

ANNEXES

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ANNEX 1: CLIMATE

Rainfall Station: Anjara Municipality

Precipitation, Total monthly in mm

W.Y.	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	Total
86/87	0	33	328.5	112	181	53	114	3.5	0	0	0	825
87/88	0	23	10	187	152	208	77	10	0	0	29	696
88/89	0	12	52	210.5	63.5	45	121	0	0	17	0	521
89/90	0	11	82	84	197	56	74	51	0	0	0	555
90/91	0	9	46	6.5	217.5	84.5	150	27	6	0	0	546.5
91/92	0	4	68	373	246.5	459.5	19	0	9	19	0	1198
92/93	0	0	66.5	347.5	119	108	50	0	0	0	0	691
93/94	0	5	22	24	162	141	179	18	0	0	0	551
94/95	0	25.5	281.5	156	31	117	47	21	0	0	0	679
95/96	0	0.5	63	45.5	176.5	38	232.5	0	0	0	0	556
96/97	0	70	23	72	124.5	295	135	12.5	16	0	0	748
97/98	5	17	33	139.5	207	59.5	215	12	0	0	0	688
98/99	0	0	8	13	129.5	49	35.5	9.5	0	0	0	244.5
Avg.	0.4	16.2	83.3	136.2	154.4	131.8	111.5	12.7	2.4	2.8	2.2	653.9

Meteorological Station: Deir Alla

Precipitation, Annual Total in mm N.R.A. Station

Year	'50	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60	'61	'62	'63	'64	'65	'66	'67	'68	'69
mm	128	308	270	378	137	432	332	252	213	118	290	284	233	337	304	185	392	242	282	218

Average for period 1950 – 1969: **266.8 mm**

Precipitation, Total monthly in mm

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1990	74.2	31.4	45.1	24.0	0.0	0.0	0.0	0.0	0.0	6.0	24.9	0.3	205.9
1991	91.9	29.1	83.7	16.4	0.9	0.0	0.0	0.0	0.0	11.5	74.3	179.6	487.4
1992	114.8	182.7	28.6	1.2	4.9	1.5	0.0	0.0	0.0	0.0	28.4	138.5	500.6
1993	48.0	47.3	18.6	0.0	5.3	0.0	0.0	0.0	0.1	7.1	8.0	6.5	140.9
1994	93.7	42.1	24.3	1.8	0.0	0.0	0.0	0.0	0.6	28.2	202.6	75.5	468.8
1995	9.8	49.6	10.4	5.3	0.4	0.0	0.0	0.0	0.0	1.4	18.5	22.5	117.9
1996	88.3	12.3	93.1	5.0	0.0	0.0	0.0	0.0	0.0	14.2	7.7	53.6	274.2
1997	111.6	106.0	75.3	4.3	7.3	0.0	0.0	0.0	3.4	11.5	64.7	96.1	480.2
1998	75.1	32.1	68.7	6.5	1.8	0.0	0.0	0.0	0.1	0.4	1.0	6.6	192.3
1999	52.9	25.2	28.6	2.7	0.0	0.0	0.0	0.0	0.0	3.7	2.1	3.9	119.1
Avg.	76.0	55.8	47.6	6.7	2.1	0.2	0.0	0.0	0.4	8.4	43.2	58.3	298.7

Temperature, Mean maximum °C

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	17.1	19.3	23.7	28.5	33.4	36.7	38.5	38.7	35.8	34.0	28.8	23.7	29.9
1991	18.8	20.8	24.4	30.1	33.4	37.2	38.0	37.9	36.5	33.5	27.0	17.2	29.6
1992	15.2	15.3	20.9	27.3	32.1	36.0	37.1	38.7	35.9	34.1	26.1	17.2	28.0
1993	17.3	17.2	22.7	29.9	31.7	37.5	38.2	39.2	36.6	34.9	25.8	23.3	29.5
1994	20.6	20.5	23.3	32.4	35.4	36.5	38.2	38.9	38.3	34.9	23.2	17.9	30.0
1995	19.8	20.7	24.5	28.4	34.6	38.0	38.3	38.9	37.1	32.3	24.8	20.5	29.8
1996	19.1	21.6	22.5	28.0	35.4	37.4	39.3	39.4	37.3	31.7	27.8	22.3	30.2
1997	20.0	18.2	20.4	26.6	35.6	37.4	39.0	37.2	35.8	32.7	26.5	21.1	29.2
1998	18.6	20.5	22.1	30.4	34.6	37.4	39.9	40.8	38.1	34.6	29.6	23.2	30.8
1999	21.1	22.1	25.7	30.1	36.3	37.3	39.4	40.0	37.7	33.5	27.9	23.1	31.2
Avg.	18.8	19.6	23.0	29.2	34.3	37.1	38.6	39.0	36.9	33.6	26.8	21.0	29.8

Temperature, Mean minimum °C

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	9.7	10.1	12.6	15.6	17.7	20.7	23.3	24.0	22.9	21.8	18.6	14.3	17.6
1991	18.8	11.8	14.3	16.7	18.9	21.0	23.5	24.4	22.8	22.5	17.3	11.1	18.0
1992	15.2	8.6	11.2	14.5	18.1	21.5	23.1	24.9	23.4	21.2	16.8	10.6	16.9
1993	17.3	8.7	11.6	15.3	18.1	22.0	23.6	24.5	22.9	23.3	16.8	14.5	17.6
1994	20.6	11.8	12.5	18.1	19.6	21.9	24.0	24.7	25.4	23.9	16.0	11.1	18.5
1995	19.8	11.3	12.9	14.7	19.4	22.5	24.8	25.3	23.9	20.5	15.2	12.6	17.9
1996	19.1	12.1	12.5	14.7	19.2	22.0	25.1	25.0	23.8	20.4	18.6	14.4	18.3
1997	20.0	8.9	10.8	13.7	19.0	22.1	24.5	23.8	22.4	20.9	17.6	13.1	17.4
1998	18.6	10.8	12.2	16.6	19.9	21.9	24.4	26.6	24.8	21.9	19.0	15.0	18.7
1999	21.1	12.1	14.1	15.9	20.7	23.1	25.0	26.0	24.9	22.0	17.6	13.5	18.9
Avg.	18.0	10.6	12.5	15.6	19.1	21.9	24.1	24.9	23.7	21.8	17.4	13.0	18.0

Relative Humidity % Mean monthly

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	62.0	63.0	55.0	52.0	49.0	48.0	50.0	52.0	54.0	47.0	43.0	47.0	51.8
1991	57.0	54.0	57.0	46.0	43.0	44.0	49.0	53.0	51.0	45.0	49.0	58.0	50.5
1992	56.0	63.0	51.0	48.0	40.0	39.0	40.0	40.0	38.0	34.0	33.0	52.0	44.5
1993	53.0	71.0	55.0	45.0	50.0	46.0	48.0	49.0	48.0	42.0	47.0	57.0	50.9
1994	63.0	62.0	65.0	42.0	48.0	51.0	52.0	57.0	50.0	47.0	63.0	58.0	54.8
1995	60.0	66.0	58.0	48.0	39.0	43.0	48.0	52.0	62.0	61.0	47.0	57.0	53.4
1996	65.0	63.0	68.0	54.0	53.0	55.0	48.0	50.0	49.0	44.0	35.0	50.0	52.8
1997	50.0	50.0	61.0	48.0	42.0	49.0	41.0	43.0	43.0	44.0	64.0	77.0	51.0
1998	76.5	70.1	66.6	59.5	58.4	63.0	61.0	66.5	63.5	60.1	66.2	53.1	63.7
1999	59.9	63.4	59.4	59.8	55.6	55.0	42.7	44.6	44.1	44.9	36.8	52.3	51.5
Avg.	60.2	62.6	59.6	50.2	47.8	49.3	48.0	50.7	50.3	46.9	48.4	56.1	52.5

Wind Speed, Mean 'knot

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	5.4	3.6	5.2	5.6	4.2	3.9	2.8	2.7	2.9	3.9	5.5	5.5	4.3
1991	6.3	6.9	5.6	5.1	5.7	4.4	3.7	3.4	3.1	5.0	4.8	4.1	4.8
1992	4.5	3.6	4.8	4.4	5.5	4.3	3.6	2.8	3.5	2.8	7.3	5.7	4.4
1993	6.0	3.5	4.2	4.6	4.9	3.1	3.2	2.1	2.8	5.1	7.4	7.1	4.5
1994	7.3	5.3	5.1	7.2	4.9	4.1	3.5	2.7	3.3	5.2	4.5	6.3	5.0
1995	4.9	4.1	3.8	4.4	5.0	3.4	2.6	2.9	3.6	3.9	5.7	8.9	4.4
1996	5.3	3.7	9.7	6.1	4.8	4.5	5.8	4.7	4.3	5.7	10.2	6.3	5.9
1997	6.0	5.6	4.3	5.5	5.6	3.4	2.9	2.9	3.1	2.9	5.3	3.6	4.3
1998	5.0	4.1	2.6	3.4	2.6	1.6	1.4	1.2	1.5	2.1	2.5	5.3	2.8
1999	5.6	3.4	-	-	-	-	1.7	2.2	1.6	1.5	3.3	4.6	-
Avg.	5.6	4.4	5.0	5.1	4.8	3.6	3.1	2.8	3.0	3.8	5.7	5.7	

Prevailing Wind Direction from true North 'Degree'

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1992	81.0	197.0	27.0	347.0	337.0	333.0	311.0	335.0	342.0	343.0	59.0	98.0
1993	67.0	49.0	350.0	349.0	340.0	343.0	232.0	353.0	351.0	56.0	52.0	28.0
1994	86.0	59.0	357.0	357.0	354.0	340.0	310.0	328.0	348.0	47.0	117.0	75.0
1995	69.0	17.0	360.0	320.0	338.0	341.0	274.0	322.0	332.0	342.0	51.0	59.0
1996	58.0	23.0	2.0	348.0	348.0	347.0	342.0	355.0	5.0	353.0	345.0	14.0
1997	9.0	20.0	349.0	287.0	289.0	280.0	259.0	269.0	271.0	334.0	64.0	79.0
1998	69.0	9.0	336.0	346.0	311.0	309.0	321.0	313.0	316.0	82.0	147.0	167.0

Meteorological Station: Ras Muneef

Precipitation, Total monthly mm

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1968													693.0
1969													554.0
1990	150.1	75.9	109.7	37.9	0.2	0.0	0.0	0.0	0.0	6.6	30.2	29.6	430.2
1991	193.7	82.0	132.0	39.1	6.0	0.0	0.0	0.0	0.0	6.2	110.8	344.9	914.7
1992	241.5	376.8	43.3	4.4	11.9	28.2	0.0	0.0	0.0	0.0	71.1	260.4	1037.6
1993	109.4	86.0	51.2	10.2	42.3	0.0	0.0	0.0	1.1	16.0	35.0	32.7	383.9
1994	179.1	92.9	133.2	8.7	2.5	0.4	0.0	0.0	0.1	26.8	223.9	169.8	837.4
1995	27.7	80.2	51.7	28.5	0.6	0.0	0.0	0.0	0.0	5.7	81.1	34.3	309.8
1996	162.4	39.1	182.4	18.6	0.0	0.0	0.0	0.0	0.0	47.9	34.0	86.4	570.8
1997	116.8	247.5	136.7	26.2	24.1	0.0	0.0	0.0	6.1	38.5	105.6	147.5	849.0
1998	171.3	79.3	187.2	15.0	2.9	0.0	0.0	0.0	4.4	2.4	2.0	41.2	505.7
1999	95.2	67.1	39.5	15.3	0.0	0.0	0.0	0.0	0.0	4.8	5.1	30.0	257.0
Avg.	144.7	122.7	106.7	20.4	9.1	2.9	0.0	0.0	1.2	15.5	69.9	117.7	610.6

Temperature, Mean maximum °C

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	6.0	7.2	12.2	17.3	21.8	25.1	26.1	26.5	24.9	23.2	18.7	13.1	18.5
1991	7.8	9.5	13.9	19.2	21.2	25.2	25.2	25.6	25.6	22.6	16.6	7.0	18.3
1992	3.7	3.7	9.2	16.8	20.7	24.3	25.4	27.2	24.9	24.7	14.8	6.4	16.8
1993	7.1	6.8	11.8	18.6	20.0	25.8	26.3	27.7	25.7	23.8	14.1	13.8	18.5
1994	9.4	8.6	12.4	20.5	23.7	24.8	25.6	27.4	27.4	24.3	12.3	7.0	18.6
1995	8.8	10.1	13.2	16.7	23.5	26.1	26.0	27.1	26.2	21.6	13.9	9.8	18.6
1996	8.0	10.7	11.0	16.3	24.7	25.4	27.7	27.6	25.9	20.1	15.8	11.8	18.8
1997	9.9	6.7	9.0	15.2	23.8	25.3	26.7	24.8	24.2	22.3	15.4	10.4	17.8
1998	7.1	9.2	9.8	18.6	22.8	25.1	27.5	29.4	26.3	23.5	19.7	12.1	19.3
1999	10.1	11.2	13.5	18.0	24.5	24.5	26.7	28.2	25.8	22.1	17.1	13.6	19.6
Avg.	7.8	8.4	11.6	17.7	22.7	25.2	26.3	27.2	25.7	22.8	15.8	10.5	18.5

Temperature, Mean minimum °C

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	0.8	1.6	3.8	8.5	11.6	13.9	15.8	15.5	14.0	13.8	10.9	5.9	9.7
1991	2.3	3.0	6.4	9.9	11.3	14.4	14.8	15.3	15.1	13.8	9.4	1.8	9.8
1992	-0.6	-0.9	2.0	6.6	10.9	14.2	14.8	17.1	15.1	15.1	7.6	1.7	8.6
1993	0.9	0.9	3.9	8.6	10.9	15.6	15.9	17.7	15.7	14.6	7.5	7.1	9.9
1994	4.1	3.0	5.3	11.1	13.9	13.9	15.7	17.1	17.7	15.7	6.7	1.8	10.5
1995	3.1	3.4	5.0	6.6	13.2	15.1	15.6	16.3	15.9	12.3	6.8	3.9	9.8
1996	2.8	4.0	4.0	7.0	14.0	14.7	18.0	17.3	16.0	11.8	9.4	6.3	10.4
1997	4.2	0.6	2.7	6.2	14.2	14.8	16.2	14.9	14.7	13.7	9.0	5.5	9.7
1998	2.3	2.9	3.4	10.1	12.7	15.0	17.1	19.3	17.2	14.1	11.5	6.3	11.0
1999	4.2	3.8	5.8	8.6	14.2	14.3	16.7	17.6	15.8	13.3	9.7	6.6	10.9
Avg.	2.4	2.2	4.2	8.3	12.7	14.6	16.1	16.8	15.7	13.8	8.9	4.7	10.0

Relative Humidity % Mean monthly

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	76.0	79.0	61.0	53.0	49.0	48.0	59.0	60.0	64.0	50.0	49.0	59.0	58.9
1991	81.0	71.0	72.0	49.0	51.0	46.0	58.0	64.0	50.0	55.0	70.0	87.0	62.8
1992	81.0	90.0	71.0	60.0	55.0	56.0	64.0	64.0	64.0	43.0	66.0	89.0	66.9
1993	79.0	79.0	68.0	53.0	59.0	51.0	60.0	55.0	56.0	56.0	69.0	72.0	63.1
1994	79.0	77.0	74.0	47.0	47.0	56.0	64.0	58.0	55.0	57.0	87.0	83.0	65.3
1995	80.0	76.0	66.0	60.0	48.0	52.0	68.0	67.0	55.0	62.0	57.0	73.0	63.7
1996	81.0	73.0	80.0	61.0	47.0	53.0	54.0	56.0	54.0	63.0	66.0	76.0	63.7
1997	73.0	77.0	76.0	62.0	43.0	55.0	61.0	70.0	63.0	60.0	76.0	86.0	66.8
1998	90.5	84.4	78.7	61.6	56.8	60.5	57.7	52.9	57.5	53.3	56.0	71.4	65.1
1999	76.4	73.4	71.8	73.5	68.3	86.5	85.2	80.8	77.5	82.8	73.0	75.3	77.0
Avg.	79.7	78.0	71.9	58.0	52.4	56.4	63.1	62.8	59.6	58.2	66.9	77.2	65.3

Wind Speed, Mean 'knot

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly
1990	12.7	11.5	10.4	7.9	10.3	13.0	13.2	11.4	9.3	9.8	11.3	12.7	11.1
1991	12.7	13.8	13.4	13.7	13.3	12.2	14.7	13.9	10.0	9.3	10.1	15.3	12.7
1992	17.9	19.9	16.3	15.8	15.2	17.2	16.7	15.4	14.4	9.3	15.0	15.4	15.7
1993	14.8	11.0	12.9	10.5	9.7	10.4	11.9	9.5	8.9	8.3	12.4	8.7	10.8
1994	13.4	14.2	9.7	11.1	9.0	11.4	13.6	10.0	6.5	8.1	13.8	13.8	11.2
1995	11.6	10.4	11.1	10.0	8.2	10.7	12.5	11.9	9.9	9.2	12.7	11.1	10.8
1996	13.7	12.9	14.1	11.2	9.9	10.2	10.6	9.3	9.5	10.9	14.9	13.0	11.7
1997	13.0	14.0	16.4	15.2	11.2	12.0	13.6	14.6	10.5	8.9	10.5	11.4	12.6
1998	13.4	11.0	13.9	10.0	9.2	9.3	9.9	6.5	6.5	5.7	5.8	8.2	9.1
1999	7.1	8.7	8.9	7.0	4.7	6.7	8.0	5.2	5.1	2.9	4.9	6.1	6.3
Avg.	13.0	12.7	12.7	11.2	10.1	11.3	12.5	10.8	9.1	8.2	11.1	11.6	

Prevailing Wind Direction from true North 'Degree'

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1992	218.0	227.0	251.0	259.0	261.0	264.0	268.0	270.0	270.0	277.0	161.0	230.0
1993	201.0	219.0	221.0	246.0	241.0	253.0	259.0	264.0	268.0	108.0	179.0	118.0
1994	180.0	220.0	242.0	252.0	263.0	267.0	256.0	266.0	263.0	169.0	155.0	140.0
1995	164.0	149.0	194.0	208.0	240.0	232.0	226.0	234.0	230.0	217.0	147.0	109.0
1996	139.0	185.0	195.0	192.0	221.0	234.0	234.0	239.0	233.0	202.0	75.0	157.0
1997	137.0	193.0	184.0	203.0	228.0	226.0	224.0	222.0	227.0	193.0	130.0	210.0
1998	246.0	229.0	262.0	232.0	276.0	305.0	301.0	324.0	325.0	294.0	246.0	189.0

ANNEX 2: SOILS

SOIL MAP UNITS FOR WADI RAJIB AREA

MAP UNIT	AREA (dunum)	Altitude (m) & Slopes	Geomorphology Parent Material	Vegetation Cover, Land Use	Moisture Regime, Ann. Rainfall	Stones, Max. Rock Outcrop	USDA Code, Dom. Series, Depth	(USDA Subgroup & Particle Size Class	% Dominance
K2	67.9	300-750 5-40%	Mid and low slopes on limestone; deep to moderate deep colluvium	Intensive rainfed treecropts & arable + afforestation	Xeric (wet); 400-500 mm	6% A-hor stones; 6% surface stones; <5% rock outcrop	JDEO JEO10 d JDEO JEO15 d JDEP nd d HDFB HFB1 s (11% shallow)	Calcixerollic Xerochrepts (F) Calcixerollic Xerochrepts (F) Typic Xerochrepts (nd) Lithic Haploxeroll (shallow) (97 cm average depth)	(30%) (20%) (20%) (10%)
K3	24.9	300-960 5-16% (17-40%)	Moderately to steeply sloping mid & low slopes; gen. W-facing; deep v. calcareous colluvium	Intensive rainfed Arable & treecropts	Xeric (wet); 400-500 mm	4% A-hor stones; 6% surface stones; <5% rock	JDEO JEO10 d JDEO JEO11 d JDEP (nd) d/md JDED nd s (14% shallow)	Calcixerollic Xerochrepts (F) Calcixerollic Xerochrepts (Hz) Typic Xerochrepts (nd) Lithic Xerochrept (nd) (112 cm average depth)	(25%) (25%) (15%) (15%)
K7	235.0	400-1150 0-25%	High rolling plateaux & terrace remnants; moderately deep colluvial cover	Intensive rainfed arable & treecropts + minor irrigation	Xeric (wet); 400-600 mm	4% A-hor stones; 4% surface stones; <5% rock outcrop	JDEP JEP26 md JDEP JEP22 md JDEF JEF3 d JDED (nd) s (18% shallow)	Typic Xerochrepts (F) Typic Xerochrepts (F) Vertic Xerochrepts (F) Lithic Xerochrept (nd) (75 cm average depth)	(25%) (25%) (15%) (10%)
K10	107.3	450-1100 5-16% (0-40%)	Concave colluvial footslopes on bench positions-deep & moderately deep colluvium	Intensive rainfed Arable & treecropts	Xeric (wet); 400-500 mm	9% A-hor stones; 10% surface stones; <2% rock outcrop	JDEP nd md JDEF JEF3 md KECA KCA 11 s JDED JED5 s (22% shallow)	Typic Xerochrepts (F) Vertic Xerochrepts (F) Lithic Xerorthents (Mh) Lithic Xerochrepts (F) (71 cm average depth)	(60%) (10%) (10%) (10%)
K12	33.4	700-1050 9-25%	High, rolling plateaux & terrace remnants; moderately deep, stony colluvial cover.	Intensive rainfed Arable & treecropts	Xeric (wet); 500-600 mm	15% A-hor stones; 18% surface stones and boulders; <5% rock outcrop	JDEP nd md JDED JED8 s JDEO nd md (29% shallow)	Typic Xerochrepts (Qmnhv) Lithic Xerochrepts (Qv) Calcixerollic Xerochrepts (nd) (69 cm average depth)	(45%) (15%) (10%)
K17	231.0	400-1000 25-60% (9-90%)	Very steep mass-movement slopes in major & deeply dissected valleys	Brush range, much with good cover; forest & re-afforestation; some irrigation	Xeric (wet); 400-550 mm	15% A-hor stones; 10% surface stones and boulders; 10% rock outcrop	JDEP JEP26 md HDFB HFB1 s JDED JED5 s KECA KCA 11 s (43% shallow)	Typic Xerochrepts (F) Lithic Haploxerolls (F) Lithic Xerochrepts (F) Lithic Xerorthents (Mh) (61 cm average depth)	(30%) (15%) (15%) (10%)

MAP UNIT	AREA (dunum)	Altitude (m) & Slopes	Geomorphology Parent Material	Vegetation Cover, Land Use	Moisture Regime, Ann. Rainfall	Stones, Max. Rock Outcrop	USDA Code, Dom. Series, Depth	(USDA Subgroup & Particle Size Class	% Dominance
K18	28.1	500-1050 5-25% (25-40%)	High, convex ridge tops & bench positions; shallow to moderately deep colluvium	Brush range; forest; rainfed arable	Xeric (wet); 500-600 mm	8% A-hor stones; 7% surface stones; 5% rock outcrop	JDEO JEO10 md JDED nd s HDFZc HFZ nd md HDFB HFB2 s (38% shallow)	Calcixerollic Xerochrepts (F) Lithic Xerochrepts (nd) Typic Haploxerolls (F) Lithic Haploxerolls (Mh) (54 cm average depth)	(40%) (15%) (15%) (10%)
K23	369.0	600-1100 (250-600) 9-16% (0-40%)	High, convex ridge tops and upper slopes; shallow colluvium	Brush range; forest; some treecrops	Xeric (wet); 500-600 mm	6% A-hor stones; 5% surface stones & boulders; 5% rock outcrop	JDED JED5 s JDEP JEP9 md KECA (nd) s HDFB (nd) s (62% shallow)	Lithic Xerochrepts (F) Typic Xerochrepts (F) Lithic Xerorthents (nd) Lithic Haploxeroll (nd) (49 cm average depth)	(30%) (20%) (20%) (10%)
K24	126.0	450-1100 9-16% (0-40%)	High, convex ridge tops and upper slopes; shallow & stony colluvium	Brush rangeland; forest; rainfed treecrops	Xeric (wet); 500-600 mm	15% A-hor stones; 10% surface stones & boulders; 10% rock outcrop	JDED JED nd s JDEP JEP26 md KECA nd s HDFB nd s (69% shallow)	Lithic Xerochrepts (Qv) Typic Xerochrepts (F) Lithic Xerorthents (nd) Lithic Haploxeroll (nd) (48 cm average depth)	(40%) (30%) (10%) (10%)

ANNEX 3: VEGETATION

Common tree and shrub species of the Wadi Rajib area are:

Acacia cyanophylla*
Amygdalus amora
Amygdalus persica**
Arbutus andrachne
Casuarina equisetifolia*
Ceratonia siliqua
Cercis siliquatum
Colycotome villosa
Crataegus azarolus
Cupressus sempervirens*
Eucalyptus camaldulensis*
Ficus carica**
Malus communis**
Melia azederach*
Nerium oleander
Olea europaea
Phyllirea media
Pinus halepensis
Pinus pinea
Pistacia palestina
Prosopis juliflora*
Punica granatum**
Pyrus syriaca
Quercus aegilops
Quercus coccifera
Retama retam
Rhamnus palestina
Rhamnus punctata
Rhus coriaria
Robinia pseudoacacia*
Schinus molle*
Styrax officinalis
Tamarix sp.
Zizyphus spina-christi

* = in man-made forest plantations

** = in homegardens and fruit orchards

ANNEX 4: POPULATION DATA AND SOCIAL INFRASTRUCTURE

Population of Wadi Rajib Area in 1994

Village/Town	Male	Female	Total
Anjara	7046	6754	13800
Ash Shikara	348	338	686
As Sakhina	95	88	183
Souk	34	28	62
Az Zarra'a	130	120	250
Jabal Al Akhdar	111	108	219
Al Fakhira	61	47	108
As Sufsafa	115	116	231
Kufranja	8554	8354	16908
Rajib	756	765	1521
Ballas	388	389	777
As Safinah	428	424	852
Total:	18066	17531	35597

Population of Wadi Rajib Area in 1997

Area	Male	Female	Total
Anjara	7816	7492	15309
Ash Shikara	386	375	761
As Sakhina	105	98	203
Souk	38	31	69
Az Zarra'a	144	133	277
Jabal Al Akhdar	123	120	243
Al Fakhira	68	52	120
As Sufsafa	128	129	256
Kufranja	9496	9274	18770
Rajib	839	849	1688
Ballas	431	432	863
As Safinah	475	471	946
Total:	20049	19456	39505

Population increase between 1994 and 1997: **3.66%**

Source of data: Department of Statistics, Amman

Medical Services in the Villages of the Wadi Rajib Watershed Area

Village	Hospital	First Aid Center	Branch for a Medical Center	Mother & Child Care	Pharmacy	Dentist	M. Lab
Anjara	0	1	0	1	3	1	1
As Sufsafa	0	0	0	0	0	0	0
As Sakhina	0	0	1	0	1	0	0
Al Fakhira	0	0	0	0	0	0	0
Az Zarra'a	0	0	0	0	0	0	0
Ash Shikara	0	0	0	0	0	0	0
Jabal Al Akhdar	0	1	1	0	1	0	0
Rajib	0	0	0	1	1	0	0
Ballas	0	0	1	0	1	0	0
Souk	0	0	0	0	0	0	0
Dahhus	0	0	0	0	0	0	0
As Safina	0	0	1	0	1	0	0

Source: Public Health Department, Ajlun

Educational Services in the Villages of the Wadi Rajib Watershed Area

Village	Kinder-garten	Elem. Boys	Elem. Girls	Mixed classes 1-3	Elem. Mixed	Sec. Boys	Sec. Girls	No. of Schools
Anjara	1	1	2	2	3	2	1	9
As Sufsafa	0	0	0	0	1	0	0	1
As Sakhina	0	1	0	1	0	0	1	2
Al Fakhira	0	0	0	0	0	0	0	0
Az Zarra'a	0	0	0	0	1	0	0	1
Ash Shikara	0	0	0	0	0	0	0	0
Jabal Al Akhdar	0	1	0	1	0	0	0	1
Rajib	0	0	0	1	0	1	1	2
Ballas	0	1	1	0	1	0	0	3
As Safina	0	1	1	0	0	0	0	2
Dahhus	0	0	0	0	1	0	0	1
Khsheibeh Foga	0	0	0	0	1	0	0	1
Thaghril Zabeed	0	0	0	0	1	0	0	1
Ka'b Mallool	0	0	0	0	1	0	0	1

Source: Department of Education, Ajlun

ANNEX 5: A LIST OF CHARITABLE SOCIETIES AND COOPERATIVES IN THE WADI RAJIB AREA

Cooperatives registered with JCC:

- 1 – Agricultural Cooperative of Ajlun (since 1971, mixed cooperative with 38 members (3 female), activities: operate a shop for agricultural input supplies, credit facilities)
- 2 – Al Rabad Castle Women Cooperative of Ajlun (since 1994, 30 female members, activities: sewing and trico training courses, handicraft production (currently stopped))
- 3 – Saif Cooperative at Ajlun (since 1996, 65 male members, activities: kindergarten)
- 4 – The Bee Keepers Cooperative at Anjara (mixed cooperative with 19 members (4 female), activities: bee keeping, shop for selling agricultural input supplies)
- 5 – Al Ehsan Cooperative at Anjara (mixed cooperative with 39 members (12 female), activities: general trading, giving loans)
- 6 – Al Tawfeeq Cooperative at Anjara (since 1974, mixed cooperative with 60 members, activities: giving loans, operate a tennis and billard hall)
- 7 – Al Zaytooneh Cooperative at Anjara (mixed cooperative with 63 members (9 female), activities: genaral trading, giving loans)
- 8 – Anjara Cooperative at Anjara (since 2000, mixed cooperative with 50 members, no activities yet)
- 9 – Reef Anjara Cooperative at Anjara (since 1988, mixed cooperative with 35 members (2 female), activities: giving loans)
- 10 – Al Jabal Cooperative at Kufranja (mixed cooperative with 40 members (5 female), activity: operates one shop for electrical equipment)
- 11 – Al Rafeed Cooperative at Kufranja (since 1996, all male cooperative with 33 members, activities: operate an educational center offering English and computer courses, a library and a kindergarten)
- 12 – Kufranja Cooperative at Kufranja (since 1994, all male cooperative with 170 members, activities: opearte a shop for agricultural input supplies, operate a fodder mixer, operate a shop for electric equipment, giving loans)
- 13 – Al Aqsa Al Shareef Cooperative at Halaweh village (all male cooperative with 22 members, activities: general trading, child club, goat raising project)
- 14 – Ain Janna Cooperative at Ain Janna (since 1990, mixed cooperative with 25 members (3 female), activity: operation of one bus service)
- 15 – Hetteen Cooperative at Ain Janna (mixed cooperative with 202 members, activities: operate a school with 3 school buses, provide computer courses and sewing training)
- 16 – Al Ruwad Cooperative in Ain Janna (mixed cooperative with 11 members, no activities)
- 17 – Fatima Al Zahra'a Women Cooperative (since 1990, 65 female members, activities: operate a kindergarten, a hair stylist shop, trading activities, credit facilities)
- 18 – Al Siraj Cooperative at Al Hashemieh village (mixed cooperative with 70 m members, activity: operates one shop for electrical equipment)
- 19 – Al Tanoor Cooperative (presently not operational)
- 20 – Jabal Al Akhdar Women Cooperative in Jabal Al Akhdar village (since 1999, 140 female members, numerous activities supported by WSMP and other organisations)
- 21 – Thaghrit Zabeed Women Cooperative in Thaghrit Zabeed village (since 2000, 42 female members, numerous income generating activities supported by WSMP)

Charitable Societies registered with the Ministry of Social Development:

- 1 – Ballas Mixed Society (since 1995, 46 male and 8 female members, activities: lectures and seminars, sewing and trico training, 2 classes of kindergarten, civil defense training for women)
- 2 – Ain Janna Women Society (since 1981, 70 female members, activities: operate a kindergarten and a nursery, sewing training, lectures on various topics)
- 3 – Ba'oon Women Society (since 1994, 58 female members, activities: run a kindergarten, literacy courses for women, participation in bazaars with vegetables)
- 4 – Arjan Mixed Society (since 1981, 91 male and 35 female members, activities: trico and sewing training, kindergarten and nursery, various lessons for pupils, credit unit in cooperation with social development office)
- 5 – Ras Muneef Mixed Society (160 members, about 60% female members, activities: operate a kindergarten, credit unit in cooperation with social development)
- 6 – Sakhra Women Society (since 1996, currently 40 female members (not active), presently no activities)
- 7 – Sakhra Men Society (34 male members, sewing and trico training for women!, various lessons for pupils, awareness programs and seminars, assistance to poor people)
- 8 – Al Hashemieh Men Society (400 male members, activities: operate a kindergarten with 5 classes, sewing training for women, sport hall for tennis and billard, renting of stores)
- 9 – Jabal Ajloun Mixed Society
- 10 – Wahadneeh Men Society (since 1994, 200 male members, currently no activities)
- 11 – Ajloun Women Society (since 1982, 85 female members, activities: producing handicrafts, food processing, operate a kindergarten, lectures for women, training courses on sewing, civil defence and handicraft production)
- 12 – Anjara Mixed Society (45 members, activities: operate a kindergarten, general trading)
- 13 – Kufranja Society (57 male members, activities: kindergarten, funeral vehicle, tractor operations, sewing courses, two sewing centers)
- 14 – Hallaweh Women Society (since 1997, 15 female members, activities: children's club)
- 15 – Ebeen and Ebeleen Mixed Society at Ebeen village (60 members, 15 female, activities: funeral vehicle, kindergarten, sewing courses, giving loans)
- 16 – Ebleen Women Society at Ebleen village (55 female members, activities: children's club, sewing courses, lectures for women on various topics)
- 17 – Ebeen Women Society at Ebeen village (50 female members, activities: sewing courses, English courses, civil defence courses, trico courses and fitness courses)
- 18 – Al Hillal Society at Fakhira village (since 1996, 65 male members, numerous income generating and water harvesting and storage activities with support by WSMP and funding support by GEF)
- 19 – Rajib Society at Rajib village (All male society, strong tribal conflicts)

ANNEX 6: CROP AND LIVESTOCK PRODUCTION

Crop production data from Wadi Rajib area:

CROP	Area (du)	Average yield in kg/du
Rainfed wheat	1250	30
Irrigated wheat	300	100
Rainfed barley	500	30
Irrigated barley	80	100
Irrigated broad bean	220	
Rainfed vegetables: onion + okra	50	
Total annual crops:	2400	
Rainfed olive*	4870	250
Irrigated olive*	931	400
Rainfed apple (in production)	219	400
Rainfed apple (new plantation)	60	
Rainfed pear (in production)	49	100
Rainfed pear (new plantation)	34	
Rainfed fig (in production)	158	400
Rainfed fig (new plantation)	10	
Rainfed apricot (in production)	14	250
Rainfed apricot (new plantation)	11	
Rainfed almond (in production)	32	230
Rainfed almond (new plantation)	6	
Rainfed peach (in production)	50	330
Rainfed peach (new plantation)	28	
Rainfed plum (in production)	75	300
Rainfed plum (new plantation)	6	
Rainfed pomegranate (in production)	21	1100
Rainfed pomegranate (new plantation)	4	
Rainfed cherry (in production)	4	200
Rainfed cherry (new plantation)	5	
Irrigated apricot (in production)	11	350
Irrigated apricot (new plantation)	5	
Irrigated fig (in production)	56	550
Irrigated fig (new plantation)	6	
Irrigated pomegranate (in production)	117	1400
Irrigated pomegranate (new plantation)	10	
Others: banana, date palms, mango, avocado	379	
Total fruit trees:	7171	

* = the area under olive plantation comprises mature trees as well as newly planted seedlings

Total olive production in Wadi Rajib is 374 tons per year. 19 tons are used as pickled olives, the rest for oil milling.

Source of data: Agricultural Directorate Ajlun

Livestock production data from Wadi Rajib area:

Livestock census 1991

No. of livestock breeders	Sheep	Goats	Cows	Horses	Mules	Donkies
171	3886	6798	356	111	40	318

Livestock census 1997**

Area	No. of livestock breeders	Sheep	Goats	Cows	Horses	Mules	Donkies
Ballas, As Safina	78	535	1455	115	47	0	95
Ash Shikara, Jabal Al Akhdar, Al Fakhira, Az Zarra'a, As Sakhina	85	327	2688	158	36	13	97
Dahhous, Part of Rajib	86	3559	4110	160	55	4	165
Anjara, As Sufsafa, Souk, Other parts of Anjara	199	1163	5630	153	81	12	215
TOTAL	448	5584	13883	586	219	29	572

** = The livestock census 1997 includes areas falling outside the Wadi Rajib watershed boundaries, but being part of the mentioned communities.

Source of data: Agricultural Directorate Ajlun

Remark: Reliable data on livestock numbers is very hard to come by. Therefore the above data should be treated with extreme care. The 1991 and 1997 figures should not be compared as the exact areas covered in each census are not clearly specified.

ANNEX 7: INSTITUTION BUILDING AND TRAINING ACTIVITIES

Sample Agreement between WSMP and co-operating Charitable Societies or Cooperatives:

Project Agreement between WSMP and a Charitable Society or Cooperative

First Party: Watershed Management Project represented by Mr. Jörg, Weik, hereinafter referred to as (WSMP)

Second Party: _____
hereinafter referred to as (the society)

Both parties have agreed to implement and manage small income generating activities and construct cisterns and establish other agreed activities at _____ and for their residents only according to the following terms:

1. The introduction of the agreement is an integral and indivisible part of it.
2. Both parties will cooperate jointly in the preparation of the project, following up its implementation, evaluating its progress and its efficiency, performing studies and coordinating in any field not included in this agreement.
3. Both parties have agreed that all beneficiaries must be members of the society¹.
4. Both parties have agreed to form a joint committee to discuss the loans, take decisions and prepare payment orders. The representatives of the society; mainly the head, the secretary and the treasurer, and the Watershed Management Project (WSMP) will appoint their representatives in the committee.
5. Both parties have agreed to authorize the committee - above mentioned in 4 - to prepare all forms of papers and documents that both the project and the society and its members will use, in agreement with the financial and administrative policy of the WSMP project.
6. Both parties have agreed that financing the society and the members and giving them loans is to be done according to the conditions of WSMP for IGA's and cisterns. This includes loans obtained directly from WSMP, or obtained from any other source but through WSMP, or other projects - such as GEF, or projects financed in the future by WSMP, or projects financed from the funds paid back to the society.
7. For a **Voluntary Society**, WSMP will fund 85% of the costs, however, the maximum amount of funding provided by WSMP for each individual project

¹ Cooperative societies require memberships, meanwhile Voluntary Societies can also benefit non members.

shall not exceed JD 383 for IGA's and 510 for cisterns. The society will fund 10% of the costs and will be responsible to get 5% from the beneficiaries. Therefore the maximum amount for income generating projects will be JD 450 and JD 600 for cisterns. For a **Cooperative Society**, WSMP will fund a maximum amount for income generating projects of JD 450 and JD 600 for cisterns. Each family can get only one loan.

8. Both parties have agreed that the society will ensure the society's and beneficiary's contribution of the total amount of every single income generating activity or cistern that is approved by WSMP. If the society's contribution is given in cash it has to be deposited at the joint account before WSMP starts supporting the project.
9. Both parties have agreed that the society is responsible for following up the implementation of the project in regards to either the society or its members. The society will solely be liable to all claims and allegations whatever they will be, and liable to whomever declares, alleges, or submits a complaint, either official or not. The employees of WSMP will not be liable to any allegation or claim whatever it will be.
10. Both parties have agreed that, at the end of the final phase, and when the project is handed over to the society, money loaned for IGA's relating to purchasing goats or sheep for fattening or breeding, that the society has to stipulate and to guarantee that they must be grown or bred in an enclosed plot or shelter, and never be left to graze freely outside the said shelter.
11. Both parties agreed, that when the project is turned over to the society, the society has to reinvest the revenue of the income generating projects to finance new loans for constructing cisterns at a gross value up to JD 600, and for additional income generating activities at a gross value of up to JD 450.
12. Both parties have agreed, on the occurrence of a foreign circumstance or force major that necessitates the ending, or the canceling of the agreement before full implementation of the project, that they are to send notice thirty days before the ending or the cancellation. If the society wants to end or cancel the agreement, the society shall refund the WSMP all endowments that had been paid to the society either in kind or in cash.
13. All clauses, appendices and forms relating to this agreement are subject to modification, and revision, whenever WSMP finds it necessary.
14. Both parties have agreed to open a joint account in the name of WSMP and the society; the representative of the WSMP will be the sole authorized person to sign and draw from the bank / only both partners together are authorized to sign and draw from the bank.

This agreement has been read, understood, accepted and signed by the legal representative of each party, in the presence and witness of:

Name

Signature

First Party: _____

Second Party: _____

First witness: _____

Second witness: _____

Date: ____/____/____

Not applicable are deleted. (Paragraphs 3,7,8,14)

Watershed Management Project Rules, Regulations and Working Procedures

Rules and procedures for obtaining a loan from a Voluntary Society and/or a Cooperative

A. Steps for acquiring loans for income generating projects (IGA's):

- A filled application form should be forwarded to the society.
- The steering committee, which should consist of an odd number of members, will consider the application and either approve or reject the proposal made.
- In case of a preliminary approval, the Watershed Management Project staff will conduct a feasibility study of the proposed IGA project.
- According to the result of the feasibility study Watershed Management Project will give final approval or exclude the project.

B. Rules on loan allocation:

- ◆ Beneficiaries: Must live within the boundary of the VS/C.
Activity must be within the boundary of the VS/C.
- ◆ Non-environmentally friendly projects such as goat production and charcoal making will not be supported by the project. Other activities excluded from project support, will be listed and reviewed quarterly in a separate memo.
- ◆ Maximum total amount for Income Generating Activities (IGAs) is JD 450 and for cisterns JD 630.
- ◆ For cooperatives, all beneficiaries have to be members. In the case of voluntary societies, any non-member can also apply for a loan. (Exception: Ba'oon, which is treated like a cooperative in all aspects).
- ◆ In a voluntary society one family can take several IGA's but only up to a total amount of JD 450. They can also take further loans as long as the total loan amount does not surmount the sum of JD 450. At no time the total debt of the family can be more than JD 450. For the cooperative, every member can take loans up to a total of JD 450 with the exception of group activities (handicraft projects).
- ◆ Group loans for handicrafts are possible in addition to individual loans, and can reach a total of 600 JD.
- ◆ No loans will be allocated to groups for Income Generating Activities other than for handicrafts.
- ◆ The beneficiary must provide a guarantee in the form of signed bank checks. In addition to the signed bank checks, a guarantee bond has to be signed by a guarantor.

◆ One guarantor can guarantee for more than 1 loan, however, the total guarantee amount should not exceed 70% of his monthly salary at the bank.

◆ All loans have to be repaid in full over a period of 24 months in case of an IGA, and 30 months in the case of cisterns. There are no charged interests but a service fee is fixed by each voluntary society or cooperative. In the case of cisterns, the loan amount is paid in 3 phases according to the progress of the cistern construction.

◆ Required inputs for each IGA are jointly purchased by Watershed Management Project staff, the Voluntary Society / Cooperative, and the beneficiary. Inputs are provided in kind. Appropriate bills are required. WSMP can request to take part in all purchases at all times.

◆ Large livestock, including calves and ewes, will be bought under the supervision of a livestock specialist. All beekeeping projects, in addition to the components of bees and equipment, should include supervision and training.

◆ The beneficiary is obliged to follow the instructions and advice of the technical staff, and the specialist of Watershed Management Project (e.g. regarding fodder, medicine, etc.). The beneficiaries are also obliged to provide information and data for M&E purposes if requested to do so.

◆ The IGA will be followed up regularly by the group and Watershed Management Project during establishment and implementation. If the beneficiary sold part or all of the inputs provided, all checks will be cashed in immediately, without further notice.

◆ Cisterns started without approval will not be supported by the project.

Training Activities in each Pilot Area supported by WSMP between 1998 and November 2000:

Technical Training Courses:

No.	Pilot Area	Topic of Training	Date	Duration	Trainees	Trainer	Remark
1	Al Hillal	Bee keeping	11/98	4 days	6 M	Al Hiari	
2	Al Hillal	Thyme planting and processing	11/98	1 day	12 F	WSMP staff	
3	Al Hillal	Sewing	07/99	5 months	15 F	GUVS	
4	Al Hillal	Fruit tree pruning	02/00	1 day	27 M	Ag. Dir.	
5	Jabal Al Akhdar	Thyme planting and processing	04/99	1 day	25 F	WSMP staff	
6	Jabal Al Akhdar	Bee keeping (theory)	05/99	1 day	4 M 1 F	Al Hiari	
7	Jabal Al Akhdar	Bee keeping (practice)	05/99	16 days	4 M 1 F	Al Hiari	2/week for 2 m.
8	Jabal Al Akhdar	Sewing techniques	06/99	6 months	9 F	Eman Amarat	
9	Jabal Al Akhdar	Fruit processing	07/99	1 day	13 F	WSMP staff	
10	Jabal Al Akhdar	Fruit processing	08/99	1 day	15 F	WSMP staff	
11	Jabal Al Akhdar	Grape processing	08/99	1 day	15 F	WSMP staff	
12	Jabal Al Akhdar	Grape processing	08/99	1 day	12 F	WSMP staff	
13	Jabal Al Akhdar	Handicraft	10/99	24 days	45 F	Randa Qobti	
14	Jabal Al Akhdar	Sewing techniques	11/99	6 months	9 F	Eman Amarat	
15	Jabal Al Akhdar	Lamb Fattening Chicken Raising	11/99	1 day	7 M 8 F	Ag. Dir./ WSMP	
16	Jabal Al Akhdar	Winter cropping	11/99	1 day	12 F	Ag. Dir./ WSMP	
17	Jabal Al Akhdar	Handicraft	02/00	8 days	15 F	Randa Qobti	
18	Jabal Al Akhdar	Handicraft	04/00	8 days	16 F	Eman Amarat	
19	Jabal Al Akhdar	Bee keeping (theory)	04/00	1 day	12 M+F	Al Hiari	
20	Jabal Al Akhdar	Bee keeping (practice)	04/00	16 days	12 M+F	Al Hiari	2/week for 2 m.
21	Jabal Al Akhdar	Weaving and cloth recycling	06/00	1 week	2 F	Ass. Protect. Nature	In Egypt
22	Jabal Al Akhdar & Thaghrit Z.	Food processing	08/00	1 day	19 F	Nabeeh Al Kayed	
23	Jabal Al Akhdar	Sewing	08/00	1 month	5 F	Eman Amarat	

No.	Pilot Area	Topic of Training	Date	Duration	Trainees	Trainer	Remark
24	Thaghrit Zabeed	Sewing	09/00	6 months	7 F	Alia'a Rawajbeh	Sept.- March 01
25	Thaghrit Zabeed	Food processing	10/00	1 day	13 F	Nabeeh Al Kayed	
26	Ba'oon	Handicraft	11/00	1 month	7 F	Eman Amarat	Nov.- Dec.
27	Ba'oon	Food Processing	11/00	1 day	15 F	Nabeeh Al Kayed	

Institution Building and General Training Courses:

No.	Pilot Area	Topic of Training	Date	Duration	Trainees	Trainer	Remark
1	Al Hillal	Bookkeeping	03/99	2 days	2 M	WSMP staff	
2	Al Hillal	M&E of small projects	08/00	2 days	1 M	GEF/ Muneer	In Dana
3	Jabal Al Akhdar	Family health	06/99	2 days	24 F	Family Org.	
4	Jabal Al Akhdar	First Aid	06/99	5 days	20 F	Civil Defence	2 courses
5	Jabal Al Akhdar	First Aid	06/99	5 days	20 F	Civil Defence	
6	Jabal Al Akhdar	Accounting	06/99	2 days	2 F	JCC	
7	Jabal Al Akhdar	Computer (typing, Windows, Winword, Excel)	07/99	40 days	2 F	Alwan Center Ajlun	July - Sept. 99
8	Jabal Al Akhdar	Literacy course	09/99	80 days		From Jabal Al Akhdar	Over 9 months period
9	Jabal Al Akhdar	Business management	10/99	2 days	19 F	CARE Intl.	
10	Jabal Al Akhdar	Project proposal writing, project design and fund raising	11/99	3 days	10 F	CARE Intl.	
11	Jabal Al Akhdar	Accounting (in Arabic)	11/99	4 days	2 F	JCC	In Amman
12	Jabal Al Akhdar	Seminar of marketing and exports	11/99	2 days	3 F	JCC	In Amman
13	Jabal Al Akhdar	Accounting for the committee	03/00	3 days	6 F	JCC	
14	Jabal Al Akhdar	Filling M&E formats	05/00	1 day	4 F	Dr. Bauer	STC
15	Jabal Al Akhdar	English language course I	05/00	6 weeks	12 F	Mrs. Vicki	May- June
16	Jabal Al Akhdar	English language course II	07/00	8 weeks	10 F	Mrs. Vicki	July- Sept.
17	Jabal Al Akhdar	Management training	08/00	2 days	10 F	JCC	
18	Jabal Al Akhdar	English language course III	09/00	8 weeks	10 F	Mrs. Vicki	Sept.- Nov.

No.	Pilot Area	Topic of Training	Date	Duration	Trainees	Trainer	Remark
19	Jabal Al Akhdar	Literacy course I	09/00	9 months	17 F	Educ. Min.	Sept.- June 01
20	Jabal Al Akhdar	Literacy course II	09/00	9 months	17 F	Educ. Min.	Sept.- June 01
21	Thaghrit Zabeed	Cooperative administration	06/00	1 day	4 F	JCC	
22	Thaghrit Zabeed	Visit to Jabal Al Akhdar Coop.	08/00	1 day	20 F	WSMP staff	
23	Thaghrit Zabeed	Literacy course I	09/00	4 months	19 F	Shareefeh Dababseh	Sept.- Jan. 01
24	Thaghrit Zabeed	Bookkeeping and Management	10/00	3 days	6 F	JCC	
25	Thaghrit Zabeed	Accounting	10/00	2 days	6 F	JCC	
26	Thaghrit Zabeed & Jabal Al Akhdar	Visit to reproductive Women Cooperative of Marka	10/00	1 day	21 F	WSMP staff	

M = Men

F = Women

ANNEX 8:**INCOME GENERATING ACTIVITIES AND RESULTS OF MONITORING AND EVALUATION EXERCISES**

Beneficiaries of the Income Generating Activities (IGA) Program in the Al Hillal Society Area (Villages: As Sakhina, Al Fakhira, Shikara, Zerra'a, As Safsafa, As Souk) as of 15 November 2000:

No.	Name of Beneficiary	M/F	Type of IGA	Total Loan	Starting Date	Remark
1	Aisha Zghoul and Nehaya M. Zghoul	F	Thyme Planting	342 JD	12/98	Group of 2
2	Fehmeieh Mustafa Hamad	F	Thyme Planting	209 JD	12/98	
3	Nawal Yehia Greishat	F	Thyme Planting	221.2 JD	12/98	
4	Rawheieh Ahmad Mossalam	F	Thyme Planting	180 JD	12/98	
5	Abeer M., Ghadeer M., Khitam Abed Al-Rahman	F	Thyme Planting	413.4 JD	12/98	Group of 3
6	Fatima Mustafa, Raba'a Ali, Muntaha M. Mossalam	F	Thyme Planting	136.8 JD	12/98	Group of 3
7	Hasseeneh Hassan	F	Thyme Planting	200.8 JD	12/98	
8	Najah Ananzeh, Fatmeh Sayel, Rabeea'a Hamad	F	Thyme Planting	219 JD	12/98	Group of 3
9	Nihad Sa'ad Afif	F	Thyme Planting	211 JD	12/98	
10	Ahlam Amarat, A'aesha Zghoul, Ameenah and Halimeh Amarat	F	Thyme Planting	333 JD	12/98	Group of 4
11	A'asheh Sulaiman Al-Amarat	F	Onion, broad bean and wheat planting	120 JD	12/98	
12	Fatema M. Muqbil Amarat	F	Dairy Cow	351.5 JD	12/98	
13	Amneh Ahmad Bayer	F	Chicken Raising	300 JD	12/98	
14	Sabha Ali Salem	F	Chicken Raising	192 JD	12/98	
15	Amneh Esm'a'il Amarat	F	Chicken Raising	200 JD	12/98	
16	Nahla Mohammed Amarat	F	Chicken Raising	230 JD	12/98	
17	Esfeieh Ma'atouk, Khadeejeh Freihat	F	Small Shop	350 JD	12/98	Group of 2
18	Fhmi Ali Greishat	M	Thyme Planting	325 JD	12/98	
19	Juma'a M. Greishat	M	Chicken Raising	204.3 JD	12/98	
20	Hussein Aisa Amarat	M	Horse for Ploughing	323 JD	12/98	
21	Jamil and Mohammed Sa'aid Greishat	M	Horse for Ploughing	450 JD	12/98	Group of 2
22	Fozat Mahmoud Greishat	M	Bee Keeping	271 JD	05/99	
23	Ahamad Thef Allah	M	Bee Keeping	271 JD	05/99	
24	Wasfi Ahmad Al Zghoul	M	Bee Keeping	271 JD	05/99	
25	Ahmad Souleiman Al Zghoul	M	Bee Keeping	271 JD	05/99	
26	Hamdeh M. Yousef Al Zghoul	M	Bee Keeping	271 JD	05/99	
27	Hamad Abed Al Rahman Al Zghoul	M	Bee Keeping	271 JD	05/99	
28	Abed Al Majid Yousef and Ahmed Greishat	M	Lamb Fattening	950 JD	08/99	Group of 2
29	Tamam M. Alaiwa	F	Thyme Planting	194.8 JD	08/99	
30	Yousef Greishat	M	Thyme Planting	187.2 JD	08/99	
31	Fayez Abed Al Rohman Greishat	M	Thyme Planting	195.7 JD	08/99	
32	Omar Zghoul	M	Thyme Planting	197.5 JD	08/99	
33	Hassan Daif Allah Zghoul	M	Horse for Ploughing	427.5 JD	08/99	
34	Naser Brameh	M	Horse for Ploughing	427.5 JD	08/99	
35	Mohammed A. Kareem Zghoul	M	Horse for Ploughing	427.5 JD	08/99	
36	A'aesheh Abed Al Qader and Wadad Hussein	F	Dairy Cow	665 JD	08/99	Group of 2

No.	Name of Beneficiary	M/F	Type of IGA	Total Loan	Starting Date	Remark
37	Fatima Nueimat	F	Chicken, Turkey and Pigeon Raising	337.3 JD	08/99	
38	Shamseieh Zghoul	F	Chicken Raising	209 JD	08/99	
39	Amneh Balawneh	F	Chicken Raising	190 JD	08/99	
40	Naief Abdullah Al Zghoul	M	Horse for Ploughing	427.5 JD	01/00	
41	Rateb Moh'd Greishat and Ahmad Yousef	M	Lamb Fattening	798 JD	01/00	Group of 2
42	Ahmad Abdullah Al Zghoul	M	Lamb Fattening	427.5 JD	01/00	
43	Khazneh Ahmad Freihat Khadeeja and Ahmad Freihat	M	Lamb Fattening	855 JD	01/00	Group of 2
44	Abed Al Kareem Ahmad Greishat	M	Small Grocery Shop	228 JD	01/00	
45	Kasem Moh'd Al Zghoul	M	Dairy Cow	427.5 JD	01/00	
46	Moh'd Ali Barahmeh	M	Horse for Ploughing	427.5 JD	01/00	
47	Ahmad Saad Mefleh	M	Horse for Ploughing	427.5 JD	01/00	
48	Suleiman A. Rahman Greishat and A.Rahman Ahmad Greishat	M	Lamb Fattening	855 JD	01/00	Group of 2
49	Jameelah Mostafa Al Nueimat	M	Poultry Raising	237.5 JD	01/00	
50	Na'eemah Naser Barahmeh	M	Poultry Raising	190 JD	01/00	
51	Fawaz Mohammed Greishat	M	Lamb Fattening	427.5 JD	01/00	Re-invested
52	Amer Yousef and Joma Yousef Greishat	M	Lamb Fattening	900 JD	01/00	Group of 2 Re-invested
53	Aref Yousef Greishat	M	Peatmoss collection and Humus Prod.	400 JD	01/00	Re-invested
54	Sa'ad Mufleh Al Abadi	M	Horse for Ploughing	427.5 JD	03/00	Re-invested
55	Hassan Ali Al Zghoul	M	Horse for Ploughing	427.5 JD	03/00	Re-invested
56	Ahmad Sayel Abed Al Rhuman	M	Lamb Fattening	427.5 JD	03/00	Re-invested
57	Yahya Musalem Mufleh	M	Lamb Fattening	427.5 JD	03/00	Re-invested
58	Ali Abed Al Kareem Alawi	M	Horse for Ploughing	427.5 JD	03/00	Re-invested
59	Mohammad Mahmoud Na'amat	M	Dairy Cow	427.5 JD	03/00	Re-invested
60	Majed Mohammad Dhafleh	M	Lamb Fattening	427.5 JD	03/00	Re-invested
61	Mousa Musleh Al Zghoul	M	Lamb Fattening	427.5 JD	06/00	Re-invested
62	Ahmad Musalem Mufleh	M	Lamb Fattening	427.5 JD	06/00	Re-invested
63	Rasmi Ali Greishat	M	Lamb Fattening	427.5 JD	06/00	Re-invested
64	Ataf Yousef Greishat	M	Lamb Fattening	427.5 JD	06/00	Re-invested
65	Majed Mahmoud Ahmad Alawi	M	Lamb Fattening	427.5 JD	06/00	Re-invested
66	Mostafa Ahmed Saleh Al Zghoul	M	Horse for Ploughing	427.5 JD	06/00	GEF funds
67	Jalal Ahmad Matouq	M	Vegetable Growing	200 JD	08/00	Re-invested
68	Mustafa Ali Mohammad	M	Lamb Fattening	427.5 JD	08/00	Re-invested
69	Moh'd Abed Al Rhuman Zghoul	M	Dairy Cow	427.5 JD	08/00	Re-invested
70	Ahmad Yousef Abed Allah Zghoul	M	Calf Fattening	427.5 JD	08/00	Re-invested
71	Hani Ahmad Zghoul	M	Dairy Cow	427.5 JD	08/00	Re-invested
				26943 JD		

M = Male

F = Female

Re-invested = re-investment from repaid loans
(No WSMP contribution)

Summary: 71 Enterprises
35 Female beneficiaries (19 working together in groups)
54 Male beneficiaries (12 working together in groups)

Enterprises:	Lamb Fattening	16	Thyme Planting	15
	Horses for Ploughing	12	Poultry Raising	10
	Dairy Cows	6	Bee Keeping	6
	Vegetable Growing	2	Shops	2
	Calf Fattening	1	Peatmoss/Humus Prod.	1

Beneficiaries of the Income Generating Activities (IGA) Program in the Jabal Al Akhdar Women's Cooperative (Villages: Jabal Al Akhdar, Khshuibeh Foga) as of 15 November 2000:

No.	Name of Beneficiary	M/F	Type of IGA	Total Loan	Starting Date	Remark
1	Rahmeh Husain Amarat	F	Thyme & Chicken	234 JD	07/99	
2	Amneh Mahmoud Na'aimat	F	Shami Goats	250 JD	07/99	
3	Haneieh Beni Fawaz	F	Chicken & Turkeys	190 JD	08/99	
4	Maisoun Ya'aqoup Beni Fawaz	F	Chicken Raising	96 JD	08/99	
5	Basma Amarat	F	Chicken Raising	147.3 JD	08/99	
6	Tawfiq Ahmed and Mahmoud Saleh	M	Lamb Fattening	484.5 JD	08/99	Group of 2
7	Fatima Ahmed Amarat	F	Lamb Fattening	285 JD	08/99	
8	Kawther Hasan Salameh	F	Thyme Planting	161.5 JD	08/99	
9	Fawzeieh Ahmed Ya'aqoup	F	Thyme Planting	154 JD	08/99	
10	Najah Amarat	F	Thyme Planting	190 JD	08/99	
11	Na'aimeh M. Na'aimat	F	Thyme Pl. & Process.	364.8 JD	08/99	
12	Samia, Shoma and Jihad Amarat	F	Calf and Lamb Fattening	403 JD	08/99	Group of 3
13	Fareedeh Zghoul	F	Thyme Planting	190 JD	08/99	
14	Faiqa M. Dabous	F	Bee Keeping	271 JD	08/99	
15	Faisal M. Amarat	M	Bee Keeping	271 JD	08/99	
16	Mea'ref Abed Allah Amarat	M	Bee Keeping	171 JD	08/99	
17	Zareefeh Ahmed Zghoul	F	Bee Keeping	271 JD	08/99	
18	Yehia Salameh Amarat	M	Bee Keeping	271 JD	08/99	
19	Eman, Tahani, Amani Amarat	F	Sewing Machine	427.5 JD	08/99	Group of 3
20	Nawal M. Beni Fawaz	F	Small Shop	88 JD	08/99	
21	Etaf Yousef Amarat	F	Small Shop	285 JD	08/99	
22	Fawzeieh Sulaiman	F	Thyme Planting	133 JD	08/99	
23	Haseebah Na'aimat	F	Chicken Slaughtering	299.3 JD	09/99	
24	Tawasif Yousef Amarat	F	Dairy Cow	450 JD	02/00	
25	Amal Ahmad Hussain	F	Calf Fattening	600 JD	02/00	
26	A'aesheh Abed Allah Amarat	F	Calf Fattening	600 JD	02/00	
27	Zakeieh M. Muqbil	F	Horse for Ploughing	450 JD	02/00	
28	Fatmeh Hasan Amarat	F	Horse for Ploughing	450 JD	02/00	
29	Rasmeieh Ahmed Zghoul	F	Horse for Ploughing	450 JD	02/00	
30	Ne'amat Naser	F	Horse for Ploughing	450 JD	02/00	
31	Fatmeh Ahmed Hasan Salameh	F	Ewes for Milking	700 JD	02/00	
32	Noor and Amoneh Amarat	F	Ewes for Milking	800 JD	02/00	Group of 2
33	Khitam Salem and Amneh Esma'ail	F	Ewes for Milking	600 JD	02/00	Group of 2
34	Amneh, Khawla and Maryam Abed Al Hafith	F	Lamb Fattening	1000 JD	02/00	Group of 3
35	Yosra and Entisar Ahmed Bayer	F	Onion Planting	700 JD	02/00	Group of 2
36	Turkieh Hasan and Etaf Yousef	F	Wheat & Barley	600 JD	02/00	Group of 2
37	Fatmeh M. Hasan Amarat	F	Wheat & Barley	600 JD	02/00	
38	Nihad Sa'ad Afif	F	Rabbit Raising	Demo	02/00	
39	Ebtisam Al Faqir	F	Lamb Fattening	700 JD	03/00	
40	Ezieh Abed Al Razaq	F	Calf Fattening	600 JD	04/00	
41	Maysoon Yaaqoob Beni Fawaz	F	Chicken Raising	204 JD	04/00	Re-invested
42	Jihad Amarat	F	Vegetable Planting	170 JD	06/00	
43	Suad Moh'd Suliman Balawneh	F	Lamb Fattening	500 JD	06/00	
44	Amneh Hassan Hussein	F	Lamb Fattening	500 JD	06/00	
45	Nawal M. Beni Fawaz	F	Chicken Raising	227 JD	06/00	Re-invested
46	Jameeleh Amjad M. Rawajbeh	F	Bee Keeping	285 JD	07/00	

No.	Name of Beneficiary	M/F	Type of IGA	Total Loan	Starting Date	Remark
47	Rasmeieh Esmail Amarat	F	Ewes for Milking	600 JD	07/00	
48	Hafetheh Mohammed Falehz	F	Bee Keeping	285 JD	07/00	
49	Suad Moh'd Awad Al Momani	F	Bee Keeping	285 JD	07/00	
50	Tamam Namaat	F	Bee Keeping	285 JD	07/00	
51	Nawal Amarat	F	Bee Keeping	285 JD	07/00	
52	Najah Amarat	F	Bee Keeping	285 JD	07/00	
53	Karnleh Amarat	F	Sewing Machine	115 JD	07/00	
54	Samia, Shoma and Jihad Amarat	F	Lamb Fattening	757 JD	08/00	Group of 3
55	Yasmin Ahmad Falah	F	Dairy Cow	800 JD	09/00	Re-invested
56	Eman Amarat	F	Handicraft Prod.	700 JD	09/00	
57	Nawal Beni Fawaz	F	Handicraft Prod.	150 JD	09/00	
58	Rawheieh Na'aimat	F	Handicraft Prod.	100 JD	09/00	
59	Muna Hamed	F	Bee Keeping	285 JD	09/00	Re-invested
60	Amneh Amarat	F	Bee Keeping	285 JD	09/00	Re-invested
61	Nihad Sa'ad	F	Bee Keeping	285 JD	09/00	Re-invested
62	Rasmeih Sawaleh	F	Dairy Cow	800 JD	09/00	
63	Nahla Mohammad Hassan	F	Handicraft Prod.	150 JD	09/00	Re-invested
64	Nihad Sa'ad Afif	F	Sewing Machine	115 JD	10/00	Re-invested
65	Khitam Salem Amarat	F	Ewes for Milking	875 JD	10/00	
66	Fathieh Hussain Balawneh	F	Land Reclamation	600 JD	11/00	Re-invested
67	Rania Abed Al Rahm. Balawneh	F	Land Reclamation	400 JD	11/00	Re-invested
68	Na'aimeh M. Na'aimat	F	Handicraft Prod.	120 JD	11/00	Re-invested
69	Fareeda Balawneh	F	Chicken Raising	200 JD	12/00	Re-invested
70	Faizeh Balawneh	F	Chicken Raising	200 JD	12/00	Re-invested
TOTAL				26236 JD		

M = Male

F = Female

Re-invested = re-investment from repaid loans
(No WSMP contribution)

Summary: 70 Enterprises
78 Female beneficiaries (20 working together in groups)
5 Male beneficiaries (2 working together in a group)

Funding: WSMP Total: 22.365 JD
Jabal Al Akhdar Cooperative: 3.871 JD

Enterprises:	Bee Keeping	14	Lamb and Calf Fattening	11
	Poultry Production	7	Thyme Planting	6
	Ewes for Milking	5	Handicraft Production	5
	Horse for Ploughing	4	Plant Production	4
	Dairy Cow	3	Sewing Machines	3
	Small Shops	2	Land Reclamation	2
	Rabbit Raising	1	Shami Goats	1
	Thyme Processing	1	Chicken Slaughtering	1

Beneficiaries of the Income Generating Activities (IGA) Program in the Thaghrat Zabeed Women's Cooperative (Villages: Thaghrat Zabeed, Ka'b Mallool) as of 15 November 2000:

No.	Name of Beneficiary	M/F	Type of IGA	Total Loan	Starting Date	Remark
1	Kafa Suleiman	F	Dairy Cow	625 JD	07/00	
2	Ameeneh Dababseh	F	Small Shop	350 JD	07/00	
3	Ai'sheh Ali	F	Chicken Raising	200 JD	08/00	
4	Fehmieh Saleh	F	Poultry Raising	250 JD	08/00	
5	Fawzieh Suleiman	F	Chicken Raising	200 JD	08/00	
6	Wafeeqa Mohammad	F	Chicken Raising	200 JD	09/00	
7	Alia'a Mahmoud	F	Chicken Raising	200 JD	09/00	
8	Zahra Hussein	F	Horse for Ploughing	450 JD	09/00	
9	Hanieh Suleiman	F	Chicken Selling Shop	300 JD	09/00	
10	Eisal Al Zghoul	F	Turkey Raising	200 JD	10/00	
11	Ghalia Ali Dababseh	F	Ewes Raising	450 JD	10/00	
12	Hiyam Khalaf Dababseh	F	Horse for Ploughing	450 JD	10/00	
13	Fatmeh Ibrahim	F	Horse for Ploughing	450 JD	10/00	
14	Haneieh Ahmad Dababseh	F	Ewes Raising	450 JD	10/00	
TOTAL				4775 JD		

F = Female

Summary: 14 Enterprises
14 Female beneficiaries

Funding: WSMP Total: 4.775 JD

Enterprises:	Poultry Production	6	Horses for Ploughing	3
	Ewes Raising	2	Dairy Cow	1
	Small Shop	1	Poultry Shop	1

Beneficiaries of the Income Generating Activities (IGA) Program in the Ba'oon Women Society (Village: Ba'oon) as of 15 November 2000:

No.	Name of Beneficiary	M/F	Type of IGA	Total Loan	Starting Date	Remark
1	Aesheh Ahmad Ali	F	Poultry Raising	200 JD	11/00	
2	Najah Alqdah	F	Horse for Ploughing	382.5 JD	11/00	
3	Turkeyeh Qdahat	F	Small Shop	200 JD	10/00	Enlarged
4	Maryam Yousef	F	Horse for Ploughing	382.5 JD	11/00	
5	Sameerah Ahmad Ali	F	Horse for Ploughing	382.5 JD	11/00	
TOTAL				1547.5 JD		

F = Female

Summary: 5 Enterprises
5 Female beneficiaries

Funding: WSMP Total: 1.547,5 JD

Well-Being Matrix

Date:

Name of Household:

Village:

Poverty Indicators	Scoring Factor	Better-Off	Medium	Poor	Situation of this household	Scoring points X Factor
		1 Point	2 Points	3 Points		
Car, Truck, Tractor, TV	2.5	TV Car	TV No car	No TV No car		
Land Ownership	2.5	> 5 Du	0-5 Du	No land		
Income from Employment or Pension	2.5	> 120 JD per month	70-120 JD per month	0-70 JD per month		
Livestock Ownership	2.5	1 Horse, >1 cow and >10 sheep/g.	1 cow and/or 1-10 sheep or goats	No large livestock, only poultry		
Charity and Social Aid	2.0	Do not get any	Get occasionally	Get charity		
Women headed household with children	2.0	With sons >18 and working	With kids 14-18 occ. work	With kids under 14, no employ.		
Debts	1.5	No debts	Debts, but regular income	Debts to cover basic needs		
House	1.5	New, large, well furnished	In between	Old, small, 3 per room, bath outs.		
Number of Family members	1.0	< 6	6 - 9	> 9		
Number of Handicapped in the Family	1.0	No handi-capped	1 with minor handicap	> 1 or seriously handi-capped		
					TOTAL:	
Overall Score		Better-off: 19 - 31	Medium: 32 - 44	Poor: 45 - 57		

Monitoring and Evaluation Formats on IGAs used by WSMP:

Monitoring Format for Chicken/Eggs Production

(monthly)

Name of farmer: _____

VS/C: _____

Reporting period _____

Cost of chickens: _____ JD

	Benefit	Cost		
	Value of own egg consumption (JD)	How much did I get from selling chicken? (JD)	How much did I spend on fodder? (JD)	How much did I spend on treatment? (JD)
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Total				

Profit calculation sheet for chicken/egg production

Name of farmer: _____

VS/C: _____

Date: _____

No. of chicken (start): _____

No. of chicken (end): _____

Reporting period: _____

Benefits	JD
Sales of eggs	
Sales of chicken	
Value of own egg consumption ¹	
Value of stock increases ²	
Total Benefits	
Costs	
Purchasing Fodder	
Treatments	
Purchasing Chicken	
Depreciation of chicken stock ³	
Value of stock decreases ⁴	
Total costs	
Profit (benefits minus costs)	
Profit from WSMP chicken⁵	

¹ Multiply the number of eggs consumed by the family with the average price of an egg.

² If the productive stock (hens 6 months old or more) did **increase** during the reporting period, calculate the number of chicken which are **more than at the beginning** of the reporting period and multiply this number with the average price of a chicken.

³ 50% of costs of original supply of chicken.

⁴ If the productive stock (hens 6 months old or more) did **decrease** during the reporting period, please calculate the number of chicken which are **less than at the beginning** of the reporting period and multiply this number with the average price of a chicken.

⁵ Calculate the share of the profit for the WSMP chicken on the basis of the share of the number of chicken originally being supplied by the WSMP.

Monitoring Format for Lamb Fattening Projects

(per cycle)

Name of farmer: _____ VS/C: _____

Reporting period: _____.

Lambs	
No. of bought lambs	
Date of buying	
Weight at buying	
Price / Lamb	
Weight at selling	
Price / lamb	

Fodder (purchased, produced of grazing)			
Quantity	Type	Cost	Date
			Total

Treatment		
Type	Cost	Date
		Total

Profit calculation sheet

Benefit calculation/JD

Item	Number	Price/JD
Lambs sold		
Manure sold	xxxxxxxxxxxxx	
Total Benefit		

Cost calculation/JD

Item	Number	Price/JD
Lambs bought		
Fodder (bought, produced)	xxxxxxxxxxxxx	
Treatment	xxxxxxxxxxxxx	
Stock Decrease		
Total cost/JD		

Monitoring Format for Cow/Milk Production
(monthly)

Name of farmer: _____
Reporting period _____

VS/C: _____
Cost of the cow: _____ JD

	Benefit		Cost	
	How much milk & milk products did I consume at home? (JD)	How much did I gain from selling milk & milk products? (JD)	How much did I spend on fodder? (JD)	How much did I spend on treatment? (JD)
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Total				

Profit calculation (Annual)

Benefit calculation / JD

*Value of own milk & milk products consumption	
Sale of milk & milk products	
Value of new calf	
<u>Total Benefit / JD</u>	

Cost calculation / JD

Fodder	
Treatment	
<u>Total Cost / JD</u>	

Profit calculation / JD

Total Benefits	
Total Cost	
Gross profit	
**Depreciation of cow	
Net profit	

* Multiply the quantity of milk & or milk products consumed by the family by the average price of a Kg of milk or that product.

** Depreciation is calculated at 20% of the original cost of the cow.

Monitoring Format for a Horse for Ploughing

Name of beneficiary: _____ VS /C: _____ Reporting date: _____

Cost of the horse and plowing equipment: _____

Benefit calculations

	Jan	Feb	March	Apr	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Total
Plowing of own land JD/Du													
Plowing of other land JD/Du													
Value of new born													
Total Benefit													

Cost calculation

	Jan	Feb	March	Apr	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Total
Fodder													
Treatment													
Total Cost													

Profit calculations

Total Benefit													
Total Cost													
Gross profit													
*Depreciation													
Net Profit													

*Depreciation is calculated at 20%, which means that a two-year-old horse will plow for 5 years.

Monitoring Format for Green Thyme Production

Name of farmer: _____ Name of cooperative/society: _____ Establishing date: _____ Planted area: _____ Dunums
 *Cost of establishing the irrigation system: _____ JD Amount of water used: _____ m³
 Specify source of water for irrigation (e.g. Tap, Cistern, small metal tank): _____

Cost Calculation / JD

Cost / JD	Jan		Feb		March		April		May		June		July		August		Sept.		Oct.		Nov.		Dec.		Total		
	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	
Seedlings																											
Water/m ³ / JD																											
Labour																											
Fertilizers																											
Pesticides																											
Transportation & Distribution																											
Total Cost																											

Benefit Calculation Kg/JD

Benefit	Jan		Feb		March		April		May		June		July		August		Sept.		Oct.		Nov.		Dec.		Total		
	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	
Sale																											
Household use																											
Value of Present Stock																											
Total Benefit																											

Profit calculation Kg/JD

Gross Profit																											
**Depreciation																											
Net Profit																											

* Water tank, pipes, hoses
 **Depreciation of irrigation system 25%, Pipes last for 3 years, a water tank for 5 years; an average is calculated at (4 yrs)
 Exclude those who got the project's support only to get the fence and selection is done among those in the middle position and who are able to fill this form.

Monitoring Format for Processed Thyme Production

Name of farmer: _____ Date: _____

Name of cooperative/society: _____

Cost calculation/JD

Cost / JD	Jan		Feb		March		April		May		June		July		August		Sept.		Oct.		Nov.		Dec.		Total					
	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg				
Own production of green thyme																														
Additional bought green thyme																														
Labour																														
Other ingredients																														
Processing & Packaging																														
Transport & Distribution																														
Total Cost																														

Benefit calculation JD/kg

Benefit	Jan		Feb		March		April		May		June		July		August		Sept.		Oct.		Nov.		Dec.		Total						
	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg	JD	Kg					
Sale																															
Household use																															
Value of Present Stock																															
Total Benefit																															

Net Profit																																
-------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Exclude those who got the project's support only to get the fence and selection is done among those in the middle position and who are able to fill this form.

Results of Monitoring & Evaluation Exercises by WSMP Concerning the Profitability of IGAs

No.	IGA	Number of cases monitored/used for calculation	Time of monitoring	Total revenue per month	Total costs per month	Average total profit per month (up to now)
1	Baladi Cow	3	July-Sept. 00	141 JD	46.1 JD	94.9 JD
2	Friesian Cow	2	July-Sept. 00	235 JD	79 JD	156 JD
3	50 Chicken	2 best out of 6	May-Sept. 00	18 JD	11.75 JD	7.25 JD
4	Bee Keeping	2	April-Aug. 00	90 JD	6 JD	84 JD
5	Lamb Fattening	1	April-July 00	180.75 JD	140.25 JD	40.5 JD
6	Horse	2	Jan.-Aug. 00	86.25 JD	31.25 JD	55 JD
7	Green Thyme	2	Jan-Sept. 00	14.5 JD	1.65 JD	12.85 JD
8	Cistern with vegetables	1	Sept.99-Sept. 00	77.8 JD	43.4 JD	34.4 JD
9	Handicraft production	31	2 months	45.8 JD	6 JD	39.8 JD

ANNEX 9:

CISTERN CONSTRUCTION AND RESULTS OF MONITORING EXERCISES

Beneficiaries of Cistern Construction Program in the Al-Hillal Society Area (As Sakhina, Al Fakhira, Shikara) as of 15 November 2000:

No.	Name	Cistern Size in m ³	WSMP Contr. in JD	Soc. Contr. in JD	Total Loan in JD	Monthly Repay. in JD	Period	Remarks
1	Ahmad Mefleh Amarat	30	510	90	600	20	30/1/99-30/6/01	First Lot
2	Khawla Ahmad A. Allah	30	510	90	600	15 x 24m. 40 x 6m.	30/1/99-30/6/01	First Lot
3	Dalal Yahya Mossalam	30	510	90	600	20	30/1/99-30/6/01	First Lot
4	Abdel Majeed Greishat	30	510	90	600	20	30/1/99-30/6/01	First Lot
5	Entesar Ibrahim Moh'd	30	425	75	500	16.5 x 29m 21.5 x 1 m	30/1/99-30/6/01	First Lot
6	Maisaloun Naser Khaleel	30	382.5	67.5	450	15	30/1/99-30/6/01	First Lot
7	Ameenah Suliman Slameh	30	425	75	500	16.5 x 29m 21.5 x 1 m	30/1/99-30/6/01	First Lot
8	Monem Yousef Mohamed	30	425	75	500	16.5 x 29m 21.5 x 1 m	30/1/99-30/6/01	First Lot
9	Ahmad Yousef Fadeel	30	382.5	67.5	450	15	30/1/99-30/6/01	First Lot
10	Ahmad Moh'd Al-Sa'adiyah	30	510	90	600	20	30/8/99-30/1/02	Sec. Lot
11	Hassan Abdullah Al-Zghoul	25	425	75	500	16.5 x 29m 21.5 x 1 m	30/8/99-30/1/02	Sec. Lot
12	Moh'd Mosallam Greishat	20	340	60	400	13.5 x 29m 8.5 x 1 m.	30/8/99-30/1/02	Sec. Lot
13	Moh'd Ahmad Al-Zghoul	30	510	90	600	20	30/8/99-30/1/02	Sec. Lot
14	Ahmad Mahmoud Greishat	30	510	90	600	20	30/8/99-30/1/02	Sec. Lot
15	Naief Mahmoud Greishat	30	0	600	600	20	30/8/99-30/1/02	From Repayment
16	Hamad A. Rahman Greishat	30	0	0	600	20	30/9/00-28/2/03	GEF funds
17	Saket Hussein Mobarak Siouf	30	0	0	600	20	30/9/00-28/2/03	GEF funds
18	Khaled Khaleel O. Al-Zghoul	30	0	0	600	20	30/9/00-28/2/03	GEF funds
19	Mahmoud T. Bani Fawaz	30	0	0	600	20	30/9/00-28/2/03	GEF funds
20	Hashem Moh'd A. Balawneh	30	0	0	600	20	30/9/00-28/2/03	GEF funds
21	Hamad Ali Moh'd Greishat	25	0	0	600	20	30/9/00-28/2/03	GEF funds
22	Ahmad A. Rahman Greishat	20	0	0	600	20	30/9/00-28/2/03	GEF funds
23	Ibrahim A. Rahman Greishat	30	0	0	600	20	30/9/00-28/2/03	GEF funds
24	Adnan Ali Moh'd Greishat	30	0	0	300	10	30/4/00-30/9/02	GEF funds
25	Barakat A. Rabboh Al-Zghoul	30	0	0	600	20	30/5/00-1/11/02	GEF funds
26	Omar Abdullah Ali Greishat	30	0	0	600	20	30/4/00-30/9/02	GEF funds
27	Moh'd Said Ahmad Fadeel	30	0	0	600	20	30/4/00-30/9/02	GEF funds
28	Jom'ah A. Rahman Greishat	30	0	0	600	20	30/4/00-30/9/02	GEF funds
29	Ahmad Mustafa A. Greishat	25	0	0	500	16.5 x 29m 21.5 x 1 m	30/4/00-30/9/02	GEF funds
30	Yousef Moh'd A. Greishat	30	0	0	600	20	30/4/00-30/9/02	GEF funds
31	Abdel Fattah A. Mosallam	25	0	0	500	16.5 x 29m 21.5 x 1 m	30/4/00-30/9/02	GEF funds
32	Hussein Ahmad S. Al-Zghoul	30	0	0	600	20	30/4/00-30/9/02	GEF funds
33	Mowafak Fawaz M. Greishat	30	0	0	600	20	30/4/00-30/9/02	GEF funds
	TOTAL:	965	6375	1725	18400			

Average investment per m³ of water storage: **19 JD**

Beneficiaries of Cistern Construction Program in the Jabal Al Akhdar Area (Jabal Al Akhdar, Khsheibeh Foga) as of 15 November 2000:

No.	Name	Cistern Size in m ³	WSMP Contr. in JD	Coop. Contr. in JD	Total Loan in JD	Monthly Repay. in JD	Period	Remarks
1	Fadieh Ali Amarat	30	450	0	450	15	1/8/99-31/1/02	First Lot
2	Fatima Moh'd Amarat	30	600	0	600	20	1/8/99-31/1/02	First Lot
3	Taghreed Moussa Amarat	30	600	0	600	20	1/8/99-31/1/02	First Lot
4	Najmiah Beni Fawaz	21	420	0	420	14	1/8/99-31/1/02	First Lot
5	Raeda Suleiman Moh'd	30	600	0	600	20	1/8/99-31/1/02	First Lot
6	Aysheh Bayer	30	600	0	600	20	1/9/00-31/1/03	First Lot
7	Haleema Hassan Amarat	30	300	0	300	10	1/2/00-1/7/02	Maintenance Sec. Lot
8	Aysheh Ahmad Azyout	30	300	0	300	10	1/7/00-1/12/02	Maintenance Sec. Lot
9	Fatima Moh'd Al-Rawajbeh	30	600	0	600	20	1/7/00-1/12/02	Sec. Lot
10	Manal Dhiab Ananzeh	21	390	0	390	13	1/7/00-1/12/02	Sec. Lot
11	Fawziah Ahmad Ananzeh	30	600	0	600	20	1/7/00-1/12/02	Sec. Lot
12	Ameenah A. Razak Amarat	30	0	600	600	20	1/12/00-1/5/03	From Repay.
13	Ameenah Suleiman Amarat		0					From Repay. Under constr.
14	Kamleh Moh'd Al-Nueimat		0					From Repay. Under constr.
15	An'am Mostafa Al-Rawajbeh		0					From Repay. Under constr.
16	Raghd Mo'araf Amarat	30	0	300	300	10	1/12/00-1/5/03	Maintenance From Repay.
17	Hanieh Moh'd A.Kareem Abboud		0					From Repay. Under constr.
	TOTAL:	372	5460	900	6360			

The No. 13, 14, 15 and 17 are currently under construction.

Average investment per m³ of water storage: **17 JD**

M&E procedures and formats for cisterns

The project will monitor the costs and benefits of cisterns as follows:

- A sample of 10 cisterns will be followed up (6 of them used purely for drinking, washing and other domestic use, 2 of them for watering animals and two of them for supplementary vegetable irrigation in addition to domestic use).
- A stratified random sampling will be done selecting the required number of beneficiaries from the respective strata (see above).
- The main task of monitoring is to quantitatively assess the savings from the cistern by comparing the annual water costs before and after the cistern is functional.
- A secondary task is to qualitatively assess potential savings in labour for collecting water, the potential impact on the health situation of the family due to the improved supply of water and potential other impacts directly related to the cistern throughout the year.

The '**monitoring format for cisterns**' presented on the next page will be used for data collection. The first part of the monitoring format (basic identification and investment costs) and the baseline information (pipe water and tanker water used before the cistern was built) will be filled in by the beneficiary together with field staff during the first monitoring visit of the field staff to the selected farmer.

The main part, the table on the following page, could either be filled out by the beneficiary him-/herself on a monthly basis or with the help of project staff during the routine supervisory visits. The responsible project staff should find out which is the better and more reliable way.

And lastly, the beneficiary will be visited at the end of the season to check the data basis and to discuss the potential non-quantifiable benefits of the cistern (see '**additional monitoring sheet for cisterns**'; the page after the monitoring sheet).

After having collected all the data, the responsible field staff will calculate the total benefit from the data in the sheet and compare the data from all farmers. Reporting should be done separately for the different strata.

The qualitative impact of the cistern mentioned by the sample farmers should be described verbally in a report.

Monitoring format for cisterns¹

Name of farmer: _____ VS/C: _____ Reporting period: _____ Date: _____
 Costs of cistern: _____ Costs of pump/fittings: _____ Costs of Irrigation Facilities: _____

Water consumption and costs before the cistern was built:

Pipe water used *before* the cistern was built² (from _____ to _____): _____ m³
 _____ JD

Tanker water used *before* the cistern was built³ (from _____ to _____): _____ m³
 _____ JD

Water consumption and costs after the cistern was built (reporting period⁴ (from _____ to _____))

Month	Pipe Water		Tanker Water		Rain water ⁵
	Consumption (m ³)	Costs (JD)	Consumption (m ³)	Costs (JD)	collected from catchment (m ³)
Total					

¹ Collect the following data during your supervisory visits from the farmer, depending on your visiting schedule.
² Calculate the amount of water taken from tankers during the 12 months before the cistern was built.
³ Estimate the amount of water bought and the money spent for water delivered by the water tanker.
⁴ Starting from the months you start your monitoring, collect the data for 12 consecutive months.
⁵ Estimate together with the farmer during each supervisory visit the amount of water which was collected from the rainfall. Discuss with the farmer which proportion of the amount collected from the rainfall might have been really stored in the cistern and which proportion might have been overflowed and wasted. Fill in only the proportion/amount of water which you estimated as being collected in the cistern.

Comparison of water consumption and water costs

Period	Water Consumed (m ³)	Water Costs (JD)	Costs per m ³ (JD/m ³)
Before the cistern was built (from _____ to _____)			
After the cistern was built (from _____ to _____)			
Difference			

Savings from the cistern per year⁶: _____ JD

Profit/loss from the cistern per year⁷: _____ JD

⁶ Calculate the total amount of water consumed per year after the cistern was built. Multiply this figure with the difference in the costs per m³ of water. This figure reflects the annual savings in water costs of the family after having a cistern assumed that they would have used the same amount of water before the cistern was built. The savings in terms of cash alone are lower because the family will use more water when the water is cheaper. The additional savings are not realised in cash money but reflect the higher living standard for the family from having access to more water.

⁷ Subtract the annual depreciation costs from equipment (10% from the costs of the cistern, 20% from the costs of the pump/fittings and irrigation equipment) from the calculated savings. This figure reflects the calculated profit (in case the figure is positive) or loss (in case the figure is negative) from the cistern for the family p.a.

Additional monitoring sheet for cisterns

The following information is only collected once at the end of the reporting period.

Please hold informal discussions with the family member most knowledgeable about the cistern, water purchases and water use.

Questions concerning additional, not quantifiable benefits:

Do you save time for water collection since you have the cistern?
If yes, describe the changes and tell us how many hours per year you save?

Did you see any changes in the health and nutrition status of your family since you have the cistern?

Is there any difference in the money spent for medicine?
If yes, describe the changes and savings and tell us how much money you saved!

What other changes happened as a direct consequence of your cistern?
Describe the 'good' and the 'bad' consequences!

If the farmer gets additional benefits which you can quantify, you can add the additional benefit to your savings from the cistern per year (see monthly monitoring sheet).

Caution: Do not add the additional benefits from increased production of livestock and supplementary irrigation. These benefits are already included in the savings of water costs.

When reporting, describe the non-quantifiable benefits verbally.

Results of Monitoring the Impact and Savings per Family from Cistern Construction:

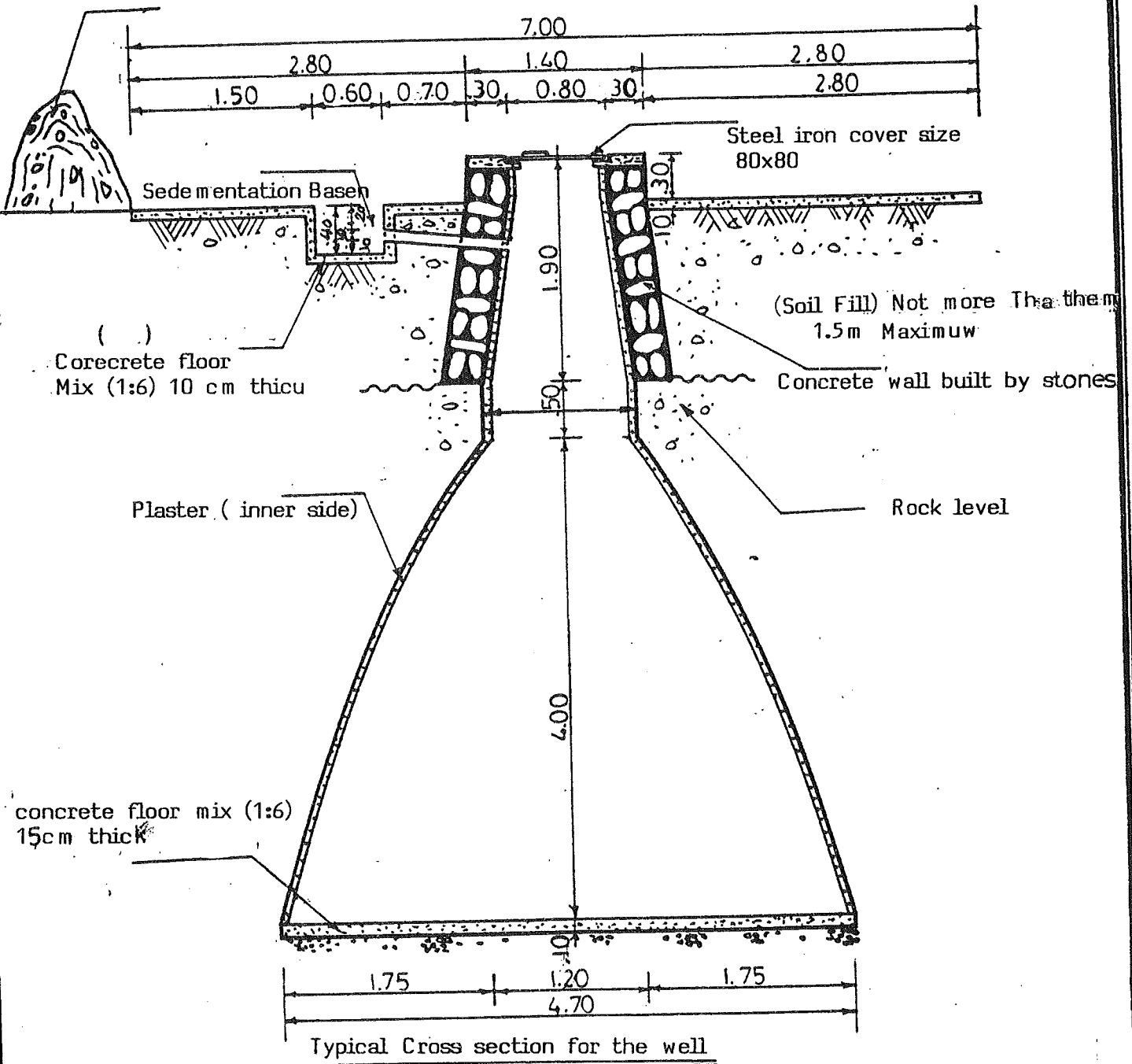
(In the year 2000, 7 families living in the target areas and using a newly built cistern were requested to closely monitor their water consumption and the impact of the cistern on their savings.)

Family	Cost of Cistern (JD)	Cost of Pumps and Fittings (JD)	Water used before (m ³)	Water used with cistern (m ³)	Water cost before (JD)	Water cost with cistern (JD)	Cost per m ³ before (JD)	Cost per m ³ after (JD)	Savings from the cistern (JD/y)	Profit/Loss from the cistern (JD/y)
1	600	35	322	316	228.8	79.0	0.710	0.242	152.5	85.0
2	600	35	116	102	41.6	13.2	0.358	0.129	23.4	- 43.6
3	600	0	100	130	32.8	10.4	0.328	0.080	32.2	- 27.8
4	600	35	80	169	7.6	11.9	0.094	0.070	4.1	- 62.9
5	600	35	60	110	60.0	50.0	1.000	0.454	60.1	- 6.9
6	700	0	144	224	144.0	164.0	1.000	0.732	60.0	-10.0
7	600	35	254	282	54.7	56.4	0.215	0.200	4.2	- 62.8
Total			1076	1333	569.5	384.9	0.529	0.272		
Average	Change			+23.9%		-32.5%		-48.6%	48.1	- 18.4

This means in other words that on average, among the 7 test families, the water consumption increased by 23.9 % one year after they had started using the new cistern. At the same time the cost of the water consumed decreased by 32.5% which resulted in savings on water costs per family of 48.1 JD. The cost per m³ consumed decreased by 48.6% from an average cost of 0.529 JD before, to 0.272 JD after the construction of the cistern. Still, the overall investment for such a cistern being relatively high, the average loss after deduction of the depreciated investment amounts to 18.4 JD per year. This will obviously change after 10 years and full depreciation of the cistern.

Technical Drawings on Cistern Design:

Retention made by the earth Resulted from the excavation



Typical Cross section for the well

Monitoring Format for Professional Irrigation of Vegetables/Fruit Trees from Cisterns

Name of farmer: _____ VS/C: _____ Reporting period: _____ Date: _____
 Cost of cistern: _____ Cost of irrigation facilities: _____ Area irrigated in du: _____
 Crops grown (m²): _____

Items in JD	Month																Total
Benefits																	
Sales of irrigated products ¹																	
Own consumption ²																	
Total Benefits																	
Costs																	
Seeds and seedlings ³																	
Fertilisers																	
Chemicals																	
Packaging materials																	
Marketing costs																	
Irrigation water																	
Hired labour																	
Hired equipment																	
Depreciation ⁴																	
Total Costs																	
Profit⁵																	

¹ Record the benefits from all products. In case of fruit tree irrigation estimate and add the incremental benefits you get from irrigation.
² Estimate the amount of irrigated vegetable you and your family eat and calculate the benefit on the basis of prices you get on the market for the same vegetable.
³ Do not include the costs of fruit tree seedlings.
⁴ Add here 10% of the original investment costs for the cistern and the fence and 20% of the investment costs for your irrigation equipment.
⁵ At the end of the monitoring cycle (1 year) calculate the profit by deducting the costs from the benefits.

ANNEX 10:

PARTICIPATORY LAND USE PLANNING AND RECOMMENDED LAND USE

Present Land Use in Al Hillal Pilot Area

Private Land:

Present Land Use	Area in du	% of total Area
Existing orchards	4527.591	66
Existing forests	765.480	11
Rangeland	1477.492	21.6
Annual crops	55.380	0.8
Non agriculture and settlement areas	41.750	0.6
TOTAL	6867.693	100

The private land is composed of 253 individual plots with a total area of 6867.693 dunum.

171 plots with a total area of 4839.104 dunum are owned under the "Masha'a" land tenure system. This corresponds to 70.46% of the private land area.

82 plots with a total area of 2028.589 dunum are owned under the "Mulk" or individual land tenure system. This corresponds to 29.54% of the private land area.

State Land:

Present Land Use	Area in du	% of total Area
Existing forests and bare lands	3585.593	100

The state land is composed of 32 individual plots with a total area of 3585.593 dunum.

Code System used for the Recommended Land Use Map of Wadi Rajib

- Code 1 = Present land use: Rangeland
Future land use: Orchards (already agreed by the landowner)
Area = 379.821 dunum
- Code 2 = Present land use: Rangeland
Future land use: Orchards (not yet agreed by the landowner)
Area = 1097.671 dunum
- Code 3 = Present land use: Annual crops
Future land use: Annual crops (no change required, discussed with landowner)
Area = 5.000 dunum
- Code 4 = Present land use: Annual crops
Future land use: Annual crops (no change required, not yet discussed with landowner)
Area = 50.380 dunum
- Code 5 = Present land use: Existing forests
Future land use: Forests (no change required)
Area = 765.480 dunum
- Code 6 = Present land use: Orchards
Future land use: Orchards (no change required, discussed with landowners)
Area = 4527.591 dunum
- Code 7 + 8 = Present land use: Non agricultural land and settlements
Future land use: Non agricultural land and settlements (no change)
Area = 41.750 dunum

Synoptic Overview on Land Use Situation in Al Hillal Pilot Area and the Possibility to introduce Land Use Changes

Total Area: 10453.300 dunum

Private Land: 6867.700 dunum (65.7%)

State Land: 3585.600 dunum (34.3 %)

Land Tenure	Area	Forest Cover	Area Requiring no Change in Land Use	Area for which Land Use Changes have been proposed	Area for which Land Use Changes have been agreed
State Land	34.3%	95%	100% Only management recommendations like: pruning, replanting, removing of dead branches		
Private Land	65.7%	Olives: 66% Range/ Fallow: 22% Forest: 11%	78.5%	21.5%	5.5%
Masha'a	70.5%				
Mulk	29.5%			= 6.5% on individual land	