Sanitation in Developing Countries

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Sanitation in Developing Countries

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Sullage Disposal in Urban Centres

Frederick Z. Njau

The problem of sullage disposal within the urban areas of most developing nations is as old as history itself. This problem, though visible, has received little, if any, attention, perhaps due to the fact that it is not a derivative of human excreta and, hence, in the minds of most people is harmless despite the intolerable nuisance of smell and providing breeding grounds for many waterborne diseases. As yet, no concrete solutions have been put forward for safe disposal of sullage in urban areas. The solutions discussed in this paper will be based partly on the experiences of others and partly on theoretical solutions.

Existing Disposal Methods: Their Advantages and Disadvantages

Sullage, as defined here, refers to all domestic wastewaters other than toilet wastes. The volumes of sullage generated will normally depend upon water consumption. The problem of sullage disposal, therefore, will be most prominent in those households not connected to sewerage or septic tank soakaway systems, i.e., those using low-cost sanitation systems. The volumes, therefore, will vary between those households obtaining water from public standpipes and using pit latrines or compost toilets, and those with a single water tap on site and using pit latrines.

In broad terms, there are six sullage disposal methods: (1) disposal on the ground within the compound; (2) disposal on the ground outside the compound; (3) on-site disposal, into ground seepage pits; (4) on-site disposal into pit latrines; (5) disposal into open drains; and (6) disposal into covered drains or sewers.

Disposal of sullage by some of these methods may have associated health risks. Throwing sullage on the ground creates wet, muddy conditions that may provide breeding sites for mosquitoes. If the soils are permeable and evaporation is high, however, this practice may be tolerable. The only danger likely to occur from disposal of sullage into properly designed underground soakaway pits is that of groundwater contamination. The problem is less likely to occur with sullage disposal in comparison with the disposal of sewage in this manner and is, therefore, acceptable. Similarly, disposal of sullage into pit latrines creates no greater risk than increasing the depth of seepage and, hence, contamination of deeper groundwater. This method, however, will also require frequent emptying of the pit and possible collapse of improperly lined pits. Sullage discharged into open drains during the dry season does not flow away and where ponding is likely would result in the existence of offensive odours and areas where mosquitoes would breed. Disposal of sullage into closed drains or sewers presents no health problem but may be expensive and unjustified.

Recommendations

The only safe and hygienic method of sul-
lage disposal, other than through a sewer system, is to construct a soakaway pit on site or off site, depending upon the land available and the soil conditions. A soakaway pit lined with open blockwork is recommended for soils with low permeability in order that it may be emptied without causing structural damage.