

Improved sanitation using the Sanplat System

by Bjorn Brandberg

Sanplat latrines are a low-cost alternative to the VIP and pour-flush latrines. They build on local knowledge and local materials, and draw on the stimulus of technology improvement, while being very inexpensive.

THE POLLUTION OF the environment by human faeces is currently the single most serious threat to human life — diarrhoea alone kills over 4 million people each year: one person every 8 seconds. It is a silent disaster of tremendous proportions. Children are disabled for life by parasitic infections and frequent diarrhoea in their early years. Women live with permanent anaemia because of these same infections. How can this disaster be prevented in the future?

While people in the North worry about rain forests, endangered species, and the ozone layer, all problems which will threaten living conditions in the future, people in the South are being poisoned to death by their own faeces today. Building and using latrines is absolutely necessary if we want to prevent the pollution of the environment from faecal poison. But how?

The Sanplat System was developed in Mozambique as a small research

project funded by IDRC (Canada) and SIDA (Sweden) through UNHCR, and was continued in Malawi with the support of the World Bank and UDO/OPS. The Lutheran World Federation took the system to Tanzania. In Uganda it is implemented by many organizations, including RUWASA, Unicef, and WaterAid. UNHCR and ApproTech are using the system in refugee camps in Malawi and Kenya. In Angola it is implemented through a World Bank urban upgrading project in Lobito and Benguela.

'Using latrines is the most effective way to prevent disease. Most people in Africa know how to build a traditional latrine. You dig a pit, cover it with logs and mud, and leave a hole in the middle for its use. A hut may be built over the pit, or just a wall to provide privacy.'

These were the wise words of the Minister of Health at the time of independence in Mozambique, when the new government launched the

National Latrine Building Day. In one day thousands of latrines were built. Nobody really knows how many, but in the capital, Maputo, the coverage became close to 100 per cent.

Problems soon became evident. Many latrines were built in sandy soil; high groundwater tables caused them to collapse, and it was difficult to get resistant wood for the logs to cover the pit. Hygiene practices also needed to be improved. To solve these problems the 'Latrine Melhorada' was developed; it became a low-cost latrine building system, afterwards renamed the Sanplat System.

For stable soils, simple unlined pits can be used. In sandy, collapsing soils a lining inside the pit will be required. Elevated latrines are used in areas of rocky soil or where groundwater tables are high. In combination with the three different latrine slabs, there was a system suitable for most situations where improved pit latrines were required.

The key element in this system is the improved latrine slab, which is available in three sizes: small (60 × 60cm), medium (1.2m in diameter), and large (1.5m). To reduce the weight and eliminate the need for reinforcement, the two large slabs are round and dome-shaped. This also prevents sand from entering the pit. Round slabs can also be rolled short distances.

The round 1.5m slab is the most popular model in urban areas in Mozambique, where wood to cover the pit is difficult to find. The round 1.2m slab is also slightly dome-shaped, and used for lined pits or pits with a brick collar, where less slab support is required. In rural areas in Malawi the small square 60 × 60cm sanplat became a bestseller, while the urban dwellers preferred bigger square ones with proper reinforcement, still with the sanplat features integrated, as described below.

Guidelines

The success of the system depends on its low cost and its adaptability to both local building traditions and the taste and economy of the individual family. Equally important are the strict guidelines for what the sanplat should look like. It should have:

- smooth and sloping surfaces for easy cleaning;
- a child-safe drop-hole;
- a tight-fitting lid to stop smell and



The RUWASA project in Uganda, where women from the African Housing Fund are producing over 1000 sanplats a month.



Kits containing moulds and manuals for making the sanplats are available from the author.

flies; and
 ○ elevated footrests to avoid fouling the slab.

Simple manuals and guides for quality control are provided when moulds are purchased. These standardized moulds ensure that proper dimensions are produced every time. With the moulds and manuals the training of sanplat-makers has become easy, and a great number of sanplats can be produced to cope with the increasing demand.

Sanplat technology

Nobody knows how many sanplat latrines have been built. The technology is being replicated spontaneously in many African countries, and sanplat latrines have become the national standard in Mozambique and Malawi. Thousands of sanplat latrines have been built in Tanzania and Angola. In Uganda more than 1000 sanplat latrines are built each month. A considerable number have been built in northern Ghana. In the Somali refugee camps in Kenya over 30 000 sanplat latrines have been built. Even so, the Sanplat System is still not widely known.

Technically, sanplat latrines are less complicated than VIP or pour-flush latrines. Their biggest advantages are cost and replicability, because they can

make full use of local building traditions and can upgrade existing latrines.

The cost-effectiveness can be illustrated by the amount of cement used: in Zimbabwe 3 to 6 bags of cement (150-300kg) are used for one VIP latrine, while in Malawi one bag of cement is used for 5 to 8 sanplat latrines (5-6kg).

Sanplat latrine technology is now spreading, especially in East Africa. With the Sanplat System an alternative technology for latrine building has been developed, one which is suitable where more complicated systems are not affordable. The simplicity of the system, in combination with its low cost, has made it ideal for integration into other programmes, especially water and health education. To a very great extent the system promotes itself.

Upgrading

In most cases existing latrines can be upgraded to sanplat standard simply by installing a sanplat on top of the old drop-hole. Most other systems would require a completely new structure.

Why should people who have built their own latrines with their own materials and skills have to abandon them? Because a government or NGO programme is trying to introduce a new model? It might even be difficult to find space for a new latrine, and the

superstructure of the old one may have been built quite well.

The subsidized provision of sanplats has proven to be a far cheaper and more effective method of stimulating latrine building than providing truck-loads of free cement. And making small sanplats in a casting yard is much easier than training whole communities to make reinforced concrete slabs (with correct dimensions) in their gardens.

WHO has withdrawn 'the control of flies' from their agenda of priority interventions for diarrhoeal control. Perhaps flies are not as dangerous as we had believed. Vent-pipes make the

Moulds

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construction of latrines more complicated and more expensive, but about 97 per cent of VIP latrines do not have screens on the vent-pipes, and so do not control flies anyway. The figure may vary, but the screen problem is a difficult one, and one on which the advantages of the vent-pipe and the dark superstructure rest.

The Sanplat System eliminates the problem of the vent-pipe. There is also no need for a reinforced concrete slab, as no walls or vent-pipes need to be supported by the slab.

The final push

Water and sanitation improvements are frequently promoted along with health education. Sanplats are easily produced at casting yards where, for example, well rings are produced. To reduce transport costs they can also be made at village level.

Transport is a critical issue in any sanitation project. In the rural areas of Malawi small sanplats were head-carried up to 6km or more from the casting yard to the village. In Uganda they were transported long distances on bicycles, on river boats in Bangladesh, and on donkeys in Ethiopia. In urban areas in Mozambique locally manufactured pushcarts were introduced as part of the project. The smaller the sanplat, the easier the transport.

About 40 per cent of all families in Africa already have a traditional latrine. Introducing the Sanplat System as the recommended standard will give a flying start to sanitation improvements, as the old latrines can be improved simply by installing a sanplat. For families who have been planning to build a latrine, the conditional availability of sanplats may give the final push — sanplats are only delivered when the latrine structure has been built. Often coverage as high as 70 per cent is achieved this way.

With a coverage that high in combination with information about the health hazards of not using latrines, the remaining 30 per cent will be easier to convert. Although targets should not be set that high in the beginning of a project, experiences from Malawi and Uganda indicate that coverage as high as 100 per cent is possible if implementation is carried out in an environment of encouraging advocacy and social mobilization. ●

Bjorn Brandberg is a consulting sanitation adviser for SBI Consulting International AB, Box 217, S-530 30 TUN, Sweden. Fax: +46 510 80434.

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Papers are invited on themes related to the objectives listed above. **Abstracts** of no more than 250 words should be in English, and two copies must be submitted to the organizer by **30 June 1994**. **Full papers** should reach them by **31 January 1995**.

All enquiries and correspondence to: Mr Mou Haisheng, Department of Hydrology, Institute of Geography, CAS Building 917, Datun Road, Anwai, Beijing 100101, People's Republic of China. Fax: +86 1 4911844.

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