

# Syria: attempting to tame the Euphrates

TEN years after Syria first harnessed the waters of the Euphrates, the Damascus government is contemplating building a second dam on the river. It will be a medium-size construction, says deputy irrigation minister Mahmoud Tijjar, somewhat smaller than the 4.5-kilometre Tabqa dam, opened on 5 July 1973. The project is still at a preliminary stage. Feasibility studies have not yet been done and a site still has to be chosen — although the dam will be upstream from Tabqa, somewhere between Al-Shajara, at the northern end of the artificial Lake Asad, and Jerablus, near the Turkish border.

A second dam is needed to help to solve the serious shortage of power. Lack of rainfall and Turkey's increased use of the upper waters of the Euphrates have reduced drastically the impact of the Tabqa dam. In late February, only three of its 100-MW Kaplan-type turbines were in action, because there was not enough water in Lake Asad to power the other five.

The Syrians, anxious to promote orderly development of the Euphrates' waters in all the countries through which it runs, have been careful to

avoid direct, public criticisms of the Turks. Tijjar says the Turks have been using too much water since the Keban dam opened in 1974: "At Keban, they are taking what they need, no matter what our needs for the remaining water are," he says. But, he adds, "the main problem is the low rainfall in the area as a whole."

This season, rainfall has been much lower than usual. "We think we are not going to get more than 20,000 million cubic metres (of rain) — less than the average rainfall in the Euphrates basin, which is usually around 27,000 million cubic metres," says Hazem Toron, a technical consultant at the Irrigation Ministry, which has taken the place of the old Euphrates dam ministry.

Tijjar believes the problems of sharing the Euphrates' waters require co-operation between all three riparian states — Syria, Turkey and Iraq. He is particularly worried about the impact that Turkey's planned Ataturk dam will have on the flow of water to Syria, and also about the effect of other dams being built or planned by the Turks — such as the major Karakaya dam, being built by an Italian consortium, and

two smaller dams nearer to the Syrian border, at Karkamis and Findikli (MEED 17:7:81).

"Any dam built in the valley by Turkey inside Turkish borders should be built after an agreement with the Syrian and Iraqi governments," Tijjar says. Syria had ensured that there was at least an understanding with its downstream neighbour, Iraq, before it started building the Tabqa dam. But Turkey had shown no equivalent concern when it embarked on its major dam construction projects. "With Iraq, everything was all right. Unfortunately, however, the Turks have started a new construction (the Ataturk dam) without any agreement with their neighbours," Tijjar explains.

Despite the present low ebb of Syria's relations with Iraq, Tijjar agrees that Syria should join Iraq and Turkey in forming a multinational Euphrates river authority to regulate the use of the Euphrates.

"Of course there is a need (for such an authority). Whenever any country wants to build a construction on the river valley, it should take into account the needs of other countries," he says.

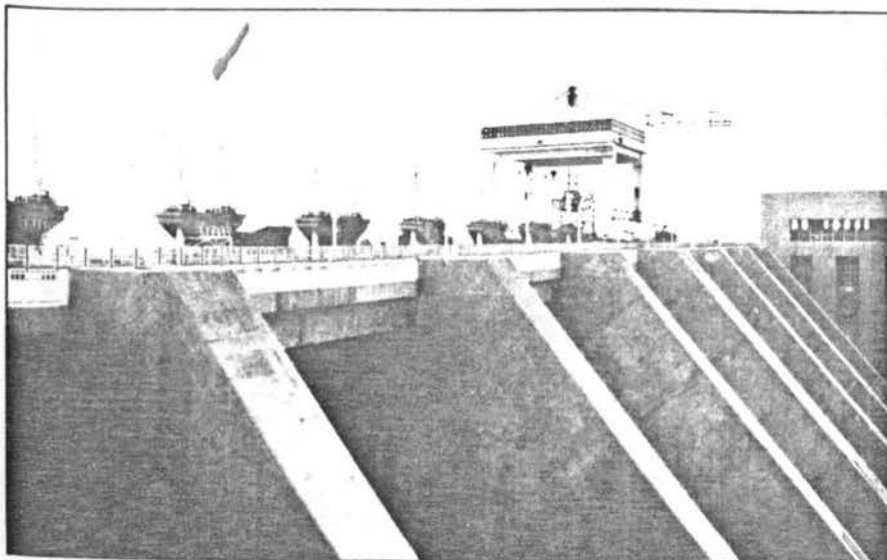
And Syria's needs are considerable. Until 1983, the Tabqa power station operated at 65 per cent capacity — producing close to 2,500 million kWh in a full year, or about 45 per cent of all Syria's electric power. But the turbines are now working at only 30-40 per cent capacity and there appears to be small chance of an improvement — although summer is coming and electricity demand will inevitably increase.

Power cuts are already common, and there seems little the Syrians can do — short of buying substantial numbers of gas turbine generators to alleviate the impending crisis.

A small regulatory dam, being built by the General Company for Land Reclamation 25 kilometres downstream from Tabqa, should come into service soon. The first of its three 70-MW turbines should be producing power by the end of 1985. The £500 million (\$127 million) dam is being built with technical assistance from two Soviet companies, Energoprojekt and Technopromexport.

The Irrigation Ministry is also looking at the possibility of building three dams on the Khabur river, which flows into the Euphrates south of Deir al-Zor. These will provide some electricity, as will the new Tishrin dam on the Kebir She-mali river, near Latakia. Planned to come into service in 1985, the

The first Euphrates dam, at Tabqa: its power station is working at less than half capacity because of Lake Asad's low water level



MEPhA/J Roberts

Tishrin dam — begun in 1980 — is one of several schemes inherited by the Irrigation Ministry in 1983 from the former public works ministry.

Although power generation is an important part of the dam building programme, most of the new dams are principally needed for irrigation. The original Euphrates dam scheme called for the irrigation of 640,000 hectares; Tijjar believes the eventual figure could be close to 700,000 hectares. This would effectively double the amount of land irrigated by the Euphrates before the Tabqa dam was built.

But, so far, only about 60,000 hectares are being irrigated. Completion of the crucial 18-kilometre first stage of the main headreach canal — from the dam to the Balikh area — is not due until mid-1985, although work on the £Syr 250 million (\$ 64 million) project began in 1977. However, early in 1983, the Syrian Arab Company for Irrigation Construction (Sarico) started work on the canal's £Syr 350 million (\$ 89 million) 52-kilometre second stage. For completion at the end of 1985, it should ease irrigation problems considerably.

At present, Tijjar says, Syrian and foreign technicians are working on the problem that has plagued the irrigation scheme for the past decade: the soil's high gypsum content. The gypsum makes the ground vulnerable to subsidence; the canals therefore have to be made watertight to ensure that seepage does not cause erosion of the ground beneath. "We are using butene or polyvinyl chloride (PVC)

sheeting to prevent leakage through the canals, or a changing of the understructure. We are dealing with that and we hope we have overcome the problem."

Syria is getting substantial help from the Soviet Union in the programme to tame the Euphrates — notably from government irrigation specialists and from Solkhazpromexport, a Soviet trading company. Japan's Nippon Koei, Romania's Romagrimex and France's Geraset have also been working on various aspects of the Euphrates project (Syria, MEED Special Report, March 1980, page 35).

Finance has come mainly from domestic sources, from the World Bank and from the Soviet Union, which provided much of the initial funding for the £Syr 1,600 million (\$408 million) cost of the Tabqa dam itself. The World Bank in 1974 lent \$73 million for irrigation and agricultural development and a further \$30 million in 1979. "We are now negotiating with the World Bank to get more loans. No figure has been set, but it will be for the Khabur river area," says Tijjar. The loan is expected to be for \$80 million.

Fresh World Bank finance and progress in construction of the main headreach canal mean Syria can look forward to a rapid expansion of its irrigated land in the second half of the 1980s. Useful starts have already been made: 21,000 hectares are being irrigated in the Raqqa area Pilot Project; in the Euphrates Middle Stage Project, more than 27,000 hectares have been reclaimed; in the Meskeneh region,

almost half a 21,000-hectare plot has been reclaimed, with Soviet help, and the rest should be ready for cultivation soon. Work on a fourth major scheme, the Meskeneh, Gharb & Aleppo Plains Project, which involves the irrigation of 130,000 hectares, has begun.

Eventually, the aim is to ensure that production of cotton, wheat, sugar beet, vegetables and industrial crops will be sufficient to enable a country once dubbed the breadbasket of the Roman East to feed itself again. Much still needs to be done. So far, only 50 of the estimated 400 new villages planned for the reclaimed and irrigated land have been built. Infrastructure, such as roads and power installations, needs completion. Parts of the project will take several years before they show results — for example, the planting of 3 million saplings to provide raw material for the £Syr 750 million (\$191 million) paper mill at Deir al-Zor, or the 250,000 fruit trees and thousands of vines and nut trees planted along the valley.

But a start has been made, and with agricultural production now considered to be of prime importance in a country threatened with the decline of its chief source of foreign exchange, oil, it is certain that Syria will continue to give priority to the development of its share of the Euphrates basin — even at a time of severe economic constraint.

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