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Choice of sanitation technologies

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Choice of sanitation technologies

Richard Holden, South Africa

IN MANY COUNTRIES the approach to the provision of sanitation to those not served by a waterborne system is that one technology fits all.

The problems that are experienced with this approach is that it frequently does not cater to the aspirations of the sections of the population that desire a more convenient level of service and can set the entry level of sanitation too high so that the section of the population most at risk is unable to attain it. This has resulted in low levels of coverage (30% in Zimbabwe and Lesotho 50% after 20 years).

It is argued that improvements in sanitation can only be achieved by changing people's behaviour. Behaviour change is only achieved if people are given a series of small attainable goals which lead to constant improvement.

South Africa has just commenced with its sanitation programme. By giving people a choice of technologies and utilising Participatory Health and Sanitation Transformation (PHAST) methodology it is hoped that South Africa will be able to achieve the above goals. The paper will set out the framework which is being put in place to achieve this and suggest ways in which an incremental approach to sanitation can be implemented.

Background to South African Programme

Due to the substantial population of European origin (4 million out of 40 million) the country has portrayed itself as a developed country with little of the attendant problems of developing countries. This was, however, an illusion created by apartheid and although on site water and waterborne sewage was provided to most people in the urban areas those in the rural areas received little or no assistance resulting in an estimated 12 million people without a supply of adequate potable water and 21 million without adequate sanitation.

As a result of this illusion and the limited contact with other countries, due to apartheid, this situation was not recognised and no policy or implementation strategy developed.

The result of this was that when South Africa was welcomed back into the world community after the first democratic elections in 1994 it could draw on the lessons learnt over the past 20 years from other countries implementing sanitation programmes.

Programme principles

The 3 main principles behind the South African sanitation programme are:

- Sanitation is about health;
- Communities must be involved; and
- Sanitation systems should protect the environment and not harm it.

By recognising that sanitation is about improving health rather than providing infrastructure the Government has set the scene for a multi-sectorial involvement being driven by health and education needs rather than engineering considerations.

The programme in South Africa recognises the need to get the households to recognise that they have a problem and to determine what is the best solution to their needs taking into account their:

- financial ability to pay both capital and operation and maintenance costs;
- culture;
- geology and hydrology of where they live;
- the density of the population; and
- the availability of water.

The household is then free to decide what is the most appropriate solution to their problems. The sanitation programme also recognises that the provision of a toilet structure is only part of the programme, changes in personal behaviour, improved water supplies and storage of water, safe disposal of domestic waste and proper handling of food also play an important part in improving the health and quality of life of the household.

The programme also recognises that a household cannot be expected to change everything at once, otherwise the magnitude of the task becomes overwhelming and nothing is achieved.

PHAST

PHAST is being introduced into South Africa by the Mvula Trust, National Sanitation Co-ordinating Office and the World Health Organisation. It is being found that the pictorial representation of the problems greatly assists the household to set achievable goals.

It is also recognised that behaviour change can come before the construction of an adequate toilet facility. PHAST tools such as contamination routes assist in the addition of a simple hand-washing facility to a pit toilet., improvement in water source management, storage and use, safe disposal of children's faeces etc. All of these incrementally improve

health and each one on its own is easily achievable at household level.

Incremental improvement of infrastructure

With regard to the provision of infrastructure most households in South Africa have provided themselves with an unimproved pit, except along the eastern part of the country where the surrounding bush is used. The structure is mainly for privacy rather than to confer a health benefit.

Due to the provision of waterborne sewage in the towns and cities most rural households aspire to this type of system and are unaware of any alternatives. The National Sanitation Policy also sets the basic level of service as the Ventilated Improved Pit (VIP) toilet costing between R600 to R1000 (£72 to £120) and at present the government is making available a R600 (£72) subsidy to assist the household in achieving this. With the current level of finance available it will take over 50 years to achieve full coverage.

Many of the stakeholders in the sanitation programme are starting to realise that to fulfil the aspirations of the richer members of the rural communities and to be able to immediately improve the sanitation situation for the poorer households an incremental approach is required. This is where PHAST tools such as the sanitation ladder allow the household to recognise their existing situation and decide what they can easily achieve to improve it.

In South Africa there are 2 basic types of toilets:

- Digesters which include unimproved pits, Sanplats VIPs aqua privies and septic tanks. All of these are commonly used (except Sanplats); and

- dehydrating toilets such as urine separation which is being introduced to South Africa.

With the use of good quality components it is contended that a household can make incremental improvements to their situation and ultimately achieve the desired goal of an acceptable toilet

For example a Sanplat could be used to cover a small hole, then moved to a lined pit, then a top structure and pedestal added, then converted into a VIP and finally the pit could be sealed and a secondary tank added to make it a septic tank.

Similarly a good urine diversion pedestal can be used over a hole in the ground, moved into an outhouse and finally installed in a house.

Conclusion

To increase rates of coverage a wide selection of technologies must be made available so as to meet the needs and aspirations of different households. An incremental approach should be adopted on both infrastructure and behaviour change issues so that each household can easily set itself the goal of improving the situation.

South Africa has only just commenced with a integrated, holistic and multi-sectorial sanitation programmes and has adopted much of the above. It waits to be seen if a continuous process of improvement achieves the desired result.