



Water

A Shared Responsibility



Overview

Israel is located in a semiarid climate zone, with over 60 percent of its land covered by desert. It is considered one of the most water-stressed countries in the world, experiencing annual extreme variations in precipitation, as well as multiple years of drought.

From its early years of statehood, Israel needed to address the challenge of water scarcity, a fact that has undoubtedly shaped the development of the Israeli water sector over the last seven decades. In order to survive and thrive, Israel had no choice but to adapt and develop a series of innovative water technologies and practices, as well as national water reforms.

This approach, encompassing good management, high-tech development and public education, has transformed the State of Israel from a water-parched nation to a global leader in the water sector.

Natural water resources transcend political boundaries. They can be managed in a cooperative, sustainable manner, to maximize the prosperity of all players in the region. Israel shares with its neighbors its accumulated knowledge and expertise in water management and new technologies, with several committees formed for jointly managing and addressing pressing regional water issues.

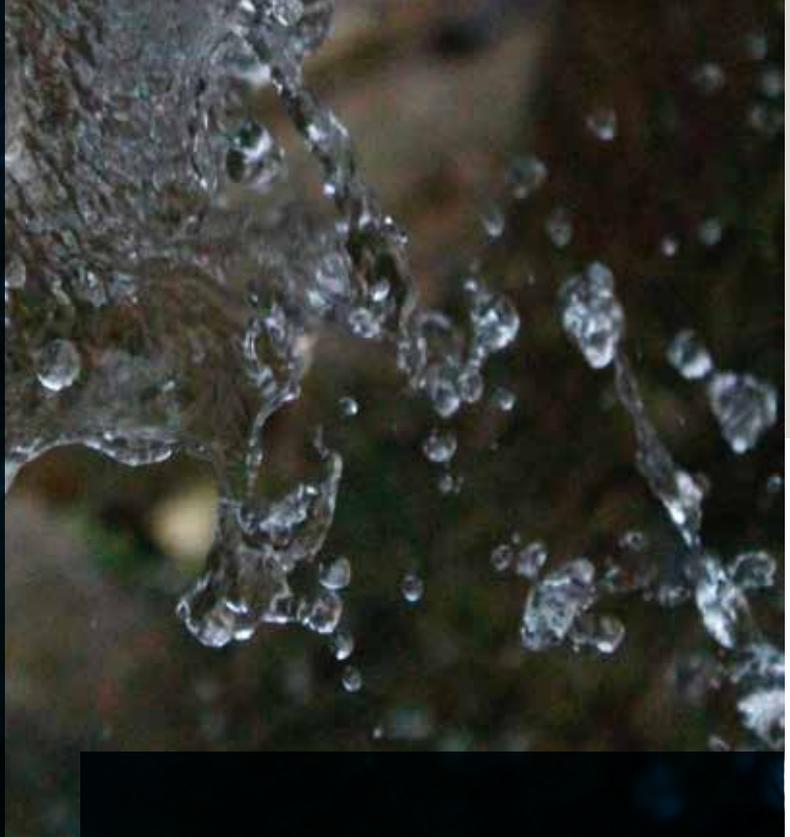
International Cooperation

Water is a basic and vital product for the individual and for meeting the needs of the economy. Managing national water sectors, while coping with a scarce resource, poses a complex challenge for countries around the world.

Governments and international organizations are looking for proven and effective solutions, generating interest in Israel's water sector, which is considered one of the most sophisticated and effective in the world.

The water balance between demand and available supply of natural water resources shows a constant deficit, growing from year to year. The permanent challenge is to close the gap. Furthermore, and most importantly, natural replenishment is challenged by the impacts of climate change: droughts are more frequent, and when occurring are more intense and for longer periods.

Israel's international development cooperation efforts in water related fields are directed at working with partners on



is committed to share inclusive policies and best practices in water management, and optimal use of water saving technologies to increase access and availability to water especially in rural areas, integrating a gender-based perspective, with the overall goal of ending poverty in all its forms, while leaving no one behind.

the international, regional, national and community levels to establish water responsible and inclusive policies, best practices in water management, and optimal use of water saving technologies. In alignment with the UN 2030 Agenda and Sustainable Development Goal 6, Israel's Ministry of Foreign Affairs appointed a Special Envoy for International Water Affairs to join the efforts of ensuring access and availability of water to all.

Based on the knowledge accumulated over decades of confronting the difficulties posed by harsh climatic conditions and a shortage of water resources, the State of Israel has become a world-renowned leader in developing technologies for optimal utilization of scarce water resources. It is this knowledge and proven experience that Israel, through MASHAV, Israel's Agency for International Development Cooperation, at Israel's Ministry of Foreign Affairs, shares with fellow nations facing water scarcity challenges.

Key Innovations in the Israeli Water Sector

Managing the national water sector, while coping with a scarce resource, poses a complex challenge that requires an optimal response. Israel's water sector has undergone significant changes in almost all of its aspects: physical, structural, legislative and organizational, following the understanding that the only possible way to cope with natural water shortage on one hand, and a growing population and life quality standards on the other, was to adopt and implement an Integrated Water Resources Management approach.

To achieve a reliable water supply, Israel has over the years, gradually implemented holistic and integrative policies, combining institutional and infrastructure reforms, including the following:



A National Water System to Connect All Water Infrastructure

Faced with extreme variations in precipitation Israel implemented early on an innovative system of storing and conveying water from its wetter north to the drier center and south, the main agricultural areas.

Interception of Surface Water Run-Off and Recharge

Israel invested in infrastructure to capture flash floods caused by short rainstorms coupled with a landscape that often lacks a mitigating vegetation cover.

Large-Scale Reuse of Treated Wastewater for Irrigation

Reclaimed wastewater has become a major source of water for farmers, supplying more than 40 percent of the country's needs for irrigation and more than 87 percent of wastewater being reused.



Development of Large-Scale Desalination

In the early 2000s, a strategic decision was made to develop desalination plants on a large scale.

The aim was that most of the water supply for municipal consumption would come from desalinated water.

Demand Management to Control Aquifers Abstraction

Aquifers have been gradually switched from being overexploited resources to becoming major storage reservoirs.

Promoting Crop Selectivity

In the early 1960s, Israel addressed the growing scarcity of freshwater for irrigation and emphasis was placed on growing counter seasonal vegetables in greenhouses to reduce evapotranspiration.



Creating a Supporting Environment for Water Innovation

Israel efforts to promote innovations in the water sector include the establishment of a unique industry–utility–university ecosystem, to support the development of innovative water technologies, by bringing

together private entrepreneurs, water utilities, and the government, to ensure that water innovation can be developed and be brought to market.

Promoting Demand Management and Public Awareness

Demand management has always been an important component of Israel's efforts to achieve water security, and expanded in 2008 with a successful government initiated major water conservation campaign.



Efficient Irrigation Technologies

Maintaining a competitive agricultural sector has always been a national priority for Israel, and one of the keys to success is the close collaboration and interaction between Israeli agricultural research institutes, farmers, and extension services (which facilitate the transfer of agricultural research and techniques to the field level).

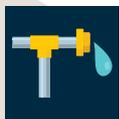
Extreme water scarcity required implementing efficient irrigation and fertigation practices and investment in modern technologies such as: moisture-sensitive automated drips, automatic vales and sprinklers, low discharge sprayers, mini-sprinklers and compensated drippers that are computer-controlled. These systems can work efficiently with all types of water resources, including treated wastewater, and in different environmental regions.

Additional Sources

Playlist: Water related lectures
Israel's Water Authority
Israel's Export Institute
Israel's Ministry of Foreign Affairs publication



MASHAV professional training programs in the field:



Irrigation

- Fertigation for Intensive Agriculture
- Efficient Water Management for Sustainable Agriculture
- Crop Production under Saline Stress
- Advanced Irrigation Technologies



Water Management

- Wastewater Reclamation and Reuse in Agriculture
- River Rehabilitation
- Sustainable Management of Natural Resources



Research and Development

- Intensive Agriculture in Arid and Semi-Arid Environments
- Vegetable Production in a Protected Environment
- Crop Production under Saline Stress
- Practices and Processes in Soil and Water



Environment and Climate Change

- Combating Desertification and Drought
- Urban Water Technologies and Management



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