

Keren Kayemeth LeIsrael • Jewish National Fund

Addressing Israel's Water Shortage through
WATER RECYCLING, HARVESTING, & RESTORING

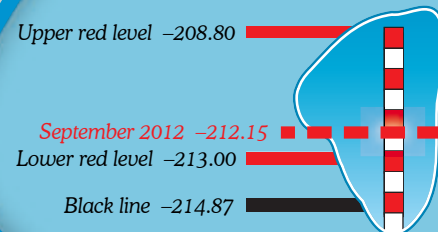


“...for in the wilderness shall waters break out, and streams in the desert...and the parched land shall become a pool, and the thirsty ground springs of water...” *Isaiah 35:6,7*

Solving the problem of dwindling water resources is the greatest challenge facing humankind in the third millennium. To stem the water crisis in Israel, KKL-JNF has developed reservoirs that collect recycled wastewater and floodwater, which is then used mainly for agriculture. As more than half of Israel's water consumption goes to agriculture, these reservoirs are vital, reducing the use of fresh water for irrigation by some 60%.

To date, KKL-JNF has built 250 reservoirs, impounding three quarters of treated wastewater per annum. The quantity varies from year to year, depending on the amount of rainfall. Many of the reservoirs are multifunctional. Besides irrigation, they supply water for riverbank rehabilitation, recreation, and recharge aquifers. Indeed, KKL-JNF has become Israel's fourth aquifer.

The water level in the Sea of Galilee



Water usage in Israel

Agriculture	57%
Domestic	38%
Industry	5%



Water recycling is a critical element for managing our water resources. Through water conservation and water recycling we can meet environmental needs and still have sustainable development and a viable economy.”

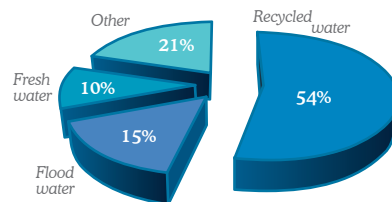
*Felicia Marcus, Regional Administrator
Environmental Protection Agency, USA*

Effluent reuse in Israel is among the highest in the world

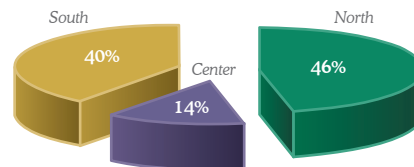
Three quarters of treated, municipal sewage is reused for irrigation: 31% of the total water supplied to agriculture and 18% of Israel's total water use. The national goal is to produce 600 MCM of recycled water for agriculture by 2020. KKL-JNF and government ministries and agencies have joined forces to create additional reservoirs for recycled water for the benefit of Israel's agriculture and rivers. The water will be used for irrigation and channeled to polluted rivers, giving them new life.

KKL-JNF reservoirs provide three quarters of all the recycled water for agriculture. According to the United Nations World Water Development Report 3, Israel leads the world in the use of recycled water for agriculture.

But our work is far from over. In order to impound all the recycled or reclaimed water produced by Israel's water purification systems, 50 more reservoirs must be built in the next five years, including 39 new and refurbished reservoirs, soon to be completed, impounding a total of 57.8 MCM of water, the only irrigation source for 40,000 acres (16,000 hectares) of crops.



KKL-JNF Reservoir Types



KKL-JNF Reservoirs by Region



"Necessity is the mother of invention"

One positive consequence of Israel's critical water situation is that it has placed Israel at the head of the field in innovative methods of saving and recycling water. Urban runoff, the rainwater laced with pollutants that floods our streets, is collected by sewers and flows into the sea resulting in a major source of wasted water and pollution. KKL-JNF, working with Australian experts, has developed the biofilter, a system to purify urban runoff, which is then used to recharge groundwater.

"Nature's Right to Water"

Although water is the most widely occurring substance on earth, only 2.53% of it is fresh, with the remainder, salt water. Fresh water is an essential part of almost every ecosystem and those that center on water are called wetlands, which include springs, rivers, lakes, marshes and winter pools.

Included in the domestic, industrial, agricultural, and recreational use of water is nature, herself. Recognizing "nature's right to water", Israel approved the 2004 Water Law that affirms the need to conserve and rehabilitate rivers, springs and wetlands.

KKL-JNF plays a key role in protecting our natural water sources with the restoration of the world-renowned Hula Marshes, exemplary of environmental development. Species in Israel thought long extinct can, once again, thrive, and nature-lovers from far and near are able to enjoy the site. Thanks to our efforts, supported by KKL-JNF friends worldwide, we are bringing new life to Israel's rivers and wetlands. We are ensuring that sensitive winter pools used by endangered amphibians as breeding grounds are protected and can serve as a focus for recreational and educational activity.

Israel is a signatory to the intergovernmental treaty, the Ramsar Convention on Wetlands, whose concept the "wise use" of wetlands has at its heart the conservation and sustainable use of wetlands and their resources for the benefit of humankind. This definition well applies to KKL-JNF's work on behalf of water sources.



Water is the driver of Nature."

Leonardo da Vinci

Water for nature



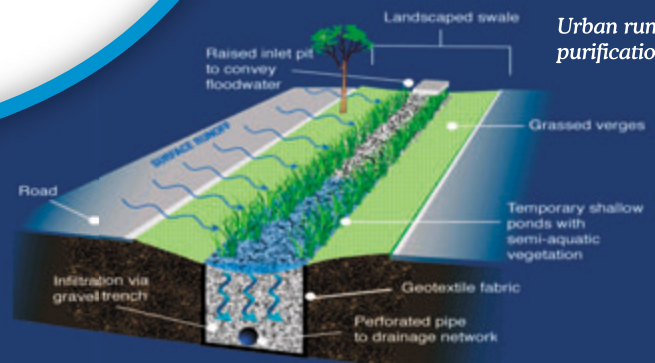
River restoration



Spring rehabilitation



Urban runoff purification



Did you know that KKL-JNF together with friends and donors from Israel & abroad...

- Planted more than 240 million trees
 - Manages and maintains 40,000 hectares (100,000 acres) of natural woodland
 - Contributes to Israel's water economy by building reservoirs and dams to impound runoff, floodwaters and recycled water, providing 50% of the water used for agriculture
 - Rehabilitates riverbanks, enhancing their biodiversity
 - Built 1,000 recreation areas throughout the country, including leisure areas and regional parks that host tens of thousands of visitors
 - Develops thousands of kilometers of cycling trails, crisscrossing the length and breadth of the country through forests and open areas, for the public and for free
 - Creates a bond between people and forests by organizing recreational and cultural activities in nature for all
 - Conserves the environment, rolls back the desert and creates shady green sites at army bases and in southern communities
 - Carries out cutting-edge research whose findings are applied to water conservation, sustainable forestry, the prevention of soil erosion, modern agriculture and related environmental issues
 - Partners with international organizations, sharing knowledge and implementing projects in cooperation with countries around the world to help find solutions to environmental challenges
 - Reclaimed land for about 1,000 communities throughout Israel
 - Reclaimed some 100,000 hectares (250,000 acres) of land for farming
 - Purchased some 260,000 hectares (650,000 acres) of land for communities
 - Created some 8,000 km of roads and forest routes
 - Educates hundreds of thousands of young people in Israel and abroad, intensifying their bond with Israel and helping the social integration of new olim into Israeli society
- And our vision for the next decade continues...*



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Jewish National Fund
KKL Resources Development
& Public Affairs Division
Jerusalem 2013
Photography: KKL Photo
Archives, Jerusalem

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