

This year World Water Day focuses on the need for cooperation between various stakeholders, which is essential for managing water resources in the most effective way.

World Water Day 2013: International Year of Water Cooperation

Malta, being an island, does not share any transboundary river basins or groundwater body with any other country. Water cooperation is thus present at the local and national level. There are 276 transboundary river basins worldwide: 64 in Africa, 60 in Asia, 68 in Europe, 46 in North America and 38 in South America.

In Malta, the need for effective management of water resources is pressing due to the limited availability of freshwater resources in comparison with the level of abstraction. This can be seen in Table 1 and Chart 1, with an upward trend in the Water Exploitation Index (WEI) between 2004 and 2012. These values indicate a stressed to severely stressed country in terms of water resources.



Table 1 shows that Malta's freshwater resources are totally dependent on precipitation, as no inflow or outflow of water resources from or to other countries takes place. Since 2004, the WEI has shown an increase averaging 3.5 per cent per year. This has occurred since groundwater abstraction went up by an average of 3.6 per cent per year, while freshwater resources, as calculated by the Long Term Annual Average (LTAA), have edged up annually by an average of 0.1 per cent.

Table 2 and Chart 2 show the water produced for public consumption by the Water Services Corporation (WSC). On average, groundwater abstraction makes up 45.5 per cent of the plant's water production, with the remaining share originating from the three desalination plants at Cirkewwa, Ghar Lapsi and Pembroke. Since 1995, the total yearly water production decreased by an average 2.9 per cent per year, mainly as a result of a vast programme of leakage control that drastically reduced the amount of water losses from the underground network of water mains. This reduction in the system demand brought down the abstraction of groundwater by the WSC by approximately 7 million cubic metres, or a decrease of 34.5 per cent.

Table 2 shows that water production is almost equivalent to the supply in the distribution network. As a result, during the period 1997-2012 the end-of-year water reserves of the WSC averaged 0.9 per cent of total annual water production ■

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Table 1. Water Exploitation Index: 2004-2012 (million cubic metres)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Precipitation	145.8	159.8	170.6	196.1	158.2	215.0	162.1	186.8	164.1
Actual evapotranspiration	(1) 70.2	76.9	82.1	94.3	76.1	103.5	78.0	89.9	79.0
Total freshwater resources	(2) 75.6	82.9	88.5	101.7	82.1	111.5	84.1	96.9	85.1
LTA total freshwater resources	(3) = (1 - 2) 93.1	93.7	92.1	94.2	92.9	94.3	93.5	93.9	94.1
Total groundwater abstraction	(4) 31.5	33.0	32.6	36.6	35.7	31.7	41.0	38.2	39.8
of which:									
Abstraction by the WSC	(5) = (6 + 7) 14.9	14.0	13.1	14.0	14.1	12.7	12.8	13.1	13.3
Abstraction for Irrigation	(6) 16.6	19.0	19.6	22.6	21.7	19.1	28.2	25.1	26.5
Water Exploitation Index (%)	(7) 33.9	35.2	35.5	38.8	38.5	33.7	43.8	40.6	42.3
	(5 / 4) x 100								

Source: NSO, WSC, Malta Airport Meteorological Office

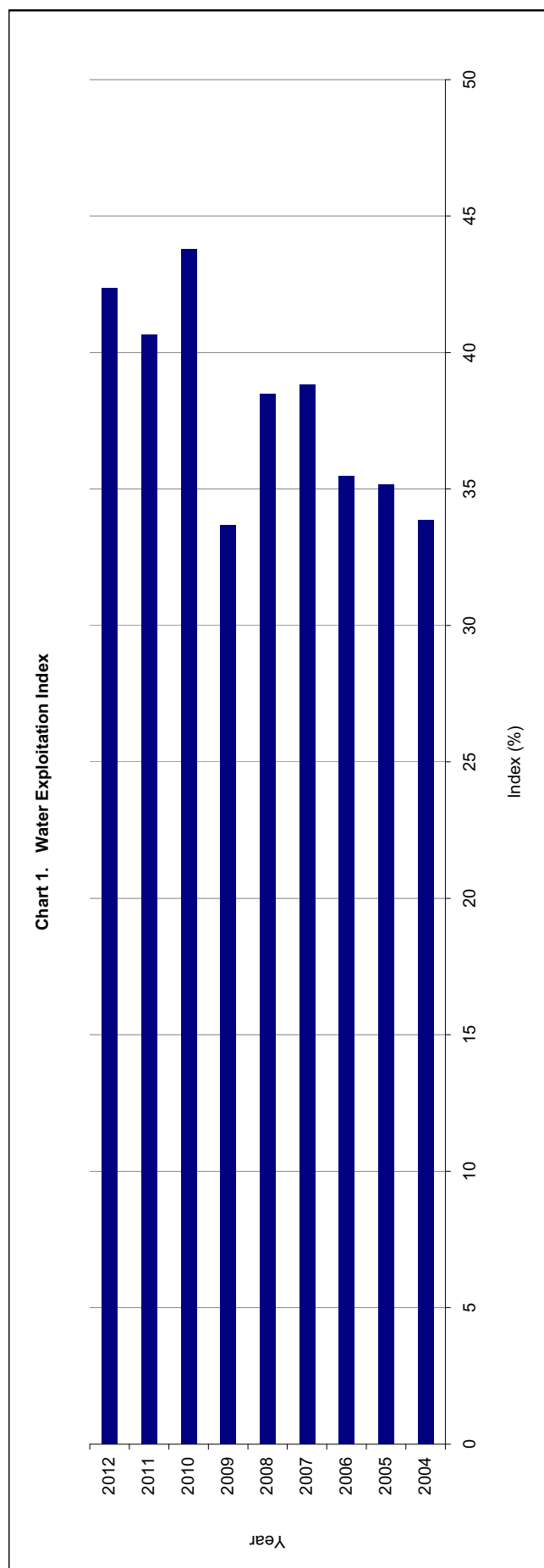
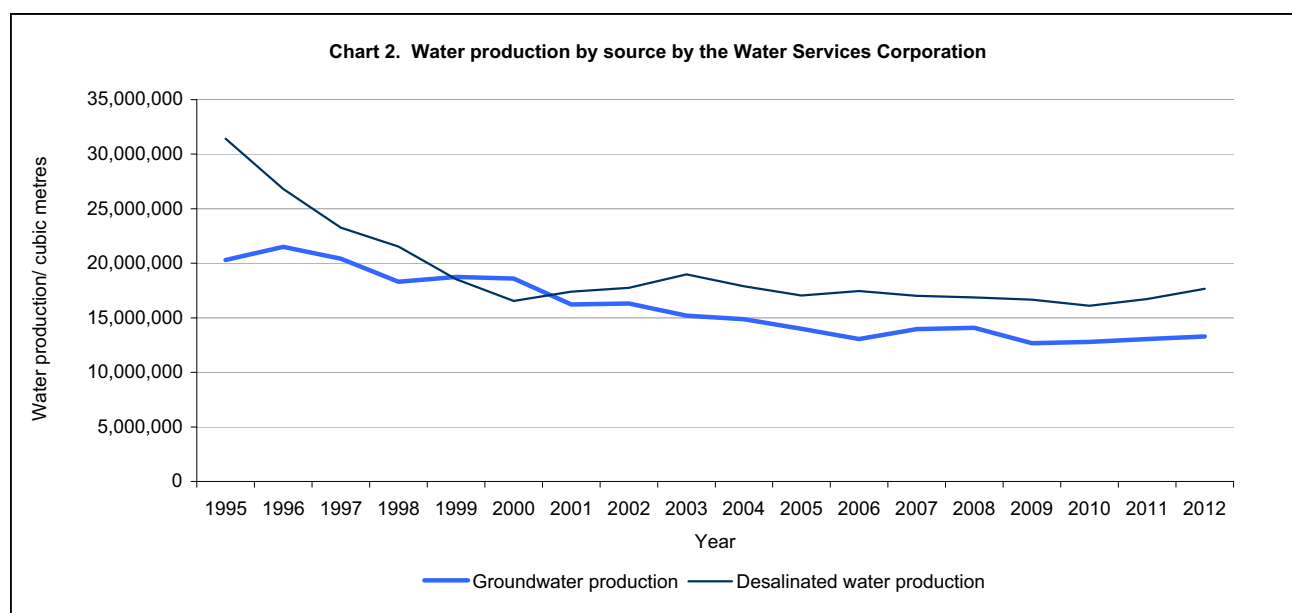


Table 2. Water production and supply by the Water Services Corporation: 1995-2012 (cubic metres)

Year	Groundwater production	Desalinated water production	Gozo polishing plant reject	Total yearly water production	Water supply in the distribution network	End of year reserves
1995	20,297,853	31,410,454	0	51,708,307	n/a	n/a
1996	21,500,188	26,814,283	0	48,314,471	n/a	n/a
1997	20,412,559	23,267,684	0	43,680,243	43,683,798	304,707
1998	18,302,368	21,532,011	0	39,834,379	39,852,718	286,367
1999	18,750,409	18,552,752	0	37,303,161	37,239,090	350,432
2000	18,596,531	16,554,393	0	35,150,924	35,160,435	340,920
2001	16,218,310	17,385,390	0	33,603,700	33,647,308	297,313
2002	16,313,167	17,734,790	0	34,047,957	34,039,237	306,032
2003	15,196,203	18,969,489	0	34,165,692	34,189,647	282,080
2004	14,886,796	17,894,583	0	32,781,379	32,791,135	272,324
2005	13,994,560	17,049,042	0	31,043,602	31,033,802	282,124
2006	13,059,358	17,469,049	0	30,528,407	30,475,197	335,334
2007	13,957,572	17,007,077	149,716	30,814,933	30,798,726	351,542
2008	14,075,940	16,871,911	138,237	30,809,614	30,848,830	312,325
2009	12,676,827	16,653,689	141,153	29,189,363	29,168,753	332,934
2010	12,784,120	16,109,456	131,318	28,762,258	28,774,784	320,409
2011	13,060,554	16,722,082	132,757	29,649,879	29,669,162	301,127
2012	13,298,978	17,646,924	115,947	30,829,955	30,831,639	299,442

Source: WSC



Methodological Notes

1. Table 1 refers to the operations of the Water Services Corporation, and excludes all water production by private enterprises and households.
2. Total yearly water production = groundwater production + desalinated water production - Gozo polishing plant reject.
3. The Gozo polishing plant is used to remove excessive levels of certain chemicals from abstracted groundwater, in order to achieve a good qualitative status for drinking water according to EU directive 98/83/EC.
4. The Water Exploitation Index (WEI) for Malta is determined by calculating the groundwater abstraction as a percentage of the Long Term Annual Average (LTAA) of freshwater resources. The Long Term Annual Average (LTAA) is worked out by calculating the average values of the most recent consecutive 20 years.
5. Actual evapotranspiration = 63% of the total precipitation less runoff. The amount of runoff depends upon the percentage of built-up land and is calculated as 6% in unbuilt areas and 85% in built-up areas.
6. In Table 2 total groundwater abstraction figures exclude abstraction by households and private enterprises in the animal husbandry, manufacturing, construction and services sectors.