

Create New Water Resources, Which Will Create the Basis for Peace

by Marcia Merry Baker

The map on the next page is reproduced from the November 1999 document, "Solving the Problem of Fresh Water Scarcity in Israel, Jordan, Gaza and the West Bank," a White Paper prepared by the Center for Middle East Peace and Economic Cooperation.¹ The paper calls for large-scale desalination of seawater and brackish water, and the Center has been running full-page advertisements in major Hebrew and Arabic newspaper throughout the Middle East.

On the scope of the crisis, the report states that as of last fall, "Fresh-water supplies in the Jordan River Basin are at an all-time low in terms of availability per capita. Water quality and environmental problems are serious. And a fresh water shortfall of at least 20% by 2010 is forecast by almost all credible experts when the current population of 13 million people will have increased to as much as 20 million.

"Complicated by disparity of usage patterns (Israelis use about 100 cubic meters per year for domestic purposes, Jordanians about 50 and Palestinians about 30) water rights issues promise to be very difficult to resolve between Israelis and Palestinians and also between Israel and Syria, but would be much easier if there were large, new amounts of fresh water available."

Kensley Brunsdale, the Center's Counsel for Energy and Water, points out that to the average person and household in the region, faced with expensive, bad water, and scarce supplies, there is no question of the desirability of large-scale water desalination. In Section III of the White Paper, titled "Begin Large-Scale Desalination of Sea Water," the report notes, "Due to major advances in technology, the cost to desalinate a cubic meter of sea water is roughly half the retail cost of tap water paid by an Israeli household in Tel Aviv. *It is hard to believe that desalinated water is cleaner, tastes better, and costs only 1/1000 of what people are paying on both sides of the Jordan for bottled water!*" (emphasis in original).

At three of the sites shown—Gaza, Ashkelon in Israel, and at Wadis Hisban in Jordan—projects are already approved and under way for multimillion-cubic-meter desalination facilities. Reportedly, at the July Camp David "working group" talks on water (one of the five "final status issues") in Emmitsburg, Maryland, there was basically no dispute over

the need to collaborate to "make" and distribute new water resources in the region. The details shown here are familiar to any concerned policymaker.

However, to the average American, or even to otherwise well-informed citizens in other countries, the knowledge of the technologies and efficacy of the process of desalinating water, is lacking. Thus, the pro-development, pro-peace constituency of citizenry is deprived of basic need-to-know facts, to force through *the policy of economic development as the basis for peace*.

Moreover, although the focus of world concern is on the Middle East peace process, the need for large-scale water desalination is made obvious by the current drought in the mid-latitudes stretching from northeastern Africa, through the Indian subcontinent, through to eastern China. At present, more than 100 cities in China are suffering water shortages. A seawater desalination research center has been set up at Tianjin University on the North China Coast, and coastal cities are putting special effort into research and projects.

One Billion Cubic Meters

The "factory" symbols on Figure 1 denote favored sites for coastal and inland desalination facilities, which the Center for Middle East Peace and Economic Cooperation regards as "Phase I." The inland sites are at Bet Shean, Israel, and at Wadis Hisban, Jordan—a project already approved. If all these facilities were built, including several with adjacent power plants, a total output of 1 billion cubic meters of fresh water a year could be created. (One cubic meter is about 264 gallons.) This volume would equal half of the annual output of desalinated water in Saudi Arabia, where more than 21 million people rely on such water for 70% of the country's annual consumption!



The various symbols indicate how the new water supplies can be distributed. Two pre-existing channels of distribution are the National Water Carrier in Israel, shown by the dot-and-dash line, and the King Abdullah Canal, shown by the hatched line. Also, the report notes, "the region's natural mechanisms for distributing water (the common aquifers and Sea of Galilee) already provide tremendous flexibility for distributing much of the new water supply envisioned."

New lines of water distribution are shown by heavy black lines, especially to supply Amman, with the "Enlarged Conveyance System" from the Canal, plus the Hisban carrier,





1. Permission to re-print Figure 1 has been granted by the Center for Middle East Peace and Economic Development, 633 Pennsylvania Avenue, Washington, D.C. 20004. See www.centerpeace.org.

Desalination: The New Regional Water Supply Alternative for Israel, Jordan, Gaza, and the West Bank


Key

-  Existing Israeli National Water Carrier
-  Existing King Abdul'ah Canal



New supplies from desalination could easily reach 1 Bcm per year

-  Israel sea water desalination facilities (developed in stages dictated by demand) adjacent to existing power plants
-  Gaza sea water desalination facility adjacent to proposed power plant
-  Bet Shean possible brackish water desalination plant (50 Mcm p/yr.)- could serve Israel, Jordan or Palestinians
-  Hisban possible brackish water desalination plant (30-50 Mcm p/yr.)- would serve Amman


Other New Supplies and Cooperative Opportunities




 Cooperative Agreement to share the Sea of Galilee for mutually beneficial storage, distribution and water quality improvement purposes

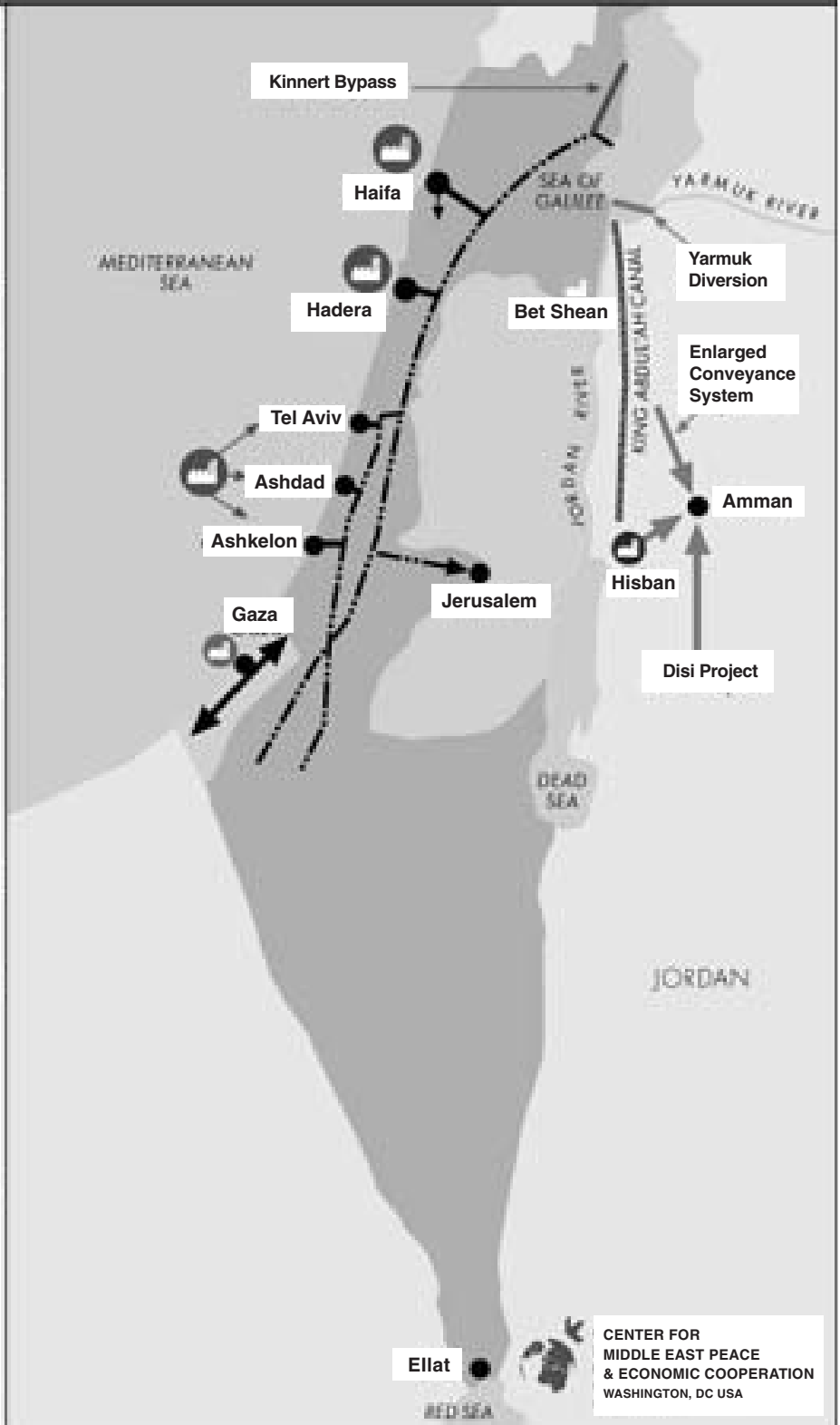
Two cooperative Sea of Galilee projects are proposed to maximize inter-dependent opportunities:

-  Yarmuk Diversion-50-100 Mcm p/yr. of new fresh water and storage for Jordan, could be linked to development of new supplies elsewhere from desalination
-  Kinneret Bypass-Possibility that would improve water quality for Israel, reduce pumping, with no related reduction in quantity

 Enlarged Conveyance System to Amman

 Disi Project-New Jordan supply (100 Mcm from southern aquifer)

-  New supplies could be delivered almost anywhere in the region if cooperative agreements, water banking and creative water exchanges are employed
-  Potential for resolution of present water conflicts will be greatly enhanced
-  Private sector can be employed to develop many of the required components



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and to the south, the proposed new Disi Project to bring in aquifer flow.

Not shown on Figure 1, but also covered are long-standing proposals for inland seawater canals. "There are serious proposals pending in Israel to bring large amounts of Mediterranean water inland, for desalination between the Mediterranean and the Dead Sea, using either a northern or southern route (Med-Dead). Another proposal would bring large amounts of Red Sea water (Red-Dead) for desalination inland. In both scenarios, the 400 meter elevation drop between the Seas and the Dead Sea would be used to generate electricity and desalinate seawater, with fresh water used for domestic purposes throughout the region, and waste brine ending up in the Dead Sea."

Thus, the "geography" of the sites of new water output, and the network of distribution, is clear. Also indisputable, is the proven success of the various modern desalination technologies—in particular reverse osmosis. And the urgency of the need for expanded water supplies goes without saying.

Besides the White Paper reported here, studies and feasibility plans have been drawn up for decades to promote desalination in the trans-Jordan. For example, in the March 1995 report prepared for the Palestinian Economic Council for Development and Reconstruction, titled "Water Resources and Agricultural Development and Management—a Subsector Report," author Hasan K. Qashu included an appendix on "The Desalination Alternative for Gaza." Dr. Qashu wrote, "Freshwater balance for Gaza is approaching a disastrous proportion as reflected by impacts on health and the rapid contamination trends of freshwater aquifers. The only practical sources are the restoration of surface and sub-surface freshwater flows across the boundaries with Israel, to original levels before the expansion of groundwater exploitation by Israel in the upper basin *or desalination of seawater*. Expected deficit of freshwater for Gaza will reach 40 million cubic meters a year by the turn of the century. This water can be produced from the sea using a co-generation of water and power facility at a cost of \$0.70-\$0.85 per cubic meter. This complex would generate about 50 million cubic meters a year freshwater and 50 megawatts power for sale through Gaza/West Bank grid" (emphasis added).

The White Paper from the Center for Middle East Peace and Economic Cooperation presents thorough tables of statistics on comparative costs of desalination in other parts of the world, and those proposed for the Middle East, showing how inexpensive it is.

As far as production costs, "The average price of desalinated sea water is today only one-tenth of what it was 20 years ago, dropping dramatically from \$5.50 per cubic meter in 1979 to \$0.55 in 1999, including interest, capital recovery, and O&M [operations and maintenance]." The desalination plant under construction in Tampa, Florida (34 million cubic meters a year output) will produce at a cost of \$0.55 per cubic meter. The report notes, "The careful study of cost data has convinced us that Israel could desalinate as much as 1 billion

cubic meters of sea water at a cost of \$0.55 to \$0.70, probably closer to the lower figure, and that the economy will largely justify and support that investment."

A Nuclear-Powered 'Oasis Plan'

The most interesting political-economic policy question, is: Why not go nuclear? The biggest part of the cost of desalinating salty water, is the expense of electricity for the process. Safe, modern nuclear power plants—in particular, the proposed high-temperature gas-cooled designs, coupled with the appropriate desalination technology—could vastly expand the "natural resource" base of water supplies in water-short regions.

For decades, Lyndon LaRouche has proposed such an approach for the Middle East, North Africa, and other arid lands, calling it the "Oasis Plan" approach. Envisioned are "nuplexes" of nuclear-powered and desalinated water-supply centers and corridors, home to complexes of advanced agro-industrial development. This kind of approach on the Med-Dead and Red-Dead routes, as well as on the sea coastlines, and for brackish-water sites, would transform the economic landscape throughout the Middle East. The impact would be to create "corridors of development" with plentiful power and water supplies, thus creating a man-made "Oasis" effect in the deserts (see *EIR*, May 19, 2000, "Solving the Water Shortage Is the Key to Mideast Peace").

LAROUCHE ON THE NEW BRETTON WOODS

"The present fatally ill
global financial and
monetary system must be
radically reorganized.

It can not be reformed, it
must be reorganized.

This must be done in the
manner of a reorganization
in bankruptcy, conducted
under the authority
not of international
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sovereign governments."

A 90-minute
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