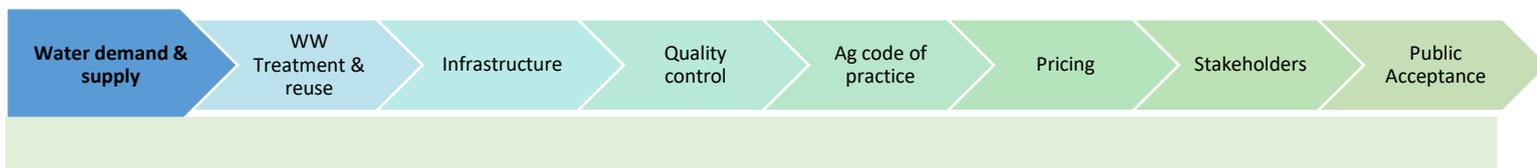




## The Success Story of Israel

### Fact Sheet 1 - Water demand and supply: facts and figures



#### KEYS FOR SUCCESS – Lessons learned from the success stories of Cyprus and Israel

SUWANU EUROPE is a H2020 project aiming to promote the effective exchange of knowledge, experience and skills among practitioners and relevant actors on the use of reclaimed water in agriculture. This factsheet is part of a total of 17 factsheets that describe the successful reclamation practices of Israel and Cyprus in order to learn and boost implementation of solutions adapted to the European context. Our ultimate goal is to enhance acceptance and awareness to an alternative source of an increasingly scarce resource, water.

The State of Israel is located on the edge of the desert, with a climate that varies between Mediterranean and arid. The average annual rainfall in the north of the country is about 1,000 mm in rainy years, and in the south, rainfall ranges between 30 mm (in Eilat, the southmost point of Israel) and 200 mm multi-year average. In addition, the rainy season is short, usually only 5 or 6 months, between October and March, concentrating most of the rainfall between December and February (20, 25 and 21% respectively). Around 60% of rainwater evaporates, 30% infiltrates to the groundwater, and 5 to 10% flows through rivers.

The distribution of natural water sources is directly related to rainfall. Thus, it is possible to see that the greatest amount of water resources is concentrated in the North region of the country and that the South is almost completely desert (see Figure 1 and Figure 2).

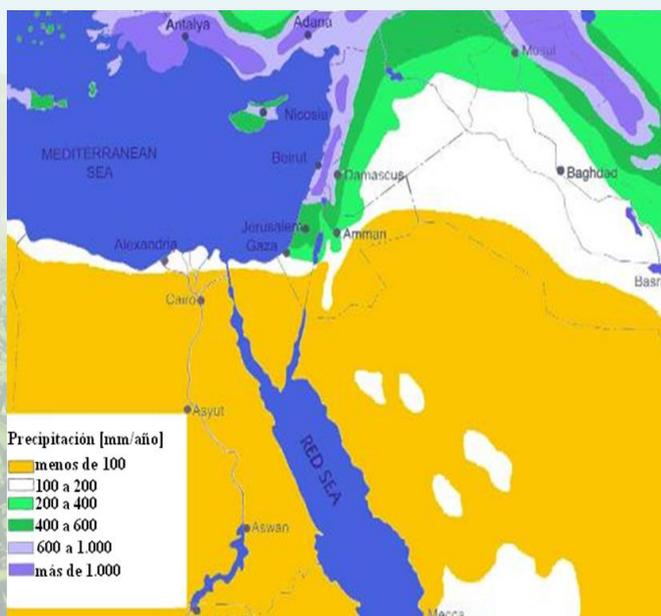


Figure 1 - Distribution of precipitation in the Middle East

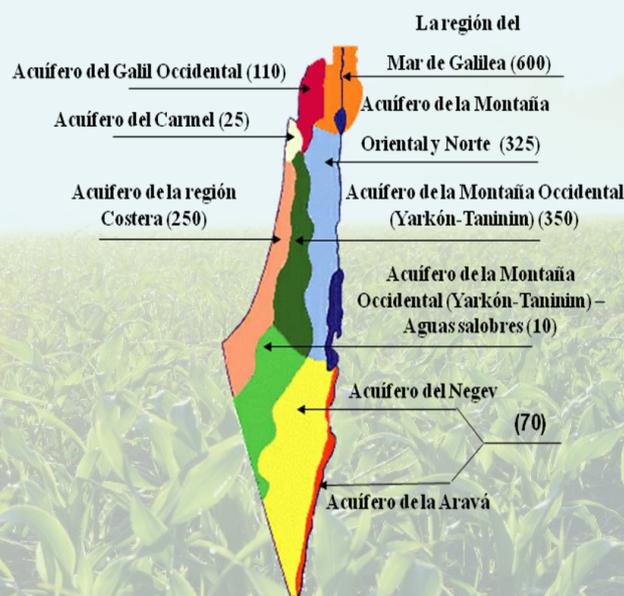


Figure 2 - Distribution of water resources in Israel. The annual natural recharge, in Millions of m<sup>3</sup>, is presented for each source in parentheses

According to the Water Law, drafted in 1959, all water resources belong to the public and any water use requires a permit (or license of use) and is regulated by the Water Authority. It is worth highlighting that the term "all water resources" also includes non-traditional sources for the time when the law was drafted, such as treated effluents and desalination water. This centralized control structure was and is used as the basis for managing water resources in Israel: how much water can be extracted from each of the available resources during the different times of the year, as well as the amount of water allocated to the different consumers. To efficiently manage the water sector, an extensive monitoring and measurement system was implemented, which includes monitoring of the volume extracted from each source, water quality, groundwater levels, etc.

The current consumption in Israel (2018) is around 2,200 Million m<sup>3</sup> per year, of which approximately 1,200 Million m<sup>3</sup> is used for agriculture (55%), 850 Million m<sup>3</sup> for domestic use (38%), and 150 Million m<sup>3</sup> are used by industry (7%). The domestic supply also includes some 100 Million m<sup>3</sup> supplied to the Palestinian Authority and to the Kingdom of Jordan.

In Israel, approximately 85% of wastewater is treated and reclaimed for agriculture use with different qualities and in accordance with the most demanding standards. The incorporation of treated effluents in agriculture had a very large impact on the national water balance. Mainly, it allowed reallocating more of the drinking water resources to domestic use, to a degree where today these freshwater resources make up less than 50% of the water used in agriculture.

In 1955 was drafted the Water Measurement Law and Israel started to meter all the water consumed, included the water supplied to the agricultural sector. Figure 3 shows the history of water consumption by sectors since the establishment of the State of Israel in conjunction with population growth. The same chart shows three fundamental milestones in the history of water in the country: the operation of the National Water Carrier (1964), the beginning of the reuse of effluents in a massive way (mid-1980s) and the beginning of large scale desalination, all of which will be discussed in greater detail below.

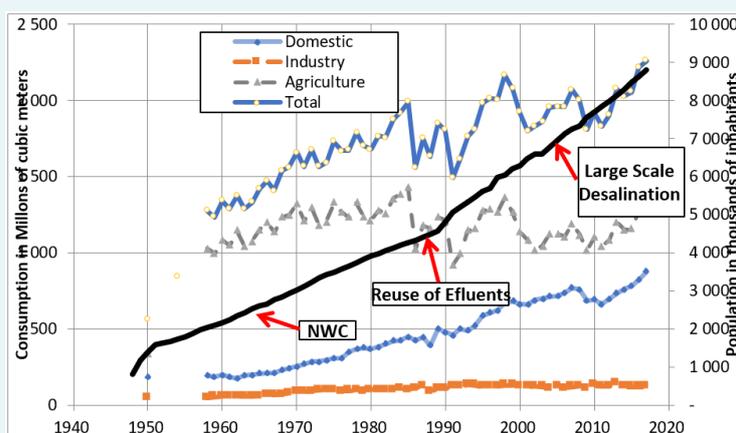


Figure 3 - Total water consumption by sector (in millions of m<sup>3</sup> per year) since 1950 and population of Israel (in thousands of inhabitants) since the establishment of the State in 1948

## CLOSING REMARKS

Water supply in Israel sets an example of the importance of clear policies and centralized water management for creating a sustainable water sector where all aspects of water use and reuse are considered under the same roof. This management philosophy makes it easier to invest in large scale infrastructure projects, implement technological innovations, and introduce water of various cost to match the different needs that exist throughout the water sector.

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