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EDUCATION AND SANITATION, KEYS TO HEALTH

by ROWAN SHIRKIE

Water mains, pumps, improved sewerage and other water management and sanitation techniques may be insufficient, as well as too costly, to reduce the threat of water-related diseases, a major cause of death in developing countries. Programs of sanitary education and community participation in health schemes may become more important than civil engineering works in the struggle to break the unhealthy cycle that perpetuates these diseases.

Last year, the United Nations Habitat Conference set the world an ambitious goal: safe water and appropriate sanitation measures for every community by 1990. Today, less than a quarter of the world's rural population has access to such facilities and the cost of providing them has been estimated at $9 billion every year for 14 years. While this long-term goal is pursued, other approaches may bring rural populations more rapid, more economical and more lasting results: these other approaches rely on people's self-reliant management of existing water supply and sanitation resources.

One approach now being tried in several countries is a program of sanitary education for mothers-- a family's first source of health care. Researchers in Guatemala, for instance, tested water quality in a village equipped with a water main: they found that less than four percent of the water samples taken directly from the taps were contaminated. But when they tested water from household containers, they found contamination in 36 to 44 percent of the samples!

This startling difference suggested that disease-causing parasites and bacteria were introduced when the water was handled in the home. Much of this contamination appeared to be related to the mother's activities. Perhaps one of the children is sick. In tending the child, she picks up bacteria from the feces, soiled bedding or clothing.

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During normal household routine she may then have occasion to handle -- and thereby contaminate -- the water containers. As the water is used in cooking and by the other members of the family, the germs are spread. The cycle also returns the infection to the sick child.

The mother is thus in the best position to interrupt this cycle and many countries are implementing sanitary education programs that will arm her with simple and practical preventative measures enabling her to do so.

Another approach is being tried in Africa where researchers are investigating alternate methods of waste disposal. Water-borne sewerage systems are expensive and only suited to densely populated urban areas. In rural areas, traditional waste disposal methods such as pit latrines, buckets or the direct use of rivers and lakes can be dangerous. These methods pollute surface and ground waters and provide breeding sites for insects and germs that spread disease.

Thus in Botswana and Tanzania, several improved types of privies and latrines are being investigated. The most interesting appears to be a modified "compost toilet" of the type long used in Scandinavian countries. This toilet takes advantage of natural bacteriological action, inside a closed container, to destroy pathogens in waste material. A layer of peat or leaves deposited at the bottom of the container helps to start the process of organic decomposition. The decomposing material (kitchen refuse and human waste) slides slowly down the sloping floor of the container towards a storage chamber.

High temperatures produced during the composting process prevents insects from breeding and adequate ventilation removes all odours. After several months of decomposition, the process produces an odourless, safe humus that can be used as fertilizer.

The success of these two approaches which relate health to water use and protection, relies on a good understanding of the dangers presented by the bacterial pollution of water and on the participation of the communities who are ultimately responsible for safeguarding their health.

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