Israel's 'regional development options'

The 250-page report released at Casablanca by the government of Israel, called "Development Options for Regional Cooperation," presents 10 categories of "sectoral development options." The report, excerpted below, takes up the vital issue of financing, proposing the formation of a Mideast development bank: "There is no doubt that it would be possible to get assistance from existing sources such as the World Bank, the European Investment Bank, and private banks. However, it is preferable to concentrate all investment money for Middle Eastern development in a bank set up exclusively for that purpose. This approach offers a number of important advantages. First, only 1% of the necessary capital is needed to establish the bank. Second, from a sociopsychological standpoint, the bank will encourage people living in the Middle East to see the regional framework as an entity in its own right."

Financial requirements

. . . Initial estimates of the investments that will be necessary for regional cooperation projects in the Middle East region as presented in this document over the coming 5 to 10 years amount to between $18-27 billion. . . .

The breakdown of investments according to sectors is as follows:

Water: $4-6 billion
Agriculture: $1-1.5 billion
Combatting desertification: $1 billion
Tourism: $2-2.5 billion
Transportation: $3-4 billion
Energy: $3-6 billion
Communication: $1 billion
Environment: $0.5-1 billion
Industry: $0.5-1 billion
Canals Project: $2-3 billion
Total: $18-27 billion

Canals to the Dead Sea

The difference in altitude between the Mediterranean Sea and the Dead Sea, and between the Gulf of Aqaba and the Dead Sea, about 400 meters, and the extensive evaporation from the Dead Sea produce a unique, important energy potential. Several possible alignments exist for a canal to convey seawater from the Mediterranean Sea or the Gulf of Aqaba to the Dead Sea. A canal could facilitate the production of hydroelectric energy, or alternatively, desalination of seawater and the production of water for domestic, agricultural and industrial use.

The Canal project will yield additional economic benefits apart from hydroelectric, such as: balance the Dead Sea evaporation, marine agriculture, tourism facilities, production of salt, power station cooling, supply for solar ponds, etc.

Alternatives:

1. The central route
Mediterranean-Dead Sea Canal starting from Gaza Strip
2. The Southern Alignment
Red Sea-Dead Sea Canal
3. The Northern Alignment
Mediterranean Sea-Dead Sea Canal starting near Haifa.

The central alternative: Mediterranean Dead Sea (starting in the Gaza Strip)

The completed Mediterranean Dead Sea (MDS) Project (see map) will transfer water from the Mediterranean to the Dead Sea in two consecutive periods. During the initial period more seawater will be pumped through the system than can be balanced by Dead Sea evaporation, and as a result the level of the Dead Sea will be slowly raised to its approximate pre-1930 level. During this 17-20 year "Filling Period"—about 1,750 million cubic meters of Mediterranean water will flow annually into the Dead Sea. During the "Steady State Period," after the Dead Sea level has reached the target elevation of −390.5 m (its "Steady State" level), the flow will be reduced to some 1,200 million m^3 per year, at which the lake level will remain stable. With this operation regime, the hydroelectric project will be able to generate electricity for many tens of years to come.

The 800 MW power station at the Dead Sea (composed of four 200 MW generating units) will operate mainly during peak demand hours, according to the needs of the electric grid. During the Filling Period, the Power Station will supply about 2,000 million kwh/year, to be reduced to about 1,300 million kwh/year during the Steady State period. . . .

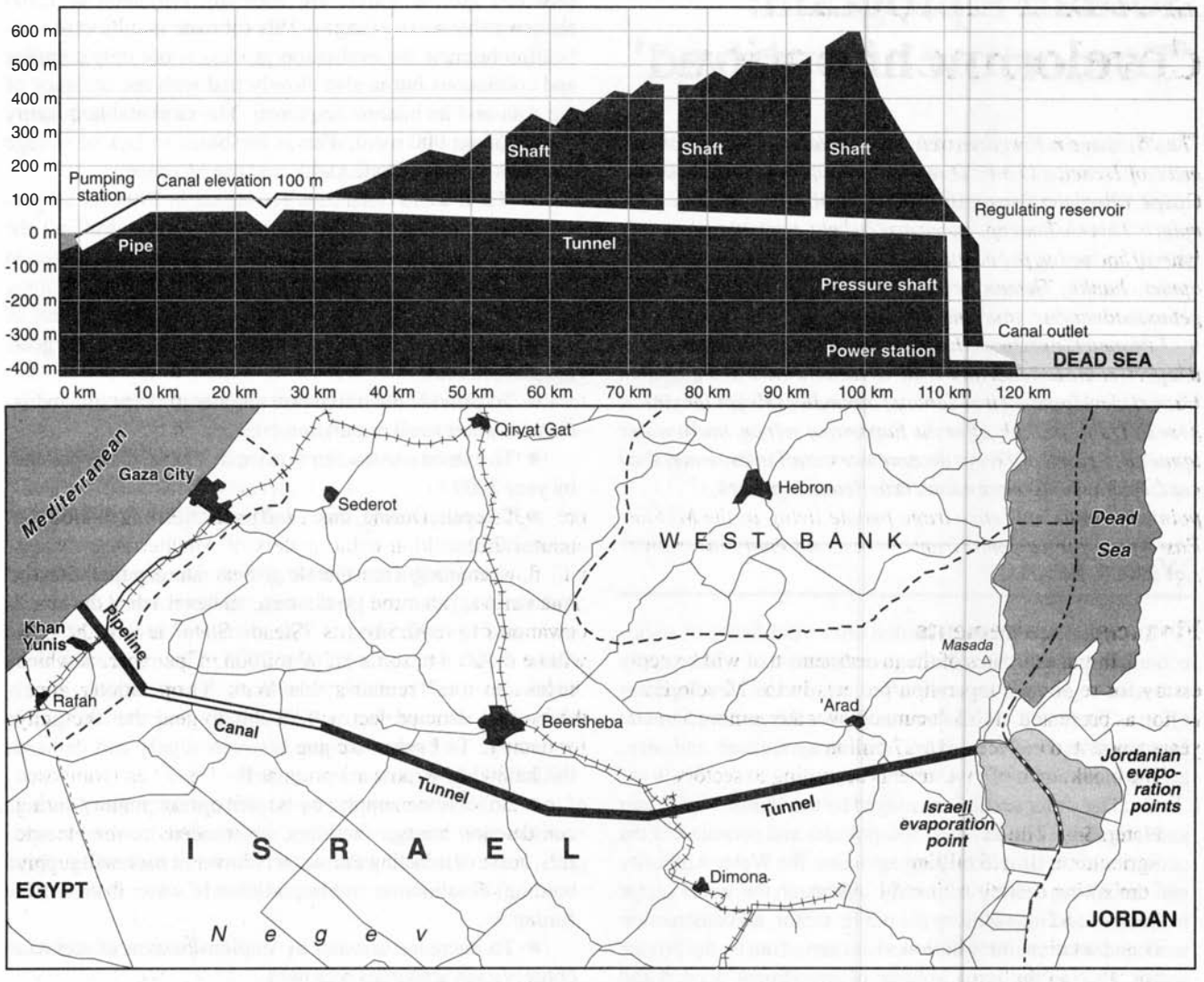
According to this alternative Mediterranean seawater will enter a Pumping Station near the Gaza shore which will raise the water to Elevation +100 m. At this level, the water will flow in an open 20 km long canal, to the Main Tunnel. The Pumping Station will consume about 630 million kwh/year in the Filling Period and about 420 million kwh/year during the Steady State period. About 70% of this energy will be recuperated at the Power Station which will utilize the added head. Since the Pumping Station will operate mainly during non-peak load hours and the Power Station will operate during peak hours, the electrical system will benefit from pumped-storage effects.

The Project comprises the following main components:

- An Intake Structure to be built at the Gaza shore with a stilling basin. . . .
- A closed concrete conduit ("Elevation Zero Conduit") that carries the seawater from the Intake Structure to the Pumping Station. The 15×8 m rectangular twin cell conduit,

FIGURE 1

Mediterranean-Dead Sea Canal proposed by Israel



Sources: Uri S. Würzburger; *Development Options for Regional Cooperation,* Government of Israel, October 1994.

1.4 km long, is buried so as not to disturb surface traffic.

- A Pumping Station, equipped with four electric pumps, that will discharge the water through a Pressure Pipeline to an elevation of about +100 m. . . .
- A Pressure Pipeline, made of precast concrete tubes and steel liner membrane, with a diameter of 6.1 m and length of about 7.6 km, will reach the border of the Gaza Strip at an elevation of 100 m above sea level. . . .
- An open trapezoidal canal ("Elevation 100 Canal"), about 40 m wide at water surface and 20 km long, that carries the water from the outlet of the Pressure Pipeline to the Main Tunnel near Kibbutz Ourim. . . .
- The Main Tunnel, which begins at the Elevation 100 Canal outlet near Ourim, carries water to the Regulating Reservoir above the Dead Sea cliffs at a flow rate of up to 64 m^3/sec. The tunnel length route passes south of Beersheba, avoiding fresh water aquifers and other water-bearing strata. . . .
- The Regulating Reservoir, with an active storage volume of 9.5 million m^3 is to be built at the Main Tunnel outlet, on a plateau north of the Parsa ravine and west of the Dead Sea escarpment. . . .
- The Power Station is to be constructed in a system of caverns excavated into the rock and shall comprise four generating units, each consisting of a turbine and a generator of 200 MW capacity, transformers and auxiliary equipment.