Addis Ababa Water Supply — a capital task (*)

Today, the regular availability of drinking water is a luxury for the average African household. The situation is worse in rural communities, where a considerable part of a woman's working day is spent fetching water, but in a continent where the urban population is galloping at an annual rate of 4.5%, however, long-term planning of urban water supply is an absolute necessity. An efficient and dependable water supply system is an essential feature of any modern metropolis.



AAWSA

A water point on the outskirts of Addis Ababa

Addis Ababa is a fast-growing African city. In addition to being Ethiopia's political and economic capital, it is also the hub of African diplomacy, hosting the headquarters of two leading continental organisations: the Organisation of African Unity (OAU) and the United Nations Economic Commission for Africa (ECA), which hold most of their important meetings there. Until 1976, the population of Addis Ababa is estimated to have grown at a staggering 6.5% annually, which has since fallen to a still-high 3%. A city founded in 1887, its population only half a century ago stood at a mere 100 000. Some estimates say its population, which presently stands at over 1.5 million, will hit the 6 million mark by the year 2000. Long-term planning of its water supply was understandably not part of the spontaneous birth of Addis Ababa (the name means New Flower in Amharic, the official language) just over a century ago. The numerous springs and streams that flow from the surrounding hills were considered enough; but not for long. It was a matter of a few years before water began to be a scarcity in the New Flower. It even became a critical problem at the palace of Emperor Menelik. The first-ever pipeline was in fact installed to supply water to the palace from a spring at some distance. It was hailed by all as a technological miracle and dispelled earlier scepticism held by the Imperial family and the Emperor's aides about water being pumped uphill, against the law of gravity. The acute shortage of water continued, however, for the large majority of the inhabitants of Addis Ababa, who continued to depend on river, spring and well water for their daily needs.

Limited efforts were made to increase pipe-water distribution during the brief Italian occupation of the city from 1936 to 1941, but it was only after the Italians left and the municipality of Addis Ababa was reorganised with a separate water supply services department that it was possible to distribute 2 800 m^3 of pipe-water to the city for the first time. The department was serving about 1 500 customers. The earliest dam with a capacity of 30 000 m^3 was the Gafarsa dam, which was raised to its present height in 1955 and a treatment works was added in 1960.

Recurrent drought and the growth of the city's population necessitated the construction of a new dam on the Akaki river at Lagadadi, north-east of Addis Ababa. Completed in 1971, Lagadadi comprised a concrete buttress main dam and gated spillway, a

(*) Article provided by the Delegation of the Commission of the European Communities in Ethiopia.



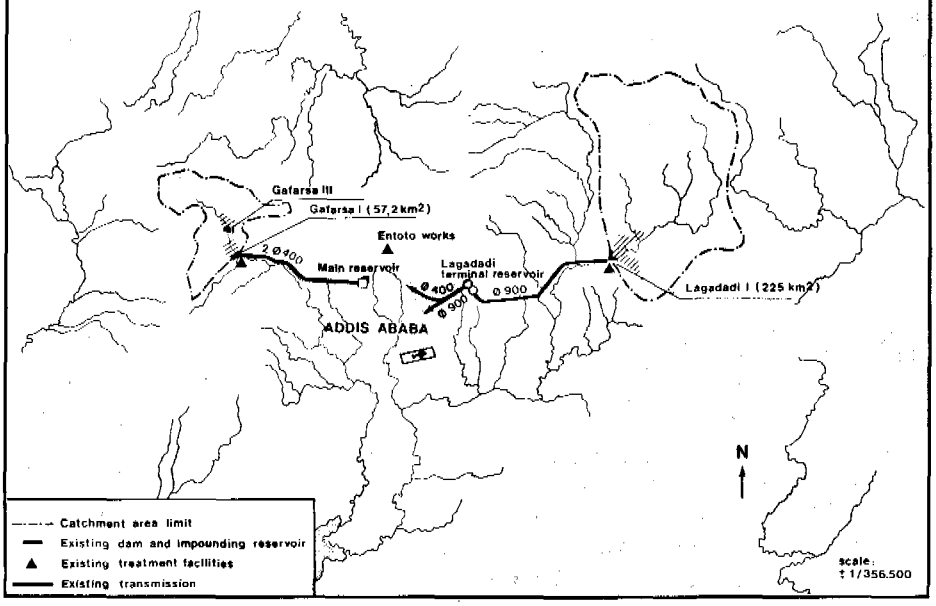
AAWSA

Extension work on the treatment plant at Gafarsa

rockfill dam, a water treatment plant of 50 000 m^3 and a 900 mm pipe-line to the city. Soon, even the combined daily total of 72 000 m^3 of water supplied to the city some 18 km away could not cope with the rapidly growing population. It was at this stage of expansion that the EEC stepped in with financial assistance for the Addis Ababa Second Water Supply Project. An agreement was signed in December 1983 between the European Community and the Ethiopian Government providing for a grant of ECU 45 750 000 and a loan of ECU 7 700 000 from the Community to finance a part of the project aimed at increasing the overall supply from 72 000 m^3 to 180 000 ^{3} a day. This meant increasing the treatment plant capacity at Lagadadi from 50 000 m^3 to 150 000 m^3 a day and rehabilitating the treatment plant at Gafarsa, reinforcing the supply pipe-lines, installing new storage tanks and pumping units, strengthening the distribution mains and laying 20 km of new mains. At the time, the project was the largest single project ever financed by the EEC in any ACP country.

On the government's side, the Addis Ababa Water Supply and Sewerage Authority (AAWSA) was responsible for the implementation of the project. AAWSA is an autonomous public body responsible for the city's potable water supply, the conservation and control of groundwater and the prevention of its pollution, as well as for ensuring the sanitary disposal of sewage. It soon set up a special office with its own engineering staff to oversee the implementation of the project. In August 1981, the French consulting firm BCEOM was appointed to undertake the analysis of tenders and to assist with tender negotiations, the supervision of the works, and the post-implementation (final acceptance, etc.). The same firm had also carried out the design work.

Existing production and transmission facilities location map



Tenders were opened in August 1982 and out of a total of 68 bids received, three companies tendered for all nine lots that made up the construction contract. One of them, J. Riepl of the Federal Republic of Germany was awarded the contract after lengthy negotiations. Project execution began soon after its signing in 1983. Construction proceeded on schedule and by the end of 1985, 93 % of the work was completed. Despite the fact that the shipping and delivery of most equipment, in particular the large-diameter pipes, took place at the height of the 1984/85 famine crisis, when the country's main port, Assab, was overloaded and transport inside the country committed to emergency relief, the contractor did a commendable job by largely completing the project within the original time frame of 30 months.

AAWSA says that the completion of the project has not only eliminated the severe shortage of water the city had been experiencing but has also made it possible for some peasant associations in nearby localities to get a continuous supply of potable water for the first time. The project had also created employment opportunities for some 600 Ethiopians over a period of three years. Studies indicate that the adequate supply of water for Addis Ababa is assured until 1992. After 1992, however, given the current population growth rate the city will need expanded water supply facilities. AAWSA, therefore, is presently preparing for the third phase of its expansion programme. ○



AAWSA

The Lagadadi Treatment Works, focus of much of the project