

Giant Turkish dam projects offer water for the desert, aid to peace

by Marcia Merry

Astride the Euphrates River in south-central Turkey is the giant Ataturk Dam—centerpiece of one of the most ambitious hydraulic projects in the world. This project, and the proposal for a “Peace Pipeline,” promise water for the deserts of the Middle East.

The Ataturk Dam is part of the Turkish government’s Guneydogu Anadolu Projesi (Southeastern Anatolia Project, or GAP), that calls for building 21 dams and 17 hydroelectric power plants on the Tigris (Dicle) and Euphrates (Firat) River systems. The plan originated more than two decades ago with the Turkish State Hydraulic Works, and today it has evolved into a master blueprint involving a combination of 13 major projects, primarily for irrigation and hydropower. Construction on the first dams began in the 1970s, and today there are three dams so far completed or in the final stages.

While the GAP is designed for the transformation of the six provinces of southeastern Turkey, the potential for harnessing the waters of the Anatolian highlands offers the possibility for bringing water to millions as far south as the southern Arabian Peninsula.

The only significant source of precipitation run-off that is available to be developed for use in the Middle East is from this region, which extends into the highlands of Iran. At present, Turkey makes use of only about 8% of its net precipitation. In contrast, Israel, for example, uses fully 88% of the surface water available to it—which is very little. There are millions of acre-feet of water available in Anatolia for the development of Turkey, and for neighbors to the south.

In 1986, Turkey initiated a mobilization for the Peace Pipeline. The plan called for diverting water flow from the Ceyhan and Seyhan Rivers, which rise in the Anatolian highlands and discharge uselessly into the Mediterranean, southward via Peace Pipelines into the arid wastes as far as Yemen.

Taking the opposite approach, geopoliticians in London and Washington in October advocated that Turkey exercise its “Spigot Option” against Iraq, and use the Ataturk Dam to turn off the flow of water in the Euphrates to Iraq. According to John Vidal, the environmental correspondent of the London *Guardian*, “Iraq would wither in the first true ‘eco-war’ . . . Water is Iraq’s Achilles heel.” Vidal admitted that the

“Spigot Option” has some problems, for example, that turning off the Euphrates would hurt Syria, through which the river flows between Turkey and Iraq; and also, Turkey does not control all of the headwaters of the Tigris River. However, Vidal is not alone in the call for “hydro-warfare.” Peter Schweitzer, of the American Foreign Policy Council, has also called for Turkey to use its water as a weapon, and received prominent attention in the *International Herald Tribune* in November.

Apart from the demands of these madmen, all the water development plans will be thwarted if Bush’s drive for war succeeds. Plans for the Peace Pipeline are now completely stopped.

Turkey initiated ‘Peace Pipeline’

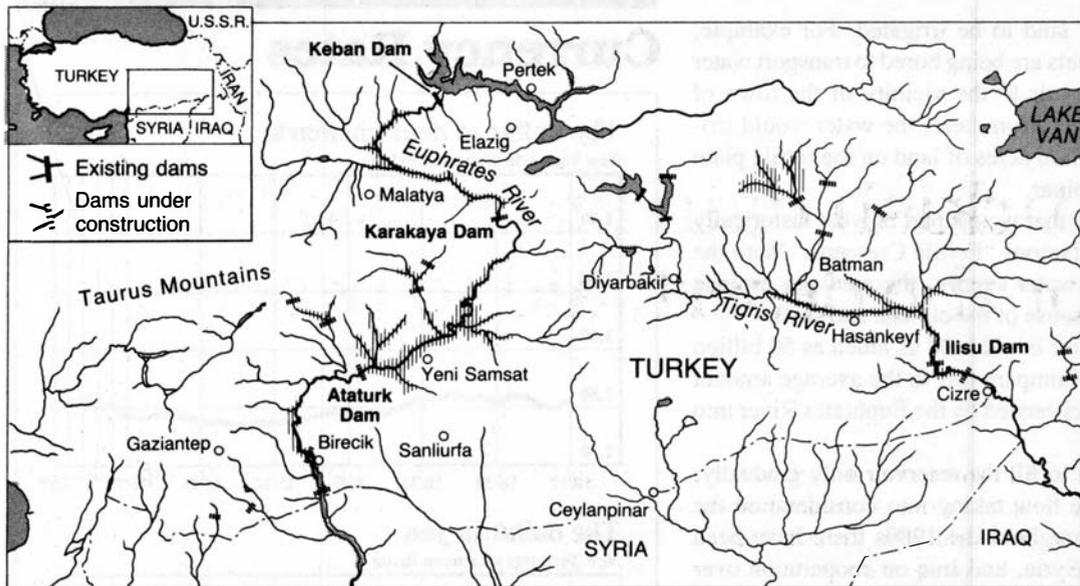
The original Turkish proposal called for one branch of the pipeline to go through Syria and Iraq, and another through Syria, Jordan, and Saudi Arabia, all the way to Yemen. The cost might run as high as \$21 billion, according to one American engineering firm, but there are no insuperable engineering feats involved, and the payoff would be immeasurable.

Right from the start, opponents branded the plan as Turkish propaganda, but there was great enthusiasm from the public. The original idea called for joint financing by Turkey, Syria, and Iraq. There was great interest in a public investment offering.

There is no quick, inexpensive solution to the need for water to the south, but the need is great. Although Saudi Arabia has developed water supplies through desalination, and from pumping from the sizable aquifers that underlie the region, there are many parched, waterless areas.

Water supplies are an acute question in Jordan. Officials at the staff of the Water Research Center of the University of Jordan estimate that the average Jordanian uses only 22 gallons (83 liters) of domestic water per day. This contrasts with 93 gallons (350 liters) per person per day used in Western Europe, and 66 gallons (250 liters) in Israel.

In the face of these acute needs, the Peace Pipeline provides a potential for political and economic stability. Econo-



The Southeastern Anatolia Project (GAP) plan for 11 dams on the Tigris River system and 10 on the Euphrates River system (plus the Keban Dam), will provide water for development.

mist and statesman Lyndon LaRouche has stressed this project as part of the "Oasis Plan" basis for peace in the Middle East. This autumn, in the Paris daily *Le Monde*, former French Foreign Minister Claude Cheysson also called for a giant Turkey-to-Yemen regional water project, to aid the peace process in the Gulf.

GAP project continues

Describing the future of the GAP, the Turkish Minister of State Kamran Inan said, "These rivers have been here for millions of years. We want to put the water to use, to benefit the children of this country. We are building a project for generations to come. I don't believe there is anything of greater urgency. Turkey is increasing by 1.3 million people every year. The requirements are enormous, but if intelligently used, our resources are more than enough to cover these demands."

According to the GAP "Final Master Plan Report" of April 1989, it is planned that at full development, over 1.6 million hectares of land will be irrigated, and 26 billion kilowatt-hours (kwh) of electric energy will be generated annually with an installed capacity of over 7,500 megawatts. The total planned irrigation area corresponds to 19% of the total economically irrigable area in Turkey (8.5 million hectares), and the total annual electricity generation accounts for 22% of the economically viable hydropower potential of the nation (118 billion kwh).

The objectives of GAP cover power, agriculture and industry, and overall development. The GAP dams will increase Turkey's hydropower capacity by at least 70%.

The design covers the six provinces of Turkey that occupy the southeastern part of the nation, and border on Syria to the south and Iraq to the southeast. The land area of 73,863 square kilometers corresponds to the size of Belgium, Hol-

land, and Luxembourg combined. The region comprises 9.5% of the total land area of Turkey. The population in 1985 was 4.3 million, accounting for 8.5% of the nation's total of 50.7 million in 1985.

The GAP region is one of the less developed areas of Turkey, and in the mid-1980s, the per capita gross regional product was 47% of the per capita gross product of the nation. However, 15 years after the initial stages of the GAP, the region was self-sufficient in basic foodstuffs, including wheat, meat, and milk. And, the region accounted for high shares of the national output of certain agriculture commodities: 76% of lentils produced in Turkey, 92% of the pistachios, 28% of the pomegranates, 22% of the grapes, 15% of the barley, and 13% of the cotton.

The Keban Dam, the first of the 21 dams in the GAP project, was completed in the 1970s and is fully functioning. The reservoir of the Karakaya Dam is still being filled, and eventually it is expected to provide nearly one-quarter of the GAP's electrical output.

The Ataturk Dam's reservoir is also still being filled. Named after Mustafa Kemal Ataturk, the leader of modern Turkey, the Ataturk Dam spans the Euphrates downstream from the ancient town of Samsat.

The Ataturk Dam is the world's fifth-largest earthen dam. The dam is 600 feet high and over 6,000 feet long. Hundreds of trucks, graders, and bulldozers have moved multi-thousand tons of rock and dirt. An estimated 110 million cubic yards of fill have been hauled in. Over 12,000 people have worked on the site, building the dam itself, the power plant, irrigation water tunnels, and related works. Provision has been made for the dam to withstand earthquakes, which are common in this region.

When completed, this single dam is designed to produce one-third of the GAP's projected energy output, and provide

water for over half the land to be irrigated. For example, gigantic twin water tunnels are being bored to transport water from the Ataturk Reservoir to the vicinity of the town of Sanliurfa, 33 miles away. From here, the water would irrigate as many as 1.2 million acres of land on the fertile plain of Harran, near Ceylanpinar.

This region is the northern-most part of what historically has been known as the famous "Fertile Crescent." With the provision of a reliable water supply, the area can provide three harvests a year because of the climate and soils.

The Ataturk Reservoir could hold as much as 50 billion cubic meters of water. Compare this to the average amount of 30 billion cubic meters carried by the Euphrates River into Syria in a whole year.

Turkey has planned to fill the reservoir only gradually, and then to regulate the flow taking into consideration the downstream users. Throughout the 1980s there have been talks between Turkey, Syria, and Iraq on cooperation over the Euphrates water. In 1975, Syria completed the large Al-Thawra Dam on the Euphrates, and Iraq accused Syria of withholding water. However, in April this year, Iraq and Syria signed a Euphrates-sharing agreement.

In January 1990, Turkish President Turgut Özal spoke at the initiation of the filling of the Ataturk Reservoir (which will take years), stressing that there would be no impoundment of the Euphrates waters at the expense of Syria and Iraq. "Let no one suspect our intentions. We have taken into account the needs and concerns of our neighbors. We will never use the control of water to coerce or threaten them."

Opposing this view, and the water development perspective, the World Bank withdrew its funding support for the GAP. However, Turkey proceeded without it.

Saving the heritage

Teams of archaeologists have been working since the 1970s to excavate, save, and reassemble significant artifacts of the previous settlements in this ancient region, in advance of the new lakes and water channels projected by the GAP plan. Down through the centuries, there have been successions of societies here, from Assyria through to Roman times, and medieval cities. Trade routes have criss-crossed the region, including the Silk Road to China. Many of the small villages occupy sites with 2,000 years worth of ruins and artifacts.

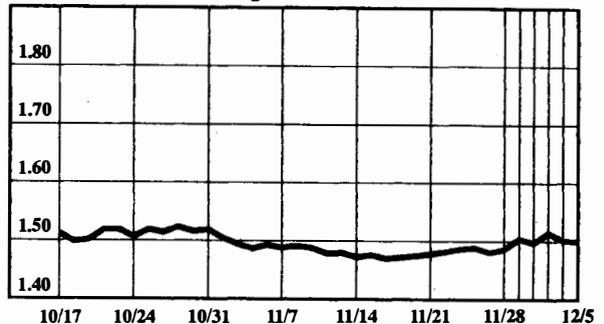
In the floodplain of the Ataturk Dam, teams began their salvage work in 1978. Even the residents of the modern village of Samsat were resettled into Yeni (New) Samsat, at a site which will be on the shoreline of the new Ataturk Reservoir.

The Turkish Ministry of Culture has salvage sites at 60 locations in Anatolia and, until the Bush war drive, had been seeking foreign assistance to keep pace with the construction of the dams. Now, all is in abeyance.

Currency Rates

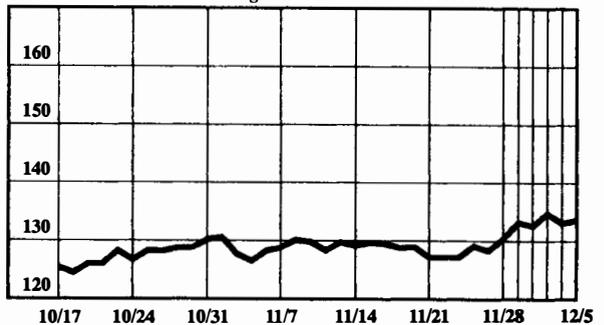
The dollar in deutschemarks

New York late afternoon fixing



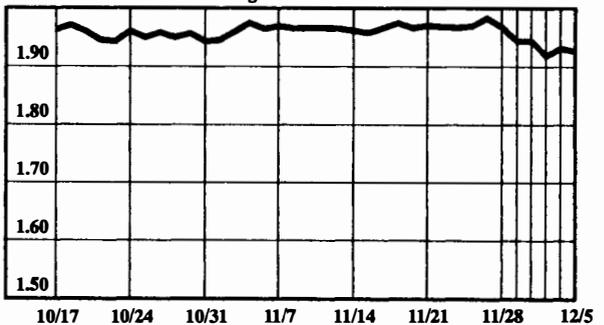
The dollar in yen

New York late afternoon fixing



The British pound in dollars

New York late afternoon fixing



The dollar in Swiss francs

New York late afternoon fixing

