How to Promote the Use of Latrines in Developing Countries

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by

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Abstract

Current sanitation promotion methods are not meeting the growing need for proper treatment of human waste around the world. New methods need to be developed that will increase world sanitation levels. The following is a literature review of the reasons behind non-adoption and the results of case studies in sanitation promotion. The lessons learned from these studies are formulated into a strategy for a successful latrine promotion program. The basic requirements are knowledge of the local area and people, selection of appropriate messages and technology, and community involvement.

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1. Introduction

The treatment and disposal of human waste is becoming increasing important as the world population increases. Each year two million children die from diarrhoeal diseases, making it the second most serious killer of children under the age of five (WHO, 1998). The main source of diarrhoeal infection is human excreta (Cairncross, 1999). It seems clear therefore, that human excreta should be managed as a potentially dangerous material. The construction of latrines is a relatively simple technology that may be used to control the spread of infectious diseases. Studies have shown that latrine coverage has to reach 90% of a population to have an impact on community health (Ikin, 1994). However, 2.3 billion people, 40% of the total world population, lack improved sanitation and 80% of these people live in rural areas (WHO, 2000). Improvements in sanitation coverage are one of the key elements to ameliorate health around the world.

Despite the enormous potential benefits of improved sanitation, large-scale latrine promotion around the world has been very disappointing. The percent coverage of sanitation has increased by 5% during twenty years of sanitation promotion, however the number of people lacking sanitation services remains practically the same (WHO, 2000). Current sanitation promotion tactics needs to be reevaluated in order to develop new techniques that meet with wider public appeal. Considering the reasons behind the non-adoption and the results of case studies can provide the necessary information to create a successful sanitation program.

2. Reasons for Non-adoption of Latrines

There are several reasons for non-adoption of latrines. The most common are related to poverty, socio-cultural issues, and technical difficulties. The most commonly identified reason for the lack of a household toilet was the high cost, followed by 'use public latrines', 'lack of space', and 'difficult to operate and maintain' (Cotton, 1998).

2.1 Economic Reasons

Poverty and indebtedness limit the spread of latrine coverage. Poor people surviving on subsistence incomes inhabit the majority of areas where latrine adoption has been promoted. At this level of poverty, income is primarily spent on food and goods, with other items given low priority. It is difficult to convince these people to use their limited finances on sanitation when they have lived their entire life without it. Even when they are convinced that sanitation will be beneficially, the perceived high cost of installation keeps many people from adopting latrines.

It may be difficult for extension agents to understand what is considered 'high cost' in a developing country. It is often useful to consider the cost of latrines as a percent of the household income. For example, a Mozambique program targeted latrine construction in the poorest sections of the peri-urban communities. The average household income in these areas was $22 per month. The program introduced domed concrete slabs that were subsidized to a user cost of $1.16. This one-time cost represents 5% of the average monthly income. The extra costs of transportation and construction were borne by the users. A survey of residents indicated that the majority of people viewed the total costs of the latrine as a medium cost (Cotton, 1998).

2.2 Socio-cultural Reasons

There are several socio-cultural issues that can influence the acceptance of on-plot sanitation. The concept of dirty and clean can vary from culture to culture. In many places children's feces are considered harmless and therefore are not disposed of in latrines. Latrines themselves may be viewed as dirty and evil places. It may be considered more sanitary to defecate in the fields away from the house. Existing traditions and beliefs also play a part in the reception of latrines. It is difficult to change long ingrained behaviors dictating defecation practices and without proper reinforcing people will revert to old habits. In some cultures religious beliefs may influence latrine use as well. For example, a latrine construction project in India placed the toilets in the northeast corner of the plot. According to the local Hindi belief this is an inauspicious location to place a toilet, so the people refused to use them (Cotton, 1998).

Gender issues are an important consideration in sanitation projects. In many cultures women need separate facilities from the men. This may be especially important for menstruating women. Women often require more privacy and will boycott facilities that they feel give inadequate protection.

Cultures may be resistant or reluctant to change. This is especially true when foreign aid workers are responsible for promoting change. There may be feelings of resentment and/or fear of outsiders and their ideas. Community leaders may fear the loss of authority as foreign ideas begin to spread. There have been reports of leaders sabotaging sanitation projects or redirecting sanitation funds into their own pockets.

2.3 Additional Issues

Another frequent barrier to latrine adoption is difficulties in operation and maintenance. Odor and insect problems are often quoted as deterrents to use, however only 11% of users reported these as nuisance problems (Cotton, 1998). The largest numbers of maintenance problems are related to emptying. Emptying may require extra costs that are difficult for families to afford. There are also concerns with hygiene during emptying and the frequency with which it must be done.

The other reasons for lack of a household toilet are less of a concern in designing a sanitation promotion program. If people lack a household latrine because they are using public latrines the ultimate goal of managing human excreta is still met. In this case, there is always the possibility that the family may construct their own latrine when it becomes financially affordable. Lack of space for latrine construction may be a concern in urban areas, but studies have not shown a link between plot size and the absence of a latrine (Cotton, 1998). In considering all of the socio-cultural reasons for non-adoption it is also important to realize that communities are not uniform and not all of these issues will be problematic for everyone. The goal of a successful promotion program will be to identify the site-specific problem areas and work to overcome the barriers to accepted sanitation.

3. Case Studies

The following set of case studies give examples of success and failure in sanitation promotion around the world. Future generations can learn from past experience to develop new sanitation strategies that can lead to improved global health.

3.1 Guinea (IRC, 2000)

Latrine promotion in Guinea was started in 1989 with the introduction of ventilated single and double pit latrines. This program was followed for 8 years until the introduction of SanPlat latrines in 1997. Since 1997, the Guinean government, in conjunction with UNICEF, has worked to integrate socioeconomic and cultural variables into the intervention program. A program evaluation was performed in 2000, by an external source, to verify if the construction of latrines had a positive impact on human health and the environment.

The original program objectives were to install 10,000 household and 600 public latrines by the year 2001, as well as promote hand-washing practices. The program used mass media to encourage demand for sanitation, as well as financial support for construction. The costs of construction were shared between the beneficiaries and UNICEF. Families were expected to pay 73% of the cost of a household latrine ($45) with the remainder funded by UNICEF. UNICEF provided 53% of the costs for the construction of public latrines ($160).

The principle avenues of communication utilized by the program were rural radio broadcasts, local extension agents, and school programs. The radio was considered the principal method for heightening public awareness. Several types of radio broadcasts were used including a roundtable forum, a mini-program, and public broadcasts. All radio broadcasts were done entirely in the native language. The radio shows were well received, especially by women. They enjoyed that fact that the broadcasts were in the native language and addressed

problems relevant to their daily lives. Nearly everyone interviewed in the survey was familiar with the radio broadcasts and participated in local discussions of the radio messages. The demand for sanitation has increased since the start of the radio programming, especially in areas with good radio reception.

Local extension agents were trained in water and sanitation issues and acted as important community contacts for the program. They used religious ceremonies and social gathering to convey the program message of the importance of sanitation and the need for latrines. The program also supported environmental education in 82 local schools. The objective was to promote the use of hygiene and sanitation in school. Unfortunately, the program evaluation was conducted at the very beginning of the school year and was unable to adequately assess the success of this program.

Between 1997 and 2000, 8,786 household latrines and 487 public latrines were constructed, the majority of which remained functional at the time of the survey. Although the number of latrines has increased since the start of the program, approximately half of the rural population still lacks adequate sanitation facilities and resorts to open defecation in the bush. However, there are indications of positive behavior change in that those that use the bush no longer defecate near the house or close to open water.

3.2 Burkina Faso (Curtis, 2001 and Cotton, 1998)

There have been several hygiene promotion programs introduced in Burkina Faso. The results of two of these interventions are provided here. The first program was carried out in Bobo-Dioulasso, the second largest city in Burkina Faso, from 1995 to 1998 (Curtis, 2001). This program began by planning a promotion strategy based on local culture and existing behaviors. Using this information, a small number of behaviors were identified as targets for change and a few key program messages were selected. The goal of the program was to increase the practices of hand washing and latrine use by promoting the social and

aesthetic desirability of these behaviors. The key groups targeted during the program were women and children.

The program used several channels of communication to convey their message. Program extension agents conducted house-to-house visits monthly and encouraged community members to participate in local discussion groups. Street theatre and local radio programming increased the program coverage. The program message was also incorporated into the curriculum in local primary schools.

The outcome of this program was evaluated using household surveys. The results showed an increase in potty usage by children from 74% to 85%. The number of times that children's feces were disposed of in a latrine also increased from 80% to 90%. However, these trends are statistically questionable based on the difficulty of finding a control population and the method of information gathering.

The second sanitation intervention program took place in Ouagadougou, the country's largest city (Cotton, 1998). The approach used in this program is similar to that of the Bobo-Dioulasso program. The first phase of the program involved gathering knowledge of the area and the second phase was the information campaign (Cotton, 1998). The communication strategies included a mix of animation and social marketing. Radio and television broadcasts were designed to spread the message to a broad base of people. The broadcasts were timed to air during peak listening periods. Public performances of dance troupes were also used to reinforce the program message. The most effective promotion tool used in this program was guided tours of households with latrines. These tours allowed people to see first hand how latrines operated and learn more about construction and other practical information. During a program evaluation it was found that everyone that participated in a guided tour decided to build his/her own latrine.

3.3 China (Shugeng, 2000)

For centuries agricultural regions in China have used night soil as fertilizer for field crops. The introduction of latrines in these areas has posed the difficulty of convincing farmers that the health benefits of latrines outweigh the loss of natural fertilization. The initial programs advocating sanitation reform prior to the 1970s met with little success. These programs generally lacked community involvement, offered few benefits to the farmers and were ill received by people resistant to change.

Between 1977 and 1981, a new double-urn latrine was invented. The end product of the new design was a relatively non-hazardous fertilizer. The latrine consisted of a front and a back urn, connected by a pipe. The entire project could be constructed from local material. After sufficient retention time in the first urn, the waste that reaches the second urn could be used as fertilizer at any time. Studies have shown that the design eliminates pathogens while retaining a significant percentage of the nitrogen content.

In 1989, an official latrine promotion plan was put into action based on the double-urn technology. The program identified five key elements to the implementation process. First, planning for the reform was done on both national and local levels with the support of specialists and professionals. The planning was consistent with current government policies to gain political support for the program. A combination of local advocacy meetings and mass media were used to spread the key messages of the reform. The main message of the movement was that latrine reform would improve public health and help agriculture, all for a relatively low investment. The government provided subsidies and low-interest loans, but most of the cost of construction was the responsibility of the families. Another key element was setting up demonstration sites where people could learn how the system actually worked. The program also trained local leaders as technicians and reform promoters to ensure community involvement.

The results of the latrine revolution in China have been positive. The rate of latrine coverage over the last decade has increased from nearly zero to 49.8%

of the households. By the year 2000, 8.6 million new latrines had been constructed. There are indications of improved public health as well. In one pilot village the annual incidence of diarrhea dropped from 28% to 11% over a two-year period.

Several valuable lessons can be learned from the latrine revolution in China. First, it is important to gain political support and government commitment to the program. A mix of mass media and interpersonal communication is the best way to deliver the key program messages. Demonstration sites for the selected technologies are important, as is the training of local people in operation and maintenance methods. It is also necessary to provide reasonable funding options and incentives to make the technology affordable.

3.4 Bangladesh (Ikin, 1994 and Smout, 1999)

The following two case studies examine the results of two simultaneous sanitation programs run in Bangladesh during the 1990s. The first was a national campaign promoted by the Government of Bangladesh and UNICEF (Ikin, 1994). The program organized over 1,000 village sanitation centers throughout the nation where subsidized waterseal latrines were sold. Latrine coverage is estimated to have increased from below 3% to above 26% since the start of the program more than 18 years ago. The lack of further improvement in sanitation coverage is likely due to the high cost of the technology promoted. It is estimated that 80% of the population cannot even afford the subsidized latrines. The results of this program indicate that more than a national level campaign is necessary if high results are desired. The results of the second intervention confirm this finding.

The second program took place at the same time as the national latrine promotion program, however this program used a community-based approach in sanitation promotion. The International Center for Diarrhoeal Disease Research, Bangladesh developed the Sanitation and Family Education Project (SAFE) and implemented it in the primarily agricultural region of southeast Bangladesh (Smout, 1999). The project used two models of outreach in order to determine the

key elements of a successful sanitation program. Model one was a limited approach, using conventional intervention methods, and working only through caretaker sessions. Model two was the expanded version that incorporated more innovative promotion plans, such as school sanitation curriculums, child-to-child sessions, and key community member sessions. Session activities included discussions, demonstrations, participatory learning, and song, dance or story telling.

The two models were based on the same basic principals. Increased latrine use was one of six priority behaviors targeted for change based on information gathered about existing customs. The other target behaviors included, clean water, environmental cleanliness, hand washing, food hygiene and diarrhea management. Both models centered promotion activities on community participation.

A post intervention evaluation found improvements in all targeted behaviors. Model one showed increases in latrine use from 36% to 91%, while latrine use in model two increased from 37% to 90%. Across the other target behaviors model two showed only slightly better results than model one. This indicates that key elements to success were common to both models. The common elements included community participation, participatory extension methods, and focusing on a few key behaviors for change.

3.5 India (UNICEF, 2002)

Sanitation and hygiene promotion programs started in India in the 1980s with the support of UNICEF. The initial emphasis was on technical solutions, specifically the promotion of twin-pit pour-flush latrines. The government and UNICEF advocated the construction of these latrines as the national standard for cost-effective sanitation. However, the idea was never widely accepted and latrine coverage in rural areas remained less than 10 percent. The cost of latrine construction was considered too high and people saw little motivation for use.

Between 1986- 1987, UNICEF performed several micro-field studies to determine alternative methods to sanitation promotion. The results indicated that the lack of community involvement was detrimentally to the program. The studies also revealed several reasons behind people's reluctance to use the new latrines. People avoided latrine use for fear of breaking it, or because they believed it more sanitary to defecate in the fields away from the house, or because they preferred to use the latrine as a storage facility. The high cost of the twin-pit pour-flush toilets was also often beyond the means of many poor communities.

The results of these studies lead to a new approach in sanitation promotion in India in the 1990s. The new emphasis was on lower-cost latrines and sanitary behavior changes. A community-based approach was used to promote behavior change. Efforts were made to increase household visits, school programming and considerations for gender issues. Sanitation issues were linked with other health concerns in an attempt to increase motivation for latrine usage. A program evaluation in the mid 1990s indicated that person-to-person visited could be highly effective, but that 3-4 visits were required for every latrine installed. The labor costs associated with this method of promotion are therefore quite high. School programs were developed to teach children hygienic behaviors, including the use of a latrine. The hope is that the children will than bring these behaviors home with them, thereby acting as agents of change in their communities.

The new promotion plan also stressed the role of women in sanitation and household hygiene management. Lack of proper sanitation facilities has traditionally been more detrimental to women than to men. Due to the lack of privacy, many women may wait until nightfall to relieve themselves, leading to serious health problems and kidney failure. The lack of sanitation facilities has also been a barrier to girls attending school. The restructuring of the sanitation promotion program has attempted to address these issues by including women in health discussions and the operation and maintenance of the new latrines.

The key to sanitation promotion in India has been balancing the technical and social aspects of sanitation services. Since the introduction of community based promotion methods, rural India has seen sanitation coverage increase from

nearly zero to 14% while total sanitation coverage increased to 31%. Community involvement and self-financing methods lead to the construction of more than 350,000 latrines in one county alone. An impact evaluation in 1999 showed consistently better excreta disposal practices in communities participating in the promotion programs. The study indicated that future sanitation promotion efforts should focus on social marketing techniques and community management of latrines.

3.6 Summary of Case Studies

A brief summary of the promotion methods and key results for each case study is given in Table 1. The case studies employed a broad range of promotion tactics to varying degrees of success. In each case study the most important promotion method is indicated. The most common element to successful latrine promotion appears to be community outreach and involvement.

Table 1: Key methods and results found in the case studies

Case Study	Promotion Methods	Key Results
Guinea 1997-2000	• Radio broadcasts* • Local extension agents • School programs • Subsidized costs	• Construction of 8,786 household and 487 public latrines • Indications of positive behavior change
Burkina Faso 1995-1998	• House-to-house visits • Guided tours of latrines* • Street theatre • Radio programming • School programs	• Increased children's potty usage by 11% • Disposal of children's feces in a latrine increased by 10%
China 1989-2000	• Appropriate technology • Governmental support • Mass media • Community involvement* • Demonstration sites • Subsidies and loans	• Latrine coverage increased 49.8% • 8.6 million latrines constructed • Decrease in diarrhea disease by 17%
Bangladesh 1990s	• Community participation* • Government subsidies • School programs	• Increased latrine coverage from 3% to 26% through national campaign • Community programs saw increased latrine use up to 91%
India 1980-2000	• Initial emphasis on technology • New emphasis on community • Household visits* • School programming • Involvement of women	• Technical focused solution proved ineffective • Increased rural coverage by 14% • Consistently better excreta disposal practices observed

* Most effective promotion tool for this particular case study

4. Strategies for Developing a Successful Latrine Program

By combining successful ideas from a variety of case studies a general strategy for developing a latrine promotion program is obtained. This strategy consists of three steps: background study, planning phase, and project implementation (Figure 1). A background study of the local area identifies the key concerns to be addressed in the planning phase. During the planning phase key messages and technologies are selected, as well as, the target audience. Finally, the implementation phase puts into practice the various methods of outreach, cost reduction, institutional roles, and sustainability.

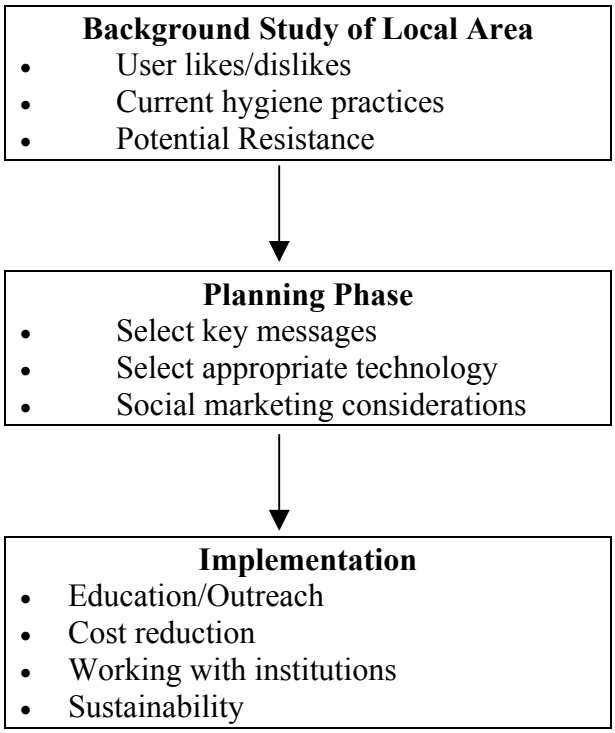

Figure 1: Flow diagram for developing a latrine promotion program

4.1 Background Study

The first step is to become familiar with the local area. The acceptance of latrines varies from culture to culture and it is important to understand where the areas of potential resistance lie so as to direct promotion efforts efficiently. Conducting interviews can help to determine users likes and dislikes as well as identify current hygiene practices. This information is essential to the planning of a sanitation promotion program that will match the customs and attitudes of the users.

4.2 Planning Phase

The information gathered during the background study of the local people can be used to plan a custom tailored sanitation promotion program. The initial planning phase should consist of selection of the key messages to be promoted and a matching appropriate technology. The key messages need to be based on existing ideas, because it is much harder to introduce radical or rapid changes in a population. The core ideas should be kept simple and to the point. It is easiest for people to grasp a few straightforward ideas, rather than a long list of suggested improvements. The type of latrine selected should be low-cost, appropriate for the geographic area, and match with existing customs of anal cleaning and defecation habits as much as possible.

Once the key messages and technology have been selected a marketing approach must be developed. Recent efforts in promotion programs related to socio-cultural issues have focused on social marketing techniques. Social marketing uses the approaches of economics to advance social change. Social marketing advocates a demand driven approach to sanitation. Therefore, a successful sanitation program needs to create a demand for latrines. This is accomplished by offering affordable technology, but also by increasing the social desirability of latrines. Studies have shown that the reasons people want latrines are less for health concerns than for social status, privacy, comfort and

convenience (WHO, 2000). It should therefore, be the goal of any sanitation program to foster these feelings to increase the social demand for latrines. Since social status is one of the driving factors in latrine demand, it is important to recruit prominent people and community leaders to the cause of sanitation. Sanitation promotion by these leaders will increase the acceptability of latrines (Ikin, 1994). While the role of community leaders may be important, so is the participation of the average community member. Community based efforts have been shown to be more effective than external intervention (WHO, 2000). The marketing approach must select key populations within the community to act as agents of change and use appropriate channels of communication to reach the target audience.

4.3 Implementation

Implementing a latrine promotion program requires outreach and education of the masses, as well as, cost reduction strategies. It is also important to consider the interactions of any institutions involved in the project and the issue of sustainability.

The most effective method of outreach is person-to-person visits (UNICEF, 2002). These visits are used to share hygiene and technical information, as well as encourage sanitary behavior changes. Other methods, such as radio and television programming, discussion groups, and school curriculums, may be incorporated depending on the community reception of these types of media. Radio or television programming has worked well in areas with high coverage by these media. Broadcast programming is most effective when done in the native language. Discussion groups are a good way to encourage community participation in the project. They may also be a way to disperse technical information to a large population through demonstration sites. Introducing hygiene curriculum in the local schools works well in areas of high school attendance and reliable school systems. Children can act as powerful agents of change when they practice proper hygienic behaviors in the classroom

and then bring these behaviors home with them (UNICEF, 2002). It is also hoped that children will retain these positive traits into adulthood.

A significant factor to consider in any sanitation program is the cost to the new technology. High cost is the number one deterrent for the spread of latrine construction (Cotton, 1998). It is important to select low-cost technologies for sanitation projects in the developing world. The perception of low-cost often differs between the extension agents introducing a new technology and the local users. It may be easier to consider costs as a percentage of household income. The suggested range for affordable sanitation is between 1.5 to 3% of the household income.

There are many ways to reduce the user costs of improved sanitation. The two most common ways are through subsidies and credit systems. Government or NGO subsidies can bring down the capital costs. Subsidies may be a good seeding tactic at the beginning of a social marketing campaign (Ikin, 1994). However, extensive use of subsidies may lead to dependence on outside funds and problems with sustainability. It is also important that operation and maintenance costs remain the responsibility of the user. This requires that the user take ownership of the project and increases the sustainability of the latrine.

In areas where subsidies are not available or not used, a credit system may be necessary for many households. Traditional loans generally are associated with higher management costs and are not very accommodating in periods of financial stress. In many cases, it may be preferable to establish forms of social contracting in return for services. Social contracting relies on peer-pressure and peer-guarantees to make sure that debt is repaid. These systems are especially effective in areas where people are unfamiliar with traditional loan systems. In many areas a tribal court can take over any discipline cases that arise. The danger with any credit system is the financial instability of the majority of users applying for credit. Indebtedness is already one of the main reasons that households lack proper sanitation facilities. Care must be taken to keep the repayment period short and accommodate periods of financial stress.

Many sanitation promotion programs rely on the support of both the local government and NGOs. Whenever there are multiple institutions working together on a project it is important to have a clear structure of goals and methods of implementation. Care must be taken not to duplicate efforts or damage the working relationship between the partner institutions. Where large institutions are involved it is helpful to establish community contacts to ensure effective communication from the field to the institute headquarters.

Although the introduction of improved sanitation services may be difficult, insuring the sustainability of these services may be even more so. The most important step towards sustainability is the involvement of the community from the start of the project. People must learn to take ownership and pride in their latrines. Social marketing strategies can aid in the increased acceptance and demand for latrines. School programming is also an important step towards educating the future of sanitary behavior. Another tactic is to train local artisans to construct and maintain latrines. These artisans may build small businesses to market their skills, thus increasing the economy drive behind latrine use. Above all the program must be adaptable and flexible enough to change with the needs and demands of the people being served.

5. Conclusions

Current sanitation promotion methods are not meeting the growing need for proper treatment of human waste around the world. New methods need to be developed that will increase world sanitation levels. Considering the reasons behind the non-adoption and the results of case studies is important in engineering new tactics in sanitation promotion. The basis for a successful latrine promotion program required knowledge of the local area and people, selection of appropriate messages and technology, and community involvement.

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