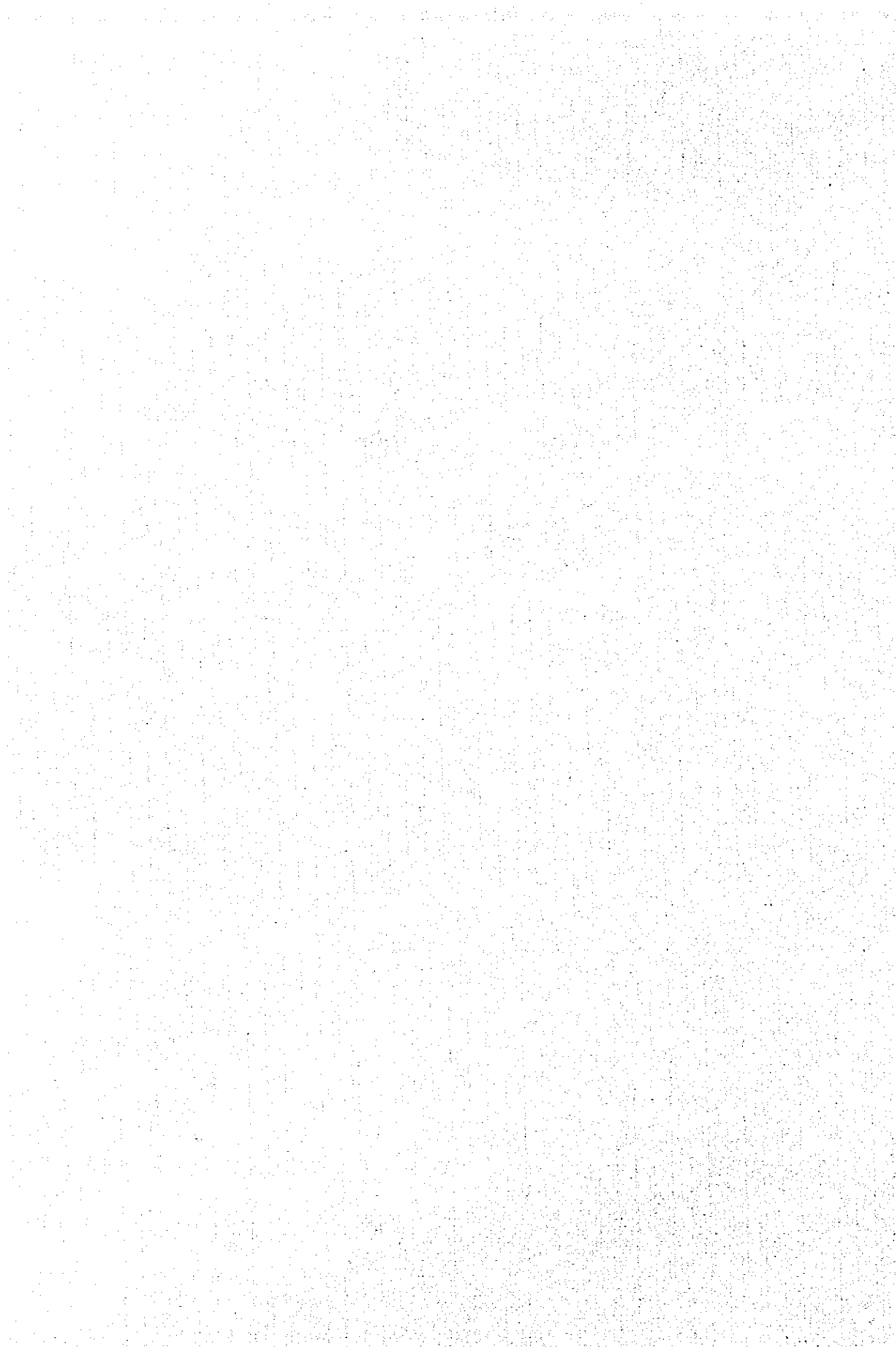


## 表 と 図



## 表の目次

		頁
表 3.1.5.1	土壌の物理的性質	TF - 1
表 3.1.5.2	土壌の化学的性質	TF - 1
表 3.2.2.1	チュニジア国の行政区分と人口統計(1994)	TF - 2
表 3.2.2.2	調査対象地域の人口と世帯数	TF - 3
表 3.3.2.1	主要作物の栽培面積(1993/94)	TF - 4
表 3.3.2.2	作付体系によるオアシスの分類	TF - 5
表 3.3.2.3	主要作物の収量(1992/93, 1993/94)	TF - 6
表 3.3.2.4	主要作物の生産量(1992/92, 1993/94)	TF - 7
表 3.3.4.1	農産物の市場価格と農家庭先価格(1994/95)	TF - 8
表 3.3.4.2	農業資機材の市場価格と農家庭先価格(1994/95)	TF - 9
表 3.3.5.1	現況の作物別の生産費と純生産費	TF - 10
表 3.3.5.2	現況の調査対象地域 (153 オアシス) の作物総生産額	TF - 11
表 3.3.5.3	現況の調査対象地域 (153 オアシス) における作物純生産額	TF - 12
表 3.3.8.1	現況の平均農家経済収支	TF - 13
表 3.3.8.2	現況の平均農家経済収支	TF - 14
表 3.4.5.1	県別の灌漑方法と水路能力	TF - 15
表 3.5.1.1	水利施設の維持管理分担	TF - 16
表 3.5.2.1	維持管理費の内訳	TF - 17
表 3.5.2.2	農民水利組合と維持管理費の概要	TF - 17
表 4.4.3.1	153 オアシスの現況評価	TF - 18
表 4.4.3.2	農業開発計画のためのオアシス総合評価	TF - 19
表 4.4.3.3	事業対象オアシスと面積及び総合評価	TF - 20
表 5.1.2.1	事業を実施した場合の主要作物の収量	TF - 21
表 5.1.2.2	事業を実施しない場合の作物の収量	TF - 22
表 5.1.2.3	事業実施による作物生産増大量	TF - 23
表 6.3.1.1	各オアシスにおける工事量	TF - 24
表 7.1.2.1	事業実施計画	TF - 29
表 7.1.2.2	年度別工事計画面積	TF - 30
表 7.2.2.1	事業費内訳	TF - 31

表9.1.1	農産物と農業資機材の財務及び経済価格	TF - 32
表9.2.1	事業を実施しない場合と実施した場合の作物生産費と収益	TF - 33
表9.2.2	4県別の事業実施による年間の灌漑便益	TF - 34
表9.3.1	153 オアシスの事業費、維持管理費及び灌漑便益	TF - 35
表9.4.1	経済事業費と灌漑便益による経済内部収益率（県別）	TF - 36
表9.4.2	経済事業費と灌漑便益による経済内部収益率（全体）	TF - 37
表9.4.3	153 オアシスの経済評価（経済事業費、灌漑便益、経済内部収益率）	TF - 38
表9.5.1	財務価格による作物生産費と純収益	TF - 39
表9.5.2	事業実施による農家経済収支	TF - 40

## 図の目次

	頁	
図3.1.3.1	標準地質層序	TF - 41
図3.1.3.2	ハンドオーガー掘削結果	TF - 42
図3.1.4.1	CT 井戸水位の経年変化	TF - 43
図3.4.4	灌漑排水施設の模式と川語	TF - 44
図3.5.1.1	農業省の機構	TF - 45
図3.5.1.2	地方農業開発局の機構	TF - 46
図5.1.1	収量と灌漑達成率の関係	TF - 47
図6.2.1	水路標準図	TF - 48
図6.2.2	分水工標準図	TF - 49
図6.2.3	排水路標準図	TF - 50
図6.2.4	末端施設計画平面図（オーエドシリ）	TF - 51
図6.2.5	末端施設計画平面図（カスバ）	TF - 52
図6.2.6	末端施設計画平面図（ドラスード）	TF - 53
図6.2.7	末端施設計画平面図（トゥズール）	TF - 54
図6.2.8	末端施設計画平面図（アティレット）	TF - 55
図6.2.9	末端施設計画平面図（マンソーラ）	TF - 56
図6.2.10	末端施設計画平面図（リマオウア）	TF - 57
図6.2.11	末端施設計画平面図（ガベス）	TF - 58

表 3.1.5.1 土壌の物理的性質

Code No.	Name of Oasis	Depth of Horizon (cm)	Boundary	Form of Boundary	Colour		Texture	Particle size (%)			Structure		Consistence			Remarks
					Wet	Dry		Clay	Silt	Sand	Grade	Type	Size	Wet	Moist	
GF- 1	Kaaba	0-100<	na	na	2.5Y 5/1	2.5Y 5/2	SL	4	24	72	na	na	na, app	lo	lo	
GF- 2	Sud Ouest	0-100<	na	na	5YR 5/3	5YR 6/2	SL	14	20	66	na	na	na, app	lo	lo	
GF- 4	Lala	0-100<	na	na	7.5YR 4/2	7.5YR 5/2	LS	1	16	83	na	na	na, app	lo	lo	
GF- 6	Qued Shili	0-100<	na	na	10YR 6/6	10YR 6/3	LS	2	16	82	na	na	na, app	lo	lo	
GF- 8	Sagoud	0-100<	na	na	10YR 6/6	10YR 7/3	SL	2	28	70	na	na	na, app	lo	lo	
TZ- 1	Tozeur	0-100<	na	na	2.5Y 3/2	2.5Y 6/2	SL	3	26	71	na	na	na, app	lo	lo	
TZ- 11	Nefza	0-100<	na	na	2.5Y 3/3	2.5Y 5/3	LS	1	11	88	na	na	na, app	lo	lo	
TZ- 15	Draa Sud	0-100<	na	na	10YR 7/4	2.5Y 8/5	SL	1	31	68	na	na	na, app	lo	lo	
TZ- 21	Cedasia	0-100<	na	na	10YR 5/5	2.5Y 8/5	LS	2	24	74	na	na	na, app	lo	lo	
TZ- 26	Tamerza	0-100<	na	na	2.5Y 8/3	2.5Y 5/2	S	0	7	93	na	na	na, app	lo	lo	
KB- 1	Bechün	0-150<	na	na	10YR 7/3	2.5Y 7/3	SL	3	47	50	na	na	na, app	lo	lo	
KB- 17	Manouara	0-150<	na	na	10YR 4/2	2.5Y 6/2	SL	3	23	74	na	na	na, app	lo	lo	
KB- 24	Qum El Ferh	0-150<	na	na	7.5YR 6/6	7.5YR 7/4	L	3	53	44	na	na	na, app	lo	lo	
KB- 44	Aüllet	0-40	na	na	10YR 7/6	10YR 8/4	SI	1	82	17	na	na	na, app	lo	lo	
KB- 60	Fakoura 1	40-150<	na	na	10YR 7/6	10YR 8/4	SI	2	91	7	na	na	na, app	lo	lo	
GB- 6	Gabes	0-45	A	S	7.5YR 4/4	10YR 7/3	L	10	45	45	na	na	na, app	lo	lo	
GB- 7	Limaoua 1	45-150<	S	S	10YR 3/3	7.5YR 7/4	SL	1	37	62	na	na	na, app	lo	lo	
GB- 19	Chenebou 1	0-150<	na	na	2.5YR 3/4	5YR 7/4	SIL	5	50	45	na	na	na, app	lo	lo	
GB- 30	Arram	0-150<	na	na	5YR 6/8	5YR 8/5	SI	6	72	22	na	na	na, app	lo	lo	
GB- 42	Kettana 3	0-150<	na	na	5YR 5/6	5YR 8/3	SL	2	37	61	na	na	na, app	lo	lo	

Source: Determined by JICA study team

表 3.1.5.2 土壌の科学的性質

Code No.	Name of Oasis	pH	TPC (nd/m)	Organic Matter (%)	Total N (%)	CEC (meq/100g)	Exchangeable Cation (meq/100g)			Water Soluble (meq/100g)		ESP (%)	
							Ca	Mg	Na	K	SO <sub>4</sub>		Cl
GF- 1	Kaaba	8.8	80	5.64	0.13	1.2	29.5	4.3	2.3	0.6	2.2	2.3	6.3
GF- 2	Sud Ouest	8.1	22	3.52	0.06	2.3	49.0	7.4	2.7	1.2	5.6	3.8	4.5
GF- 4	Lala	8.1	22	4.00	0.05	1.2	32.0	13.6	2.7	1.5	0.9	5.3	5.3
GF- 6	Qued Shili	8.4	350	0.78	0.01	0.5	42.5	5.4	6.8	0.9	52.1	12.1	12.2
GF- 8	Sagoud	8.3	225	1.64	0.06	1.5	49.0	7.4	4.6	1.2	5.6	3.8	7.4
TZ- 1	Tozeur	8.2	280	5.34	0.16	1.4	43.0	7.4	3.4	1.4	80.6	1.1	6.2
TZ- 11	Nefza	8.2	98	0.60	0.03	0.6	34.4	3.3	1.3	0.5	7.7	1.1	3.3
TZ- 15	Draa Sud	8.9	25	0.64	ND	0.3	24.2	2.4	1.9	0.6	18.1	5.1	6.5
TZ- 21	Cedasia	8.7	85	1.20	0.10	0.1	48.0	6.7	3.7	1.3	1.5	3.0	6.2
TZ- 26	Tamerza	9.3	60	0.04	ND	0.2	39.0	4.3	1.2	0.6	0.8	1.0	2.7
KB- 1	Bechün	8.0	220	1.68	0.08	0.9	35.0	1.6	2.1	0.2	212.5	4.8	5.4
KB- 17	Manouara	8.3	360	6.62	0.13	1.6	33.7	4.6	4.2	0.9	53.7	5.6	9.7
KB- 24	Qum El Ferh	8.4	460	1.26	0.06	0.6	34.0	4.6	4.8	1.0	11.2	0.4	10.8
KB- 44	Aüllet	8.6	520	1.78	ND	0.6	30.2	4.4	3.8	1.2	125.0	14.1	8.9
KB- 60	Fakoura 1	8.2	85	0.70	0.03	1.7	23.5	5.3	0.9	1.7	18.2	0.7	2.9
GB- 6	Gabes	8.3	240	2.42	0.01	0.5	53.0	7.1	3.3	1.3	22.5	2.2	5.1
GB- 7	Limaoua 1	8.5	245	3.24	0.04	0.9	47.0	7.4	4.2	1.1	3.5	2.9	7.0
GB- 19	Chenebou 1	8.4	65	3.16	0.06	1.2	46.0	6.6	4.7	1.0	1.1	1.5	8.1
GB- 30	Arram	8.9	14	1.30	0.04	0.9	48.0	5.0	3.6	1.4	0.7	1.5	6.2
GB- 42	Kettana 3	8.3	59	2.12	0.06	1.5	45.0	7.1	4.7	1.2	1.1	1.5	8.1

Source: Determined by JICA study team

表 3.2.2.1 テュニジア国の行政区分と人口統計 (1994)

Gouvernorat	No. of Delegation	No. of Imada	Total Area (km <sup>2</sup> )	Population 1984	Population (1994)		Growth Rate (1984 - 94)	Population Density (per km <sup>2</sup> )	Number of Family	Family Size	
					Male	Female					Total
1. Tunis	21	159	288	774,364	453,092	434,711	887,803	1.4%	3,082.6	195,557	4.54
2. Ariana	12	83	1,592	374,192	291,855	277,439	569,294	4.3%	357.6	110,622	5.15
3. Ben Arous	12	75	687	246,193	189,757	181,988	371,745	4.2%	541.1	76,947	4.83
4. Nabeul	16	98	2,837	461,405	296,563	282,055	578,618	2.3%	204.0	118,041	4.90
5. Zaghouan	6	48	2,833	118,743	71,456	71,580	143,036	1.9%	50.5	26,888	5.32
6. Bizerte	14	102	3,751	394,670	245,812	237,274	483,086	2.0%	128.8	97,101	4.98
7. Béja	9	101	3,887	274,706	153,198	150,655	303,853	1.0%	78.2	59,973	5.07
8. Jendouba	8	91	3,075	359,429	202,144	202,639	404,783	1.2%	131.6	78,722	5.14
9. Le Kef	11	87	5,081	247,672	135,845	136,507	272,352	1.0%	53.6	54,021	5.04
10. Siliana	10	86	4,642	222,038	122,672	122,238	244,910	1.0%	52.8	44,196	5.54
11. Kairouan	11	114	6,603	421,607	269,161	263,548	532,709	2.4%	80.7	92,973	5.73
12. Kasserine	13	106	8,251	297,959	195,063	191,845	386,908	2.6%	46.9	68,498	5.65
13. Sidi Bouzid	12	111	7,379	288,528	190,440	186,703	377,143	2.7%	51.1	64,101	5.88
14. Dousse	14	103	2,669	322,491	220,430	213,279	433,709	3.0%	162.5	88,845	4.88
15. Monastir	13	77	1,033	278,478	185,382	178,519	363,901	2.7%	352.3	72,564	5.01
16. Mahdia	11	99	2,873	270,435	165,082	170,662	335,744	2.2%	116.9	62,918	5.34
17. Sfax	15	125	7,008	577,992	374,076	359,611	733,687	2.4%	104.7	150,436	4.88
18. Gafsa	11	74	7,360	235,723	155,241	152,272	307,513	2.7%	41.8	54,330	5.66
19. Tozeur	5	36	6,159	67,945	44,917	44,138	89,055	2.7%	14.5	16,590	5.37
20. Kébili	5	40	22,454	95,371	66,381	65,533	131,914	3.3%	5.9	21,316	6.19
21. Gabes	9	72	7,505	240,016	156,400	155,303	311,713	2.6%	41.5	56,451	5.52
22. Médenine	9	93	9,333	295,889	194,263	191,922	386,185	2.7%	41.4	70,443	5.48
23. Tataouine	7	64	38,266	100,329	68,111	67,592	135,703	3.1%	3.5	22,672	5.99
Total	254	2,044	155,566	6,966,173	4,447,341	4,338,023	8,785,364	2.3%	56.5	1,704,185	5.16
Study Area	30	222	43,478	639,053	422,939	417,256	840,195	2.8%	19.3	148,667	5.65
	11.8%	10.9%	27.9%	9.2%	9.5%	9.6%	9.6%			8.7%	

Sources : Annuaire Statistique de la Tunisie, Mai 1994, Institut National de la Statistique, Ministère du Plan et du Développement Régional  
Recensement Général de la Population (Population par division administrative), 1994

表 3.2.2.2 調査対象地域の人口と世帯数

Governorate / Délégation	Population			Household	
	Urban	Rural	Total	Number (H.H.) (per family)	
<b>ガフサ県</b>					
1. Gafsa Sud	71,107	4,924	76,031	14,265	5.33
2. Guetar	14,053	7,297	21,350	3,777	5.65
3. Ksar	26,003	2,460	28,463	5,316	5.35
4. Metalaoui	38,086	1,989	40,075	7,323	5.47
5. Redeyef	26,944	1,834	28,778	4,508	6.38
Sub-total	176,193	18,504	194,697	35,189	5.53
<b>トゥズール県</b>					
1. Tozeur	28,979	6,630	35,609	6,751	5.27
2. Nefta	18,993	213	19,206	3,643	5.27
3. Hazoua	0	3,467	3,467	528	6.57
4. Deguèche	13,370	11,932	25,302	4,706	5.38
5. Tamerza	1,951	3,520	5,471	962	5.69
Sub-total	63,293	25,762	89,055	16,590	5.37
<b>ケビリ県</b>					
1. Souk Lahad	18,726	8,597	27,323	4,550	6.01
2. Kebili Nord	10,518	17,280	27,798	4,920	5.65
3. Kebili Sud	11,846	14,333	26,179	4,242	6.17
4. Douz	31,108	7,140	38,248	5,648	6.77
5. Faouar	0	12,366	12,366	1,956	6.32
Sub-total	72,198	59,716	131,914	21,316	6.19
<b>ガベス県</b>					
1. Gabes Est	89,787	408	90,195	17,870	5.05
2. Gabes Ouest	21,076	5,959	27,035	4,932	5.48
3. Ghannouch	19,232	0	19,232	2,891	6.65
4. Metouia	17,372	6,118	23,490	4,361	5.39
5. El Hamma	32,155	26,718	58,873	9,762	6.03
6. Mareth	13,848	43,450	57,298	10,025	5.72
7. Matmata	2,244	4,529	6,773	1,477	4.59
Sub-total	195,714	87,182	282,896	51,318	5.51
<b>Total</b>	<b>507,398</b>	<b>191,164</b>	<b>698,562</b>	<b>124,413</b>	<b>5.61</b>

Source de inform Reusement general de lu population et des logement, Mai 1994  
Institut National de la Statistique, TUNIS

表 3.3.2.1 主要作物の栽培面積 (1993/94)

Code No	Name of Oasis	Area (ha)	Arboriculture (ha)	Winter Veget. (ha)	Summer Veget. (ha)	Fodder Crops (ha)	Indus. Crops (ha)	Cropping Intensity	Code No	Name of Oasis	Area (ha)	Arboriculture (ha)	Winter Veget. (ha)	Summer Veget. (ha)	Fodder Crops (ha)	Indus. Crops (ha)	Cropping Intensity
<b>Gafsa Governorate</b>									<b>Kebili Governorate</b>								
GF-1	Kasba	698	698	146	117	165		1.61	KB-40	Guelhada	103	103	40	36	50		2.22
GF-2	Sud Ouest	703	703	88	128	167		1.54	KB-41	Kelwanen	47	47		9	25		2.02
GF-3	El Guettar	450	450	110	7	50		1.37	KB-42	Kibbia	92	92	17	30	33		1.87
GF-4	Lalla	700	699	62	133	230		1.61	KB-43	Sidi Hamed	100	100	13	9	30		1.52
GF-5	El Ksar	578	579	68	142	230		1.76	KB-44	Ailet	230	220	109	15	64		1.85
GF-6	Oued Shili	56	32	3		7		0.75	KB-45	Douz	280	280	14	6	60		1.29
GF-7	Thelja	65	54	7		7		1.05	KB-46	Gboula	75	75	7	3	33		1.57
GF-8	Segdoud	217	217	15	15	30		1.28	KB-47	Goula	65	65	7	3	34		1.68
	Sub-total	3,467	3,432	499	542	885		1.55	KB-48	Grad	111	111	12	9	50		1.64
<b>Tozeur Governorate</b>									<b>Gabes Governorate</b>								
TZ-1	Tozeur	929	929	65	55	70		1.20	GB-1	Ain Zrig	140	140	10	8	22	11	1.36
TZ-2	Kastilia	50	50	4	4	6		1.28	GB-2	Tenoula 1	40	40	4	4	8	3	1.48
TZ-3	Oued El Koucha	62	62	2	2	3		1.11	GB-3	Tenoula 2	20	20	2	2	2	3	1.45
TZ-4	Nefayette	72	72	4	4	4		1.17	GB-4	Zrig dakhania	30	30	2	1	8	2	1.43
TZ-5	Chemsa	90	90	4	4	5		1.14	GB-5	Teboufboa	520	520	43	35	80	80	1.46
TZ-6	Helha Est	75	75	2	2	3		1.09	GB-6	Oasis de Gabes	734	734	28	23	125	200	1.51
TZ-7	Helha Ouest	50	50	3	3	4		1.20	GB-7	Limaoua 1 et 2	148	148	32	24	23	6	1.57
TZ-8	Rhim 1	40	40	3	3	5		1.28	GB-8	M'aleo	40	40	2	2	9	8	1.53
TZ-9	Jhm 2	167	167	2	2	4		1.05	GB-9	Chou El Ferik	31	31	2	3	3	12	1.65
TZ-10	Bn Chabbat 3	325	325	11	9	7		1.08	GB-10	Bouchetma	143	143	6	5	13	11	1.24
TZ-11	Nefsa	852	852	50	45	48		1.17	GB-11	Mahjoub	374	374	106	85	95	19	1.82
TZ-12	Ghardaya	40	40	4	2	3		1.33	GB-12	Salem	99	99	22	18	20	5	1.66
TZ-13	Bn Chabbat 1	240	240	9	7	7		1.10	GB-13	Sbeoi	72	72	21	17	19	4	1.85
TZ-14	Bn Chabbat 2	272	272	9	9	9		1.10	GB-14	Fayal	260	260	72	18	62	13	1.63
TZ-15	Deaa Sud	198	198	10	8	6		1.12	GB-15	M'ayra Ghannouch	280	280	78	63	66	14	1.79
TZ-16	Hazoua 1	72	72	3	3	4		1.14	GB-16	M'lofia	268	268	72	18	62	13	1.62
TZ-17	Hazoua 2	48	48	2	2	3		1.15	GB-17	Ouedhaef	263	263	78	63	110	13	2.00
TZ-18	Hazoua 3	238	238	6	4	5		1.06	GB-18	Aouinette	232	232	33	29	5		1.30
TZ-19	Oued Loghissi	78	78	2	2	4		1.10	GB-19	Chencho 1	57	57	8	7	25		1.70
TZ-20	Tozarit	43	43	3	2	2		1.15	GB-20	Chencho 2	40	40	11	9	5		1.63
TZ-21	Cedada	55	55	3	3	5		1.20	GB-21	Tekouri	32	32	6	5	15		1.81
TZ-22	Dghoumes	104	104	4	3	5		1.12	GB-22	Hamma oasis	400	400	33	27	150		1.53
TZ-23	Degache	822	822	63	54	62		1.22	GB-23	M'zara hennu	80	80	6	5	35		1.58
TZ-24	Chakmou	90	90	3	2	4		1.10	GB-24	Bechima 1	280	280	6	5	40		1.18
TZ-25	El Hanama	400	400	25	22	22		1.17	GB-25	Bechima 2	290	290	11	9	70		1.31
TZ-26	Tamerza	80	80	3	2	4		1.11	GB-26	Khobayet	96	96	11	9	50		1.73
TZ-27	Ch'ebka	23	23	1	1	1		1.13	GB-27	Ben Ghilouf	180	180	33	27	120		2.00
TZ-28	Foum El Khanga	48	48	2	1	2		1.10	GB-28	Ghib Dekhane	70	70	2	2	30		1.49
TZ-29	Midea	29	29	2	1	2		1.17	GB-29	Oued Nekhia	30	30	3	3	5		1.37
TZ-30	Ain El Karma	25	25	2	1	2		1.20	GB-30	Aram	163	163	13	10	10		1.20
	Sub-total	5,622	5,622	306	262	311		1.16	GB-31	Mareh 1	100	100	6	5	20		1.31
<b>Kebili Governorate</b>									<b>Gabes Governorate</b>								
KB-1	Bechri	162	162	8	9	46		1.39	GB-32	Mareh 2	180	180	13	10	80		1.57
KB-2	Bouabdallah	270	270	14	15	65		1.35	GB-33	Mareh 3	30	30	4	3	10		1.57
KB-3	Fainassa	205	205	7	10	50		1.33	GB-34	Mareh 5	115	115	11	9	45		1.57
KB-4	El Ghia	94	94	11	13	26		1.64	GB-35	Mareh 6	88	88	9	6	55		1.60
KB-5	Menchia	140	140	9	13	61		1.59	GB-36	Zrat 2	174	174	14	10	60		1.48
KB-6	Nagga	181	181	3	4	36		1.24	GB-37	Zerkine 1 et 3	116	116	7	6	25		1.33
KB-7	Oum Souiaa	162	162	9	15	23		1.29	GB-38	Zerkine 2	156	156	2	3	10		1.10
KB-8	Oued Zira	176	176	8	18	61		1.49	GB-39	Ayoune Zerkine	30	30	2	3	10		1.50
KB-9	Oued Touati	62	62	11	8	50		2.11	GB-40	Medssia	58	58	4	3	5		1.21
KB-10	Tenchji	54	54	8	7	35		1.93	GB-41	Ketana 1	98	98	6	5			1.11
KB-11	Zacouit El Anes	125	125	7	6	34		1.38	GB-42	Ketana 3	140	140	2	1			1.02
KB-12	Zacouit El Harth	81	81	5	5	34		1.54	GB-43	Ketana 4	125	125	3	3		15	1.17
KB-13	Ziret Louhichi	86	86	9	11	42		1.72	GB-44	Sidi Sellam	120	120	12	10			1.19
KB-14	Chouchet Nagga	26	26	5	5	16		2.00	GB-45	Zrig Barania	71	71	2	2	10	20	1.48
KB-15	Gualaya	150	150	17	12	42		1.47	GB-46	Chouki	50	50					1.00
KB-16	Jedda	133	133	21	5	55		1.61	GB-47	Taaradh 1	35	35	3	3	1		1.20
KB-17	Mansoura	86	86	7	8	37		1.60	GB-48	Taaradh 3	55	55	5	3	2		1.18
KB-18	Raba	162	162	32	10	40		1.51									
KB-19	Telmine	240	240	101	14	40		1.65									
KB-20	Tembib	118	118	21	25	65		1.94									
KB-21	Tonbar	127	127	25	15	55		1.75									
KB-22	Lingues	57	57	8	6	48		2.09									
KB-23	Mazza Neji	66	66	6	6	34		1.70									
KB-24	Oum El Farh 1 et 2	55	55	11	8	35		1.98									
KB-25	Sithiri	82	82	7	7	65		1.96									
KB-26	Saidane	30	30	4	10	20		2.13									
KB-27	Barghouthia	52	52	31	10	18		2.13									
KB-28	Bazma	146	146	3		25		1.19									
KB-29	B'chelli	135	135	31	10	40		1.60									
KB-30	B'bidete	75	75	31	26	22		2.05									
KB-31	Zarcine	70	70	12		17		1.41									
KB-32	Jenna	112	112	34	15	77		2.13									
KB-33	Miourfa	81	81	34	15	40		2.70									
KB-34	M'aid	95	95	25	14	60		2.04									
KB-35	Rahmet	85	85	11	2	70		1.98									
KB-36	Ras El Ain	268	268	30	30	62		1.46									
KB-37	Souk El Balaz	65	65	15	12	42		2.06									
KB-38	Ben Zitoun 1 et 2	147	147	71	55	43		2.15									
KB-39	Bourzine	94	94	51	10	54		2.22									
	Sub-total	7,133	7,133	864	621	1,620	452	1.48									
	<b>Total</b>	<b>23,433</b>	<b>23,409</b>	<b>2,920</b>	<b>2,331</b>	<b>3,662</b>	<b>452</b>	<b>1.48</b>									

Sources : Gafsa, Tozeur, Kebili and Gabes CRDA  
Remarks :



表 3.3.2.2 作付体系によるオアシスの分類

Code No	Name of Oasis	Date Palm	Olive	Fruits	Field Crops	Oasis	
						Type-1	Type-2
<b>Gafsa Governorate</b>							
GF-1	Kasba	+	++++	++	**	T	O-1
GF-2	Sud Ouest	+	++++	++	**	T	O-2
GF-3	El Guenar	+++	+	++	**	T	DF-2
GF-4	Lalla	+	++++	++	**	T	O-2
GF-5	El Ksar	++	++	+++	**	T	FD-2
GF-6	Oued Shah	++++	+	+	+	N	D-1
GF-7	Theja	++++	+	+	+	T	D-1
GF-8	Seghdou	++++	+	++	**	N	D-4
<b>Tozeur Governorate</b>							
TZ-1	Tozeur	++++	+	+	+	T	D-1
TZ-2	Kastilia	+++	+	++	**	T	DF-2
TZ-3	Oued El Koucha	++++	+	+	+	T	D-1
TZ-4	Neflyette	++++	+	+	**	T	D-2
TZ-5	Chemsa	++++	+	+	**	T	D-2
TZ-6	Helba Est	++++	+	+	**	T	D-2
TZ-7	Helba Ouest	+++	+	++	+	T	DF-1
TZ-8	him 1	+++	+	++	**	T	DF-2
TZ-9	him 2	+++	+	++	+	T	DF-1
TZ-10	Bn Chabbat 3	+++	+	++	+	N	DF-1
TZ-11	Nefa	++++	+	+	+	T	D-1
TZ-12	Ghardaia	+++	+	++	**	N	DF-2
TZ-13	Bn Chabbat 1	+++	+	++	+	N	DF-1
TZ-14	Bn Chabbat 2	+++	+	++	+	N	DF-1
TZ-15	Dran Sud	+++	+	++	+	T	DF-1
TZ-16	Hazoua 1	+++	+	++	+	T	DF-1
TZ-17	Hazoua 2	+++	+	++	+	N	DF-1
TZ-18	Hazoua 3	+++	+	++	+	N	DF-1
TZ-19	Oued Leghaissi	+++	+	++	+	T	DF-1
TZ-20	Tozarit	+++	+	++	+	T	DF-1
TZ-21	Cedada	++++	+	+	**	T	D-4
TZ-22	Dghornes	+++	+	++	+	T	DF-1
TZ-23	Degache	++++	+	+	+	T	D-1
TZ-24	Chakmou	++++	+	+	**	T	D-2
TZ-25	El Huturia	++++	+	+	+	T	D-1
TZ-26	Tanazra	++++	+	+	+	T	D-1
TZ-27	Chebika	++++	+	+	**	T	D-2
TZ-28	Foum El Khanga	++++	+	+	**	T	D-2
TZ-29	Mides	++++	+	+	**	T	D-2
TZ-30	Ain El Karma	++++	+	+	**	T	D-2
<b>Kebili Governorate</b>							
KB-1	Bechri	++++	+	+	**	T	D-3
KB-2	Bouabdallah	++++	+	+	**	T	D-3
KB-3	Fainassa	++++	+	+	**	T	D-3
KB-4	El Chaa	++++	+	+	**	T	D-3
KB-5	Menchia	++++	+	+	**	T	D-3
KB-6	Nagga	++++	+	+	**	T	D-3
KB-7	Oum Soma	++++	+	+	**	T	D-3
KB-8	Oued Zra	++++	+	+	**	T	D-3
KB-9	Oued Touafi	++++	+	+	**	T	D-3
KB-10	Tenchig	++++	+	++	**	T	D-4
KB-11	Zaouiet El Aret	++++	+	++	**	T	D-3
KB-12	Zaouiet El Harth	++++	+	++	**	T	D-3
KB-13	Zit El Louhichi	++++	+	++	**	T	D-3
KB-14	Chouchet Nagga	++++	+	++	**	N	D-4
KB-15	Gataya	++++	+	++	**	T	D-3
KB-16	Jedja	++++	+	++	**	T	D-3
KB-17	Mansoura	++++	+	++	**	T	D-3
KB-18	Rabta	++++	+	++	**	T	D-3
KB-19	Telmine	++++	+	++	**	T	D-4
KB-20	Tembib	++++	+	++	**	T	D-4
KB-21	Tombar	++++	+	++	**	T	D-4
KB-22	Linegues	++++	+	++	**	T	D-3
KB-23	Mazraa Nejt	++++	+	++	**	T	D-3
KB-24	Oum El Fardh 1 et 2	++++	+	++	**	T	D-3
KB-25	Sifuni	++++	+	++	**	T	D-3
KB-26	Saidane	++	+	+++	**	N	FD-2
KB-27	Barghoutia	++++	+	++	**	T	D-1
KB-28	Bazna	+++	+	++	**	T	DF-2
KB-29	B'chelli	++++	+	++	**	T	D-4
KB-30	Bhidene	++++	+	++	**	T	D-1
KB-31	Zarcine	++++	+	++	**	T	D-1
KB-32	Jenna	++++	+	++	**	T	D-3
KB-33	Mkouria	++++	+	++	**	T	D-1
KB-34	Masid	+++	+	++	**	T	DF-2
KB-35	Rahmat	+++	+	++	**	T	DF-2
KB-36	Ras El Ain	++++	+	++	**	T	D-1
KB-37	Souk El Barez	+++	+	++	**	T	DF-2
KB-38	Ben Zouat 1 et 2	++++	+	++	**	T	D-3
KB-39	Bourzina	++++	+	++	**	T	D-4
<b>Kebili Governorate</b>							
KB-40	Gueliada	++++	+	++	**	T	D-4
KB-41	Kelwamen	++++	+	++	**	T	D-4
KB-42	Klibia	++++	+	++	**	T	D-3
KB-43	Sidi Hamad	++++	+	++	**	T	D-4
KB-44	Ailet	++++	+	++	**	N	D-4
KB-45	Douz	++++	+	++	**	T	D-4
KB-46	El Ghoulfa	+++	+	++	**	T	DF-2
KB-47	El Gofaa	++++	+	++	**	T	D-4
KB-48	Grad	++++	+	++	**	T	D-4
KB-49	El Hray	+++	+	++	**	T	DF-2
KB-50	Nouiel	+++	+	++	**	T	DF-2
KB-51	Zafrane	++++	+	++	**	T	D-4
KB-52	Bouharza	++++	+	++	**	T	D-4
KB-53	Ksar Ghilane	+++	+	++	**	T	D-1
KB-54	Sakourna	+++	+	++	**	T	DF-2
KB-55	Tarfaya	+++	+	++	**	T	DF-2
KB-56	Dhonnana	+++	+	++	**	N	D-4
KB-57	Smida	+++	+	++	**	N	DF-2
KB-58	Ghidna	++++	+	++	**	T	D-3
KB-59	Sabia	++++	+	++	**	T	D-3
KB-60	El Facour 1	++++	+	++	**	T	D-3
KB-61	El Facour 2	++++	+	++	**	T	D-3
KB-62	Bechni	++++	+	++	**	N	D-3
KB-63	Dergine	++++	+	++	**	N	D-3
KB-64	Matrouha	++++	+	++	**	T	D-3
KB-65	Regim Matoug 1	++++	+	++	**	N	D-3
KB-66	Regim Matoug 2	++++	+	++	**	N	D-4
KB-67	Tarfayt Elma	++++	+	++	**	N	D-4
<b>Gabes Governorate</b>							
GB-1	Ain Zig	++	+	+++	**	T	FD-2
GB-2	Temoula 1	+	+	++++	**	T	F-2
GB-3	Temoula 2	+	+	++++	**	T	F-2
GB-4	Zig Dakhlania	++	+	+++	**	T	FD-2
GB-5	Teboulbou	++	++	+++	**	T	FD-1
GB-6	Ouin de Gabes	++	+	+++	**	T	FD-2
GB-7	Linaoua 1 et 2	+	+	++++	**	N	F-2
GB-8	Mdou	+	+	++++	**	T	F-2
GB-9	Chou El Ferik	small	small	small	****	T	A
GB-10	Bouhamma	+++	+	++	**	T	DF-2
GB-11	Majjoub	+++	+	++	**	T	DF-2
GB-12	Salern	++	++	+++	**	T	FD-2
GB-13	Sbou	++	++	+++	**	T	FD-2
GB-14	Faycal	small	small	small	****	T	A
GB-15	M'ziraa Ghanouch	small	small	small	****	T	A
GB-16	Metouia	+++	++	+++	**	T	DF-2
GB-17	Ouedhref	+++	+	++	**	T	DF-2
GB-18	Aouinette	+	++++	+	**	T	G-2
GB-19	Chenchoa 1	small	small	small	****	T	A
GB-20	Chenchoa 2	small	small	small	****	N	A
GB-21	Tekouri	++	+	+++	**	T	FD-2
GB-22	Hamma Oasis	++++	+	++	**	T	D-3
GB-23	Mizraa Hamna	++	++	+++	**	T	FD-2
GB-24	Bechima 1	++	+	+++	**	T	FD-2
GB-25	Bechima 2	+++	+	++	**	T	DF-2
GB-26	Khebayef	++	++	+++	**	T	FD-2
GB-27	Ben Oulouf	++	++	+++	**	T	FD-2
GB-28	Gib Dokhane	++	++	+++	**	T	FD-2
GB-29	Oued Nekhla	+++	+	++	**	T	DF-2
GB-30	Aram	++	++	+++	**	T	FD-2
GB-31	Mareth 1	+	+	++++	**	T	F-2
GB-32	Mareth 2	+	+	++++	**	T	F-2
GB-33	Mareth 3	++	++	+++	**	T	FD-2
GB-34	Mareth 5	+	+	++++	**	T	F-2
GB-35	Mareth 6	+	+	++++	**	T	F-2
GB-36	Zarat 2	+	+	++++	**	T	F-2
GB-37	Zerkine 1 et 3	+	+	++++	**	T	F-2
GB-38	Zerkine 2	+	+	++++	**	T	F-2
GB-39	Ayoune Zerkine	+	+	++++	**	T	F-2
GB-40	Madsia	+	+	++++	**	T	F-2
GB-41	Kettana 1	+	++	++++	**	T	F-1
GB-42	Kettana 3	+	++	++++	**	T	F-1
GB-43	Kettana 4	+	++	++++	**	T	F-1
GB-44	Sidi Sellam	+	++	++++	**	N	F-1
GB-45	Zig Barania	+	++++	++	**	T	O-2
GB-46	Ghandki	+	++	++++	**	N	F-1
GB-47	Laaradh 1	+	++	++++	**	N	F-1
GB-48	Laaradh 3	+	++	++++	**	N	F-1

Source: JICA study team estimation

Remarks: T; Traditional oasis, N; Newly developed oasis

++++: Predominant (>70%), +++: Leading (<50%), ++: Small (>50%), +: Very small (>20%)

\*\*\*\*: large area is used for field crops, \*\*: Relatively large (more than 20% of total area), \*\*\*: Small (>20-40

Small: Plant density of all trees is less than 90 trunks per square metre



表 3.3.2.4 主要作物の生産量 (1992/93, 1993/94)

(Unit: tons)

Code No	Name of Oasis	Date		Pome-		Fig and		Winter		Summer		Fodder		Insha	
		Palm	Olive	granate	Apricot	Others	Veget.	Veget.	Crope	Crope	Fodder	Insha	Crope	Crope	
<b>Cafsa Governorate</b>															
GF-1	Kasba	566	4,243	116	1,368	169	3,565	2,185	5,019						
GF-2	Sud Ouest	314	4,669	175	376	194	2,037	2,173	8,719						
GF-3	El Ouedar	2,195	923	87	37	185	2,543	106	2,898						
GF-4	Lalla	293	4,953	189	136	176	1,497	2,295	13,828						
GF-5	El Ksar	895	2,842	605	451	162	1,683	2,790	13,952						
GF-6	Oued Shili	208					49		316						
GF-7	Thelja	347	79				143		431						
GF-8	Saghad	1,149	145	58	25	33	254	230	1,369						
Sub-total		5,658	17,854	1,230	2,394	960	11,263	8,719	47,531						
<b>Tozeur Governorate</b>															
TZ-1	Tozeur	5,425	47	36	10	61	831	528	5,430						
TZ-2	Kastila	244	6	7	3	12	55	43	465						
TZ-3	Oued El Koucha	365	6	2	3	2	28	22	239						
TZ-4	Neflayetie	413	6	5	3	5	56	43	315						
TZ-5	Chemsa	529	6	5	3	10	58	45	405						
TZ-6	Hebha Est	493	3	4	2	9	27	20	233						
TZ-7	Hebha Ouest	272	6	5	3	8	36	37	321						
TZ-8	Jhim 1	200	5	2	2	5	32	26	364						
TZ-9	Jhim 2	959	9	9	5	20	28	22	317						
TZ-10	Bu Chabbat 3	1,368	17	28	20	57	147	95	609						
TZ-11	Nefta	4,939	20	26	5	38	601	408	3,606						
TZ-12	Charqaya	206	3	4	3	7	55	21	233						
TZ-13	Bu Chabbat 1	1,812	13	25	11	44	126	71	615						
TZ-14	Bu Chabbat 2	1,146	9	24	14	52	123	95	784						
TZ-15	Deza Sud	787	6	24	11	42	136	85	509						
TZ-16	Hazoua 1	379	3	11	3	10	40	28	308						
TZ-17	Hazoua 2	187	2	5	10	29	22	242							
TZ-18	Hazoua 3	965	4	21	8	20	78	36	403						
TZ-19	Oued Lghrisi	311	2	7	3	7	28	22	314						
TZ-20	Tozeur	173	8	2	3	7	41	22	157						
TZ-21	Cadara	303	9	2	5	34	28	383							
TZ-22	Dghouma	564	12	9	3	15	48	29	393						
TZ-23	Degache	4,200	236	32	7	35	738	488	4,638						
TZ-24	Chakrou	480	11	7	2	10	34	21	305						
TZ-25	El Hamra	2,279	17	15	5	21	301	205	1,653						
TZ-26	Tamerza	487	6	5	3	5	37	23	331						
TZ-27	Chabika	133	3				14	7	83						
TZ-28	Foum El Khaoua	267	6	5	3	8	21	7	166						
TZ-29	Mida	167	3	2			29	7	156						
TZ-30	Ain El Karma	147	3	2			21	7	156						
Sub-total		29,232	450	334	135	537	3,833	2,514	24,343						
<b>Kebili Governorate</b>															
KB-1	Boehi	923	5	6			99	93	2,294						
KB-2	Bouabdafah	1,476	5	6			182	152	3,189						
KB-3	Fatoua	1,185	10	10	3	6	94	102	2,553						
KB-4	El Giza	491	28	3	2	5	134	120	1,783						
KB-5	Menchia	672	31	12	5	18	109	135	2,804						
KB-6	Nagga	1,032	3				35	37	1,770						
KB-7	Oum Souaa	790	71	6	2	5	109	138	1,091						
KB-8	Oued Zira	301	22	9	2	10	101	156	2,860						
KB-9	Oued Touat	302	4	3			119	67	2,206						
KB-10	Tenchig	278	9	6	2	3	106	68	1,721						
KB-11	Zaoulet El Anar	658	27	3			89	60	1,633						
KB-12	Zaoulet El Harh	408	17				58	50	1,548						
KB-13	Zreit Leuhichi	459	23	5			114	107	2,095						
KB-14	Chouket Nagga	100					63	45	793						
KB-15	Gouaya	777	14	6	5	16	212	130	2,018						
KB-16	Jedifa	728	38	3			266	56	2,784						
KB-17	Mansoura	424	17				81	78	1,685						
KB-18	Raha	918		6	2	5	325	109	1,984						
KB-19	Telmine	1,261	32	38	2	34	1,445	146	1,966						
KB-20	Tenchig	585	38	10			25	266	248	3,290					
KB-21	Tombat	628	32	12			16	310	150	2,664					
KB-22	Liragues	364	14	3			3	99	61	2,377					
KB-23	Mazraa Neji	367	10	7			3	79	63	1,733					
KB-24	Oum El Farh 1 et 2	368	10	3			3	138	88	1,791					
KB-25	Sidiiri	455	19	3			6	95	71	3,337					
KB-26	Saidone	74	21	6	2	1	48	88	982						
KB-27	Baghbofina	273	9	3			5	384	98	885					
KB-28	Barma	674	85	33	3	14	36		1,225						
KB-29	B'chelli	713	5	6	2	21	384	98	1,966						
KB-30	B'chella	496	5	3			8	384	258	1,082					
KB-31	Zacine	369		3			2	138	782						
KB-32	Arava	545	19	3			11	459	161	4,011					
KB-33	Moudia	431	5	3	2	5	326	149	1,922						
KB-34	Maid	488		9	2	13	294	133	2,882						
KB-35	Rahmat	457	5	10			11	136	24	3,518					
KB-36	Ras El Ain	1,446	42	19			19	368	309	3,092					
KB-37	Souk El Balet	307	28	13			8	192	134	2,103					
KB-38	Ben Zetoun 1 et 2	800	3	6	2	13	916	526	2,114						
KB-39	Bourzic	509	5	10	3	14	664	103	2,772						
Sub-total		18,478	4,879	21,065	1,444	1,903	24,375	9,435	96,263						
<b>Gabes Governorate</b>															
GB-1	Ain Zig	555		410	36	55	294	126	1,323	17					
GB-2	Temoula 1		8	49	161	108	107	51	495	5					
GB-3	Temoula 2	25	4	74	49	26	60	34	123	5					
GB-4	Zig dakharia	73		170	12	15	59	13	486	3					
GB-5	Tebouba	1,175	359	1,798	172	234	1,166	502	4,580	114					
GB-6	Oasis de Gabes	2,842	12	2,764	35	34	712	347	7,330	292					
GB-7	Limaoua 1 et 2	6	74	709	81	290	882	357	1,336	9					
GB-8	M'dou	95	12	107	24	50	58	33	535	12					
GB-9	Chah El Farh	56		88	38	63	59	45	188	19					
GB-10	Bouchenara	665	28	192	12	40	175	79	779	17					
GB-11	Majoub	1,257	558	1,065	24	39	2,977	1,287	5,602	28					
GB-12	Salem	273	182	71			5	613	273	1,185	7				
GB-13	Soud	201	134	61			5	597	260	1,155	6				
GB-14	Faycal	659	512	180	12	30	2,052	276	3,716	20					
GB-15	M'zira Ghannouch	189	816	565	49	71	2,256	981	4,017	21					
GB-16	Meloua	1,292		586	12	10	2,047	275	3,707	19					
GB-17	Ouedref	1,172	49	442	23	9	2,100	913	6,232	14					
GB-18	Awbete														



表 3.3.4.2 農業資機材の市場価格と農家庭先価格 (1994/95)

(Unit: D.)

Description	Unit	Market Price				Average (a)	Farmgate Price		
		Gafsa	Tozeur	Kebili	Gabes		T.C.* (b) (10%)	Total (a + b)	Estimated Price
<b>A. SEEDLING / SEED</b>									
1. Arboriculture									
1.1 Date Palm	Seedling	1.500	1.200	1.000	1.500	1.300	0.130	1.430	1.500
1.2 Olive	Seedling	1.500	2.000	2.500	1.200	1.800	0.180	1.980	2.000
1.3 Pomegranate	Seedling	0.400	0.500	0.300	0.400	0.400	0.040	0.440	0.500
1.4 Apricot	Seedling	0.850	0.700	0.750	0.520	0.705	0.071	0.776	0.800
1.5 Fig	Seedling	0.400	0.300	0.800	0.350	0.463	0.046	0.509	0.500
1.6 Apple	Seedling	1.200	2.000	1.100	1.200	1.375	0.138	1.513	1.500
1.7 Grape	Seedling	1.500	0.500	0.500	1.200	0.925	0.093	1.018	1.000
2. Vegetables									
	(Seed)						(5%)		
2.1 Carrot	Kg	24.000	25.800	18.000	24.000	22.950	1.148	24.098	24.100
2.2 Turnip	Kg	13.000	12.600	14.000	12.000	12.900	0.645	13.545	13.500
2.3 Onion	Kg	65.000	54.000	54.000	52.000	56.250	2.813	59.063	59.000
2.4 Kidney Beans	Kg	1.600	1.450	1.000	1.600	1.413	0.071	1.483	1.500
2.5 Pepper	Kg	120.000	145.000	105.000	225.000	148.750	7.438	156.188	156.200
2.6 Tomato	Kg	54.000	75.000	80.000	67.000	69.000	3.450	72.450	72.500
3. Fodder Crops									
3.1 Lucern	(Seeds) Kg	4.200	4.560	3.500	4.000	4.065	0.203	4.268	4.300
4. Industrial Crops									
4.1 Henna	(Seed) Kg				2.000	2.000	0.100	2.100	2.100
<b>B. FARMINPUTS</b>									
1. Fertilizers									
							(10%)		(per kg)
1.1 FYM / Compost	ton								10.000
1.2 Ammonite	50 kg	10.500	10.700	10.500	10.000	10.425	1.043	11.468	11.500 0.230
1.3 Super 45 (TSP)	50 kg	10.500	11.000	11.000	10.500	10.750	1.075	11.825	11.900 0.238
1.4 Sulfate de Potash	50 kg	19.350	19.500	19.000	19.000	19.213	1.921	21.134	21.100 0.422
1.5 Nitrate de Potash	50 kg	38.000	39.000	45.000	38.000	40.000	4.000	44.000	44.000 0.880
2. Insecticides									
2.1 DCES EC 25	lit	22.000	19.500	20.500	22.000	21.000	1.050	22.050	22.100
2.2 THIODAN	lit		12.700	13.200		12.950	0.648	13.598	13.600
2.3 FATEK	lit	7.200	6.600	8.000	6.500	7.075	0.354	7.429	7.500
2.4 PERIMOR	lit	30.000	30.000	32.000	32.000	31.000	1.550	32.550	32.600
								Estimated average	18.700
3. Fungicides									
3.1 PELT 44	kg	18.000	6.900/0.3g	20.600	22.660	20.420	1.021	21.441	21.500
3.2 CUIVOX 50	kg	4.300/lit	4.070			4.070	0.204	4.274	4.300
3.3 BENLATE	kg	45.930	10.800/0.3g	51.000	66.000	54.310	2.716	57.026	57.000
3.4 MANEBE	kg	6.500	5.700	8.600	6.700	6.875	0.344	7.219	7.200
								Estimated average	25.200
<b>C. OTHERS</b>									
1. Water Charge									
	m3	0.025	0.017	0.020	0.017	0.020			0.020
	per ha	202.000	239.000	150.000	160.000	187.750			188.000
2. Labor Charge									
2.1 Casual Worker	man-day	4.600	4.160	5.500	6.500	5.190			5.200
2.2 Pollinisation (Date)	man-day	4.600	4.160	8.000	6.500	5.815			5.800
2.3 Harvesting	man-day	4.600	8.000	8.000	6.500	6.775			6.800

Sources : Arr. des Etudes et Statistiques Agricole, Division des Etudes et du Developpement Agricole, Gafsa, Tozeur, Kebili and Gabes CRDA

Farm Economic Survey by JICA Study Team, September 1995

Remarks : T.C.\* : Transportation cost from market to farm including handling charge and other cost.

表 3.3.5.1 現況の作物別の生産費と純生産額

(Unit: D./ha)

Description	Gross Income		Production Cost			Net Return (a - b)	
	Yield* (ton)	Unit Price (D./kg)	Amount (a)	Farm Inputs	Labor Cost		Others
1. Arboriculture							
1.1 Date Palm	5.86	1.025	4,702 *	357	571	46	974 *
1.2 Olive	6.05	0.400	1,896 *	219	522	37	778 *
1.3 Pomegranate	10.31	0.287	2,320 *	391	591	49	1,031 *
1.4 Apricot	11.80	0.493	4,561 *	363	726	55	1,144 *
1.5 Fig	4.21	0.385	1,271 *	249	600	56	905 *
2. Vegetables							
2.1 Carrot	21.00	0.109	2,289	381	1,144	76	1,601
2.2 Turnip	20.00	0.201	4,020	374	1,144	76	1,594
2.3 Onion	21.36	0.186	3,973	437	1,248	84	1,769
2.4 Kindey Beans	10.43	0.370	3,859	309	1,076	70	1,455
2.5 Pepper	9.29	0.874	8,119	681	1,196	94	1,971
2.6 Tomato	21.10	0.310	6,541	400	1,196	79	1,675
3. Fodder Crops							
3.1 Lucern	54.85	0.053	2,907	250	738	49	1,038
4. Industrial Crops							
4.1 Henna	1.47	1.839	2,703	371	827	59	1,257

Sources : Farm economic survey by JICA Team, 1995

Remark : (\*): Figures of arboriculture crops are estimated average yield and annual cost of 25 years.

Ref : ANNEX-E, Tables E.3.10.1 (1), (2), (3) and (4)

表 3.3.5.2 現況の調査対象地域 (153オアシス) の作物総生産額

Description	Unit	Gafsa Gouvernorat	Tozeur Gouvernorat	Kebili Gouvernorat	Gabes Gouvernorat	Total
<b>1. Arboriculture (Unit Prices)</b>						
1.1 Date Palm	1.025 D/kg					
- Planted Area	(ha)	812	5,036	6,566	3,113	15,527
- Yield	(kg/ha)	7.34	5.82	5.68	5.93	5.86
- Production	(tons)	5,958	29,329	37,289	18,470	91,046
- Gross Income	(D., '000)	6,106.8	30,062.2	38,221.6	18,931.8	93,322.4
1.2 Olive	0.400 D/kg					
- Planted Area	(ha)	2,221	177	194	1,727	4,319
- Yield	(kg/ha)	8.04	2.71	4.63	3.98	6.05
- Production	(tons)	17,854	480	898	6,879	26,111
- Gross Income	(D., '000)	7,141.5	191.8	359.2	2,751.8	10,444.4
1.3 Pomegranate	0.287 D/kg					
- Planted Area	(ha)	150	145	161	1,788	2,244
- Yield	(kg/ha)	8.20	2.30	3.21	11.78	10.31
- Production	(tons)	1,230	334	517	21,065	23,145
- Gross Income	(D., '000)	353.0	95.9	148.3	6,035.6	6,642.7
1.4 Apricot	0.493 D/kg					
- Planted Area	(ha)	125	51	49	122	347
- Yield	(kg/ha)	19.15	2.64	2.52	11.83	11.80
- Production	(tons)	2,394	135	124	1,444	4,096
- Gross Income	(D., '000)	1,180.1	66.5	60.9	711.6	2,019.1
1.5 Fig/Others	0.385 D/kg					
- Planted Area	(ha)	124	213	243	383	963
- Yield	(kg/ha)	7.74	2.52	2.69	4.97	4.21
- Production	(tons)	960	537	654	1,903	4,054
- Gross Income	(D., '000)	369.6	206.8	251.9	732.5	1,560.8
Sub-total	(ha)	3,432	5,622	7,213	7,133	23,400
	(D., '000)	15,151.1	30,623.2	39,041.9	29,173.2	113,989.4
<b>2. Vegetables</b>						
2.1 Turnip/Carrot	0.201 D/kg					
- Planted Area	(ha)	166	125	457	392	1,140
- Yield	(kg/ha)	29.43	13.15	13.49	28.23	20.84
- Production	(tons)	4,885	1,644	6,163	11,066	23,757
- Gross Income	(D., '000)	981.8	330.4	1,238.8	2,224.2	4,775.3
2.2 Onion	0.186 D/kg					
- Planted Area	(ha)	166	123	541	408	1,238
- Yield	(kg/ha)	26.69	14.58	14.94	29.73	21.36
- Production	(tons)	4,431	1,794	8,085	12,128	26,438
- Gross Income	(D., '000)	824.2	333.6	1,503.8	2,255.9	4,917.5
2.3 Kidney Beans	0.370 D/kg					
- Planted Area	(ha)	167	58	263	64	552
- Yield	(kg/ha)	14.66	6.82	6.98	16.89	10.43
- Production	(tons)	2,447	396	1,835	1,081	5,759
- Gross Income	(D., '000)	905.5	146.3	678.9	400.0	2,130.8
2.4 Pepper	0.874 D/kg					
- Planted Area	(ha)	319	168	558	413	1,458
- Yield	(kg/ha)	9.96	6.81	6.99	12.87	9.29
- Production	(tons)	3,176	1,144	3,903	5,315	13,538
- Gross Income	(D., '000)	2,776.2	999.5	3,411.3	4,645.4	11,832.4
2.5 Tomato	0.310 D/kg					
- Planted Area	(ha)	223	94	248	208	773
- Yield	(kg/ha)	29.61	14.58	17.00	19.81	21.10
- Production	(tons)	6,603	1,370	4,217	4,120	16,309
- Gross Income	(D., '000)	2,046.8	424.8	1,307.2	1,277.0	5,055.8
Sub-total	(ha)	1,041	568	2,067	1,485	5,161
	(D., '000)	7,534.5	2,234.6	8,140.0	10,802.5	28,711.7
<b>3. Fodder Crops</b>						
3.1 Lucern	0.053 D/kg					
- Planted Area	(ha)	886	311	2,850	1,620	5,667
- Yield	(kg/ha)	53.65	77.63	50.15	59.38	54.85
- Production	(tons)	47,531	24,143	142,936	96,203	310,813
- Gross Income	(D., '000)	2,519.1	1,279.6	7,575.6	5,098.8	16,473.1
<b>4. Industrial Crops</b>						
4.1 Henna	1.839 D/kg					
- Planted Area	(ha)	0	0	0	452	452
- Yield	(kg/ha)				1.47	1.47
- Production	(tons)	0	0	0	662	662
- Gross Income	(D., '000)	0.0	0.0	0.0	1,218.0	1,218.0
<b>Total Planted Area</b>	(ha)	<b>5,352</b>	<b>6,501</b>	<b>12,130</b>	<b>10,690</b>	<b>34,680</b>
<b>Total Gross Income</b>	(D., '000)	<b>25,204.8</b>	<b>34,137.4</b>	<b>54,757.5</b>	<b>46,292.4</b>	<b>160,392.2</b>

Ref. : ANNEX-E, Tables E.3.10.1 and E.3.10.2

表 3.3.5.3 現況の調査対象地域 (153オアシス) における作物純生産額

Description	Unit	Gafsa Gouvernorat	Tozeur Gouvernorat	Kebili Gouvernorat	Gabes Gouvernorat	Total
<b>I. Arboriculture (Production Cost)</b>						
1.1 Date Palm	974 D/ha					
- Planted Area	(ha)	812	5,036	6,566	3,113	15,527
- Gross Income	(D., '000)	6,106.8	30,062.2	38,221.6	18,931.8	93,322.4
- Production Cost	(D., '000)	790.9	4,905.1	6,395.3	3,032.1	15,123.4
- Net Income	(D., '000)	5,315.9	25,157.1	31,826.3	15,899.7	78,199.0
1.2 Olive	778 D/ha					
- Planted Area	(ha)	2,221	177	194	1,727	4,319
- Gross Income	(D., '000)	7,141.5	191.8	359.2	2,751.8	10,444.3
- Production Cost	(D., '000)	1,727.9	137.7	150.9	1,343.6	3,360.1
- Net Income	(D., '000)	5,413.6	54.1	208.3	1,408.2	7,084.2
1.3 Pomegranate	1,031 D/ha					
- Planted Area	(ha)	150	145	161	1,788	2,244
- Gross Income	(D., '000)	353.0	95.9	148.3	6,045.6	6,642.8
- Production Cost	(D., '000)	154.7	149.5	166.0	1,843.4	2,313.6
- Net Income	(D., '000)	198.3	-53.6 *	-17.7 *	4,202.2	4,329.2
1.4 Apricot	1,144 D/ha					
- Planted Area	(ha)	125	51	49	122	347
- Gross Income	(D., '000)	1,180.1	66.5	60.9	711.6	2,019.1
- Production Cost	(D., '000)	143.0	58.3	56.1	139.6	397.0
- Net Income	(D., '000)	1,037.1	8.2	4.8	572.0	1,621.1
1.5 Fig / Others	905 D/ha					
- Planted Area	(ha)	124	213	243	383	963
- Gross Income	(D., '000)	369.6	206.8	251.9	732.5	1,560.8
- Production Cost	(D., '000)	112.2	192.8	219.9	346.6	871.5
- Net Income	(D., '000)	257.4	14.0	32.0	385.9	689.3
<b>2. Vegetables</b>						
2.1 Turnip* / Carrot	1,594 D/ha					
- Planted Area	(ha)	166	125	457	392	1,140
- Gross Income	(D., '000)	981.8	330.4	1,238.8	2,224.2	4,775.2
- Production Cost	(D., '000)	264.6	199.3	728.5	624.8	1,817.2
- Net Income	(D., '000)	717.2	131.1	510.3	1,599.4	2,958.0
2.2 Onion	1,769 D/ha					
- Planted Area	(ha)	166	123	541	408	1,238
- Gross Income	(D., '000)	824.2	333.6	1,503.8	2,255.9	4,917.5
- Production Cost	(D., '000)	293.7	217.6	957.0	721.8	2,190.1
- Net Income	(D., '000)	530.5	116.0	546.8	1,534.1	2,727.4
2.3 Kidney Beans	1,455 D/ha					
- Planted Area	(ha)	167	58	263	64	552
- Gross Income	(D., '000)	905.5	146.3	678.9	400.0	2,130.7
- Production Cost	(D., '000)	243.0	84.4	382.7	93.1	803.2
- Net Income	(D., '000)	662.5	61.9	296.2	306.9	1,327.5
2.4 Pepper	1,971 D/ha					
- Planted Area	(ha)	319	168	558	413	1,458
- Gross Income	(D., '000)	2,776.2	999.5	3,411.3	4,645.4	11,832.4
- Production Cost	(D., '000)	628.7	331.1	1,099.8	814.0	2,873.6
- Net Income	(D., '000)	2,147.5	668.4	2,311.5	3,831.4	8,958.8
2.5 Tomato	1,675 D/ha					
- Planted Area	(ha)	223	94	248	208	773
- Gross Income	(D., '000)	2,046.8	424.8	1,307.2	1,277.0	5,055.8
- Production Cost	(D., '000)	373.5	157.5	415.4	348.4	1,294.8
- Net Income	(D., '000)	1,673.3	267.3	891.8	928.6	3,761.0
<b>3. Fodder Crops</b>						
3.1 Lucern	1,038 D/ha					
- Planted Area	(ha)	886	311	2,850	1,620	5,667
- Gross Income	(D., '000)	2,519.1	1,279.6	7,575.6	5,098.8	16,473.1
- Production Cost	(D., '000)	919.7	322.8	2,958.3	1,681.6	5,882.4
- Net Income	(D., '000)	1,599.4	956.8	4,617.3	3,417.2	10,590.7
<b>4. Industrial Crops</b>						
4.1 Henna	1,257 D/ha					
- Planted Area	(ha)	0	0	0	452	452
- Gross Income	(D., '000)	0.0	0.0	0.0	1,218.0	1,218.0
- Production Cost	(D., '000)	0.0	0.0	0.0	568.2	568.2
- Net Income	(D., '000)	0.0	0.0	0.0	649.8	649.8
<b>Total :</b>						
- Planted Area	(ha)	5,359	6,501	12,130	10,690	34,680
- Gross Income	(D., '000)	25,204.6	34,137.4	54,757.5	46,292.6	160,392.1
- Production Cost	(D., '000)	5,651.9	6,756.1	13,529.9	11,557.2	37,495.1
- Net Income	(D., '000)	19,552.7	27,381.3	41,227.6	34,735.4	122,897.0
153 Oasis Area	(ha)	3,467	5,622	7,213	7,133	23,435
Cropping Intensity		154.6%	115.6%	168.2%	149.9%	148.0%
- Net Income per ha	(D./ha)	5,639.2	4,870.4	5,715.2	4,869.2	5,244.2

Ref. : ANNEX E, Tables E.3.10.1, E.3.10.2, and E.3.10.3



表 3.3.8.1 現在の平均農家経済収支

Description	Kashi Oats / Galia				Owed Shell Oats / Galia				Tosser Oats / Tosser				Drama Seed Oats / Tosser			
	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)
<b>A. FARM LAND</b>	1.06	7.75	0.9	1,025	1.28	1.78	6.51	1,116	1,025	11,877	1.38	1.59	6.23	8.1	1,025	8,264
<b>B. GROSS INCOME</b>	0.11	8.16	0.4	6,400	0.02	2.23	0.0	2,237	13	47	0.01	0.01	2.52	0.0	0.493	12
- Aroclaurit	0.02	8.26	0.2	0.287	0.01	0.01	0.0	0.493	12	37	0.01	0.01	2.52	0.0	0.493	12
- Olive	0.11	19.54	2.1	0.493	0.04	2.42	0.1	0.385	37	37	0.04	0.04	2.42	0.1	0.385	163
- Pomegranate	0.03	8.06	0.2	0.385												
- Apricots																
- Fig / Other Fruits																
Fodder Crops	0.25	30.42	7.6	0.053	0.39	45.09	17.4	0.053	920	411	0.10	0.10	77.57	7.8	0.053	411
- Lucern																
Winter Season Vegetables	0.08	30.21	2.4	0.201	0.06	30.04	1.2	0.186	224	105	0.04	0.04	13.09	0.5	0.201	105
- Turnip / Carrot	0.06	27.19	2.2	0.186	0.11	10.02	1.1	0.370	389	153	0.04	0.04	14.54	0.6	0.186	118
- Onion	0.07	15.11	1.0	0.370							0.01	0.01	6.79	0.1	0.370	35
- Kidney beans																
Summer Season Vegetables	0.10	10.07	1.0	0.874	0.05	10.07	0.4	0.874	320	153	0.05	0.05	6.79	0.4	0.874	320
- Pepper	0.08	30.21	2.5	0.310							0.03	0.03	14.54	0.5	0.310	153
- Tomato																
Industrial Crops	1.21 ha	1.61	(Cropping Intensity)	7,845 (D)	2.33 ha	2.58	(Cropping Intensity)	13,410 (D)	1.66 ha	1.2025	(Cropping Intensity)	9,421 (D)	2.22 ha	1.1258	(Cropping Intensity)	9,421 (D)
- Henas / Tobacco																
Subtotal																
Off-farm Income																
<b>Total Gross Income</b>																
<b>C. GROSS OUTGOING</b>																
Production Cost	1.06	0.11	974	107	1.78	1.78	974	1,734	400	2.33 ha	2.58	1,428	2.22 ha	2.58	1,257	2,292 (D)
- Aroclaurit	0.11	778	0.778	16	0.02	0.02	1,031	21	64	0.04	0.04	1,594	0.04	0.04	1,594	64
- Olive	0.02	1,031	1,144	11	0.01	0.01	1,444	15	71	0.04	0.04	1,769	0.04	0.04	1,769	71
- Pomegranate	0.01	1,144	905	36						0.01	0.01	1,455	0.02	0.02	1,455	29
- Apricots																
- Fig / Other Fruits																
Fodder Crops	0.25	1,038	260		0.39	1,257				1.66 ha	1,257		2.22 ha	1,257		
- Lucern																
Winter Season Vegetables	0.08	1,594	128		0.06	1,769	106			0.04	1,594	64	0.04	1,594	64	
- Turnip / Carrot	0.06	1,769	142		0.11	1,455	153			0.01	1,769	71	0.02	1,455	29	
- Onion	0.07	1,455	95							0.05	1,971	106	0.05	1,971	99	
- Kidney beans										0.03	1,675	57	0.03	1,675	50	
Summer Season Vegetables	0.10	1,971	187													
- Pepper	0.08	1,675	126													
- Tomato																
Industrial Crops	1.21 ha	1,257	5,333 persons/family**		2.33 ha	2,580	5,47 persons/family**		1.66 ha	1,257	5,27 persons/family**		2.22 ha	2,292 (D)	5,27 persons/family**	
- Henas / Tobacco																
Subtotal																
Livestock Expenses**																
- Food	261	45.5%			261.1	45.5%			261.1	45.5%			261.1	45.5%		
- Housing	104	18.1%			103.9	18.1%			103.9	18.1%			103.9	18.1%		
- Clothing	69	12.1%			69.3	12.1%			69.3	12.1%			69.3	12.1%		
- Hygiene	43	7.5%			43.1	7.5%			43.1	7.5%			43.1	7.5%		
- Transportation / Communication	36	6.3%			36.3	6.3%			36.3	6.3%			36.3	6.3%		
- Education / Culture	44	7.6%			43.7	7.6%			43.7	7.6%			43.7	7.6%		
- Others	17	2.9%			16.6	2.9%			16.6	2.9%			16.6	2.9%		
Subtotal	524	100.0%			524.0	100.0%			524.0	100.0%			524.0	100.0%		
<b>Total Gross Outgoing</b>																
<b>D. NET RESERVE</b>																

Source: Enquete National sur le Budget Consumption des Menages, 1990  
 From economic survey by JICA Study team, 1995.  
 Remarks: (\*) These crops are calculated as representative crops for each season.  
 (\*\*): Consumption by person per year are estimated based on 1000 person farmers.  
 (\*\*): Average family size are estimated based on average of Delegation of each Oases area.  
 Ref.: ANNEXE Tables E.3.10.1, E.3.11.1 and E.3.11.2

表 3.3.8.2 現況の平均農家経済収支

Description	Mandatory Crops / Azebi				Allied Crops / Azebi				Olive or Grape / Gabes				Lima Beans / Z / Gabes										
	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)	Amount (D.)	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)	Amount (D.)	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)	Amount (D.)	Cropped Area (ha)	Estimated Yield (ton/ha)	Production (tons)	Unit Price (D/kg)	Amount (D.)			
<b>A. FARM LAND</b>	0.25	5.37	1.2	1,025	1,238	0.25	4.04	2.7	1,025	2,795	0.25	0.29	5.86	1.1	1,025	1.24	5.81	0.1	1,025	90			
<b>B. GROSS INCOME</b>	0.23	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Agriculture	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Dec	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Olive	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Prunes	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Apricots	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Fig / Other Fruits	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Fodder Crops	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Lucern	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Winter Season Vegetables	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Turnip / Carrot	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Onion	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Kidney beans	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Summer Season Vegetables	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Pepper	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Tomato	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Herbs / Tobacco	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
- Subtotal	0.01	4.28	0.0	0,400	9	0.02	3.08	0.1	0,287	18	0.01	0.19	3.90	0.0	0,400	0.01	3.87	0.6	0,400	248			
<b>C. Farm Income</b>	0.25	1,568	(Cropping Intensity)	1,680	(a)	0.25	1,165	(Cropping Intensity)	1,220	(b)	0.25	1,000	(C)	0.25	1,000	(C)	0.25	1,000	(C)	0.25	1,000	(C)	
<b>Total Gross Income</b>	(a+b)	4,140	(c)	4,140	(c)	(a+b)	3,652	(c)	3,652	(c)	(a+b)	3,991	(c)	(a+b)	3,991	(c)	(a+b)	3,991	(c)	(a+b)	3,991	(c)	
<b>G. GROSS OUTGOING</b>	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Dec	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Olive	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Prunes	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Apricots	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Fig / Other Fruits	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Fodder Crops	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Lucern	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Winter Season Vegetables	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Turnip / Carrot	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Onion	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Kidney beans	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Summer Season Vegetables	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Pepper	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Tomato	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Industrial Crops	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Herbs / Tobacco	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
- Subtotal	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219	4	0.25	974	219
<b>Livestock Expenses</b>	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Food	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Housing	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Clothing	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Hygiene	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Transportation / Communications	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Education / Culture	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Others	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
- Subtotal	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)	410	(d)	0.25	410	(d)
<b>Total Gross Outgoing</b>	(a+b)	3,652	(f)	3,652	(f)	(a+b)	3,142	(f)	3,142	(f)	(a+b)	3,581	(f)	(a+b)	3,581	(f)	(a+b)	3,581	(f)	(a+b)	3,581	(f)	
<b>NET RESERVE</b>	(a+b)	446	(g)	446	(g)	(a+b)	510	(g)	510	(g)	(a+b)	462	(g)	(a+b)	462	(g)	(a+b)	462	(g)	(a+b)	462	(g)	

Remarks: (\*) : These crops are calculated as representative crops for each season.  
 (\*\*): Consumption by person per year are estimated based on south region farmers.  
 (\*\*\*) : Average family size are assumed based on average of Delimitation of each Oasis area.  
 Ref.: ANNEX-E, TABLE 3.10.1, E.3.11.1 and E.3.11.2

表 3.4.5.1 県別の灌漑方法と水路能力

県	セクターの 支配面積 (ha)	分水槽のセクターの 支配面積 (ha)	セクターの 組織容量 (l/sec)	ha当りの 灌漑時間 (hr/ha)	間断日数		1日の 灌漑時間 (時間/日)	*)最大計画 純用水量 (mm/日)	**)推定 最大純用水量 (mm/日)	既存施設容量 からみた 灌漑達成率 (%)
					変動幅 (日)	平均 (日)				
Gafsa	52	8.8	30	2.8	5-14	***)13/7	20	2.3	7.9	29
Tozeur	28	3.5	31	3.8	5-11	7	20	3.1	8.6	37
Kebili	31	3.1	21	10.0	15-60	21	20	2.6	8.8	30
Gabes	44	2.4	22	7.0	10-40	16	21	2.0	6.4	31

(備考)

\*) 灌漑効率はオアシスのサンプル調査による。

\*\*) 本調査結果による推定値

\*\*\*) 樹木/蔬菜

表 3.5.1.1 水利施設の維持管理分担

	運転管理		施設維持管理		
	地方 農業開発局	農民 水利組合	地方 農業開発局	農民 水利組合	県
1. 灌漑施設					
1) ガワ					
- ガワ灌漑水路	○	-	○	-	-
- その他	-	○	○	-	-
2) トリゲル	○	△	○	△	-
3) 死リ					
- 井戸	○	-	○	-	-
- 揚水機場	△	○	○	△	-
- 用水路	-	○	○	△	-
4) ガベス	-	○	○	△	-
2. 排水施設					
1) ガワ					
- 幹線排水路	○	-	○	-	-
- 二次排水路	○	-	○	-	-
- 三次排水路	-	○	-	○	-
2) トリゲル					
- 幹線排水路	○	-	○	-	△
- 二次排水路	○	-	○	-	-
- 三次排水路	○	-	○	-	-
3) 死リ					
- 幹線排水路	○	-	○	-	△
- 二次排水路	-	○	-	○	-
- 三次排水路	-	○	-	○	-
4) ガベス					
- 幹線排水路	○	-	○	-	△
- 二次排水路	-	○	-	○	-
- 三次排水路	-	○	-	○	-

凡例:

○: 管理者  
△: 副管理者

表 3.5.2.1 維持管理費の内訳

	ガフサ	トズール	ケビリ	ガベス	平均
1.全体 OM 費					
1.1 面積当りOM費 (TD/ha)	202	327	228	168	231
1.2 OM費の分担割合					
- AIC	67	71	67	75	70
- CRDA	33	29	33	25	30
2. AICのOM費					
2.1 面積当りOM費 (TD/ha)	135	232	151	125	161
2.2 OM費の内訳 (%)					
- 人件費	12	4	28	36	20
- 電気料金	47	82	67	50	62
- CDRAへの水利費	37	0	0	0	9
- 修理費	4	14	4	10	8
- その他	0	0	1	4	1
合計	100	100	100	100	100

表 3.5.2.2 農民水利組合と維持管理費の概要

県	村数の数 (Nos) (1)	AIC の数 (Nos) (2)	*) AICの平均 OM費 (DT/ha/year)	AICが 未組織 の村数 (Nos) (3)	OM費に不足が生じる村数				合計 (Nos)
					不足の程度				
					15%以下 (Nos)	15-50% (Nos)	50-100% (Nos)	100% (Nos)	
Gafsa	8	8	135	0	1	1	0	1	3
Tozeur	30	44	232	7	3	2	1	12	18
Kebili	67	69	151	0	11	2	1	4	18
Gabes	48	48	125	0	3	0	0	0	3
Total	153	169	(平均 161)	7	18	5	2	17	42

注)

\*) CRDAのOM費は含んでいない。

表 4.4.3.1 153オアシスの現況評価

Code No	Name of Oasis	Area (ha)	Oasis Type		Evaluation			Ranking	Code No	Name of Oasis	Area (ha)	Oasis Type		Evaluation			Ranking					
			Grouping Type	Sub-type	Irrigation Achv. (%)	Drainage (%)	Tourism (%)					EIRR (%)	Covering Type	Sub-type	Irrigation Achv. (%)	Drainage (%)		Tourism (%)	EIRR (%)			
ガフオアシ								ケビリオアシ														
GF-1	Kasba	698	T	O-2	45	X	O	X	21.2%	O	B	KB-40	Cochlads	103	T	D-4	44	X	X	22.6%	O	A
GF-2	Sud Oueda	703	T	O-2	32	X	O	X	24.6%	O	B	KB-41	Kelwanca	47	T	D-4	47	X	X	15.4%	O	B
GF-3	El Goumar	450	T	DF-2	21	X	O	X	23.0%	O	B	KB-42	Kilba	92	T	D-3	53	X	X	9.3%	X	C
GF-4	Lalla	700	T	O-2	37	X	O	X	18.8%	O	B	KB-43	Sidi Hamod	100	T	D-4	44	X	X	20.2%	O	A
GF-5	El Ksar	578	T	FD-2	49	X	O	X	21.5%	O	B	KB-44	Anka	220	N	D-4	41	X	X	13.1%	X	C
GF-6	Oued Shili	56	N	D-1	38	X	O	X	20.8%	O	B	KB-45	Douz	280	T	D-4	64	X	X	15.0%	O	B
GF-7	Thelja	65	T	D-1	52	X	X	X	13.7%	X	C	KB-46	El Ghoulia	75	T	DF-2	67	O	O	0.6%	X	D
GF-8	Sepkoud	217	N	O-4	50	X	X	X	26.0%	O	A	KB-47	El Gafaa	65	T	D-4	67	O	O	1.3%	X	D
Sub-total / Average (8)		3,467			41				22.0%			ケビリオアシ										
トズール								ガフオアシ														
TZ-1	Tozour	929	T	D-1	44	X	X	O	14.9%	O	B	GF-9	Ain Zrig	140	T	FD-2	47	X	X	19.2%	O	B
TZ-2	Kastilia	59	T	DF-2	44	X	O	X	15.7%	O	B	GF-10	Tonoula 1	40	T	F-2	52	X	X	10.7%	X	C
TZ-3	Oued El Koucha	62	T	D-1	49	X	X	X	11.4%	X	C	GF-11	Tonoula 2	30	T	F-2	51	X	X	9.9%	X	C
TZ-4	Nefayette	72	T	D-2	43	X	O	O	13.0%	X	C	GF-12	Zrig Dukhania	30	T	FD-2	43	X	X	10.0%	X	C
TZ-5	Cheusa	90	T	D-2	53	X	X	X	9.3%	X	C	GF-13	Teboulou	520	T	FD-2	38	X	X	16.0%	O	B
TZ-6	Helba Est	75	T	D-2	38	X	X	X	13.8%	X	C	GF-14	Oasis de Gahes	734	T	DF-2	42	X	X	21.4%	O	A
TZ-7	Helba Ouest	50	T	DF-1	51	X	X	X	15.4%	O	B	GF-15	Limoula 1 et 2	148	N	F-2	40	X	X	15.4%	O	B
TZ-8	Jhim 1	40	T	DF-2	35	X	X	X	23.2%	O	A	GF-16	Mdu	40	T	F-2	44	X	X	12.2%	X	C
TZ-9	Jhim 2	167	T	DF-1	48	X	X	X	12.3%	X	C	GF-17	Chort El Ferik	31	T	A	47	X	O	19.5%	O	B
TZ-10	Ben Chabhat 1	325	N	DF-1	70	O	O	X	1.1%	X	D	GF-18	Bouchanna	143	T	DF-2	45	X	X	21.6%	O	A
TZ-11	Noha	852	T	D-1	39	X	X	X	23.4%	O	A	GF-19	Mahjoub	374	T	DF-2	43	X	X	20.2%	O	A
TZ-12	Ghandaya	40	T	DF-2	44	X	X	X	13.9%	X	C	GF-20	Salem	99	T	FD-2	44	X	X	15.3%	O	B
TZ-13	Ben Chabhat 1	240	N	DF-1	70	O	O	X	4.5%	X	D	GF-21	Shou	72	T	FD-2	45	X	X	16.7%	O	B
TZ-14	Ben Chabhat 2	232	N	DF-1	70	O	O	X	4.5%	X	D	GF-22	Faycal	260	T	A	46	X	X	14.6%	O	B
TZ-15	Draa Sud	198	N	DF-1	64	O	O	X	6.5%	X	D	GF-23	M'ziraa Ghannouch	280	T	A	49	X	X	17.5%	X	C
TZ-16	Hazoua 1	72	T	DF-1	43	X	X	X	11.5%	X	C	GF-24	Melouia	268	T	DF-2	45	X	X	19.8%	O	B
TZ-17	Hazoua 2	48	N	DF-1	52	X	X	X	20.6%	O	A	GF-25	Ouedjef	263	T	DF-2	36	X	X	26.2%	O	A
TZ-18	Hazoua 3	238	N	DF-1	52	X	X	X	20.2%	O	A	GF-26	Arsenette	232	T	O-2	46	X	X	13.0%	X	C
TZ-19	Oued Lechessi	78	T	DF-1	47	X	X	X	10.7%	X	C	GF-27	Chencho 1	57	T	A	40	X	X	13.0%	X	C
TZ-20	Tozourit	48	T	DF-1	47	X	X	X	11.6%	X	C	GF-28	Chencho 2	40	N	A	51	X	X	11.2%	X	C
TZ-21	Cedata	55	T	D-4	42	X	X	X	12.7%	X	C	GF-29	Tekeouf	32	T	FD-2	43	X	X	16.3%	O	B
TZ-22	Dghaimes	104	T	DF-1	47	X	X	X	13.0%	X	C	GF-30	Hamma Oasis	400	T	D-3	44	X	X	22.0%	O	A
TZ-23	Degache	832	T	D-1	38	X	X	X	16.2%	O	B	GF-31	M'ziraa Hamma	89	T	FD-2	45	X	X	17.5%	O	B
TZ-24	Chakrou	90	T	O-2	42	X	O	X	16.3%	O	B	GF-32	Bochima 1	280	T	FD-2	50	X	X	8.3%	X	C
TZ-25	El Homma	400	T	D-1	39	X	X	X	21.6%	O	A	GF-33	Bochima 2	290	T	DF-2	40	X	X	16.5%	O	B
TZ-26	Tamerza	80	T	D-1	58	O	X	X	5.4%	X	D	GF-34	Khebayst	94	T	FD-2	52	X	X	15.0%	O	B
TZ-27	Chikha	23	T	O-2	58	O	X	X	1.5%	X	D	GF-35	Ben Ghoulouf	180	T	FD-2	56	O	O	13.3%	O	C
TZ-28	Foum El Khanga	48	T	O-2	58	O	X	X	-0.3%	X	D	GF-36	Gub Dekhane	20	T	FD-2	49	X	O	9.3%	X	C
TZ-29	Mides	29	T	O-2	58	O	X	X	5.5%	X	D	GF-37	Oued Nakhla	30	T	DF-2	50	X	X	17.3%	O	B
TZ-30	Ain El Kama	25	T	O-2	58	O	X	X	1.5%	X	D	GF-38	Arara	163	T	FD-2	69	X	X	9.1%	X	C
Sub-total / Average (30)		5,622			50				13.9%			ケビリオアシ										
ケビリオアシ								ガフオアシ														
KB-1	Bechri	162	T	D-3	47	X	X	X	12.1%	X	C	GF-39	March 1	100	T	F-2	44	X	X	11.1%	X	C
KB-2	Bouabdallah	230	T	D-3	44	X	X	X	15.5%	O	B	GF-40	March 2	180	T	F-2	40	X	X	14.4%	O	B
KB-3	Fatnassa	205	T	O-3	51	X	X	X	9.8%	X	C	GF-41	March 3	30	T	FD-2	54	X	X	8.5%	X	C
KB-4	El Ghiaa	74	T	O-3	46	X	X	X	14.0%	O	B	GF-42	March 5	115	T	F-2	29	X	X	13.1%	O	B
KB-5	Machia	140	T	D-3	38	X	X	X	17.5%	O	B	GF-43	March 6	83	T	F-2	40	X	X	18.3%	O	B
KB-6	Nagga	151	T	D-3	44	X	X	X	14.4%	O	B	GF-44	Zarg Barrania	71	T	O-2	46	X	X	8.0%	X	C
KB-7	Oum Souza	162	T	D-3	38	X	X	X	16.0%	O	B	GF-45	Chauki	30	N	F-1	47	X	X	NA%	X	D
KB-8	Oued Zera	176	T	D-3	36	X	X	X	21.8%	O	A	GF-46	Laaradh 1	35	N	F-1	47	X	X	5.2%	X	D
KB-9	Oued Touau	62	T	D-3	29	X	X	X	23.3%	O	A	GF-47	Laaradh 2	55	N	F-1	54	X	X	2.4%	X	D
KB-10	Tenchig	54	T	D-4	44	X	X	X	19.1%	O	B	Sub-total / Average (48)										
KB-11	Zawlet El Aous	125	T	D-3	40	X	X	X	21.7%	O	A	Total (153)	22,452	42	16.1%							
KB-12	Zawlet El Harh	81	T	O-3	33	X	X	X	25.0%	O	A											
KB-13	Zarat Loubkichi	56	T	D-3	47	X	X	X	13.4%	O	C											
KB-14	Choucha Nagga	26	N	D-4	46	X	X	X	14.4%	O	B											
KB-15	Quataya	150	T	D-3	40	X	X	X	26.6%	O	A											
KB-16	Jedida	133	T	D-3	50	X	X	X	12.9%	X	C											
KB-17	Mansoura	85	T	D-3	33	X	X	X	17.6%	O	B											
KB-18	Rakha	162	T	D-3	46	X	X	X	15.0%	O	B											
KB-19	Telmaie	240	T	D-4	44	X	X	X	15.5%	O	B											
KB-20	Tembib	118	T	D-4	50	X	X	X	12.1%	X	C											
KB-21	Tombat	127	T	D-4	42	X	X	X	12.3%	X	C											
KB-22	Umagues	57	T	D-3	46	X	X	X	14.3%	O	B											
KB-23	Mazraa Naji	66	T	D-3	51	X	X	X	12.4%	X	C											
KB-24	Oum El Farh 1 et 2	55	T	D-3	52	X	O	X	22.8%	O	B											
KB-25	Sulfind	82	T	D-3	53	X	O	X	11.8%	X	B											
KB-26	Salfane	30	N	FD-2	44	X	X	X	16.3%	O	B											
KB-27	Barghouthia	52	T	D-3	44	X	X	X	23.6%	O	A											
KB-28	Bazma	146	T	DF-2	51	X	X	X	11.6%	X	C											
KB-29	B'chelli	135	T	D-4	4	X	X	X	13.3%	X	C											
KB-30	Bladette	75	T	D-3	44	X	X	X	24.2%	O	A											
KB-31	Zacine	70	T	D-3	34	X	X	X	26.8%	O	A											
KB-32	Jenna	112	T	D-3	56	O	O	X	15.1%	O	C											

表 4.4.3.2 農業開発計画のためのオアシス総合評価

Description	ガブサ県		トゥズール県		ケビリ県		ガバス県		合計	
	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)
153 Oases-Area	8	3,467	30	5,622	67	7,213	48	7,132	153	23,435
1. Irrigation Facilities										
1.1 ○ : Satisfy the design criteria	0	0	3	837	6	480	1	58	10	1,375
1.2 ○ : Mostly satisfy the design criteria	0	0	6	403	5	538	1	180	12	1,121
1.3 X : Not satisfy the design criteria	8	3,467	21	4,382	56	6,195	46	6,895	131	20,939
2. Drainage Facilities										
2.1 ○ : Satisfy the design criteria	6	3,185	3	338	4	348	2	128	15	3,999
2.2 ○ : Mostly satisfy the design criteria	0	0	4	909	7	572	2	238	13	1,719
2.3 X : Not satisfy the design criteria	2	282	23	4,375	56	6,293	44	6,767	125	17,717
3. Tourism										
3.1 ○ : Very important for tourism	0	0	5	205	0	0	0	0	5	205
3.2 ○ : Relatively important for tourism	0	0	2	1,001	0	0	0	0	2	1,001
3.3 X : Unimportant for tourism	8	3,467	23	4,416	67	7,213	48	7,133	146	22,229
4. Economic Evaluation (EIRR)										
2.1 ○ : above 20%	6	2,702	5	1,578	18	1,725	5	1,914	34	7,919
2.2 ○ : 20 - 14 %	1	700	5	1,941	20	2,353	19	2,847	45	7,841
2.3 △ : 14 - 7.5 %	1	65	11	863	22	2,554	20	2,194	54	5,676
2.4 X : below 7.5%	0	0	9	1,240	7	581	4	178	20	1,999
5. Ranking for Agricultural Development										
5.1 A : Higher ranking	1	217	5	1,578	14	1,414	5	1,914	25	5,123
5.2 B : High ranking	6	3,185	5	1,941	23	2,548	18	2,667	52	10,341
5.3 C : Medium ranking	1	65	11	863	23	2,670	21	2,374	56	5,972
5.4 D : Low ranking	0	0	9	1,240	7	581	4	178	20	1,999

表 4.4.3.3 事業対象オアシス数と面積及び総合評価

県名/郡名	オアシス		合 計			
	No.	Area	A	B	C	D
1. ガフサ県						
1.1 Gafsa Sud	2	1,401	0	2	0	0
1.2 Guetar	1	450	0	1	0	0
1.3 Ksar	2	1,278	0	2	0	0
1.4 Metalaoui	2	121	0	1	1	0
1.5 Redeyef	1	217	1	0	0	0
<u>Sub-total</u>	<u>8</u>	<u>3,467</u>	<u>1</u>	<u>6</u>	<u>1</u>	<u>0</u>
2. トゥズール県						
2.1 Tozeur	10	1,860	1	3	5	1
2.2 Nefta	5	1,602	1	0	1	3
2.3 Hazoua	4	436	2	0	2	0
2.4 Degache	6	1,519	1	2	3	0
2.5 Tamerza	5	205	0	0	0	5
<u>Sub-total</u>	<u>30</u>	<u>5,622</u>	<u>5</u>	<u>5</u>	<u>11</u>	<u>9</u>
3. ケビリ県						
3.1 Souk Lahad	14	1,824	4	7	3	0
3.2 Kebili Nord	12	1,306	1	7	4	0
3.3 Kebili Sud	18	1,987	8	2	8	0
3.4 Douz	13	1,265	1	2	4	6
3.5 Faoaur	10	831	0	5	4	1
<u>Sub-total</u>	<u>67</u>	<u>7,213</u>	<u>14</u>	<u>23</u>	<u>23</u>	<u>7</u>
4. ガベス県						
4.1 Gabes Est	5	750	0	2	3	0
4.2 Gabas Ouest	5	1,096	2	2	1	0
4.3 Ghahhouch	5	1,085	1	3	1	0
4.4 Metouia	3	763	1	1	1	0
4.5 El Hamma	11	1,555	1	5	5	0
4.6 Mareth	17	1,794	0	5	10	2
4.7 Matmata	2	90	0	0	0	2
<u>Sub-total</u>	<u>48</u>	<u>7,133</u>	<u>5</u>	<u>18</u>	<u>21</u>	<u>4</u>
<b>Total</b>	<b>153</b>	<b>23,435</b>	<b>25</b>	<b>52</b>	<b>56</b>	<b>20</b>

Ref.: 表 4.4.3.1, 4.4.3.2



表 5.1.2.1 事業を実施した場合の主要作物の収量

(Unit: t/ha)

Code No.	Name of Oasis	Date		Pome-grana	Apricot	Fig/other Fruit	Carrot/Tunij	Onion	Kidney Bean	Pepper	Tomato	Fodder Crops	Indu-der Crops	Code No.	Name of Oasis	Date		Pome-grana	Apricot	Fig/other Fruit	Carrot	Onion	Kidney Bean	Pepper	Tomato	Fod-der Crops	Indu-der Crops														
		Paln	Olive													Paln	Olive																								
オアシス														ウバオアシス																											
GF-1	Kaiba	14	14	9.0	21.0	8.7	32.8	29.5	16.4	11.0	32.8	65.5		KB-40	Gueliba	6.4	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6		KB-41	Kelwanet	6.4	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6			
GF-2	Sol Oued	14	14	9.0	21.0	8.5	32.8	29.5	16.4	11.0	32.8	65.7		KB-42	Kaiba	6.4	3.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6		KB-43	Sidi Hamid	6.4	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6		
GF-3	El Gueitar	14	14	9.0	21.0	8.4	32.8	29.6	16.4	11.0	32.8	65.7		KB-44	Aulet	4.6	3.5	2.8	3.0	14.9	16.5	7.7	7.7	18.7	55.2		KB-45	Douz	6.4	3.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6		
GF-4	Lalla	14	14	9.0	21.0	8.7	32.8	29.5	16.4	11.0	32.8	65.7		KB-46	Gueliba	6.5	3.2	3.5	2.8	3.0	14.9	16.5	7.7	7.7	18.7	55.1		KB-47	Golan	6.5	3.2	3.5	2.8	3.0	14.9	16.5	7.7	7.7	18.7	55.1	
GF-5	El Ksar	14	14	9.0	21.0	8.8	34.2	29.5	16.4	11.0	32.8	65.6		KB-48	Gad	6.5	3.2	3.5	2.8	3.0	14.9	16.5	7.7	7.7	18.7	55.1		KB-49	Hay	6.4	3.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6	
GF-6	Oued Shli	10										49.7		KB-50	Nouel	6.4	3.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6		KB-51	Zafrane	6.5	3.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6	
GF-7	Thelja	15	15									66.4		KB-52	Bouhamza	6.4	3.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6		KB-53	Kar Ghilane	6.4	3.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6	
GF-8	Sgskud	10	2.2	9.1	8.1	6.6	22.1	22.1	11.1	11.0	22.1	49.8		KB-54	Sakouma	6.5	3.2	3.5	2.8	3.0	14.9	16.5	7.7	7.7	18.7	55.1		KB-55	Faraya	6.5	3.2	3.5	2.8	3.0	14.9	16.5	7.7	7.7	18.7	55.1	
Average		13.3	13.9	9.9	24.7	8.4	31.7	29.3	16.2	11.0	32.4	65.0		ガバオアシス																											
トウモロコシ														ガバオアシス																											
TZ-1	Toucar	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-1	Ain Zrig	6.6		13.2	13.2	5.5	31.4	33.0		14.3	22.0	66.0	1.7	GB-2	Tenzula 1	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-2	Kaifila	6.9	4.0	2.5	3.6	2.8	14.5	16.1	7.5	7.5	16.1	86.1		GB-3	Tenzula 2	6.6	4.4	13.2	13.2	5.5	31.4	33.0		14.3	22.0	66.0	1.7	GB-4	Zig Bakhtia	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-3	Oued El Knoch	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-5	Teboulhou	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7	GB-6	Oued de Gabes	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-4	Kelayene	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-7	Limaoua l et 2	6.7	4.5	13.4	13.4	5.6	31.7	33.4	18.9	14.5	22.3	66.8	1.7	GB-8	M Sdu	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-5	Chouma	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-9	Chou El Fork	6.8		13.7	13.7	5.7	31.4	33.0		14.3	22.0	66.1	1.7	GB-10	Bouchemma	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-6	Haba Est	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-11	Mahjoub	6.6	4.4	13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0	1.7	GB-12	Salem	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-7	Haba Ouest	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-13	Stouf	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7	GB-14	Fayaf	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-8	Him 1	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-15	Mirza Channech	6.6	4.4	13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0	1.7	GB-16	Moula	6.6		13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7
TZ-9	Him 2	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-17	Ouedouf	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	1.7	GB-18	Aouinote	6.6	4.4				31.4	33.1	18.7	14.3	22.0	66.0	
TZ-10	Be Chabbar 3	5.1	2.2	2.5	2.9	2.8	14.9	16.5	7.7	7.7	16.5	88.0		GB-19	Chouchou 1	6.6		12.5	12.6	5.2	31.4	33.1	18.7	14.3	22.0	66.1		GB-20	Chouchou 2	6.5	4.3	13.4		5.6	31.8	33.4	18.9	14.5	22.3	66.8	
TZ-11	Naha	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-21	Tekouf	6.6		13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0		GB-22	Hammaoud	6.6		13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	
TZ-12	Ghadgaya	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-23	Mirza Hanama	6.6		13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.0		GB-24	Bechima 1	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	
TZ-13	Be Chabbar 1	5.1	2.2	2.6	2.8	2.8	15.0	16.6	7.8	7.8	16.6	88.8		GB-25	Bechima 2	6.6	4.4	13.2	13.2	5.5	29.8	31.4	17.8	13.5	20.9	62.7		GB-26	Khbayet	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	
TZ-14	Be Chabbar 2	5.1	2.2	2.5	2.9	2.8	14.9	16.5	7.7	7.7	16.5	88.0		GB-27	Ben Oukouf	6.6	4.4	13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0		GB-28	Gib Dakhane	6.6	4.4				31.4	33.1	18.7	14.3	22.0	66.1	
TZ-15	Drao Sad	5.0	2.2	2.5	2.8	2.8	14.7	16.3	7.6	7.6	16.3	87.0		GB-29	Oued Nakhla	6.6	4.4				31.4	33.1	18.7	14.3	22.0	66.1		GB-30	Arian	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	
TZ-16	Hazoua 1	6.9	3.2	2.5	2.8	2.7	13.8	15.3	7.2	7.2	15.3	81.8		GB-31	Mareh 1	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1		GB-32	Mareh 2	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1	
TZ-17	Hazoua 2	5.6	3.1	3.4	3.7	3.6	14.7	16.3	7.6	7.6	16.3	87.0		GB-33	Mareh 3	6.6	4.4	13.2			31.4	33.1	18.7	14.3	22.0	66.1		GB-34	Mareh 5	6.6	4.4	13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0	
TZ-18	Hazoua 3	5.5	3.1	3.4	3.7	3.6	14.7	16.3	7.6	7.6	16.3	87.0		GB-35	Mareh 6	6.6	4.4	13.2	13.2	5.5	31.4	33.1	18.7	14.3	22.0	66.1		GB-36	Zara 2	6.6	4.4	13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0	
TZ-19	Oued Leghrid	3.0	2.2	2.5	2.8	2.7	14.4	15.8	8.0	8.0	15.8	79.7		GB-37	Zerkine 1 et 3	6.6	4.4	13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0		GB-38	Zerkine 2	6.6	4.4	13.2	13.2	5.5	31.4	33.0	18.7	14.3	22.0	66.0	
TZ-20	Toureit	5.0	2.2	2.5	2.8	2.7	14.4	15.8	8.0	8.0	15.8	79.7		GB-39	Ayoune Zerkine	6.6	4.4	13.2			31.4	33.0	18.7	14.3	22.0	66.0		GB-40	Meksis	6.7	4.4	13.3	5.6	31.7	33.3	14.5	22.2	66.6			
TZ-21	Cebada	6.9	3.2	2.5	2.8	2.7	14.5	16.1	7.5	7.5	16.1	86.1		GB-41	Ketana 1	6.6	4.4	13.2	13.2	5.5	31.4	33.0		14.3	22.0	66.0		GB-42	Ketana 3	6.6	4.4	13.2	13.2	5.5	31.4	33.1	14.3	22.0	66.1		
TZ-22	Dghoumes	6.9	3.2	2.5	2.8	2.7	14.4	15.8	8.0	8.0	15.8	79.7		GB-43	Ketana 4	6.6	4.4	13.2	13.2	5.5	31.4	33.1		14.3	22.0	66.0		GB-44	Sidi Sallam	7.2	5.2	13.3	6.7	31.4	33.1	18.7	14.3	22.0	66.1		
TZ-23	Dghouche	6.9	3.2	2.5																																					

表 5.1.22 事業を実施しない場合の主要作物の収量

												(Unit: tons/ha)																					
Code No.	Name of Oasis	Date		Pome-grana-te	Apri-cot	Fig/other Fruit	Carrot Tumir	Oni-on	Kind-ney Bean	Pe-pper	To-mato	Fod-der Crops	Indu-strial Crops	Code No.	Name of Oasis	Date		Pome-grana-te	Apri-cot	Fig/other Fruit	Carrot Tumir	Oni-on	Kind-ney Bean	Pe-pper	To-mato	Fod-der Crops	Indu-strial Crops						
		Palm	Olive													Palm	Olive																
ガフワリ群																																	
GF-1	Kasba	78	82	83	19.5	8.1	30.2	27.2	15.1	10.1	30.2	60.4		KB-40	Quafala	58	3.1	2.4	2.6	13.1	14.6	6.8	6.8	16.5	48.9								
GF-2	Sud Ouest	75	79	80	18.8	7.8	29.1	25.2	14.6	9.7	29.1	58.2		KB-41	Kelwamen	5.6	3.0	2.4	2.6	12.8	14.2	6.5	6.6	16.1	47.4								
GF-3	El Goutar	7.4	7.8	7.9	18.7	7.7	30.0	26.1	14.5	9.7	30.1	58.0		KB-42	Khibia	6.0	4.8	3.3	2.5	2.7	13.7	15.3	7.1	7.1	17.3	50.9							
GF-4	Lalla	7.7	8.1	8.2	19.4	8.0	30.1	27.1	15.0	10.2	30.1	60.1		KB-43	Sidi Hamed	5.7	3.1	2.4	2.6	13.1	14.6	6.8	6.8	16.5	48.5								
GF-5	El Ksar	17.8	8.2	8.3	19.6	8.1	30.3	27.3	15.2	10.1	30.3	60.3		KB-44	Asilet	4.0	3.0	2.4	2.6	12.8	14.3	6.7	6.7	16.2	47.5								
GF-6	Qued Shili	6.5												KB-45	Douz	5.7	4.5	3.1	2.4	2.6	12.9	14.4	6.7	6.7	16.3	47.9							
GF-7	Theja	7.3	7.3											KB-46	Ghoulia	6.1	5.1	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.6	54.6							
GF-8	Saghad	6.3	6.3	7.9	7.9	5.8	19.3	19.3	9.6	11.0	19.3	43.4		KB-47	Golaa	6.1	4.9	3.3	2.6	2.8	14.0	15.6	7.3	7.3	17.6	51.9							
Average		7.2	8.4	8.3	19.1	7.7	29.6	26.5	14.6	10.0	29.6	59.1		KB-48	Grad	6.0	4.9	3.3	2.6	2.8	14.0	15.6	7.3	7.3	17.6	51.9							
トゥースール群																																	
TZ-1	Toceur	6.2	2.9	2.2	2.5	2.4	12.9	14.4	6.7	6.7	14.4	76.6		KB-49	Hsay	5.9	4.7	3.2	2.5	2.7	13.5	15.0	7.0	7.0	17.0	49.9							
TZ-2	Kasitina	6.2	2.9	2.2	2.5	2.4	13.1	14.5	6.8	6.8	14.5	77.5		KB-50	Noueil	5.6	4.5	3.0	2.4	2.6	12.8	14.2	6.5	6.6	16.1	47.4							
TZ-3	Qued El Koucha	6.3	2.9	2.3	2.6	2.5	13.2	14.7	6.9	6.9	14.7	78.5		KB-51	Zafzane	6.3	5.0	3.4	2.7	2.9	14.3	15.9	7.4	7.4	18.0	53.1							
TZ-4	Nefayette	6.3	2.9	2.2	2.5	2.4	13.2	14.6	6.8	6.8	14.6	77.9		KB-52	Bouhama	5.7	4.6	3.1	2.4	2.6	13.1	14.6	6.8	6.8	16.5	48.6							
TZ-5	Chomsa	6.4	3.0	2.3	2.6	2.5	13.5	15.0	7.0	7.0	15.0	77.9		KB-53	Ksai Ghitane	5.6	4.5	3.0	2.4	2.6													
TZ-6	Helba Est	5.9	2.7	2.1	2.4	2.3	12.3	13.6	6.4	6.4	13.6	71.6		KB-54	Salkouma	6.0	4.9	3.3	2.6	2.8	14.0	15.6	7.3	7.3	17.6	51.9							
TZ-7	Helba Ouest	6.3	2.9	2.3	2.5	2.4	13.2	14.7	6.9	6.9	14.7	78.4		KB-55	Tarfaya	6.2	5.0	3.4	2.7	2.9	14.4	16.0	7.5	7.5	18.1	53.2							
TZ-8	Jhim 1	5.6	2.6	2.0	2.3	2.2	11.7	13.0	6.1	6.1	13.0	69.2		KB-56	Dbonurana	4.2	3.2	2.5	2.7	13.6	15.1	7.1	7.1	17.1	50.4								
TZ-9	Jhim 2	6.1	2.8	2.2	2.4	2.4	12.7	14.1	6.6	6.6	14.1	75.3		KB-57	Saïda	4.2	3.2	2.5	2.7	13.4	14.9	7.0	7.0	16.9	49.7								
TZ-10	Ibn Chabhat 3	4.8	2.1	2.4	2.8	2.7	14.0	15.9	7.4	7.4	15.9	84.9		KB-58	Ohidou	5.7	3.3	2.6	2.8	14.0	15.6	7.3	7.3	17.1	52.0								
TZ-11	Naha	6.0	2.8	2.1	2.4	2.3	12.5	13.9	6.5	6.5	13.9	74.2		KB-59	Sabriya	5.4	2.9	2.3	2.5	12.4	13.7	6.4	6.4	15.6	45.8								
TZ-12	Ghartaya	6.0	2.8	2.2	2.5	2.6	12.8	14.2	6.6	6.6	14.2	75.6		KB-60	Fawar 1	5.7	3.1	2.4	2.6	13.1	14.6	6.8	6.8	16.3	48.6								
TZ-13	Ibn Chabhat 1	4.7	2.1	2.4	2.7	2.6	14.1	15.6	7.3	7.3	15.6	85.6		KB-61	Fawar 2	5.9	3.2	2.5	2.7	14.7	16.2	7.0	7.0	18.2	51.6								
TZ-14	Ibn Chabhat 2	4.7	2.1	2.4	2.7	2.6	14.3	15.9	7.4	7.4	15.9	84.9		KB-62	Bochdi	4.2	3.2	2.5	2.7	13.4	14.9	7.0	7.0	16.9	49.8								
TZ-15	Oraa Sud	4.8	2.1	2.4	2.8	2.7	14.3	15.9	7.4	7.4	15.9	84.9		KB-63	Dergine	4.6	3.5	2.7	2.9	14.7	16.4	7.6	7.6	18.5	54.5								
TZ-16	Hazoua 1	5.9	2.7	2.1	2.4	2.3	12.3	13.7	6.4	6.4	13.7	73.1		KB-64	Matrouha	5.6	3.0	2.4	2.6	12.8	14.2	6.6	6.6	16.1	47.4								
TZ-17	Hazoua 2	4.3	1.9	2.2	2.5	2.4	12.9	14.4	6.7	6.7	14.4	76.6		KB-65	Regim 1	4.2	3.2	2.5	2.7	13.5	15.0	7.0	7.0	17.0	50.1								
TZ-18	Hazoua 3	4.3	1.9	2.2	2.5	2.4	12.9	14.4	6.7	6.7	14.4	76.6		KB-66	Regim 2	4.3	3.2	2.6	2.8	13.8	15.3	7.1	7.1	17.3	51.0								
TZ-19	Qued Loghissi	4.2	1.9	2.1	2.4	2.3	12.6	14.0	6.5	6.5	14.0	74.7		KB-67	Tarfayez Elma	4.1	3.1	2.4	2.6	13.2	14.6	6.8	6.8	16.6	48.8								
TZ-20	Tozraï	4.2	1.9	2.1	2.4	2.3	12.6	14.0	6.5	6.5	14.0	74.7		Average																			
TZ-21	Cedra	5.9	2.7	2.1	2.4	2.3	12.3	13.7	6.4	6.4	13.7	73.2		GB-1	Ain Zrig	6.0		11.9	11.9	5.0	28.3	29.8		12.9	19.9	59.6	3.5						
TZ-22	Dghoumes	6.0	2.8	2.1	2.4	2.3	12.6	14.0	6.5	6.5	14.0	74.7		GB-2	Temoûta 1	4.0	12.1	12.1	5.0	28.7	30.2	17.1	13.1	20.1	60.3	1.5							
TZ-23	Degache	5.9	2.7	2.1	2.4	2.3	12.5	13.9	6.5	6.5	13.9	73.9		GB-3	Temoûta 2	5.7	3.8	11.4	11.4	4.8	27.1	28.5		12.4	19.0	57.0	1.4						
TZ-24	Chakmou	6.2	2.9	2.2	2.5	2.4	12.9	14.3	6.7	6.7	14.3	76.3		GB-4	Zrig dakhlaïna	5.9		11.8	11.8	4.9	28.2	29.6		12.8		59.2	1.5						
TZ-25	El Hamna	5.9	2.7	2.1	2.4	2.3	12.4	13.7	6.4	6.4	13.7	73.2		GB-5	Teboulhou	5.6	3.7	11.2	11.2	4.7	26.5	27.9	15.8	12.1	18.6	55.8	1.4						
TZ-26	Tamerza	6.2	2.9	2.2	2.5	2.4	12.9	14.4	6.7	6.7	14.4	76.5		GB-6	Oasis de Gabes	5.8	3.9	11.6	11.6	4.8	27.5	28.9	16.4	12.5	19.3	59.0	1.4						
TZ-27	Chebika	6.5	3.0	2.3	2.6	2.5	13.6	15.1	7.1	7.1	15.1	80.7		GB-7	Limacoua 1 et 2	5.7	3.8	11.3	11.3	4.7	26.9	28.3	16.1	12.3	18.9	56.7	1.4						
TZ-28	Foum El Khanga	6.5	3.0	2.3	2.6	2.5	13.6	15.1	7.1	7.1	15.1	80.7		GB-8	Mifou	5.6	3.8	11.3	11.3	4.7	26.9	28.3		12.2	18.8	56.5	1.4						
TZ-29	Mides	6.5	3.0	2.3	2.6	2.5	13.6	15.1	7.1	7.1	15.1	80.7		GB-9	Chott El Farik	6.2		12.3	12.3	5.1	28.3	29.8		12.9	19.9	61.7	1.5						
TZ-30	Ain El Karma	6.5	2.9	2.2	2.5	2.4	12.9	14.4	6.7	6.7	14.4	76.5		GB-10	Bouchemna	6.0	3.9	11.8	11.8	4.9	28.1	29.6		12.8	19.2	59.1	1.5						
Average		5.7	2.4	2.2	2.5	2.5	12.9	14.3	6.7	6.7	14.3	76.0		GB-11	Mahjoub	6.0	3.8	11.5	11.5	4.8	27.3	28.8	16.3	12.3	19.2	57.5	1.4						
ケビリ群																																	
KB-1	Bochei	5.6	4.5	3.0	2.4	2.6	12.8	14.2	6.6	6.6	14.2	47.4		GB-12	Salem	5.9	3.9	11.7	11.7	4.9	27.8	29.3	16.6	12.7	19.5	58.5	1.5						
KB-2	Bouaballah	5.4	4.3	3.1								47.8		GB-13	Shouf	5.8	3.8	11.5	11.5	4.8	27.4	28.9	16.										

表 5.1.2.3 事業実施による主要作物生産の増加量

(Units: tons)

Code No.	Name of Oasis	Date Palm	Pome-granate Olive	Apric-ot	Fig Fruit	Carrot	Onion	Kind-ney Bean	Pe-pper	To-mato	Pod-der Crops	Indu-stra-l Crops
GF-1	Kasba	44	312	10	165	13	130	115	60	60	130	842
GF-2	Sud Ouest	38	594	22	44	18	194	99	54	104	178	1,253
GF-3	El Ouezzar	295	130	12	5	17	112	105	76	7	5	385
GF-4	Ezfa	26	488	18	11	15	54	53	28	68	130	1,288
GF-5	El Kasr	69	243	51	32	14	90	55	24	68	168	1,127
GF-6	Oued Shill	48						2	2			32
GF-7	Theja	53	12					13	10			67
GF-8	Saghad	294	20	8	1	10	14	14	8		22	192
Sub-total		668	1,798	122	198	86	593	456	262	306	833	5,185
トランス-オアシス												
TZ-1	Tozeur	608	5	5	1	8	40	51	8	28	34	665
TZ-2	Kastila	27	2	1	1	2	3	3		1	3	52
TZ-3	Oued El Koucha	34	1	0	0	0	1	1	1	1	1	23
TZ-4	Nefayete	39	1	1	0	1	3	3		1	3	33
TZ-5	Chemsa	42	0	0	0	1	2	2		1	2	41
TZ-6	Heha Est	67	1	1	0	2	2	3		1	3	42
TZ-7	Heha Ouest	25	1	0	0	1	1	1	1	1	3	31
TZ-8	Jhin 1	44	1	1	1	1	3	3	1	3	3	85
TZ-9	Jhin 2	120	1	1	1	2	2	2		1	2	43
TZ-10	Bu Chabba 1	83	1	1	1	2	4	2	1	2	2	22
TZ-11	Nefta	734	3	5	1	6	40	44	10	30	33	571
TZ-12	Gardajna	30	0	1	0	0	3	4		1	2	32
TZ-13	Bu Chabba 1	82	1	2	1	3	3	4	1	3	2	22
TZ-14	Bu Chabba 2	93	0	1	1	4	2	2	1	2	2	28
TZ-15	Deas Sud	33	0	1		2	2	2	0	1	1	13
TZ-16	Haroua 1	61	1	2	0	2	3	2		2	2	35
TZ-17	Haroua 2	53	1	2		5	3	2		1	2	31
TZ-18	Haroua 3	259	2	18	4	10	5	4	1	3	2	52
TZ-19	Oued Lophid	56	0	1	0	1	2	2		2	2	30
TZ-20	Tozeur	31	1	0	0	1	4	2		2	2	10
TZ-21	Cedala	49	2	0		1	2	2	1	2	2	67
TZ-22	Dghoumes	80	2	2	0	2	2	2	2	2	2	25
TZ-23	Degache	566	41	6	1	6	48	53	15	36	40	756
TZ-24	Chakou	54	1	1	0	1	2	2	1	1	2	39
TZ-25	El Hanana	338	3	1	1	4	21	24	6	15	19	284
TZ-26	Tamerza	51	1	0	0	1	2	2	1	4	2	38
TZ-27	Chchila	8	0			0	1			1		5
TZ-28	Foum El Khanga	16	0	0	0	1	1		0	0		13
TZ-29	Mides	10	0	0	0	1	1		1	0		11
TZ-30	Ain El Karma	9	0	0		0	2		1	1		19
Sub-total		3,761	73	48	17	69	268	224	90	144	171	5,183
ケビオアシス												
KB-1	Bechri	126	1	1		1	6	7	2	6	8	331
KB-2	Bouhadjallah	212	1	1		1	11	12	2	9	12	442
KB-3	Fanara	99	1	1	0	0	4	5	1	4	5	240
KB-4	El Giza	67	4	1	0	1	8	9	3	10	8	274
KB-5	Menchia	144	7	3	1	4	8	13	5	15	11	653
KB-6	Nagga	125	0			1	2	2	1	2	2	220
KB-7	Oum Sonaa	155	14	1	0	1	8	12	3	14	13	219
KB-8	Oued Zera	163	4	2	0	2	5	7	1	11	8	354
KB-9	Oued Tawal	46	1	1		1	12	13	5	9	8	550
KB-10	Tenchig	43	1	1	0	1	6	10	1	6	5	277
KB-11	Zaoulet El Aas	81	4	1		0	6	7	1	4	5	245
KB-12	Zaoulet El Harh	99	5			1	5	6	1	4	7	347
KB-13	Zera Leuhiki	47	3	0		0	4	6	1	6	6	227
KB-14	Chouchet Nagga	12	0	0		0	4	4	1	4	2	110
KB-15	Gouaya	110	2	1	1	2	13	15	3	9	8	362
KB-16	Jedda	110	6	1		1	17	19	5	3	5	429
KB-17	Mansoura	95	4			1	8	9	1	7	11	327
KB-18	Raba	126		1	0	1	24	28	8	6	10	300
KB-19	Telmine	156	5	8	0	5	17	214	4	10	14	316
KB-20	Tendib	49	3	1		2	10	11	3	11	11	359
KB-21	Tonbar	88	5	2		2	15	15	7	13	8	332
KB-22	Umagous	31	2	0		0	5	5	2	3	4	274
KB-23	Mazraa Ndj	49	1	1		1	6	5	1	4	5	252
KB-24	Oum El Farh 1 et 2	26	1	0		0	5	5	2	3	4	144
KB-25	Soufina	30	1	0		0	2	3	0	2	2	215
KB-26	Sidare	9	3	1	0	1	4	2	1	2	5	134
KB-27	Bargouthia	33	1	0		1	19	22	6	6	6	110
KB-28	Barna	78	7	3	0	1	4	2	1			153
KB-29	Bchelli	86	1	1	0	2	19	22	6	6	6	244
KB-30	Bsdeuc	49	1	0		1	22	24	6	16	18	147
KB-31	Zarine	68	1	1		1	10	14	4			156
KB-32	Jenna	32	1	0		0	11	14	2	4	6	246
KB-33	Mouria	30	1	1	0	1	23	26	10	10	13	268
KB-34	Mriad	77	2	0		2	19	21	7	10	11	468
KB-35	Rhmal	46	1	1		1	6	7	2	1	2	302
KB-36	Ras El Ain	148	5	2		1	15	18	6	14	18	335
KB-37	Souk El Bazer	31	3	2		1	9	11	2	6	8	244
KB-38	Bea Zinoun 1 et 2	97	1	1	0	1	54	60	10	36	35	268
KB-39	Bourine	42	0	1	0	1	26	28	7	4	5	243
Sub-total		5,527	1,062	3,328	221	274	1,570	1,717	149	359	582	12,878
Total		11,631	2,964	2,562	418	590	2,664	3,412	472	1,663	1,831	37,532

Source: JICA Study Team estimation  
 Ref.: Tables E.5.4.1, E.5.4.2, E.5.4.3, E.5.4.4

表 6.3.1.1 各オアシスにおける工事量

(1) ガアサ県

コード 番号	オアシス名	計画面積 (ha)	ガアル 面積(ha)	計画面積/ ガアル面積	シタム 面積容量(l/s)	施設 諸元	改修水路		PVC ハイブ		排水路 築水	灌漑 (m/ha)	排水 (m/ha)	灌漑 (m)	排水 (m)
							延長(m)	分水工	延長(m)	分水工					
GF- 1	Kasba	698	46.320	15.1	30	25 x 25	5230	162	-	-	-	113	0	78811	0
GF- 2	Sud Ouest	703	41.750	16.8	30	25 x 25	6275	148	-	-	-	150	0	105660	0
GF- 3	El Guettar	450	46.400	9.7	33	30 x 25	8200	250	-	-	-	177	0	79526	0
GF- 4	Lalla	700	46.030	15.2	30	25 x 25	6815	174	-	-	-	148	0	103639	0
GF- 5	El Ksar	578	44.620	13.0	30	25 x 25	5520	164	-	-	-	124	0	71505	0
GF- 6	Oued Shili	56	4.620	12.1	40	φ200	-	-	740	19	-	160	0	8970	0
GF- 7	Theija	65	2.560	25.4	30	φ160	-	-	330	9	235	129	150	8379	9775
GF- 8	Segdoud	217	15.360	14.1	20	20 x 20	1900	50	-	-	1510	124	128	26842	27690
	Total	3,467	247.660	14.0	30		33940	948	1070	28	1745	141	35	483333	37465

(2) トウズール県

コード 番号	オアシス名	計画面積 (ha)	ガアル 面積(ha)	計画面積/ ガアル面積	シタム 面積容量(l/s)	施設 諸元	改修水路		PVC ハイブ		排水路 築水	灌漑 (m/ha)	排水 (m/ha)	灌漑 (m)	排水 (m)
							延長(m)	分水工	延長(m)	分水工					
TZ- 1	Tozeur	929	24.390	38.1	30	φ160	-	-	4180	92	780	171	42	159145	39215
TZ- 2	Kastilia	50	3.200	15.6	35	φ200	-	-	480	12	-	150	0	7500	0
TZ- 3	Oued El Koucha	62	4.000	15.5	54	30 x 25	535	15	-	-	320	134	80	8293	4960
TZ- 4	Neflayette	72	5.400	13.3	30	φ160	-	-	965	20	225	179	42	12867	3000
TZ- 5	Chemsa	90	5.920	15.2	26	φ160	-	-	825	18	480	139	81	12542	7297
TZ- 6	Helba Est	75	4.950	15.2	55	30 x 25	1045	21	-	-	220	211	69	15833	5152
TZ- 7	Helba Ouest	50	4.095	12.2	55	30 x 25	275	8	-	-	345	67	84	3358	4212
TZ- 8	Jhim 1	40	8.000	5.0	40	30 x 25	855	26	-	-	525	107	98	4275	3900
TZ- 9	Jhim 2	167	6.000	27.8	30	25 x 25	595	20	-	-	395	99	105	16561	17535
TZ- 10	Ibn Chabbat 3(*)	325	9.600	33.9	30	25 x 25	1800	112	-	-	760	188	104	60938	33786
TZ- 11	Nefla	852	26.388	32.3	25	25 x 20	3190	91	-	-	525	121	32	102997	27606
TZ- 12	Ghardaya	40	4.725	8.5	40	30 x 25	775	16	-	-	200	164	66	6561	2624
TZ- 13	Ibn Chabbat 1 (*)	240	6.810	35.2	25	25 x 20	190	54	-	-	200	28	73	6696	17621
TZ- 14	Ibn Chabbat 2 (*)	272	7.470	36.4	25	25 x 20	1170	77	-	-	185	157	66	42602	17942
TZ- 15	Draa Sud	198	10.800	18.3	20	20 x 20	140	34	-	-	0	13	0	2567	0
TZ- 16	Hazoua 1	72	6.645	10.8	27	25 x 25	600	16	-	-	840	217	135	15603	9698
TZ- 17	Hazoua 2	48	4.030	11.9	19	φ140	-	-	615	14	250	153	100	7325	4824
TZ- 18	Hazoua 3	238	19.346	12.3	27	25 x 25	900	28	-	-	32	97	114	23005	27102
TZ- 19	Oued Loghrissi	78	4.100	19.0	23	φ160	-	-	540	16	200	132	98	10273	7610

町	区	地区名	計画面積 (ha)	サマル 面積(ha)	計画面積/ サマル面積容量	シマ 容量(l/s)	施設 諸元	改修水路 延長(m)	分水工	PVCパイプ 延長(m)	分水工	圃場 面積	排水路(延長)	灌漑 (m/ha)	排水 (m/ha)	灌漑 (m)	排水 (m)
17-20		Tazrarit	48	4,340	11.1	38	30 x 25	495	16			400	103	114	116	5475	5563
17-21		Cedada	55	4,250	12.9	45	φ200			780	15	350	145	184	116	10094	6406
17-22		Dghomes	104	6,320	16.5	25	25 x 20	710	36			600	210	112	128	11884	13329
17-23		Degache	822	26,500	31.0	45	30 x 25	4080	92			1025	60	154	41	126557	33655
17-24		Chakmou	90	7,700	11.7	27	φ160			1460	32	-	-	190	0	17065	0
17-25		El Hamma	400	9,900	40.4	30	25 x 25	1020	38			660	75	103	74	41212	29697
17-26		Tamerza	80	6,680	12.0	-	縦水型水路	720	21			570	540	108	166	8623	13293
17-27		Chebika	23	1,380	16.7	-	縦水型水路	225	6			150	-	163	109	3750	2500
17-28		Foum El Khanga	48	1,380	34.8	-	縦水型水路	205	4			230	-	149	167	7130	8000
17-29		Mides	29	2,500	11.6	22	縦水型水路	100	8			70	98	40	67	1160	1949
17-30		Ain El Karma	25	1,910	12.1	-	縦水型水路	150	7			230	85	79	165	1963	4123
		Total	5,622	238,729	23.5	31		19775	746	11655	271	12185	4622	131	85	753653	352500

(3) ケベリ県

町	区	地区名	計画面積 (ha)	サマル 面積(ha)	計画面積/ サマル面積容量	シマ 容量(l/s)	施設 諸元	改修水路 延長(m)	分水工	PVCパイプ 延長(m)	分水工	圃場 面積	排水路(延長)	灌漑 (m/ha)	排水 (m/ha)	灌漑 (m)	排水 (m)
KB-1		Bechri	162	4,480	36.2	21	25 x 20	795	18			265	193	177	102	28748	16562
KB-2		Bouabdallah	270	16,510	16.4	21	25 x 20	2750	62			1040	320	167	82	44973	22241
KB-3		Fatnassa	205	12,260	16.7	15	20 x 20	1780	42			290	300	145	48	29763	9865
KB-4		El Glicia	94	6,550	14.4	25	φ160			1130	25	545	225	173	118	16217	11050
KB-5		Menchia	140	9,240	15.2	22	25 x 20	1690	40			625	530	183	125	25606	17500
KB-6		Nagga	181	9,940	18.2	20	φ140			1580	33	555	-	159	56	28771	10106
KB-7		Oum Soma	162	10,010	16.2	21	φ160			1655	40	705	503	165	121	26784	19550
KB-8		Oued Zira	176	9,600	18.3	22	φ160			1740	35	440	75	181	54	31900	9442
KB-9		Ouled Touati	62	5,720	10.8	25	φ160			1470	28	260	-	257	45	15934	2818
KB-10		Tenchig	54	3,520	15.3	15	φ140			435	14	325	100	124	121	6673	6520
KB-11		Zaouet El Anes	125	5,060	24.7	20	20 x 20	425	19			295	-	84	58	10499	7288
KB-12		Zaouet El Harth	81	8,870	9.1	20	φ140			1630	35	735	203	184	106	14885	8566
KB-13		Ziret Louhichi	86	5,100	16.9	22	φ160			955	19	400	-	187	78	16104	6745
KB-14		Chouchet Nagga	26	2,000	13.0	25	φ160			300	8	200	-	150	100	3900	2600
KB-15		Guataya	150	9,540	15.7	20	φ140			1300	34	185	-	136	19	20440	2909
KB-16		Jedida	133	10,500	12.7	18	φ140			2020	41	640	675	192	125	25587	16657
KB-17		Mansoura	86	4,100	21.0	18	φ140			1270	44	510	-	310	124	26639	10698
KB-18		Rabta	162	9,470	17.1	20	φ160			1750	36	660	295	185	101	29937	16337
KB-19		Telmene	240	14,140	17.0	21	φ160			2450	55	630	595	173	87	41584	20792
KB-20		Tembib	118	7,070	16.7	22	φ160			1180	26	410	-	167	58	19694	6843
KB-21		Tambar	127	4,400	28.9	25	φ160			1020	24	570	-	232	130	29441	16452
KB-22		Limagues	57	3,270	17.4	25	25 x 20	660	14			225	-	202	69	11505	3922

KB-23	Mazraa Nejl	66	3,000	22.0	26	φ160				400	12	300	150	133	150	8800	9900
KB-24	Oum El Farth let2	55	6,840	8.0	27	25 x 25	450	11				200		66	29	3618	1608
KB-25	Stiftim	82	3,600	22.8	25	25 x 20	505	10						140	0	11503	0
KB-26	Saldane	30	2,000	15.0	25	φ160				350	8	100		175	50	5250	1500
KB-27	Barghouthia	52	6,230	8.3	25	φ160				825	20	300		132	48	6886	2504
KB-28	Bazma	146	9,480	15.4	25	φ160				1320	36	915		139	97	20329	14092
KB-29	B'chelli	135	8,060	16.7	22	φ160				1525	48	610		189	76	25543	10217
KB-30	Bidette	75	4,530	16.6	15	φ140				500	16	400		110	88	8278	6623
KB-31	Zarcine	70	5,500	12.7	15	φ140				775	21	340		141	62	9864	4327
KB-32	Jenna	112	6,640	16.9	25	25 x 20	260	5				150		39	23	4386	2530
KB-33	Mouria	81	6,260	12.9	20	20 x 20	630	21		1040	23	520		170	85	16181	8090
KB-34	Msaïd	95	6,106	15.6	25	φ160						400		174	93	14791	7889
KB-35	Rabmat	85	4,310	19.7	22	25 x 20	750	16						187	80	49993	21515
KB-36	Ras El Ain	268	15,010	17.9	25	25 x 20	2800	60				1205		122	93	7937	6015
KB-37	Souk El Balez	65	3,890	16.7	27	φ160				475	13	360		115	82	16908	12035
KB-38	Ben Zitoun let2	147	7,390	19.9	21	25 x 20	850	23				530		131	47	12334	4452
KB-39	Bourzine	94	6,440	14.6	22	φ160				845	22	200		115	57	11839	5920
KB-40	Gueliada	103	6,960	14.8	25	φ160				800	24	400		209	102	9811	4791
KB-41	Kelwamen	47	2,060	22.8	15	φ140				430	10	130		139	79	12752	7287
KB-42	Klibia	92	5,050	18.2	22	φ160				700	16	400		76	78	7605	7795
KB-43	Sidi Hamed	100	7,890	12.7	27	φ160				600	24	615		204	76	44820	16671
KB-44	Atilet	220	16,100	13.7	26	φ160				3280	101	1220		87	67	24356	18692
KB-45	Douz	280	14,830	18.9	26	25 x 20	1290	52				805		159	0	11943	0
KB-46	El Ghoula (*)	75	4,710	15.9	27	φ160				750	57			91	87	5947	5670
KB-47	El Gola (*)	65	2,350	27.7	27	φ160				215	12	105		176	120	19560	13358
KB-48	Grad (*)	111	6,980	15.9	25	φ160				1230	87	620		79	0	7105	0
KB-49	El H say	90	5,700	15.8	26	φ160				450	18			146	50	14146	4836
KB-50	Nouel	97	6,720	14.4	22	φ160				980	20	280		52	0	5247	0
KB-51	Zaafrane	101	4,620	21.9	27	φ160				240	14			140	75	11161	6000
KB-52	Bouhamza	80	6,200	12.9	26	φ160				865	22	310		106	126	10577	12596
KB-53	Asar Ghilane	100	5,200	19.2	22	25 x 20	550	16				400		176	85	14112	6813
KB-54	Sakkouma (*)	80	4,110	19.5	26	φ160				725	42	200		149	93	11500	7167
KB-55	Tarfaya (*)	77	4,620	16.7	25	φ160				690	32	430		91	136	4091	6136
KB-56	Dhomrana	45	2,200	20.5	18	φ140				200	6	200		114	65	7285	4153
KB-57	Smida	64	4,700	13.6	27	φ160				535	16	200		60	87	4803	6987
KB-58	Ghima	80	4,580	17.5	22	25 x 20	275	16				400		133	152	8000	9100
KB-59	Sabria	60	3,000	20.0	26	φ160				400	11	300		103	96	8967	8395
KB-60	El Faouar 1	87	6,840	12.7	15	φ140				705	21	440		197	77	15759	6135
KB-61	El Faouar 2	80	6,650	12.0	20	φ140				1310	36	510					

KB-62	Bechni	100	8,630	11.6	25	25 x 20	30	975	390	160	113	64	11298	6373	
KB-63	Darsine (*)	72	4,730	15.2	20	φ140		1090	64	-	230	63	16592	4567	
KB-64	Matrouha	100	4,000	25.0	15	φ140		495	16	400	124	125	12375	12500	
KB-65	Regim Matoug 1	104	4,000	26.0	20	φ140		625	16	400	105	126	16250	13130	
KB-66	Regim Matoug 2	96	6,000	16.0	18	φ140		790	24	600	132	100	12640	9600	
KB-67	Tarfayet Elma	52	2,050	25.4	25	φ160		150	7	200	50	73	3805	6341	
Total		7,213	438,116	16.5	22		455	17,435	1412	27605	6539	147	80	1080682	573782

(4) ガベス県

コード 番号	オアシス名	計画面積 (ha)	サドル 面積(ha)	計画面積/ サドル面積容量(1/s)	シ/A	施設 諸元	改修水路		PVCパイプ		排水路(m)		灌漑 (m/ha)	排水 (m/ha)	灌漑 (m)	排水 (m)
							延長(m)	分水工	延長(m)	分水工	圃場	集水				
GB-1	Ain Zris	140	8,840	15.8	18	20 x 20	31	635	11	200	420	-	94	48	13224	6652
GB-2	Temoula 1	40	3,220	12.4	17	20 x 20	12	315			260	25	98	89	3913	3940
GB-3	Temoula 2	20	1,080	18.5	11	φ140			6	125	100	65	116	153	2315	3056
GB-4	Zrig Dakhlania	30	2,230	13.5	24	φ160			11	350	140	50	157	85	4709	2556
GB-5	Teboulbou	520	36,090	14.4	22	25 x 20	115	4855	33	1540	2700	705	177	94	92142	49061
GB-6	Oasis de Gabes	734	49,600	14.8	25	25 x 20	192	5585			2740	248	113	60	82649	44218
GB-7	Limoua 1 et 2	148	13,850	10.7	26	φ160			67	2370	920	320	171	90	25326	13251
GB-8	M'dou	40	4,070	9.8	37	30 x 25	13	580			355	175	143	130	5700	5209
GB-9	Chott El Ferik	31	4,570	6.8	18	20 x 20	17	480			95	-	105	21	3256	644
GB-10	Borchamma	143	9,380	15.2	20	φ140			21	740	415	-	79	44	11281	6327
GB-11	Mahjoub	374	24,390	15.3	27	25 x 25	52	1705	50	2090	1885	115	156	82	58193	30668
GB-12	Salem	99	8,250	12.0	36	φ200			33	1330	605	-	161	73	15960	7260
GB-13	Sboui	72	4,240	17.0	25	φ160			17	765	345	135	180	113	12991	8151
GB-14	Faycal	260	14,950	17.4	19	20 x 20	38	1610	16	695	1280	320	154	107	40087	27826
GB-15	M'ziraa Ghannouch	280	18,330	15.3	22	25 x 20	35	1370	45	2130	1475	613	191	114	53464	31895
GB-16	Methouia	268	14,080	19.0	25	25 x 20	28	1155	20	965	1010	-	151	72	40352	19224
GB-17	Ouedhref	263	13,910	18.9	26	25 x 20	28	1165	28	1290	1190	168	176	98	46417	25676
GB-18	Aouinette	232	17,940	12.9	18	20 x 20	38	1745	32	1325	780	275	171	59	39701	13643
GB-19	Chenchou 1	57	4,000	14.3	27	25 x 25	15	545			380	100	136	120	7766	6940
GB-20	Chenchou 2	40	3,970	10.1	25	φ160			16	630	405	125	159	134	6348	5340
GB-21	Tekouri	32	1,700	18.8	16	φ140			11	425	180	68	250	146	8000	4668
GB-22	Hamma Oasis	400	19,440	20.6	18	φ140			73	2945	1345	358	146	88	58539	35041
GB-23	Mziraa Hama	80	6,660	12.0	16	φ140			25	1120	530	223	168	113	13453	9045
GB-24	Bechima 1	280	15,420	18.2	15	20 x 20	72	2130			1170	378	138	100	38677	28109
GB-25	Bechima 2	290	16,050	18.1	15	20 x 20	74	2135			1190	605	133	112	38576	32433
GB-26	Khebayet	96	6,660	14.4	41	30 x 25	16	450			400	-	68	60	6486	5766
GB-27	Ben Ghilouf	180	10,330	17.4	14	20 x 20	24	600			300	-	58	29	10455	5227





表 7.1.2.1 事業実施計画

Code No.	Name of Oasis	Area (ha)	Project Cost (D. /000)	19 97	19 98	19 99	20 00	20 01	20 02
<b>ガブサ郡</b>									
GF-1	Kasha	698	1,268	☆	●	●	●	●	●
GF-2	Sud Ouest	703	1,620		☆	●	●	●	●
GF-3	El Guettar	450	1,287		☆	●	●	●	●
GF-4	Lalla	700	1,595		☆	●	●	●	●
GF-5	El Ksar	578	1,133			☆	●	●	●
GF-6	Oued Shih	56	166			☆	●	●	●
GF-7	Tbeja	65	350			☆	●	●	●
GF-8	Segdoud	217	853			☆	●	●	●
Sub-total (8)		3,457	8,272						
<b>トゥズール郡</b>									
TZ-1	Tozeur	929	2,886	☆	●	●	●	●	●
TZ-2	Kastalia	50	138	☆	●	●	●	●	●
TZ-3	Oued El Koucha	62	197	☆	●	●	●	●	●
TZ-4	Nefayete	72	205	☆	●	●	●	●	●
TZ-5	Chemsa	90	261	☆	●	●	●	●	●
TZ-6	Helha Est	75	362	☆	●	●	●	●	●
TZ-7	Helha Ouest	50	114	☆	●	●	●	●	●
TZ-8	Jhim 1	40	156	☆	●	●	●	●	●
TZ-9	Jhim 2	167	667	☆	●	●	●	●	●
TZ-10	Iba Chabbat 3	325	1,590	☆	●	●	●	●	●
TZ-11	Nefta	852	2,163	☆	●	●	●	●	●
TZ-12	Ghangaya	40	163	☆	●	●	●	●	●
TZ-13	Iba Chabbat 1	240	700	☆	●	●	●	●	●
TZ-14	Iba Chabbat 2	272	1,211	☆	●	●	●	●	●
TZ-15	Draa Sud	198	93	☆	●	●	●	●	●
TZ-16	Haroua 1	72	389	☆	●	●	●	●	●
TZ-17	Haroua 2	48	199	☆	●	●	●	●	●
TZ-18	Haroua 3	238	928	☆	●	●	●	●	●
TZ-19	Oued Lefrissi	78	357	☆	●	●	●	●	●
TZ-20	Tozrati	48	192			☆	●	●	●
TZ-21	Cedada	55	300			☆	●	●	●
TZ-22	Dghoumes	104	438			☆	●	●	●
TZ-23	Degache	822	2,718	☆	●	●	●	●	●
TZ-24	Chakmou	90	227			☆	●	●	●
TZ-25	El Hamma	400	1,119			☆	●	●	●
TZ-26	Tamerza	80	488			☆	●	●	●
TZ-27	Chchika	23	91			☆	●	●	●
TZ-28	Foum El Khanga	45	212			☆	●	●	●
TZ-29	Mides	29	79			☆	●	●	●
TZ-30	Ain El Karma	25	117			☆	●	●	●
Sub-total (30)		5,622	18,759						
<b>ネビリ郡</b>									
KB-1	Bechri	162	797	☆	●	●	●	●	●
KB-2	Bouabdallah	270	1,027	☆	●	●	●	●	●
KB-3	Fainassa	205	628	☆	●	●	●	●	●
KB-4	El Ghaa	94	442	☆	●	●	●	●	●
KB-5	Menchia	140	786	☆	●	●	●	●	●
KB-6	Nagga	181	461	☆	●	●	●	●	●
KB-7	Oum Sotaa	162	837	☆	●	●	●	●	●
KB-8	Oued Zira	176	567	☆	●	●	●	●	●
KB-9	Oued Touati	62	231	☆	●	●	●	●	●
KB-10	Tenchig	54	219	☆	●	●	●	●	●
KB-11	Zaouiet El Anes	125	228	☆	●	●	●	●	●
KB-12	Zaouiet El Harth	81	329	☆	●	●	●	●	●
KB-13	Ziret Louhichi	86	289	☆	●	●	●	●	●
KB-14	Chouchet Nagga	26	88	☆	●	●	●	●	●
KB-15	Guataya	150	305	☆	●	●	●	●	●
KB-16	Jafida	133	731	☆	●	●	●	●	●
KB-17	Mansoura	86	494	☆	●	●	●	●	●
KB-18	Raba	162	682	☆	●	●	●	●	●
KB-19	Telmine	240	1,097	☆	●	●	●	●	●
KB-20	Tembib	118	349	☆	●	●	●	●	●
KB-21	Tombar	127	591	☆	●	●	●	●	●
KB-22	Limaguec	57	198	☆	●	●	●	●	●
KB-23	Mazraa Neji	66	318	☆	●	●	●	●	●
KB-24	Oum El Farh 1 et 2	55	79	☆	●	●	●	●	●
KB-25	Sqfimi	82	154	☆	●	●	●	●	●
KB-26	Saidane	30	89	☆	●	●	●	●	●
KB-27	Barghouthia	52	129	☆	●	●	●	●	●
KB-28	Bazma	145	473	☆	●	●	●	●	●
KB-29	Bchelli	135	512	☆	●	●	●	●	●
KB-30	Blidetic	75	202	☆	●	●	●	●	●
KB-31	Zarcine	70	184	☆	●	●	●	●	●
KB-32	Jomna	112	116	☆	●	●	●	●	●
KB-33	Misouria	81	158	☆	●	●	●	●	●
KB-34	Msaïd	95	316	☆	●	●	●	●	●
KB-35	Rahmal	85	299	☆	●	●	●	●	●
KB-36	Ras El Ain	268	921	☆	●	●	●	●	●
KB-37	Souk El Baïez	65	193	☆	●	●	●	●	●
KB-38	Bou Zaoun 1 et 2	147	473	☆	●	●	●	●	●
KB-39	Bourzine	94	279	☆	●	●	●	●	●
Sub-total (39)		7,133	25,976						
<b>ネビリ郡</b>									
KB-40	Guchada	103	260			☆	●	●	●
KB-41	Kelwamen	47	225			☆	●	●	●
KB-42	Klibia	92	267			☆	●	●	●
KB-43	Sidi Hamad	100	239			☆	●	●	●
KB-44	Atlet	220	872			☆	●	●	●
KB-45	Douz	280	778			☆	●	●	●
KB-46	El Ghoula	75	292			☆	●	●	●
KB-47	El Goula	65	274			☆	●	●	●
KB-48	Grad	111	712			☆	●	●	●
KB-49	El Hsay	90	135			☆	●	●	●
KB-50	Nouiet	97	271			☆	●	●	●
KB-51	Zaafrane	101	128			☆	●	●	●
KB-52	Bouhamra	80	290			☆	●	●	●
KB-53	Ksar Ghilane	109	450			☆	●	●	●
KB-54	Sakkouma	80	454			☆	●	●	●
KB-55	Tarfaya	77	300			☆	●	●	●
KB-56	Dhomrane	45	193			☆	●	●	●
KB-57	Sridja	64	206			☆	●	●	●
KB-58	Ghidma	80	169			☆	●	●	●
KB-59	Sabria	60	317			☆	●	●	●
KB-60	El Faouar 1	87	309			☆	●	●	●
KB-61	El Faouar 2	89	275			☆	●	●	●
KB-62	Bechri	100	299			☆	●	●	●
KB-63	Dergine	72	368			☆	●	●	●
KB-64	Matrouba	100	401			☆	●	●	●
KB-65	Regim Maatoug 1	104	442			☆	●	●	●
KB-66	Regim Maatoug 2	96	294			☆	●	●	●
KB-67	Tarfayct Elma	52	190			☆	●	●	●
Sub-total (67)		7,213	25,761						
<b>ガバス郡</b>									
GB-1	Ain Zrig	140	283	☆	●	●	●	●	●
GB-2	Temoula 1	40	104	☆	●	●	●	●	●
GB-3	Temoula 2	20	112	☆	●	●	●	●	●
GB-4	Zrig Dakhlania	30	122	☆	●	●	●	●	●
GB-5	Teboulhou	520	2,152	☆	●	●	●	●	●
GB-6	Oasis de Gabes	734	1,886	☆	●	●	●	●	●
GB-7	Limaoua 1 et 2	148	628	☆	●	●	●	●	●
GB-8	Mdou	40	204	☆	●	●	●	●	●
GB-9	Chou El Ferik	31	52	☆	●	●	●	●	●
GB-10	Bouchamma	143	246	☆	●	●	●	●	●
GB-11	Mahjoub	374	1,270	☆	●	●	●	●	●
GB-12	Salem	99	379	☆	●	●	●	●	●
GB-13	Shouf	72	337	☆	●	●	●	●	●
GB-14	Faycal	260	982	☆	●	●	●	●	●
GB-15	Mzirra Ghannouch	280	1,365	☆	●	●	●	●	●
GB-16	Melouia	268	794	☆	●	●	●	●	●
GB-17	Ouedhef	263	1,033	☆	●	●	●	●	●
GB-18	Aouinette	232	748	☆	●	●	●	●	●
GB-19	Cherchou 1	57	243	☆	●	●	●	●	●
GB-20	Cherchou 2	40	190	☆	●	●	●	●	●
GB-21	Tekouri	31	189	☆	●	●	●	●	●
GB-22	Hamma Oasis	400	1,383	☆	●	●	●	●	●
GB-23	Mzirra Hamma	80	345	☆	●	●	●	●	●
GB-24	Bechima 1	280	1,020	☆	●	●	●	●	●
GB-25	Bechima 2	290	1,189	☆	●	●	●	●	●
GB-26	Khebayet	96	192	☆	●	●	●	●	●
GB-27	Bou Ghikouf	180	225	☆	●	●	●	●	●
GB-28	Ghb Dekhane	70	166	☆	●	●	●	●	●
GB-29	Oued Nekhla	30	65	☆	●	●	●	●	●
GB-30	Arram	163	866	☆	●	●	●	●	●
GB-31	March 1	100	453	☆	●	●	●	●	●
GB-32	March 2	180	869	☆	●	●	●	●	●
GB-33	March 3	30	133	☆	●	●	●	●	●
GB-34	March 5	115	824	☆	●	●	●	●	●
GB-3									

表 7.1.2.2 年度別工事計画面積

			(Unit: ha)															
Code No.	Name of Oasis	Area (ha)	19 97	19 98	19 99	20 00	20 01	20 02	Code No.	Name of Oasis	Area (ha)	19 97	19 98	19 99	20 00	20 01	20 02	
<b>ガベス県</b>									<b>ケビリ県</b>									
GF-1	Kasba	698		140	209	209	140		KB-40	Guelhada	103			51	52			
GF-2	Sud Ouesl	703			143	210	210	140	KB-41	Kefwamen	47			47				
GF-3	El Guettar	450			135	180	135		KB-42	Khbia	92			92				
GF-4	Lalla	700			140	210	210	140	KB-43	Sidi Hamed	100			100				
GF-5	El Ksar	578				178	230	170	KB-44	Anlet	220			110	110			
GF-6	Oued Shili	56				56			KB-45	Douz	280				140	140		
GF-7	Thelja	65				65			KB-46	El Ghoulia	75				75			
GF-8	Segdoud	217				108	109		KB-47	El Gouja	65				65			
Sub-total			3,467	0	140	627	1,216	1,034	450	KB-48	Grad	111				56	55	
<b>トズール県</b>									<b>ケビリ県</b>									
TZ-1	Tozour	929		185	186	186	186	186	KB-49	El Hrsay	90				90			
TZ-2	Kastilia	50		50					KB-50	Nouiel	97				97			
TZ-3	Oued El Koucha	62		62					KB-51	Zanfranc	101				51	50		
TZ-4	Nellayette	72		72					KB-52	Bouhamza	80				80			
TZ-5	Chemsa	90		90					KB-53	Ksar Ghilane	100				50	50		
TZ-6	Helba Est	75		75					KB-54	Sakkouma	80				80			
TZ-7	Helba Ouest	50		50					KB-55	Tarfaya	77				77			
TZ-8	Jhim 1	40		40					KB-56	Dhomrana	45				45			
TZ-9	Jhim 2	167		83	84				KB-57	Snida	64				64			
TZ-10	Iba Chabbat 3	325		162	163				KB-58	Ghidna	80						80	
TZ-11	Nefta	852			170	256	256	170	KB-59	Sabria	60				60			
TZ-12	Ghardaya	40		40					KB-60	El Faouar 1	87				87			
TZ-13	Iba Chabbat 1	240			120	120			KB-61	El Faouar 2	80				80			
TZ-14	Iba Chabbat 2	272			136	136			KB-62	Bechoi	100						100	
TZ-15	Oraa Sud	198			99	99			KB-63	Dergine	72						72	
TZ-16	Hazoua 1	72			72				KB-64	Matrouha	100					50	50	
TZ-17	Hazoua 2	48			48				KB-65	Regim Maatoug 1	104					52	52	
TZ-18	Hazoua 3	238			73	95	70		KB-66	Regim Maatoug 2	96					96		
TZ-19	Oued Loghissi	78			78				KB-67	Tarfuyt Elma	52					52		
TZ-20	Tozzarit	48				48			Sub-total									
TZ-21	Cedada	55				55			7,213	0	2,079	2,420	1,508	1,104	102			
TZ-22	Dghounes	104				52	52		<b>ガベス県</b>									
TZ-23	Degaebe	872			164	247	247	164	GB-1	Ain Zrig	140		70	70				
TZ-24	Chakmou	90				90			GB-2	Temoula 1	40		40					
TZ-25	El Hamma	400				120	160	120	GB-3	Temoula 2	20		20					
TZ-26	Tamerza	80				80			GB-4	Zrig Dakhlania	30		30					
TZ-27	Chebika	23				23			GB-5	Teboulbou	520		104	156	156	104		
TZ-28	Foum El Khanga	48				48			GB-6	Oasis de Gabes	734		146	147	147	147	147	
TZ-29	Mides	29				29			GB-7	Limounou 1 et 2	148		148					
TZ-30	Ain El Karma	25				25			GB-8	Midou	40		40					
Sub-total			5,622	0	869	1,433	1,709	971	640	GB-9	Chott El Ferik	31		31				
<b>ケビリ県</b>									<b>ガベス県</b>									
KB-1	Bechri	162		81	81				GB-10	Bouchamma	143		72	71				
KB-2	Bouabdallah	270		135	135				GB-11	Mahjoub	374			187	187			
KB-3	Fatnassa	205		103	102				GB-12	Salem	99			99				
KB-4	El Ghaia	94		94					GB-13	Sboui	72			72				
KB-5	Mecchia	140		140					GB-14	Faycal	260			130	130			
KB-6	Nagga	181		91	90				GB-15	M'ziraa Ghannouch	280			140	140			
KB-7	Oum Soman	162		81	81				GB-16	Melouia	268			134	134			
KB-8	Oued Zara	176		88	88				GB-17	Ouedhref	263			132	131			
KB-9	Oufed Touati	62		62					GB-18	Aouinette	232			116	116			
KB-10	Tenchig	54		54					GB-19	Chenchou 1	57			57				
KB-11	Zaouiet El Anes	125		63	62				GB-20	Chenchou 2	40			40				
KB-12	Zaouiet El Harth	81		81					GB-21	Tekouri	32			32				
KB-13	Zirel Louhichi	86		86					GB-22	Hamma Oasis	400			80	120	120	80	
KB-14	Chouchet Nagga	26		26					GB-23	M'ziraa Hamma	80			80				
KB-15	Gualaya	150		75	75				GB-24	Bechima 1	280			140	140			
KB-16	Jedida	133		67	66				GB-25	Bechima 2	290			145	145			
KB-17	Mansoura	86		86					GB-26	Khehayet	96			96				
KB-18	Rabia	162		81	81				GB-27	Ben Ghilouf	180			90	90			
KB-19	Telmene	240		120	120				GB-28	Glab Dekhane	70			70				
KB-20	Tembib	118		59	59				GB-29	Oued Nekhla	30			30				
KB-21	Tomber	127		64	63				GB-30	Arram	163				82	81		
KB-22	Limagues	57		57					GB-31	Mareth 1	100				50	50		
KB-23	Mazraa Neji	66		66					GB-32	Mareth 2	180				54	72	54	
KB-24	Oum El Farh 1 et 2	55		55					GB-33	Mareth 3	30				30			
KB-25	Sifumi	82		82					GB-34	Mareth 5	115				58	57		
KB-26	Saidane	30		30					GB-35	Mareth 6	88				88			
KB-27	Barghouthia	52		52					GB-36	Zarat 2	174				87	87		
KB-28	Bazma	146			73	73			GB-37	Zerkine 1 et 3	116				58	58		
KB-29	Bechelli	135			68	67			GB-38	Zerkine 2	156				78	78		
KB-30	Blidene	75			75				GB-39	Ayoune Zerkine	30				30			
KB-31	Zarcine	70			70				GB-40	Madssia	58				58			
KB-32	Jemna	112			56	56			GB-41	Kettana 1	98				98			
KB-33	Mtouria	81			81				GB-42	Kettana 3	140				70	70		
KB-34	Msaïd	95			95				GB-43	Kettana 4	125				63	62		
KB-35	Rahmat	85			85				GB-44	Sidi Sellam	120				60	60		
KB-36	Ras El Ain	268			81	107	80		GB-45	Zrig Barvania	71				71			
KB-37	Souk El Balce	65			65				GB-46	Ghandi	30				30			
KB-38	Ben Zitoun 1 et 2	147			74	73			GB-47	Laaradh 1	35						35	
KB-39	Bourzine	94			94				GB-48	Laaradh 3	55						55	
Sub-total			7,133	0	701	2,314	2,701	1,136	281	Total								
			23,435	0	3,782	6,294	7,134	4,245	1,473									

Ref.: Table 7.1.2.1

表 7.2.2.1 事業費内訳

(単位:1000円・イナール)

項 目	1年目	2年目	3年目	4年目	5年目	6年目	合計
(1)直接工事費							
(灌漑・排水施設)	0	11,416	18,661	19,946	11,578	3,417	65,018
(2)用地及び補償費							
	212	367	355	232	86	0	1,254
(3)一般管理費							
(1.5% of (1))	0	158	283	297	177	61	975
(4)エンジニアリングサービス費							
	640	1,480	1,534	1,264	709	244	5,871
(5)予備費							
(10% of (1)+(2)+(3)+(4))	85	1,342	2,083	2,173	1,254	372	7,309
(6)物価上昇費							
(4% of (1)+(2)+(3)+(4)+(5))	37	1,204	2,861	4,061	2,990	1,086	12,239
合計	974	15,967	25,777	27,973	16,794	5,180	92,666

Table 9.1.1 農産物と農業資機材の財務及び経済価格

Description	Unit	Farm Products		Farm Inputs	
		Financial Price (D.)	Economic Price (D.)	Financial Price	Economic Price
<b>A. FARM PRODUCTS</b>					
1. Arboriculture					
1.1 Date Palm	Kg	1.025	1.180	1.500	1.500
1.2 Olive	Kg	0.400	0.625	2.000	2.000
1.3 Pomegranate	Kg	0.287	0.294	0.500	0.500
1.4 Apricot	Kg	0.493	0.505	0.800	0.800
1.5 Fig	Kg	0.385	0.394	0.500	0.500
2. Vegetables					
2.1 Carrot	Kg	0.109	0.113	24.100	24.100
2.2 Turnip	Kg	0.201	0.208	13.500	13.500
2.3 Onion	Kg	0.186	0.192	59.000	59.000
2.4 Kidney Beans	Kg	0.370	0.383	1.500	1.500
2.5 Pepper	Kg	0.874	0.904	156.200	156.200
2.6 Tomato	Kg	0.310	0.321	72.500	72.500
3. Fodder Crops					
3.1 Lucern	Kg	0.053	0.055	4.300	4.300
4. Industrial Crops					
4.1 Henna	Kg	1.839	1.904	2.100	2.100
<b>B. FARM INPUTS</b>					
1. Fertilizers					
1.1 FYM/ Compost	ton	10.000	8.500	10.000	(per kg)
1.2 Ammonite	50 kg	11.500	9.700	11.500	0.230
1.3 Super 45 (TSP)	50 kg	11.900	13.250	11.900	0.238
1.4 Sulfate de Potasse	50 kg	21.100	13.800	21.100	0.422
1.5 Nitrate de Potash	50 kg	44.000	26.100	44.000	0.880
2. Insecticides	lit	18.700	18.700	18.700	-
3. Fungicides	kg	25.200	25.200	25.200	-
4. Water Charge	m <sup>3</sup>	0.020	0.020	0.020	-
5. Labor Charge			(x 0.85)		
2.1 Casual Worker	man-day	5.200	4.420	5.200	4.420
2.2 Pollinisation (Date)	man-day	5.800	4.930	5.800	4.930
2.3 Harvesting	man-day	6.800	5.780	6.800	5.780

Sources : Arr. des Etudes et Statistiques Agricole, Division des Etudes et du Development

Agricole, Gafsa, Tozeur, Kebili and Gabes CRDA

Farm Economic Survey by JICA Study Team, September 1995

Remarks : T.C.\* : Transportation cost from market to farm including handling charge and other costs.

Ref. : ANNEX-K, Tables K.2.1.1, K.2.1.2 and K.2.1.3

表 9.2.1 事業を実施しない場合と実施した場合の作物生産費と収益

(Unit : D./ha)

Description		Gross Income			Production Cost				Net Return (a - b)		
		Yield* (ton)	Unit Price (D./kg)	Amount (a)	Farm Inputs	Labor Cost	Others	Total (b)			
1. Arboriculture	1.1 Date Palm	Without Project	4.55	1.180	5,367	351	501	42	894	4,473	
		With Project	5.18		6,108	475	536	50	1,061	5,047	
		Increment	0.63		741				167	574	
	1.2 Olive	Without Project	4.78	0.625	2,990	215	449	33	697	2,293	
		With Project	5.33		3,333	286	421	35	742	2,591	
		Increment	0.55		343				45	298	
	1.3 Pomegranate	Without Project	7.90	0.294	2,328	329	476	40	845	1,483	
		With Project	9.25		2,720	390	462	43	895	1,825	
		Increment	1.35		392				50	342	
	1.4 Apricot	Without Project	9.88	0.505	4,987	343	569	46	958	4,029	
		With Project	10.98		5,543	405	569	48	1,022	4,521	
		Increment	1.10		556				64	492	
	1.5 Fig	Without Project	3.37	0.394	1,326	244	476	49	769	557	
		With Project	3.77		1,484	371	462	62	895	589	
		Increment	0.40		158				126	32	
2. Vegetables	2.1 Turnip* /Carrot	Without Project	20.00	0.208	4,160	370	972	67	1,409	2,751	
		With Project	22.50		4,680	414	1,048	72	1,534	3,146	
		Increment	2.50		520				125	395	
	2.2 Onion	Without Project	21.00	0.192	4,032	432	1,061	75	1,568	2,464	
		With Project	23.80		4,570	476	1,092	79	1,647	2,923	
		Increment	2.80		538				79	459	
	2.4 Kindey Beans	Without Project	10.40	0.383	3,983	261	915	59	1,235	2,748	
		With Project	11.70		4,481	344	1,012	68	1,424	3,057	
		Increment	1.30		498				189	309	
	2.5 Pepper	Without Project	9.20	0.904	8,317	1,043	1,017	103	2,163	6,154	
		With Project	10.30		9,311	1,080	1,083	108	2,271	7,040	
		Increment	1.10		994				108	886	
	2.6 Tomato	Without Project	20.90	0.321	6,709	624	1,017	82	1,723	4,986	
		With Project	23.40		7,511	668	1,083	87	1,838	5,673	
		Increment	2.50		803				115	688	
	3. Fodder Crops	3.1 Lucern	Without Project	54.40	0.055	2,992	249	628	44	921	2,071
			With Project	65.30		3,592	344	685	52	1,081	2,511
			Increment	10.90		600				160	440
4. Cash Crops	4.1 Henna	Without Project	1.40	1.904	2,666	386	703	55	1,144	1,522	
		With Project	1.70		3,237	481	751	62	1,294	1,943	
		Increment	0.30		571				150	421	

Remark : Figures of arboriculture crops are estimated average yield and annual cost of 25 years.

Ref. : ANNEX-K, Tables K.2.2.1 (1) to (7)

表 9.2.2 果別の事業実施による年間の滝産便益

Description	Unit	カブツ田		トラムニ		ケル田		カベス田		カベ		Increment
		Win Project	With Project	Win Project	With Project	Win Project	With Project	Win Project	With Project	Win Project	With Project	
<b>1. Arborescens</b>												
1.1 Date Palm (W/P Cost)												
Planted Area (ha)	812	812	5,006	5,006	6,566	6,566	3,113	3,113	3,113	3,113	15,277	15,277
Gross Production Value (D. 2000)	6,933.8	7,957.0	39,873.5	38,241.4	42,775.4	48,131.4	24,278.5	24,278.5	24,278.5	24,278.5	104,861.2	113,726.3
Production Cost (D. 2000)	725.9	861.5	4,502.2	5,349.1	5,870.0	6,955.5	2,793.0	2,793.0	2,793.0	2,793.0	10,463.5	2,542.4
Net Income (Irregular Benefit) (D. 2000)	6,207.9	7,095.5	25,371.3	22,892.3	36,905.4	41,175.9	21,485.5	21,485.5	21,485.5	21,485.5	90,980.1	111,639.2
1.2 Olive (W/P Cost)												
Planted Area (ha)	2,221	2,221	177	177	196	196	1,727	1,727	1,727	1,727	4,319	4,319
Gross Production Value (D. 2000)	11,171.9	12,295.9	292.8	338.0	345.8	616.3	4,155.2	4,702.3	4,702.3	4,702.3	16,032.5	1,968.8
Production Cost (D. 2000)	1,548.0	1,649.0	123.4	131.3	135.2	143.5	1,203.7	1,301.4	1,301.4	1,301.4	3,204.2	193.9
Net Income (Irregular Benefit) (D. 2000)	9,623.9	10,646.9	169.4	206.7	210.6	472.8	2,951.5	3,398.9	3,398.9	3,398.9	12,828.3	1,674.9
1.3 Pomegranate (W/P Cost)												
Planted Area (ha)	150	150	145	145	161	161	1,788	1,788	1,788	1,788	2,244	2,244
Gross Production Value (D. 2000)	361.2	397.1	95.2	102.1	147.2	163.8	6,964.1	6,964.1	6,964.1	6,964.1	7,810.1	1,049.8
Production Cost (D. 2000)	128.8	134.3	92.3	94.9	136.0	142.9	1,510.9	1,510.9	1,510.9	1,510.9	1,772.4	106.4
Net Income (Irregular Benefit) (D. 2000)	232.4	262.8	2.9	7.2	11.2	21.9	5,453.2	5,453.2	5,453.2	5,453.2	6,037.7	943.4
1.4 Apple (W/P Cost)												
Planted Area (ha)	125	125	51	51	49	49	122	122	122	122	347	347
Gross Production Value (D. 2000)	1,206.4	1,307.6	101.2	74.4	67.8	67.8	814.0	814.0	814.0	814.0	2,035.8	226.0
Production Cost (D. 2000)	119.8	127.8	8.0	46.9	46.9	46.8	116.9	116.9	116.9	116.9	332.5	72.6
Net Income (Irregular Benefit) (D. 2000)	1,086.6	1,179.8	93.2	27.5	21.0	21.0	697.1	697.1	697.1	697.1	1,703.3	203.4
1.5 Fig / Others (W/P Cost)												
Planted Area (ha)	124	124	213	213	243	243	383	383	383	383	983	983
Gross Production Value (D. 2000)	377.1	411.0	33.9	234.2	206.6	276.3	727.8	835.7	835.7	835.7	1,562.4	197.8
Production Cost (D. 2000)	95.4	110.3	15.1	164.8	166.9	212.0	284.5	301.3	301.3	301.3	740.6	126.0
Net Income (Irregular Benefit) (D. 2000)	281.7	300.7	18.8	69.4	39.7	64.3	443.3	534.4	534.4	534.4	821.8	98.8
<b>2. Vegetables</b>												
2.1 Turnip / Carrot (W/P Cost)												
Planted Area (ha)	166	166	125	125	457	457	392	392	392	392	1,140	1,140
Gross Production Value (D. 2000)	1,023.5	1,128.0	104.5	377.7	43.5	150.5	2,520.2	2,520.2	2,520.2	2,520.2	4,842.8	65.0
Production Cost (D. 2000)	233.9	254.6	20.7	190.8	14.7	53.9	452.3	452.3	452.3	452.3	1,066.2	137.8
Net Income (Irregular Benefit) (D. 2000)	789.6	873.4	83.8	186.9	28.8	96.6	2,067.9	2,067.9	2,067.9	2,067.9	3,776.6	58.2
2.2 Onion (W/P Cost)												
Planted Area (ha)	166	166	123	123	541	541	408	408	408	408	1,238	1,238
Gross Production Value (D. 2000)	844.8	932.4	87.6	381.0	42.8	194.0	2,297.7	2,992.2	2,992.2	2,992.2	4,953.4	568.9
Production Cost (D. 2000)	266.3	273.2	12.9	201.0	10.1	40.0	697.3	672.3	672.3	672.3	1,941.2	95.6
Net Income (Irregular Benefit) (D. 2000)	578.5	659.2	74.7	180.0	32.7	154.0	1,600.4	1,320.2	1,320.2	1,320.2	3,012.2	513.3
2.3 Kidney Beans (W/P Cost)												
Planted Area (ha)	167	167	58	58	263	263	64	64	64	64	552	552
Gross Production Value (D. 2000)	933.1	1,049.9	99.8	167.7	83.2	306.6	401.3	438.9	438.9	438.9	2,430.1	249.6
Production Cost (D. 2000)	206.1	237.8	31.7	81.9	48.2	48.2	79.0	91.3	91.3	91.3	784.0	102.5
Net Income (Irregular Benefit) (D. 2000)	727.0	812.1	68.1	85.8	35.0	258.4	322.3	347.6	347.6	347.6	1,646.1	157.1
2.4 Pepper (W/P Cost)												
Planted Area (ha)	319	319	188	188	558	558	413	413	413	413	1,458	1,458
Gross Production Value (D. 2000)	2,895.8	3,172.6	276.8	1,452.7	130.7	416.3	4,459.1	5,329.5	5,329.5	5,329.5	12,002.4	1,564.2
Production Cost (D. 2000)	690.0	753.7	33.7	301.1	17.7	59.7	893.3	937.2	937.2	937.2	3,133.7	350.7
Net Income (Irregular Benefit) (D. 2000)	2,205.8	2,418.9	243.1	1,151.6	113.0	356.6	3,565.8	4,392.3	4,392.3	4,392.3	8,868.7	1,213.5
2.5 Tomato (W/P Cost)												
Planted Area (ha)	223	223	94	94	248	248	208	208	208	208	773	773
Gross Production Value (D. 2000)	2,117.5	2,320.5	203.0	466.8	55.3	150.0	1,282.3	1,469.4	1,469.4	1,469.4	5,125.3	604.4
Production Cost (D. 2000)	384.2	410.0	25.8	172.3	10.3	27.6	356.6	381.5	381.5	381.5	1,311.9	86.8
Net Income (Irregular Benefit) (D. 2000)	1,733.3	1,910.5	177.2	294.5	45.0	122.4	925.7	1,087.9	1,087.9	1,087.9	3,813.4	517.6
<b>3. Fodder Crops</b>												
3.1 Lucern (W/P Cost)												
Planted Area (ha)	466	466	311	311	2,850	2,850	1,620	1,620	1,620	1,620	5,697	5,697
Gross Production Value (D. 2000)	2,881.2	3,166.4	265.1	1,471.3	170.7	901.6	5,166.8	5,875.5	5,875.5	5,875.5	10,996.8	2,066.1
Production Cost (D. 2000)	818.0	957.7	141.7	335.6	49.2	269.4	1,492.0	1,751.0	1,751.0	1,751.0	5,219.2	887.2
Net Income (Irregular Benefit) (D. 2000)	2,063.2	2,208.7	123.4	1,135.7	121.5	632.2	3,674.8	4,124.5	4,124.5	4,124.5	5,777.6	1,178.9
3.2 Sorghum (W/P Cost)												
Planted Area (ha)	455	455	455	455	455	455	455	455	455	455	455	455
Gross Production Value (D. 2000)	1,219.0	1,463.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0
Production Cost (D. 2000)	517.1	564.4	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3
Net Income (Irregular Benefit) (D. 2000)	701.9	898.6	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7
<b>4. Industrial Crops</b>												
4.1 Henna (W/P Cost)												
Planted Area (ha)	1,144	1,144	1,254	1,254	452	452	452	452	452	452	452	452
Gross Production Value (D. 2000)	30,248.4	34,173.4	3,925.0	4,924.5	7,385.1	7,385.1	10,990	10,990	10,990	10,990	34,680	2,026.9
Production Cost (D. 2000)	5,206.4	5,729.1	332.7	966.6	1,796.4	1,796.4	10,403.8	10,403.8	10,403.8	10,403.8	34,291.3	3,946.8
Net Income (Irregular Benefit) (D. 2000)	25,042.0	28,444.3	3,592.3	3,957.9	5,588.7	5,588.7	2,586.2	2,586.2	2,586.2	2,586.2	1,688.7	4,380.1
Total Planted Area (ha)	5,339	5,339	6,501	6,501	12,130	12,130	10,990	10,990	10,990	10,990	34,680	2,026.9
Total Gross Production Value (D. 2000)	30,248.4	34,173.4	3,925.0	4,924.5	7,385.1	7,385.1	10,990	10,990	10,990	10,990	34,680	2,026.9
Total Production Cost (D. 2000)	5,206.4	5,729.1	332.7	966.6	1,796.4	1,796.4	10,403.8	10,403.8	10,403.8	10,403.8	34,291.3	3,946.8
Total Net Income (D. 2000)	25,042.0	28,444.3	3,592.3	3,957.9	5,588.7	5,588.7	2,586.2	2,586.2	2,586.2	2,586.2	1,688.7	4,380.1

Remark: W/P Project / Win Project Comparison. Ref.: Annex-K, Tables K-2.1, K-2.2, and K-2.3.

表 9.3.1 153オアシスの事業費、維持管理費及び灌漑便益

Code No	Name of Oasis	Area (ha)	Project Cost		O/M Cost		Irrigation Benefit		Code No	Name of Oasis	Area (ha)	Project Cost		O/M Cost		Irrigation Benefit			
			Total (D.000)	per ha (D./ha)	Total (D.000)	per ha (D./ha)	Total (D.000)	per ha (D./ha)				Total (D.000)	per ha (D./ha)	Total (D.000)	per ha (D./ha)				
<b>ガフリ県</b>									<b>ケビリ県</b>										
GF-1	Kasba	698	1,268	1,817	14.5	21	430.5	602	KB-40	Gueliada	103	260	2,524	2.8	27	91.6	839		
GF-2	Sud Ouest	703	1,620	2,304	17.3	25	640.8	912	KB-41	Kelwanon	47	225	4,787	2.1	45	50.8	1,081		
GF-3	El Guettar	450	1,287	2,860	13.1	29	461.4	1,025	KB-42	Khifa	92	267	2,902	2.8	30	39.0	424		
GF-4	Lalla	700	1,595	2,279	17.1	24	461.7	660	KB-43	Sidi Hamed	100	239	2,390	2.6	26	73.3	733		
GF-5	El Kasar	578	1,133	1,960	12.6	22	381.2	660	KB-44	Aitai	220	872	3,964	8.5	39	169.6	771		
GF-6	Oued Shili	56	156	2,964	17	30	52.7	941	KB-45	Dow	280	778	2,779	8.2	29	186.0	664		
GF-7	Thelja	65	350	3,385	3.2	49	69.8	1,074	KB-46	El Ghoula	75	292	3,893	2.9	39	19.7	263		
GF-8	Segdoud	217	853	3,931	8.2	38	354.2	1,632	KB-47	El Gofaa	65	274	4,215	2.7	42	19.8	305		
Sub-total (8)		3,467	8,272	2,386	87.7	25	2,842.3	820	KB-48	Grad	111	712	6,414	6.5	59	47.0	423		
<b>トゥズール県</b>									<b>ケビリ県</b>										
TZ-1	Tozeur	929	2,885	3,102	29.5	32	645.4	695	KB-49	El Hsoy	90	135	1,500	1.7	19	42.1	468		
TZ-2	Kastilla	50	138	2,760	1.5	30	32.0	640	KB-50	Nouid	97	271	2,794	2.9	30	85.3	879		
TZ-3	Oued El Koucha	62	197	3,177	2.0	32	33.2	535	KB-51	Zanfane	101	128	1,267	1.7	17	7.4	73		
TZ-4	Nefayette	72	205	2,847	2.1	29	39.2	544	KB-52	Bouhamza	80	290	3,625	2.9	36	58.1	726		
TZ-5	Choua	90	261	2,900	2.7	30	32.5	417	KB-53	Ksar Ghilane	100	450	4,500	4.3	43	75.7	757		
TZ-6	Helho Est	75	362	4,827	3.4	45	72.6	968	KB-54	Sakouma	80	454	5,675	4.2	53	31.0	388		
TZ-7	Helho Ouest	50	114	2,380	1.3	26	25.9	518	KB-55	Tarfaya	77	300	3,896	2.9	38	13.9	181		
TZ-8	Jhim 1	40	156	3,900	1.5	38	55.8	1,395	KB-56	Dhommara	45	193	4,289	1.9	42	30.3	673		
TZ-9	Jhim 2	167	667	3,924	6.5	39	121.3	726	KB-57	Smida	64	206	3,219	2.1	33	40.7	636		
TZ-10	Ibn Chabbat 3	325	1,590	4,892	15.0	46	54.3	167	KB-58	Sabira	60	317	5,283	3.0	50	91.1	1,511		
TZ-11	Ncha	852	2,162	2,538	23.2	27	803.9	944	KB-59	El Faouar 1	87	309	3,552	3.1	36	75.4	867		
TZ-12	Ghangaya	40	163	4,075	1.6	40	33.3	833	KB-60	El Faouar 2	80	275	3,438	2.8	35	45.0	563		
TZ-13	Ibn Chabbat 1	240	700	2,917	7.3	30	65.8	274	KB-61	Bechli	100	299	2,990	3.1	31	68.5	685		
TZ-14	Ibn Chabbat 2	272	1,211	4,452	11.6	43	73.2	269	KB-62	Dergine	72	368	5,111	3.5	49	8.9	124		
TZ-15	Draa Sud	198	93	479	2.1	11	12.3	62	KB-63	Matrouha	100	401	4,010	3.9	39	93.7	937		
TZ-16	Hazoua 1	72	389	5,403	3.6	50	66.4	922	KB-64	Regim Maatoug 1	104	442	4,250	4.3	41	62.9	605		
TZ-17	Hazoua 2	48	199	4,146	1.9	40	61.8	1,288	KB-65	Regim Maatoug 2	96	294	3,063	3.0	31	46.4	483		
TZ-18	Hazoua 3	238	928	3,899	9.1	38	284.6	1,196	KB-66	Tarfayet Elna	52	190	3,654	1.9	37	39.0	750		
TZ-19	Oued Lejhissi	78	357	4,577	3.4	44	57.7	740	Sub-total (67)				7,213	25,761	3,571	257.4	36	5,688.7	775
TZ-20	Tozari	48	192	4,000	1.9	40	33.8	704	<b>ガベス県</b>										
TZ-21	Cudala	55	300	5,455	2.8	51	56.8	1,033	GB-1	Ain Zrig	140	283	2,021	3.4	24	82.2	591		
TZ-22	Dhommara	104	438	4,212	4.2	40	85.8	825	GB-2	Temoula 1	40	104	2,600	1.1	28	16.7	418		
TZ-23	Degache	822	2,718	3,307	27.4	33	662.9	806	GB-3	Temoula 2	20	112	5,600	1.1	55	16.8	840		
TZ-24	Chakrou	90	227	2,522	2.4	27	55.4	616	GB-4	Zig Dakhlania	30	122	4,067	1.2	40	11.4	613		
TZ-25	El Hamoua	400	1,119	2,728	11.7	29	376.7	942	GB-5	Teboulhou	520	2,152	4,138	21.3	41	511.3	983		
TZ-26	Tanetra	80	488	6,100	4.5	56	51.5	644	GB-6	Oasis de Gabes	734	1,886	2,569	20.8	28	634.0	854		
TZ-27	Chebka	23	91	3,957	0.9	39	6.7	291	GB-7	Linaoua 1 et 2	148	628	4,243	6.2	43	141.6	937		
TZ-28	Foum El Khanga	48	212	4,417	2.0	42	13.0	271	GB-8	M'dou	40	204	5,100	1.9	45	36.5	913		
TZ-29	Mides	29	79	2,724	0.8	28	8.5	293	GB-9	Chou El Ferik	31	52	1,677	0.7	23	15.5	500		
TZ-30	Ain El Karma	25	117	4,680	1.1	44	8.6	344	GB-10	Bouchamma	143	246	1,720	3.1	22	83.0	580		
Sub-total (30)		5,622	18,759	3,337	189.0	34	3,935.9	700	GB-11	Majjour	374	1,270	3,396	13.1	35	390.6	1,044		
<b>ケビリ県</b>									<b>ガベス県</b>										
KB-1	Bechri	162	797	4,920	7.5	46	142.4	879	GB-12	Saleni	99	379	3,828	3.8	38	85.3	852		
KB-2	Bouabdallah	220	1,027	3,804	10.1	37	234.0	667	GB-13	Sboul	72	337	4,681	3.3	46	83.1	1,154		
KB-3	Fainassa	205	628	3,063	6.5	32	94.4	460	GB-14	Fayet	260	982	3,771	9.9	38	212.5	812		
KB-4	El Gfira	94	442	4,702	4.2	45	90.1	959	GB-15	M'ziria Ghannouch	280	1,365	4,875	13.1	47	254.1	908		
KB-5	Menchia	190	786	5,614	7.3	52	201.7	1,441	GB-16	Metouia	268	794	2,963	8.4	31	238.9	891		
KB-6	Nagga	181	461	2,547	5.0	28	126.8	701	GB-17	Ouedhref	263	1,033	3,928	10.3	39	431.8	1,642		
KB-7	Oum Souda	162	837	5,167	7.9	49	129.9	1,209	GB-18	Aoumette	232	748	3,224	7.8	34	145.7	628		
KB-8	Oued Zira	176	567	3,222	5.8	33	189.8	1,078	GB-19	Chenbou 1	51	243	4,263	2.4	42	46.8	821		
KB-9	Oued Touou	62	231	3,726	2.3	37	83.1	1,340	GB-20	Chenbou 2	40	190	4,750	1.8	45	31.8	795		
KB-10	Trechig	54	219	4,056	2.1	39	62.3	1,154	GB-21	Tekouf	32	189	5,906	1.8	56	45.4	1,419		
KB-11	Zaouiet El Anes	125	278	2,224	3.1	25	93.0	744	GB-22	Hamma Oasis	400	1,383	3,458	14.2	36	488.2	1,221		
KB-12	Zaouiet El Harh	81	329	4,062	3.2	40	128.9	1,591	GB-23	Mziraa Hamma	80	345	4,313	3.4	43	89.3	1,116		
KB-13	Ziret Louhichi	86	289	3,360	2.9	34	56.5	637	GB-24	Bechima 1	280	1,020	3,643	10.4	37	137.6	491		
KB-14	Chouchet Nagga	26	88	3,385	0.9	35	18.5	712	GB-25	Bechima 2	290	1,189	4,100	11.8	41	291.1	1,004		
KB-15	Gustaya	150	305	2,033	3.5	23	131.8	879	GB-26	Khebayet	96	192	2,000	2.3	24	42.9	447		
KB-16	Koufda	133	731	5,496	6.8	51	137.6	1,035	GB-27	Ben Ghilouf	180	225	1,230	3.2	18	63.8	354		
KB-17	Manseura	86	494	5,744	4.6	53	127.9	1,487	GB-28	Gib Dokhane	70	166	2,371	1.9	27	24.7	353		
KB-18	Raba	162	682	4,210	6.6	41	149.6	923	GB-29	Oued Nekhla	30	65	2,167	0.8	27	16.9	563		
KB-19	Telimine	240	1,097	4,571	10.5	44	249.8	1,041	GB-30	Arram	163	866	5,313	8.2	50	126.5	776		
KB-20	Touhib	118	349	2,958	3.6	31	62.8	532	GB-31	March 1	100	453	4,530	4.4	44	77.3	773		
KB-21	Tombar	127	591	4,654	5.6	44	106.6	839	GB-32	March 2	180	869	4,828	8.4	47	190.3	1,057		
KB-22	Umagues	57	198	3,474	2.0	35	41.3	725	GB-33	March 3	30	133	4,433	1.3	63	18.4	613		
KB-23	Mazraa Neji	66	348	5,273	3.3	50	63.2	958	GB-34	March 5	115	834	7,165	7.5	65	172.7	1,502		
KB-24	Oum El Farh 1 et 2	55	79	1,436	1.0	18	28.2	513	GB-35	March 6	88	299	3,398	3.1	35	82.2	934		
KB-25	Sifima	82	154	1,878	1.8	22	27.2	332	GB-36	Zarat 2	114	650	4,885	8.2	47	128.7	740		
KB-26	Saidane	30	89	2,967	0.9	30	21.3	710	GB-37	Zerkine 1 et 3	116	247	2,329	2.9	25	48.4	417		
KB-27	Barghouia	52	129	2,481	1.4	27	41.4	912	GB-38	Zerkine 2	156	630	4,038	6.3	40	88.6	568		
KB-28	Bazma	146	473	3,240	4.8	33	82.6	566	GB-39	Ayoune Zerkine	30	90							

表 9.4.1 経済事業費と灌漑便益による経済内部収益率 (県別)

ガフサ県, 8 オアシス (Unit: D, '000)							トゥズール県, 30 オアシス (Unit: D, '000)						
No	Year	Project Cost (a)	OM Cost (b)	Total (c)	Irrigation Benefit (d)	Balance (e-d)	No	Year	Project Cost (a)	OM Cost (b)	Total (c)	Irrigation Benefit (d)	Balance (e-d)
1	1997	64.0	0.0	64.0	0.0	-64.0	1	1997	179.0	0.0	179.0	0.0	-179.0
2	1998	414.0	0.0	414.0	0.0	-414.0	2	1998	3,327.0	0.0	3,327.0	0.0	-3,327.0
3	1999	1,437.0	3.5	1,440.5	23.0	-1,417.5	3	1999	5,014.0	29.2	5,043.2	121.7	-4,921.5
4	2000	3,028.0	19.4	3,047.4	148.7	-2,898.7	4	2000	5,517.0	77.4	5,594.4	444.0	-5,150.4
5	2001	2,388.0	50.2	2,438.2	473.9	-1,964.3	5	2001	2,895.0	134.8	3,029.8	1,005.6	-2,024.2
6	2002	941.0	76.3	1,017.3	968.5	-48.8	6	2002	1,827.0	167.5	1,994.5	1,703.2	-291.3
7	2003		87.7	87.7	1,537.0	1,449.3	7	2003		189.0	189.0	2,490.4	2,301.4
8	2004		87.7	87.7	2,082.5	1,994.8	8	2004		189.0	189.0	3,155.9	2,966.9
9	2005		87.7	87.7	2,525.2	2,437.5	9	2005		189.0	189.0	3,620.7	3,431.7
10	2006		87.7	87.7	2,768.5	2,680.8	10	2006		189.0	189.0	3,846.3	3,657.3
11	2007		87.7	87.7	2,842.3	2,754.6	11	2007		189.0	189.0	3,935.9	3,745.9
12	2008		87.7	87.7	2,842.3	2,754.6	12	2008		189.0	189.0	3,935.9	3,746.9
13	2009		87.7	87.7	2,842.3	2,754.6	13	2009		189.0	189.0	3,935.9	3,746.9
14	2010		87.7	87.7	2,842.3	2,754.6	14	2010		189.0	189.0	3,935.9	3,746.9
15	2011		87.7	87.7	2,842.3	2,754.6	15	2011		189.0	189.0	3,935.9	3,746.9
16	2012		87.7	87.7	2,842.3	2,754.6	16	2012		189.0	189.0	3,935.9	3,746.9
17	2013		87.7	87.7	2,842.3	2,754.6	17	2013		189.0	189.0	3,935.9	3,746.9
18	2014		87.7	87.7	2,842.3	2,754.6	18	2014		189.0	189.0	3,935.9	3,746.9
19	2015		87.7	87.7	2,842.3	2,754.6	19	2015		189.0	189.0	3,935.9	3,746.9
20	2016		87.7	87.7	2,842.3	2,754.6	20	2016		189.0	189.0	3,935.9	3,746.9
21	2017		87.7	87.7	2,842.3	2,754.6	21	2017		189.0	189.0	3,935.9	3,746.9
22	2018		87.7	87.7	2,842.3	2,754.6	22	2018		189.0	189.0	3,935.9	3,746.9
23	2019		87.7	87.7	2,842.3	2,754.6	23	2019		189.0	189.0	3,935.9	3,746.9
24	2020		87.7	87.7	2,842.3	2,754.6	24	2020		189.0	189.0	3,935.9	3,746.9
25	2021		87.7	87.7	2,842.3	2,754.6	25	2021		189.0	189.0	3,935.9	3,746.9

ケベリ県, 67 オアシス (Unit: D, '000)							ガバス県, 48 オアシス (Unit: D, '000)						
No	Year	Project Cost (a)	OM Cost (b)	Total (c)	Irrigation Benefit (d)	Balance (e-d)	No	Year	Project Cost (a)	OM Cost (b)	Total (c)	Irrigation Benefit (d)	Balance (e-d)
1	1997	294.0	0.0	294.0	0.0	-294.0	1	1997	174.0	0.0	174.0	0.0	-174.0
2	1998	8,042.0	74.2	8,116.2	0.0	-8,116.2	2	1998	2,547.0	0.0	2,547.0	0.0	-2,547.0
3	1999	8,058.0	160.5	8,218.5	322.2	-7,896.3	3	1999	7,930.0	25.9	7,955.9	119.8	-7,836.1
4	2000	5,104.0	214.4	5,318.4	1,019.3	-4,299.1	4	2000	9,917.0	111.6	10,028.6	635.0	-9,393.6
5	2001	3,850.0	253.8	4,103.8	1,950.2	-2,153.6	5	2001	4,520.0	211.6	4,731.6	1,611.8	-3,119.8
6	2002	413.0	257.4	670.4	3,052.1	2,381.7	6	2002	888.0	253.6	1,141.6	2,782.6	1,641.0
7	2003		257.4	257.4	4,169.9	3,912.5	7	2003		264.0	264.0	4,001.5	3,737.5
8	2004		257.4	257.4	4,965.4	4,708.0	8	2004		264.0	264.0	5,007.7	4,743.7
9	2005		257.4	257.4	5,386.0	5,128.6	9	2005		264.0	264.0	5,804.3	5,540.3
10	2006		257.4	257.4	5,572.9	5,315.5	10	2006		264.0	264.0	6,094.5	5,830.5
11	2007		257.4	257.4	5,588.7	5,331.3	11	2007		264.0	264.0	6,094.5	5,830.5
12	2008		257.4	257.4	5,588.7	5,331.3	12	2008		264.0	264.0	6,094.5	5,830.5
13	2009		257.4	257.4	5,588.7	5,331.3	13	2009		264.0	264.0	6,094.5	5,830.5
14	2010		257.4	257.4	5,588.7	5,331.3	14	2010		264.0	264.0	6,094.5	5,830.5
15	2011		257.4	257.4	5,588.7	5,331.3	15	2011		264.0	264.0	6,094.5	5,830.5
16	2012		257.4	257.4	5,588.7	5,331.3	16	2012		264.0	264.0	6,094.5	5,830.5
17	2013		257.4	257.4	5,588.7	5,331.3	17	2013		264.0	264.0	6,094.5	5,830.5
18	2014		257.4	257.4	5,588.7	5,331.3	18	2014		264.0	264.0	6,094.5	5,830.5
19	2015		257.4	257.4	5,588.7	5,331.3	19	2015		264.0	264.0	6,094.5	5,830.5
20	2016		257.4	257.4	5,588.7	5,331.3	20	2016		264.0	264.0	6,094.5	5,830.5
21	2017		257.4	257.4	5,588.7	5,331.3	21	2017		264.0	264.0	6,094.5	5,830.5
22	2018		257.4	257.4	5,588.7	5,331.3	22	2018		264.0	264.0	6,094.5	5,830.5
23	2019		257.4	257.4	5,588.7	5,331.3	23	2019		264.0	264.0	6,094.5	5,830.5
24	2020		257.4	257.4	5,588.7	5,331.3	24	2020		264.0	264.0	6,094.5	5,830.5
25	2021		257.4	257.4	5,588.7	5,331.3	25	2021		264.0	264.0	6,094.5	5,830.5

ガフサ県, 8 オアシス (Unit: D, '000)							トゥズール県, 30 オアシス (Unit: D, '000)						
ITEM (%)	Cost up (%)	Benefit Down (%)			B/C	ITEM (%)	Cost up (%)	Benefit Down (%)			B/C		
		-10	0	20				-10	0	20			
Cost	0	-10	26.0%	24.0%	19.9%	2.17	Cost	0	-10	16.9%	15.5%	12.3%	1.34
UP		-5	24.9%	23.0%	19.0%	2.66	UP		-5	16.1%	14.7%	11.5%	1.64
Benefit	0	0	23.9%	22.0%	18.1%	3.29	Benefit	0	0	15.3%	13.9%	10.9%	2.04
DOWN		5	22.9%	21.1%	17.3%		DOWN		5	14.6%	13.2%	10.2%	
EIRR	22.0%	10	22.0%	20.3%	16.6%		EIRR	13.9%	10	13.9%	12.6%	9.7%	
		20	20.5%	18.8%	15.2%				20	12.7%	11.4%	8.6%	

ケベリ県, 67 オアシス (Unit: D, '000)							ガバス県, 48 オアシス (Unit: D, '000)						
ITEM (%)	Cost up (%)	Benefit Down (%)			B/C	ITEM (%)	Cost up (%)	Benefit Down (%)			B/C		
		-10	0	20				-10	0	20			
Cost	0	-10	17.6%	16.1%	12.8%	1.39	Cost	0	-10	19.2%	17.6%	14.1%	1.52
UP		-5	16.7%	15.3%	12.1%	1.71	UP		-5	18.2%	16.7%	13.3%	1.83
Benefit	0	0	15.9%	14.5%	11.4%	2.14	Benefit	0	0	17.4%	15.9%	12.6%	2.20
DOWN		5	15.2%	13.8%	10.8%		DOWN		5	16.6%	15.1%	11.9%	
EIRR	14.5%	10	14.5%	13.1%	10.2%		EIRR	15.9%	10	15.9%	14.4%	11.3%	
		20	13.3%	11.9%	9.1%				20	14.6%	13.2%	10.1%	



表 9.4.2 経済事業費と灌漑便益による経済内部収益率

- 全体, 153 オアシス -

(Unit: D., '000)

No	Year	Project Cost (a)	O/M Cost (b)	Total (a + b = c)	Irrigation Benefit (d)	Balance (c - d)	
1	1997	711.0	0.0	711.0	0.0	-711.0	
2	1998	14,330.0	0.0	14,330.0	0.0	-14,330.0	
3	1999	22,439.0	129.0	22,568.0	597.0	-21,971.0	
4	2000	23,566.0	360.4	23,926.4	2,264.4	-21,662.0	
5	2001	13,653.0	603.4	14,256.4	5,055.8	-9,200.6	
6	2002	4,069.0	747.9	4,816.9	8,516.0	3,699.1	
7	2003		798.1	798.1	12,208.2	11,410.1	
8	2004		798.1	798.1	15,303.5	14,505.4	
9	2005		798.1	798.1	17,328.4	16,530.3	
10	2006		798.1	798.1	18,229.3	17,431.2	
11	2007		798.1	798.1	18,461.4	17,663.3	
12	2008		798.1	798.1	18,461.4	17,663.3	
13	2009		798.1	798.1	18,461.4	17,663.3	
14	2010		798.1	798.1	18,461.4	17,663.3	
15	2011		798.1	798.1	18,461.4	17,663.3	
16	2012		798.1	798.1	18,461.4	17,663.3	
17	2013		798.1	798.1	18,461.4	17,663.3	
18	2014		798.1	798.1	18,461.4	17,663.3	
19	2015		798.1	798.1	18,461.4	17,663.3	
20	2016		798.1	798.1	18,461.4	17,663.3	
21	2017		798.1	798.1	18,461.4	17,663.3	
22	2018		798.1	798.1	18,461.4	17,663.3	
23	2019		798.1	798.1	18,461.4	17,663.3	
24	2020		798.1	798.1	18,461.4	17,663.3	
25	2021		798.1	798.1	18,461.4	17,663.3	
Project Area :		23,435 ha		<u>NPV</u>	<u>Cost</u>	<u>Benefit</u>	<u>B - C</u>
Project Cost :		78,768 x ,000 D.		10% =	61,127	91,860	30,733
		3,361 D./ha		7.5% =	67,346	124,106	56,760
Sensitivity data:				5% =	74,816	171,730	96,914
<u>ITEM</u>	<u>(%)</u>	<u>Cost up</u>	<u>Benefit Down (%)</u>			<u>B/C</u>	
		<u>(%)</u>	<u>-10</u>	<u>0</u>	<u>20</u>		
Cost	0	-10	18.9%	17.3%	13.9%	1.50	
UP		-5	18.0%	16.5%	13.1%	1.84	
Benefit	0	0	17.1%	15.7%	12.4%	2.30	
DOWN		5	16.4%	14.9%	11.8%		
		10	15.7%	14.2%	11.2%		
EIRR	15.7%	20	14.4%	13.0%	10.0%		

表 9.4.3 153オアシスの経済評価 (経済事業費、経済便益、経済内部収益率)

Code No	Name of Oasis	Area (ha)	Project Cost (D.000)	Irrigation Benefit (D.000)	Evaluation			Code No	Name of Oasis	Area (ha)	Project Cost (D.000)	Irrigation Benefit (D.000)	Evaluation									
					EIRR	B/C	B-C						EIRR	B/C	B-C							
ガフサ群							ケドリ群															
GF-1	Kasba	698	1,268	420.5	21.2%	2.58	1,762	KB-40	Guchada	103	260	91.6	22.6%	2.77	399							
GF-2	Sud Ouest	703	1,620	640.8	24.6%	3.04	2,672	KB-41	Kelwamen	47	225	50.8	15.4%	1.82	164							
GF-3	El Gaetar	450	1,287	461.4	23.0%	2.81	1,937	KB-42	Khbia	92	267	39.0	9.3%	1.16	39							
GF-4	Lalla	700	1,595	461.7	18.8%	2.72	1,577	KB-43	Sidi Hamod	100	239	73.3	20.2%	2.44	309							
GF-5	El Ksar	578	1,133	381.2	21.3%	2.54	1,368	KB-44	Atlet	220	872	169.6	13.1%	1.55	409							
GF-6	Oued Shih	56	166	52.7	20.8%	2.48	205	KB-45	Douz	280	778	186.0	15.9%	1.84	527							
GF-7	Theja	65	350	69.8	13.7%	1.61	171	KB-46	El Ghoulia	75	292	19.7	0.6%	0.53	-114							
GF-8	Segdoud	217	853	354.2	26.0%	3.23	1,515	KB-47	El Gofaa	65	274	19.8	1.3%	0.57	-98							
Sub-total (8)							Sub-total (67)															
3,467							7,213															
8,272							25,761															
2,842.3							5,588.7															
22.0%							14.5%															
2.66							1.71															
11,232							16,246															
トウズム群																						
TZ-1	Tozour	929	2,866	645.4	14.9%	1.74	1,803	GB-1	Ain Zrig	130	283	82.2	19.2%	2.31	352							
TZ-2	Kastha	50	138	32.0	15.7%	1.83	117	GB-2	Temoula 1	40	104	16.2	10.7%	1.30	31							
TZ-3	Oued El Koucha	62	197	33.2	11.4%	1.37	71	GB-3	Temoula 2	20	112	16.8	9.9%	1.23	25							
TZ-4	Nefajete	72	205	39.2	13.0%	1.56	110	GB-4	Zrig Dakhlania	30	122	18.4	10.0%	1.24	28							
TZ-5	Chema	90	261	37.5	9.3%	1.17	43	GB-5	Teboulthou	520	2,152	511.3	16.0%	1.88	1,641							
TZ-6	Hciba Est	75	363	72.6	13.8%	1.65	224	GB-6	Oasis de Gabes	734	1,866	634.0	21.4%	2.60	2,552							
TZ-7	Heiba Ouest	50	114	25.9	15.4%	1.83	92	GB-7	Lamis de Fet 2	148	628	141.6	15.4%	1.85	509							
TZ-8	Jhim 1	40	156	55.8	23.2%	2.93	289	GB-8	Midou	40	204	36.5	12.7%	1.47	92							
TZ-9	Jhim 2	167	667	121.3	12.3%	1.47	293	GB-9	Choui El Ferik	31	51	15.5	19.5%	2.35	70							
TZ-10	Bn Chabhat 3	325	1,590	54.3	xxx	0.28	-1,058	GB-10	Bouchanama	143	246	83.0	21.6%	2.66	388							
TZ-11	Neha	852	2,162	803.9	23.4%	2.85	3,244	GB-11	Mahjoub	374	1,270	390.6	20.2%	2.43	1,569							
TZ-12	Ghardaya	40	163	33.3	13.9%	1.64	93	GB-12	Sakm	99	379	85.3	15.3%	1.80	272							
TZ-13	Bn Chabhat 1	240	700	65.8	4.5%	0.77	-137	GB-13	Shoui	72	337	83.1	16.7%	1.98	294							
TZ-14	Bn Chabhat 2	272	1,211	73.2	4.5%	0.78	-141	GB-14	Faycal	260	982	212.5	14.6%	1.71	604							
TZ-15	Draa Sud	198	93	12.3	6.3%	0.92	-7	GB-15	M'ziraa Ghannouch	280	1,365	254.1	12.5%	1.48	564							
TZ-16	Hazoua 1	72	389	66.4	11.5%	1.38	130	GB-16	Melouia	268	754	238.9	19.8%	2.37	943							
TZ-17	Hazoua 2	48	199	61.8	20.6%	2.50	265	GB-17	Ouedhret	263	1,033	431.8	26.2%	3.32	2,058							
TZ-18	Hazoua 3	238	928	284.6	20.2%	2.41	1,086	GB-18	Aouinette	232	748	145.7	13.0%	1.54	247							
TZ-19	Oued Lophrisa	78	357	57.7	10.7%	1.30	96	GB-19	Chenouch 1	57	243	46.8	13.0%	1.55	114							
TZ-20	Tozrahi	48	192	33.8	11.6%	1.38	61	GB-20	Chenouch 2	40	190	31.8	11.2%	1.35	59							
TZ-21	Cedada	55	300	56.8	12.7%	1.50	122	GB-21	Tekouf	32	189	45.4	16.3%	1.94	157							
TZ-22	Dghoumes	164	438	85.8	13.0%	1.52	183	GB-22	Hamma Oasis	400	1,383	488.2	22.6%	2.73	1,920							
TZ-23	Degache	822	2,718	663.9	16.2%	1.89	1,935	GB-23	M'ziraa Hamma	80	345	89.3	17.5%	2.08	331							
TZ-24	Chakmou	90	227	55.4	16.3%	1.90	171	GB-24	Bechima 1	280	1,020	137.6	8.3%	1.07	59							
TZ-25	El Hamma	400	1,119	376.7	21.6%	2.56	1,357	GB-25	Bechima 2	290	1,189	291.1	16.5%	1.94	964							
TZ-26	Tamerza	80	488	51.5	5.4%	0.83	-66	GB-26	Khebayet	96	192	42.9	15.0%	1.76	132							
TZ-27	Chehika	23	91	6.7	1.5%	0.58	-33	GB-27	Ben Ghikouf	180	225	63.8	18.3%	2.15	233							
TZ-28	Foum El Khanga	48	212	13.0	0.3%	0.48	-90	GB-28	Glib Dokhane	70	166	24.7	9.5%	1.18	26							
TZ-29	Mides	29	79	8.5	5.5%	0.84	-10	GB-29	Oued Nakhia	30	65	16.9	17.3%	2.04	62							
TZ-30	Ain El Karma	25	117	8.6	1.5%	0.58	-40	GB-30	Arram	163	866	126.5	9.1%	1.14	96							
Sub-total (30)							Sub-total (48)															
5,622							7,133															
18,759							25,976															
3,935.9							6,094.5															
13.9%							15.9%															
1.64							1.84															
10,200							18,814															
ケドリ群																						
KB-1	Bechri	162	797	142.4	11.1%	1.45	334	GB-31	Marech 1	100	453	77.3	11.1%	1.33	118							
KB-2	Bouabdallah	270	1,027	234.0	15.5%	1.85	804	GB-32	Marech 2	180	869	190.3	14.4%	1.67	450							
KB-3	Fatnassa	205	628	94.4	9.8%	1.21	124	GB-33	Marech 3	30	133	18.4	8.5%	1.09	10							
KB-4	El Ghia	94	442	90.1	14.0%	1.67	285	GB-34	Marech 5	113	824	172.7	14.1%	1.64	418							
KB-5	Menchia	140	786	201.7	17.5%	2.11	834	GB-35	Marech 6	88	299	82.2	18.3%	2.15	285							
KB-6	Nagga	181	461	126.8	18.4%	2.21	520	GB-36	Zarat 2	174	850	128.7	9.5%	1.18	121							
KB-7	Oum Soma	162	837	195.9	16.0%	1.91	698	GB-37	Zerkine 1 et 3	116	247	48.4	12.8%	1.49	99							
KB-8	Oued Zira	176	567	189.8	21.8%	2.70	896	GB-38	Zerkine 2	156	630	88.6	8.6%	1.09	45							
KB-9	Oued Touati	62	231	83.1	23.3%	2.94	431	GB-39	Ayoane Zerkine	30	90	17.6	13.0%	1.52	39							
KB-10	Tenchig	54	219	62.3	19.1%	2.33	280	GB-40	Madsia	58	221	9.3	xxx	0.33	-122							
KB-11	Zaouiet El Anes	125	278	93.0	21.7%	2.67	437	GB-41	Kettana 1	98	429	97.9	15.7%	1.83	289							
KB-12	Zaouiet El Harh	81	329	128.9	23.0%	3.21	697	GB-42	Kettana 3	140	583	95.1	10.5%	1.27	124							
KB-13	Ziret Loukhiti	86	289	56.3	13.4%	1.60	166	GB-43	Kettana 4	125	482	96.5	13.3%	1.56	214							
KB-14	Bouchet Nagga	26	88	18.5	14.4%	1.71	61	GB-44	Sidi Sellam	120	339	95.0	18.5%	2.15	315							
KB-15	Gualaya	150	305	131.8	26.6%	3.44	701	GB-45	Zrig Barrania	71	218	29.1	8.0%	1.04	8							
KB-16	Jedida	133	731	137.6	12.9%	1.53	360	GB-46	Ghandi	30	119	4.5	xxx	0.30	-69							
KB-17	Mansoura	86	494	127.9	17.6%	2.13	533	GB-47	Laaradh 1	35	183	19.7	5.2%	0.82	-25							
KB-18	Rabia	162	682	149.6	15.0%	1.78	492	GB-48	Laaradh 3	55	235	19.7	2.4%	0.64	-64							
KB-19	Telminc	240	1,097	249.8	13.5%	1.85	861	Total (153)														
KB-20	Tembib	118	349	62.8	12.1%	1.45	146	23,435														
KB-21	Tombar	177	591	106.6	12.3%	1.47	255	28,768														
KB-22	Limagues	57	198	41.3	14.3%	1.70	134	18,461.4														
KB-23	Mazraa Neji	66	348	63.2	12.4%	1.49	164	15.2%														
KB-24	Oum El Farh 1 et 2	55	79	28.2	22.8%	2.84	143	1.84														
KB-25	Sifumi	82	154	27.2	11.8%	1.42	63	56,760														
KB-26	Saidane	30	89	21.3	16.3%	1.95	82															
KB-27	Barghouthia	52	129	47.4	23.6%	2.98	247															
KB-28	Bazma	146	473	82.6	11.6%	1.38	156															
KB-29	Bechli	135	512	101.4	13.3%	1.57	252															
KB-30	Bbdic	75	202	76.7	24.2%	3.02	367															
KB-31	Zarcine	70	184	79.4	26.8%	3.43	402															
KB-32	Kama	112	116	27.0	15.1%	1.75	79															
KB-33	Mecoria	81	158	53.9	22.0%	2.69	242															
KB-34	Msalid	95	316	112.2	23.0%	2.84	520															
KB-35	Rahmat	85	299	53.5	12.5%	1.49	130															
KB-36	Ras El Ain	268	921	164.5	11.8%	1.40	505															
KB-37	Souk El Bakr	65	193	46.6	16.3%	1.93	160															
KB-38	Ben Zitoun 1 et 2	147	473	156.7	21.6%	2.62	662															
KB-39	Bouraine	94	279	52.2	12.6%	1.49	123															

Ref.: 表 7.1.2.2, 9.3.1

表 9.5.1 財務価格による作物生産費と純収益

(Unit : D./ha)

Description		Gross Income			Production Cost				Net Return (a - b)
		Yield* (ton)	Unit Price (D./kg)	Amount (a)	Farm Inputs	Labor Cost	Others	Total (b)	
1. Arboriculture									
1.1 Date Palm	Without Project	4.55	1.025	4,662	357	199	27	583	4,079
	With Project	5.18		5,305	475	278	37	790	4,515
	Increment	0.63		643				207	436
1.2 Olive	Without Project	4.78	0.400	1,914	217	158	19	394	1,520
	With Project	5.33		2,133	296	174	24	494	1,639
	Increment	0.55		219				100	119
1.3 Pomegranate	Without Project	7.90	0.287	2,273	348	265	31	644	1,629
	With Project	9.25		2,655	412	292	36	740	1,915
	Increment	1.35		382				96	286
1.4 Apricot	Without Project	9.88	0.493	4,869	363	371	37	771	4,098
	With Project	10.98		5,411	429	420	43	892	4,519
	Increment	1.10		542				121	421
1.5 Fig	Without Project	3.37	0.385	1,296	249	265	39	553	743
	With Project	3.77		1,450	349	292	51	692	758
	Increment	0.40		154				139	15
2. Vegetables									
2.1 Turnip* /Carrot	Without Project	20.00	0.201	4,020	374	348	36	758	3,262
	With Project	22.50		4,523	419	406	41	866	3,657
	Increment	2.50		503				108	395
2.2 Onion	Without Project	21.00	0.186	3,906	437	348	39	824	3,082
	With Project	23.80		4,427	482	348	41	871	3,556
	Increment	2.80		521				47	474
2.4 Kindey Beans	Without Project	10.40	0.370	3,848	263	348	31	642	3,206
	With Project	11.70		4,329	374	464	42	880	3,449
	Increment	1.30		481				238	243
2.5 Pepper	Without Project	9.20	0.874	8,041	1,047	348	70	1,465	6,576
	With Project	10.30		9,002	1,086	406	34	1,526	7,476
	Increment	1.10		961				61	900
2.6 Tomato	Without Project	20.90	0.310	6,479	628	348	49	1,025	5,454
	With Project	23.40		7,254	673	406	54	1,133	6,121
	Increment	2.50		775				108	667
3. Fodder Crops									
3.1 Lucern	Without Project	54.40	0.053	2,883	250	348	30	628	2,255
	With Project	65.30		3,461	345	406	38	789	2,672
	Increment	10.90		578				161	417
4. Cash Crops									
4.1 Henna	Without Project	1.40	1.839	2,575	387	261	32	680	1,895
	With Project	1.70		3,126	482	348	41	871	2,255
	Increment	0.30		552				191	361

Remark : Figures of arboriculture crops are estimated average yield and annual cost of 25 years.

Ref. : Tables K.3.1.1 (1) to (8)

表 9.5.2 事業実施による農家経済収支

Description	カスバ・オアシス/ガバサ渠			オウエドシリ・オアシス/ガバサ渠			トズール・オアシス/トズール渠			ハソクア3・オアシス/トズール渠		
	Area (ha)	Production (tons)	Amount (D.)	Area (ha)	Production (tons)	Amount (D.)	Area (ha)	Production (tons)	Amount (D.)	Area (ha)	Production (tons)	Amount (D.)
A. Farm Land	1.06			3.11			1.38			1.00		
B. Farm Income	1.71		8,923	2.33		16,281	1.65		10,419	1.06		5,510
Arboriculture	1.06	10.62	5,019	1.78	14.24	14,596	1.38	9.15	9,220	1.00	5.33	5,241
Fodder crops	0.25	16.38	668	0.39	19.38	1,027	0.10	8.61	456	0.02	1.74	92
Winter vegetables	0.23	6.05	1,360	0.16	2.44	658	0.09	1.30	265	0.02	0.31	60
Summer vegetables	0.17	3.51	1,676				0.08	0.86	478	0.02	0.24	117
Industrial crops												
D. Off-farm incomes												500
Total Gross Income			8,923			16,281			10,419			6,010
E. Production Cost	1.71		1,238	2.33		1,853	1.65		1,351	1.06		845
Arboriculture	1.06		611	1.78		1,406	1.38		1,081	1.00		784
Fodder crops	0.25		197	0.39		307	0.10		79	0.02		16
Winter vegetables	0.23		196	0.16		140	0.09		79	0.02		18
Summer vegetables	0.17		234				0.08		112	0.02		27
Industrial crops												
F. Living Expenses	5.33 persons/family		3,059	5.42 persons/family		3,140	5.22 persons/family		2,024	5.33 persons/family		3,270
Total Gross Outgoing			4,297			4,993			4,375			4,615
G. Net Reserve (Capacity to Pay)			4,626			11,288			6,044			1,395
H. Repayment Amount			(4.8%)			(9.5%)			(8.2%)			(32.4%)
- Construction Cost	1,817 D. per ha			2,964 D. per ha			3,107 D. per ha			3,899 D. per ha		
- Repayment per year			223			1,068			497			452
Balance (G - H)			4,403			10,220			5,547			943

Description	マンソクア・オアシス/ガバサ渠			アライレット・オアシス/ガバサ渠			ガベス・オアシス/ガバサ渠			リマオク7182・オアシス/ガバサ渠		
	Area (ha)	Production (tons)	Amount (D.)	Area (ha)	Production (tons)	Amount (D.)	Area (ha)	Production (tons)	Amount (D.)	Area (ha)	Production (tons)	Amount (D.)
A. Farm Land	0.25			0.73			0.29			1.25		
B. Farm Income	0.40		2,043	1.32		5,326	0.41		2,250	1.92		8,591
Arboriculture	0.25	1.55	1,540	0.75	3.35	3,286	0.29	2.50	1,647	1.25	11.36	3,831
Fodder crops	0.11	6.01	318	0.22	12.14	644	0.05	3.11	165	0.19	12.69	673
Winter vegetables	0.02	1.86	61	0.38	8.53	1,136	0.01	0.31	63	0.28	8.83	1,777
Summer vegetables	0.02	0.99	124	0.04	0.42	260	0.01	0.14	125	0.20	3.26	2,154
Industrial crops							0.08	0.14	250	0.05	0.09	156
D. Off-farm incomes			2,500			1,000			2,000			
Total Gross Income			4,543			6,326			4,250			8,591
E. Production Cost	0.40		326	1.32		1,151	0.41		356	1.92		1,591
Arboriculture	0.25		194	0.75		589	0.29		224	1.25		872
Fodder crops	0.11		87	0.22		173	0.05		37	0.19		150
Winter vegetables	0.02		18	0.38		331	0.01		9	0.28		244
Summer vegetables	0.02		27	0.04		58	0.01		16	0.20		281
Industrial crops							0.08		70	0.05		41
F. Living Expenses	5.33 persons/family		3,244	6.12 persons/family		3,542	5.43 persons/family		3,145	5.48 persons/family		3,145
Total Gross Outgoing			3,570			4,693			3,501			4,736
G. Net Reserve (Capacity to Pay)			973			1,633			749			2,853
H. Repayment Amount			(17.1%)			(21.1%)			(11.5%)			(15.9%)
- Construction Cost	5,744 D. per ha			3,964 D. per ha			2,569 D. per ha			4,243 D. per ha		
- Repayment per year			166			344			86			614
Balance (G - H)			807			1,289			662			2,241

Remarks: Repayment condition for construction cost; annual interest 10% and 20 years of repayment  
 Ref.: ANNEX-K, Table K.3.1.1, K.3.1.2 and K.3.1.3

图 3.1.3.1 標準地質層序

ECHELLE LITHOSTRATIGRAPHIQUE

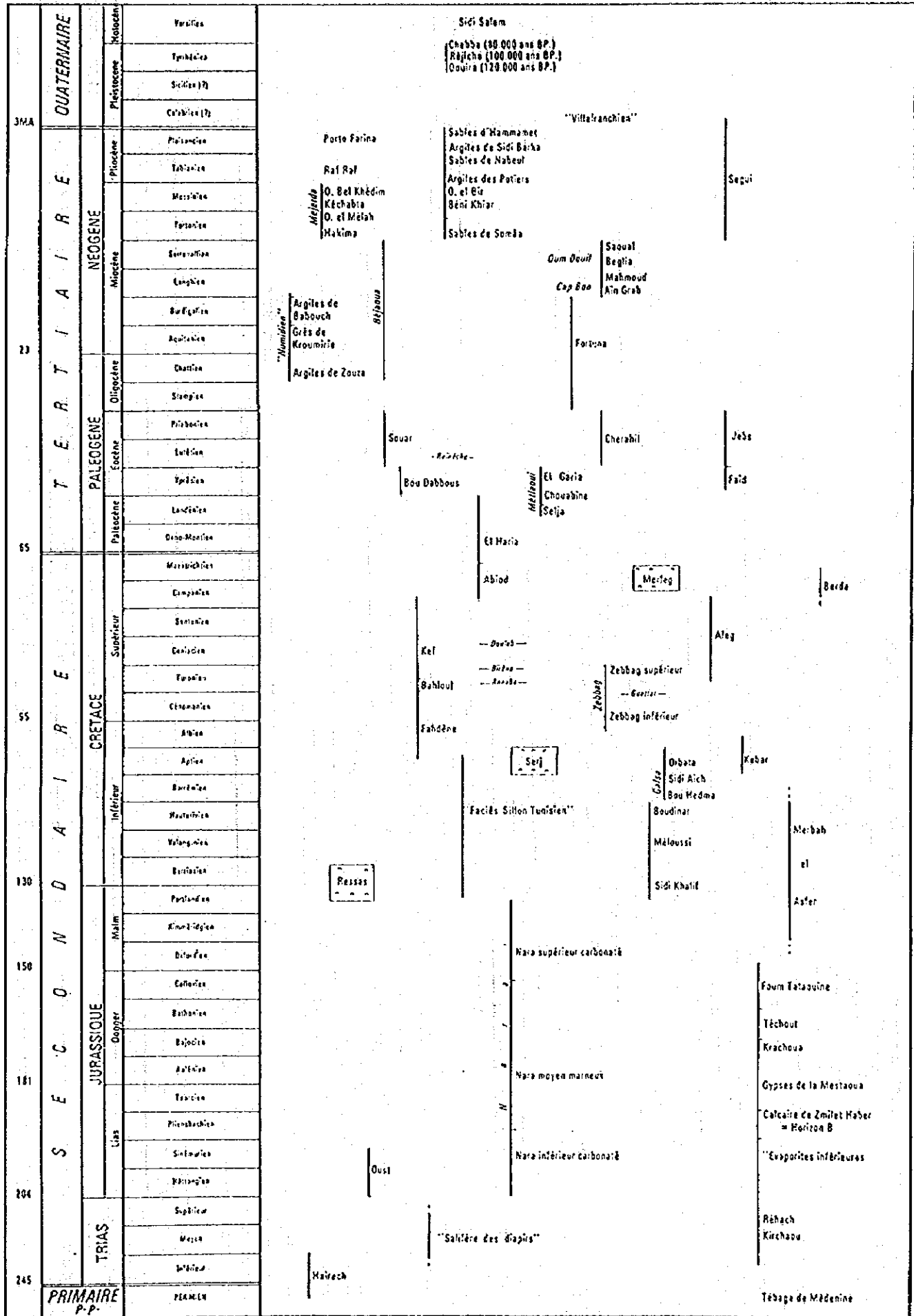


図 3.1.3.2 ハンドオーガー掘削結果

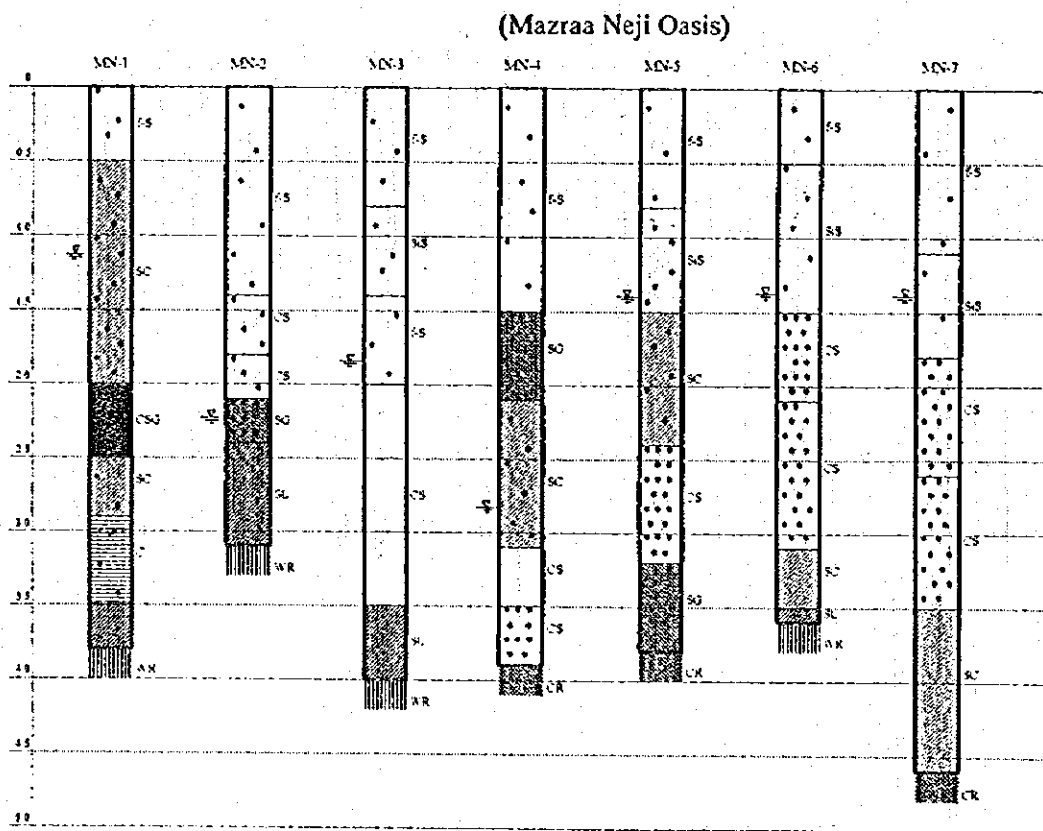
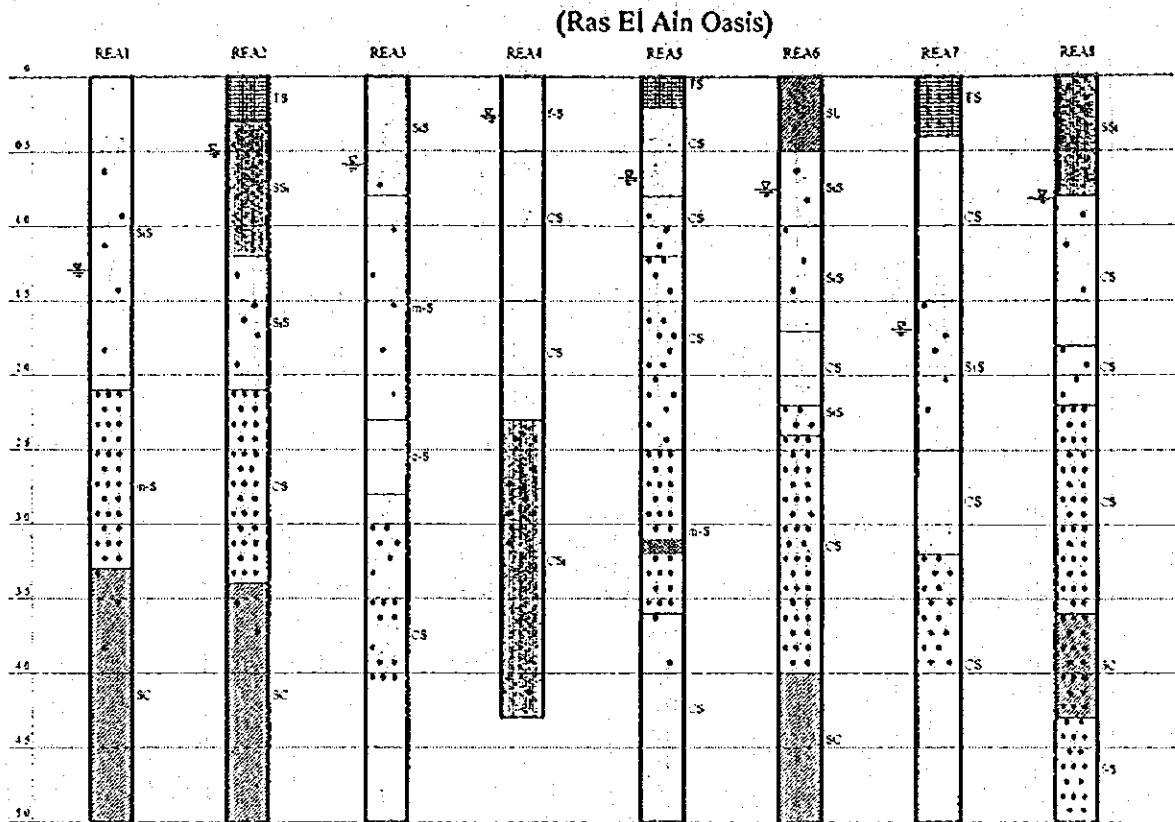
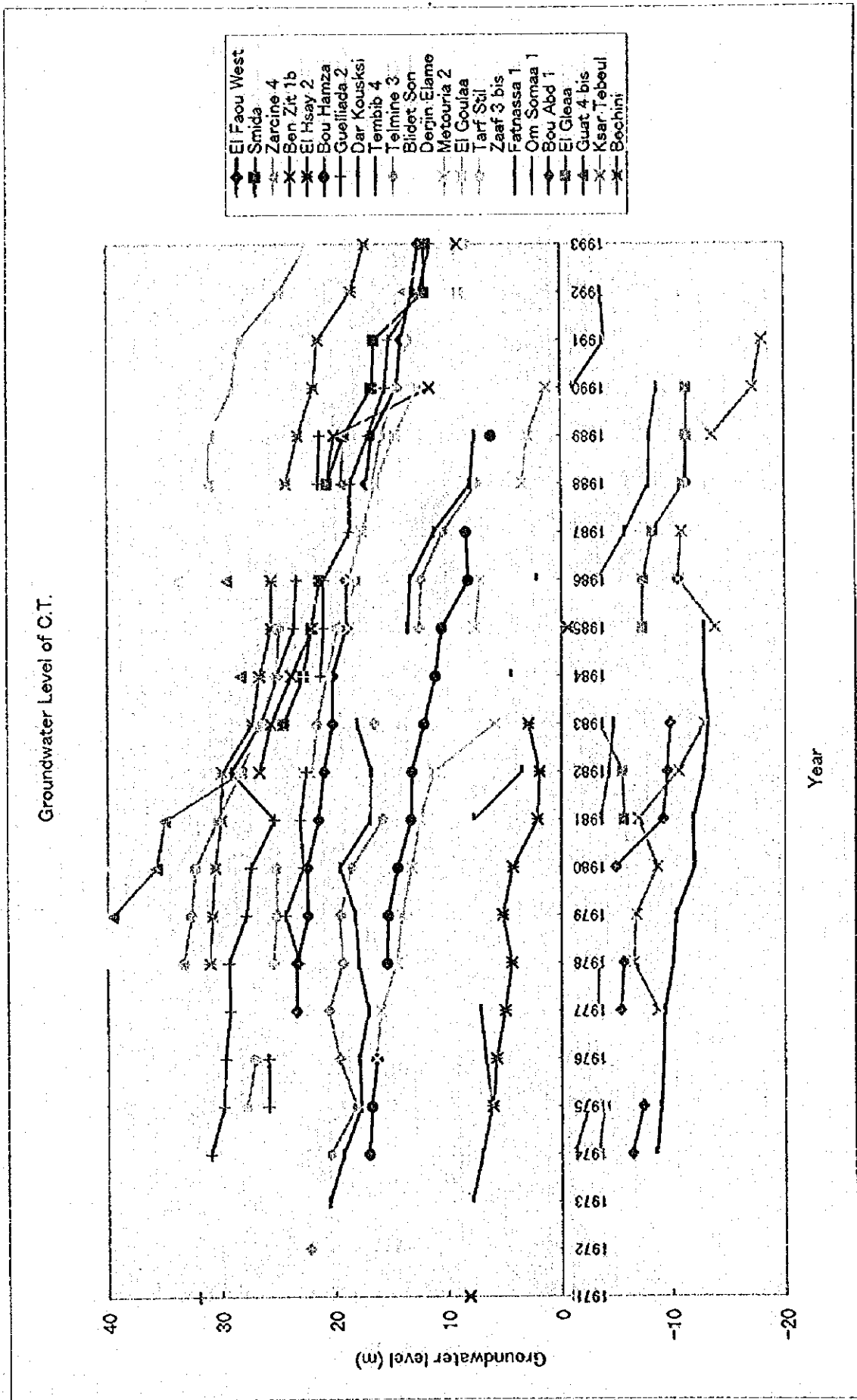


図 3.1.4.1 CT 井戸水位の経年変化



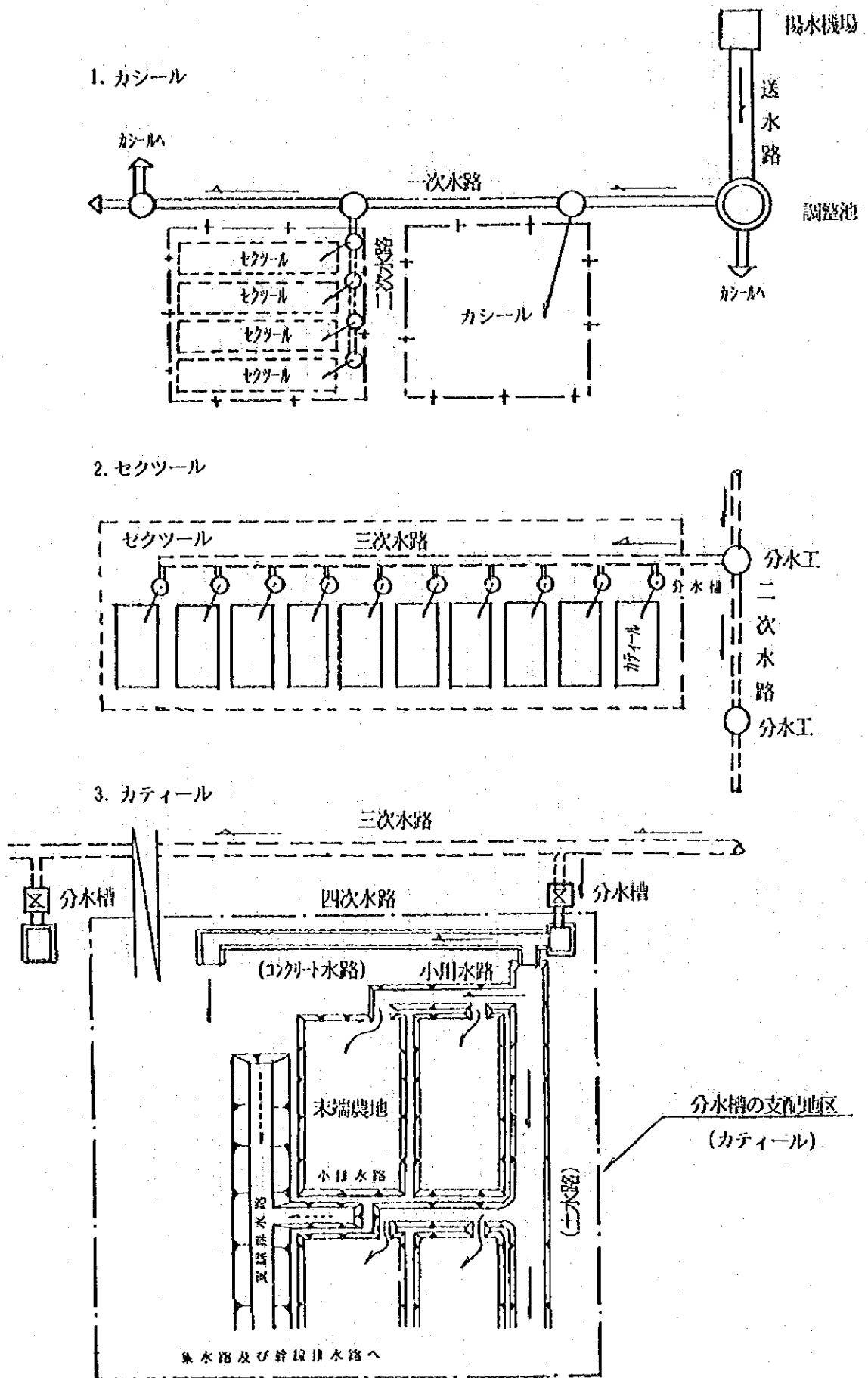


図 3.4.4 灌漑排水施設の模式と用語



ORGANIGRAMME EXISTANT DU MINISTERE DE L'AGRICULTURE  
農業省組織圖

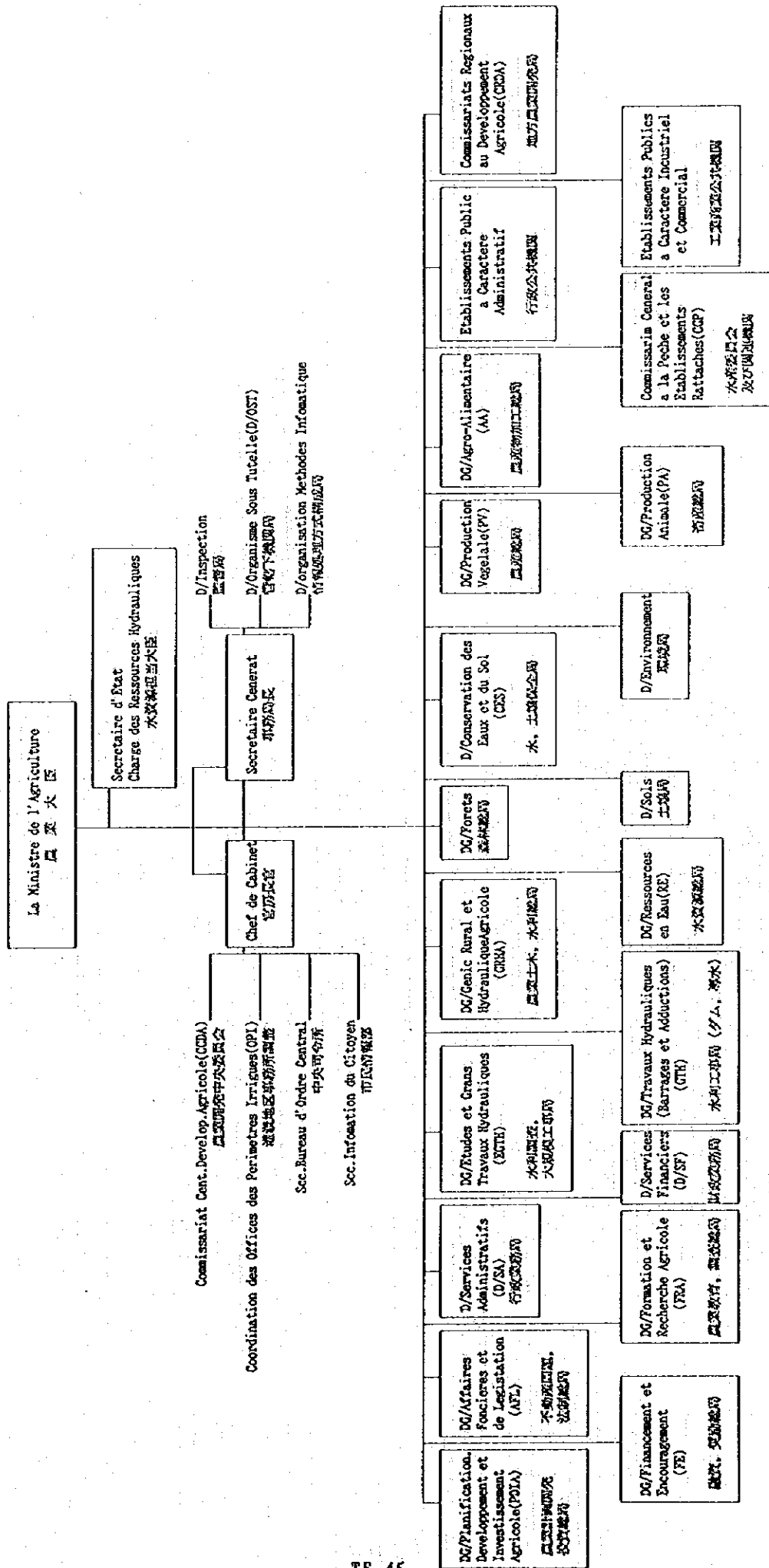
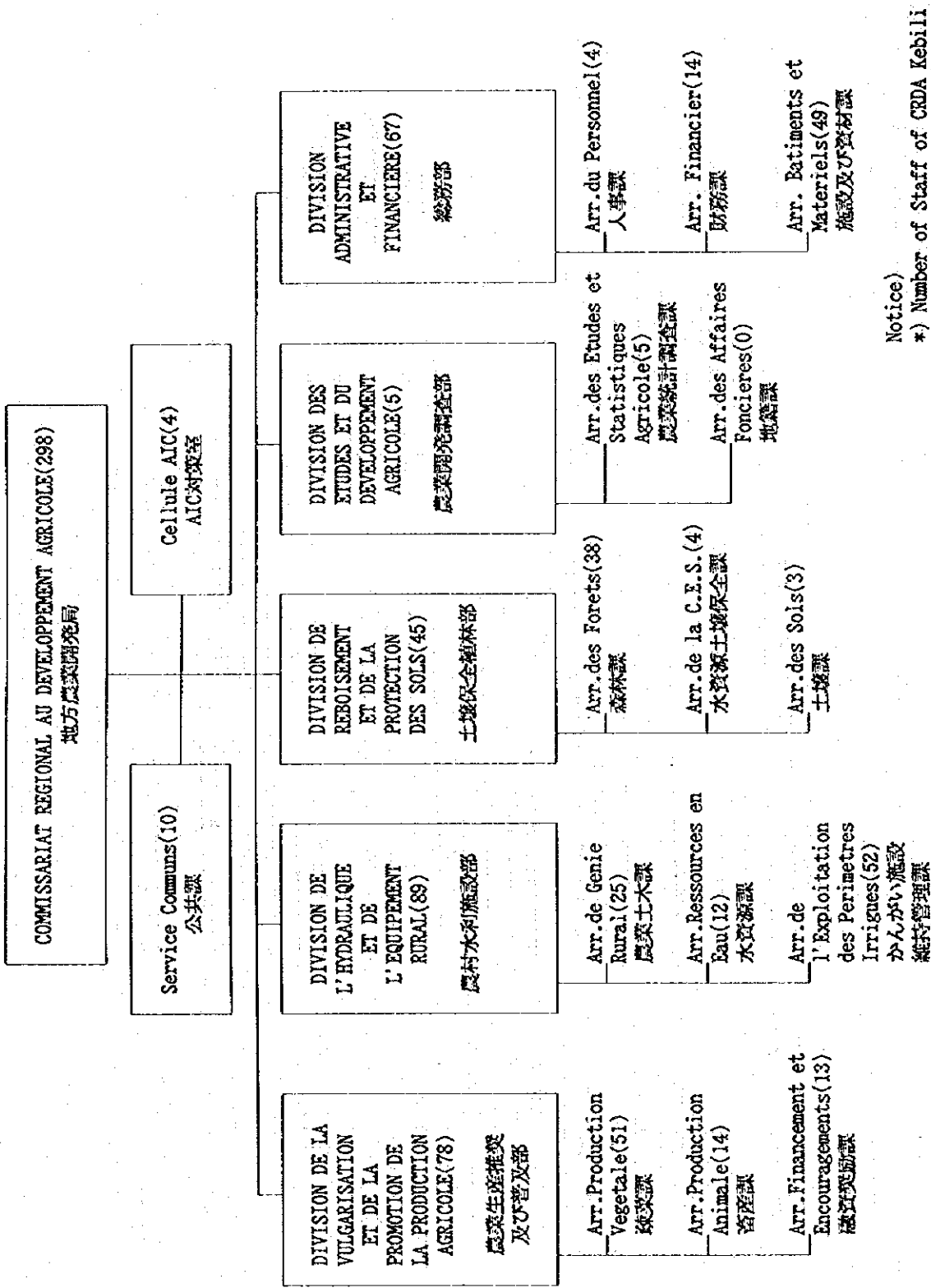


図 3.5.1.1 農業省の機構



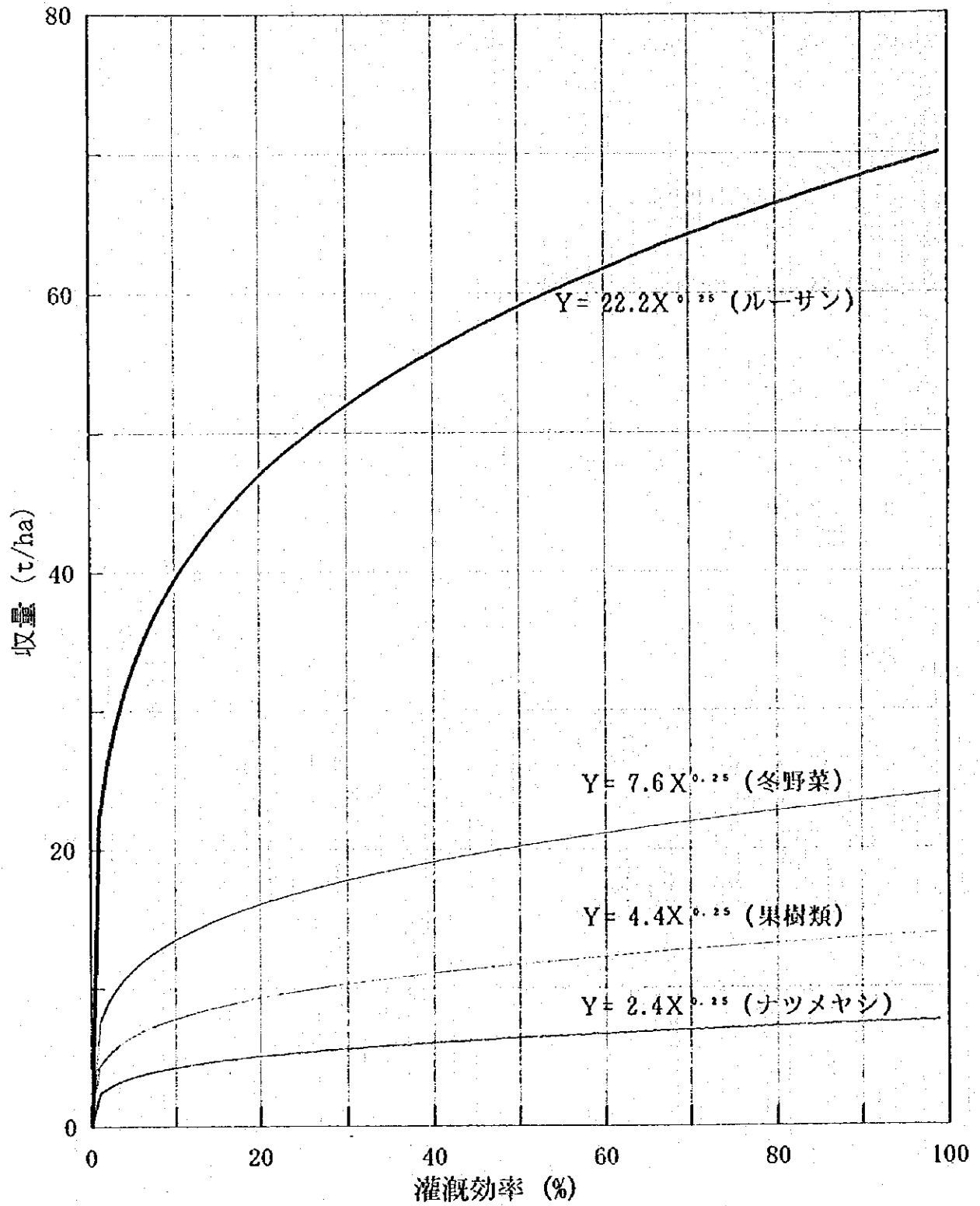
Notice)

\*) Number of Staff of CRDA Kebili

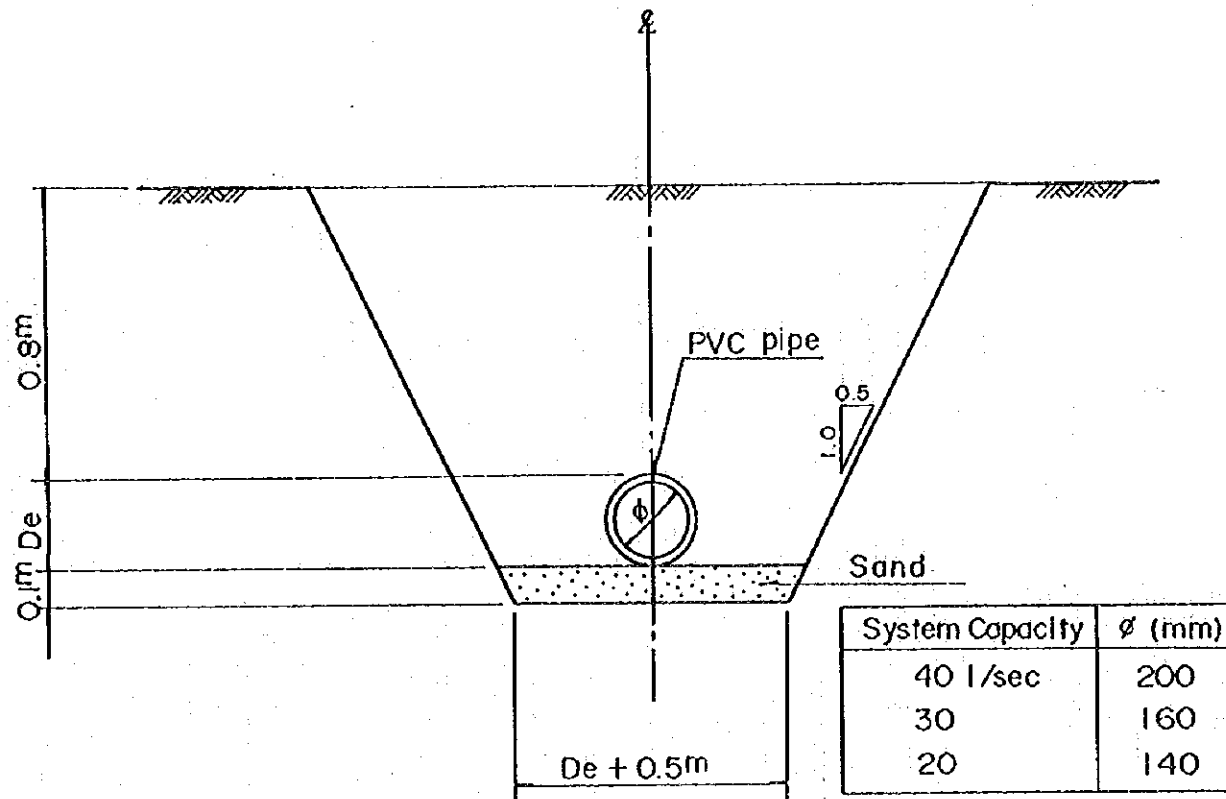
\*\*) Decret n° 89 - 834 du Juin 1989

図 3.5.1.2 地方農業開発局の機構 (ケビリ県)

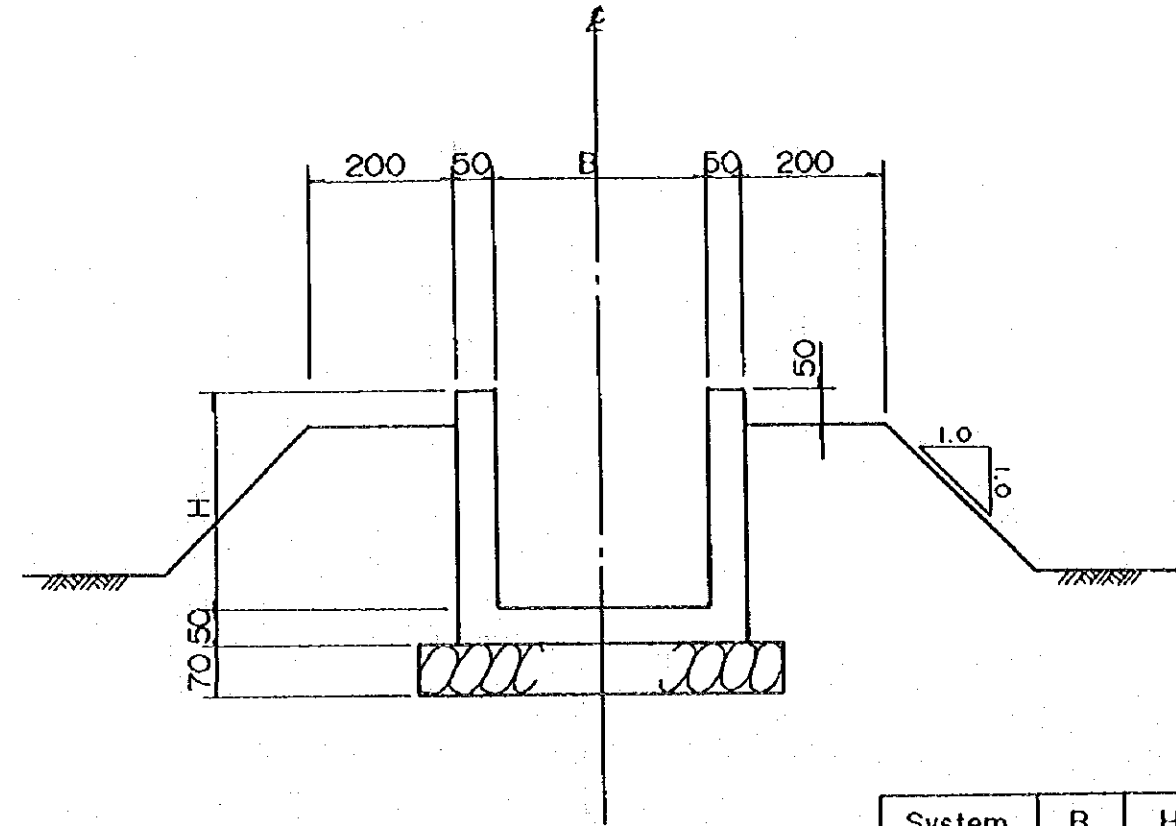
図 5.1.1 収量と灌漑効率の関係



Typical cross section of PVC pipe S = 1 : 20



Typical cross section of concrete channel S = 1 : 10



Typical cross section of amenity canal S = 1 : 20

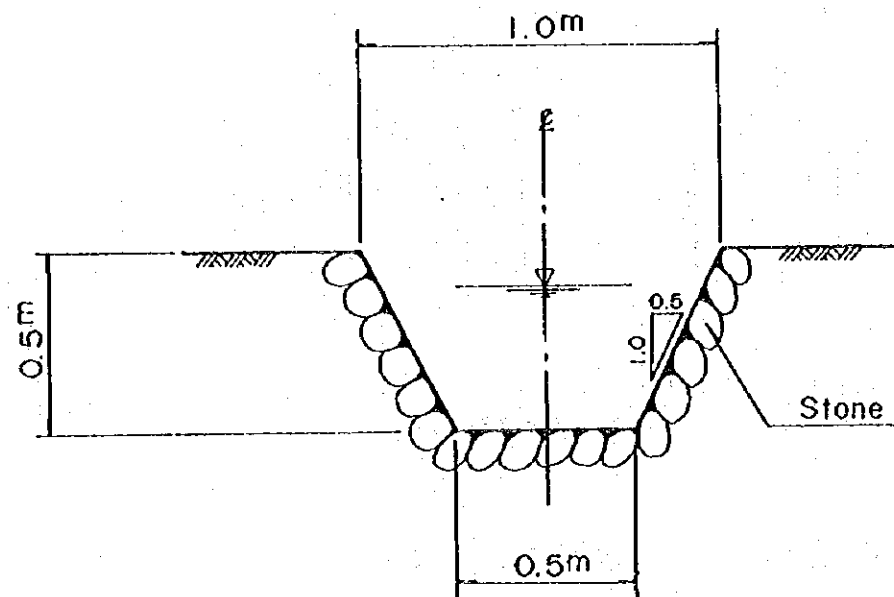
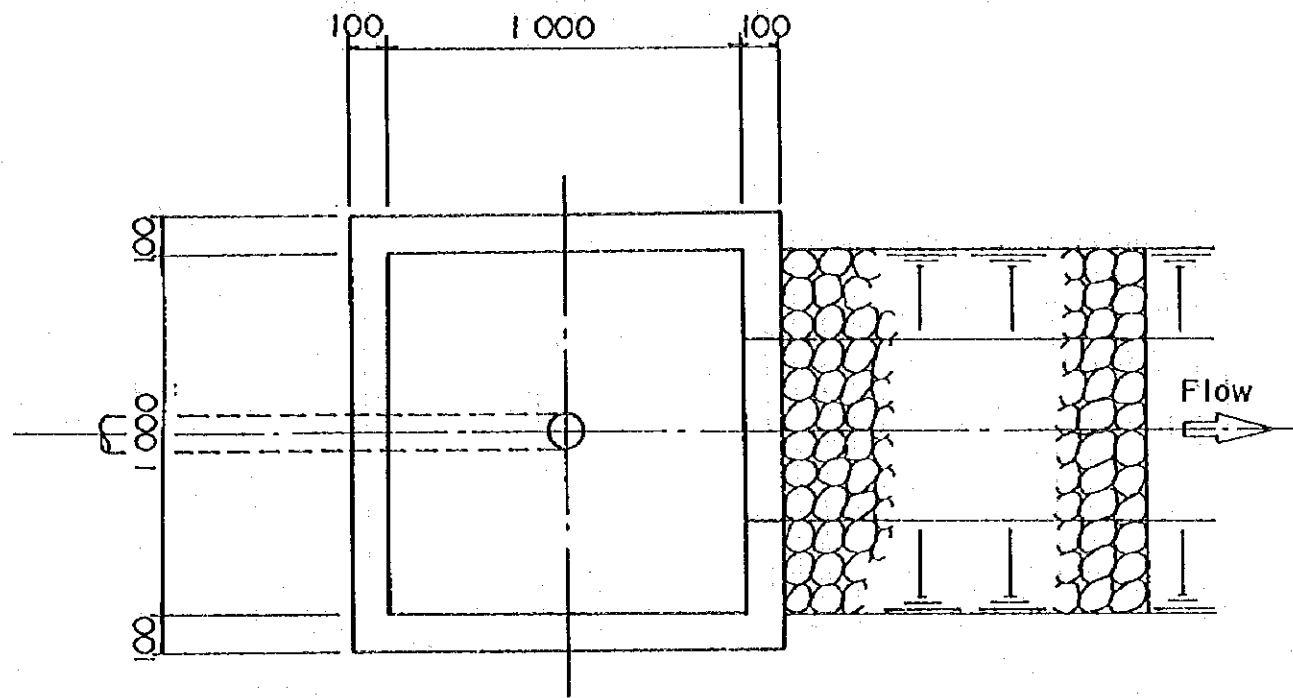
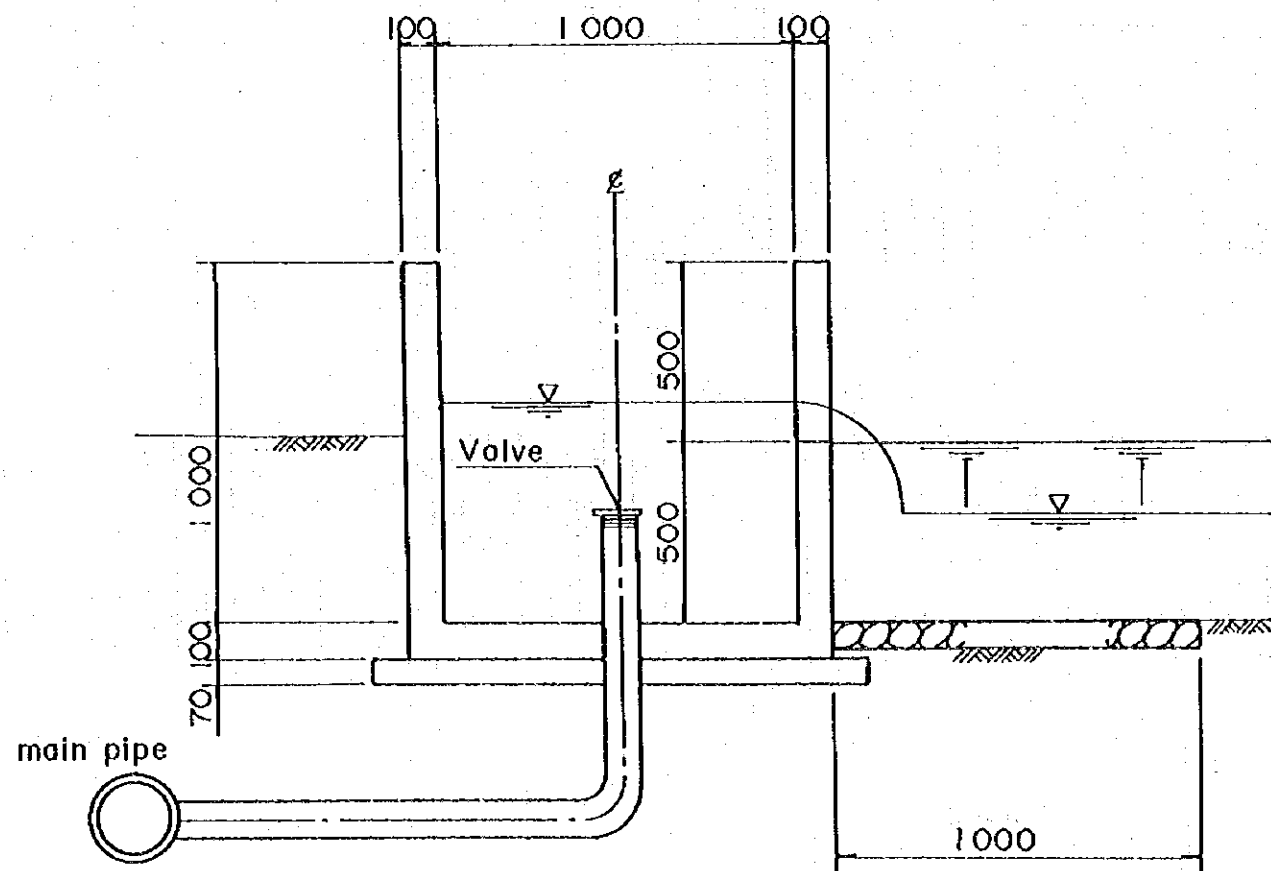


図 6.2.1 かんがい水路標準図

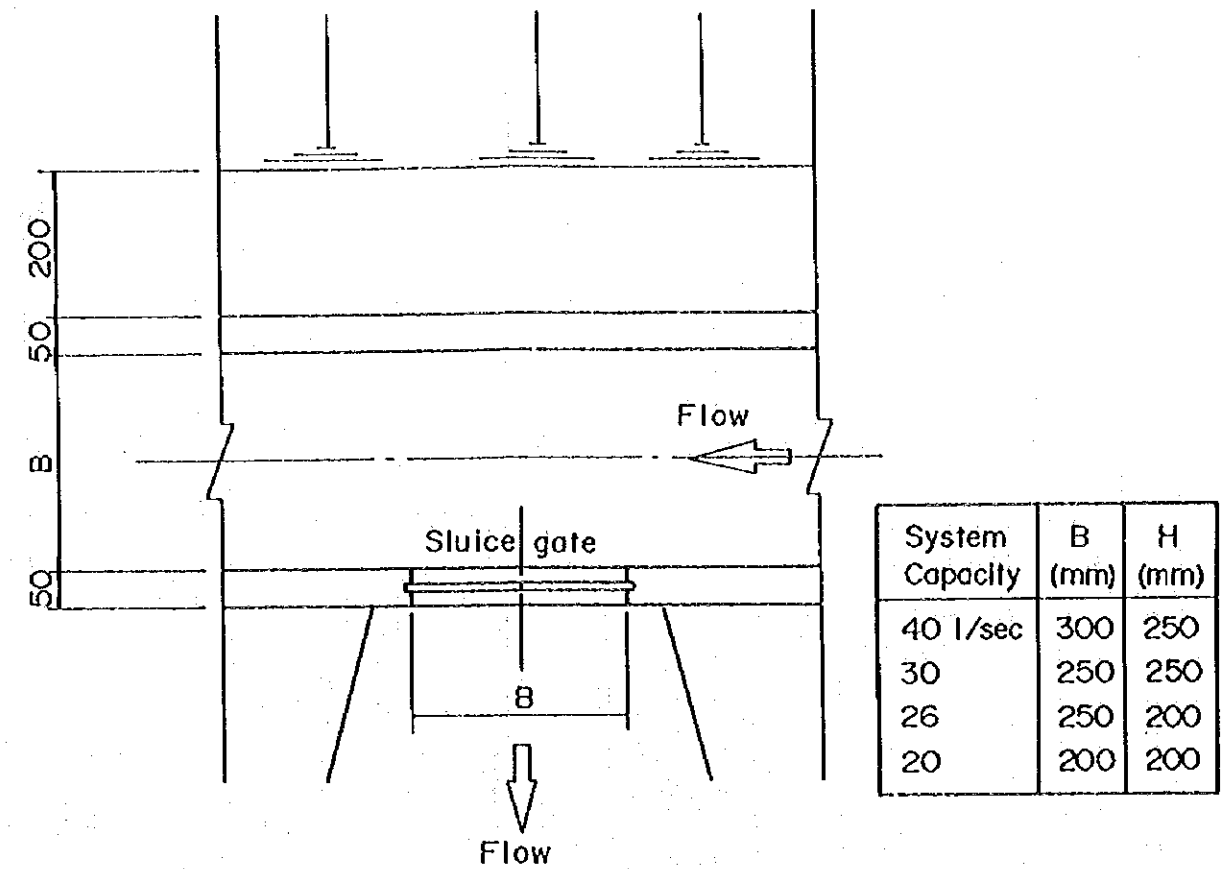
Plan of turn-out (Type 1) S = 1:20



Typical cross section of turn-out (Type 1) S = 1:20



Plan of concrete channel and turn-out (Type 2) S = 1:10



Typical cross section of turn-out (Type 2) S = 1:20

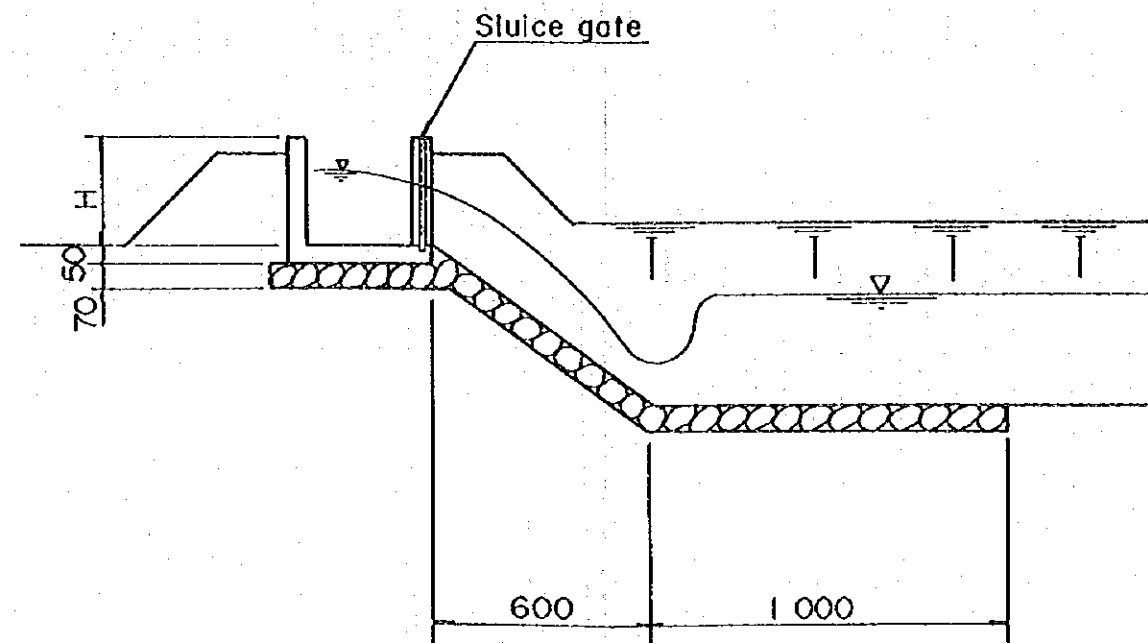
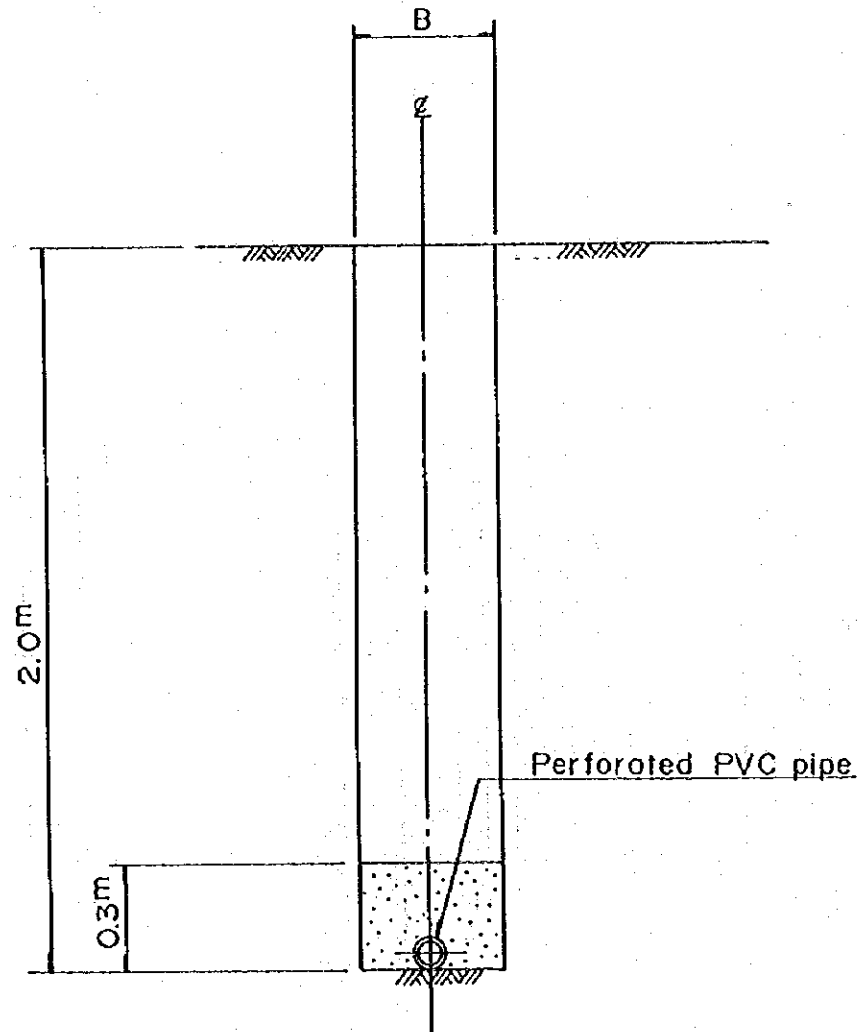


图 6.2.2 分水工標準図

Typical cross section of field drain S = 1 : 20



PVC φ (mm)	B (cm)
58/65	30
71.5/80	40

Typical cross section of collector drain S = 1 : 30

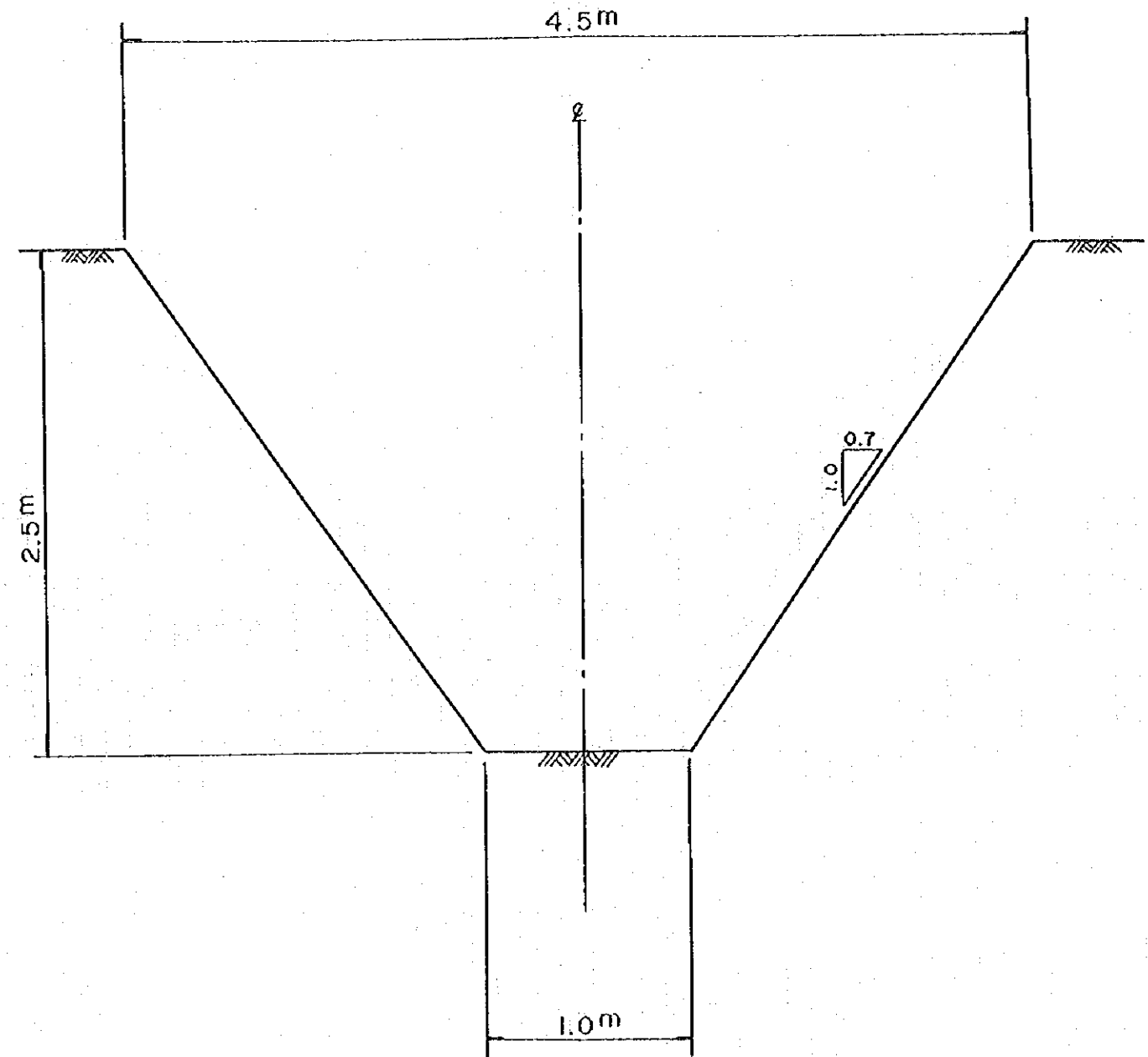
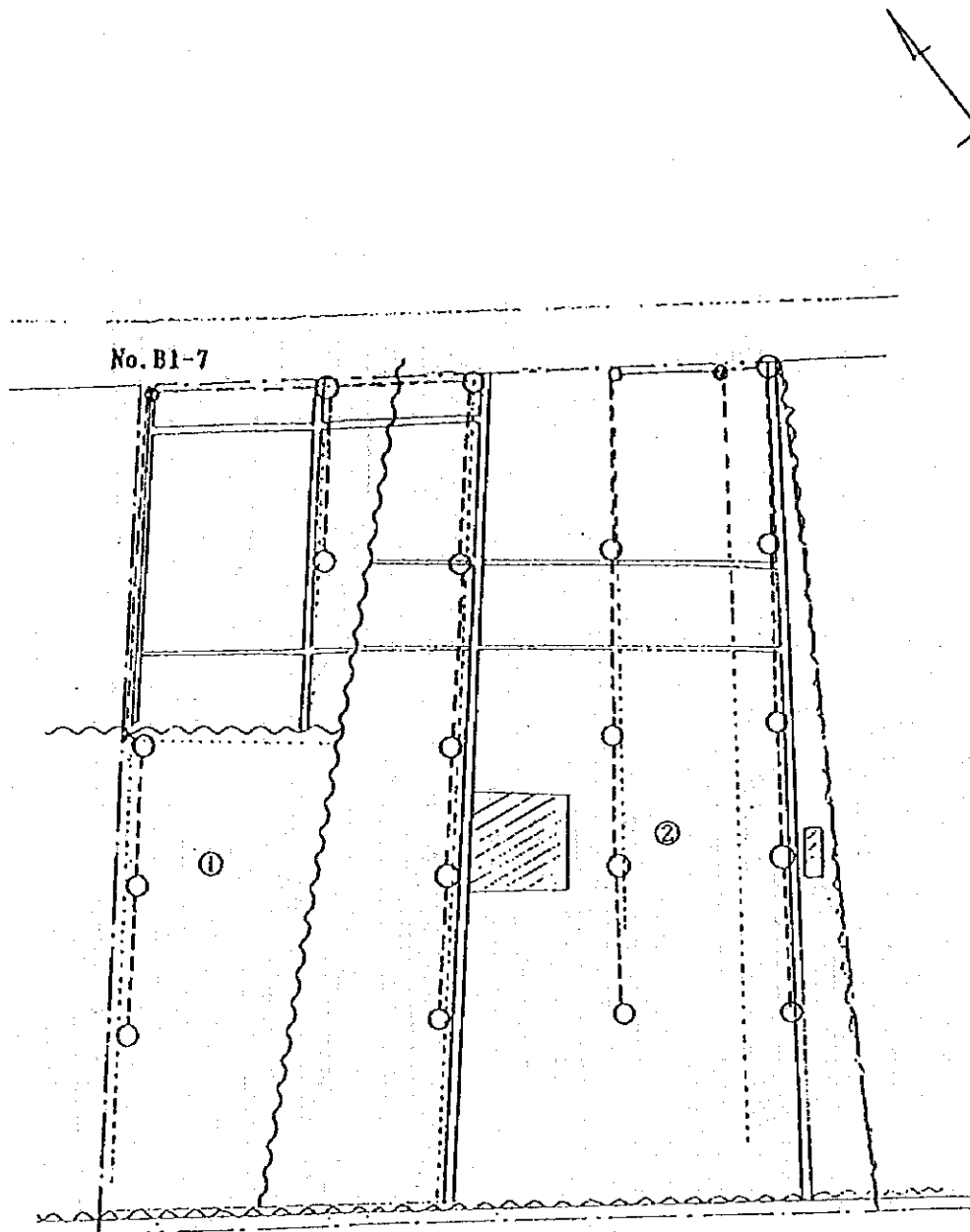


図 6.2.3 排水路標準図



図 6.2.4 末端施設計画平面図 (オーエド・シリオアシス)

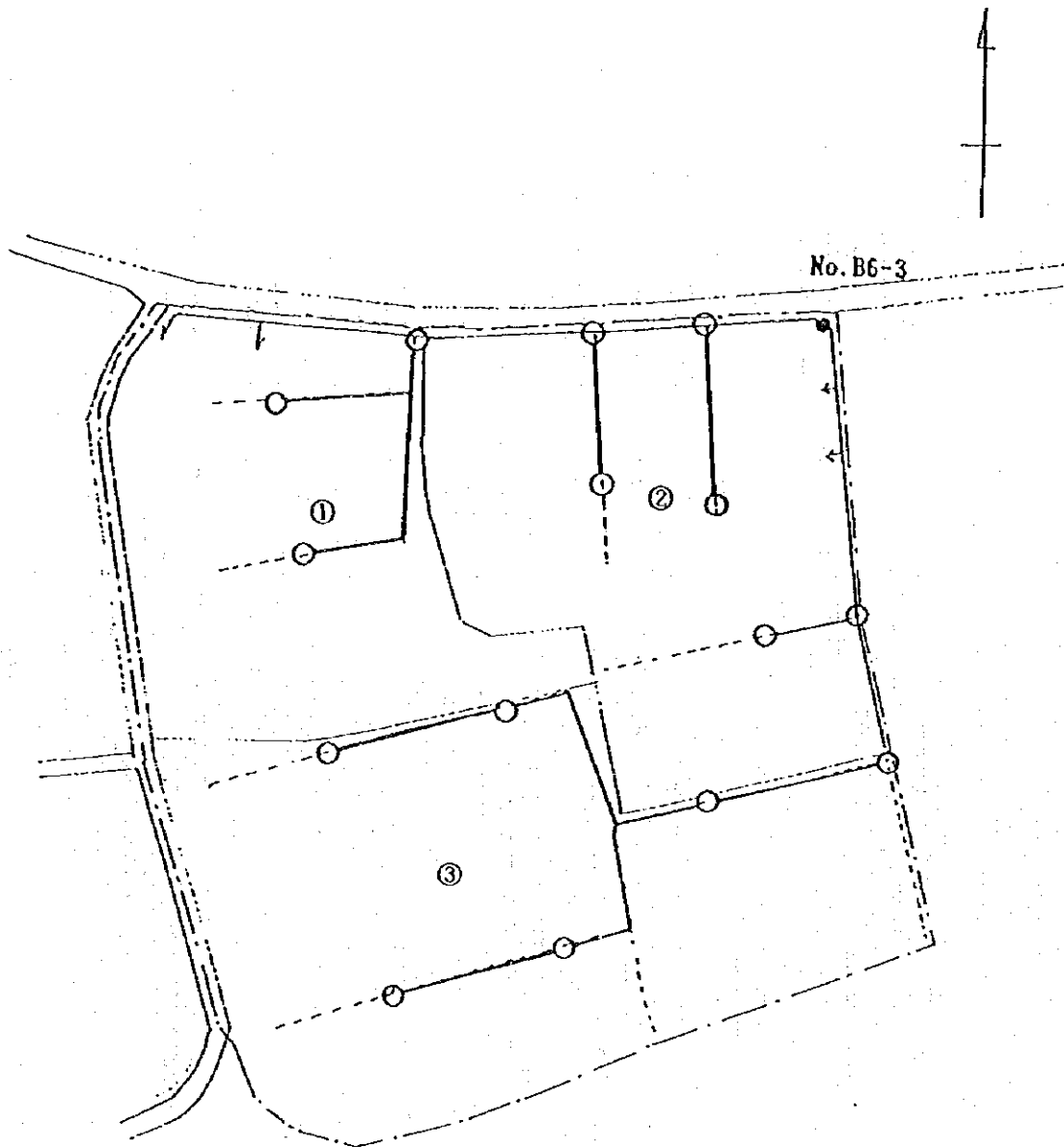


LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
-----	Pipe Line
-----	Earth Canal
~~~~~	Drainage Canal

Gross area	4.620 ha
Irrig canal	0.150 ha
Drain canal	0.190 ha
Road	0.340 ha
Others	0.090 ha
Net area	3.850 ha
Ratio	0.830



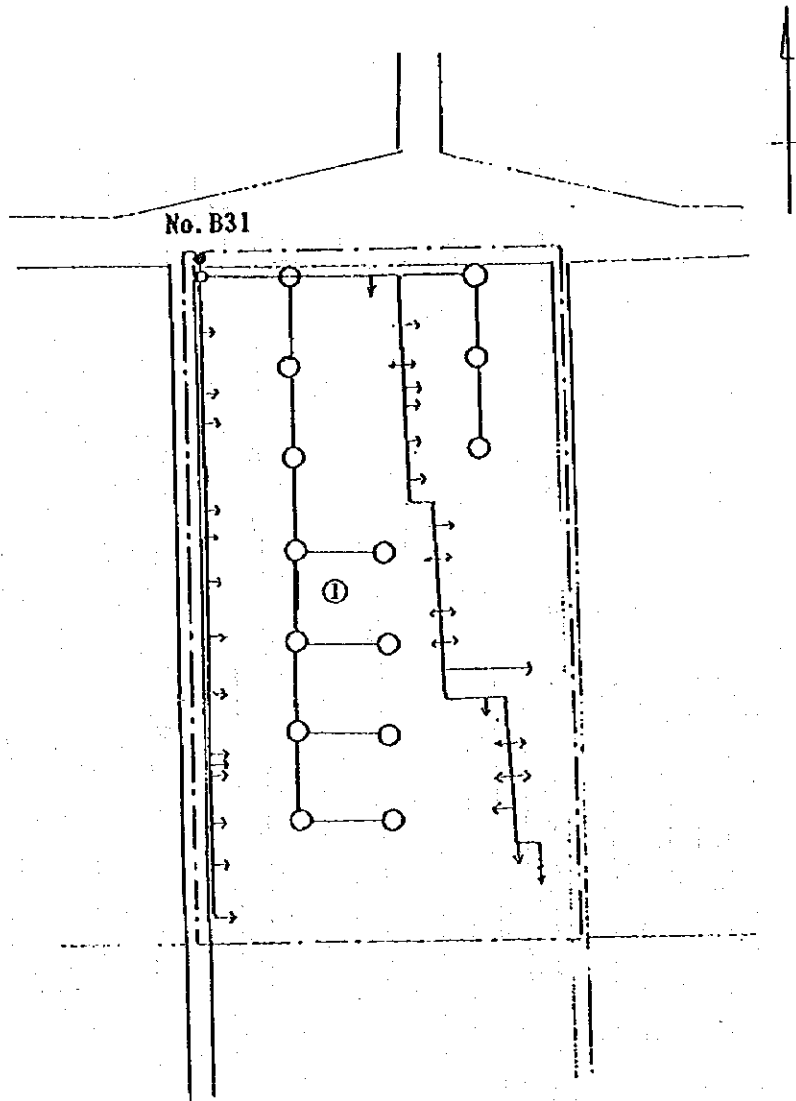
図 6.2.5 末端施設計画平面図 (カスバオアシス)



LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
-----	Pipe Line
- - - - -	Earth Canal
~~~~~	Drainage Canal

Gross area	4.400 ha
Irig canal	0.140 ha
Drain canal	0.000 ha
Road	0.020 ha
Others	0.000 ha
Net area	4.240 ha
Ratio	0.960

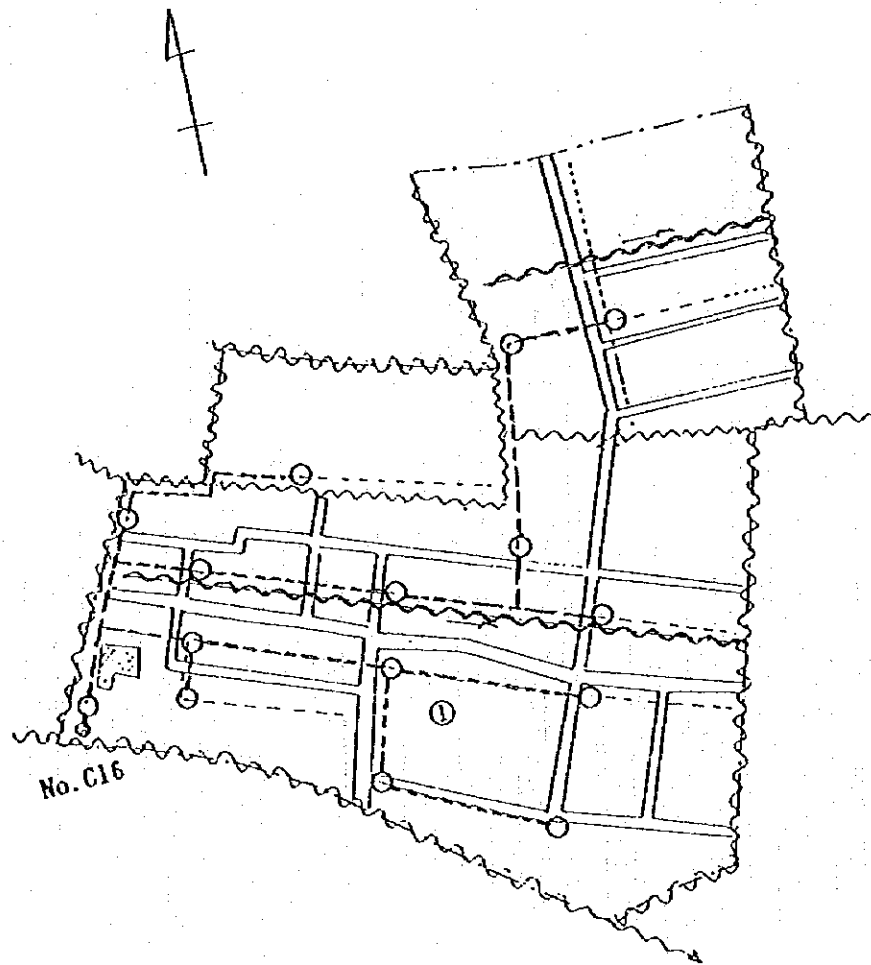
図 6.2.6 末端施設計画平面図 (ドラースード)



LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
.....	Pipe Line
- - -	Earth Canal
~~~~~	Drainage Canal

Gross area	2.000 ha
Irig canal	0.050 ha
Drain canal	0.000 ha
Road	0.120 ha
Others	0.000 ha
Net area	1.830 ha
Ratio	0.920

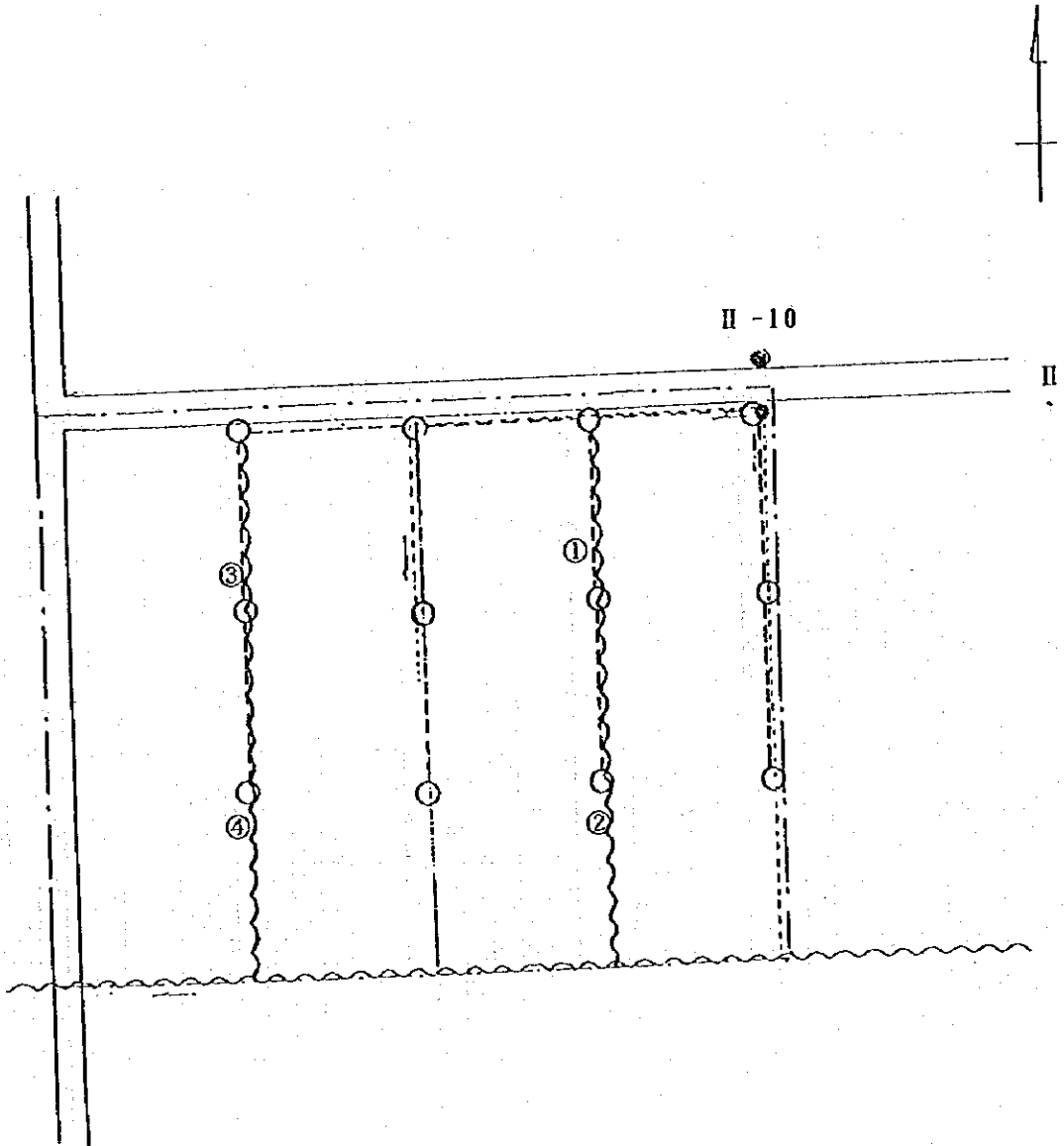
図 6.2.7 末端施設計画平面図 (トゥズールオアシス)



LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
.....	Pipe Line
- - - -	Earth Canal
~~~~~	Drainage Canal

Gross area	2.760 ha
Irig canal	0.110 ha
Drain canal	0.070 ha
Road	0.140 ha
Others	0.010 ha
Net area	2.430 ha
Ratio	0.880

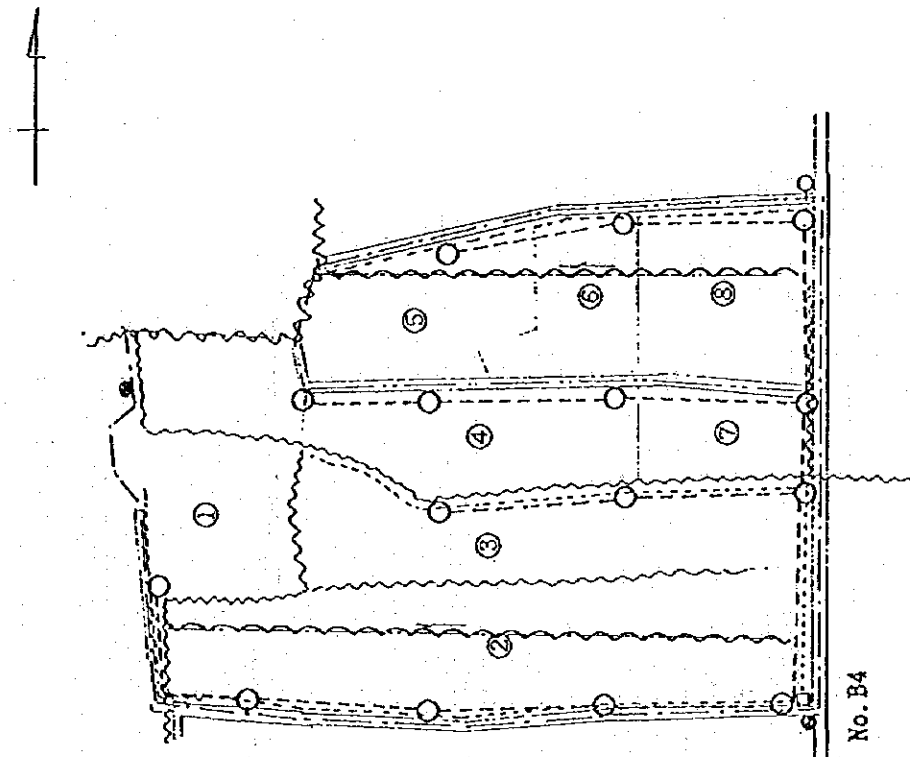
図 6.2.8 末端施設計画平面図 (アティレットオアシス)



LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
-----	Pipe Line
- - - -	Earth Canal
~~~~~	Drainage Canal

Gross area	3.250 ha
Inrig canal	0.050 ha
Drain canal	0.050 ha
Road	0.210 ha
Others	0.000 ha
Net area	2.940 ha
Ratio	0.900

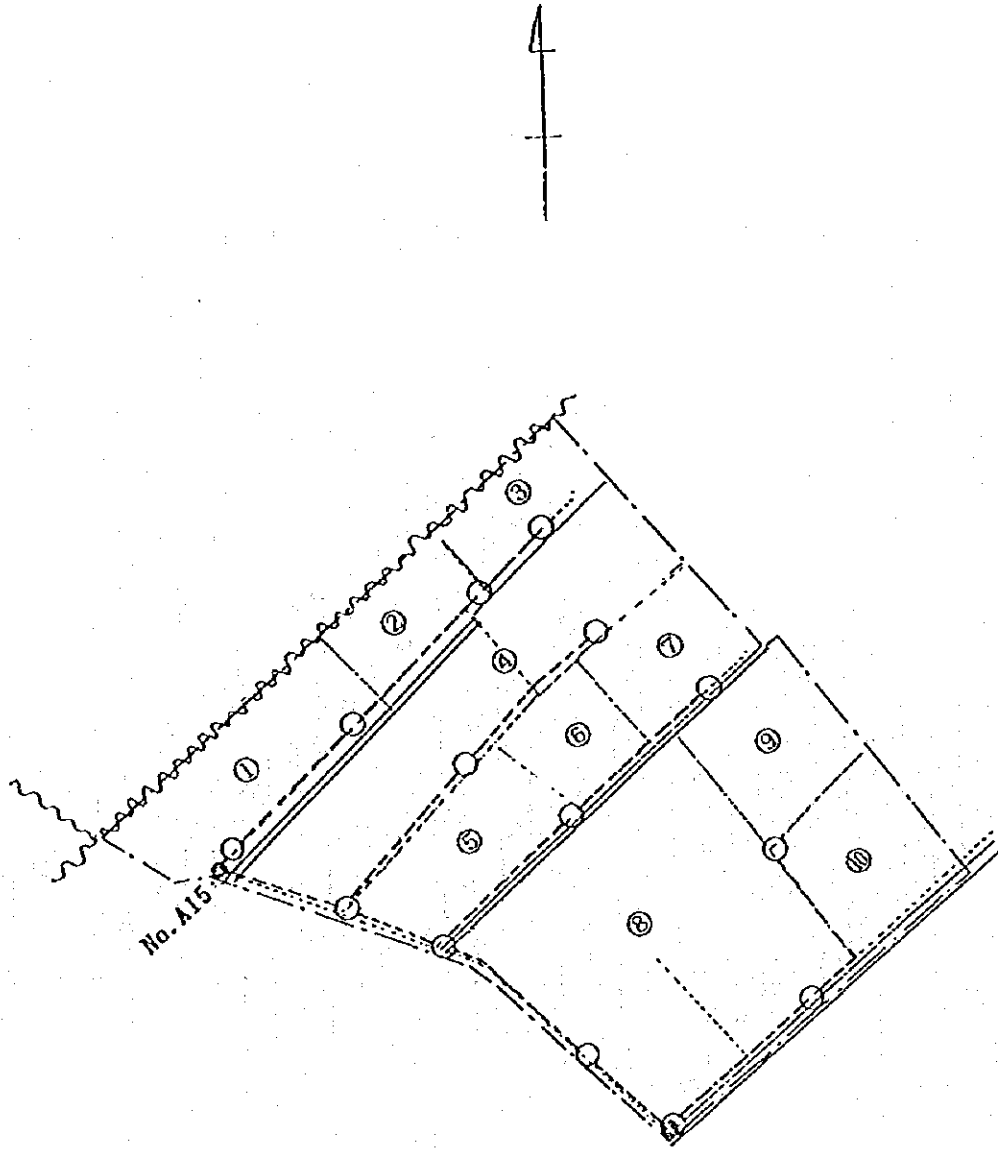
図 6.2.9 末端施設計画平面図 (マンソーラオアシス)



LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
.....	Pipe Line
- - - -	Earth Canal
~~~~~	Drainage Canal

Gross area	2.390 ha
Irig canal	0.080 ha
Drain canal	0.090 ha
Road	0.120 ha
Others	0.000 ha
Net area	2.100 ha
Ratio	0.880

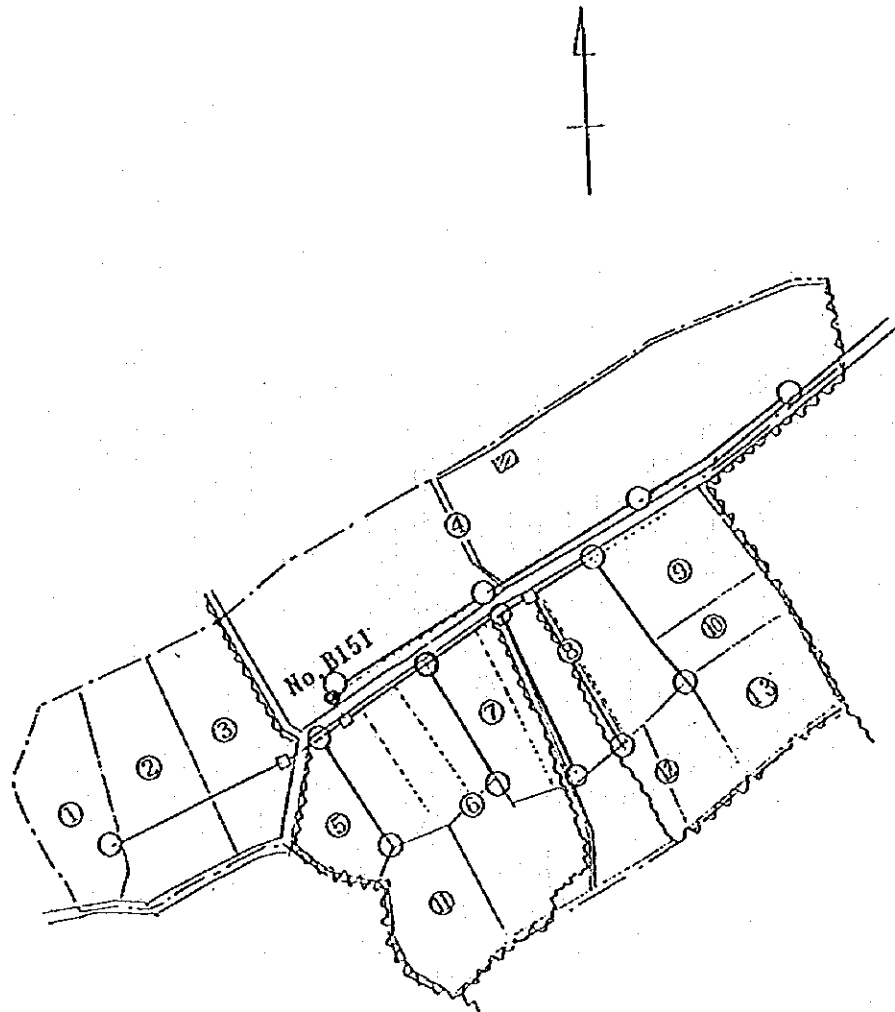
図 6.2.10 末端施設計画平面図 (リマオウアオアシス)



LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
.....	Pipe Line
- - - -	Earth Canal
~~~~~	Drainage Canal

Gross area	2.180 ha
Irig canal	0.120 ha
Drain canal	0.020 ha
Road	0.050 ha
Others	0.000 ha
Net area	1.990 ha
Ratio	0.910

図 6.2.11 末端施設計画平面図 (オアシス デ ガベス)

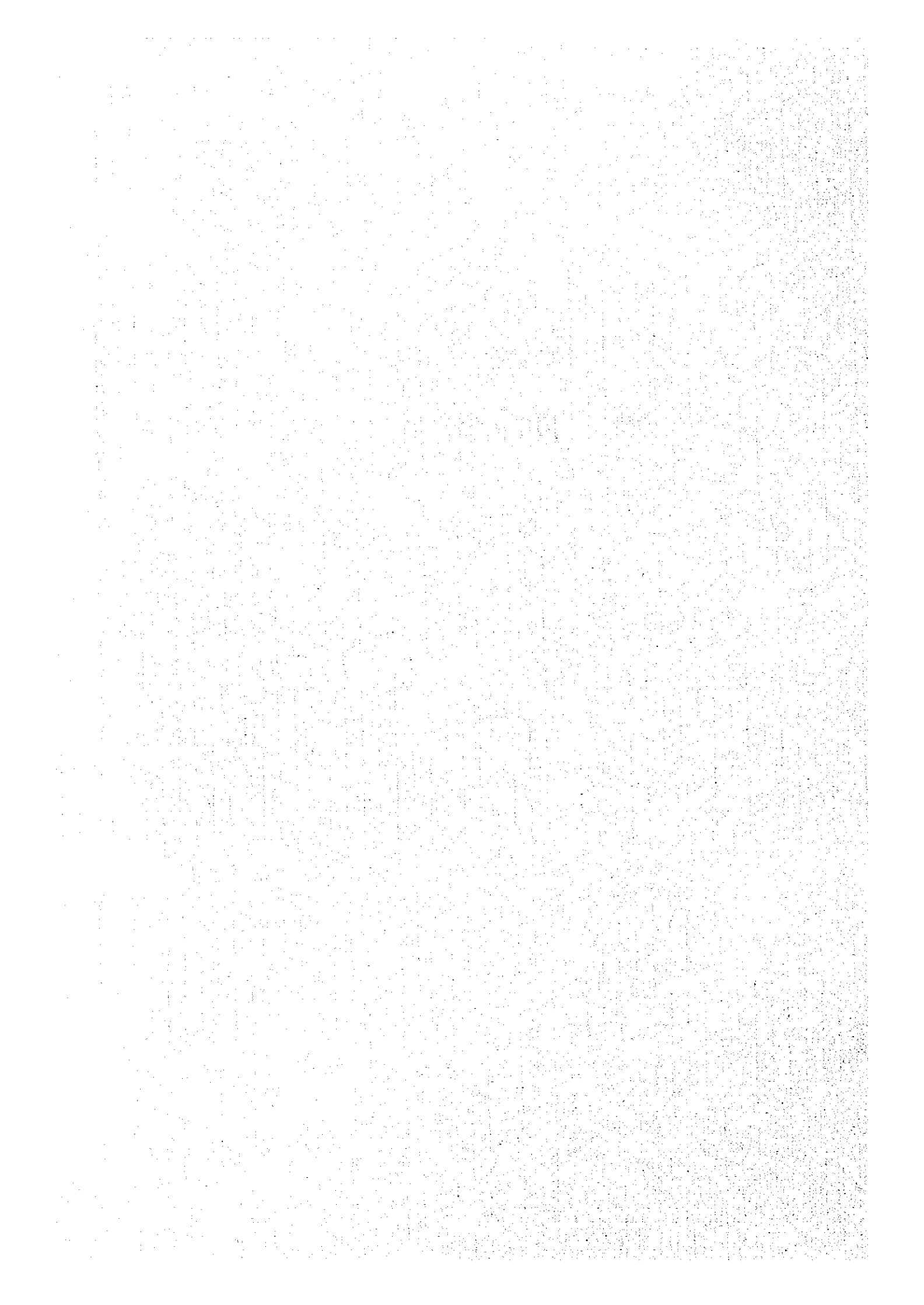


LEGEND	
●	Hydrant
○	Turn-out
-----	Concrete Canal
.....	Pipe Line
- - - -	Earth Canal
~~~~~	Drainage Canal

Gross area	2.260 ha
Irrig canal	0.080 ha
Drain canal	0.090 ha
Road	0.160 ha
Others	0.000 ha
Net area	1.930 ha
Ratio	0.850

# 付 属 書





## 付 属 書

- |          |                        |
|----------|------------------------|
| 付属書 - 1  | 面接者リスト                 |
| 付属書 - 2  | 資料収集リスト                |
| 付属書 - 3  | 要員計画表                  |
| 付属書 - 4  | 土壌・水質試験                |
| 付属書 - 5  | 事前調査(予備)における会議議事録      |
| 付属書 - 6  | 実施細則 (S/W)             |
| 付属書 - 7  | 実施細則に係わる会議議事録          |
| 付属書 - 8  | インセプションレポートに係わる会議議事録   |
| 付属書 - 9  | フェーズ2実施レポートに係わる会議議事録   |
| 付属書 - 10 | プログレスレポート (2)に係わる会議議事録 |
| 付属書 - 11 | ドラフトファイナルレポートに係わる会議議事録 |



付 属 書 - 1

面 接 者 リ ス ト



## LIST OF PARTICIPANTS

### Ministry of Agriculture

M. HAMADANE Abdelkader	Directeur Général Direction générale du Génie Rural (DGGR)
Mme. BOUTITI Raqya	Directeur, - do.-
Mme. GHARBI Najet	Chef, Service, - do.-
M. BELHAJ Kamel	Ingénieur Principal, - do.-

### Commissariat Régional au Développement Agricole (CRDA) de Gafsa

M. ZNAZEN Salah	Directeur Général
M. BELARBI Abdelhafidh	Chef, Arrondissement des Périmètres
M. HAJJI Abdelhamid	Chef, Arrondissement des études et Statistiques
M. KADRI Ridha	I. A Arrondissement des Périmètres Irrigués
M. BELARBI Abdelhafid	Chef Arrondissement des Périmètres Irrigués
Mlle. OTHMAN Aicha	Ingénieur Agronome de Arrondissement des Périmètres Irrigués
M. BEN MARAI Mohamed	Ingénieur Pédologue des Sols Agricoles

### CRDA de Tozeur

M. HAMZA Mekki	Directeur Général
M. KLILA Mohamed	Chef Arrondissement de Génie Rural
M. GAEIB Mohamed Ali	Chef Arrondissement de Forêts
M. HDIDAN Mohamed	Chef Arrondissement de Périmètres
Mme. ABIDI Leila	Chef Arrondissement de Conservation des Couches et du Sol
M. CHEBBI Mohamed	Etudes Statistiques
M. HARAFHI Jonaidi	Génie Rural

### CRDA de Kebili

M. ABDALLAH Ridha	Directeur Général
M. GHRISSI Mohamed	Ingénieur en Chef du Service de Statistiques
M. KLILA Habib	Ingénieur Chef de Service de Ressources en eau
M. JARBOUI Mohamed	Ingénieur Principal de Génie Rural
M. HAJJI Mosbah	Chef d'Arrondissement des Périmètres Irrigués

### CRDA de Gabes

M. TOUMIA Mohamed Lamine	Directeur Général
M. FTIRICH Amar Kilani	Chef d'Arrondissement des Etudes et Statistiques
M. FEKI Mohamed	Ingénieur Principal Agro-économiste
M. OUNIS Mohamed	Ingénieur à l'Arrondissement des Périmètres Irrigués
M. LIMAM Ladhari	Chef d'Arrondissement du Génie Rural
M. OMRANI Abdallah	Chef d'Arrondissement des Périmètres Irrigués
M. ZOUARI Ridha	Chef d'Arrondissement de la Production Agricole
M. SAIED Adel	Chef d'Arrondissement des Sols

付 属 書 - 2

資料収集リスト





Domaine	Code	Nom du document
A) Informations générales /cartes /statistiques	1	Carte de la Tunisie (S=1:500.000)
	2	Sciences naturelles
	3	Assemblage des cartes (1/100.000 et 1/200.000)
	4	Surface, population et population active par emploi de chaque gouvernorat. 1989
B) Mesures gouvernementales /Economie	1	The VIIth Plan in brief 1992-1998, 1992
	2	VIIe Plan de développement économique et social 1992 - 1996 Développement agricole et sécurité alimentaire
	3	Associations d'intérêt collectif
	4	La stratégie nationale pour la création et le suivi des Associations d'intérêt collectif d'eau potable, DGR, MDA, 1992
	5	Investment Coordination Committee (ICC) Guidelines and Procedures
	6	ICC Project Evaluation Procedures and Guidelines
	7	ICC Technical Board Mini-workshop on Methodology for Project Review
C) Météorologie et hydrologie /sol	1	Carte des étages bioclimatiques
	2	Pluviométrie (carte hypsométrique des précipitations annuelles moyennes)
	3	Températures moyennes annuelles Période (1901 - 1995), I.N.M. (carte hypsométrique des températures annuelles moyennes)
	4	Températures moyennes du mois le plus chaud, I.N.M. (carte hypsométrique des températures mensuelles maximales)
	5	Températures moyennes du mois le plus froid, I.N.M. (carte hypsométrique des températures mensuelles minimales)
	6	Pluies moyennes annuelles en mm, Période (1901 - 1990 (carte hypsométrique des précipitations annuelles moyennes)
	7	Institut national de la météorologie, 1994 (inclut des données climatiques générales mensuelles de points représentatifs du Pays)
	8	Données d'observation des températures mensuelles moyennes (gouvernorats de Kébili Tozeur, Gabès, et Gafsa), période 1970 - 89
	9	Particularités climatiques de Gabès
	10	Carte pédologique de la Tunisie, S = 1:100.000, Division des sols, 1971
D) Economie agricole	1	Coût à la production d'un hectare
	2	Frais annuels d'entretien d'un EA, arboriculture en irrigué
	3	Production, prix et distribution des dattes
	4	Résultats de l'enquête suivi de la Campagne agricole (1992-93)
	5	Annuaire des statistiques agricoles, 1992
E) Organisation	1	Organigramme du Ministère de l'Agriculture, 1988
	2	Organigramme du Ministère de l'Agriculture
	3	Organigramme de la DGGR
	4	Organigramme du Ministère de la protection de l'environnement et du territoire
	5	Ministère de l'Agriculture, Journal officiel de la République Tunisienne, 1990
	6	Etat du personnel de la Division hydraulique, CRDA
F) Rapport d'étude	1	Ressources en eaux du Sahara septentrional, 1992
	2	Abrégé du Plan Directeur des Eaux du Sud (P.D.E.S)

	3 Plan Directeur des eaux du sud, volumes I et II, 1983
	4 Enquête sur les oasis, 1992
	5 Etude comparative entre l'irrigation traditionnelle & la Cuvette et le système aux sources multiples, 1988
	6 Fiche Projet (oasis)
	7 Suivi de projet
	8 Projet d'exécution de rénovation et création de Gafsa, Oasis de Lalla, Avant-projet, 1986, DGR, M.D.A.
	9 Projet d'économie de l'eau du périmètre irrigué de Douz
	10 Programme de détartrage des conduites de distribution des refroidisseurs par maillage du réseau, 1986, DGR, M.D.A.
	11 Fiche d'identification d'un périmètre irrigué
G) Ressources en eau / installations de source	1 Liste des oasis et plan de localisation (gouvernorat de Kébili, Tozeur, Gabès et Gafsa)
	2 Plan de localisation des oasis objets de l'étude (gouvernorats de Kébili, Tozeur, Gabès et Gafsa)
	3 Liste des forages et puits (gouvernorats de Kébili, Tozeur, Gabès et Gafsa)
	4 Economie d'eau dans la Nefzaoua
	5 Ressources en eau de Gabès
	6 Ressources en eau du Sud Tunisien
	7 Evolution de l'exploitation (1973-92)
	8 Sauvegarde des oasis du gouvernorats de Gabès, Etat de la salure des oasis, 1989, CRDS Gabès
	9 Carte des ressources en eau de la Tunisie S = 1:500.000, 1991 DGRE, MDA
	10 Note sur la salinité des sols dans les oasis de Nefzaoua
H) Irrigation / installations d'irrigation	1 Aménagement parcellaire avec Seguias bétonnés ou maçonnés
	2 Suivi de l'évolution des sols sous irrigation, DDS, MDA, 1992
	3 Aperçu de l'irrigation dans le gouvernorat de Gabès
	4 Stratégie d'économie d'eau dans les périmètres irrigués du gouvernorat de Gabès
	5 Plan d'ensemble
	6 Carte du système des réseaux d'eau (oasis de Zauete el Anes et Novel, Kebil CRDA)
	7 Situation de l'oasis de Tozeur et du périmètres de Drea Sud
I) Eaux souterraines / qualité des eaux	1 A propos des eaux souterraines en Tunisie (Japonais)
	2 Schémas des couches géologiques (gouvernorat de Kéburi)
	3 Annuaire de l'exploitation des nappes profondes, 1992, DGRE, M.D.A.
	4 Petroleum Geology of Tunisia, 1990, Entreprise tunisienne d'activités pétrolières
	5 Utilisation des eaux usées traitées à des fins agricoles
	6 Spécifications physico-chimiques et biologiques
	7 Chimie de l'eau des forages CI et CT à Kébili
J) Environnement	1 Rapport national, l'état de l'environnement 1993, MEAT
K) Divers	1 Liste des Bureaux d'études

Domaine	Code	Nom du document
A) Cartes	1	Cartes topographiques de la zone de l'étude (échelle: 1/100.000), total 45 unités
	2	Cartes topographiques de la zone de l'étude (échelle: 1/50.000) total 87 unités
B) Hydrogéologie	1	Carte hydrogéologique, plan sectionnal hydrogéologique documents sur l'hydrogéologie
	2	Plan des forages
	3	Inventaire des forages
	4	Relevés d'observation du niveau des eaux souterraines
	5	Relevés d'observation de la qualité des eaux souterraines
C) Système de refroidissement des eaux géothermales	1	Aperçu de la capacité des installations existantes
	2	Etude de la survenance de dépôts
	3	Etude de l'état de la maintenance des installations

付 属 書 - 3

要 員 計 画 表

