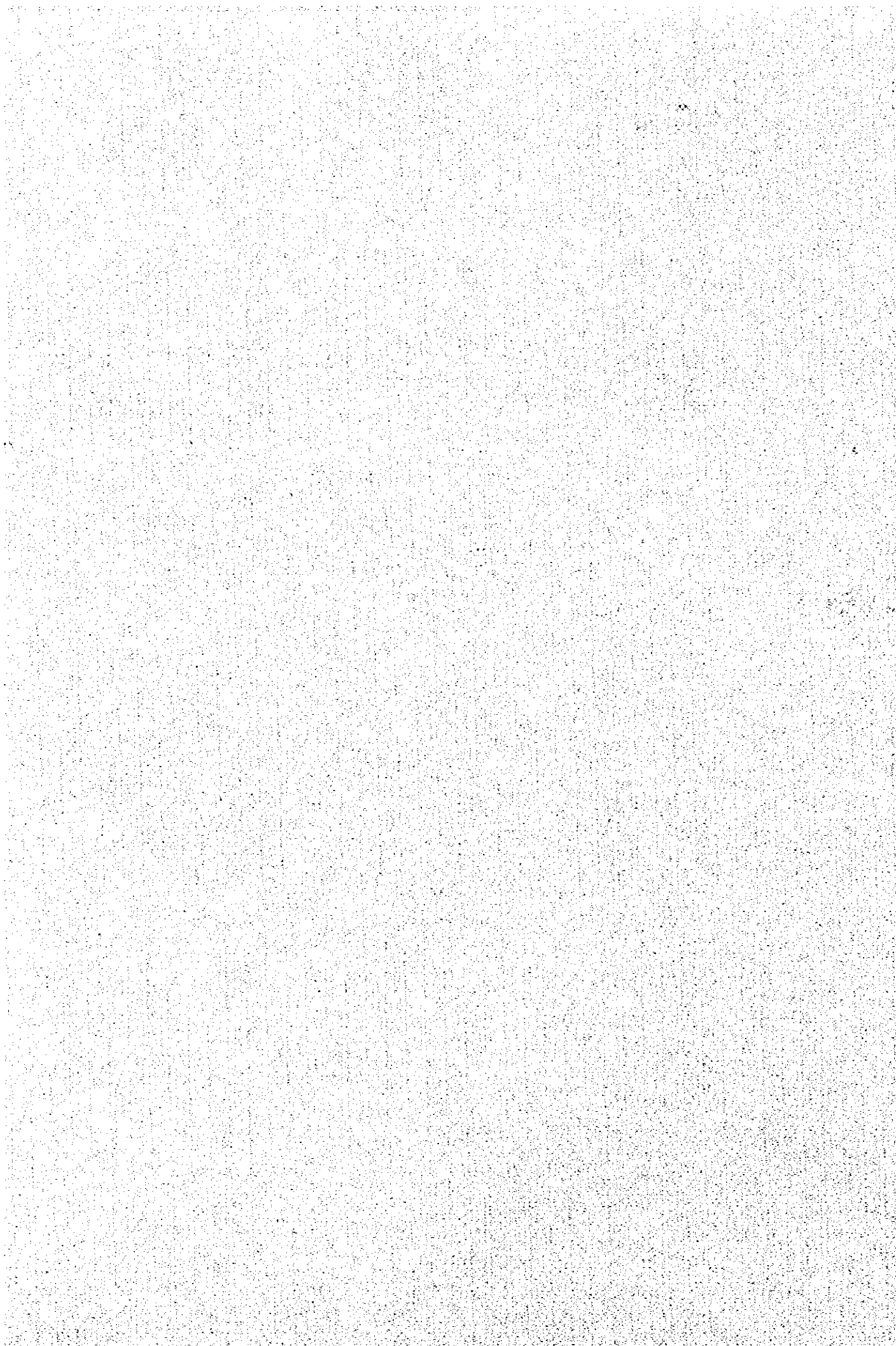


附表



JICA調査団及びトルコ政府関係者リスト

JICA STUDY TEAM		TURKISH COUNTERPARTS	
Name	Position	Name	Position
Yasuhiko KUNIIHIRO	Team Leader	Mr. Hikmet ÖZGÖBEK	Regional Director
		Dr. Ahmet ALPASLAN	Deputy Director
		Dr. Ilker ATIŞ	Planning Director
Toshihiro TOMITA	Co-Team Leader	Ditto	
Shuichi MATSUSHIMA	Irrigation and Water Management Expert	Msc. Ali Fuat KÜÇÜKKARAKURT	Chief Engineer
Kunihiko OHINO	Agronomist / Agro-Processing / Farmers' Organization Expert	Mr. Ahmet TOMAR	Agronomist / Agro-economist
Naoto MORIOKA	Agro-Economist / Project Economist	Mr. Ahmet TOMAR	Agronomist / Agro-economist
Seyfettin AYDIN	Hydrologist / Meteorologist	Ms. Işık ERDEM	Meteorologist
Makoto SUGA	Geo-Hydrologist	Ms. Firuzan REGAY	Geological Engineer
		Dr. Hasan BAYKAL	Geological Engineer
Hirohisa ISOGAI	Dam Planner	Ms. İnci GÜN	Civil Engineer
Tetsunari GEJO	Land Use Expert and Environmentalist	Msc. Ali Fuat KÜÇÜKKARAKURT Mr. Hasan MİRZA	Chief Engineer Soil Specialist
Masahiro OMIYA	Design Engineer / Cost Estimator	Mr. Refik SAFA	Project Department Director
		Mr. Esat SARAÇOĞLU	Civil Engineer

投資計画に係る政府予算

Category of Budget		1990		1991		1992		1993		1994		1995	
		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
A. General Directorate of State Hydraulic Works (GSI)													
(US\$ million equivalent)		1,051	-	-	-	1,105	-	1,222	-	822	-	526	-
Agriculture		1,350	49	-	-	3,630	48	7,050	53	13,290	55	12,857	57
Energy		1,190	43	-	-	3,249	43	5,200	39	9,137	37	7,058	31
Other Services (social)		200	7	-	-	704	9	1,155	9	1,953	8	2,628	12
Total		2,740	100	-	-	7,583	100	13,405	100	24,380	100	22,543	100
(US\$ million equivalent)		1,051	-	-	-	1,105	-	1,222	-	822	-	526	-
B. General Directorate of Rural Services (GDRS)													
Category of Budget		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agriculture		435	38	-	-	1,350	34	2,071	30	3,950	30	2,200	28
Transport-Communication		519	45	-	-	1,763	45	3,400	50	6,600	50	3,963	50
Housing		0	0	-	-	5	0	10	0	15	0	40	1
Other Services (social)		197	17	-	-	810	21	1,343	20	2,584	20	1,721	22
Total		1,151	100	-	-	3,928	100	6,824	100	13,149	100	7,924	100
(US\$ million equivalent)		442	-	-	-	572	-	622	-	443	-	185	-
C. Ministry of Agriculture and Rural Affairs (MARA)													
Category of Budget		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agriculture		190	95	-	-	420	88	640	89	1,100	89	1,595	87
Manufacture		5	3	-	-	16	3	27	4	40	3	73	4
Housing		1	0	-	-	15	3	15	2	25	2	25	1
Other Services (Economy)		1	1	-	-	9	2	6	1	10	1	30	2
Other Services (social)		3	1	-	-	20	4	31	4	62	5	112	6
Total		200	100	-	-	480	100	719	100	1,237	100	1,835	100
(US\$ million equivalent)		77	-	-	-	70	-	66	-	42	-	43	-

流域内における主な観測所の気象データ

Station: Odemis													
Items	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
TEMPERATURE													
Maximum values	°C	22.6	25.4	30.4	44.0	45.0	45.0	46.6	45.0	40.8	37.5	31.4	23.0
Monthly mean	°C	6.9	7.9	10.6	14.8	20.7	24.6	26.1	27.6	22.5	16.7	12.1	8.7
Minimum values	°C	-10.0	-9.1	-5.7	-1.4	1.7	5.6	10.2	8.0	4.9	-2.0	-7.0	-9.0
RELATIVE HUMIDITY	%	73.0	72.0	70.0	67.0	60.0	53.0	50.0	52.0	58.0	66.0	73.0	76.0
EVAPORATION	mm	21.1	31.7	60.8	105.4	160.5	214.4	243.9	233.5	188.0	127.7	71.7	35.9
PRECIPITATION													
Mean monthly	mm	107.0	86.9	69.9	49.3	35.0	17.2	6.1	2.7	14.3	39.3	79.4	130.2
WIND													
Direction		SSW	N	WSW	NW	NW	NE	NNW	ENE	NNE	N	NNW	WSW
Maximum velocity	m/s	25.9	22.5	24.0	20.4	17.1	26.7	21.3	22.3	16.0	16.8	17.8	21.1
26.7													

Station: Bayındır													
Items	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
TEMPERATURE													
Maximum values	°C	23.5	24.6	31.5	34.0	38.5	40.6	43.4	41.0	39.2	37.2	28.0	24.0
Monthly mean	°C	8.5	9.3	11.9	15.5	20.7	23.3	27.5	27.0	23.8	18.9	13.8	9.9
Minimum values	°C	-8.5	-5.9	-3.4	1.0	6.5	11.0	13.5	13.5	8.5	0.5	-2.7	-5.5
RELATIVE HUMIDITY	%	-	-	-	-	-	-	-	-	-	-	-	-
EVAPORATION	mm	31.4	41.1	70.1	114.6	169.5	224.1	250.1	244.5	202.9	146.6	88.9	46.4
PRECIPITATION	mm	121.6	94.5	71.2	53.2	35.7	15.1	3.0	1.1	14.4	43.3	70.3	140.5
Mean monthly	mm												
WIND													
Direction		-	-	-	-	-	-	-	-	-	-	-	-
Maximum velocity	m/s	-	-	-	-	-	-	-	-	-	-	-	-

Station: Tire													
Items	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
TEMPERATURE													
Maximum values	°C	23.2	24.0	31.3	34.2	39.8	42.3	44.3	42.7	40.3	37.0	29.3	23.6
Monthly mean	°C	7.4	8.4	11.0	15.1	20.0	24.9	27.3	26.6	22.7	17.4	12.0	8.8
Minimum values	°C	-8.0	-6.8	-5.4	0.8	4.2	8.8	11.0	10.6	7.2	0.0	-3.8	-5.6
RELATIVE HUMIDITY	%	68.0	65.0	65.0	61.0	57.0	49.0	47.0	48.0	53.0	60.0	66.0	70.0
EVAPORATION	mm	26.9	36.3	65.0	109.5	167.3	216.3	249.2	237.8	192.3	137.6	75.4	40.8
PRECIPITATION	mm	142.5	110.2	82.9	58.4	36.0	13.2	3.9	2.7	13.7	41.2	91.3	174.5
Mean monthly	mm												
WIND													
Direction		SSW	SW	SE	SSW	WSW	WNW	NNE	WSW	ENE	ENE	NW	S
Maximum velocity	m/s	6.6	6.9	8.6	6.0	4.8	5.0	5.1	4.4	5.8	5.8	13.5	7.4
13.5													

表-2.1.2

クチュク・メンデレス川の水文特性

Name of Dam	Catchment Area (km ²)	Monthly Mean Discharge (MCM)												Floods (m ³ /sec)				Sediment Load (m ³ /km ² /y)	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Ave.	1/10	1/150	1/100		PMF
Uladi	66.0	0.52	0.93	2.57	3.47	2.63	2.41	1.45	0.90	0.51	0.37	0.35	0.38	1.37	39.8	71.1	86.3	392.0	150
Ergenli	98.0	0.78	1.38	3.82	5.15	3.91	3.57	2.15	1.34	0.75	0.55	0.51	0.56	2.04	52.8	97.7	119.7	633.0	200
Burgaz	91.2	0.73	1.29	3.56	4.80	3.64	3.33	2.00	1.25	0.70	0.51	0.48	0.52	1.90	53.3	90.2	107.5	552.0	200
Aktaş	58.7	0.18	0.50	2.23	3.29	2.28	2.05	1.17	0.57	0.23	0.12	0.09	0.10	1.07	51.4	91.5	111.0	370.0	200
Ödemiş	64.6	0.49	0.91	3.70	5.40	4.14	4.04	2.49	1.33	0.75	0.55	0.46	0.46	2.06	38.8	75.6	94.0	452.0	200
Birgi	12.6	0.11	0.21	0.85	1.24	0.95	0.93	0.57	0.30	0.17	0.13	0.11	0.11	0.47	15.3	28.2	34.4	130.0	100
Bucak	18.0	0.16	0.30	1.23	1.79	1.37	1.34	0.82	0.44	0.25	0.18	0.15	0.15	0.68	13.0	25.3	31.5	144.0	150
Beydağ	444.0	1.64	2.97	9.24	14.71	14.07	14.58	9.79	5.53	1.65	0.70	0.48	0.76	6.34	258.3	406.0	468.0	1,543.0	300
Pınarççi	51.3	0.22	0.61	2.17	4.29	3.84	3.90	2.26	1.13	0.38	0.12	0.10	0.09	1.59	36.1	62.6	75.0	366.0	150
Sarılar	30.9	0.13	0.37	1.30	2.57	2.30	2.34	1.36	0.68	0.23	0.07	0.06	0.06	0.96	21.8	38.0	46.0	247.0	100
Yenişehir	15.0	0.06	0.18	0.63	1.25	1.12	1.14	0.66	0.33	0.11	0.03	0.03	0.03	0.46	13.5	23.0	28.7	152.0	150
Eğirdere	21.8	0.09	0.26	0.92	1.82	1.63	1.66	0.96	0.48	0.16	0.05	0.04	0.04	0.68	16.5	29.8	36.0	193.0	200
Akyurt	24.2	0.08	0.22	1.06	1.45	1.19	1.16	0.56	0.23	0.08	0.03	0.02	0.02	0.51	20.0	31.9	37.5	136.0	100

灌溉適性分級

Physiography	Suit. Class	Area (ha)	Remarks
Upland			
US	VI	144,900	Steep slope, Shallow Soil Depth, High rock content
UG	VI	13,400	Steep slope, Shallow Soil Depth, High rock content
UL	VI	47,500	Steep slope, Shallow Soil Depth, High rock content
Marl Hills			
Hhb	VI	4,300	Hilly, shallow soil depth
HrA	V	1,000	Rolling, High carbonate content
Colluvial slopes			
CsL	V	1,800	Sloping
Pediment			
EsS	V	1,200	Sloping
EmW	V	1,000	Gently sloping, High carbonate content
Terraces			
TIB	III	1,500	Rolling
TbB	I	500	
Old dissected alluvial fans			
DsS	V	7,500	Sloping, Rock content
DsG	V	3,900	Sloping, Rock content
DsM	V	3,800	Sloping, Rock content
Young dissected alluvial fans			
PoS	VI	3,900	Sloping, High rock content, Coarse texture
PsG	VI	900	Sloping, High rock content, Coarse texture
PsL	VI	1,800	Sloping, High rock content, Coarse texture
PmS	III	26,200	Coarse texture, low water holding capacity
PmG	III	3,900	Coarse texture, low water holding capacity
PmL	III	2,800	Coarse texture, low water holding capacity
PIS	II	20,600	Gently sloping
PIG	III	1,900	Coarse texture, low water holding capacity
PIL	II	700	Gently sloping
PIM	II	5,500	Gently sloping
PbM	I	3,600	
PbH	III	600	Flood
Basins			
Bin	II	1,400	Imperfect drain
BfV	III	5,700	Imperfect drain, Low fertility
Bwl	III	1,600	Imperfect drain, Low fertility
Young alluvial plains			
AyC	III	6,100	Coarse texture, low water holding capacity
AyB	I	24,000	
AyA	III	1,400	Imperfect drain, Low fertility
Streambeds			
R	VI	1,900	-
Built-up Area			
	-	5,000	-
Total		351,800	

表-2.1.4

流域内の郡別平均栽培面積 (1990-1994)

Crop	Beydag		Kiraz		Ödemiş		Tire		Bayındır		Torbalı		Selçuk		Total	
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)
Field crops																
Wheat	240	4.3	518	5.3	1,426	3.7	5,840	16.1	3,550	11.5	10,260	31.3	970	6.7	22,804	13.5
Barley	315	5.6	430	4.4	1,086	2.8	2,661	7.3	630	2.0	2,596	7.9	91	0.6	7,809	4.6
Oat	23	0.4	0	0.0	0	0.0	100	0.3	98	0.3	654	2.0	0	0.0	874	0.5
Rye	21	0.4	310	3.1	16	0.0	0	0.0	22	0.1	0	0.0	0	0.0	369	0.2
Cotton	260	4.7	414	4.2	5,832	15.0	8,226	22.7	5,305	17.2	8,274	25.2	2,789	19.1	31,100	18.4
Tobacco	533	9.5	866	8.8	2,840	7.3	2,688	7.4	336	1.1	1,354	4.1	66	0.4	8,683	5.1
Maize	62	1.1	222	2.3	132	0.3	356	1.0	264	0.9	366	1.1	73	0.5	1,475	0.9
Legumes	82	1.5	214	2.2	80	0.2	0	0.0	0	0.0	32	0.1	0	0.0	407	0.2
Sesami	7	0.1	32	0.3	337	0.9	533	1.5	61	0.2	184	0.6	188	1.3	1,342	0.8
Potatoes	169	3.0	200	2.0	8,594	22.1	274	0.8	215	0.7	0	0.0	3	0.0	9,455	5.6
Onions	35	0.6	7	0.1	113	0.3	58	0.2	0	0.0	23	0.1	5	0.0	241	0.1
Vetches	36	0.6	33	0.3	30	0.1	274	0.8	228	0.7	426	1.3	72	0.5	1,099	0.7
Alfalfa	175	3.1	322	3.3	1,239	3.2	694	1.9	483	1.6	93	0.3	12	0.1	3,018	1.8
Others	158	2.8	10	0.1	30	0.1	153	0.4	87	0.3	418	1.3	9	0.1	865	0.5
Subtotal	2,115	37.9	3,577	36.3	21,755	56.0	21,856	60.4	11,280	36.5	24,679	75.3	4,277	29.3	89,540	53.1
Vegetables																
Tomatoes	33	0.6	34	0.3	231	0.6	412	1.1	139	0.4	209	0.6	73	0.5	1,131	0.7
Pepper	53	0.9	27	0.3	438	1.1	198	0.5	218	0.7	175	0.5	19	0.1	1,127	0.7
Egg plant	26	0.5	16	0.2	192	0.5	129	0.4	123	0.4	78	0.2	15	0.1	578	0.3
Watermelons	264	4.7	40	0.4	2,774	7.1	3,489	9.6	1,220	3.9	1,520	4.6	344	2.4	9,650	5.7
Melon	8	0.1	0	0.0	17	0.0	116	0.3	25	0.1	154	0.5	135	0.9	456	0.3
Cucumber	36	0.6	131	1.3	1,388	3.6	59	0.2	615	2.0	186	0.6	48	0.3	2,462	1.5
Squash	3	0.1	2	0.0	12	0.0	42	0.1	30	0.1	35	0.1	25	0.2	150	0.1
Okra	32	0.6	7	0.1	378	1.0	37	0.1	7	0.0	13	0.0	3	0.0	477	0.3
Cabbages	34	0.6	10	0.1	170	0.4	42	0.1	71	0.2	159	0.5	2	0.0	489	0.3
Leeks	23	0.4	20	0.2	136	0.4	68	0.2	85	0.3	95	0.3	4	0.0	431	0.3
Cauliflowers	9	0.2	8	0.1	120	0.3	44	0.1	62	0.2	98	0.3	11	0.1	352	0.2
Spinach	15	0.3	13	0.1	69	0.2	39	0.1	41	0.1	172	0.5	92	0.6	441	0.3
Lettuce	12	0.2	1	0.0	89	0.2	34	0.1	66	0.2	134	0.4	21	0.1	356	0.2
Celery	1	0.0	2	0.0	7	0.0	7	0.0	14	0.0	17	0.1	0	0.0	48	0.0
Green onions	22	0.4	13	0.1	22	0.1	153	0.4	1	0.0	35	0.1	7	0.0	252	0.1
Green legumes	102	1.8	36	0.4	186	0.5	457	1.3	267	0.9	48	0.1	3	0.0	1,100	0.7
Carrots	5	0.1	0	0.0	3	0.0	13	0.0	0	0.0	0	0.0	0	0.0	21	0.0
Radish	6	0.1	0	0.0	19	0.0	10	0.0	2	0.0	17	0.1	4	0.0	58	0.0
Others	4	0.1	0	0.0	34	0.1	0	0.0	26	0.1	9	0.0	0	0.0	72	0.0
Subtotal	687	12.3	359	3.6	6,284	16.2	5,350	14.8	3,013	9.7	3,153	9.6	807	5.5	19,653	11.6
Tree crops (trees)																
Olive	740	13.3	1,340	13.6	4,431	11.4	5,000	13.8	14,610	47.3	3,309	10.1	7,662	52.5	37,093	22.0
Figs	809	14.5	1,038	10.5	2,732	7.0	2,485	6.9	61	0.2	130	0.4	445	3.0	7,701	4.6
Citrus	0	0.0	0	0.0	15	0.0	17	0.0	46	0.1	20	0.1	114	0.8	212	0.1
Apple	33	0.6	1,445	14.6	109	0.3	82	0.2	18	0.1	0	0.0	15	0.1	1,701	1.0
Pears	8	0.1	256	2.6	87	0.2	171	0.5	75	0.2	77	0.2	24	0.2	698	0.4
Quince	5	0.1	131	1.3	48	0.1	17	0.0	19	0.1	29	0.1	14	0.1	263	0.2
Peaches	41	0.7	63	0.6	174	0.4	484	1.3	71	0.2	416	1.3	792	5.4	2,041	1.2
Cherries	47	0.8	226	2.3	296	0.8	36	0.1	86	0.3	0	0.0	12	0.1	703	0.4
Plums	63	1.1	71	0.7	233	0.6	43	0.1	17	0.1	21	0.1	17	0.1	464	0.3
Pomegranates	19	0.3	42	0.4	37	0.1	20	0.1	17	0.1	20	0.1	3	0.0	158	0.1
Chestnuts	630	11.3	354	3.6	671	1.7	126	0.3	40	0.1	0	0.0	0	0.0	1,820	1.1
Other nuts	96	1.7	784	7.9	214	0.6	383	1.1	51	0.2	33	0.1	52	0.4	1,611	1.0
Grapes (ha)	80	1.4	99	1.0	465	1.2	510	1.4	1,065	3.4	1,347	4.1	360	2.5	3,927	2.3
Others	22	0.4	112	1.1	72	0.2	44	0.1	4	0.0	34	0.1	9	0.1	297	0.2
Subtotal	2,592	46.4	5,961	60.4	9,583	24.7	9,417	26.0	16,179	51.3	5,438	16.6	9,518	65.3	58,689	34.8
Populus	250	4.5	111	1.1	2,000	5.2	64	0.2	1,700	5.5	50	0.2	0	0.0	4,175	2.5
Fallow land	0	0.0	0	0.0	100	0.3	0	0.0	0	0.0	0	0.0	0	0.0	100	0.1
Others	45	0.8	0	0.0	856	2.2	629	1.7	110	0.4	0	0.0	0	0.0	1,640	1.0
Total	5,690	101.9	10,008	101.5	40,578	104.5	37,316	103.1	32,281	101.4	33,320	101.6	14,603	100.1	173,797	103.0
Farm land	5,584	100.0	9,863	100.0	38,825	100.0	36,210	100.0	30,919	100.0	32,790	100.0	14,586	100.0	168,777	100.0

Source: "Agricultural Structure and Production" from 1990 to 1994, Provincial Office of MARA, Izmir.

流域内の年別作物生産量

Crop	(tons)					
	(1990)	(1991)	(1992)	(1993)	(1994)	(Average)
Common field crops						
Wheat	62,184	81,605	61,599	120,151	101,655	86,639
Barley	19,537	21,766	20,023	25,818	20,941	21,617
Oat	2,573	2,054	1,643	2,289	2,845	2,281
Rye	755	640	786	795	842	764
Cotton	80,600	78,274	84,209	83,102	86,525	82,542
Tobacco	9,530	4,802	8,425	8,397	4,208	7,072
Maize	13,847	9,330	8,158	13,189	9,433	10,791
Legumes	554	483	661	1,420	1,496	923
Sesami	1,682	2,468	1,142	414	379	1,247
Potatoes	209,495	230,795	249,072	262,420	288,650	248,086
Onions	2,833	2,006	2,704	5,319	6,392	3,851
Vetches	2,133	1,812	4,678	5,111	3,409	3,429
Clover	23,249	32,500	32,268	68,269	46,230	40,503
Vegetables						
Tomatoes	29,760	32,095	24,597	38,465	46,690	34,321
Pepper	22,204	23,479	21,836	21,503	25,192	22,843
Egg plant	14,500	15,520	12,930	17,010	18,330	15,658
Watermelons	280,916	293,242	305,434	296,650	317,735	298,795
Melon	7,475	7,445	7,900	8,281	10,146	8,249
Cucumber	27,632	42,715	39,968	27,146	37,797	35,052
Squash	2,985	2,980	2,900	3,020	3,936	3,164
Okra	1,540	1,686	1,505	1,818	2,075	1,725
Cabbages	20,210	20,102	17,422	18,605	21,392	19,546
Leeks	11,590	11,890	11,105	12,615	14,180	12,276
Cauliflowers	6,593	6,713	7,378	8,000	10,240	7,785
Spinach	4,022	3,954	3,944	3,820	4,737	4,095
Leaf Lettuce	6,360	7,050	7,090	7,590	8,265	7,271
Celery	441	491	365	856	1,558	742
Garlic green	2,138	2,083	2,168	2,680	6,120	3,038
Beans	6,478	7,375	7,256	8,041	12,182	8,266
Carrots	370	390	272	260	516	362
Red radish	530	404	405	580	1,429	670
Others	905	1,730	646	1,023	97	880
Tree crops						
Olive	108,714	12,715	69,089	21,454	117,603	65,915
Figs	37,116	44,879	34,917	43,816	46,129	41,371
Citrus	2,106	2,850	3,090	2,773	2,931	2,750
Apple	9,800	9,840	8,865	8,907	6,989	8,880
Pears	2,757	2,529	2,360	2,714	2,672	2,606
Quince	1,127	1,050	861	1,001	1,007	1,009
Peaches	12,163	12,097	12,133	15,418	16,727	13,708
Cherries	1,566	1,757	2,257	2,089	2,503	2,034
Plums	2,220	2,398	2,237	2,347	2,499	2,340
Pomegranates	937	913	843	832	863	878
Chestnuts	7,505	7,629	8,390	8,363	7,728	7,923
Other nuts	2,432	2,551	2,394	2,478	2,599	2,491
Grape	38,743	38,851	42,145	32,132	32,134	36,801
Others	1,108	978	991	1,280	1,476	1,167

Source: "Agricultural Structure and Production" from 1990 to 1994, Provincial Office of MARA, Izmir.

表-2.1.6

流域内の化学肥料および農薬の流通量

(a) Chemical Fertilizer		(tons)			
Items	1992	1993	1994	Average	
Ammonium Sulfate	8,076	9,166	6,380	7,874	
Ammonium Nitrate	9,492	10,732	11,285	10,503	
Urea	6,711	9,051	6,191	7,318	
Diammonium Phosphate	1,088	1,432	1,320	1,280	
Potassium Sulfate (50%K)	485	1,022	573	693	
Triple super phosphate	433	540	652	542	
Compound 15-15-15	10,018	10,908	11,828	10,918	
Compound 20-20-0	5,612	3,981	3,697	4,430	
Ammonium Nitrate	1,330	75	63	489	
Potassium Nitrate	0	18	1	6	
Calcium Ammonium Nitrate	49	856	249	385	
Compound 25-5-10	0	594	186	260	
Compound 25-5-0	374	23	22	140	
Compound 26-13-0	0	0	0	0	
Compound 15-45-0	22	0	1	8	
Compound 11-52-0	0	0	5	2	
Total	45,682	50,391	44,447	44,847	
Converted to N21% fertilizer	50,734	56,977	47,885	51,865	
P17%	19,466	19,708	19,965	19,713	
K50%	3,416	4,426	4,159	4,000	
Total	73,772	81,111	71,979	75,621	
Kg/ha					
N21% fertilizer	301	338	284	307	
P17%	115	117	118	117	
K50%	20	26	25	24	

Source : Provincial Office of MARA, Izmir

(b) Agro-chemicals		(kg.lit)					
Agro-Chemicals	1993		1994		Average		kg.lit/ha
	No. of brand	Quantities sold	No. of brand	Quantities sold	No. of brand	Quantities sold	
Insecticides	100	477,113	107	420,571	104	448,842	1.2
Fungicides	63	425,502	93	487,493	78	456,498	1.2
Herbicides	31	120,913	35	324,050	33	222,482	0.6
Acaricides	19	41,861	15	53,214	17	47,538	0.1
Nematocides	6	4,400	8	12,410	7	8,405	0.0
Fumigants	5	67,152	15	101,057	10	84,105	0.2
Plant growth regulators	11	22,706	17	30,828	14	26,767	0.1
Others	7	194,069	13	191,124	10	192,597	0.5
Total	242	1,353,716	303	1,620,747	273	1,487,232	3.9

Source: Provincial Office of MARA, Izmir

流域内の家畜数および畜産物生産量 (1990-1994)

(a) Number	(unit: heads)							
	Livestock	Beydağ	Kiraz	Ödemiş	Tire	Bayındır	Torbali	Seçuk
Cattle	6671.4	17720.8	32838	22325	17640.6	9808.2	2764.6	109788.6
Sheep	7631	36687	56652	25296.2	17803	22556.4	5784.6	172410.2
Goats	1549.4	2069.8	6000.2	4870	5070	12347.6	4156.2	36063.2
Horse	302	581	1250.8	822	1149	1040.2	683.4	5828.4
Mule	8.2	97.8	38.2	93.4	34.6	21.2	44	337.4
Donkey	1889.4	1646	1390.4	940.6	737.4	2230.2	411.2	9245.2
Hen	10370	42400	93740	60000	135840	427560	5960	775870
Other poultry	442.2	0	4884	2880	0	5240	356	13802.2

Source: Agricultural Structure and Production, Provincial Office of MARA, Izmir

(b) Production	(unit: tons)							
	Livestock products	Beydağ	Kiraz	Ödemiş	Tire	Bayındır	Torbali	Seçuk
Milk	8767.4	30409.6	40476	15839.4	27083.2	25271.8	1736.4	149583.8
Meats	89.2	671.8	2307.2	649.2	511.2	731.6	300.6	5260.8
Fats	39.6	170.8	159.4	46.2	208.8	10.6	16.2	651.6
Cheese	161.4	2544	4364	722	781.6	1458	73	10104
Wool	10	47.22	83.3	38.36	9.7	39.02	14.64	242.24
Honey	5.9	15.3	77.66	181	125.24	105.2	19.18	529.48
Eggs (1,000eggs)	2111	3768	6817.6	2460	5648.8	104000	497	125302.4

Source: Agricultural Structure and Production, Provincial Office of MARA, Izmir

表-2.1.8

流域内の D S I 監督下にある灌漑施設の現況

Irrigation scheme	Town	Established year	Well			Spring		Stream		Remarks
			Number of wells	Discharge (l/sec)	Irrigated Area(ha)	Discharge (l/sec)	Irrigated Area(ha)	Discharge (l/sec)	Irrigated Area(ha)	
1 Ankkad	Bayındır	1958-72	4	160.0	120.0					
2 Buruncuk	Bayındır	(1995)	4	120.0	142.4					under construction
3 Carlı	Bayındır	(1995)	4	100.0	100.0					under construction
4 Çiftiçeşme	Bayındır	1981	4	150.0	150.0					
5 Çiğli I. Kısım	Bayındır	1981	5	190.0	200.0					
6 Çiğli II. Kısım	Bayındır	(1995)	4	80.0	100.0					under construction
7 Hifli I. Kısım	Bayındır	1991-92	5	100.0	100.0					
8 Firanlı	Bayındır	1987	9	320.0	280.0					
9 Hasköy I. Kısım	Bayındır	1981	4	280.0	267.1					
10 Kızılcaaydı I. Ks.	Bayındır	1976	7	210.0	110.0					
11 Turan I. Kısım	Bayındır	1986	4	210.0	210.0					
12 Yakacık I. Kısım	Bayındır	1985	4	210.0	200.0					
13 Yakapınar	Bayındır	1980-82	6	210.0	175.0					
14 Yusufu I. Kısım	Bayındır	1982	4	200.0	100.0					
15 Zeytinova	Bayındır	1993-95	5	120.0	100.0					
16 Ankkasi	Bayındır	1958						200	250	
17 Ergetri	Bayındır	1977						115.0	116.0	
18 Merkez	Bayındır	1958						20.0	25.0	
19 Yakapınar-Carlı	Bayındır	1972						100.0	125.0	
20 Büyükavacak	Ödemiş	1977	5	90.0	165.0					
21 Demircili	Ödemiş	1968-69	4	160.0	200.0					
22 Kaymakçı	Ödemiş	1978	1	35.0	61.0					
23 Konaklı	Ödemiş	(1995)	6	200.0	200.0					under construction
24 Köpükavacak I. Ks.	Ödemiş	1970	7	135.0	160.5					
25 Köpükavacak II Ks.	Ödemiş	(1995)	2	40.0	50.0					under construction
26 Yarıkköy	Ödemiş	1981	6	180.0	150.0					
27 Yıldıran I. Kısım	Ödemiş	1983	12	360.0	350.0					
28 Camlık	Ödemiş	1984				40	80			
29 Camyayla	Ödemiş	1985				65.0	80.0			
30 Kemeri	Ödemiş	1975-84				75.0	112.0			
31 Bademliye	Ödemiş	1984						35.0	40.0	
32 Bıcakeci Halkköyü	Ödemiş	1989-91						100.0	100.0	
33 Çayırköy	Ödemiş	1989-91						30.0	30.0	
34 Comaklar	Ödemiş	1978-79						30.0	40.0	
35 Comaklar (2)	Ödemiş	1980						30.0	30.0	
36 Fındık	Ödemiş	1975						85.0	104.0	
37 Horzum	Ödemiş	1983						70.0	75.0	
38 Kerpici	Ödemiş	1984						52.0	60.0	
39 Kerpici (2)	Ödemiş	1988						12.0	11.0	
40 Kocakören	Ödemiş	1989-91						40.0	54.7	
41 Pirişçi	Ödemiş	1974						40.0	50.0	
42 Uçkonaklar	Ödemiş	1981						50.0	105.0	
43 Yağalar	Ödemiş	1974						30.0	20.0	
44 Yağalar (2)	Ödemiş	1975						40.0	70.0	
45 Yılanlı	Ödemiş	1991-92						60.0	13.0	
46 Oçkən	Tire	1985	6	160.0	160.0					
47 Kalbat I	Tire	1972-74	6	305.0	392.0					
48 Kalbat II	Tire	1985	4	305.0	398.0					
49 Yarıçiftlik	Tire	1981	3	150.0	100.0					
50 Akcaşhır	Tire	1967				60.0	60.0			
51 Ayaklılı	Tire	1975				65.0	120.0			
52 Büyükkale	Tire	1966				40.0	50.0			
53 Köpükale	Tire	1966				35.0	40.0			
54 Karsak	Tire	1983				200.0	350.0			
55 Çayırli	Tire	1976						20.0	40.0	
56 Dereci	Tire	1977						100.0	70.0	
57 Eğirdere	Tire	1980-81						25.0	27.0	
58 Eğirdere (2)	Tire	1990-91						55.0	20.0	
59 Kırtepe	Tire	1981						130.0	150.0	
60 Osmançik	Tire	1990-91						40.0	42.0	
61 Aslanlar	Tortalı	(1995)	7	200.0	244.0	250.0	250.0			under construction
62 Atalan I. Kısım	Tortalı	1984	6	230.0	200.0					
63 Atalan II. Kısım	Tortalı	1990-91	2	80.0	40.0					
64 Çaybaşı	Tortalı	(1995)	6	140.0	170.0					under construction
65 Merkez I. Kısım	Tortalı	1984	5	230.0	209.0					
66 Merkez II. Kısım	Tortalı	1982-83	8		350.0					
67 Orbey	Tortalı	1981-82		200.0	220.0					
68 Pamukyazi	Tortalı	1985	4	200.0	210.0					
69 Pancar	Tortalı	(1995)	11	420.0	433.0					under construction
70 Şehider	Tortalı	1990-91	6	125.0	100.0					
71 Tulum	Tortalı	(1995)	5	100.0	160.0					under construction
72 Yeniköy	Tortalı	(1995)	2	125.0	125.0					under construction
73 Ayraçlılar	Tortalı	1963-64				350.0	450.0			
74 Pancar	Tortalı	1967-68				125.0	200.0			
75 Dağlızilca	Tortalı	1980						100.0	100.0	
76 Orbey	Tortalı	1970-71						500.0	500.0	
77 Arkaçlılar	Kiraz	(1995)	3	90.0	102.5					under construction
78 Çatak	Kiraz							10.0	80.0	
79 Çenider	Kiraz	(1995)						65.0	71.6	under construction
80 Dokuzlar	Kiraz	1981						15.0	24.2	
81 Ovacık	Kiraz	(1995)						18.0	70.0	under construction
82 Uzunköy	Kiraz	1975-76						40.0	50.0	
83 Merkez I. kısım	Selçuk	1977-78	4	240.0	203.0					
84 Merkez II. kısım	Selçuk		4	200.0	185.0					
Total			208	7,350	7,633	1,269	1,720	1,977	2,258	

ダム計画地点における水質分析結果

Item	Unit	Sampling Point of Dam Site					
		Beydağ	Aktaş	Burgaz	Fırganlı	Uladi	Yemişçur
Sampling Date		9.3.1995	9.3.1995	9.3.1995	9.3.1995	9.3.1995	9.3.1995
pH	-	7.2	7.5	7.3	7.4	7.6	7.5
EC	mS/cm	0.23	0.20	0.23	0.21	0.16	0.24
Cation							
Na+	mg/l	24.61	23.90	12.65	3.91	9.66	12.19
K+	mg/l	0.78	0.78	0.39	0.39	0.39	0.39
Ca++	mg/l	17.20	15.60	27.20	27.00	15.80	18.40
Mg++	mg/l	9.50	8.70	4.80	6.40	7.20	13.80
Total	mg/l	52.09	48.98	45.04	37.70	33.05	44.78
SAR	-	1.67	1.70	0.83	0.25	0.72	0.74
Anion							
CO ₃ -	mg/l	0.00	0.00	0.00	0.00	0.00	0.00
HCO ₃ -	mg/l	64.50	78.00	60.50	58.50	64.00	84.00
Cl-	mg/l	34.70	13.40	18.40	19.80	9.90	22.60
SO ₄ -	mg/l	22.90	29.60	28.60	16.20	16.20	28.20
Total	mg/l	122.10	121.00	107.50	94.50	90.10	134.80
Organic Carbon	mg/l	1.49	2.76	4.72	5.01	2.60	1.30
Boron	mg/l	0.00	0.00	0.00	0.00	0.00	0.00

Source : DSI II

表-2.1.10

クチエク・メンデレス川流域における既存水質データ

Item	Unit	Sampling Point																
		Feb.1994		Apr.1994		Jan.1992		Apr.1994		Jan.1992		Apr.1994		Feb.1994		Apr.1994		May.1994
Sampling Date		Beydağ	Beydağ	Beydağ	Beydağ	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk	Selçuk
pH	-	8.5	8.2	7.0	8.2	9.2	8.3	8.3	7.5	8.0	7.5	8.0	7.3	8.2	8.2	7.7	7.7	7.7
EC	mS/cm	0.25	0.24	0.26	0.24	0.58	0.47	0.47	1.08	0.31	1.08	0.31	0.79	0.43	0.43	0.76	0.76	0.76
Cation																		
Na+	mg/l	13.57	17.02	37.72	17.02	51.52	45.31	45.31	127.88	29.21	127.88	29.21	92.69	31.05	31.05	94.76	94.76	94.76
K+	mg/l	0.39	0.39	0.78	0.39	1.56	1.56	1.56	3.90	0.78	3.90	0.78	3.12	0.78	0.78	3.12	3.12	3.12
Ca++	mg/l	35.40	32.60	80.00	32.60	24.40	26.60	26.60	62.40	26.00	62.40	26.00	41.00	52.60	52.60	58.40	58.40	58.40
Mg++	mg/l	4.00	7.00	2.67	7.00	19.90	17.00	17.00	18.70	10.50	18.70	10.50	21.50	8.80	8.80	6.60	6.60	6.60
Total	mg/l	53.36	57.01	121.17	57.01	97.38	90.47	90.47	212.88	66.49	212.88	66.49	158.31	93.23	93.23	162.88	162.88	162.88
SAR	-	0.82	1.00	1.60	1.00	2.65	2.39	2.39	5.16	1.73	5.16	1.73	4.13	1.48	1.48	4.43	4.43	4.43
Anion																		
CO3--	mg/l	0.00	0.00	0.00	0.00	52.00	20.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCO3-	mg/l	68.50	90.50	157.50	90.50	64.00	105.00	105.00	321.50	117.50	321.50	117.50	244.00	139.00	139.00	239.50	239.50	239.50
Cl-	mg/l	21.60	32.20	18.40	32.20	76.90	47.50	47.50	104.50	16.60	104.50	16.60	60.90	50.60	50.60	63.40	63.40	63.40
SO4--	mg/l	34.80	11.90	40.60	11.90	31.20	43.40	43.40	45.20	30.90	45.20	30.90	64.10	25.40	25.40	57.20	57.20	57.20
Total	mg/l	124.90	134.60	216.50	134.60	224.10	215.90	215.90	471.20	165.00	471.20	165.00	369.00	215.00	215.00	360.10	360.10	360.10
BOD	mg/l	2.40	2.80	2.20	2.80	3.00	-	-	15.60	1.00	15.60	1.00	20.70	13.40	13.40	7.70	7.70	7.70
Total dissolved matter	mg/l	136	45	265	45	298	200	200	300	300	300	300	500	105	105	123	123	123
Nitrogen as ammonia	mg/l	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.12	0.00	0.12	0.00	0.03	0.00	0.00	0.00	0.00	0.00
Nitrogen as nitrite	mg/l	0.00	0.00	0.00	0.00	0.042	0.000	0.000	0.035	0.050	0.035	0.050	0.000	0.000	0.000	0.000	0.000	0.000
Nitrogen as nitrate	mg/l	1.01	0.00	0.00	0.00	1.58	0.00	0.00	0.00	2.05	0.00	2.05	0.62	2.58	2.58	0.90	0.90	0.90
Total phosphorous	mg/l	0.05	0.04	0.06	0.04	0.06	0.00	0.00	0.12	0.10	0.12	0.10	0.11	0.17	0.17	0.26	0.26	0.26
Dissolved oxygen	mg/l	10.50	7.90	10.30	7.90	5.30	-	-	3.00	6.70	3.00	6.70	6.30	3.08	3.08	1.09	1.09	1.09
Boron	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	0.34	2.07	0.34	0.59	0.00	0.00	0.00	0.00	0.00

Source : DSI II

表-2.1.11

観測井戸における水質

Well No.	District	Village	Date of Sampling	pH	EC (μS/cm)	Cations (mg/dl)				Anions (mg/dl)				Total (mg/dl)	SAR	Category of Water	R.S.C.	Hardness P.P.T.	Mineralog.	Ammonium	Oxygen mg/l
						Na	K	Ca	Mg	CO ₃	HCO ₃	Cl	SO ₄								
1	10350	KORAKU	10/19/54	7.3	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	21.00	0	0	0	1.00
2	10351	KORAKU	10/19/54	7.3	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	19.00	0	0	0	0.90
3	4024	ODORAKI	10/19/54	6.7	67	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	27.00	0	0	0	0.90
4	2046		10/19/54	7.6	61	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	27.00	0	0	0	0.90
5	10352		10/19/54	7.4	29	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	16.00	0	0	0	0.90
6	10353		10/19/54	7.7	39	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	13.00	0	0	0	0.90
7	10354		10/19/54	6.9	49	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	22.00	0	0	0	0.90
8	10355		10/19/54	7.1	39	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	13.00	0	0	0	0.90
9	10356		10/19/54	7.0	37	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	13.00	0	0	0	0.90
10	10357		10/19/54	6.9	36	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	13.00	0	0	0	0.90
11	10358		10/19/54	7.5	45	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	11.00	0	0	0	0.90
12	10359		10/19/54	7.8	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	10.00	0	0	0	0.90
13	10360		10/19/54	7.7	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	10.00	0	0	0	0.90
14	10361		10/19/54	7.9	49	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	21.00	0	0	0	0.90
15	10362		10/19/54	7.2	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	11.00	0	0	0	0.90
16	10363		10/19/54	7.3	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	11.00	0	0	0	0.90
17	10364		10/19/54	7.3	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	11.00	0	0	0	0.90
18	10365		10/19/54	7.4	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	17.00	0	0	0	0.90
19	10366		10/19/54	7.4	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	15.00	0	0	0	0.90
20	10367		10/19/54	7.7	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	10.00	0	0	0	0.90
21	10368		10/19/54	7.7	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	10.00	0	0	0	0.90
22	10369		10/19/54	6.8	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	10.00	0	0	0	0.90
23	10370		10/19/54	7.6	60	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	21.00	0	0	0	0.90
24	10371		10/19/54	7.0	38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	17.00	0	0	0	0.90
25	10372		10/19/54	7.2	37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	17.00	0	0	0	0.90
26	10373		10/19/54	7.5	49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	20.00	0	0	0	0.90
27	10374		10/19/54	7.6	37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	16.00	0	0	0	0.90
28	10375		10/19/54	7.1	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	16.00	0	0	0	0.90
29	10376		10/19/54	7.3	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	15.00	0	0	0	0.90
30	10377		10/19/54	7.5	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	15.00	0	0	0	0.90
31	10378		10/19/54	7.6	41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	17.00	0	0	0	0.90
32	10379		10/19/54	7.3	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	16.00	0	0	0	0.90
33	10380		10/19/54	7.4	48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	17.00	0	0	0	0.90
34	10381		10/19/54	7.5	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	16.00	0	0	0	0.90
35	10382		10/19/54	7.2	63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	27.00	0	0	0	0.90
36	10383		10/19/54	7.1	44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	21.00	0	0	0	0.90
37	10384		10/19/54	7.2	47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	20.00	0	0	0	0.90
38	10385		10/19/54	7.3	40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
39	10386		10/19/54	7.4	40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
40	10387		10/19/54	7.5	40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
41	10388		10/19/54	7.4	40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
42	10389		10/19/54	7.5	41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
43	10390		10/19/54	7.5	41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
44	10391		10/19/54	7.4	41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
45	10392		10/19/54	7.5	41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90
46	10393		10/19/54	7.4	41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C5S1	18.00	0	0	0	0.90

表-2.1.12

イズミール県内における固有植物種および絶滅の危機のある動物種

(a) Endemic Species of Plants

- *Alopecurum davisi*
- *Asperula daphneolia*
- *Astragalus papasianus*
- *Centaurea zeybeckii*
- *Prunus cocomilia* var. *puberula*
- *Scrophularia scopolii* var. *smymaea*
- *Verbascum smymaeum*
- *Campanula teucroides*
- *Vincetoxicum tmoicum*
- *Cirsium tmoicum*
- *Galium tmoilium*

(b) Endangered or Vulnerable Species of Animals

Mammals	<p>Endangered</p> <p><i>Hyaena hyaena</i></p> <p>Vulnerable</p> <p><i>Myotis myotis macroscalicus</i></p> <p><i>Myotis c. capaccinii</i></p> <p><i>Lutra lutra</i></p>
Birds	<p>Endangered</p> <p><i>Pelecanus crispus</i></p> <p><i>Haliaeetus albicilla</i></p> <p><i>Hieraetus fasciatus</i></p> <p><i>Ketupa zeylonensis</i></p> <p>Vulnerable</p> <p><i>Accipiter brevipes</i></p> <p><i>Halcyon smymensis</i></p>
Fish	<p>Endangered</p> <p><i>Acipenser guldenstadti</i></p> <p><i>Acipenser stellatus</i></p> <p><i>Acipenser sturio</i></p> <p>Vulnerable</p> <p><i>Salmo trutta macostigmata</i></p>

各ダム開発計画の検討

Name of Dam	Dam Embankment Volume (m ³)	Net Reservoir Capacity		Construction Cost		Engineering Remarks	Judgement
		Total (m ³)	per m ³ of D.E.V. (m ³)	Total (TL billion)	per Im ³ of N.R.C. (TL)		
Uladi	5,700,000	41,700,000	7.32	1,654.00	39,664	The slope stability of right bank side, just upstream of the dam site, and hydrological properties of the arete at the right abutment should be investigated.	Economically justifiable
Beydağ	9,000,000	241,300,000	26.81	3,288.30	13,627	The cut-off treatment and workability of very thick alluvial deposit should be studied.	Economically justifiable
Ergenli	6,850,000	61,780,000	9.02	20,884.00	33,733	The treatment of the hot spring located at the dam site should be studied.	Economically justifiable
Aktaş	1,600,000	16,720,000	10.45	521.90	31,214	Bearing strength and permeability of the sediments distributed in the left bank side should be checked.	Economically justifiable
Burgaz	7,020,000	68,900,000	9.81	2,176.20	31,585		Economically justifiable
Bucak	5,600,000	9,200,000	1.64	1,451.40	157,761	The construction of the cut-off will be difficult because of fan deposit. Furthermore, there will occur a plenty of sedimentation from the erosion and transportation of fan deposit.	Economically not justifiable
Akyurt	1,380,000	8,480,000	6.14	1,039.70	122,606	A detailed investigation will be required to check the existence of cavities in lime stone. In addition, hydrological properties of the arete of right abutment should be investigated.	Economically not justifiable
Sarılar	17,800,000	30,000,000	1.69	4,592.70	155,090	The existence of hard rock basement at river bed should be confirmed.	Economically not justifiable
Pringci	3,440,000	5,250,000	1.52	891.70	170,497		Economically not justifiable

Note: D.E.V ; Dam embankment volume

表-2.2.2 (1)

現況、事業を実施しない場合及び事業を実施する場合の作物生産量 (ペーダー地区)

Crops	Present Condition			"Future without Project" Condition			"Future with Project" Condition			Incremental Production	
	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	(1)* (tons)	(2)** (tons)
Cereals	970	2.8	2,720	1,230	2.8	3,440	770	5.5	4,240	1,520	800
Cotton	4,260	2.5	10,650	3,570	2.5	8,930	4,620	3.5	16,170	5,520	7,240
Tobacco	1,110	0.8	890	1,410	0.8	1,130	-	-	-	-890	-1,130
Potatoes	2,850	28.0	79,800	2,390	28.0	66,920	3,080	33.0	101,640	21,840	34,720
Second Potatoes	1,410	20.0	28,200	850	20.0	17,000	1,540	28.0	43,120	14,920	26,120
Other field crops	320	4.8	1,540	410	4.8	1,970	-	-	-	-1,540	-1,970
Fodders	540	12.0	6,480	690	12.0	8,280	770	18.0	13,860	7,380	5,580
Watermelon	1,740	30.0	52,200	1,050	30.0	31,500	1,540	35.0	53,900	1,700	22,400
Summer vegetables	1,550	32.0	49,600	940	32.0	30,080	3,080	45.0	138,600	89,000	108,520
Second vegetables	560	25.0	14,000	340	25.0	8,500	3,080	27.0	83,160	69,160	74,660
Green Legumes	-	-	-	-	-	-	1,540	15.0	23,100	23,100	23,100
Olives	370	1.8	670	470	1.8	850	-	-	-	-670	-850
Figs	420	5.4	2,270	530	5.4	2,860	-	-	-	-2,270	-2,860
Other Fruits	320	11.8	3,780	190	11.8	2,240	1,540	15.0	23,100	19,320	20,860
Poplar	1,000	-	-	1,000	-	-	-	-	-	-	-
Total	17,420			15,070			21,560				

Remarks: (1)* : Difference between production under the present condition and "future with project" condition.
 (2)**: Difference between production under the "future without project" condition and "future with project" condition.

現況、事業を実施しない場合及び事業を実施する場合の作物生産量 (アクタシユ地区)

Crops	Present Condition			"Future without Project" Condition			"Future with Project" Condition			Incremental Production	
	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	(1)* (tons)	(2)** (tons)
Cereals	470	2.8	1,320	520	2.8	1,460	195	5.5	1,070	-250	-390
Cotton	380	2.5	950	320	2.5	800	390	3.5	1,370	420	570
Tobacco	130	0.8	100	150	0.8	120	0	-	-	-100	-120
Potatoes	50	28.0	1,400	40	28.0	1,120	195	33.0	6,440	5,040	5,320
Second Potatoes	100	20.0	2,000	60	20.0	1,200	195	28.0	5,460	3,460	4,260
Other field crops	0	4.8	0	0	4.8	0	0	-	-	0	0
Fodders	0	12.0	0	0	12.0	0	65	18.0	1,170	1,170	1,170
Watermelon	160	30.0	4,800	100	30.0	3,000	195	35.0	6,830	2,030	3,830
Summer vegetables	70	32.0	2,240	40	32.0	1,280	130	45.0	5,850	3,610	4,570
Second vegetables	70	25.0	1,750	40	25.0	1,000	195	27.0	5,270	3,520	4,270
Green Legumes	0	-	-	0	-	-	130	15.0	1,950	1,950	1,950
Olives	40	1.8	70	50	1.8	90	0	-	-	-70	-90
Figs	0	5.4	0	0	5.4	0	0	-	-	0	0
Other Fruits	0	11.8	0	0	11.8	0	130	15.0	1,950	1,950	1,950
Poplar	0	-	-	0	-	-	-	-	-	-	-
Total	1,470	-	-	1,320	-	-	1,820	-	-	-	-

Remarks: (1)* : Difference between production under the present condition and "future with project" condition.

(2)**: Difference between production under the "future without project" condition and "future with project" condition.

表-2.2.2 (3)

現況、事業を実施しない場合及び事業を実施する場合の作物生産量（ブルガス地区）

Crops	Present Condition			"Future without Project" Condition			"Future with Project" Condition			Incremental Production	
	Cropped area (ha)	Unit yield (ton/ha)	Pro-duction (tons)	Cropped area (ha)	Unit yield (ton/ha)	Pro-duction (tons)	Cropped area (ha)	Unit yield (ton/ha)	Pro-duction (tons)	(1)* (tons)	(2)** (tons)
Cereals	990	2.8	2,770	1,100	2.8	3,080	730	5.5	4,020	1,250	940
Cotton	1,460	2.5	3,650	1,220	2.5	3,050	1,230	3.5	4,310	660	1,260
Tobacco	100	0.8	80	110	0.8	90	0	-	-	-80	-90
Potatoes	50	28.0	1,400	30	28.0	840	250	33.0	8,250	6,850	7,410
Second Potatoes	0	20.0	0	0	20.0	0	0	28.0	0	0	0
Other field crops	100	4.8	480	110	4.8	530	0	-	-	-480	-530
Fodders	190	12.0	2,280	210	12.0	2,520	190	18.0	3,420	1,140	900
Watermelon	340	30.0	10,200	220	30.0	6,600	490	35.0	17,150	6,950	10,550
Summer vegetables	250	32.0	8,000	160	32.0	5,120	730	45.0	32,850	24,850	27,730
Second vegetables	150	25.0	3,750	100	25.0	2,500	1,120	27.0	30,240	26,490	27,740
Green Legumes	0	-	-	0	-	-	390	15.0	5,850	5,850	5,850
Olives	1,080	1.8	1,940	1,200	1.8	2,160	590	3.5	2,070	130	-90
Figs	20	5.4	110	20	5.4	110	0	-	-	-110	-110
Other Fruits	290	11.8	3,420	190	11.8	2,240	640	15.0	9,600	6,180	7,360
Poplar	0	-	-	0	-	-	0	-	-	-	-
Total	5,020			4,670			6,360				

Remarks: (1)* : Difference between production under the present condition and "future with project" condition.

(2)**: Difference between production under the "future without project" condition and "future with project" condition.

現況、事業を実施しない場合及び事業を実施する場合の作物生産量 (エルゲンリ地区)

Crops	Present Condition			"Future without Project" Condition			"Future with Project" Condition			Incremental Production	
	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	Cropped area (ha)	Unit yield (ton/ha)	Production (tons)	(1)* (tons)	(2)** (tons)
Cereals	920	2.8	2,580	1,020	2.8	2,860	700	5.5	3,850	1,270	990
Cotton	1,400	2.5	3,500	1,170	2.5	2,930	1,160	3.5	4,060	560	1,130
Tobacco	90	0.8	70	100	0.8	80	0	-	-	-70	-80
Potatoes	50	28.0	1,400	30	28.0	840	230	33.0	7,590	6,190	6,750
Second Potatoes	0	20.0	0	0	20.0	0	0	28.0	0	0	0
Other field crops	90	4.8	430	100	4.8	480	0	-	-	-430	-480
Fodders	190	12.0	2,280	210	12.0	2,520	190	18.0	3,420	1,140	900
Watermelon	330	30.0	9,900	210	30.0	6,300	470	35.0	16,450	6,550	10,150
Summer vegetables	230	32.0	7,360	150	32.0	4,800	700	45.0	31,500	24,140	26,700
Second vegetables	140	25.0	3,500	90	25.0	2,250	1,080	27.0	29,160	25,660	26,910
Green Legumes	0	-	-	0	-	-	370	15.0	5,550	5,550	5,550
Olives	1,020	1.8	1,840	1,130	1.8	2,030	560	3.5	1,960	120	-70
Figs	20	5.4	110	20	5.4	110	0	-	-	-110	-110
Other Fruits	280	11.8	3,300	180	11.8	2,120	600	15.0	9,000	5,700	6,880
Poplar	0	-	-	0	-	-	0	-	-	-	-
Total	4,760			4,410			6,060				

Remarks: (1)* : Difference between production under the present condition and "future with project" condition.

(2)**: Difference between production under the "future without project" condition and "future with project" condition.

表-2.2.3

現状および事業を実施した場合の作物生産額

Crops	Production (ton)					Price (TL/kg)	Value (TL billion)				
	Beydağ	Aktaş	Burgaz	Ergenli	Total		Beydağ	Aktaş	Burgaz	Ergenli	Total
1. Present Condition											
Cereals	2,720	1,320	2,770	2,580	9,390	7,200	20	10	20	19	69
Cotton	10,650	950	3,650	3,500	18,750	45,300	482	43	165	159	849
Tobacco	890	100	80	70	1,140	181,200	161	18	14	13	206
Potatoes	79,800	1,400	1,400	1,400	84,000	7,500	599	11	11	11	632
2nd Potatoes	28,200	2,000	-	-	30,200	6,500	183	13	-	-	196
Other field crops	1,540	-	480	430	2,450	4,000	6	-	2	2	10
Fodders	6,480	-	2,280	2,280	11,040	4,500	29	-	10	10	49
Watermelon	52,200	4,800	10,200	9,900	77,100	5,400	282	26	55	53	416
Summer vege.	49,600	2,240	8,000	7,360	67,200	5,000	248	11	40	37	336
2nd vegetables	14,000	1,750	3,750	3,500	23,000	5,400	76	9	20	19	124
Olives	670	70	1,940	1,840	4,520	19,400	13	1	38	36	88
Figs	2,270	-	110	110	2,490	5,700	13	-	1	1	15
Other Fruits	3,780	-	3,420	3,300	10,500	12,000	45	-	41	40	126
Total							2,157	142	417	400	3,116
2. "Future with Project" Condition											
Cereals	4,240	1,070	4,020	3,850	13,180	7,200	31	8	29	28	96
Cotton	16,170	1,370	4,310	4,060	25,910	45,300	733	62	195	184	1,174
Potatoes	101,640	6,440	8,250	7,590	123,920	7,500	762	48	62	57	929
2nd Potatoes	43,120	5,460	-	-	48,580	6,500	280	35	-	-	315
Fodders	13,860	1,170	3,420	3,420	21,870	4,500	62	5	15	15	97
Watermelon	53,900	6,830	17,150	16,450	94,330	5,400	291	37	93	89	510
Summer vege.	138,600	5,850	32,850	31,500	208,800	5,000	693	29	164	158	1,044
2nd vegetables	83,160	5,270	30,240	29,160	147,830	5,400	449	28	163	157	797
Green Legumes	23,100	1,950	5,850	5,550	36,450	11,600	268	23	68	64	423
Olives	-	-	2,070	1,960	4,030	19,400	-	-	40	38	78
Other Fruits	23,100	1,950	9,600	9,000	43,650	12,000	277	23	115	108	523
Total							3,846	298	944	898	5,986
3. Increment (Increase Rate)							1,689	156	527	498	2,870
							78%	110%	126%	125%	92%

表-2.2.4

計画灌溉用水量

Crops	Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotatoesII	F.Fruits	Olive	Net Total (mm)	Gross Total 0.78	Total (mm/s/1,000ha)
a) Beydağ													
Area (%)	30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	140.0*	0.20	0.001
Jan.	0.00	0.00	0.00	0.02	0.14	0.00	0.00	0.00	0.00	0.00	0.16	0.29	0.001
Feb.	0.00	0.00	0.00	0.06	0.16	0.00	0.00	0.00	0.00	0.00	0.22	2.11	0.008
Mar.	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.00	0.00	0.00	1.65	10.91	0.042
Apr.	0.00	1.15	0.07	2.91	2.94	0.00	1.83	0.00	0.01	0.00	8.51	67.78	0.253
May	2.53	17.32	2.82	3.55	4.40	0.00	19.82	0.00	2.42	0.00	52.87	113.55	0.438
Jun.	31.46	22.64	4.54	0.23	1.94	0.00	15.38	0.00	12.37	0.00	88.57	122.35	0.457
Jul.	50.78	7.66	0.51	0.00	4.02	5.27	0.00	2.87	7.87	0.00	95.44	163.62	0.611
Aug.	46.70	0.00	0.00	10.57	7.03	11.99	0.00	14.11	25.45	0.00	127.62	97.84	0.577
Sep.	16.01	0.00	0.00	7.03	8.69	8.69	0.00	12.68	7.26	0.00	26.50	33.97	0.127
Oct.	0.54	0.00	0.00	0.18	4.72	4.72	0.00	7.55	0.06	0.00	3.78	4.85	0.019
Nov.	0.00	0.00	0.00	0.18	0.44	0.75	0.00	2.27	0.02	0.00	0.23	0.29	0.001
Dec.	0.00	0.00	0.00	0.05	0.06	0.02	0.00	0.08	0.00	0.00	0.23	4.85	0.001
	148.02	48.77	7.94	7.96	35.13	31.44	37.04	39.56	60.33	65.67	481.86	617.77	
b) Akraş													
Area (%)	30.0	10.0	15.0	15.0	5.0	10.0	15.0	15.0	15.0	10.0	140.0*	0.20	0.001
Jan.	0.00	0.00	0.00	0.02	0.14	0.00	0.00	0.00	0.00	0.00	0.16	0.29	0.002
Feb.	0.00	0.00	0.00	0.06	0.16	0.00	0.00	0.00	0.00	0.00	0.22	2.11	0.015
Mar.	0.00	0.00	0.00	0.77	0.87	0.00	0.00	0.00	0.00	0.00	1.65	10.91	0.066
Apr.	0.00	1.15	0.07	2.91	2.94	0.00	1.83	0.00	0.01	0.00	8.51	67.78	0.229
May	2.53	17.32	2.82	3.55	4.40	0.00	19.82	0.00	2.42	0.00	52.87	113.55	0.377
Jun.	31.46	22.64	4.54	0.23	1.94	0.00	15.38	0.00	12.37	0.00	88.57	122.35	0.437
Jul.	50.78	7.66	0.51	0.00	4.02	5.27	0.00	2.87	7.87	0.00	95.44	163.62	0.614
Aug.	46.70	0.00	0.00	10.57	7.03	11.99	0.00	14.11	25.45	0.00	127.62	97.84	0.385
Sep.	16.01	0.00	0.00	7.03	8.69	8.69	0.00	12.68	7.26	0.00	26.50	33.97	0.138
Oct.	0.54	0.00	0.00	0.18	2.94	4.72	0.00	7.55	0.06	0.00	3.78	4.85	0.026
Nov.	0.00	0.00	0.00	0.18	0.44	0.75	0.00	2.27	0.02	0.00	0.23	0.29	0.002
Dec.	0.00	0.00	0.00	0.05	0.06	0.02	0.00	0.08	0.00	0.00	0.23	4.85	0.002
	148.02	48.77	7.94	7.96	35.13	31.44	37.04	39.56	60.33	65.67	481.86	617.77	
c) Ergenli & Burgaz													
Area (%)	25.0	16.0	10.0	15.0	4.0	8.0	5.0	0.0	23.0	13.0	131.0*	0.22	0.001
Jan.	0.00	0.00	0.00	0.06	0.11	0.00	0.00	0.00	0.00	0.00	0.17	0.40	0.002
Feb.	0.00	0.00	0.00	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.31	3.87	0.014
Mar.	0.00	0.00	0.00	2.32	0.70	0.00	0.00	0.00	0.00	0.00	3.02	15.88	0.061
Apr.	0.00	0.92	0.07	8.72	2.04	0.00	0.46	0.00	0.02	0.17	12.39	64.95	0.243
May	2.10	13.86	2.82	10.66	3.52	0.00	4.96	0.00	3.14	9.60	50.66	117.75	0.454
Jun.	26.22	18.11	4.54	0.70	1.55	0.00	3.85	0.00	16.09	20.80	91.85	140.43	0.524
Jul.	42.32	6.13	0.51	3.22	4.22	4.22	0.00	0.00	21.37	22.72	109.54	140.43	0.629
Aug.	38.92	0.00	0.00	0.00	8.46	9.59	0.00	0.00	29.27	20.74	131.41	168.47	0.368
Sep.	13.34	0.00	0.00	0.00	5.62	6.95	0.00	0.00	22.61	15.92	74.48	95.49	0.107
Oct.	0.45	0.00	0.00	0.55	0.35	3.77	0.00	0.00	4.30	2.68	22.45	28.78	0.008
Nov.	0.00	0.00	0.00	0.54	0.35	0.60	0.00	0.00	1.71	0.04	0.24	0.30	0.001
Dec.	0.00	0.00	0.00	0.15	0.05	0.02	0.00	0.00	0.02	0.00	0.24	0.30	0.001
	123.35	39.02	7.94	23.87	28.10	25.15	9.26	0.00	69.38	85.37	498.22	638.75	

*: Total Crop Intensity (%)

表-3.1.1

計画地区内の町村人口

Administrative unit	1980	1985		1990		80 - 90	Land* Area (ha)	Population Density (per km ²)
	Popula- tion	Popula- tion	Growth Rate	Popula- tion	Growth Rate	Growth Rate		
Beydağ District	7,016	7,312	0.83%	7,798	1.30%	1.06%	7,259	107.4
Şehir (Town)	4,710	5,131	1.73%	5,831	2.59%	2.16%	854	682.8
Merkez	2,306	2,181	-1.11%	1,967	-2.04%	-1.58%	6,405	30.7
Alakeçili	356	221	-9.09%	191	-2.88%	-6.04%	446	42.8
Halıköy	612	668	1.77%	646	-0.67%	0.54%	1,904	33.9
Sarıkaya	154	199	5.26%	161	-4.15%	0.45%	553	29.1
Yağcılar	938	841	-2.16%	747	-2.34%	-2.25%	2,177	34.3
Tosunlar	246	252	0.48%	222	-2.50%	-1.02%	1,325	16.8
Ödemiş District	71,653	79,161	2.01%	82,513	0.83%	1.42%	45,508	181.3
Şehir (Town)	40,736	47,475	3.11%	51,620	1.69%	2.40%	4,350	1,186.7
Merkez	7,232	7,011	-0.62%	6,945	-0.19%	-0.40%	7,418	93.6
Büyükavluçak	502	406	-4.16%	380	-1.31%	-2.75%	450	84.4
Demireçili	1,109	1,161	0.92%	1,136	-0.43%	0.24%	823	138.0
Gerçekli	576	624	1.61%	609	-0.49%	0.56%	1,134	53.7
Gereli	1,100	1,071	-0.53%	1,100	0.54%	0.00%	1,015	108.4
Karakova	258	188	-6.13%	169	-2.11%	-4.14%	654	25.8
Ocaklı	980	695	-6.64%	668	-0.79%	-3.76%	757	88.2
Seyrekli	1,100	1,196	1.69%	1,193	-0.05%	0.81%	1,320	90.4
Yolüstü	1,607	1,670	0.77%	1,690	0.24%	0.50%	1,265	133.6
Bademli	2,486	2,461	-0.20%	2,238	-1.88%	-1.05%	2,582	86.4
Emirli	1,191	1,163	-0.47%	1,110	-0.93%	-0.70%	1,438	77.2
Mescitli	1,295	1,298	0.05%	1,128	-2.77%	-1.37%	1,151	98.0
Birgi	143	142	-0.14%	137	-0.71%	-0.43%	1,100	12.5
Kışlaköy	143	142	-0.14%	137	-0.71%	-0.43%	1,100	12.5
Kaymakçı	11,022	11,604	1.03%	11,716	0.19%	0.61%	18,201	64.4
Kaymakçı	4,239	4,879	2.85%	5,325	1.76%	2.31%	4,335	122.8
Araşarlı	524	524	0.00%	560	1.34%	0.67%	1,670	33.5
Çaylı	2,783	2,843	0.43%	2,547	-2.17%	-0.88%	1,671	152.4
Ertuğrulköy	804	828	0.59%	801	-0.66%	-0.04%	789	101.5
Eselli	330	133	-16.62%	113	-3.21%	-10.16%	1,743	6.5
Kızılcaavlu	642	670	0.86%	650	-0.60%	0.12%	1,682	38.6
Kurucaova	1,000	1,014	0.28%	1,035	0.41%	0.34%	4,349	23.8
Türkönü	480	511	1.26%	467	-1.78%	-0.27%	1,048	44.6
Yeşilköy	220	202	-1.69%	218	1.54%	-0.09%	914	23.9
Ovakent	10,034	10,468	0.85%	9,857	-1.20%	-0.18%	11,850	83.2
Ovakent	4,753	4,837	0.35%	4,401	-1.86%	-0.76%	3,180	138.5
Balabanlı	1,140	1,223	1.42%	1,189	-0.56%	0.42%	1,682	70.7
Bozcayaka	650	748	2.85%	684	-1.77%	0.51%	3,131	21.8
Kazanlı	717	814	2.57%	1,057	5.36%	3.96%	1,187	89.0
Konaklı	2,774	2,846	0.51%	2,523	-2.38%	-0.94%	2,670	94.5
Tire District	1,947	2,193	2.41%	2,067	-1.18%	0.60%	3,300	62.6
Gökçen	1,947	2,193	2.41%	2,067	-1.18%	0.60%	3,300	62.6
Kızılcahavlu	1,343	1,537	2.74%	1,457	-1.06%	0.82%	2,326	62.6
Yeğenli	604	656	1.67%	610	-1.44%	0.10%	974	62.6
Grand Total	80,616	88,666	1.92%	92,378	0.82%	1.37%	56,967	164.8

Note; *: Data on land area of villages from Provincial Directorate of Ministry of Agriculture and Rural Affairs.
Source: Population Census 1980, 1985 and 1990, State Institute of Statistics.

計画地区の就業別人口 (12歳以上)

Items	Beydağ District Center		Ödemiş District Center		District Centers		Villages and Municipalities		Total in Project Area				
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female			
1. Total population	2,870	2,960	5,830	4,690	28,720	28,730	57,450	17,210	17,720	34,930	45,930	46,450	92,380
2. Population above 12 years old	2,300	2,390	4,690	4,690	22,430	22,980	45,410	13,390	13,870	27,260	35,820	36,850	72,670
3. Economic inactive population	600	2,010	2,610	17,450	22,030	19,460	24,640	1,290	3,000	4,290	6,470	22,460	28,930
3.1 Retired	180	10	190	1,420	1,660	1,600	250	240	60	300	1,840	310	2,150
3.2 House wife	0	1,780	1,780	0	15,380	17,160	17,160	0	2,350	2,350	0	19,510	19,510
3.3 Students	260	220	480	1,940	1,630	2,200	1,850	620	470	1,090	2,820	2,320	5,140
3.4 Others	160	0	160	1,220	200	1,380	200	430	120	550	1,810	320	2,130
4. Economic active population	1,700	380	2,080	15,550	3,140	18,690	20,770	12,100	10,870	22,970	29,350	14,390	43,740
5. Unemployment	190	40	230	1,060	330	1,390	1,620	120	40	160	1,370	410	1,780
6. Employment	1,510	340	1,850	14,480	2,800	17,280	19,130	11,980	10,830	22,810	27,970	13,970	41,940
6.1 Technical worker	90	50	140	870	480	1,350	1,490	280	120	400	1,240	650	1,890
6.2 Administrative worker	30	0	30	300	10	310	340	70	10	80	400	20	420
6.3 Clerical worker	70	30	100	580	270	850	950	140	60	200	790	360	1,150
6.4 Service worker	150	10	160	2,360	120	2,480	2,640	360	30	390	2,870	160	3,030
6.5 Commercial worker	180	10	190	1,620	130	1,750	1,940	490	40	530	2,290	180	2,470
6.6 Agriculture	300	180	480	2,680	1,320	4,000	4,480	8,350	10,350	18,680	11,330	11,830	23,160
6.7 Others	690	60	750	6,060	470	6,530	7,280	2,290	240	2,530	9,040	770	9,810
6.8 Unknown	0	0	0	10	0	10	10	0	0	0	10	0	10
	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: 1990 Census of Population (Social and Economic Characteristics of Population), State Institute of Statistics.

表-3.1.3

作物別栽培面積

Crops	(ha)	(ha)	(ha)
	Beydağ	Ödemiş	Tire
Common field crops			
Wheat	240	1,426	5,840
Barley	315	1,086	2,661
Oat	23	0	100
Rye	21	16	0
Cotton	260	5,832	8,226
Tobacco	533	2,840	2,688
Maize	62	132	356
Legumes	82	80	0
Sesami	7	337	533
Potatoes	169	8,594	274
Onion and Garlic	35	113	58
Vetches	36	30	274
Alfalfa	175	1,239	694
Others	158	30	153
Sub-total	2,115	21,755	21,856
Vegetables			
Tomatoes	33	231	412
Pepper	53	438	198
Egg plant	26	192	129
Watermelons	264	2,774	3,489
Melon	8	17	116
Cucumber	36	1,388	59
Squash	3	12	42
Okra	32	378	37
Cabbages	34	170	42
Leeks	23	136	68
Cauliflowers	9	120	44
Spinach	15	69	39
Lettuce	12	89	34
Celery	1	7	7
Green onions	22	22	153
Green legumes	102	186	457
Carrots	5	3	13
Radish	6	19	10
Others	4	34	0
Sub-total	687	6,284	5,350
Tree crops			
Olive	740	4,431	5,000
Figs	809	2,732	2,485
Citrus	0	15	17
Apple	33	109	82
Pears	8	87	171
Quince	5	48	17
Peaches	41	174	484
Cherries	47	296	36
Plums	63	233	43
Pomegranates	19	37	20
Chestnuts	630	671	126
Other nuts	96	214	383
Grape (ha)	80	465	510
Others	22	72	44
Sub-total	2,592	9,583	9,417
Total	5,395	37,622	36,623

Source: Provincial Agricultural Office of MARA, Izmir

エーゲ地域で推奨されている営農資材

(a) Main Varieties Cropped in This Region

Crop	Main varieties
Wheat:	Cunhriyet-75, Gediz-75, Penjamo-62
Barley:	Zefer 160, Gem, Kaya
Maise:	Kompozit 3/74, Kompozit ADA, NKPX 20, NKPX 525, NKPX 616 etc.
Cotton:	Nazilli 66-100, Coker 100 A/2
Tobacco:	İzmir-Kokulu 64, 6265 Karabaglar, İzmir-ÖZBAS, İzmir-İNCEKARA
Potato:	Ari, Cosima, Fina, Frigga, Alpa, İsola, Resy, Jaella, Desiree
Tomato:	We 156, ES.58, Sc.2121, Campbell-33, Pearson, Roma VF, Red
Eggplant:	Halkapınar, Kemer, Topan
Pepper:	Çarliston, Dolmahk-16, ACI ve TATLI SIVRI, ACI SIVRI 48-4 ÇEŞİDİ
Cabbage:	Bayraklı
Cauliflower:	Brioozenia, Winner Osenia
Watermelon:	(native) Yeni Dünya Karupuzu, Tekirdag Karupuzu, Karbuz Karabuz etc. (imported) Dixie Queen, Florida Giant, Irish Gray, Klondike etc.
Olive:	Memecik, Ayvalık, Gemlik, Domat, Memeli, Uslu, İzmir Sofralık
Fig:	Ak İlek, Elmia İlek, Hacı Mestan İlegi, Kara İlek, Kaba İlek etc.
Peach:	Springtime, Cardinal, Dixired, Red Globe, Starking, Red Haven, Triogem, J.H.Hale etc.
Apple:	Starkrimson delicious, Starkspur golden, Starking delicious, Jonathan etc.
Grape:	Rupestris Du Lot, Berlandieri * V= (R-99, R-110, 41-B, 420-A, 5-BB)

Source: Agricultural extention handbook

(b) Fertilizer application standard in Aegean region

Crop	N				P ₂ O ₅		(kg/ha)
	N		P ₂ O ₅		K ₂ O		
	Irrigated	Rainfed	Irrigated	Rainfed			
Wheat	110-130	80-100	70-90	60-80	-	-	
Cotton	90-110		60-80		-	-	
Tobacco		30-50		40-50	40-60		
Potato	140-160	110-130		60-80	-	-	
Watermelon	80-100	50-70	60-80	50-70	-	-	
Vegetable	100-120		60-80		50-70		
Alfalfa	30-50		130-150		-	-	
Grape	120-140	80-100	60-80	50-70	-	-	
Olive*		0.2-0.3		0.15-0.2	0.2-0.3		
Fruits tree*		2-4		2-3	-	-	

Remark * : kg/ tree

Source: Provincial office of MARA, İzmir

表-3.1.5

計画地区の現況における営農資材

Items	Sub-items	Unit	(Unit days/ha, kg/ha, lit./ha)												
			Cereals	Cotton	Potatoes	Potatoes	2nd	Vege- tables	2nd Vege- tables	Water- melon	Tobacco	Fodders	Olive	Figs	Other fruits
Yield		(kg)	2,800	2,500	28,000	20,000	20,000	32,000	25,000	30,000	800	12,000	1,800	5,400	11,800
Land Prep.	Labour/Operator	(days)	1.2	1.4	11.9	11.6	11.2	0.9	11.4	1.5	1.0	0.8	3.0		
	Machinery	(days)	1.2	1.4	1.9	1.6	1.2	0.9	1.4	1.5	1.0	0.8	3.0		
Seeding	Labour	(days)	0.2	0.2	11.5	9.5	20.0	10.0	9.0	60.0	0.7	12.5			
	Machinery	(days)	0.2	0.2	1.5	1.5									
Seed/seedlings	Labour	(kg)	160	80	2,500	2,500	20	30	2.5	20					
	Machinery	(days)													
Pruning	Labour	(days)	0.8	0.8	6.0	4.0	8.0	2.0	0.6	2.0	2.0	10.0	10.0	20.0	
	Machinery	(days)													
Fertilizer App.	N	(kg)	106	83	130	134	97	94	83	30	31	30	38	60	
	P2O5	(kg)	60	60	75	76	63	63	60	30	30	30	38	60	
Manure App.	K2O	(kg)	60	60	75	90	50	50	60	30	30	30	38	60	
	Labour	(days)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Manure	Labour	(kg)	5,000	5,000	5,000	5,000	3,000	3,000	3,000	3,000			3,000	3,000	
	Machinery	(days)													
Pest Control	Labour	(days)		0.6	6.0	5.0	5.0	2.0	0.3	2.0	2.0	1.0	0.4	10.0	
	Chemicals	(kg or lit.)		6.0	4.0	3.0	8.0	7.0	3.0	3.0	4.0	2.0	2.0	4.0	
Irrigation	Labour	(days)		9.0	15.0	9.0	15.5	12.0	18.2		8.0			12.0	
	Machinery	(days)													
Cultivating	Labour/Operator	(days)		26.6	20.3	20.3	21.9	20.3	20.6	40.0			10.0	38.8	
	Machinery	(days)		0.6	0.3	0.3	1.9	0.3	0.6					1.6	
Harvesting	Labour/Operator	(days)	0.5	30.0	4.0	3.0	80.0	50.0	30.0	160.0	40.0	50.0	21.0	100.0	
	Machinery	(days)	0.5		2.0	1.0									
Post-harvest	Labour/Operator	(days)	2.0	5.0	10.0	8.0	10.0	5.0	8.0	10.0	40.0	1.5	7.6	15.0	
	Machinery	(days)	0.5						2.0			0.8			
Other materials	Sacks	(kg)	40	25	100									1,000	
	Nylon	(kg)	160	100	150										
Transporting	Labour/Operator	(days)	1.0	0.3			2.0	2.0		2.0	2.0		0.1	6.0	
	Machinery	(days)	1.0	0.3			1.0	1.0		2.0	2.0			3.0	
Total	Labour/Operator	(days)	7.7	75.9	86.7	72.4	176.0	116.5	89.6	285.4	94.2	76.5	100.8	190.7	
	Machinery	(days)	3.4	2.5	5.7	4.4	4.5	2.5	3.5	3.4	3.5	1.8	0.8	7.6	

Remarks: Labour/operator (1 manday = 10 hours), machinery (1man operation =10 hours).

ベアダー・ダム計画地点の既存水質データ

Item	Unit	Sampling Month						Average
		Feb.1994	Apr.1994	Dec.1994	Feb.1995	Apr.1995	June.1995	
pH	-	8.5	8.2	7.0	7.1	7.9	7.8	7.8
EC	mS/cm	0.25	0.24	0.26	0.19	0.18	0.49	0.27
Suspended solids	mg/l	1	1	2	1	12	18	6
Cation								
Na+	mg/l	13.57	17.02	37.72	11.27	21.39	30.13	21.85
K+	mg/l	0.39	0.39	0.78	0.39	0.39	0.78	0.52
Ca++	mg/l	35.40	32.60	80.00	20.00	32.80	55.00	42.63
Mg++	mg/l	4.00	7.00	2.67	6.80	3.40	23.90	7.96
Total	mg/l	53.36	57.01	121.17	38.46	57.98	109.81	72.97
SAR	-	0.82	1.00	1.60	0.79	1.34	1.21	1.12
Anion								
CO3--	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCO3-	mg/l	68.50	90.50	157.50	36.00	76.00	187.00	102.58
Cl-	mg/l	21.60	32.20	18.40	31.90	11.30	29.00	24.07
SO4--	mg/l	34.80	11.90	40.60	21.30	49.00	71.80	38.23
Total	mg/l	124.90	134.60	216.50	89.20	136.30	287.80	164.88
BOD	mg/l	2.40	2.80	2.20	5.03	3.77	3.47	3.28
COD	mg/l	-	0.00	5.60	4.00	-	-	3
Permanganate Value	mgO2/l	0.82	2.46	4.56	0.00	1.54	0.44	
Total dissolved matter	mg/l	136	45	265	-	200	434	216
Nitrogen as ammonia	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen as nitrite	mg/l	0.14	0.00	0.00	0.70	0.03	0.17	0.17
Nitrogen as nitrate	mg/l	1.01	0.00	0.00	0.29	0.64	4.98	1.15
Phosphorous as phosphate	mg/l	0.05	0.04	0.06	0.06	0.11	0.00	0.05
Dissolved oxygen	mg/l	10.50	7.90	10.30	9.61	6.66	8.79	8.96
Boron	mg/l	0.00	0.00	0.00	0.87	0.00	2.07	0.49

Source : DSI II Laboratory

表-3.1.7

計画地区区内における地下水の水質

Sample No.	Village	Date of Sampling	pH	EC (umhos/cm)	Cations (mek/l)			Anions (mek/l)			Total Sodium %	SAR	Category of Water	Boron (ppm)		
					Na+	K+	Ca++	Mg++	CO3--	HCO3-					Cl-	SO4--
1		15/6/1995	7.5	742	1.96	0.04	5.71	0.00	4.56	1.26	1.69	7.71	25.42	1.16	C2S1	0.00
2		15/6/1995	7.4	735	1.53	0.04	5.77	0.00	4.85	1.02	1.77	7.64	23.95	1.05	C2S1	0.16
3		15/6/1995	7.6	613	2.35	0.05	3.94	0.00	4.92	0.85	0.60	6.37	37.36	1.70	C2S1	0.00
4		15/6/1995	7.4	519	2.09	0.04	3.26	0.00	4.20	0.92	0.27	5.39	38.78	1.64	C2S1	0.29
5		15/6/1995	7.7	425	1.31	0.03	3.08	0.00	3.21	0.94	0.27	4.42	29.64	1.06	C2S1	0.72
6		15/6/1995	7.6	410	0.70	0.01	3.55	0.00	2.96	0.78	0.62	4.26	16.43	0.53	C2S1	0.69
7		15/6/1995	7.6	607	1.94	0.04	4.33	0.00	4.74	1.18	0.39	6.31	30.74	1.32	C2S1	0.18
8		15/6/1995	7.2	504	0.96	0.02	4.26	0.00	3.86	1.06	0.32	5.24	18.32	0.66	C2S1	0.18
9		15/6/1995	7.3	501	1.71	0.03	3.52	0.00	4.15	0.80	0.31	5.26	32.51	1.29	C2S1	0.10
10		15/6/1995	7.1	715	1.93	0.04	5.46	0.00	5.54	1.50	0.39	7.43	25.98	1.17	C2S1	0.35
11		15/6/1995	7.1	572	1.86	0.04	4.04	0.00	4.22	1.26	0.46	5.94	31.31	1.31	C2S1	0.11

表-3.2.1

事業を実施した場合の営農資材投入量

Crops Items	Sub-items	Unit	(Unit days/ha, kg/ha, lit./ha)											
			Cereals	Cotton	Potatoes	Potatoes	2nd tables	Vege- tables	2nd Vege- tables	Water- melon	Green legumes	Fodders	Olive	Grape
Yield		(kg)	5,500	3,500	33,000	28,000	27,000	35,000	15,000	18,000	3,500	15,000	25,000	
Land Prep.	Labour/Operator	(days)	1.2	1.6	11.9	11.6	11.5	3.5	11.5	1.2	1.0	1.9	3.0	
	Machinery	(days)	1.2	1.6	1.9	1.6	2.2	1.5	1.5	1.2	1.0	1.9	3.0	
Seeding	Labour	(days)	0.2	0.2	12.5	11.5	20.0	9.0	10.0	0.2	-	-	-	
	Machinery	(days)	0.2	0.2	0.5	0.5	-	-	-	0.2	-	-	-	
	Seed/seedlings	(kg)	160	80	2,500	3,000	30	4	120	-	-	-	-	
Pruning	Labour	(days)	-	-	-	-	-	-	-	-	10.0	40.0	20.0	
Fertilizer App.	Labour	(days)	1.0	2.0	6.0	4.0	10.0	3.0	3.0	2.0	1.0	3.0	4.0	
	N	(kg)	130	110	160	140	120	120	80	50	50	140	150	
	P2O5	(kg)	70	80	90	80	70	80	70	150	30	80	80	
	K2O	(kg)	50	50	90	75	60	60	20	-	60	0	50	
Manure App.	Labour	(days)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	4.0	4.0	
	Manure	(kg)	10,000	15,000	15,000	10,000	15,000	20,000	10,000	10,000	10,000	15,000	15,000	
Pest Control	Labour	(days)	2.0	2.0	6.0	6.0	6.0	3.0	2.0	2.0	1.0	2.0	10.0	
	Chemicals	(kg or lit.)	2.0	7.0	4.0	3.0	8.0	3.0	2.0	1.0	4.0	5.0	5.0	
Irrigation	Labour	(days)	3.0	18.0	16.0	10.0	23.0	14.0	16.0	14.0	6.0	8.0	9.0	
	Labour/Operator	(days)	-	41.2	41.0	41.0	40.0	46.0	31.0	20.0	-	47.1	52.1	
	Machinery	(days)	-	1.2	1.0	1.0	2.9	-	-	-	-	2.1	2.1	
Harvesting	Labour/Operator	(days)	0.8	50.0	6.0	6.0	100.0	70.0	40.0	50.0	40.0	40.0	100.0	
	Machinery	(days)	0.8	-	3.0	3.0	-	-	-	-	-	-	-	
Post-harvest	Labour/Operator	(days)	4.0	10.0	12.0	10.0	15.0	7.0	11.0	10.0	40.0	1.5	18.0	
	Machinery	(days)	1.0	-	-	-	-	-	-	-	-	1.5	-	
Other materials	Sacks	(kg)	70	30	500	360	750	120	120	-	-	-	500	
	Nylon	(kg)	-	-	-	-	-	-	-	-	-	-	-	
	Others	(kg)	-	-	-	-	-	-	-	-	-	-	-	
Transporting	Labour/Operator	(days)	1.0	1.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	
	Machinery	(days)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	
Total	Labour/Operator	(days)	16.2	130.0	118.4	106.1	233.2	177.0	123.5	125.5	96.4	77.5	166.0	
	Machinery	(days)	4.2	4.0	7.4	7.1	6.1	2.5	2.5	3.4	2.5	5.0	6.1	

Remarks: Labour/operator (1 manday = 10 hours), machinery (1 man operation = 10 hours).

事業を実施した場合の作物生産に係る必要労働投入量

Crops	(mandays per hectare)												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Cereals				3.0	2.5	5.8				3.4	1.5		16.2
Cotton				5.7	13.6	21.6	20.0	7.6	30.5	30.5	0.5		130.0
Potatoes	0.5	31.9		48.0	22.5	15.5							118.4
Potatoes II							0.5	46.6	39.5	0.5	19.0		106.1
Watermelon	0.3	1.4	7.8	10.0	26.0	51.5	26.5						123.5
Summer vegetables	0.5	4.6	0.6	42.0	29.5	31.5	65.0	59.0			0.5		233.2
Vegetables II							37.5	33.5	27.0		79.0		177.0
Green legumes							32.5	17.0	14.0		62.0		125.5
Fodders				20.5	24.5	20.5				3.4	2.0		96.4
Grape		29.5	47.0	21.5		3.0	3.0	62.0					166.0
Other tree fruits		25.0		2.0	34.6	95.0	59.0	4.5					220.1

Crops	Area %	(per farm)												
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Wheat	5	0.00	0.00	0.00	0.26	0.21	0.49	0.00	0.00	0.00	0.13	0.00	0.00	1.38
Cotton	30	0.00	0.00	0.00	2.91	6.94	11.02	10.20	3.88	15.56	0.26	0.00	0.00	66.30
Potatoes	20	0.17	10.85	0.00	16.32	7.65	5.27	0.00	0.00	0.00	0.00	0.00	0.00	40.26
Potatoes II	10	0.00	0.00	0.00	0.00	0.00	0.00	0.09	7.92	6.72	3.23	0.00	0.00	18.04
Watermelon	10	0.05	0.24	1.33	1.70	4.42	8.76	4.51	0.00	0.00	0.00	0.00	0.00	21.00
Summer vegetables	20	0.17	1.56	0.20	14.28	10.03	10.71	22.10	20.06	0.00	0.17	0.00	0.00	79.29
Vegetables II	20	0.00	0.00	0.00	0.00	0.00	0.00	12.75	11.39	9.18	26.86	0.00	0.00	60.18
Green legumes	10	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.89	2.38	10.54	0.00	0.00	21.34
Fodders	5	0.00	0.00	1.74	2.17	2.08	1.74	0.00	0.00	0.00	0.17	0.00	0.00	8.19
Grape	5	0.00	2.51	4.00	1.83	0.00	0.26	0.26	5.27	0.00	0.00	0.00	0.00	14.11
Other tree fruits	5	0.00	2.13	0.00	0.17	2.94	8.08	5.02	0.38	0.00	0.00	0.00	0.00	18.71
Total	140	0.39	17.28	7.27	39.63	34.27	46.32	60.44	51.79	33.83	41.35	0.00	0.00	348.78

1.7 ha

計画二次排水路の設計流量

Secondary No.	Catchment area (ha)	Runoff coefficient (C)			River bed gradient (S) (o/oo)	Flow length (L) (m)	Flow height (H) (m)	Tc 0.0195(L ^{0.75} /H ^{0.375}) ^{0.85} (min)	Rainfall intensity * (mm/hr)	Peak discharge 0.0023CIS ^{0.85} A ^{0.4} (m ³ /sec)	Remarks
		Vegetation	Soil	Topography							
D-R-1	208	0.16	0.22	0.08	103.2	4,400	454	29.9	35.0	6.69	
D-R-2	63	0.16	0.22	0.11	158.5	1,760	279	12.5	59.0	5.04	
D-R-3	78	0.16	0.22	0.11	190.0	1,500	285	10.3	66.3	6.96	
D-R-4	40	0.16	0.22	0.11	153.1	1,600	245	11.8	61.2	3.61	
D-R-5	129	0.16	0.22	0.11	169.6	2,300	390	15.0	59.0	8.13	
D-R-6	73	0.16	0.16	0.11	187.5	1,600	300	10.9	64.1	5.59	
D-R-7	116	0.16	0.16	0.11	163.6	2,200	360	14.7	53.6	6.59	
D-R-8	286	0.16	0.16	0.08	118.1	4,200	496	27.4	36.9	8.13	
D-R-9	681	0.22	0.16	0.06	96.7	5,100	493	34.3	32.2	15.00	Emnekisigi River
SD-R-1	321	0.22	0.16	0.06	66.3	4,100	272	33.5	32.6	7.73	
SD-R-2	3,621	0.22	0.12	0.04	43.6	13,700	597	99.8	16.9	22.14	Gokkuyu River
SD-R-3	3,558	0.22	0.12	0.06	62.9	11,800	742	77.3	19.8	28.84	Sicau River
SD-R-4	1,145	0.16	0.16	0.04	47.0	6,700	315	55.9	24.0	12.01	
SD-R-5	9,220	0.16	0.16	0.06	98.4	20,600	2,028	99.8	16.9	55.03	Gelinboz River
SD-R-6	2,826	0.16	0.16	0.06	61.0	16,500	1,007	101.2	16.8	19.26	Birgi River
SD-R-7	4,710	0.16	0.16	0.04	47.3	19,600	928	127.4	14.6	22.73	Geney River
SD-R-8	5,355	0.16	0.16	0.06	51.9	18,000	935	115.1	15.5	28.78	Tombaki River
SD-R-9	11,560	0.16	0.16	0.04	41.4	24,400	1,010	158.8	12.8	47.48	Rahmanlar River
D-L-1	773	0.16	0.16	0.11	162.1	6,200	1,005	32.7	33.1	18.53	Tokelli River
D-L-2	505	0.16	0.12	0.11	153.4	6,500	1,010	34.5	32.1	11.48	
D-L-3	825	0.16	0.12	0.08	139.2	7,200	1,002	38.9	29.8	14.28	Baglar River
D-L-4	659	0.16	0.16	0.11	165.6	6,200	1,027	32.4	33.3	16.46	Cengiller River
D-L-5	1,209	0.16	0.16	0.11	176.3	5,900	1,040	30.5	34.6	28.11	Aksaikkilar River
SD-L-1	416	0.16	0.16	0.15	266.4	3,900	1,039	18.9	46.1	18.94	Incirlik River
SD-L-2	7,929	0.16	0.16	0.04	20.9	19,200	402	171.6	12.2	24.48	Pirineci River
SD-L-3	1,806	0.16	0.16	0.08	142.2	9,700	1,379	48.5	26.1	26.10	
SD-L-4	3,138	0.16	0.16	0.06	79.5	11,000	874	66.9	21.5	28.32	
SD-L-5	1,848	0.16	0.16	0.06	83.2	7,700	641	49.9	25.7	22.31	Carakaya River
SD-L-6	938	0.22	0.16	0.06	83.3	5,400	450	38.0	30.3	17.71	
SD-L-7	2,693	0.22	0.16	0.04	45.7	12,400	567	90.7	17.9	20.64	

*: Rainfall intensity is at 5 years return period. Rainfall intensity curve of ODEMIS in the "MAKSIMUM YAGISLARIN FREKANSI ATLASI" is applied.

表-3.3.1

事業費の概要

Cost Item	Local Currency Portion		Foreign Currency Portion	Total
	(Tl. billion)	(US\$ thousand)	(US\$ thousand)	(US\$ thousand)
A. Irrigation and Drainage Systems				
A-1 Direct Construction Cost				
(1) Package-I				
- Headrace & Irrigation System	1,027.0	20,542	2,345	22,887
- Drainage System	163.1	3,263	605	3,868
(2) Package-II				
- Irrigation System	701.7	14,034	1,731	15,765
- Drainage System	89.7	1,794	323	2,117
(3) On-farm Development				
Right Bank	640.4	12,809	16,089	28,898
Left Bank	383.0	7,661	9,818	17,479
Sub-total (A-1)	3,005.0	60,103	30,911	91,014
A-2 O&M and Office Equipment	4.1	82	1,558	1,640
A-3 Land Acquisition	61.1	1,222	0	1,222
A-4 Project Administration	455.1	9,101	0	9,101
A-5 Technical Support	214.4	4,288	11,134	15,422
Sub-total (A-1 to A-5)	3,739.7	74,796	43,603	118,399
A-6 Physical Contingency	374.0	7,480	4,360	11,840
Sub-total (A-1 + A-7)	4,113.7	82,276	47,963	130,239
A-7 Price Contingency	1,231.3	24,625	7,195	31,820
Total (A)	5,345.0	106,901	55,158	162,059
B. Beydağ Dam				
B-1 Direct Construction Cost	1,049.7	20,995	21,776	42,771
B-2 Land Acquisition	637.0	12,740	0	12,740
B-3 Project Administration	213.9	4,277	0	4,277
Sub-total (B-1 to B-3)	1,900.6	38,012	21,776	59,788
B-4 Physical Contingency	190.1	3,801	2,178	5,979
Sub-total (B-1 + B-4)	2,090.7	41,813	23,954	65,767
B-5 Price Contingency	363.5	7,270	2,189	9,459
Total (B)	2,454.2	49,083	26,143	75,226
C. Total Project Cost	7,799.2	155,984	81,301	237,285
Administration:	10% of construction cost.			
Physical contingency:	10% of direct construction cost, land acquisition, project administration, technical support, and physical contingency.			
Price contingency:	2% annum for foreign currency portion and 4% annum for local currency portion.			

営農資材および生産物の経済/財務価格
(1995 Constant Price)

Item	Unit	1995 Financial Price	2005 Economic Price	Remarks
Field crops				
Wheat	TL/kg	7,200	6,200	Import/Export parity
Cotton	TL/kg	45,300	35,200	Export parity
Tobacco	TL/kg	181,200	38,800	Export parity
Potatoes	TL/kg	7,500	6,800	Domestic market
2nd Potatoes	TL/kg	6,500	5,900	Domestic market
Other field crops (maize)	TL/kg	4,000	3,600	Domestic market
Fodders (Alfalfa)	TL/kg	4,500	4,100	Domestic market
Vegetables				
Watermelon	TL/kg	5,400	4,900	Domestic market
Summer vegetables				
Average	TL/kg	5,000	4,600	Average by production
Tomatoes	TL/kg	3,700	3,400	Domestic market
Cucumber	TL/kg	5,500	5,000	Domestic market
Peppers	TL/kg	5,100	4,600	Domestic market
2nd Vegetables				
Leafy vegetables (Cabbage)	TL/kg	5,400	4,900	Domestic market
Green legumes	TL/kg	11,600	10,600	Domestic market
Tree Crops				
Olive (oil)	TL/kg	19,400	22,000	Export parity
Figs	TL/kg	5,700	5,200	Domestic market
Other fruits				
Grapes (fresh)	TL/kg	12,000	10,900	Domestic market
Orange/Citrus	TL/kg	9,000	8,200	Export parity
Sub-products				
Straw	TL/kg	1,000	1,900	Domestic market
Fertilizers (price per effective content)				
N	TL/kg	20,700	23,300	Import parity
P2O5	TL/kg	18,400	20,700	Import parity
K2O	TL/kg	12,400	14,000	Import parity
Agro-chemicals				
Average	TL/kg	572,400	520,900	
Labour				
Casual	TL/day	190,000	95,000	
Operator	TL/day	250,000	125,000	

Note; 1995 prices are projected by Consumer Price Index = 1.812) from 1994 average prices.
1994 average prices are quoted from the price list of the provincial agricultural statistics.

表-3.5.2

增加便益額

Crop	Yield (ton)	Price (TL/kg)	per ha				Area (ha)	Total Net Value (US\$)
			Gross Value (TL,1000)	Cost (TL,1000)	Net Value (TL,1000) (US\$)			
1. "Future without Project" Condition								
Cereals (Rainfed)	2.8	6,200	22,100	12,400	9,700	191	1,230	239,000
Cotton (Rainfed)	0.9	35,200	31,700	21,200	10,500	210	1,880	395,000
Cotton (Irrigated)	2.5	35,200	88,000	24,000	64,000	1,280	1,690	2,163,000
Tobacco (Rainfed)	0.8	38,800	31,000	42,900	-11,900	-238	1,410	-336,000
Potatoes (Rainfed)	10.0	6,800	68,000	28,700	39,300	786	1,260	990,000
Potatoes (Irrigated)	28.0	6,800	190,400	36,600	153,800	3,076	1,130	3,476,000
2nd Potatoes (Irrigated)	20.0	5,900	118,000	31,800	86,200	1,724	850	1,465,000
Other Field Crops (Rainfed)	4.8	3,600	17,300	12,400	4,900	98	410	40,000
Fodders (Rainfed)	12.0	4,100	49,200	13,300	35,900	718	690	495,000
Watermelon (Irrigated)	30.0	4,900	147,000	24,000	123,000	2,460	1,050	2,583,000
Vegetables (Irrigated)	32.0	4,600	147,200	36,600	110,600	2,212	940	2,079,000
2nd Vegetables (Irrigated)	25.0	4,900	122,500	30,700	91,800	1,836	340	624,000
Olive (Rainfed)	1.8	22,000	39,600	16,200	23,400	468	470	220,000
Figs (Rainfed)	5.4	5,200	28,100	15,900	12,200	244	530	129,000
Fruits (Irrigated)	11.8	10,900	128,600	39,900	88,700	1,774	190	337,000
Poplars (Irrigated)	-	-	-	-	12,200	241	1,000	244,000
Total	-	-	-	-	-	-	15,070	15,143,000 983 /ha
2. "Future with Project" Condition								
Cereals	5.5	6,200	43,200	17,000	26,200	524	770	403,000
Cotton	3.5	35,200	123,200	33,800	89,400	1,788	4,620	8,261,000
Potatoes	33.0	6,800	224,400	51,700	172,700	3,454	3,080	10,638,000
2nd Potatoes	28.0	5,900	165,200	46,000	119,200	2,384	1,540	3,671,000
Fodders	18.0	4,100	73,800	19,500	54,300	1,086	770	836,000
Watermelon	35.0	4,900	171,500	35,200	136,300	2,726	1,540	4,198,000
Vegetables	45.0	4,600	207,000	59,000	148,000	2,960	3,080	9,117,000
2nd Vegetables	27.0	4,900	132,300	44,100	88,200	1,764	3,080	5,433,000
Green Legumes	15.0	10,600	159,000	33,800	125,200	2,504	1,540	3,856,000
Olive	3.5	22,000	77,000	15,800	61,200	1,224	0	0
Fruites (Grapes)	15.0	10,900	163,500	33,000	130,500	2,610	770	2,010,000
Fruites (Oranges)	25.0	8,200	205,000	43,800	161,200	3,224	770	2,482,000
Total	-	-	-	-	-	-	21,560	50,905,000 3,306 /ha
3. Incremental Benefit								35,762,000 \$2,322 /ha

Remarks: Value of cereals includes value of sub-products (straws).

表-3.5.3

経済費用・便益フロー

(US\$1,000)

Year in Order	Year	Project Cost				Irrigation Benefit	Negative Benefit	Total Benefit	Balance
		Const. Cost	Replace. Cost	O&M Cost	Total Cost				
1	1997	9,940	-	-	9,940	-	-	0	-9,940
2	1998	12,270	-	-	12,270	-	110	-110	-12,380
3	1999	12,750	-	-	12,750	-	190	-190	-12,940
4	2000	20,950	-	-	20,950	-	270	-270	-21,220
5	2001	34,800	-	-	34,800	-	270	-270	-35,070
6	2002	31,230	-	250	31,480	4,000	270	3,730	-27,750
7	2003	24,770	-	750	25,520	12,440	270	12,170	-13,350
8	2004	8,990	-	1,200	10,190	21,660	270	21,390	11,200
9	2005	1,900	-	1,360	3,260	27,270	270	27,000	23,740
10	2006	1,870	-	1,360	3,230	30,830	270	30,560	27,330
11	2007	-	-	1,360	1,360	33,750	270	33,480	32,120
12	2008	-	5,500	1,360	6,860	35,370	270	35,100	28,240
13	2009	-	10,680	1,360	12,040	35,760	270	35,490	23,450
14	2010	-	10,010	1,360	11,370	35,760	270	35,490	24,120
15	2011	-	3,430	1,360	4,790	35,760	270	35,490	30,700
16	2012	-	100	1,360	1,460	35,760	270	35,490	34,030
17	2013	-	70	1,360	1,430	35,760	270	35,490	34,060
18	2014	-	750	1,360	2,110	35,760	270	35,490	33,380
19	2015	-	6,210	1,360	7,570	35,760	270	35,490	27,920
20	2016	-	10,680	1,360	12,040	35,760	270	35,490	23,450
21	2017	-	9,960	1,360	11,320	35,760	270	35,490	24,170
22	2018	-	3,340	1,360	4,700	35,760	270	35,490	30,790
23	2019	-	-	1,360	1,360	35,760	270	35,490	34,130
24	2020	-	50	1,360	1,410	35,760	270	35,490	34,080
25	2021	-	90	1,360	1,450	35,760	270	35,490	34,040
26	2022	-	5,600	1,360	6,960	35,760	270	35,490	28,530
27	2023	-	10,750	1,360	12,110	35,760	270	35,490	23,380
28	2024	-	10,710	1,360	12,070	35,760	270	35,490	23,420
29	2025	-	4,050	1,360	5,410	35,760	270	35,490	30,080
30	2026	-	-	1,360	1,360	35,760	270	35,490	34,130
31	2027	-	3,900	1,360	5,260	35,760	270	35,490	30,230
32	2028	-	2,330	1,360	3,690	35,760	270	35,490	31,800
33	2029	-	5,500	1,360	6,860	35,760	270	35,490	28,630
34	2030	-	10,730	1,360	12,090	35,760	270	35,490	23,400
35	2031	-	10,050	1,360	11,410	35,760	270	35,490	24,080
36	2032	-	3,440	1,360	4,800	35,760	270	35,490	30,690
37	2033	-	70	1,360	1,430	35,760	270	35,490	34,060
38	2034	-	750	1,360	2,110	35,760	270	35,490	33,380
39	2035	-	710	1,360	2,070	35,760	270	35,490	33,420
40	2036	-	5,500	1,360	6,860	35,760	270	35,490	28,630
41	2037	-	10,680	1,360	12,040	35,760	270	35,490	23,450
42	2038	-	9,960	1,360	11,320	35,760	270	35,490	24,170
43	2039	-	3,340	1,360	4,700	35,760	270	35,490	30,790
44	2040	-	50	1,360	1,410	35,760	270	35,490	34,080
45	2041	-	90	1,360	1,450	35,760	270	35,490	34,040
46	2042	-	100	1,360	1,460	35,760	270	35,490	34,030
47	2043	-	5,570	1,360	6,930	35,760	270	35,490	28,560
48	2044	-	11,430	1,360	12,790	35,760	270	35,490	22,700
49	2045	-	10,670	1,360	12,030	35,760	270	35,490	23,460
50	2046	-	3,340	1,360	4,700	35,760	270	35,490	30,790
Total	Total								

Economic Internal Rate of Return = 13.9%
B/C Ratio = 2.26
Net Present Value = 241,549

表-3.5.4

財務キャッシュフロー (ペーダー・ダム事業費を含んで融資を受けた場合)

Year	Cash Outflow										Cash Inflow				Balance
	Project Cost	Replace-ment	O & M		Loan		Foreign Loan	Government Budget	Subsidy	Water Charge	Replacement Charge	Repayment by Farmers	Sub-total		
			Cost		Interest	Repayment									
1997	14,449	-	-	-	-	-	7,047	7,218	184	-	-	-	14,449	0	
1998	17,928	-	-	176	-	-	10,262	7,504	338	-	-	-	18,104	0	
1999	19,557	-	-	433	-	-	13,411	6,150	429	-	-	-	19,990	0	
2000	32,019	-	-	768	-	-	25,423	6,642	722	-	-	-	32,787	0	
2001	50,385	-	-	1,404	-	-	48,185	2,471	1,133	-	-	-	51,789	0	
2002	46,440	-	275	2,608	-	-	45,248	1,246	2,396	275	-	158	49,323	0	
2003	37,190	-	820	3,739	-	-	41,749	1,480	3,188	820	-	468	41,749	0	
2004	13,527	-	1,324	4,634	-	11,215	12,448	1,157	15,014	1,324	-	757	30,700	0	
2005	2,872	-	1,494	4,665	-	11,215	2,018	904	14,976	1,494	-	854	20,246	0	
2006	2,918	-	1,494	4,435	-	11,215	2,033	938	14,743	1,494	-	854	20,062	0	
2007	-	-	1,494	4,306	-	11,215	-	-	14,567	1,494	-	854	16,915	0	
2008	-	7,749	-	1,494	-	11,215	-	-	14,286	1,494	7,749	854	24,383	0	
2009	-	15,038	-	1,494	-	11,215	-	-	14,006	1,494	15,038	854	31,392	0	
2010	-	14,074	-	1,494	-	11,215	-	-	13,725	1,494	14,074	854	30,147	0	
2011	-	4,810	-	1,494	-	11,215	-	-	13,445	1,494	4,810	854	20,603	0	
2012	-	108	-	1,494	-	11,215	-	-	13,165	1,494	108	854	15,621	0	
2013	-	74	-	1,494	-	11,215	-	-	12,884	1,494	74	854	15,306	0	
2014	-	820	-	1,494	-	11,215	-	-	12,604	1,494	820	854	15,772	0	
2015	-	8,528	-	1,494	-	11,215	-	-	12,324	1,494	8,528	854	23,200	0	
2016	-	15,038	-	1,494	-	11,215	-	-	12,043	1,494	15,038	854	29,429	0	
2017	-	14,024	-	1,494	-	11,215	-	-	11,763	1,494	14,024	854	28,135	0	
2018	-	4,706	-	1,494	-	11,215	-	-	11,482	1,494	4,706	854	18,536	0	
2019	-	-	-	1,494	-	11,215	-	-	11,202	1,494	-	854	13,550	0	
2020	-	50	-	1,494	-	11,215	-	-	10,922	1,494	50	854	13,320	0	
2021	-	304	-	1,494	-	11,213	-	-	10,639	1,494	304	854	13,291	0	
2022	-	14,815	-	1,494	-	-	-	-	-	1,494	14,815	854	17,163	854	
2023	-	20,791	-	1,494	-	-	-	-	-	1,494	20,791	854	23,139	854	
2024	-	15,712	-	1,494	-	-	-	-	-	1,494	15,712	854	18,060	854	
2025	-	5,485	-	1,494	-	-	-	-	-	1,494	5,485	854	7,833	854	
2026	-	-	-	1,494	-	-	-	-	-	1,494	-	854	2,343	854	
2027	-	-	-	1,494	-	-	-	-	-	1,494	-	696	2,190	696	
2028	-	-	-	1,494	-	-	-	-	-	1,494	-	386	1,880	386	
2029	-	7,749	-	1,494	-	-	-	-	-	1,494	7,749	97	9,340	97	
2030	-	15,088	-	1,494	-	-	-	-	-	1,494	15,088	-	16,582	0	
2031	-	14,128	-	1,494	-	-	-	-	-	1,494	14,128	-	15,622	0	
Total	237,285	179,090	42,757	56,506	201,868	201,868	201,868	35,710	242,180	42,757	179,090	21,350	722,955		

Remark: Foreign loan: annual interest rate of 2.5% for repayment period of 25 years including grace period of 7 years.
 *: The cost for irrigation and drainage systems and Beydag dam are included in the foreign loan.

財務キャッシュフロー (灌漑排水システムに融資を受けた場合)

Year	Project Cost	Cash Outflow					Cash Inflow					Balance	
		Replace-ment	O & M Cost	Loan Interest	Loan Repayment	Sub-total	Foreign Loan	Government Budget	Government Subsidy	Water Charge	Replacement Charge by Farmers		Sub-total
1997	14,449	-	-	-	-	14,449	2,059	12,390	0	-	-	14,449	0
1998	17,928	-	-	51	-	17,979	2,552	15,376	51	-	-	17,979	0
1999	19,557	-	-	115	-	19,672	173	19,384	115	-	-	19,672	0
2000	32,019	-	-	120	-	32,139	11,787	20,232	120	-	-	32,139	0
2001	50,385	-	-	414	-	50,799	34,137	16,248	414	-	-	50,799	0
2002	46,440	-	275	1,268	-	47,983	45,248	1,192	1,110	275	133	47,983	0
2003	37,190	-	820	2,399	-	40,409	35,793	1,397	1,951	820	468	40,409	0
2004	13,527	-	1,324	3,294	-	16,381	12,448	1,079	10,773	1,324	757	16,381	0
2005	2,872	-	1,494	3,599	-	16,001	2,018	854	10,781	1,494	854	16,001	0
2006	2,918	-	1,494	3,244	-	15,892	2,033	885	10,626	1,494	854	15,892	0
2007	-	-	1,494	3,089	-	12,819	-	-	10,471	1,494	854	12,819	0
2008	-	7,749	1,494	2,883	-	20,362	-	-	10,265	1,494	7,749	20,362	0
2009	-	15,038	1,494	2,677	-	27,445	-	-	10,059	1,494	15,038	27,445	0
2010	-	14,124	1,494	2,471	-	26,325	-	-	9,853	1,494	14,124	26,325	0
2011	-	4,914	1,494	2,265	-	16,909	-	-	9,647	1,494	4,914	16,909	0
2012	-	216	1,494	2,059	-	12,005	-	-	9,441	1,494	216	12,005	0
2013	-	148	1,494	1,853	-	11,731	-	-	9,235	1,494	148	11,731	0
2014	-	1,640	1,494	1,647	-	13,017	-	-	9,029	1,494	1,640	13,017	0
2015	-	9,307	1,494	1,441	-	20,478	-	-	8,823	1,494	9,307	20,478	0
2016	-	15,038	1,494	1,235	-	26,003	-	-	8,617	1,494	15,038	26,003	0
2017	-	14,024	1,494	1,030	-	24,784	-	-	8,412	1,494	14,024	24,784	0
2018	-	4,706	1,494	824	-	15,260	-	-	8,206	1,494	4,706	15,260	0
2019	-	-	1,494	618	-	10,348	-	-	8,000	1,494	-	10,348	0
2020	-	100	1,494	412	-	10,242	-	-	7,794	1,494	100	10,242	0
2021	-	208	1,494	206	-	10,144	-	-	7,588	1,494	208	10,144	0
2022	-	7,965	1,494	-	-	9,459	-	-	-	1,494	7,965	9,459	854
2023	-	15,186	1,494	-	-	16,680	-	-	-	1,494	15,186	17,534	854
2024	-	15,664	1,494	-	-	17,158	-	-	-	1,494	15,664	18,012	854
2025	-	6,264	1,494	-	-	7,758	-	-	-	1,494	6,264	8,612	854
2026	-	-	1,494	-	-	1,494	-	-	-	1,494	-	2,348	854
2027	-	-	1,494	-	-	1,494	-	-	-	1,494	-	2,190	696
2028	-	-	1,494	-	-	1,494	-	-	-	1,494	-	1,890	386
2029	-	7,749	1,494	-	-	9,243	-	-	-	1,494	7,749	9,340	97
2030	-	15,088	1,494	-	-	16,582	-	-	-	1,494	15,088	16,582	0
2031	-	14,128	1,494	-	-	15,622	-	-	-	1,494	14,128	15,622	0
Total	237,285	169,256	42,757	39,014	148,248	636,560	148,248	89,057	171,361	42,757	169,256	21,350	642,009

Remark: Foreign loan: annual interest rate of 2.5% for repayment period of 25 years including grace period of 7 years.

*: The cost for irrigation and drainage systems are included in the foreign loan, and Beydag dam is not included in the foreign loan.

表-3.5.6

計画地区の初期環境調査結果

Environmental Items	Ecological Regions				Remarks
	Region I Catchment Area of Dam	Region II Reservoir Area including Dam Site	Region III Irrigation Area	Region IV Downstream River Channel from Dam Site	
1. Displaced of people	-	-/A	-/C	-	EIA is necessary.
2. Land use changes	-	-/C	-/C	-	
3. Impairment of transportation	-	-/C	x	-	
4. Inundation of mineral resource	-	x	x	-	
5. Historical and recreational disturbance					
- Historical and cultural disturbance	-	x	x	-	
- Recreational disturbance	-	x	x	-	
6. Ecological disturbance					
- Terrestrial fauna and flora	x	x	x	x	
- Aquatic fauna and flora	x	x	x	x	
- Marsh area	-	-	-	-/C	
8. Degradation of forest resources	x	-/C	-/C	-	
9. Erosion and sedimentation	x	-/C	-/C	-	
10. Fisheries losses	x	x	x	x	
11. Groundwater deteriorations					
- Groundwater depth	-	-	+/B	+/C	
- Groundwater quality	-	-	-/B	-/A	EIA is necessary.
12. Change of river flow regime	-	-	-/C	-/C	
13. Surface water deterioration	-	-	-/B	-/A	EIA is necessary.
14. Eutrophication of Dam Reservoir	-	-/A	-	-	EIA is necessary.
15. Public health issues	-	x	x	x	
16. Climatic change	-	x	-	-	
17. Water rights conflicts	-	-	x	x	
18. Soil degradation	-	-	x	-	
19. Changing farming practices	-	-	+/B	-	
20. Earthquake hazards	-	x	-	-	

A : Relative high magnitude of impact is expected
 B : Relative medium magnitude of impact is expected
 C : Relative low magnitude of impact is expected
 x : No effect is expected
 - : There is no relation
 + : Possitive effect is expected
 - : Negative effect is expected

環境保全計画 (1/2)

Description of Impact	Source of Impact	Environmental Conservation Plan	Location	Timing	Executor of the Conservation	Supervision Institution	Related Institution
1. People To Be Dislocated from Beydag Reservoir Area							
1.1 Unsatisfactory of resettlement	Shortage of explanation for the dislocation	Implementation of public consultation meeting	Dam reservoir area	Before land acquisition	Project Office	DSI	Local government
	Shortage of the survey of present condition of dislocated people	Implementation of questionnaire survey	Dam reservoir area	Before land acquisition	Project Office	DSI	Local government
	Constraint on new resettlement area	Preparation of support service	Dam reservoir area	During and after land acquisition	Project Office	DSI	Local government
		Implementation of support service	Dam reservoir area	During and after land acquisition	Local government	Local government	DSI
1.2 Unsatisfactory of the amount of compensation	Unproper method to decide the compensation amount	Decision of compensation amount at proper method	Dam reservoir area	During and after land acquisition	Land committee	Land committee	DSI
	Constraint on the finance for new life	Monitoring of socio-economical condition of dislocated people	New resettlement area	After land acquisition	Project Office	DSI	Local government
		Preparation of supporting plan	New resettlement area	After land acquisition	Project Office	DSI	Local government
		Implementation of support service	New resettlement area	After land acquisition	Land committee	Local government	DSI
2. Eutrophication of Beydag dam reservoir							
2.1 Increment of pollution load on the watershed of the Beydag dam	Domestic waste water	Establishment of the municipal sewage system	Watershed of Beydag dam	During and after the construction	Local government	Local government	DSI
	Runoff of fertilizer in agricultural land	Introduction of proper farming system	Watershed of Beydag dam	During and after the construction	Project Office	MARA	DSI, MOF
	Waste from livestock	Improvement of landuse such as introduce of grassland	Watershed of Beydag dam	During and after the construction	Project Office	MARA	DSI, MOF
		Control of the direct intrusion to river	Watershed of Beydag dam	During and after the construction	Project Office	MARA	DSI, MOF
		Usage of the waste as manure	Watershed of Beydag dam	During and after the construction	Project Office	MARA	DSI, MOF

表-3.5.7 (1)

表-3.5.7 (2)

環境保全計画 (2/2)

Description of Impact	Source of Impact	Environmental Conservation Plan	Location	Timing	Executor of the Conservation	Supervision Institution	Related Institution
2.2 Increment of solid waste in reservoir	Fish culture	Prohibition of Fish culture	Dam reservoir	After the construction	Project Office	DSI	Local government
		Limitation of recreational use	Dam reservoir	After the construction	Project Office	DSI	Local government
Tourism		Monitoring of water quality of the reservoir	Dam reservoir	After the construction	Project Office	DSI	
		Monitoring of farming practice	Dam reservoir	After the construction	Project Office	DSI	
3. Deterioration of water quality	Increment of crop intensity Increment of utilization of farm inputs : chemical fertilizer and agro-chemicals	Introduction of the proposed crop rotation system	Project Area	During and after the construction	Project Office	MARA	DSI
		Usage of manure or organic fertilizer instead of chemical fertilizer	Project Area	During and after the construction	Project Office	MARA	DSI
		Introduction of IPM system	Project Area	During and after the construction	Project Office	MARA	DSI
		Establishment of proper pest forecasting system	Project Area	During and after the construction	Project Office	MARA	DSI
		Application of farm inputs at proper timing and volume	Project Area	During and after the construction	Project Office	MARA	DSI
		Limitation of high toxicant agro-chemicals	Project Area	During and after the construction	Project Office	MARA	DSI
		Improper use of farm inputs : chemical fertilizer and agro-chemicals					
4. Watershed management	Increment of soil erosion	Monitor and discussion of progress of the watershed management project in the joint committee	Watershed of Beydag dam	During and after the construction	Joint Committee	DSI	MARA, MOF, GDRS
		Implementation of extension work in sloped area by MARA	Watershed of Beydag dam	During and after the construction	MARA	MARA	DSI

環境モニタリング計画

Description of Impact	Environmental Monitoring Plan	Monitoring Methodology	Analysis Methodology	Location	Timing	Frequency	Monitoring Execution Agency	Related Institution
1. People To Be Dislocated from Beydag Reservoir Area Progress of land acquisition and compensation Socio-economical condition and requirement of dislocated people		Data collection	Tabulation of data	Dam reservoir area	During land acquisition	Upon on a require	Project Office	DSI
		Interview	Tabulation of interview result	Resettlement area	After land acquisition	Two times	Project Office	DSI
2. Eutrophication of Beydag dam reservoir Waste water source in the watershed Water quality of the reservoir		Direct Observation and interview	Tabulation of the result	Watershed area	After the construction	One time per year	Project Office	DSI, Local government
		Direct Observation and sampling	Laboratory analysis	Dam reservoir	During and after the construction	Bimonthly or monthly	Project Office	DSI
3. Deterioration of water quality Water quality of surface water Water quality of groundwater Farming practice Groundwater table		Direct Observation and sampling	Laboratory analysis	Kucuk Menders river	During and after the construction	Bimonthly or monthly	Project Office	DSI
		Direct Observation and sampling	Laboratory analysis	Project Area	During and after the construction	Two time per year	Project Office	DSI
		Interview	Tabulation of interview result	Project Area	During and after the construction	One time per year	Project Office	MARA, DSI
		Direct Observation	Tabulation of the result	Project Area	During and after the construction	Two time per year	Project Office	DSI
4. Watershed management Progress of watershed management project Sedimentation of the reservoir		Meeting among related agencies	Tabulation of the progress	Watershed area	During and after the construction	One time per year	DSI	MARA, MOF, GDRS
		Sampling	Laboratory analysis	Dam reservoir	After the construction	Two times per year	Project Office	DSI
5. Others - Ecological condition - Local disease - Complain of local people - Others		Direct Observation and interview	Data analysis and reporting	River basin area	During and after the construction	One time per year	Project Office	MOE, MOF, DSI
		Data collection	Data analysis and reporting	Project Area	During and after the construction	One time per year	Project Office	MOH, Local government
		Interview	Tabulation of interview result	Project Area	During and after the construction	One time per year	Project Office	DSI
		Direct Observation and interview	Data analysis and reporting	Project Area	Upon on a require	Upon on a require	Project Office	DSI, etc.