Orthofer, R., Daoud, R., Isaac, J. and Shuval, H. (2004).
Options for a More Sustainable Water Management in the Lower Jordan Valley. Presentation at Second Israeli-Palestinian International Conference “Water for Life in the Middle East”, Israel/Palestine Center for Research and Information (IPCRI), 10-14 Oct 2004, Antalya, Turkey

Abstract

The Lower Jordan Valley is usually regarded a region with severe water scarcity, but this is not the case. The per capita availability of water is indeed much above the average of the Middle East, but it is regionally unevenly distributed. About 94 % of all usable water is used for agricultural production, and about 2/3 of that has drinking water quality. On the other hand, one region in the southeast of the valley with about 44.000 people does not have sufficient local supply of good drinking water to meet the basic domestic demand. Currently, nature and ecosystems are not allocated any significant water rights. Scenario calculations show that a more sustainable water management in the region is possible if water allocation priorities are redefined. The first priority must be given to meet vital human and social needs for drinking water and water for domestic/urban needs and to water-efficient income generation activities. Agriculture should be limited to water that is not needed in other demand sectors. Through such a new management regime, the region could grow to a population of 1 million while in the long run maintaining current levels of agriculture. Water allocation for nature and ecosystems remains a controversial issue. The restoration of a "more sustainable" water regime of the Jordan River requires cooperation from the four upstream water users (IL, JO, LB, SY). The issue that needs to be resolved is if nature and ecosystems are regarded legitimate water users with an inherent natural right, and whether the countries that divert the water from the upper Jordan River system are willing to reallocate water currently used to meet their domestic/urban and agriculture needs or are willing to pay for water from alternative sources.

Example from Paper:

Table 2: Summary of water supply and usage balances for the six water regions the study area. All numbers are rounded to reflect inherent uncertainties. *Note. All numbers rounded which may lead to small arithmetic inconsistencies.*

		Bet Shean	**Sh Husayn**	**Tubas**	**Mashare**	**Jericho**	**Karama**	**Total**
Base Data								
Population	(cap)	25 000	51 000	4 000	77 000	46 000	44 000	247 000
Area	(km^2)	200	130	70	190	450	290	1330
Mean rainfall	(mm/yr)	300	270	230	160	160	110	190
Natural renewal [1)]	(MCM/yr)	12	7	3	6	15	7	49
Water Supply								
Total water supply								
Total supply	(MCM/yr)	141	73	16	72	68	71	442
From local sources [2)]	(MCM/yr)	116	10	16	14	68	31	225
Wastewater (WW2/WW3)	(MCM/yr)	0	5		16	0	20	42
Drinking water supply (Q1)								
Total supply	(MCM/yr)	90	68	16	56	68	0	299
From local sources [2)]	(MCM/yr)	65	10	16	14	68	0	173
Per-capita water availability								
Total water	(m^3/cap.yr)	5 600	1 400	4 100	900	1 500	1 600	1 800
Drinking water (Q1)	(m^3/cap.yr)	3 600	1 300	4 100	700	1 500	0	1 200
Water Use								
Domestic use								

Drinking water (Q1)	(MCM/yr)	3	5	<	7	2	0	17
Other freshwater (Q2/Q3)	(MCM/yr)	0	0	0	0	0	4	4
Agricultural use (by quality)								
Drinking water (Q1)	(MCM/yr)	85	62	16	48	64	0	271
Other freshwater (Q2/Q3)	(MCM/yr)	49	0	1	0	0	45	99
Wastewater (WW2/WW3)	(MCM/yr)	0	5	0	15	0	20	40
Agricultural use (by sector)								
Irrigated field crops	(MCM/yr)	75	61	17	56	63	56	326
Greenhouses	(MCM/yr)	<	6	1	6	1	8	22
Fisheries	(MCM/yr)	58	0	0	0	0	0	58
Livestock	(MCM/yr)	1	<	<	1	<	1	3
Agricultural use (total)	(MCM/yr)	141	67	17	63	64	65	410
Industrial/tourism use	(MCM/yr)	2	<	0	<	<	<	3

MCM/yr = million cubic meters per year

[1] Estimated as 30 % of winter rainfall

[2] Supply from local springs, wells, surface water