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Promoting ecological sanitation in two small towns

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ECOLOGICAL SANITATION DEVELOPED for the reuse of human excrement was first introduced to the Niassa Province, in Northern Mozambique through a workshop held by the Department of Water and Sanitation and WaterAid in March 2000.

ESTAMOS, a local Mozambican NGO, founded in 1998, and a partner of WaterAid's decided to carry on with the promotion of ecological sanitation initiated by the Department of Water and Sanitation and WaterAid. ESTAMOS decided to continue through a pilot project in two small towns of Niassa Province, namely, Lichinga, the capital of Niassa and Mandimba, a provincial border town to Malawi. This paper will discuss ESTAMOS' experiences in promoting ecological sanitation with this pilot project, problems encountered and recommendations for future work in this area.

Principles of ecological sanitation

Ecological sanitation has the advantages of protecting peoples' health through safe excreta disposal, contributing to better nutrition and food security through the use of nutrients in human excrement for agriculture and finally assisting in protecting and restoring local environments. (Esrey & Anderson, 2000.)

With these advantages in mind, ecological sanitation can only succeed if the system functions properly. Some reasons for the failure of ecological sanitation toilets include the following:

- Lack of participation from the user;
- Lack of understanding of how the system works;
- Defective materials and workmanship; and
- Improper maintenance (Sida, 1998).

In addition, ecological sanitation requires people to change the way they think about human excrement. Therefore, the taboos surrounding the handling of human excrement need to be changed.

All of these aspects need to be taken into consideration during project planning and calls for on-going community participation at all stages of the process, including continuous monitoring and evaluation to ensure proper maintenance and use.

Reasons for promoting ecological sanitation in Lichinga and Mandimba

Lichinga and Mandimba are two small towns in Niassa Province that could be considered peri-urban areas due to

crowded living conditions. The promotion of ecological sanitation in these areas makes sense on several levels. Firstly, Niassa Province is a primarily agricultural area. A recent study conducted by ESTAMOS, which included 5% of the families in the Municipality of Lichinga, showed that 32% of the men and 50% of women interviewed were farmers. Therefore, the humus produced from the toilets can be used in people's fields. Secondly, the bairros especially surrounding the city centre, are very crowded and this recent study also showed that 66.4% of families interviewed use wells located in yards for drinking water. In addition, 93% of families interviewed have toilets in their yards and all of these toilets are traditional pit toilets. Lichinga and Mandimba are areas with high water tables. Therefore the combination of these factors, could create health problems because of the possibility of groundwater contamination. In addition, people in focus groups pointed out that these traditional pit latrines are unhygienic. People have problems with smell and flies. People also stated that the pit latrines tend to collapse during the rainy season and that new toilets must be constructed yet people do not always have sufficient space in their yards to construct new toilets. Ecological sanitation could therefore be an appropriate technology to address the problems mentioned above. The depths of the toilets are short to prevent contamination of groundwater, ash and dirt are poured into the toilet after each use to eliminate odour and fly problems, and the type of toilets built in the yards are permanent structures, eliminating the need to construct new toilets.

Methods of promotion

ESTAMOS chose two methods of promotion, implementing model ecological toilets in family homes and using the radio as a social marketing tool.

The idea behind the first method was to build some toilets in homes of people who held some influence within their community and to build some toilets in regular community members' homes to demonstrate that these types of toilets are a possibility for everyone. For example, 2 male chiefs and 1 female chief have received toilets and the rest of the recipients are regular community members. The strategy was that other members of the community would visit these toilets, learn about this type of toilet and in turn could create greater interest and demand.

To date, 14 ecological sanitation toilets have been constructed with an additional 34 under construction. All of the toilets constructed are the model known as the fossa alterna with double vault chambers. With the fossa alterna,

one chamber is used until full. A mixture of ash and dirt is poured into the chamber after each use. When this chamber is full, the latrine slab or toilet seat is moved on top of the other chamber. The first chamber is closed and left to compost for a period of 10-12 months.

The second method of promotion was through the radio. First, a radio interview of about 5 minutes was taped. The interview consisted of explaining the principles behind ecological sanitation, and then went on to interview a community member who had received a new fossa alterna and to hear about what she felt about the latrine and an open invitation for people to visit her toilet. The programme was run for 2 weeks during a prime listening time.

Advantages and disadvantages of the ecological latrine for community members

Small surveys were carried out amongst 12 families who received fossa alterna toilets 3 months after receiving the new toilets to hear their initial feelings. In terms of advantages, people liked the fact that these toilets did not have an odour, had a cover for the hole, were not dangerous for children (as traditional pit latrines can be) and made it easier to defecate.

In terms of disadvantages, people expressed only one concern. The short depths of the toilets and that they will fill up quickly because of large families. This concern raises the issue as to whether people will manage the system properly because they are worried the toilet will fill too quickly. For example, the interviewers observed that some toilets had odour because people did not want to put in too much ash/dirt for this reason. However, pouring in enough dirt and ash is an important aspect of ecological sanitation. The ash and dirt assist in the drying of the excrement and in elimination of odour to prevent fly breeding.

9 of the families interviewed stated that they would use the resulting compost in their fields in the future. Two of the families said they would not use the compost in future because this was a very new idea. As stated, this is a new idea for people in Niassa, and *it will* take time for people to change their attitudes about using the excreta as compost. However, this creates an opportunity for field workers to speak with these families who have these concerns and to initiate a process to address these concerns and change peoples attitudes. Follow up needs to be done with families who are using the compost and the advantage they see in using the compost. This information could then be used to help change the attitudes of people who are not using the compost on their fields.

Families interviewed also stated that they had varying numbers of visitors to their new toilets. Some households had a few visitors and others had 10 or more people. 6 visitors stated that they would like this type of toilet in their houses while others also expressed the same concern about the short depths of the toilets.

Problems faced

In terms of problems faced, ESTAMOS had hoped to have a greater number of toilets constructed during the months of November to April to increase the level of exposure to these types of toilets. However, this period is the rainy season in Niassa, which makes it difficult to obtain materials needed to construct the toilets, and recipients of the toilets in Mandimba expressed their dissatisfaction with the slow construction process.

ESTAMOS also hoped that the message about ecological sanitation would have spread further and that ESTAMOS would have seen a greater demand for ecological sanitation toilets than has presently occurred.

The reason for short depths of the toilets needs to be explained further and this may be an indication that the principle and concept of ecological sanitation was not fully explained properly to the recipients of the toilets. This could be due to a lack of dissemination of information by the field workers and/or a lack of complete knowledge of ecological sanitation on the part of the field workers themselves. People's concern about the short depths of the toilets may also pass with time as they become accustomed to the new system, and actually see that the toilets do not fill as rapidly as they initially thought.

Future recommendations

As ESTAMOS is still in the early, learning process of this pilot project a great deal of work still needs to be completed. Firstly, ESTAMOS needs to move from the stage of having demonstration toilets to implementing toilets. Field workers need to return to communities with demonstration toilets to evaluate the interest and demand for these toilets amongst community members. Further planning discussions need to occur with interested community members. These discussions should include an implementation strategy and a discussion about contributions to be made by community members and ESTAMOS towards the construction of these toilets.

In addition, ongoing evaluation and monitoring of these toilets needs to be a priority, considering that they are a new system and need to be managed correctly if the goals of ecological sanitation are to be met. In terms of the concerns of the short depths of the toilets, careful monitoring of removal of faecal matter must be monitored to ensure people are not using the compost on their fields if the chamber has not been left for a sufficient period, killing all pathogens. If this is the case, ideas need to be explored with community members how to store the composting matter until the process is complete. Field workers also need to confirm that people are using compost on their fields and for those that are not, discuss the social-cultural aspects that may contribute to the resistance of using human excreta as compost. In terms of training, on going training of both field workers and community members in ecologi-

cal sanitation principles and practices is a necessity for the sustainability and success of these toilets.

The social marketing campaign needs to be expanded by using the radio for longer periods of time. The recent study of Lichinga showed that families interviewed and in focus group discussions value toilets mostly because it dignifies their family and they do not feel ashamed when visitors need to use the toilet. These social values can be incorporated into the radio shows to promote these toilets. Greater community organising needs to be in place to promote these latrines which may include community events and organising visits to the homes.

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