

Low-cost sanitation in Mozambique

by Hilda Paqui

The UN Development Programme and Canada's International Development Research Centre have joined up for a strong latrine-building effort in Mozambique to improve health and provide employment.

AMIDST emergency relief, Mozambique is struggling to improve the living conditions of rural and peri-urban populations by constructing inexpensive and hygienic pit latrines. This is made possible through a self-help pilot project supported by the United Nations Development Programme (UNDP) and Canada's International Development Research Centre (IDRC).

In 1970, there were only 60,000 latrines in the whole of Mozambique — a country the size of Spain, France and Britain combined. Diseases associated with poor sanitation including diarrhoea, parasitic infections and enteroviruses were rampant and infant mortality was high.

The situation began to change with the launch of a massive national latrine-building campaign in 1976. Promoted by primary health care personnel and local health workers,

the campaign was so aggressive that some people were allegedly denied rides on buses by their village leaders unless they could prove they owned latrines. As a result, the number of latrines increased 20-fold to 1.2 million. By 1984, 72 per cent of the urban households owned latrines.

Disappointing results

But the anticipated health benefits did not materialize. This was largely due to poor latrine designs, improper use and lack of maintenance. For example, the open nature of the pit with no tightly fitting lid presented odour and health problems. It gave free access to flies and mosquitoes. These, in turn, transmitted diseases over a wide area. Additionally, the wooden platforms used in latrine construction were liable to rot and collapse. This rendered the latrines

unsafe — especially for children who have been known to have fallen into the pits.

Systematic research supported by UNDP and IDRC since 1979 has resulted in the development of technically sound and hygienic latrines. The main features of the improved design are: a conical unreinforced concrete slab or platform, a close-fitting cement lid for odour and insect control, a small aperture and foot rests to permit and encourage use by all family members including small children. The pit is lined with blocks where soils are very unstable, or built above ground with blocks and earth where the water table is high.

The slabs are made by community latrine construction co-operatives. There are currently 12 such co-operatives in the country. A co-operative with a trained and experienced staff of eight can produce 100 slabs a month. The slabs take a week to cure.

Each slab must bear the weight of six men without cracking to ensure it is sound. It must bear also the signature of the maker in order to identify and retrain or boycott repeated delinquents who produce defective slabs. Slabs which sell for US\$10 each carry a life-time



Mixing cement with which to build slabs at Maxaquene workshop.

guarantee. Sales are reinforced by public hygiene education supported by posters, leaflets and puppet theatre.

Individual owners are responsible for building superstructures, usually from locally available materials such as wood, reeds, mud and wattle and grass.

High demand

More than 25,000 slabs have since been sold and installed, benefiting over 125,000 people. The programme's success to date, according to the UNDP Project Manager, Mike Muller, 'derives in part from the particular situation in Mozambique whose closed market has boosted the effective demand for latrines in the absence of many other goods'. Demand far exceeds supply because of shortages of materials, especially cement and water.

UNDP and IDRC also helped to train some 350 people at the Maxaquene pilot workshop, just outside the capital, Maputo. They are now employed as professional latrine constructors and community motivators in co-operatives and city councils in Maputo, Chimoi and Beira provinces. In this way, the



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The incidence of diseases associated with poor drinking-water was high.

project is not only helping improve environmental sanitation but also providing skills for people that can lead to much-needed paid employment.

In addition to UNDP and IDRC, support to Mozambique's Sanitation Programme is provided by UNICEF, the World Health Organization (WHO), the Government of The Netherlands, CUSO/SUCO, a Canadian non-governmental organization (NGO), and SAH, a Swiss NGO.

Despite the progress made in sanitation improvement, there is need for substantial external support to consolidate what has been achieved, and expand programmes, especially in the rural areas where the need is greatest.

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diary

18-23 September 1988. **Twenty-first Inter-American Congress and Exhibition on Sanitary and Environmental Engineering.** Rio de Janeiro, Brazil. More information from *21st Congress AIDIS, ABES, Avenue Beira-Mar 216 — 13 andar, 20 021 Rio de Janeiro RJ, Brazil.*

19-23 September 1988. **Aquatech '88,** Amsterdam, The Netherlands. Twelfth International Water Technology Exhibition and Conference. Special attention is to be given to the following themes: new technologies in waste-water treatment, pipeline technology, monitoring and analysis. More information from *Rinus Onland, Sales Executive, Industrial Presentations (Europe) BV, 's-Gravelandseweg 284-296, 3125 BK Schiedam, The Netherlands.*

4-10 October 1988. **Fourth Pump Congress** in Karlsruhe,

West Germany. More information from *Fachgemeinschaft Pumpen im VDMA, Postfach 710864, D-6000 Frankfurt/Main 71, West Germany.*

11-13 October 1988. **The National Water Exhibition 1988,** at the Barbican Exhibition Halls, London, UK. Sponsored by the water Authorities Association, this exhibition gives special attention to the services and equipment for the supply and use of water, and the treatment of effluent. More information from *Turret-Wheatland Ltd., Penn House, Penn Place, Rickmansworth, Hertfordshire WD3 1SN, UK.*

23-28 October 1988. **Fourth International Micro-Irrigation Congress,** Albury-Wodonga, Australia. Call for papers on the theme, 'Micro-Irrigation: Coming of Age'. More information from *Congress Secretariat, PO Box 29, Parkville, Victoria 3052, Australia.*

7-12 November 1988. **Hydrology and Hydrogeology**

in Arid and semi-arid Areas of Africa, Ouagadougou, Burkina Faso. UNESCO international biennial seminar, organized in co-operation with IWRA. More information from *International Water Resources Association, University of Illinois, 208 N. Romine, Urbana, Illinois 61801, USA.*

9-11 November 1988. **Second IAWPRC Asian Conference on Water Pollution Control,** Bangkok. Topics will: waste treatment; human resources and economics. Information from *Professor Thongchai Paswad, Department of Environmental Engineering, Chulalongkorn University, Bangkok 10500, Thailand.*

23-24 November 1988. **International Conference on Advances in Slow Sand Filtration.** Imperial College, London, UK. To include: Pre-treatment; filter biology; process modelling; operation and maintenance; developing-country applications. Contact *Dr N. Graham, Department of Civil Engineering, Imperial College, London SW7 2BU, UK.*