



IDRC FEATURE

INTERNATIONAL DEVELOPMENT RESEARCH CENTRE
Box 8500, Ottawa, Canada, K1G 3H9 • Telephone (613) 996-2321
• Cable: RECENTRE • Telex: 053-3753

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BRINGING WATER TO THE PEOPLE

BY CLYDE SANGER

In its upper reaches, the Thika river seems an insignificant stream, as it tumbles down out of the Aberdare mountains of Kenya into the Kikuyu district of Muranga. Often it is lost sight of in little meadows or behind banana trees.

But it is no longer insignificant to the 140,000 people of the Kandara division, where a well-organized 'harambee' (or self-help) project, has turned the river into a source of drinkable water delivered right to the door of every person in the area.

This point about home delivery is very important in the eyes of George Mwicigi, Kenya's Assistant Minister of Agriculture who is also Member of Parliament for Kandara. Before the pipes were laid, he explains, women used to have to spend at least three hours every day clambering up the steep slopes from the river, carrying 4-gallon drums of water on their backs. Doctors told him that most of the bone injuries suffered in the area were the result of women slipping on these muddy ridges.

By 1970 people were fed up with this situation. They began to organize in smallish groups to finance pumping schemes. Mwicigi says he found 22 different committees making separate plans for local communities, not to mention the 38 coffee factories that were making their own arrangements, too.

He managed, after a lot of talk, to get them all to combine on a single gravity scheme. By building a small dam up in the forest at 7600 feet, enough water would be impounded for everyone in the area to have at least six gallons a day -- on tap. And it would be clean water, unlike what had come from the river on the women's backs or what would be drawn up in local pumping efforts.

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His biggest enemy was pessimism: "We can't do things on such a scale". But eventually all the groups were won over. Collection committees were set up in each community to raise 500 shillings (about \$60) from every family, and to arrange communal work-parties to dig the 4-foot-deep trench in their stretch of the system.

Considering that the Kandara water scheme was almost entirely built by volunteer labor, it is most impressive. It consists of some 600 kilometres of main-line or branch-line pipe, 8 inch and 12 inch in diameter, leading off into standpipes inside each farm, cattle-dip or community centre. The pipes are buried under three feet of earth, for protection (elephants in the forest are one problem). And there are a dozen large break-pressure tanks, to store and control the flow of the water as it descends more than 3000 feet. Laying the pipes down slopes and up facing ridges was a test of engineering skills, since the whole scheme relies on gravity.

Some funds for the scheme -- for the pipes and tanks -- came from Canada and West Germany, and three German volunteers came as engineers. But Mwicigi estimates that local people covered half the cost with cash contributions and labor. Certainly it could never have been done without thousands of men and women digging the trenches and building the tanks.

But has it been at too high a cost? Capital costs work out at \$50 per person, and several visitors from other African countries have said it can hardly be a model for them. They could not afford such expenditure, and anyway they are trying to bring potable water to rural communities with less density of population.

Where are alternative models to be found? Perhaps in Malawi, where a number of gravity schemes taking water off Mulanje mountain bring it near communities at a fraction the Kandara cost. But then in the Mulanje schemes women still have to walk up to half a mile to collect water in the old style.

The answer must be that there is no single model. Each rural area in Africa is liable to face its own set of problems in obtaining a steady supply of clean water, and will have to devise its own solutions.

The single common thread is a growing concern to provide access to good water supplies for entire populations. Tanzania has committed itself to doing this for all its people within 16 years.

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A great effort is needed in many countries. Latest figures show that only 6 percent of Ethiopia's 25 million people have access to water that is fit for human consumption. In Nigeria only 10 percent of rural peoples have access to improved sources; the rest take water from shallow wells and streams.

A country like the Sudan has to come up with several answers. Surface waters are adequate around the Nile and its tributaries, and in the south where floods create their own problems. Boreholes could tap ground water from the Nubian Sandstone in the northern quarter of the country, but this is a lightly populated part. What can be done for nomadic peoples who migrate with their livestock looking for supplies that get scarcer as population increases?

Even in a country like Tanzania which has many rivers descending to the ocean, gravity schemes may play only a minor part. Planners there are putting more hope in drilling boreholes with powerful new rigs, and constructing dams with earth-moving units.

A whole pattern of water supply schemes has had to be turned around in Tanzania since independence. In colonial days the emphasis was on commercial schemes, running the water for the benefit of cash crops and livestock raised for export. Now it is upon the well-being of the people.

Recently two workshops of geographers, engineers and planners from ten African states were held in Nairobi and Maseru to discuss the various problems of providing rural water supplies. They were held under the sponsorship of the International Development Research Centre, with the hope of identifying priorities for research in this sector.

The participants had many priorities. What are the best ways of involving local people? How can states in eastern Africa coordinate efforts to help nomads who habitually cross boundaries? Isn't it better and cheaper to adapt some local technology of getting water than import foreign ideas? What lessons can be learnt about maintaining and managing a completed water scheme?

Soon more research will begin on these and other questions. The building of communications between African states, so that they can share the experience and the lessons of this research, will be an important part of the endeavour. The important thing is to share ideas.

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