

**DATABASE FOR WATER CONSUMPTION IN
THE JORDAN RIVER BASIN
AND NEIGHBOURING AREAS**

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March 30, 1993

**This report and database were commissioned by the
International Development and Research Centre
(IDRC)
Ottawa, Canada**

one has to contact over 45 municipal water authority (*Maslahit Meiah*) departments throughout the country. This requires numerous personal contacts with influence in each of these regions, venturing into precarious areas, and a longer research period.

4.4 SYRIA

Syrian government data on water are even more aggregated and abbreviated than those in Jordan. While I was able to purchase a copy of Syria's statistical year book, many of the key data which I obtained were released on the condition anonymity for the persons involved. Some of the data are therefore from un-published "internal" brief studies or memos written by individuals in various departments in Syria's Ministry of Irrigation or that of Agriculture. It seems that the more people I talked to in these ministries, the more able I was to uncover "unofficial" documents pertaining to water.

Data in the tables refer to seven (sometimes eight) water basins in Syria. Statistics are all up-to-date and cover the current and future water needs of the Syrian population. Some data are organized by water basin and by agricultural, domestic and industrial sectors. Data for areas under irrigation cover lands which are being irrigated by (i) government networks, (ii) wells, and (iii) rivers. The latter two seem to imply non-governmental individual efforts. The ground water resources in Syria include springs, wells and water from wadis and floods. Projections of water consumption reflect the Ministry's estimates as to the area of irrigated lands each water basin will have, and the volume of water required for each economic sector.

5. CONCLUDING REMARKS

Lebanon, Israel and Syria have a similar percentage of people with access to safe drinking water (98); while Jordan is a close fourth (97), Syria is a distant fifth (71). These

Table: S 1

Syria's Water Use in 1976 and Projected Needs for 1985
(mcm/year)

Region	Water use in 1976				Total	Projected water needs, 1985		
	Irrigation		M&I water supply			Irrigation	M&I water supply	
	Surface water	Ground water	Surface water	Ground water		Surface & ground water	Surface & ground water	Total
Damascus	260	250	...	80	590	795	140	935
Orontes	580	105	...	26	711	1015	118	1133
Coastal	81	71	4	12.2	168.2	487	49.6	536.6
Halab	50	200	33	7.8	290.8	450	110.7	560.7
Jezireh	1340	240	21	4	1605	3580	68.9	3648.9
Hauran	...	60	...	13.3	73.3	110	38	148
Total	2311	926	58	143.3	3438.3	6437	525.2	6962.2

Source: United Nations. 1982. "Ground Water in the Eastern Mediterranean and Western Asia".

... indicate no data

Table: S 2

CURRENT AND PROJECTED WATER USE, 1991 & 2010

Name of basin	Current Water Use and the Area of Irrigated Lands, 1991				Projected Water Use Until 2010			
	Irrigation (mcm)	Drinking (mcm)	Industrial (mcm)	Irrigated Area (ha)	Irrigation (mcm)	Drinking (mcm)	Industrial (mcm)	Irrigated Area (ha)
A'si (Orentes)	1180	116871	413	176512	2128	3651.109	428	206137
as'Sahill	327	62986	25	45101	867.68	192.548	55	98541
Baradah and Awaj	730	200952	50	66000	680	66700	183	66000
Yarmouk	166	25766	3	33090	238	118.045	10	29390
al Baadieh	39	5807	-	300	94	279.34	-	5000
Halab (Aleppo)	496	1500	30	73526	506	167.526	70	75026
Tigres and Khabour	1170	37642	5	136647	1970	115.877	30	236647
Total	4103	585025	531	521076	6483.68	1737.09	761	711441
Euphrates (min.)	2.5119	45448	300	179424	7.638	128.31	500	545605
(max.)	6.619	645473	831	700500	1357568	1.9823	1676	1262346

Table: S 3

Syria's Water Consumption by Sector, 1984-1989

	1984	1985	1986	1987	1988	1989
Irrigation	5.78	6.19	6.19	6.19	6.3	6.63
Domestic	0.544	0.562	0.581	0.601	0.621	0.693
Industrial	0.08	0.08	0.08	0.012	0.012	0.015
Total	6.404	6.832	6.851	6.803	6.933	7.338

Table: S 4

Surface and Subsurface Water Resources in Syria's Basins

Name of Basin	Area of Basin (km ²)	Average Annual Rainfall		Population of Basin (millions)	ANNUAL AVERAGE WATER RESOURCES (mcm)					NOTES
		(mm)	(mcm)		Surface + Wadis + Runoff	Subterranean			Grand Total	
						Wells	Springs	Total		
Baradah and Awaj	8630	268	2297	3.459	-	272	578	850	850	
A'si (Orentes)	21624	403	6822	2.3268	1110	473	1134	1807	2717	Includes springs water that subterraneanly feeds the river
as'Sahill	5049	1294	6603	1.23	1557	290	488	778	2335	
al-Jezeereh (Tigris and Khabour)	21129	402	8493	0.786	788	483	1117	1800	2388	Not including water from the Tigris River (measured) at Turkish border
Euphrates	40083	182	7295	0.881	175	25	-	25	26200	Including water from Euphrates (measured) at Turkish border
Yarmouk	6724	287	1930	0.72	180	18	249	265	447	
al Baadieh	70786	138	9800	0.227	163	176	4	182	354	
Halab	11155	304	3396	2.0199	303	379	67	346	649	Turkey is building a dam on Wadi as-Sajour, 130 mcm
Total	185180		46636	11.649755	4276	2116	3637	5653	35940	

Table: S 5

LENGTH OF RIVERS WITHIN SYRIA AND THEIR FLOW RATES, 1990

RIVERS	FLOW RATE			LENGTH IN Km.	
	Min. flow m/sec	Max. flow m/sec	Average m/sec	Length Within Syrian territory	Total Length
Euphrates	43	1143	482	600	2330
Al-Khabour	26	32	20	442	442
Jaghiagh	0	11.3	7.2	100	124
Al-Balikh				116	116
Sajour				48	108
Orontes & tributar.	3.4	106.6	6.1	366	485
Afrin & tributaries	0.8	35.7	4.4	68	149
Queic				110	126
Al-Kabir Al-Shamali		106.6	3.5	89	96
Sinn	3.2	11.4	5.9	6	6
Barada	3	57.5	6.5	71	71
Awaj	0.5	25	2	66	66
Yarmouk			4	32	42
Al-Kabir Al-Janubi	0.4	87	3	56	86
Banyas	0	0.4	0.1	1	1
Sybarani	0.1	30	0.6	15	15
Abou Kobis	0	1.8	0.6	8	8

Source: Central Bureau of Statistics, 1991. "Statistical Abstract, 1991."
Office of the Prime Minister, Damascus.

Table: S 6

LAND USE IN SYRIA, 1986-1990

(Thousands of Ha)

Year	Uncultivable lands							Cultivable lands						
	Forests	Steppe & pastures	Total area	Rocky & sandy	Marshes & lakes	Buildings & roads.	Total	Uncultivated	Total	Cultivated lands		Lands under crops		
										Fallow	Total	Irrigated	Non-irrigated	Total
1986	523	8293	18518	3037	116	414	3567	508	6135	1724	5627	652	3251	3903
1987	534	8277	18518	3034	117	423	3574	503	6133	1589	5630	654	3387	4041
1988	543	8231	18518	3053	122	504	3679	505	6065	1263	5560	650	3647	4297
1989	718	7989	18518	3069	136	577	3782	526	6029	106	5503	670	4727	5397
1990	723	7869	18518	3054	136	587	3777	523	6149	160	5626	693	4773	5466

Source: Central Bureau of Statistics, Syria, 1991. "Statistical Abstract, 1991".

Office of the Prime Minister, Damascus.

Table: S 7

LAND USE BY GOVERNORATE, 1990
(Thousands of Ha)

Year	Forests Steppe & Total pastures area			Uncultivable lands				CULTIVABLE LANDS						
				Rocky & sandy	Marsh & lakes	Bldgs & roads.	Total	Cultivated lands						
								Unculti- vated	Total	Fallow	Total	Land Under Crops		
												Non-irrigated	Irrigated	Total
Damascus	26	1348	1814	166	4	74	244	65	196	4	131	52	75	127
Allepo	46	206	1848	269	25	68	362	12	1234	92	1222	1040	90	1130
Homs	123	2664	4223	954	6	80	1040	14	396	0	382	340	42	382
Hama	137	107	888	108	5	53	166	74	478	25	404	278	101	379
Lattakia	86	3	230	18	3	14	35	9	106	0	97	69	28	97
Deir-ez-Zor	5	1857	3306	1176	11	26	1213	35	231	0	196	135	61	196
Idleb	72	46	610	112	2	40	154	11	338	0	327	314	13	327
As-Hassakeh	175	590	2333	33	11	44	88	107	1480	0	1373	1222	151	1373
Al-Rakka	4	790	1922	28	66	48	142	3	988	5	983	907	71	978
Al-Sweida	8	211	555	114	1	29	144	44	192	18	148	130	0	130
Dar'a	6	29	373	35	1	82	118	17	220	16	203	172	15	187
Tartous	31	1	189	18	1	18	37	0	120	0	120	96	24	120
Quneitra	3	17	186	13	0	7	20	130	146	0	16	14	2	16
Euphrat Basin	1	0	41	10	0	4	14	2	26	0	24	4	20	24
Total	723	7869	18518	3054	136	587	3777	523	6149	160	5626	4773	693	5466

Source: Central Bureau of Statistics, Syria, 1991. "Statistical Abstract, 1991".
Office of the Prime Minister, Damascus

Table: S 8

LAND USE BY METHOD OF IRRIGATION, 1986-1990
(Thousands of Ha)

Year	Irrigated lands			Irrigated by engines from:		
	Actual irrigated lands	Irrigated without engines from rivers, Springs & lakes	Total	Wells	Rivers, Springs & Lakes	Total
	1986	621.7	155	652.9	316	181.9
1987	638.1	161.3	653.9	311.7	180.9	492.6
1988			650			
1989	670.1	150.2	670.1	313.9	206	519.9
1990	693	134.1	693	342	216.9	558.9

Source: Central Bureau of Statistics, Syria. 1991. "Statistical Abstract, 1991".

Office of the Prime Minister, Damascus.