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WASTE CONFERENCE

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BANGKOK-IDRC -- Even in Biblical times people were advised to carry a paddle to dig and "turn back and cover that which cometh from thee" (Deuterion 23:13). But this basic environmental duty is still not properly observed in many parts of the world -- a negligence that means dangerous health hazards.

The threat comes mainly from human waste that is infected with diseases, such as cholera and typhoid fever. The diseases are transmitted either by flies and other insects or a contaminated water supply.

A complicating factor is that almost all people who lack proper waste disposal facilities also do not have access to safe drinking water -- an environmental situation that is typical of most rural areas in developing countries.

Management of excreta is not a topic that generates much public interest. People who use the "flush and forget" system tend to take it for granted, but to social scientists, engineers, and community planners appropriate toilet technology is complex and serious.

For the first time, 95 such concerned experts from about 20 countries and international organizations met at a seminar in January, in Bangkok, Thailand.

The seminar on Human Waste Management for Low Income Settlement was organized by the Asian Institute of Technology, the National Housing Authority of Thailand and the Institute of Housing Studies of The Netherlands.

In the low-income housing areas of towns and cities, as well as in many

rural settlements, the high population densities and rapidly changing socioeconomic conditions means there is an urgent need for effective human waste management, seminar experts reported. However, many Third World countries have failed to address the problem and an increasingly polluted environment has given rise to a multitude of serious gastrointestinal diseases.

According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), some 15 million children below the age of five die in developing countries every year partly due to the absence of sanitation. Diarrhea alone kills 6 million children every year and contributes to the death of another 18 million. Parasitic worms infect nearly one-half of the entire population of developing countries.

There are also critical economic consequences to the absence of adequate human waste disposal. In India, for instance, water-borne diseases claim 33 million work days every year.

The usual method for human waste disposal in Western countries is the sewerage system, where excreta are flushed into sewers and carried to a treatment plant where the wastewater is purified. The sewerage system has been partially adopted in developing countries, but because of high costs often without the treatment plant.

According to Dr Krisno Nimpuno, chairman of the seminar's organizing committee, conventional sanitation (the "flush and forget" type) is not economically feasible for poor communities. He favours a low-cost approach.

And certainly the best known is the pit latrine, basically a hole in the ground. But the pit has disadvantages, such as odours that attract flies and rodents, and the possibility it may pollute groundwater.

Researchers have designed the so-called VIP latrine, ("Ventilated Improved Pit") that does not give off odours and is both clean and safe.

Many African countries have satisfactorily adopted this low-cost design. In Zimbabwe, a prefabricated long-lasting VIP latrine costs about US\$ 100: A unit using locally available materials costs only about US\$ 8.

A double-pit privy can also be built. When one pit is full, it is closed and the waste decomposes into harmless material while the other pit is in use.

For those whose toilet habits include water for cleansing, a water-seal, hand-flush toilet built over an aqua-privy, is the answer. Since only 1 to 2 litres are needed after each use, the amount of water used is not extreme.

These simple, low-cost systems should be the first provided to poor areas, said Dr Chongrak Polprasert of the Asian Institute of Technology's Environmental Engineering Division. Gradually, when living standards improve, the sanitation facilities can be upgraded.

Participants also looked into socio-cultural factors that contribute to changes in a community's toilet customs. In one Central American country, for instance, despite health education programs, women did not use public latrines. Subsequent studies revealed that the women felt going to the latrine was a private function and since the walls of the toilet did not cover their feet, they refused to use it.

Disposing of human waste is not the only concern of sanitation experts. There is also a question of trying to put it to productive use.

In the People's Republic of China, for example, nothing is "wasted". Human and animal excreta, along with agricultural residues, are extensively collected and used as fertilizer after being composted.

During the last decade, biogas technology has been widely implemented in many provinces of China. The number of biogas digesters is now estimated at 7 to 9 million, each producing enough biogas for the cooking and lighting needs of a Chinese family.

Benefits are numerous and obvious: housewives spend less time in the kitchen, which is cleaner than when firewood is used, family members no longer have to spend a long time searching for fuelwood, or spend a large part of their income to buy fuel. Biogas is also used to run machines or generate electricity, further increasing productivity and living standards.

Sanitation is a collective concern that requires the active understanding

and cooperation of all community members. But since it is a taboo subject, it is difficult to achieve this cooperation. Cultural and organizational constraints are more important than the technology. The technical options are there, but application requires much determination and effort.

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