6	147,637.6
43	1424	2045	147,637.6	147,637.6
44	1425	2046	147,637.6	147,637.6
45	1426	2047	147,637.6	147,637.6
46	1427	2048	147,637.6	147,637.6
47	1428	2049	147,637.6	147,637.6
48	1429	2050	147,637.6	147,637.6
49	1430	2051	147,637.6	147,637.6
50	1431	2052	147,637.6	147,637.6
51	1432	2053	147,637.6	147,637.6
52	1433	2054	147,637.6	147,637.6
53	1434	2055	147,637.6	147,637.6
54	1435	2056	147,637.6	147,637.6
55	1436	2057	147,637.6	147,637.6
56	1437	2058	147,637.6	147,637.6
57	1438	2059	147,637.6	147,637.6
58	1439	2060	147,637.6	147,637.6
59	1440	2061	147,637.6	147,637.6

Table 10.4.4.2 Flow of Project Cost in Economic Terms

(Unit: million rials)

No.	Year		Project Cost	O & M Cost	Replacement Cost	Total
1	1382	2003	3,006.7	0	0	3,006.7
2	1383	2004	8,511.3	0	0	8,511.3
3	1384	2005	19,660.9	0	0	19,660.9
4	1385	2006	82,353.1	0	0	82,353.1
5	1386	2007	79,919.0	0	0	79,919.0
6	1387	2008	103,596.3	0	0	103,596.3
7	1388	2009	119,757.0	0	0	119,757.0
8	1389	2010	122,387.8	0	0	122,387.8
9	1390	2011	93,836.5	0	0	93,836.5
10	1391	2012	0	3,421.6	0	3,421.6
11	1392	2013	0	3,421.6	0	3,421.6
12	1393	2014	0	3,421.6	0	3,421.6
13	1394	2015	0	3,421.6	0	3,421.6
14	1395	2016	0	3,421.6	0	3,421.6
15	1396	2017	0	3,421.6	0	3,421.6
16	1397	2018	0	3,421.6	0	3,421.6
17	1398	2019	0	3,421.6	0	3,421.6
18	1399	2020	0	3,421.6	0	3,421.6
19	1400	2021	0	3,421.6	0	3,421.6
20	1401	2022	0	3,421.6	0	3,421.6
21	1402	2023	0	3,421.6	0	3,421.6
22	1403	2024	0	3,421.6	0	3,421.6
23	1404	2025	0	3,421.6	0	3,421.6
24	1405	2026	0	3,421.6	0	3,421.6
25	1406	2027	0	3,421.6	0	3,421.6
26	1407	2028	0	3,421.6	0	3,421.6
27	1408	2029	0	3,421.6	0	3,421.6
28	1409	2030	0	3,421.6	0	3,421.6
29	1410	2031	0	3,421.6	0	3,421.6
30	1411	2032	0	3,421.6	0	3,421.6
31	1412	2033	0	3,421.6	0	3,421.6
32	1413	2034	0	3,421.6	0	3,421.6
33	1414	2035	0	3,421.6	0	3,421.6
34	1415	2036	0	3,421.6	2,752.2	6,173.8
35	1416	2037	0	3,421.6	0	3,421.6
36	1417	2038	0	3,421.6	0	3,421.6
37	1418	2039	0	3,421.6	0	3,421.6
38	1419	2040	0	3,421.6	0	3,421.6
39	1420	2041	0	3,421.6	0	3,421.6
40	1421	2042	0	3,421.6	0	3,421.6
41	1422	2043	0	3,421.6	0	3,421.6
42	1423	2044	0	3,421.6	0	3,421.6
43	1424	2045	0	3,421.6	0	3,421.6
44	1425	2046	0	3,421.6	0	3,421.6
45	1426	2047	0	3,421.6	0	3,421.6
46	1427	2048	0	3,421.6	0	3,421.6
47	1428	2049	0	3,421.6	0	3,421.6
48	1429	2050	0	3,421.6	0	3,421.6
49	1430	2051	0	3,421.6	0	3,421.6
50	1431	2052	0	3,421.6	0	3,421.6
51	1432	2053	0	3,421.6	0	3,421.6
52	1433	2054	0	3,421.6	0	3,421.6
53	1434	2055	0	3,421.6	0	3,421.6
54	1435	2056	0	3,421.6	0	3,421.6
55	1436	2057	0	3,421.6	0	3,421.6
56	1437	2058	0	3,421.6	0	3,421.6
57	1438	2059	0	3,421.6	0	3,421.6
58	1439	2060	0	3,421.6	0	3,421.6
59	1440	2061	0	3,421.6	2,752.2	6,173.8

Table 10.4.4.3 Flow of Net Project Benefit in Economic Terms

(Unit: million rials)

No.	Year		Cost	Benefit	Net Benefit
1	1382	2003	3,006.7	0	-3,006.7
2	1383	2004	8,511.3	0	-8,511.3
3	1384	2005	19,660.9	0	-19,660.9
4	1385	2006	82,353.1	0	-82,353.1
5	1386	2007	79,919.0	0	-79,919.0
6	1387	2008	103,596.3	0	-103,596.3
7	1388	2009	119,757.0	0	-119,757.0
8	1389	2010	122,387.8	0	-122,387.8
9	1390	2011	93,836.5	0	-93,836.5
10	1391	2012	3,421.6	92,926.2	89,504.6
11	1392	2013	3,421.6	119,243.9	115,822.3
12	1393	2014	3,421.6	147,637.6	144,216.0
13	1394	2015	3,421.6	147,637.6	144,216.0
14	1395	2016	3,421.6	147,637.6	144,216.0
15	1396	2017	3,421.6	147,637.6	144,216.0
16	1397	2018	3,421.6	147,637.6	144,216.0
17	1398	2019	3,421.6	147,637.6	144,216.0
18	1399	2020	3,421.6	147,637.6	144,216.0
19	1400	2021	3,421.6	147,637.6	144,216.0
20	1401	2022	3,421.6	147,637.6	144,216.0
21	1402	2023	3,421.6	147,637.6	144,216.0
22	1403	2024	3,421.6	147,637.6	144,216.0
23	1404	2025	3,421.6	147,637.6	144,216.0
24	1405	2026	3,421.6	147,637.6	144,216.0
25	1406	2027	3,421.6	147,637.6	144,216.0
26	1407	2028	3,421.6	147,637.6	144,216.0
27	1408	2029	3,421.6	147,637.6	144,216.0
28	1409	2030	3,421.6	147,637.6	144,216.0
29	1410	2031	3,421.6	147,637.6	144,216.0
30	1411	2032	3,421.6	147,637.6	144,216.0
31	1412	2033	3,421.6	147,637.6	144,216.0
32	1413	2034	3,421.6	147,637.6	144,216.0
33	1414	2035	3,421.6	147,637.6	144,216.0
34	1415	2036	6,173.8	147,637.6	141,463.8
35	1416	2037	3,421.6	147,637.6	144,216.0
36	1417	2038	3,421.6	147,637.6	144,216.0
37	1418	2039	3,421.6	147,637.6	144,216.0
38	1419	2040	3,421.6	147,637.6	144,216.0
39	1420	2041	3,421.6	147,637.6	144,216.0
40	1421	2042	3,421.6	147,637.6	144,216.0
41	1422	2043	3,421.6	147,637.6	144,216.0
42	1423	2044	3,421.6	147,637.6	144,216.0
43	1424	2045	3,421.6	147,637.6	144,216.0
44	1425	2046	3,421.6	147,637.6	144,216.0
45	1426	2047	3,421.6	147,637.6	144,216.0
46	1427	2048	3,421.6	147,637.6	144,216.0
47	1428	2049	3,421.6	147,637.6	144,216.0
48	1429	2050	3,421.6	147,637.6	144,216.0
49	1430	2051	3,421.6	147,637.6	144,216.0
50	1431	2052	3,421.6	147,637.6	144,216.0
51	1432	2053	3,421.6	147,637.6	144,216.0
52	1433	2054	3,421.6	147,637.6	144,216.0
53	1434	2055	3,421.6	147,637.6	144,216.0
54	1435	2056	3,421.6	147,637.6	144,216.0
55	1436	2057	3,421.6	147,637.6	144,216.0
56	1437	2058	3,421.6	147,637.6	144,216.0
57	1438	2059	3,421.6	147,637.6	144,216.0
58	1439	2060	3,421.6	147,637.6	144,216.0
59	1440	2061	6,173.8	147,637.6	141,463.8

Table 10.4.4.4 Net Present Value and Benefit-Cost Ratio in Economic Terms

(Unit: million rials)

No.	Year		Cost	D.F.	Present Worth	Benefit	D.F.	Present Worth
1	1382	2003	3,006.7	0.8928571	2,684.6	0	0.8928571	0
2	1383	2004	8,511.3	0.7971939	6,785.2	0	0.7971939	0
3	1384	2005	19,660.9	0.7117802	13,994.2	0	0.7117802	0
4	1385	2006	82,353.1	0.6355181	52,336.9	0	0.6355181	0
5	1386	2007	79,919.0	0.5674269	45,348.2	0	0.5674269	0
6	1387	2008	103,596.3	0.5066311	52,485.1	0	0.5066311	0
7	1388	2009	119,757.0	0.4523492	54,172.0	0	0.4523492	0
8	1389	2010	122,387.8	0.4038832	49,430.4	0	0.4038832	0
9	1390	2011	93,836.5	0.36061	33,838.4	0	0.36061	0
10	1391	2012	3,421.6	0.3219732	1,101.7	92,926	0.3219732	29,920
11	1392	2013	3,421.6	0.2874761	983.6	119,244	0.2874761	34,280
12	1393	2014	3,421.6	0.2566751	878.2	147,638	0.2566751	37,895
13	1394	2015	3,421.6	0.2291742	784.1	147,638	0.2291742	33,835
14	1395	2016	3,421.6	0.2046198	700.1	147,638	0.2046198	30,210
15	1396	2017	3,421.6	0.1826963	625.1	147,638	0.1826963	26,973
16	1397	2018	3,421.6	0.1631217	558.1	147,638	0.1631217	24,083
17	1398	2019	3,421.6	0.1456443	498.3	147,638	0.1456443	21,503
18	1399	2020	3,421.6	0.1300396	444.9	147,638	0.1300396	19,199
19	1400	2021	3,421.6	0.1161068	397.3	147,638	0.1161068	17,142
20	1401	2022	3,421.6	0.1036668	354.7	147,638	0.1036668	15,305
21	1402	2023	3,421.6	0.0925596	316.7	147,638	0.0925596	13,665
22	1403	2024	3,421.6	0.0826425	282.8	147,638	0.0826425	12,201
23	1404	2025	3,421.6	0.073788	252.5	147,638	0.073788	10,894
24	1405	2026	3,421.6	0.0658821	225.4	147,638	0.0658821	9,727
25	1406	2027	3,421.6	0.0588233	201.3	147,638	0.0588233	8,685
26	1407	2028	3,421.6	0.0525208	179.7	147,638	0.0525208	7,754
27	1408	2029	3,421.6	0.0468936	160.5	147,638	0.0468936	6,923
28	1409	2030	3,421.6	0.0418693	143.3	147,638	0.0418693	6,181
29	1410	2031	3,421.6	0.0373833	127.9	147,638	0.0373833	5,519
30	1411	2032	3,421.6	0.0333779	114.2	147,638	0.0333779	4,928
31	1412	2033	3,421.6	0.0298017	102.0	147,638	0.0298017	4,400
32	1413	2034	3,421.6	0.0266087	91.0	147,638	0.0266087	3,928
33	1414	2035	3,421.6	0.0237577	81.3	147,638	0.0237577	3,508
34	1415	2036	6,173.8	0.0212123	131.0	147,638	0.0212123	3,132
35	1416	2037	3,421.6	0.0189395	64.8	147,638	0.0189395	2,796
36	1417	2038	3,421.6	0.0169103	57.9	147,638	0.0169103	2,497
37	1418	2039	3,421.6	0.0150985	51.7	147,638	0.0150985	2,229
38	1419	2040	3,421.6	0.0134808	46.1	147,638	0.0134808	1,990
39	1420	2041	3,421.6	0.0120364	41.2	147,638	0.0120364	1,777
40	1421	2042	3,421.6	0.0107468	36.8	147,638	0.0107468	1,587
41	1422	2043	3,421.6	0.0095954	32.8	147,638	0.0095954	1,417
42	1423	2044	3,421.6	0.0085673	29.3	147,638	0.0085673	1,265
43	1424	2045	3,421.6	0.0076494	26.2	147,638	0.0076494	1,129
44	1425	2046	3,421.6	0.0068298	23.4	147,638	0.0068298	1,008
45	1426	2047	3,421.6	0.006098	20.9	147,638	0.006098	900
46	1427	2048	3,421.6	0.0054447	18.6	147,638	0.0054447	804
47	1428	2049	3,421.6	0.0048613	16.6	147,638	0.0048613	718
48	1429	2050	3,421.6	0.0043405	14.9	147,638	0.0043405	641
49	1430	2051	3,421.6	0.0038754	13.3	147,638	0.0038754	572
50	1431	2052	3,421.6	0.0034602	11.8	147,638	0.0034602	511
51	1432	2053	3,421.6	0.0030894	10.6	147,638	0.0030894	456
52	1433	2054	3,421.6	0.0027584	9.4	147,638	0.0027584	407
53	1434	2055	3,421.6	0.0024629	8.4	147,638	0.0024629	364
54	1435	2056	3,421.6	0.002199	7.5	147,638	0.002199	325
55	1436	2057	3,421.6	0.0019634	6.7	147,638	0.0019634	290
56	1437	2058	3,421.6	0.001753	6.0	147,638	0.001753	259
57	1438	2059	3,421.6	0.0015652	5.4	147,638	0.0015652	231
58	1439	2060	3,421.6	0.0013975	4.8	147,638	0.0013975	206
59	1440	2061	6,173.8	0.0012478	7.7	147,638	0.0012478	184
Total					321,375.6			416,165.8

Net Present Value at 12%: 94,790.2

Benefit-Cost Ratio at 12%: 1.3

Table 10.4.4.5 Economic Internal Rate of Return

(Unit: million rials)

No.	Year		Incremental Benefit	D.F. (14%)	Present Worth	D.F. (15%)	Present Worth
1	1382	2003	-3,006.7	0.87719298	-2,637.5	0.86956522	-2,614.5
2	1383	2004	-8,511.3	0.76946753	-6,549.2	0.75614367	-6,435.8
3	1384	2005	-19,660.9	0.67497152	-13,270.5	0.65751623	-12,927.4
4	1385	2006	-82,353.1	0.59208028	-48,759.6	0.57175325	-47,085.7
5	1386	2007	-79,919.0	0.51936866	-41,507.4	0.49717674	-39,733.9
6	1387	2008	-103,596.3	0.45558655	-47,197.1	0.4323276	-44,787.5
7	1388	2009	-119,757.0	0.39963732	-47,859.4	0.37593704	-45,021.1
8	1389	2010	-122,387.8	0.35055905	-42,904.2	0.32690177	-40,008.8
9	1390	2011	-93,836.5	0.30750794	-28,855.5	0.28426241	-26,674.2
10	1391	2012	89,504.6	0.26974381	24,143.3	0.24718471	22,124.2
11	1392	2013	115,822.3	0.23661738	27,405.6	0.21494322	24,895.2
12	1393	2014	144,216.0	0.2075591	29,933.3	0.18690715	26,955.0
13	1394	2015	144,216.0	0.18206939	26,257.3	0.16252796	23,439.1
14	1395	2016	144,216.0	0.15970999	23,032.7	0.14132866	20,381.9
15	1396	2017	144,216.0	0.14009648	20,204.2	0.12289449	17,723.4
16	1397	2018	144,216.0	0.12289165	17,722.9	0.10686477	15,411.6
17	1398	2019	144,216.0	0.10779969	15,546.4	0.09292589	13,401.4
18	1399	2020	144,216.0	0.09456113	13,637.2	0.08080512	11,653.4
19	1400	2021	144,216.0	0.08294836	11,962.5	0.07026532	10,133.4
20	1401	2022	144,216.0	0.07276172	10,493.4	0.06110028	8,811.6
21	1402	2023	144,216.0	0.06382607	9,204.7	0.05313068	7,662.3
22	1403	2024	144,216.0	0.05598778	8,074.3	0.04620059	6,662.9
23	1404	2025	144,216.0	0.04911209	7,082.7	0.04017443	5,793.8
24	1405	2026	144,216.0	0.04308078	6,212.9	0.03493428	5,038.1
25	1406	2027	144,216.0	0.03779016	5,449.9	0.03037764	4,380.9
26	1407	2028	144,216.0	0.03314926	4,780.7	0.02641534	3,809.5
27	1408	2029	144,216.0	0.0290783	4,193.6	0.02296986	3,312.6
28	1409	2030	144,216.0	0.02550728	3,678.6	0.01997379	2,880.5
29	1410	2031	144,216.0	0.02237481	3,226.8	0.01736851	2,504.8
30	1411	2032	144,216.0	0.01962702	2,830.5	0.01510305	2,178.1
31	1412	2033	144,216.0	0.01721669	2,482.9	0.01313309	1,894.0
32	1413	2034	144,216.0	0.01510236	2,178.0	0.01142008	1,647.0
33	1414	2035	144,216.0	0.01324768	1,910.5	0.0099305	1,432.1
34	1415	2036	141,463.8	0.01162077	1,643.9	0.00863522	1,221.6
35	1416	2037	144,216.0	0.01019366	1,470.1	0.00750889	1,082.9
36	1417	2038	144,216.0	0.00894181	1,289.6	0.00652947	941.7
37	1418	2039	144,216.0	0.00784369	1,131.2	0.0056778	818.8
38	1419	2040	144,216.0	0.00688043	992.3	0.00493722	712.0
39	1420	2041	144,216.0	0.00603547	870.4	0.00429323	619.2
40	1421	2042	144,216.0	0.00529427	763.5	0.00373324	538.4
41	1422	2043	144,216.0	0.0046441	669.8	0.0032463	468.2
42	1423	2044	144,216.0	0.00407377	587.5	0.00282287	407.1
43	1424	2045	144,216.0	0.00357348	515.4	0.00245467	354.0
44	1425	2046	144,216.0	0.00313463	452.1	0.00213449	307.8
45	1426	2047	144,216.0	0.00274968	396.5	0.00185608	267.7
46	1427	2048	144,216.0	0.002412	347.8	0.00161398	232.8
47	1428	2049	144,216.0	0.00211579	305.1	0.00140346	202.4
48	1429	2050	144,216.0	0.00185595	267.7	0.0012204	176.0
49	1430	2051	144,216.0	0.00162803	234.8	0.00106122	153.0
50	1431	2052	144,216.0	0.0014281	206.0	0.0009228	133.1
51	1432	2053	144,216.0	0.00125272	180.7	0.00080244	115.7
52	1433	2054	144,216.0	0.00109887	158.5	0.00069777	100.6
53	1434	2055	144,216.0	0.00096392	139.0	0.00060676	87.5
54	1435	2056	144,216.0	0.00084555	121.9	0.00052761	76.1
55	1436	2057	144,216.0	0.00074171	107.0	0.0004588	66.2
56	1437	2058	144,216.0	0.00065062	93.8	0.00039895	57.5
57	1438	2059	144,216.0	0.00057072	82.3	0.00034692	50.0
58	1439	2060	144,216.0	0.00050063	72.2	0.00030167	43.5
59	1440	2061	141,463.8	0.00043915	62.1	0.00026232	37.1
Total					15,203.8		-11,928.2

Economic Internal Rate of Return (ERR): 14.5%

Table 10.4.4.6 Sensitivity Analysis in Economic Terms

No.	Year		Base Case	Cost +10% ①	Benefit -10% ②	Combination ①+②
1	1382	2003	-3,006.7	-3,307.4	-3,006.7	-3,307.4
2	1383	2004	-8,511.3	-9,362.4	-8,511.3	-9,362.4
3	1384	2005	-19,660.9	-21,627.0	-19,660.9	-21,627.0
4	1385	2006	-82,353.1	-90,588.4	-82,353.1	-90,588.4
5	1386	2007	-79,919.0	-87,910.9	-79,919.0	-87,910.9
6	1387	2008	-103,596.3	-113,955.9	-103,596.3	-113,955.9
7	1388	2009	-119,757.0	-131,732.7	-119,757.0	-131,732.7
8	1389	2010	-122,387.8	-134,626.6	-122,387.8	-134,626.6
9	1390	2011	-93,836.5	-103,220.2	-93,836.5	-103,220.2
10	1391	2012	89,504.6	89,162.4	80,212.0	79,869.8
11	1392	2013	115,822.3	115,480.1	103,897.9	103,555.7
12	1393	2014	144,216.0	143,873.8	129,452.2	129,110.0
13	1394	2015	144,216.0	143,873.8	129,452.2	129,110.0
14	1395	2016	144,216.0	143,873.8	129,452.2	129,110.0
15	1396	2017	144,216.0	143,873.8	129,452.2	129,110.0
16	1397	2018	144,216.0	143,873.8	129,452.2	129,110.0
17	1398	2019	144,216.0	143,873.8	129,452.2	129,110.0
18	1399	2020	144,216.0	143,873.8	129,452.2	129,110.0
19	1400	2021	144,216.0	143,873.8	129,452.2	129,110.0
20	1401	2022	144,216.0	143,873.8	129,452.2	129,110.0
21	1402	2023	144,216.0	143,873.8	129,452.2	129,110.0
22	1403	2024	144,216.0	143,873.8	129,452.2	129,110.0
23	1404	2025	144,216.0	143,873.8	129,452.2	129,110.0
24	1405	2026	144,216.0	143,873.8	129,452.2	129,110.0
25	1406	2027	144,216.0	143,873.8	129,452.2	129,110.0
26	1407	2028	144,216.0	143,873.8	129,452.2	129,110.0
27	1408	2029	144,216.0	143,873.8	129,452.2	129,110.0
28	1409	2030	144,216.0	143,873.8	129,452.2	129,110.0
29	1410	2031	144,216.0	143,873.8	129,452.2	129,110.0
30	1411	2032	144,216.0	143,873.8	129,452.2	129,110.0
31	1412	2033	144,216.0	143,873.8	129,452.2	129,110.0
32	1413	2034	144,216.0	143,873.8	129,452.2	129,110.0
33	1414	2035	144,216.0	143,873.8	129,452.2	129,110.0
34	1415	2036	141,463.8	140,846.4	126,700.0	126,082.6
35	1416	2037	144,216.0	143,873.8	129,452.2	129,110.0
36	1417	2038	144,216.0	143,873.8	129,452.2	129,110.0
37	1418	2039	144,216.0	143,873.8	129,452.2	129,110.0
38	1419	2040	144,216.0	143,873.8	129,452.2	129,110.0
39	1420	2041	144,216.0	143,873.8	129,452.2	129,110.0
40	1421	2042	144,216.0	143,873.8	129,452.2	129,110.0
41	1422	2043	144,216.0	143,873.8	129,452.2	129,110.0
42	1423	2044	144,216.0	143,873.8	129,452.2	129,110.0
43	1424	2045	144,216.0	143,873.8	129,452.2	129,110.0
44	1425	2046	144,216.0	143,873.8	129,452.2	129,110.0
45	1426	2047	144,216.0	143,873.8	129,452.2	129,110.0
46	1427	2048	144,216.0	143,873.8	129,452.2	129,110.0
47	1428	2049	144,216.0	143,873.8	129,452.2	129,110.0
48	1429	2050	144,216.0	143,873.8	129,452.2	129,110.0
49	1430	2051	144,216.0	143,873.8	129,452.2	129,110.0
50	1431	2052	144,216.0	143,873.8	129,452.2	129,110.0
51	1432	2053	144,216.0	143,873.8	129,452.2	129,110.0
52	1433	2054	144,216.0	143,873.8	129,452.2	129,110.0
53	1434	2055	144,216.0	143,873.8	129,452.2	129,110.0
54	1435	2056	144,216.0	143,873.8	129,452.2	129,110.0
55	1436	2057	144,216.0	143,873.8	129,452.2	129,110.0
56	1437	2058	144,216.0	143,873.8	129,452.2	129,110.0
57	1438	2059	144,216.0	143,873.8	129,452.2	129,110.0
58	1439	2060	144,216.0	143,873.8	129,452.2	129,110.0
59	1440	2061	141,463.8	140,846.4	126,700.0	126,082.6
ERR=			14.5%	13.6%	13.5%	12.5%

Table 10.4.4.7 Project Impact on Income Distribution

Item	Unit	W/O ①	FW/O ②	FW ③	Increment ③-①	Increment ③-②
Average Cropped Area	ha					
(1) Qazvin		1.1	1.1	1.5	0.4	0.4
(2) Buin Zahra		4.3	4.3	5.8	1.5	1.5
(3) Takestan		1.3	1.3	1.8	0.5	0.5
(4) Average		1.6	1.6	2.2	0.6	0.6
Average Family Size	no.	4.9	4.9	4.9	4.9	4.9
Crop Revenue	Rials/year					
(1) Qazvin		5,861,825	6,208,315	8,646,393	2,784,568	2,438,078
(2) Buin Zahra		23,060,976	24,400,806	33,438,387	10,377,411	9,037,581
(3) Takestan		6,988,496	7,396,716	10,441,470	3,452,974	3,044,754
(4) Average		8,582,170	9,086,720	12,666,129	4,083,959	3,579,409
Crop Produciton Cost	Rials/year					
(1) Qazvin		2,543,791	2,577,091	4,027,833	1,484,042	1,450,742
(2) Buin Zahra		10,049,595	10,180,019	15,595,821	5,546,226	5,415,802
(3) Takestan		3,050,065	3,089,755	4,869,446	1,819,381	1,779,691
(4) Average		3,737,627	3,786,137	5,897,147	2,159,520	2,111,010
Net Farm Income	Rials/year					
(1) Qazvin		3,318,034	3,631,224	4,618,560	1,300,526	987,336
(2) Buin Zahra		13,011,381	14,220,787	17,842,566	4,831,185	3,621,779
(3) Takestan		3,938,431	4,306,961	5,572,024	1,633,593	1,265,063
(4) Average		4,844,543	5,300,583	6,768,982	1,924,439	1,468,399
Per Capita Net Farm Income	Rials/year					
(1) Qazvin		677,150	741,066	942,563	265,413	201,497
(2) Buin Zahra		2,655,384	2,902,201	3,641,340	985,956	739,139
(3) Takestan		803,761	878,972	1,137,148	333,386	258,176
(4) Average		988,682	1,081,752	1,381,425	392,743	299,673

Table 10.4.4.8 Additional Propurement of Agricultural Inputs

Crop	Incremental Cropped Area (ha)	Seeds		Chemical Fertilizers								Agro-chemicals	
				Urea		Ammonium Phosphate		Ammonium Nitrate		Total			
		Volume (ton)	Price (million rials)	Volume (ton)	Price (milliion rials)	Volume (kg)	Price (million rials)	Volume (kg)	Price (million rials)	Volume (ton)	Price (million rials)	Volume (ton)	Price (million rials)
Wheat	10,479	2,515.0	2,112.6	1,488.0	1,041.6	1,519.5	820.5	125.7	74.4	3,133.2	1,936.5	7.2	60.8
Barley	6,021	734.6	580.4	879.1	615.3	698.4	376.9	0	0	1,577.5	992.2	3.0	18.7
Maize	625	15.0	120.0	184.4	129.1	120.6	65.1	0	0	305.0	194.2	1.6	112.9
Cotton	28	2.4	18.8	5.7	4.0	5.0	2.7	0.1	0	10.8	6.7	0.1	2.1
Sugar Beets	1,022	17.4	39.1	319.9	223.9	242.2	130.8	19.4	11.4	581.5	366.1	13.4	245.6
Oilseeds	426	6.8	22.2	124.8	87.4	70.3	38.0	1.7	1.0	196.8	126.4	0.5	12.7
Pulses	511	59.3	237.1	58.3	40.8	71.0	38.4	0	0	129.3	79.2	0.4	4.1
Potatoes	398	1,172.5	1,348.4	143.7	100.6	87.2	47.1	0	0	230.8	147.7	0.4	9.2
Onions	85	0.8	104.4	13.5	9.5	21.0	11.3	0	0	34.5	20.8	0.2	11.5
Water Melons	398	2.3	35.2	132.5	92.8	118.2	63.8	8.4	4.9	259.1	161.5	1.1	24.0
Frage Crops	2,471	108.7	1,087.2	1,087.2	761.1	0	0	0	0	1,087.2	761.1	-	410.4
Grapes	5,936	-	1,636.0	0	0	0	0	0	0	0	0	-	249.3
Total	28,400	4,634.8	7,341.4	4,437.1	3,106.1	2,953.4	1,594.6	155.3	91.7	7,545.7	4,792.4	27.9	1,161.3

Table 10.4.4.9 Generation of Seasonal Employment Opportunities for Farming

Crop	Incremental Cropped Area (ha)	Labour Input (man-day)
Wheat	10,479	115,269
Barley	6,021	66,231
Maize	625	5,625
Cotton	28	840
Sugar Beets	1022	7,154
Oilseeds	426	7,242
Pulses	511	23,506
Potatoes	398	13,930
Onions	85	1,870
Water Melons	398	11,940
Frage Crops	2,471	98,840
Grapes	5,936	148,400
Total	28,400	500,847