

00-11-1994 17:14:10
Water Allocation System (WAS v1.0)
Developed by: The Harvard Middle East Water Project

FIXED INDUSTRIAL DEMAND AT JORDAN and NO DESALINATION PLANT AT WADI ARABA (J6)

Year: 1990

Scenario CURRENT: Current Links and Recycling

Quota File: qta.inc 6 files Jv agr

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FIXED INDUSTRIAL DEMAND AT JORDAN and NO DESALINATION PLANT AT WADI ARABA (J6)
 Year: 1990

Scenario CURRENT: Current Links and Recycling
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OPTIMAL GAMS RESULTS FOR WAS.GMS
 PRICES

ISRAEL

DISTRICT	FPRICE	RPRICE	PURB	PIND	PAGR
Hacola	0.175	0.175	0.47	0.47	0.17
Kinneret	0.175	0.175	0.47	0.47	0.17
WestGalil	0.200	0.200	0.50	0.50	0.20
Haifa	0.245	0.245	0.55	0.55	0.25
Afula	0.254	0.254	0.55	0.55	0.25
Hadera	0.270	0.270	0.57	0.57	0.27
Netanya	0.265	0.265	0.56	0.56	0.26
PTiqwa	0.311	0.311	0.61	0.61	0.31
TelAviv	0.322	0.235	0.53	0.53	0.25
Ramla	0.303	0.303	0.60	0.60	0.30
Rehovot	0.319	0.319	0.62	0.62	0.32
Lachish	0.490	0.303	0.79	0.79	0.34
Negev	0.547	0.547	0.85	0.85	0.55

JORDAN

DISTRICT	FPRICE	RPRICE	PURB	PIND	PAGR
JordanV	0.523	0.009	0.82	0.00	0.01
NHighland	0.516	0.516	0.54	0.00	0.52
Amman	0.518	0.518	0.54	0.00	0.52
DeadSea	0.165	0.165	0.47	0.00	0.16
Azraq	0.041	0.041	0.34	0.00	0.04
WadiAraba	5.125	5.125	5.42	0.00	5.12
MaanDisi	0.476	0.476	0.78	0.00	0.48
Hammad	0.132	0.132	0.43	0.00	0.13

PALESTINE

DISTRICT	FPRICE	RPRICE	PURB	PIND	PAGR
Jenin	0.280	0.280	0.58	0.58	0.28
Tulkarem	0.282	0.282	0.58	0.58	0.28
Nablus	0.268	0.268	0.57	0.57	0.27
Ramallah	0.288	0.288	0.59	0.59	0.29
Bethlehem	0.442	0.442	0.74	0.74	0.44
Hebron	0.468	0.468	0.77	0.77	0.47
GazaN	0.511	0.511	0.81	0.81	0.51
GazaS	0.555	0.555	0.85	0.85	0.55
Jericho	0.187	0.187	0.49	0.49	0.19

GOLAN

DISTRICT	FPRICE	RPRICE	PURB	PIND	PAGR
Golan	0.199	0.199	0.50	0.50	0.20

JERUSALEM

DISTRICT	FPRICE	RPRICE	PURB	PIND	PAGR
Jerusalem	0.354	0.100	0.65	0.65	0.13

Net Price of water in dispute in the Sea of Galilee is 0.175
 Average Net Price of water in dispute in the mountain aquifer is 0.087

FIXED INDUSTRIAL DEMAND AT JORDAN and NO DESALINATION PLANT AT WADI ARABA (J6)

Year: 1990

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OPTIMAL GAMS RESULTS FOR WAS.GMS
 QUANTITIES

ISRAEL

DISTRICT	PRODN	NET.EXP	URBDEM	INDDDEM	AGRDEM
Hacola	0.00	-112.50	8.67	1.28	102.55
Kinneret	560.00	478.94	8.69	0.54	71.83
WestGalil	102.00	7.43	40.00	1.85	52.72
Haifa	0.00	-191.19	32.29	3.40	155.50
Afula	40.00	-37.25	51.99	13.65	11.60
Hadera	7.00	-94.93	22.16	7.40	72.38
Netanya	222.00	115.07	26.63	1.59	78.72
PTiqwa	40.00	-47.38	41.50	1.17	44.70
TelAviv	0.00	-130.94	124.88	5.17	5.82
Ramla	129.23	81.67	13.71	2.05	31.80
Rehovot	115.00	30.56	33.09	3.75	47.60
Lachish	59.00	15.20	25.12	1.64	97.94
Negev	57.00	-97.75	34.89	20.39	99.47
TOTAL	1331.23	16.92	463.62	63.88	872.65

JORDAN

DISTRICT	PRODN	NET.EXP	URBDEM	INDDDEM	AGRDEM
JordanV	160.00	-157.09	4.49	0.00	312.60
NHighland	240.79	116.88	15.51	0.50	118.46
Amman	149.50	-2.79	68.00	12.40	124.96
DeadSea	55.08	15.00	7.30	26.00	6.77
Azraq	28.73	28.00	0.73	0.00	0.01
WadiAraba	22.00	0.00	2.54	0.60	18.86
MaanDisi	124.00	0.00	0.98	5.20	117.82
Hammad	0.11	0.00	0.10	0.00	0.00
TOTAL	780.21	0.00	99.65	44.70	699.48

PALESTINE

DISTRICT	PRODN	NET.EXP	URBDEM	INDDDEM	AGRDEM
Jenin	12.06	-0.81	5.68	0.13	7.07
Tulkarem	24.29	-1.62	8.73	0.44	16.74
Nablus	15.05	0.45	11.40	0.51	2.69
Ramallah	13.80	4.99	8.06	0.38	0.38
Bethlehem	49.33	45.41	3.12	0.41	0.39
Hebron	50.05	43.70	5.16	0.92	0.27
GazaN	39.00	3.42	15.83	0.56	19.20
GazaS	26.00	-9.98	14.65	0.55	20.77
Jericho	35.86	0.00	2.49	0.07	33.31
TOTAL	265.44	85.56	75.11	3.95	100.82

GOLAN

DISTRICT	PRODN	NET.EXP	URBDEM	INDDDEM	AGRDEM
Golan	0.00	-35.79	3.00	0.13	32.65

JERUSALEM

DISTRICT	PRODN	NET.EXP	URBDEM	INDDDEM	AGRDEM
Jerusalem	0.00	-66.69	63.34	0.30	30.42

FIXED INDUSTRIAL DEMAND AT JORDAN and NO DESALINATION PLANT AT WADI ARABA (J6)

Year: 1990

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OPTIMAL GAMS RESULTS FOR WAS.GMS
 RECYCLED QUANTITIES

ISRAEL

DISTRICT	FrmURB	FrmIND	FrmAGR	ToAGR	NET.EXP
Hacola	0.00	0.00	0.00	0.00	0.00
Kinneret	0.00	0.00	0.00	0.00	0.00
WestGalil	0.00	0.00	0.00	0.00	0.00
Haifa	0.00	0.00	0.00	0.00	0.00
Afula	0.00	0.00	0.00	0.00	0.00
Hadera	0.00	0.00	0.00	0.00	0.00
Netanya	0.00	0.00	0.00	0.00	0.00
PTiqwa	0.00	0.00	0.00	0.00	0.00
TelAviv	82.42	3.41	0.00	4.93	80.90
Ramla	0.00	0.00	0.00	0.00	0.00
Rehovot	0.00	0.00	0.00	0.00	0.00
Lachish	0.00	0.00	0.00	80.90	-80.90
Negev	0.00	0.00	0.00	0.00	0.00
TOTAL	82.42	3.41	0.00	85.83	0.00

JORDAN

DISTRICT	FrmURB	FrmIND	FrmAGR	ToAGR	NET.EXP
JordanV	0.00	0.00	0.00	0.00	0.00
NHighland	10.24	0.33	0.00	10.57	0.00
Amman	44.88	8.18	0.00	53.06	0.00
DeadSea	0.00	0.00	0.00	0.00	0.00
Azraq	0.00	0.00	0.00	0.00	0.00
WadiAraba	0.00	0.00	0.00	0.00	0.00
MaanDisi	0.00	0.00	0.00	0.00	0.00
Hammad	0.00	0.00	0.00	0.00	0.00
TOTAL	55.11	8.51	0.00	63.63	0.00

PALESTINE

DISTRICT	FrmURB	FrmIND	FrmAGR	ToAGR	NET.EXP
Jenin	0.00	0.00	0.00	0.00	0.00
Tulkarem	0.00	0.00	0.00	0.00	0.00
Nablus	0.00	0.00	0.00	0.00	0.00
Ramallah	0.00	0.00	0.00	0.00	0.00
Bethlehem	0.00	0.00	0.00	0.00	0.00
Hebron	0.00	0.00	0.00	0.00	0.00
GazaN	0.00	0.00	0.00	0.00	0.00
GazaS	0.00	0.00	0.00	0.00	0.00
Jericho	0.00	0.00	0.00	0.00	0.00
TOTAL	0.00	0.00	0.00	0.00	0.00

GOLAN

DISTRICT	FrmURB	FrmIND	FrmAGR	ToAGR	NET.EXP
Golan	0.00	0.00	0.00	0.00	0.00

JERUSALEM

DISTRICT	FrmURB	FrmIND	FrmAGR	ToAGR	NET.EXP
Jerusalem	27.38	0.00	0.00	27.38	0.00

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FIXED INDUSTRIAL DEMAND AT JORDAN and NO DESALINATION PLANT AT WADI ARABA (J6)

Year: 1990

Scenario CURRENT: Current Links and Recycling

Quota File: qta.inc 6 files Jordan Valley AGR

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OPTIMAL GAMS RESULTS FOR WAS.GMS
 SOCIAL WELFARE RESULTS

ISRAEL

DISTRICT	PROFITS	GOVT.COSTS	BUYR.SURP.	SOC.WEL
Hacola	0.000	0.000	112.553	112.553
Kinneret	97.743	0.000	81.064	178.807
WestGalil	5.701	0.000	98.197	103.898
Haifa	0.000	0.000	210.555	210.555
Afula	3.438	0.000	83.658	87.095
Hadera	0.725	0.000	115.124	115.850
Netanya	23.766	0.000	118.950	142.716
PTiqwa	4.414	0.000	97.135	101.549
TelAviv	0.000	0.000	140.477	140.477
Ramla	13.148	0.000	54.323	67.471
Rehovot	13.575	0.000	95.772	109.347
Lachish	13.088	0.000	140.705	153.793
Negev	8.221	0.000	197.332	205.553
TOTAL	183.819	0.000	1545.844	1729.663

JORDAN

DISTRICT	PROFITS	GOVT.COSTS	BUYR.SURP.	SOC.WEL
JordanV	53.344	160.677	92.673	146.017
NHighland	58.650	0.258	176.613	235.263
Amman	47.331	6.423	240.404	287.735
DeadSea	0.000	4.290	16.884	16.884
Azraq	1.107	0.000	0.746	1.853
WadiAraba	108.271	3.075	11.552	119.823
MaanDisi	44.276	2.476	158.671	202.947
Hammad	0.000	0.000	0.110	0.110
TOTAL	312.980	177.199	697.651	1010.631

PALESTINE

DISTRICT	PROFITS	GOVT.COSTS	BUYR.SURP.	SOC.WEL
Jenin	1.493	0.000	14.139	15.631
Tulkarem	2.961	0.000	28.907	31.868
Nablus	2.861	0.000	15.351	18.212
Ramallah	1.786	0.000	9.124	10.910
Bethlehem	5.268	0.000	4.161	9.429
Hebron	7.587	0.000	6.693	14.280
GazaN	12.138	0.000	42.386	54.525
GazaS	10.523	0.000	43.711	54.234
Jericho	4.407	0.000	36.553	40.960
TOTAL	49.025	0.000	201.025	250.050

GOLAN

DISTRICT	PROFITS	GOVT.COSTS	BUYR.SURP.	SOC.WEL
Golan	0.000	0.000	37.199	37.199

JERUSALEM

DISTRICT	PROFITS	GOVT.COSTS	BUYR.SURP.	SOC.WEL
Jerusalem	0.000	0.000	88.343	88.343

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OPTIMAL GAMS RESULTS FOR WAS.GMS
 TRANSPORT OF FRESH WATER

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LINKAGES USED AND QUANTITIES TRANSPORTED

FROM	TO	QTY. TRANSPORTED
Kinneret	NC-SeaOfGal	478.94
WestGalil	NC-WestGalil	7.43
Netanya	NC-Hadera	115.07
Ramla	NC-Ramla	81.67
Rehovot	NC-Rehovot	30.56
Lachish	NC-Lachish	15.20
NHighlands	JordanV	130.88
Amman	JordanV	26.21
DeadSea	Amman	15.00
Azraq	NHighlands	14.00
Azraq	Amman	14.00
Nablus	NC-Nablus	0.45
Ramallah	NC-Ramallah	4.99
Bethlehem	NC-Bethlehem	45.41
Hebron	NC-Hebron	43.70
GazaN	NC-GazaN	3.42
NC-Hacola	Hacola	112.50
NC-Golan	Golan	35.79
NC-Golan	NC-Hacola	112.50
NC-SeaOfGal	NC-Golan	148.29
NC-SeaOfGal	NC-WestGalil	330.64
NC-WestGalil	NC-Haifa	338.07
NC-Haifa	Haifa	191.19
NC-Haifa	NC-Afula	146.88
NC-Afula	Afula	37.25
NC-Afula	NC-Netanya	109.63
NC-Hadera	NC-Tulkarem	128.95
NC-Netanya	Hadera	94.93
NC-Netanya	NC-Jenin	14.70
NC-PTiqwa	PTiqwa	47.38
NC-PTiqwa	NC-TelAviv	80.41
NC-TelAviv	TelAviv	130.94
NC-Ramla	NC-TelAviv	50.53
NC-Ramla	NC-Ramallah	31.14
NC-Rehovot	NC-Jerusalem	66.69
NC-Jerusalem	Jerusalem	66.69
NC-Lachish	NC-Hebron	60.61
NC-Negev	Negev	97.75
NC-Negev	NC-GazaN	6.56
NC-Jenin	Jenin	0.81
NC-Jenin	NC-Hadera	13.89
NC-Tulkarem	Tulkarem	1.62
NC-Tulkarem	NC-Nablus	127.33
NC-Nablus	NC-PTiqwa	127.78
NC-Ramallah	NC-Rehovot	36.12
NC-Bethlehem	NC-Lachish	45.41
NC-Hebron	NC-Negev	104.31
NC-GazaN	NC-GazaS	9.98
NC-GazaS	GazaS	9.98

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OPTIMAL GAMS RESULTS FOR WAS.GMS
TRANSPORT OF RECYCLED WATER

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LINKAGES USED AND QUANTITIES TRANSPORTED

FROM	TO	QTY. TRANSPORTED
TelAviv	Lachish	80.90

FIXED INDUSTRIAL DEMAND AT JORDAN and NO DESALINATION PLANT AT WADI ARABA (J6)

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OPTIMAL GAMS RESULTS FOR WAS.GMS
DISPUTED QUANTITIES: MOUNTAIN AQUIFER

DISTRICT	SOURCE	QTY. PUMPED	MAX. QTY
Afula	S1	32.00	32.00
Afula	S2	8.00	8.00
Afula	S3	0.00	40.00
Hadera	S1	7.00	7.00
Hadera	S2	0.00	11.00
Netanya	S2	132.00	132.00
Netanya	S3	0.00	37.00
Ramla	S1	129.23	150.00
Lachish	S3	0.00	57.00
Negev	S3	25.00	25.00
Jenin	S4	0.00	98.33
Tulkarem	S3	0.00	6.68
Tulkarem	S4	0.00	134.95
Nablus	S4	0.00	20.56
Ramallah	S4	0.00	128.57
Bethlehem	S3	24.45	28.79
Hebron	S2	9.62	9.62
Hebron	S3	34.53	46.68