

# Time for action on new water resources

by Marsha Freeman

At the present time, Israel and the Jordan basin region is suffering from a drought, due to below-average rainfall, which has left water levels in Lake Tiberias below the “red line” that is considered the minimum allowable. If there is not adequate rainfall this winter, experts in Israel report, by spring the water commission, under the Ministry of Infrastructure, will reduce allocations of water by 40% to agriculture and municipalities. If the winter rains continue to be poor, then, as of April, the Israeli government has indicated that it will announce a tender for a new seawater desalination plant.

The drought underscores the urgent necessity to accelerate the implementation of regional water management and development projects—which have been long planned, and lately promulgated since the signing of the peace agreements between Israel and Egypt, Jordan, and the Palestinians—which have been stalled largely because of wrong-headed economic policies. The possibility for peace with Syria will only be successful if the issue of providing adequate water for the region, which will be raised to the top of the agenda once the political issues are settled, is solved.

Although the focus of Israel’s security concerns in trading the Golan Heights for peace with Syria is generally described in military terms, it is by solving the water shortage that security will be brought to the region. In the Israel-Syria case, 20% of the water in Lake Tiberias, which provides a significant amount of the water for Israel, is fed from springs in the Golan Heights. Joint regional water development projects will ultimately be the only way to assure security.

## Works in progress

In 1994, after Israel had signed a peace agreement with Jordan, a multi-phase water agreement was signed. The first stage involved construction by Israel of a pipeline from Lake Tiberias to Jordan, to carry 20 million cubic meters of water. This pipeline has been completed.

The second phase involves completing long-planned dam projects on the Yarmouk River. The Jordanians first started construction on a dam in the 1960s, but the project was bombed by the Israelis during the 1967 war. Efficient utilization of the Yarmouk flow had been part of the 1950s Johnston Plan for the Jordan basin development, but was never fully implemented because of the conflicts in the region, including

tensions between Jordan and Syria.

As of the first of this year, the Jordanian and Syrian governments have agreed to move ahead on their Yarmouk River Dam project. Construction is expected to begin in the coming months. Jordanian Water Minister Kamel Mukhadin said that only “the last touch-ups” are required.

The project is to be financed through the Kuwait-based Arab Fund for Economic and Social Development, which will contribute \$115 million; the Jeddah, Saudi Arabia-based Islamic Fund, which will contribute \$45 million; and the Abu Dhabi Fund, which will contribute just under \$10 million. The World Bank is against the project. The regional water shortage is so severe that the Jordanians are now discussing the possibilities of water desalination.

Expanded use of desalination has been much discussed in Israel, including the specific proposal that Israel would desalinate saline water in springs, and transfer the fresh water to Jordan. According to one hydraulic expert, this project has been at a standstill for the past two years, over a disagreement of who should pay for it.

Water is in critically short supply in all of the formerly occupied lands now administered by the Palestinian Authority. Engineers are examining the possibility of, most immediately, recycling treated waste water on the West Bank. In Israel, 70% of the waste water is treated and used for irrigation. After the signing of the Oslo Accords, a water-sharing agreement between Israel and the Palestinians was signed. This includes the use of water in the eastern mountain aquifer, which is largely unexploited, by the Palestinians.

A joint study, funded by the European Commission, by experts from Jordan, Israel, and the Palestinians, is under way, to examine how to optimize water use in the Jordan Valley, and to plan future land and water use from a regional perspective.

But it is clear that even taking into account the more efficient use of water, recycling of waste, and treatments for polluted and contaminated water, only by bringing in new supplies will the problem be solved.

## New sources of water

During the current drought, there have been proposals to raise the price of water in the Middle East, as one way to get people to “voluntarily” cut back use. This austerity approach will reduce agricultural production, reduce the standard of living for the population, and preclude the implementation of the economic development projects on the agenda—but it will not solve the water shortage.

One of the options under discussion in the region to increase the amount of water available, is to import water from Turkey. Until now, Israeli engineers have looked at the possibility of transporting water from Turkey in tankers. But another possibility under consideration is a “peace pipeline,” which would bring this relatively inexpensive freshwater through a pipeline crossing Syria. This has been opposed by



*An irrigation project in Israel, bringing water to the Negev. The most efficient use of existing water resources cannot meet the region's needs. New, "man-made," sources, using nuclear-powered desalination, will have to be created.*

those in Israel who do not want the country's supply of water to be dependent on any other country.

The long-term solution, which has been recognized by all those who have studied the problem, is to create new freshwater supplies through desalination. Although Israel has long been in a technical position to commercially apply desalination on a wide scale, and produces desalination equipment which is exported all over the world, its minimal application there has been a function of the unwillingness to invest the necessary resources. Twenty years ago, experts told the government that overpumping the underground aquifers would lead to an increase in salinity, but, until now, little has been done as an alternative.

Numerous studies have been carried out to evaluate the economic feasibility of large-scale desalination plants for Israel. The major factors are the capital costs (and interest rates charged on the capital), and the operating cost, which depends almost entirely on the price of the energy needed to run the plants.

At the present time, most of Israel's electricity is produced from burning imported coal. But there are ongoing discussions with Egypt, and also now, with the Syrians, to buy natural gas. Were Israel to bring the cost of energy down

through the near-term use of local, inexpensive, clean-burning natural gas, as the Saudis do, the operating costs for desalination would decrease.

One Israeli expert reports that in the 1990s, the World Bank concluded that desalination is the solution for the next decade. A decade ago, studies were conducted by the UN International Atomic Energy Agency (IAEA) on the application of commercial nuclear energy to desalination.

The Israeli government's participant in the IAEA commission studying desalination, Dr. Amitzar Barak, told *EIR* in 1994 that until the cost, per kilowatt of installed capacity, of nuclear power plants comes down enough to be competitive with fossil fuel plants, the Israeli government would not consider any nuclear plant projects. Dr. Barak estimated, however, that the cost of desalination could be reduced by 10% through economies of scale, and that the costs should not be extrapolated from the small-scale systems being used today.

Dr. Dan Zaslavski, a former water commissioner of Israel, also sees desalination as the solution, and emphasizes that desalination plants should be located on the Mediterranean Sea, not inland, so that only freshwater is piped across the country. Because a pipeline would cross some of Israel's most productive land, no chance should be taken that an accident could poison the aquifers upon which farming depends.

In 1994, Tom Loey, the president of IDE Technology, which builds the desalination plants that Israel exports, stated that nuclear energy is "the most obvious source" of energy for desalination. But the opposition to nuclear energy in the United States has "set back nuclear development worldwide," he said, including in Israel. Even nuclear desalination systems that had been designed by non-U.S. firms never came to fruition.

Plans for creating water for Middle East development have been on the books for years. The construction of desalination plants using conventional technology could be started immediately, and improvements in desalination technology are making it more efficient and economical. The application of nuclear energy in the region, for electricity and desalination, will remove any limits from what can be accomplished in developing the Middle East.