

Water and Sanitation

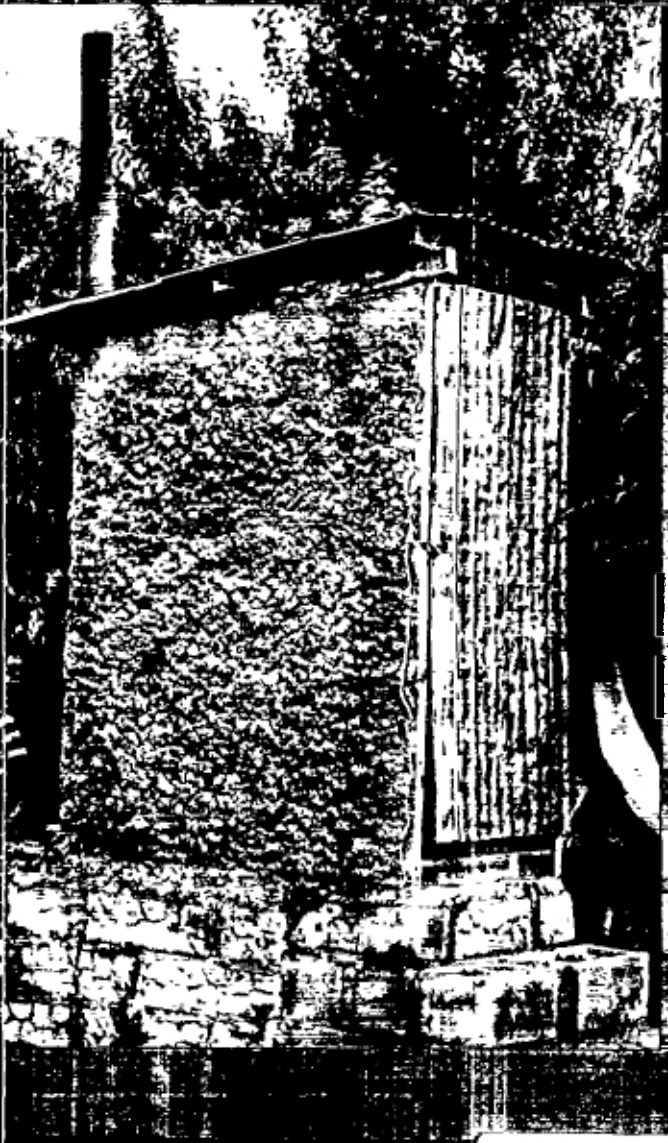
Discussion Paper Series

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Rural Sanitation in Lesotho

From Pilot Project to National Program

World Bank
Water and Sanitation
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World Bank Water and Sanitation Program and PROWESS

RURAL SANITATION IN LESOTHO

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UNDP-World Bank Water and Sanitation Program

The UNDP-World Bank Water and Sanitation Program was organized as a joint endeavor of the United Nations Development Programme and the World Bank and has been one of the primary players in worldwide efforts to meet the challenge of the International Drinking Water Supply and Sanitation Decade. The goal of the UNDP-World Bank Water and Sanitation Program is to bring basic water supply and sanitation services to those most in need in the developing world. Partners in this venture are the developing countries themselves and the multilateral and bilateral agencies that fund the Program's activities.

The UNDP-World Bank Water and Sanitation Program publishes its own publications and also releases works under the auspices of the World Bank. The Program's publications are divided into two series, a Water and Sanitation Program Report Series and a Water and Sanitation Discussion Paper Series. The Program Report Series presents formal discussions of the Program's operations and research activities as well as examinations of relevant projects and trends within the water and sanitation sector. Program Reports are subject to rigorous external review by independent authorities from appropriate fields. The Discussion Paper Series is a less formal means of communicating timely and topical observations, findings, and opinions concerning Program activities and sector issues.



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RURAL SANITATION IN LESOTHO
From Pilot Project to National Program

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ABSTRACT

This discussion paper examines the evolution of Lesotho's National Rural Sanitation Program (NRSP). The NRSP began in 1983 as a single-district pilot project and has gradually been expanded into a nationwide improvement program. The emphasis of this document is on the sequential development of the program and on the sociocultural and educational aspects of the program that have been critical to its overall success. The text is based on manuscripts from members of the UNDP-World Bank Water and Sanitation Program and the UNDP-PROWESS program who have aided in the formulation and the expansion of the NRSP.

Lesotho's NRSP is particularly interesting in that it has successfully integrated the private sector into its implementation strategy, with government playing largely an organizational and facilitative role. The NRSP has also achieved a significant degree of user cost recovery, with beneficiaries paying for construction costs of improved pit latrines, including materials and builders' wages. This level of user cost recovery has been made possible by high user demand, which has been elevated through village-level health and hygiene education campaigns. User interest and understanding of improved sanitation has been heightened through attention to community involvement and organization, which has improved not only coverage rates, but long-term sustainability as well.

This history of Lesotho's NRSP is intended to serve as an example of a well-planned and creatively implemented sanitation program. While the course taken by the NRSP is by no means the only viable approach to sector development, its history is informative and instructive. The lessons learned are summarized in the final chapter of this discussion paper.



TABLE OF CONTENTS

I. INTRODUCTION	1
II. THE RURAL SANITATION SECTOR IN LESOTHO AND THE DEVELOPMENT OF THE NATIONAL RURAL SANITATION PROGRAM	3
III. THE KEYS TO PROGRAM SUSTAINABILITY: COMMUNITY INVOLVEMENT, PRIVATE SECTOR PARTICIPATION, AND HEALTH AND HYGIENE EDUCATION	11
Community Involvement and the Extension of the NRSP	11
Participation of the Private Sector	14
Health and Hygiene Education	18
IV. SUMMARY: LESSONS LEARNED	25



I. INTRODUCTION

The rural sanitation program in Lesotho offers an excellent opportunity to study the process of sector development, from the implementation of a small-scale pilot project through the establishment of a nationwide improvement program. The rural sanitation pilot project, begun in Lesotho in 1983 with financial assistance from the United Nations Development Programme (UNDP) and the United Nations Children's Fund (UNICEF), laid the groundwork for a large-scale integrated rural sanitation program at the national level by demonstrating the importance of carefully planned, sustainable approaches to development. The pilot project emphasized the need for the involvement of rural communities and the private sector, and the need for sociocultural considerations, including an emphasis on hygiene education and the involvement of women, to be taken into account in project design. Long-term planning and improved collaboration among donors were other important elements of project success. Within a period of ten years, rural sanitation in Lesotho has risen from a neglected sector, devoid of planned improvements, to a model sector, under an integrated national program supported by the national government and a number of external donors.

Lesotho's rural sanitation program is of particular interest because of the level of responsibility it places on users to pay for improved on-site sanitation. This emphasis on user cost recovery may prove to be the decisive factor in ensuring acceptance of low-cost sanitation technology (the program utilizes the ventilated improved pit latrine, which has a total cost of US\$75-150 per unit) and the long-term sustainability of the rural sanitation program. Sustainability has also been enhanced through the successful transfer of construction and maintenance skills to members of rural communities. Those persons with latrine construction skills are able to market their skills in their communities, and have a direct economic incentive to promote improved sanitation.

The transfer of responsibility for the financing and construction of sanitation facilities to the user community improves the prospects for sustainability and self-reliance from the point of view of government as well. While the major expense of many rural sanitation programs is in latrine construction, in Lesotho very little government or donor money is spent in this area. In the well-established district sanitation programs, a privately supplied and privately financed market for latrines has been created, and latrines would continue to be built even if all government support were to come to a halt. The purchase of a latrine under an unsubsidized program shows that a high priority has been given to sanitation, which suggests that improvements have been made in hygiene attitudes and behaviors.

The emphasis on user cost recovery has also been welcomed by donors. With a reasonably well-defined and tested strategy and cost recovery policy in place, the program was more attractive to donors when support was sought for national expansion.

Requiring households to meet the full cost of improved latrines, however, has an effect on the rate and style of implementation. The pace of construction will be almost entirely dependent on the financial situation of potential users and the level of priority given to improved on-site sanitation. Because of this, a long time-frame and intense organizational activity is required. Donors need to take a longer-term view in evaluating sanitation programs of this type; success cannot be gauged on simple "number counting," but needs to be based on broader goals such as the development of local capacity.

The rural sanitation program's requirement for relatively high levels of user cost recovery also raises the issue of affordability. It is clear that some percentage of the population in rural Lesotho

will not be able to afford improved sanitation at current costs. However, subsidies have been avoided for two main reasons: first, current rates of construction are high without subsidies being provided; and second, introduction of a subsidy might undermine the self-help philosophy of the program and misallocate resources to those who can afford to pay the full cost of their own latrines. The Lesotho program has tried several strategies to increase affordability without subsidies, including a credit union scheme for financing latrine construction. Success in this area has been mixed and further efforts are needed to enable the program to reach more of the very poor.

Relatively high levels of user cost recovery can only be achieved when sanitation demand is high; demand is largely a function of an appreciation of the advantages of improved sanitation, particularly the potential health benefits. In the Lesotho program, extensive interaction with community members was required to convey the advantages of improved sanitation, and to instruct users on the hygiene behavior needed to maximize associated health benefits. Participatory approaches, which involved community members in discussions and activities related to latrines and health, were found early on to be essential in changing attitudes and behaviors, and such approaches were significantly more effective than the usual educational methods (such as distribution of flyers and posters). Increased demand for latrines and reduced incidence of diarrhea among young children were seen where participatory methods were used systematically.

Integration of health and hygiene education (or "software" project elements) with construction and technical activities (the "hardware" project elements) often proves to be a serious challenge in sectoral development projects, however, and this was certainly the case in Lesotho. Within the Lesotho government, this challenge revolved around the need for coordination and cooperation between two separate agencies, the Ministry of the Interior (concerned largely with the project's hardware aspects), and the Ministry of Health (generally responsible for software aspects). While initial attempts at cooperation brought rather discouraging results, over time, the meshing of health and hygiene components with the technical aspects of the rural sanitation program met with greater success, as a broader, integrated perspective developed. Coordination of sanitation with the water supply sector also became easier over time, as water supply professionals became increasingly aware that sanitation and health education needed to accompany water supply if significant health impacts were to be achieved.

The Government of Lesotho's commitment to the rural sanitation program is high, with the program currently rated as one of the country's most successful development initiatives. To date, the Lesotho program has been successful in achieving the goal of "sustainable and effective use." As of mid-1989, approximately 900 local latrine builders had been trained and an estimated 12,000 pit latrines had been constructed by the private sector. If the program can broaden this success, maintaining a high level of implementation on a truly self-reliant basis, it will surely be a program that other developing countries can learn from.

II. THE RURAL SANITATION SECTOR IN LESOTHO AND THE DEVELOPMENT OF THE NATIONAL RURAL SANITATION PROGRAM

Lesotho is a small country with a relatively dispersed, largely rural population. Most of the country is extremely mountainous and has a harsh climate, which limits agricultural productivity (only 13 percent of the land is arable). Partly for this reason, migrant labor in neighboring South Africa is an extremely important source of income in rural areas, with roughly 40 percent of Lesotho's active male labor force employed outside of the country. This means that unlike many other developing countries, the rural economy in Lesotho is largely cash based.

Environmental health conditions in Lesotho as a whole are poor, especially in rural areas. Although Lesotho is free of most major tropical diseases due to its altitude, infant mortality is high, typhoid is endemic, and a high incidence of gastro-intestinal diseases causes much suffering and debilitation. These diseases are caused, in part, by the lack or poor quality of drinking water; inadequate facilities for bathing, washing, and excreta disposal; poor housing; and malnutrition. This situation is compounded by generally low standards of personal and domestic hygiene.

Water supply and sanitation services in Lesotho have improved significantly since the nation gained its independence in 1966, but coverage is far from universal. Recent estimates show that only about 20 percent of rural households have sanitation facilities (generally pit latrines, one in four of which is of the improved design). Rural water supply coverage is approximately 35 percent. In urban areas about 40 percent of households have unimproved pit latrines, 9 percent have improved pit latrines, 11 percent have waterborne systems, 20 percent have bucket latrines, and 20 percent have no sanitation facilities whatsoever.

For the first ten years of Lesotho's independence, government development efforts in the rural water and sanitation sector focused solely on improving rural water supplies. The only form of improved sanitation provided by the government was the bucket latrine system used in urban government housing. Government promotion of pit latrines began in the 1970s, but there was no technical capacity to assist in implementation.

In 1975, an evaluation funded by the United Kingdom Overseas Development Administration (ODA) of Lesotho's water supply program laid out the program's shortcomings, and recommended that a broader approach to sectoral development be undertaken, which would supplement water supply activities with improvements in sanitation and hygiene (the study's results were published in Water, Health and Development, by R.G. Feacham et al., 1978).

A broader, integrated approach was also recommended by the Technology Advisory Group (TAG), a UNDP-funded, World Bank-executed project aimed at developing low-cost

Lesotho: Basic Socioeconomic Indicators

Population: 1.6 million
19% urban, 81% rural
Annual growth rate: 2.6%
Density: 53 per square kilometer

Infant mortality:
100/1,000 live births

GNP per capita: US\$370

Source: World Bank (1987)

technologies to augment the extension of water and sanitation services. TAG began working in Lesotho in the late 1970s, helping to develop an on-site sanitation project for urban areas and a phased rural sanitation project to be integrated with village water supply and primary health care programs. Between 1978 and 1983, more than a dozen TAG missions of varying durations were undertaken.

At the same time, in 1978-1979, the United States Agency for International Development (USAID) was helping Lesotho's government to design a major rural water supply project, which initially had no sanitation or health education components. At the request of USAID and the government, TAG assisted in the design of these components for the project, with the understanding that the sanitation component would be implemented through a linked long-term rural sanitation program.

As Lesotho's need for coordinated development in water supply, sanitation, and health care became clear, it was also clear that piped sewerage systems would be prohibitively expensive and that sanitation services could not be extended to the country's dispersed rural population unless affordable, on-site technology was employed. Fortunately, research work done in other countries of the region (particularly Zimbabwe and Botswana) on low-cost, on-site sanitation technologies had led to the development of the ventilated improved pit (VIP) latrine in the 1970s.

The VIP latrine had emerged as a superior form of on-site sanitation hardware due to the fact that it circumvented the two major disadvantages of traditionally designed pit latrines--odors and fly infestation--through the inclusion of a screened vent pipe in the design. By the early 1980s, Lesotho was able to turn to the VIP latrine as a tested and proven technology. While many sanitation programs begin with a strong technical bias due to the need to test and select a technology to use, Lesotho could be more immediately concerned with broader software issues, such as community participation and health and hygiene education.

Improved and effective low-cost sanitation technology, in the form of the VIP latrine, was first put to use in Lesotho through several urban development and housing projects that were implemented in the capital city of Maseru in the early 1980s. The basic VIP design was adapted for Lesotho, and private sector production of the VIP was encouraged through design improvement workshops. The plans for the improved VIP were also distributed to urban housing contractors. These early efforts were important in establishing the VIP as the preferred pit latrine style in Lesotho.

Late in 1983, a TAG-executed pilot rural sanitation project, funded by UNDP, UNICEF, and the Government of Lesotho, was launched through the Ministry of Health. This pilot project was designed as a means of testing and refining methods of service provision that were effective, sustainable, and cost-effective, with a view toward gradual expansion into a large-scale national program. The project employed a decentralized strategy for rural sanitation improvement, based on the principles of self-help and minimal long-term reliance on government funding. The pilot phase was designed to last three years, and was the country's first systematic approach to rural sanitation.

The southern district of Maseru was selected as the location for the pilot project, as it was representative, both in size and topography, of conditions in the country as a whole. The first year was devoted to team building, technical design and modification, and sociocultural field investigations. In mid-1984, a series of planning workshops were held during which members of rural

communities were invited to review a variety of VIP latrine designs and to discuss possible implementation strategies. The VIP latrine was already gaining strong recognition, and thus the main technical problems facing the rural sanitation project were to modify designs to suit the rural environment and reduce unit costs to an acceptable level.

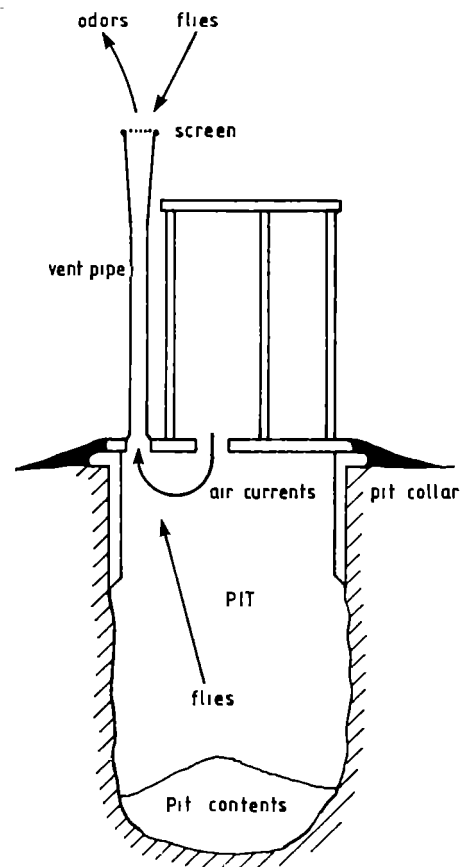
Due to severe budgetary constraints, the Government of Lesotho stipulated that beneficiaries of the project would be required to make a significant contribution to overall costs, through direct payment of latrine construction expenses. Construction of VIP latrines was to be handled by the private sector, with government playing a largely facilitative role through organizing and training. Prospective latrine builders were to be recruited from the local population, and would then receive instruction in VIP construction from project technical assistants. These local latrine builders (LLBs) could then offer themselves for hire to householders, at rates agreed between the community and the rural sanitation project; householders were given the responsibility for procuring materials and employing the LLB. It was hoped that this method of execution would allow latrine construction to become integrated into the local economy, creating income opportunities for local artisans and stimulating cash flows. The transfer of construction and technical skills to the communities was

The Improved Design of the VIP Latrine

Traditionally designed pit latrines have two main disadvantages: their interiors smell bad and they attract flies. The VIP latrine is designed to avoid both of these problems through the use of a vertical screened vent pipe; in other respects the VIP is designed like a traditional pit latrine.

The VIP's vent pipe is able to control odors because of the suction effect of wind across the top of the pipe and the thermal effect of solar radiation on the pipe's external surface. The effect of wind passing across the top of the vent pipe is to create a suction pressure within the pipe, which draws air and odors up from the pit below. Solar radiation works to heat up the vent pipe and thus the air inside of it. As this air becomes less dense, it rises, and is replaced by cooler air from below. In this way air circulates from the outside, into the superstructure, through the pit, and up the vent pipe, pulling odors up with it.

Flies are attracted to pit latrines by the odors emanating from them. In VIP latrines flies are attracted to the top of the vent pipe where odors dissipate, so this is covered with a fly screen and flies are unable to enter the pit and lay their eggs. A few flies will enter the pit through the superstructure and eventually their offspring will emerge from the pit. Since newly emergent flies are phototropic, however, they will fly toward the light at the top of the vent pipe (the only light source since the superstructure is kept dark) where the fly screen prevents their egress and in time they fall back into the pit and die. The VIP latrine is highly effective at reducing fly infestation: experimental data have shown that the VIP design lowers the numbers of flies in a latrine by upwards of 99 percent in comparison to traditionally designed pit latrines.



essential to the development of self-sufficiency in implementation and to long-term absorption of on-site technology. The contributions of beneficiaries and the involvement of the private sector in construction also allowed the government to devote more of its resources to software issues such as community involvement and health and hygiene education.

Coordinating the technical aspects of latrine construction with the need for village level self-sufficiency was not always a straightforward proposition. As an example, four different approaches to the fabrication and distribution of concrete components were tried in succession: central production by the rural sanitation project technical assistants; larger-scale central production by inmates of the district prison; village-level production by commercial concrete block makers; and on-site production by LLBs.

On-site production by LLBs turned out to be the most cost-effective method, reducing the logistical problems associated with central production, and keeping costs down by eliminating the profit margin required by local commercial producers. Central production was necessary in the initial stages to maintain quality control, but LLBs proved capable of high standards of work, and component production was progressively handed over to them, with government technical assistants maintaining regular checks on standards. An obvious benefit of this approach was that all stages of production were placed in the hands of local artisans.



Field implementation of the pilot project began at two sites in October 1984. The construction target for the pilot phase was modest, requiring that only 400 latrines be built during the three-year project cycle. This target was surpassed by 50 percent, with 600 latrines being built by the end of 1986. Almost two-thirds of the latrines were built in the final year, underscoring the long lead-up time that the project's approach required. Roughly 90 percent of the latrines built in 1986 were fully paid for by rural householders, who purchased the required materials and paid builders' fees.

Local Latrine Builders: Entrepreneurship Promoting Health in Lesotho

Latrine building has been a kind of "saving grace" for Teboho Raleteng, who has constructed 34 latrines in Liphiring, Lesotho. Before he was trained in latrine building, Mr. Raleteng's only source of income was whatever unskilled labor he could find in his rural area, where only 14 percent of the labor force is employed in non-farm work; he drove tractors, fixed fences, and took on odd jobs. He had no steady form of income, and with only one year of education, he had little chance of providing more than a subsistence level of income for himself.



Teboho Raleteng, local latrine builder, constructing the pit and foundation of a VIP latrine

In 1984, Mr. Raleteng--functionally illiterate and inexperienced in construction work--attended a two-week latrine building course, sponsored by the Mohale's Hoek district rural sanitation project and taught by technical assistants from the Ministry of the Interior. Mr. Raleteng successfully completed the course, and he was given his local latrine builder certificate and encouraged to actively market his new skills. The course's graduates were helped by local health assistants from the Ministry of Health, who worked to increase latrine demand through health education campaigns and sales of VIP latrine kits to households, and by the technical assistants, who provided supervision and encouragement to those who lacked confidence in their skills.

The training course gave Mr. Raleteng the skills he needed to establish himself in a new career. He has become very successful, creating a reputation as a competent and reliable builder and earning a steady income. Mr. Raleteng is proud of his work, and although he is sometimes teased by a few local men who consider latrine building a lowly occupation, he has had the last laugh, knowing that they are unable to earn the amount of money that he does.

As latrine construction proceeded, sanitation hardware needed to be integrated into overall efforts to improve health and hygiene. Studies were conducted of prevailing attitudes and levels of knowledge among the district's rural population, with emphasis on sanitation-related diseases. These studies suggested that a good proportion of the rural population tended to favor germ-related theories of disease transmission, although knowledge was often fragmented and not integrated into an overall theory of prevention and cure. To improve understanding, sanitation-related messages were integrated into other aspects of primary health care education already underway, such as campaigns related to water supply, nutrition, and mother and child health.

By 1986, activities in the Mohale's Hoek district had expanded considerably and work began on handing over the project to a district-based team. UNICEF agreed to carry over remaining funds from the pilot phase to continue to support activities in the Mohale's Hoek district, until this responsibility was fully taken over by the national government in 1987.

Strategies and methods of project implementation were developed in an iterative manner over the course of three years of experience in Mohale's Hoek. While the pilot phase was able to significantly exceed its construction goals, the government's ultimate determination of success was based on the project's ability to create a solid, operable framework for developing sanitation services, working within existing administrative structures and with a low level of state financial involvement. With pilot phase judged a success, at the end of 1986, the decision was made to expand the project and to attempt to replicate success on a national scale, as the Government of Lesotho endorsed a National Rural Sanitation Program (NRSP). UNDP agreed to support the expansion of the program by providing funds for a three-year period (1987-89) for a national core team, made up of experienced field workers from Mohale's Hoek.

The strategy for the national plan called for a phased series of district-based sanitation projects, maximizing the private sector's involvement in planning, managing, and implementing improvements. The national plan stipulated that the district projects should be thoroughly integrated with rural water supply and primary health care programs, sharing staff and other resources as much as possible. The Government of Lesotho demonstrated its commitment to rural sanitation by incorporating the national sanitation strategy into its 1986-1990 national development plan.

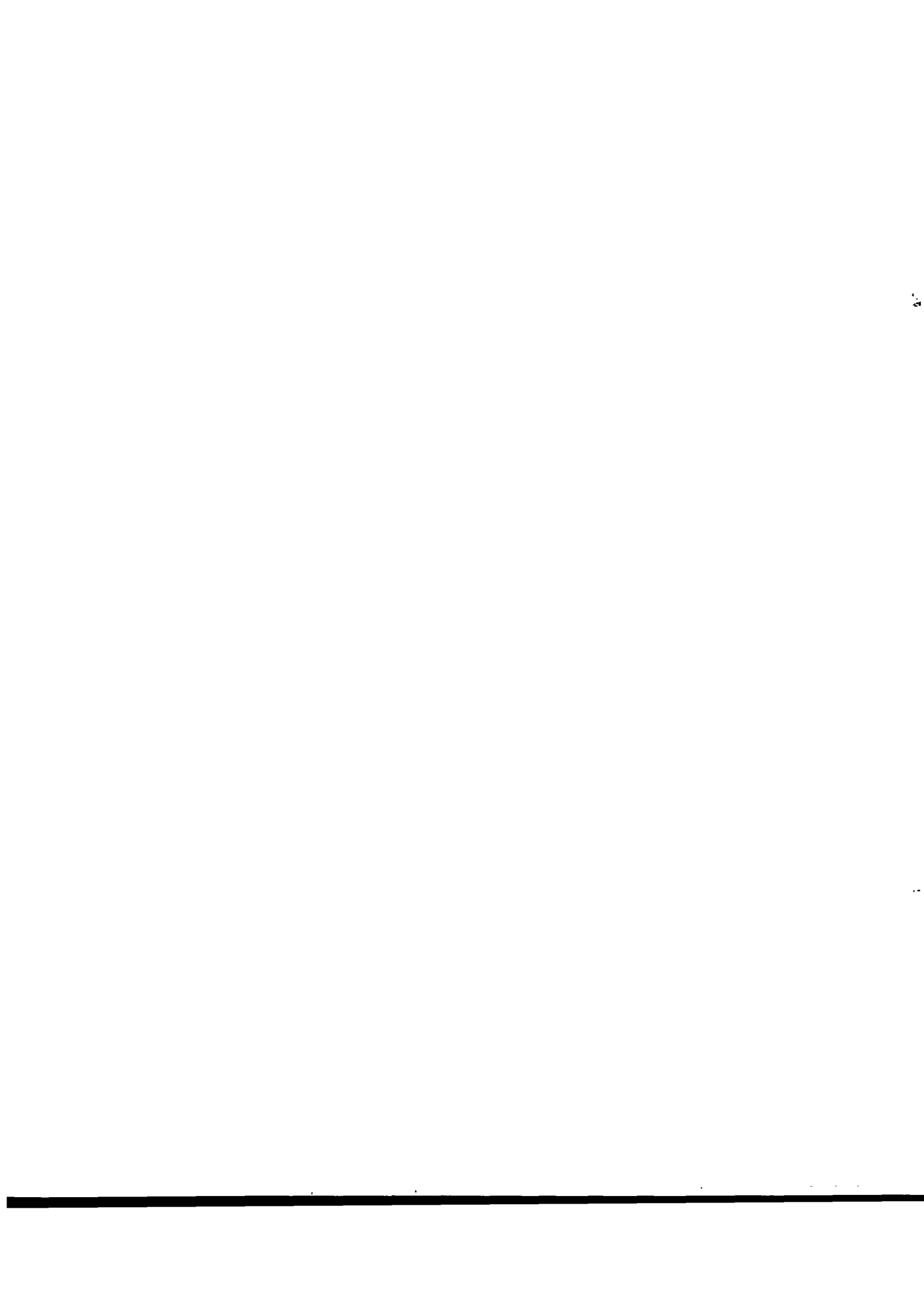
As the rural sanitation program expanded to national scale, it retained a focus on district-level activities, and donor funding proceeded on a district-by-district basis. This allowed the NRSP to work within the existing district-based administrative structure of the government. The expansion relied heavily on external funding, with international donors financing all of the capital and training costs of district programs for the first three years, and funding a limited amount of the recurrent costs on a declining basis. In 1986, with ODA funding, the program was launched in the northern districts of Leribe, Butha-Buthe, and Mokhotlong. In the following year, USAID began support of the Quthing district program and the Government of Ireland agreed to support the program in the Berea district. The Swiss Development Corporation signed an agreement in 1989 to fund the Maseru, Thaba-Tseka, and Qacha's Nek districts, and the Reconstruction Loan Corporation of the Federal Republic of Germany (KfW) agreed to fund the Mafeteng district program; by 1990, all ten districts of the country had funding agreements or functioning district programs. The Lesotho government also increased its overall program funding, to a level of roughly 25 percent of total program costs, with donors financing 50 percent and rural households contributing 25 percent. Over time, as district programs become well-established and initial training and organizational costs decline, the contributions of householders as a percentage of total program costs will increase substantially and the percentage of costs financed by external donors will decrease.

At present, Lesotho's National Rural Sanitation Program maintains a bi-level structure, with responsibilities delineated between the national and the district levels. Overall operational coordination of the NRSP is the responsibility of a core national team. This team handles general organization, develops education and training materials, conducts national monitoring and evaluation, extends technical support, trains district teams, and backstops active district programs. The national team consists of a national rural sanitation coordinator, a chief technical officer, a health education and training officer, and a monitoring and evaluation officer. In addition, there are two national training teams: one made up of four technical assistants (who teach the techniques of latrine construction), and the other consisting of two health assistants (who concentrate on health and hygiene matters). These two training teams instruct district teams and give general back-up to district programs, particularly in the early stages of development.

Actual field implementation is the responsibility of district sanitation teams. These are made up of a district sanitation coordinator (usually a senior health assistant) and a field staff made up of four health assistants (provided by the Ministry of Health) and four technical assistants (provided by the Ministry of the Interior). The district sanitation coordinator is responsible for the general management of the district program, and accounts for program expenditures under the supervision of the district health inspector. Field staff take responsibility for local sites and undertake training, promotion, and health and hygiene education at the village level. They often work with local volunteers such as village health workers.

A combination of on-the-job, in-service, and fellowship training is provided at the national and the district levels. Most senior national staff have received overseas training, and all have worked extensively with the international experts who have worked in Lesotho. Local training is given to new district teams, starting with approximately one month of in-service training and continuing with five to six months of on-the-job training and supervision before assuming full responsibility. A newsletter was launched in 1988 to improve communication among those involved in the program at the national, district, and village levels.

During the pilot phase of the rural sanitation project most aspects of project implementation were carried out with assistance from international experts. When the pilot project was expanded into a national program, technical and capital assistance from external support agencies was instrumental in making the transition. Over time, however, the role of international experts has diminished as domestic institutions have developed and national counterparts have assumed responsibility. In 1989, the efforts of the UNDP-World Bank chief technical adviser to the program were terminated ahead of schedule, since core national staff were trained and in post and the institutional framework of the NRSP was felt to be well-established.



III. THE KEYS TO PROGRAM SUSTAINABILITY: COMMUNITY INVOLVEMENT, PRIVATE SECTOR PARTICIPATION, AND HEALTH AND HYGIENE EDUCATION

At the outset of Lesotho's National Rural Sanitation Program, there were many examples of water supply and sanitation projects in all parts of the world that had established briefly successful hardware oriented demonstration projects (often heavily subsidized) that ended in failure in the long run due to neglect of software project elements, such as community involvement and health and hygiene education. The planners of the NRSP were committed to long-term sustainability and recognized that community involvement and education were integral elements of overall program strategy. Cultural acceptance of improved sanitation and an understanding of its benefits were essential to increasing latrine demand and attaining significant user-cost recovery, and changes in hygiene behavior were essential to maximizing the health benefits of the program.

Sustainable improvements in health were also contingent upon coordinating sanitation efforts with water supply and general health maintenance and education efforts. Fortunately for the NRSP, a national water supply program had made significant inroads in improving rural water supply in Lesotho, and the rural health care system, under the Ministry of Health, was reasonably well developed and was focused on village-level concerns, making use of over 4,000 volunteer village-based health workers. Because of the pre-existing structures of the village water supply and health programs, from the time of the pilot project in Mohale's Hoek, it was decided that the rural sanitation program should be implemented as much as possible through these channels. Technical aspects of latrine construction were handled through the Ministry of the Interior's water supply program and hygiene education proceeded through the Ministry of Health's rural health care program.

The village water supply and rural health care programs had not only extended services to many rural communities, but they had also made efforts to involve the communities with the services, with villages helping with construction and maintenance of water supplies, and working with and learning from their village health workers. Community participation, therefore, was not an entirely new concept to many rural communities when the NRSP began its work of promoting latrines and changing hygiene behavior. The rural sanitation program, however, had an even greater need for community participation and improved understanding than the other programs, since it required a significantly higher degree of user cost recovery.

Community Involvement and the Extension of the NRSP

While the costs of latrine construction under the NRSP are generally the responsibility of individual households, overall community approval and commitment to sanitation improvement has been found to be extremely important. If the majority of a community's residents do not adopt hygienic behavior, positive health impacts will not occur. Common belief in the need for sanitation and common goals for community improvement are the surest means of expanding coverage and of changing hygiene behavior. Raising the interest level of a community overall also makes individuals significantly more receptive to demonstration effects; that is, they are more inclined to notice the beneficial changes occurring as latrines begin to be installed. Broad exposure is also needed to ensure that local latrine builders (LLBs) are recruited from the community and to ensure that there is sufficient demand to keep the LLBs employed.

District-level sanitation teams use existing local channels of communication to reach members of rural communities, relying on home visits, small group meetings, and to a lesser extent *pitsos* (community meetings) to make initial contact. As the village residents come to learn more about the sanitation program, community involvement and education increasingly become local responsibilities, with local latrine builders dealing with promotional activities and technical support, and village health workers handling community education and motivation.

In the initial phase of the pilot project, pitsos and planning workshops with community members were used extensively to elicit community opinions on latrine design. These preferences were incorporated into design, and this has lessened the need to hold community pitsos to investigate design preferences in the expanded program. However, experience has shown that such pitsos and small focus group discussions continue to be invaluable in establishing community preferences and eliciting commitment to various other program components. While there has been little formal effort to ensure that organized group efforts are maintained on a long-term basis, local initiatives, such as the formation of learning groups, women's groups, and small self-help credit societies, have been encouraged.

Over the years a five-stage pattern of organization has emerged when a district rural sanitation program expands into a new community:

Stage 1 The first stage begins after the NRSP has been introduced in a district and a district sanitation coordinating committee and district sanitation teams have been formed. At this stage an orientation and participatory training workshop for district extension workers (technical and health assistants) occurs and technical assistants are introduced to the specifics of the VIP latrine design. While participatory health and hygiene education is primarily the responsibility of the health assistants, a five-day course for technical assistants has also been added so that they can impart health information when health assistants are not available.

Stage 2 This stage is characterized by entry into villages, after preliminary contact with local chiefs. It also includes large traditional pitsos in which information is given and opinions are solicited. Extension workers form learning groups and conduct house-to-house visits, while community leaders participate in workshops focusing on needs assessment and health education. Announcements are also made about the LLB training course and volunteers are interviewed and signed up for training by the extension workers.

Stage 3 The momentum created by the community activities is carried through to a two-week LLB training course. The LLB training course emphasizes hands-on learning, minimizing lecture time, and includes two days of focus on management and self-promotion techniques. Practical experience is gained by the LLBs through the construction of four demonstration latrines at public places in the village. To ensure high morale among builders and to consolidate learning while the LLB training is going on, the health assistants go house-to-house soliciting orders for latrines. The goal is to obtain enough orders so that each builder has at least one order soon after completion of the course.

Stage 4 After the two-week training period, the technical assistants and health assistants stay on for a couple of months if possible to supervise construction and to consolidate changes in health and hygiene behavior.

Stage 5 The final stage consists of monitoring and evaluation activities. Monthly progress reports are submitted by the health assistants and technical assistants to the district sanitation coordinator, who then compiles these reports and sends them to the national team in Maseru. At the community level, monitoring activities are conducted by the village health workers, who also maintain sales records and store latrine materials kits.

The community organization activities of the NRSP are regularly followed up through a well-developed internal monitoring and evaluation system. Based on regular information flows from district programs to headquarters and back, the program is very well documented and conducts its own annual in-depth evaluation exercises. This system grew out of the realization during the pilot phase of the importance of sociocultural issues and field-based investigations for management of the program.

Over the years, a monitoring form has evolved that provides monthly data from the field to management in Maseru and serves as an early warning system of problems in the field. The form includes information on rates and standards of construction, prices, credit flows, and the degree of activity of local latrine builders. Qualitative data is also reported on general progress in the district, courses held, problems, and support given by the national team. A third section focuses on a three-month work plan, specifying areas in which assistance is needed from the national team.

The national team also undertakes two major evaluation activities each year. The first examines the impact of health education activities on hygiene behavior, including the use and maintenance of latrines and incidence of diarrheal diseases, in both project and nonproject sites. It

The Work of a District Sanitation Coordinator

Lithoko Motebang is a district sanitation coordinator in the Berea district of Lesotho. His work involves overall coordination of district activities and training of health and technical assistants and extension workers from other fields. Training topics include latrine construction and participatory education and communication methods. All who receive training then take their new skills to the field, where they can in turn train community leaders and village health workers in participatory training workshops.

Mr. Motebang believes that latrine building skills are particularly useful to village health workers. "I feel very strongly that it is important to train the village health workers because they always stay in the villages. If we can motivate and support them, they will go out and be able to supervise other builders," he says. "It is also good for their confidence because they learn a new skill, feel important, and gain the confidence of the people."

Mr. Motebang is also responsible for running the district sanitation coordinating committee meetings, which are held every other month. These meetings allow the members of the district team (Mr. Motebang and his health and technical assistants) to discuss the problems they face in the villages and to coordinate district activities. Each month Mr. Motebang sends progress and financial reports to NRSP headquarters and participates in program evaluation meetings.

The life of a district sanitation coordinator does not always run according to plan. "My main problem is that we are short staffed," says Mr. Motebang, who has only two health assistants under him (rather than the usual allotment of four). Because of this personnel squeeze, Mr. Motebang must take on the tasks of both a health assistant and a district coordinator. Adding to the problem is the fact that in the area he works, there is only one government health center and the other health facilities--private clinics--do not support his work.

also focuses on detailed analyses of households that have built VIP latrines through the program. The second evaluation focuses on the progress and problems of local latrine builders.

To sustain evaluation activities, increasing use is being made of qualitative, participatory research methods such as focus group discussions, mapping, and drawing of problems rather than quantitative surveys. More recently, the program has started applying participatory research techniques to school children. The program's growing experience with participatory research has led to a decreased need for sophisticated quantification tools and a reduced dependence of district sanitation teams on the technical skills of the national team, which has evoked the interest of other research units within the Ministry of Health.

A health impact evaluation, carried out in 1988 by the Ministry of Health with assistance from UNDP, ODA, and UNICEF, was created by simply adding questions on latrine ownership to data routinely collected at health clinics in the country. This data, collected from mothers with sick children, included a great deal of information on child morbidity. The results of the study are examined in the discussion of health and hygiene education in this chapter.

Participation of the Private Sector

The area of community involvement that truly separates Lesotho's NRSP from other sanitation improvement programs is its degree of reliance on the private sector for latrine construction, maintenance, and financing. This reliance on the private sector is by no means complete, since the NRSP pays for the staffing of the district sanitation teams and the costs of training local latrine builders. Nevertheless, all direct latrine construction costs are paid by private individuals (there is no household subsidization), as are maintenance costs. In addition, local latrine builders function as private entrepreneurs, not government employees, and in the districts with well-established sanitation programs, the costs to the NRSP of sanitation promotion and LLB training have declined as builders have achieved success in their craft. In time, it is expected that enough LLBs will be trained that further training can be left to them, as they pass on their skills through traditional means such as partnerships and apprenticeships. The use of the private sector for latrine construction allows the rural sanitation program to devote more resources to health and hygiene education (the costs of which may also decline in the long run, as attitudes and hygiene behaviors change). In time, if the software elements of the rural sanitation program can be sustained, the amount of government and donor funds needed to maintain the program should be minimal.

While reliance on a high level of user cost recovery necessarily precludes some percentage of the population from receiving services, Lesotho's status as a relatively poor country, facing severe fiscal constraints and a large number of unserved citizens, mandated such an approach. The use of the private sector and the financial involvement of users also provides two major advantages over government service provision: wider and quicker extension of services (given government fiscal constraints) and a heightened sense of ownership and responsibility at the household level. When users own their own latrines, they feel a sense of personal accountability for upkeep; this significantly increases the sustainability of the sanitation improvements. The latrines that have been built to date under the NRSP are almost invariably well-maintained and kept clean and hygienic. People are proud of their latrines, protecting them with locks and beautifying them with pictures, plants, and carpets.

The consumer costs of a VIP latrine vary considerably according to materials used and the amount of labor contributed by the beneficiary. The total cost (labor and materials) of a single pit latrine may range from 150 to 300 Lesotho maloti (US\$75-150 as of mid-1989), and a double pit latrine may cost between 200 and 300 maloti. Within these estimates, labor costs may be 90 to 125 maloti. Surveys have shown that the mean total price paid for a VIP latrine is slightly less than one month's income for an average rural household. As a one-time expenditure this is clearly a large expense, but it represents a reasonable long-term investment when spread over the anticipated life of the latrine.

An investigation of affordability of latrines under the rural sanitation program was carried out in 1985 by USAID's Water and Sanitation for Health project. The study estimated that approximately 45 percent of Lesotho's rural households could afford VIP latrines without any external financial assistance, 30 percent of households might need some extension of credit, and 25 percent could not afford to participate without partial or full subsidization.

Credit has been made available on a limited basis through an agreement with the Lesotho Cooperative Credit Union League, a network of semi-autonomous village-based unions established primarily to provide agricultural loans. Loans for latrine construction were first distributed in 1986 on an experimental basis through a single union in the Mohale's Hoek district, and a second union joined later; both loan programs have been supported by seed money from UNICEF. Several unions in the northern districts are expected to join the scheme in the near future with support from ODA.



The wages of local latrine builders and the costs of building materials are the sole responsibility of rural householders. Given government fiscal constraints, user cost recovery has allowed wider service provision than would have been possible under complete subsidization.

Latrine building loans are provided entirely in kind, in the form of materials or payment notes for LLBs that builders cash at the credit union office when work is completed. Borrowers sign a legal bond that states the cash value of the loan and the repayment schedule. Requirements for collateral vary, but generally borrowers must have deposits in the credit union equal to the amount of the loan. Each credit union sets its own regulations regarding the maximum size of the loan and payback period. Amounts provided by the credit union are usually in the range of 100 to 200 maloti.

Credit union management capacity at the local level is highly variable, and so far the credit scheme has only been approved for those unions with a proven track record. Management problems and the uneven distribution of unions throughout the country have proven to be major limitations. An alternative scheme, with loans disbursed through the Lesotho Bank, is being tested in urban areas, and its potential for expansion in rural areas will be evaluated.

The ministries of Health and the Interior manage cost recovery. Funds that accrue from the sale of latrine component kits by village health workers and health assistants are deposited at rural clinics, where they are collected by the district sanitation coordinator. The funds are then placed in a Ministry of the Interior account and are used for centralized purchase of materials for additional kits. Other direct construction costs are managed entirely within the private sector, with rural households paying private latrine builders either directly or through credit unions. Building materials may also be privately procured by households.

The NRSP's implementation strategy makes a small but significant contribution to income generation and job creation in Lesotho's rural economy. This is of particular importance in light of the scarcity of local off-farm employment, and a decline in migrant labor opportunities in the mining industry of neighboring South Africa, which has strained Lesotho's already impoverished rural economy. Beneficiaries of the employment and income generated by the sanitation program include LLBs, some of whom rely on the occupation as their primary source of income, and local materials suppliers, who benefit from the extra activity that the construction program stimulates. Latrine construction has beneficial linkages to industries in which Lesotho can effectively compete with its economically dominant neighbor, South Africa, such as brick and block production.

All VIP latrines built to date, with the exception of the demonstration latrines, have been built by the local latrine builders. Hundreds of LLBs have been trained at the village level through the courses taught by technical assistants from the Ministry of the Interior. The two-week courses are usually made up of 20-30 participants and entail a cost to the NRSP of 3,000 maloti (an average cost of approximately 125 maloti per LLB trained). The training programs maintain an open recruitment policy, allowing interested individuals (men and women) to try their hand at latrine building and to make their own decisions as to whether or not it appeals to them as an occupation. Although the open training policy has led to a rather high drop-out rate among builders, the program has not generally suffered from shortages of builders. An evaluation of the histories of those who have taken LLB training courses has provided the estimate that 15 percent of those trained take up latrine building as a full-time career, while 45 percent do so on a part-time or intermittent basis, and about 40 percent do not take up latrine building at all. Residual benefits from the training sessions include sanitation promotion to the communities involved and construction of village demonstration latrines by the LLB trainees.

Local latrine builders have come from a wide variety of backgrounds, with ages of trainees varying from 17 to 71 years, and significant numbers of women participating. Since latrine building

Women Latrine Builders

Roughly one in four of all latrine builders trained in Lesotho is a woman. Interesting contrasts have emerged between the sexes as far as orientation and attitudes toward the work of a LLB. While men have been found to be generally more versed in construction techniques and to have more of a market orientation, women have been more aggressive in creating demand for their skills, having no qualms about house-to-house promotion. While men usually work alone, women nearly always work with a partner. In addition, women have been generally less dissatisfied with price guidelines and contracts worked out with village chiefs, male builders have been known to take action on this problem by charging more for their work than stipulated in the contracts.

While female LLBs have on average built fewer latrines than the males, compassion and cooperation often seem to be stronger motivators among women than simple profit. This has been shown by a greater willingness among women to build latrines for people who cannot assure them of payment, attempts to keep prices down (despite dissatisfaction with pay), and a willingness to voluntarily train other women as builders.

The Monnanyane household in Tšime, Butha-Buthe district provides an example of the life of a female LLB. There are two latrine builders in the family: Mr. Monnanyane, who works as a house builder and occasional latrine builder, and his wife, Mateboho Monnanyane, who pursues latrine building full time and has completed 40 VIPs, perhaps more than any other woman in the country.

Mrs. Monnanyane not only constructs latrines, she also actively markets her skills, going to neighboring towns to offer her services. Sometimes she goes house to house, telling of the importance of having a latrine, sometimes she visits the local chief to get his support. She has trained five other builders, one man and four women, who are now constructing on their own. And although the number of builders has increased in the area, she says there is still plenty of demand for her work.

Mrs. Monnanyane is a true entrepreneur, and the success of her building has led to thoughts of expansion. She's thinking of buying materials and constructing latrine superstructures at her house--a sort of mass production effort. Her background as a village health worker has convinced her of the need for improved latrines.



Mateboho Monnanyane, one of Lesotho's most prolific latrine builders, with an example of her work.

"Being a village health worker was a logical jumping off point to becoming a latrine builder," her husband says with pride. "I have understood why she does it from the beginning because she had been a village health worker, so it makes sense that she's gone on to building latrines. She's working for everyone's health, particularly children's."

In fact, her husband says, the hard work she does, such as cutting rock to dig pits, often makes her sick. Some people take advantage of her, not paying as much for a local person as they would for someone from outside the community. And even though the ground may be harder to dig out in some areas, she is paid the same amount for each job--around 70 maloti (US\$35) per latrine, about 30 maloti less than many men earn.

What keeps Mrs. Monnanyane going? "I want to make an impression on the village," she says. "There is competition when I go to other villages, but people request me because I have a good reputation. This is my work."

does not require literacy, the training program offers an opportunity for those with limited job skills; a significant percentage of LLBs have low levels of education, many being illiterate. All that is required of an LLB is a few simple tools and the motivation to complete the two-week training session. As an incentive to staying with latrine construction over the long run, LLBs are rewarded with a full set of building tools upon completion of 20 latrines.

While the NRSP has so far needed to maintain the indirect program subsidy of the LLB training program, training costs as a percentage of the total costs of the sanitation program have declined as the program has expanded, demand has increased, and more builders have become established. In addition, the average number of latrines built per LLB trained has risen over time. By 1988, the contribution of Lesotho's rural population to the latrine building program was six times as much as the government's contribution to training inputs, and most of the contributions of rural residents were staying within their communities.

There are still some problems that need to be overcome in the extension of the NRSP and the local latrine builder system. The high drop-out rate among LLBs is an area of significant frustration. While the LLB selection process attempts to choose people who are the most likely to build (based on previous building experience, lack of primary employment, and residential stability), it is likely that the interview process elicits a high degree of "correct" answers from those who apply, since these criteria are announced publicly. The entire selection process is currently under review, to see if the LLB drop-out rate can be lowered. The program is considering a variety of strategies, including selection of LLBs by the communities themselves through group discussions, to maximize the prospects for LLB success and longevity. This last approach proved successful in the UNICEF-assisted Wangingombe rural sanitation project in the Iringa region of Tanzania.

Another problem is that some of the builders need to be weaned away from their dependence on the program's field staff, so that they can take over the responsibility of managing client relations and promoting their services. This problem seems to diminish over time, however, and many self-reliant builders have firmly established themselves, offering apprenticeships and taking on employees. Builders who initially drop out of latrine building often regain their interest when demand rises and they see the income opportunities available to the established builders. An evaluation in 1986 found that LLBs were reporting a mean monthly income from latrine construction of 158 maloti, which was roughly equivalent to the mean monthly income in rural Lesotho at that time. The study concluded that for LLBs who built latrines on a full-time basis, the occupation provided a highly viable income, without the inconvenience of having to migrate for extended periods of time.

Health and Hygiene Education

While it was well known from the launching of the Mohale's Hoek pilot project that health and hygiene education were essential to the overall success of any sanitation improvement project, initial efforts at improving understanding among rural villages were constrained by personnel shortages, and communications efforts were largely limited to printed materials such as posters and fliers. These methods proved to be ineffective in changing attitudes and hygiene behavior. An additional problem was that messages were not being effectively oriented toward women, who act as the primary guardians of household hygiene and who are the most important teachers of personal hygiene to children.

As the rural sanitation program expanded to a national scale and funding to the sector increased, efforts were made to increase the effectiveness of educational activities through the use of more interactive methods, with an emphasis on the female audience. In 1986, a participatory training and communications adviser was posted to the rural sanitation program by the UNDP-PROWESS program to help in the design and implementation of improved, interactive methods of health education and hygiene training, and a women's liaison adviser was posted the following year. PROWESS also funded the design and production of a wide variety of training and promotional materials.

Education efforts at the national level are concentrated on training district sanitation coordinators in participatory approaches. District sanitation coordinators in turn teach these methods to extension workers, who can then use the teaching techniques to raise awareness and alter sanitation and hygiene behavior among villagers.

Training is performed through participatory training workshops, where as many as 30 people can be taught simultaneously, including extension workers from other sectors who may have an interest in participatory education or in learning how to integrate improved sanitation with their own areas of concern. Such workshops have become an integral part of district sanitation programs. Workshops for extension workers typically last for two weeks, with immersion in participatory education techniques followed by practical application of new skills.



Trained in participatory approaches, a health assistant goes into a village to use newly learned techniques. Asking groups of women and men to draw their community and its resources has proven to be invaluable in raising confidence levels of villagers and starting the process of community decision making.

The knowledge gained by extension workers through the district-level workshops is then passed on to the village level. Extension workers interact with village health workers and interested villagers, making visits to individual households and forming learning groups, made up mostly of women interested in working to improve their living conditions. Learning groups emphasize the creativity and resourcefulness of individuals and the strengths gained from working together. The formation of learning groups has been critical to overcoming the problem of "what to do if people's priority is not sanitation," by showing the advantages to making an investment in improved sanitation and the hygiene techniques needed to maximize health benefits. While changing attitudes and behavior is not an easy task, participatory techniques increase the involvement of the people in the learning process, and once awareness is created, change sometimes comes quickly. In one community, Ha Sechele, participants became so motivated by their learning group that by the third meeting they had protected their spring to ensure its safety.

The effectiveness of participatory approaches within villages has led to further use and adaptation of the approach in training of village health workers and community leaders, including chiefs and village development counselors. Program staff members experienced in participatory communication and health education have been frequently invited to various units of the ministries of Health, Education, and the Interior, as well as to several local and international NGOs, to conduct training and assist with curriculum development.

The final link between the NRSP's participatory health education activities and the villages is the village health worker. In summarizing the importance of this link, one district sanitation coordinator had this to say: "We must find people in the village who worry about our program when we are not here. When I enter a village now, I first contact the village health worker."

Village health workers (VHWs) are volunteers, generally women, who are elected by their communities to act as liaisons with the formal health system. The village health workers are indispensable in translating health policies into reality. Their responsibilities include first aid, baby weighing, immunization, health counselling and referrals, assistance in emergencies, and construction of protected water sources and improved latrines. There are 4,225 VHWs in Lesotho, often referred to as "village nurses" by rural residents. The VHWs are motivated primarily by the desire to help their fellow villagers, and a recent study found that the majority of rural residents sampled (87 percent) felt that the presence of village health workers had improved health in their communities.

Recognizing the key placement of the village health workers and their generally high stature in their communities, the rural sanitation program has gradually increased the role of the VHWs in health and hygiene education and latrine construction training courses. Three-day participatory training workshops are held to include the VHWs in a team approach to health campaigns in villages during pre- and post-construction phases. Some village health workers have become the local latrine builders for their communities, and most VHWs are able to supervise latrine construction.

Participatory training methods, whether used by village health workers or district extension workers, use a number of different techniques that allow learning to occur outside of the confines of traditional pedagogic methods. Interactive activities include games, dramatic presentations, artistic and creative exercises, story telling, and community survey and mapping activities. These activities underscore the relationship between good health and specific hygiene practices, such as hand washing, use of latrines, protection of food and water from contamination, conscientious infant care, and proper disposal of solid wastes.

Participatory Education Techniques: An Interactive Sociodrama

Convinced of the benefits of participatory approaches to community education and promotion, in 1986 the Mohale's Hoek project staff invited the "Theatre for Development" acting troupe, based in the English Department of the National University of Lesotho, to perform an interactive play concerning sanitation for six villages in the district. The play used audience participation, including interactive dialogue, role playing, and singing and dancing, to underscore the importance of improved sanitation and hygiene.



From a performance of the Theatre for Development. To the left, the character of the husband comes home from the mines. His daughter is suffering from diarrhea, so the village health worker convinces him to invest in a latrine.

In the photo to the right, a health assistant is contacted, who describes the VIP latrine and identifies a local latrine builder.



In the photo on the left, the builder and health assistant discuss how a VIP latrine works, how it is built, how much it costs, and similar issues.

Follow-up evaluation in Mohale's Hoek after presentation of the play revealed increased discussion and awareness of VIP latrines and heightened demand. In one village, several people bought latrine kits immediately after the performance, while others joined an informal credit union. Internal evaluations conducted one year after the play was performed in the Berea district revealed significantly increased latrine sales and construction. The evaluation revealed that of those households that had latrines, 25 percent had built them after seeing the play. A majority of this group, 63 percent, claimed that they had been directly influenced by the play to build a latrine.

Participatory activities typically ask village residents to take stock of community resources and to identify community problems. These activities are followed by group discussions and presentations, as community members verbally assess sanitary and environmental conditions around their villages. Dialogue and brain-storming sessions follow, focusing on the goals of the community and the means of solving the problems it faces. Participatory training sessions have been found to be highly effective in involving people in problem investigation, analysis, and resolution.

The program has also developed an extensive set of educational aids, such as games, slide shows, flip charts, and posters. These materials are being produced and distributed by PROWESS with assistance from ODA and the Irish government. A participatory training manual and curriculum for workshops for different health cadres has been developed and provides the model for district workshops.

Proper hygiene and sanitation practices are perhaps most important and are easily taught to children, so education among students has been an integral component of the rural sanitation program. Efforts have been extensive in the rural school systems, with hygiene education becoming a part of overall school sanitation programs. School teachers have been trained in interactive techniques as well. Children become highly involved through activities such as community mapping, which provides valuable information to extension workers on the water and sanitation situation in communities and establishes whether or not latrines are being used.

Women have also been identified as a specific segment of the rural community to whom hygiene education needs to be targeted. It is estimated that at any given time half of the able-bodied men in Lesotho are away as migrant workers, leaving women with the major responsibility for managing rural economic and social life. Despite the fact that women hold senior positions within the government, head a majority of households, are more physically present in the villages, and have higher levels of education than men, they have proven to be a difficult group to reach in the health and hygiene education effort.

To identify strategies to actively involve women in decision making, and to ensure that the benefits of extension services reach them, a women's liaison adviser position was created within the NRSP with UNDP-PROWESS assistance. The mandate of the women's liaison adviser was to work closely with the health education officers and monitoring and evaluation officers at the national level. At the district level, the women's liaison adviser worked closely with the district sanitation teams to identify existing women's groups and their modes of functioning, as well as their needs and problems.

Participatory approaches have been very successful in raising the level of involvement of women's groups in the rural sanitation program, as the groups have come to take on more of the responsibility for overall community improvement. One women's group has created an informal revolving credit system to build household latrines, while other groups have recently sought advice on how to set up and manage credit systems for undertaking construction of latrines and communal water systems.

For the rural sanitation program as a whole, the effectiveness of the participatory education strategy is apparent. Despite a lack of effective follow-up to health education in some areas (mainly due to a lack of health assistants), internal monitoring and evaluation documents consistently report increased demand for latrines after a thorough health education and promotion campaign.

Conversely, low demand for latrines is often linked to poorly conducted community health education campaigns.

The efficacy of the comprehensive approach of the rural sanitation program in improving health in Lesotho was dramatically illustrated in the findings of a 1988 health impact study performed in Mphahle's Hoek. The evaluation was completed with joint funding from the Ministry of Health, UNDP, ODA, and UNICEF. This study was carried out using a case-control design, with data collected from mothers of children under five years of age. Three groups of respondents were examined: those who reported to health clinics with children with diarrhea; those who reported to clinics with diseases unrelated to sanitation, such as respiratory illnesses or traumatic injuries; and a third group of mothers from the community who had not attended local health clinics. A comparison was then made between the groups regarding latrine ownership, nutritional status, hygiene behavior, and other factors.

Overall, the study found that those children who lived in households with latrines suffered 24 percent less diarrhea than children who lived in homes without a latrine. The importance of

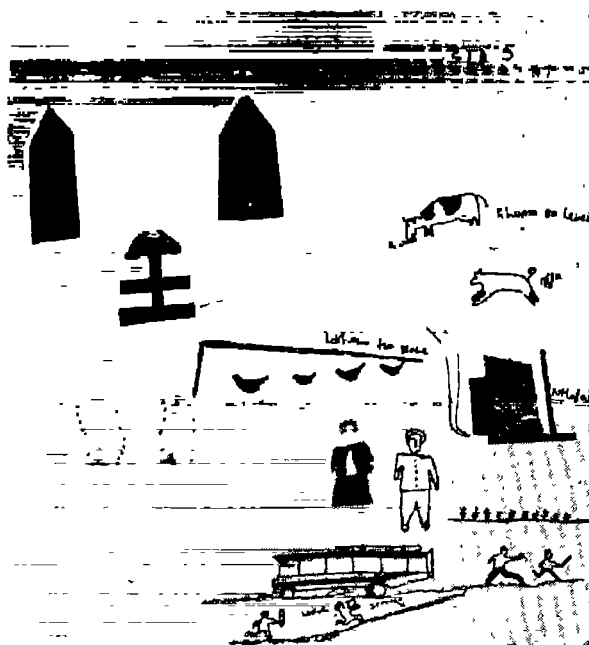
Participatory Education and Research with School Children

If health-promoting behavior is not adopted by a majority of the people in an environment, changes in health status will be difficult to achieve. Despite the fact that the majority of rural household members are children, they are rarely included in sanitation education programs.

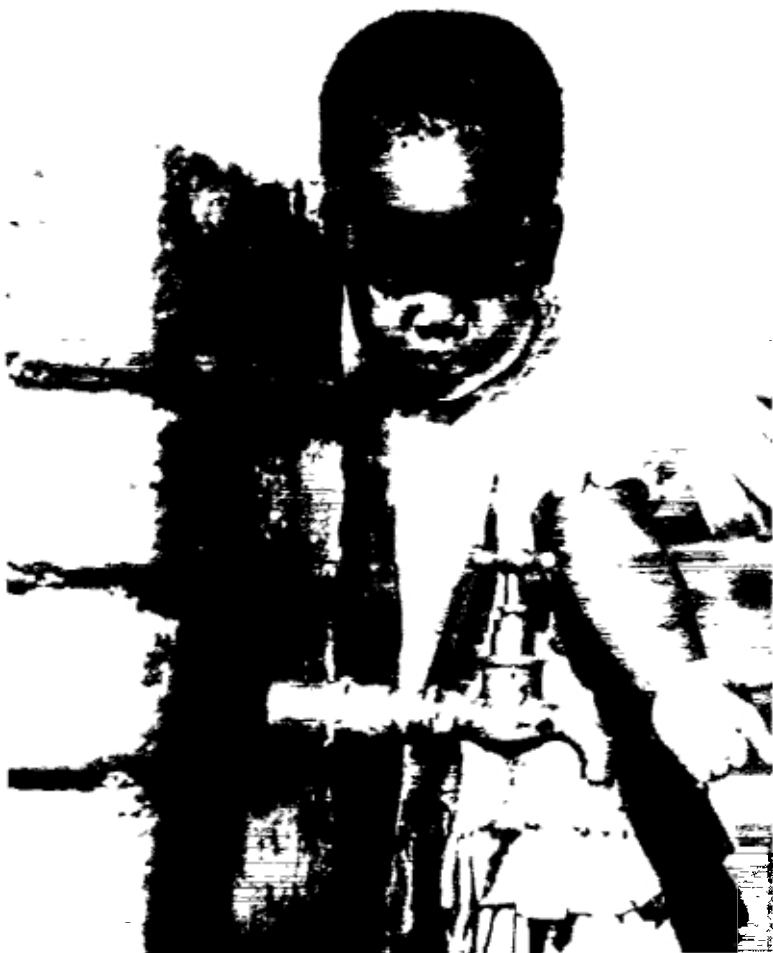
Within the NRSP, participatory techniques have been used both to educate children on the benefits of better hygiene and to improve the understanding of extension health workers on the problems of individual communities. The results of a simple community mapping activity with school children from four villages in the Leribe district demonstrate the ease and the utility of reaching school children in a community.

The instructions for the mapping activity were simple. Working in groups, fifth grade children were asked to draw their communities, including problems, resources, water sources, and places of defecation. The activity unleashed such energy and enthusiasm that the children were moved outdoors. All four groups of students reported three major community problems: public drunkenness, bad roads, and little use of latrines. The resources identified included people, trees, VIP latrines, shops, water supplies, animals, and forms of transportation. Latrines, bushes, and forests were commonly depicted as defecation sites. Water sources included unprotected springs, wells, ponds, and standposts. What the children reported in their drawings was confirmed by their school teachers.

The mapping activity produced valuable information on the community water and sanitation situation and helped to establish whether or not latrines were being used. The next step in the learning process is group discussion and the introduction of hygiene techniques needed to avoid sanitation problems.



A student's community map showing a number of local resources, including a VIP latrine



Changes in hygiene behavior, including increased hand washing and use of water, were confirmed as important complements to sanitation in improving health conditions among children.

integrating hygiene education and water use into the sanitation package was emphasized by the study's finding that when latrine ownership was complemented by hand washing after defecation and use of large quantities of water in the household (for washing, bathing, cooking, etc.), incidence of diarrhea was reduced to an even greater extent--more than 30 percent. Children coming from households with latrines were also found to be more healthy overall and less likely to suffer from malnutrition than those without latrines.

The study indicated that the strategy adopted by the NRSP was effective in improving the health of rural children, the most important criterion of project success, and it lent strong support to continuing and expanding the program. The study recommended further strengthening of the health education component of the program, with special emphasis on improved hand washing practices, use of greater quantities of water, and safer disposal of children's feces. It also advocated increased attention to hygiene education and promotion in primary health care programs.

IV. SUMMARY: LESSONS LEARNED

The experience of Lesotho's rural sanitation sector demonstrates that successful sector development is a slow process that best begins with a small-scale project that can be gradually expanded to a larger scale. Pilot projects provide a good opportunity to develop and refine project management and implementation strategies. The viability of these approaches can thereby be demonstrated to government and donors, fostering their support and commitment to wider-scale programs. Clear and extensive documentation of pilot projects is an essential element in "selling" project expansion and helps subsequent and related projects to learn from past experiences, both positive and negative. In Lesotho, careful monitoring and evaluation has been effective in gaining and preserving government support for the NRSP, and has facilitated communication among the village, district, and national levels of the program.

The Lesotho experience also illustrates the importance of formulating sectoral improvement plans that work within existing budgetary constraints and administrative structures. Working within the district-based administrative structure of Lesotho's government has allowed program expansion to occur in a logical and systematic manner. Developing the NRSP through the ministries of Health and the Interior has kept government costs down by avoiding the creation of new bureaucracies. It has also required a commitment to cooperation between two government agencies with very different functions, which can be a significant challenge. Lesotho's success in coordinating these agencies has allowed thorough integration of software elements into overall project design, and has led to a gradual change in attitudes among "hardware administrators" toward community involvement and education.

The spirit of cooperation has also been reflected in the actions of the external support agencies involved in the NRSP. From the initiation of the rural sanitation pilot project in 1983, technical and capital assistance from UNICEF, UNDP-PROWESS, and the World Bank has been coordinated to ensure successful implementation of the program. Country-level coordination and cooperation has also occurred between these organizations, the government, and the bilateral agencies involved in the sector in Lesotho (the United Kingdom Overseas Development Agency, the Government of Ireland, the Swiss Development Corporation, the Federal Republic of Germany's KfW, and the United States Agency for International Development), which has enhanced overall compatibility and efficiency, and has improved chances for program success.

An outstanding lesson to be drawn from Lesotho's rural sanitation program is that sanitation, water supply, and health care and hygiene are indisputably interrelated sectors. If projects in these sectors are to have significant impacts on overall health conditions, planning must take into account the relative status of each of the sectors and provision must be made for coordinated efforts. In Lesotho, intersectoral coordination has taken place not only at the institutional level, but at the local and the individual levels as well. Great efforts have been made to increase the awareness of rural residents of the advantages of improved sanitation and to alter hygiene practices to maximize health benefits. Changing the attitudes and behaviors of a large percentage of a population is no simple task, and as shown in the Lesotho program, it is contingent upon diligent efforts and effective communication. The use of participatory education methods has allowed district health assistants and village health workers to reach the people, and changes in attitudes toward sanitation and hygiene behavior are certainly apparent in those districts with well-established projects. In Lesotho's NRSP,

increased use of water and altered health and hygiene practices have been sold as part of the same package with improved sanitation.

Community participation and education has ensured that the rural sanitation program is understood by, approved of, and supported by its beneficiaries. This is, of course, essential in the introductory phases of project implementation, but it is also a key factor in assuring long-term sustainability. The belief of the people in improved sanitation, their acceptance of low-cost technology, and the sense of ownership and pride that has been instilled in those who now own their own latrines are invaluable assets which work to improve levels of maintenance and the chances for long-term project success. Such high standards of maintenance can only be realized through government channels at a very high cost (which in most cases means it is not provided at all). The Lesotho case speaks strongly for private responsibility as a highly viable alternative to government provision of sector services.

Raising levels of community involvement, education, and approval has also been essential in achieving the high levels of user cost recovery required under the NRSP. Significant contribution by beneficiaries has allowed the use of the private sector as an alternative to government service provision and has allowed services to be extended to many more people than would have been feasible under complete subsidization, given the limited resources of the national government. The use of the private sector in Lesotho not only works as an alternative means of project implementation, it also imparts consequential economic benefits. Employment is generated for local latrine builders, and local industries and materials distributors benefit from their linkages to construction activities. The training and building experience gained by local latrine builders are valuable skills which can be used in other income-generating activities, an important consideration in light of the severely restricted employment opportunities in Lesotho's rural areas. The potential to increase rural employment was an important factor in obtaining government endorsement of the NRSP strategy and its inclusion in the national five-year development plan.

By inducing individual households to bear the responsibility for financing latrine construction, the program has been able to demonstrate the value that rural villagers place on improved sanitation and hygiene. The mobilization of women in this effort has been crucial. As the overseers of health and hygiene practices within families, women play a leading role in promoting the construction and proper use of latrines. Health education, particularly through participatory training methods, has proven essential in raising demand for latrines by enhancing women's understanding of the need for proper hygiene and improved sanitation.

The most basic means of assessing the success of any sanitation program is evidence of sustained improvements in the health of the population. The health impact evaluation conducted in Mohale's Hoek showed that the NRSP strategy was successful in improving health conditions among young children, with latrine use and improved hygiene behavior leading to a significant decline in the incidence of diarrhea, one of the leading causes of child mortality. This study gave concrete evidence of the efficacy of the NRSP's total package of improved sanitation, and it encouraged continued support for the program. It is hoped that as the program becomes firmly rooted in the other districts of Lesotho, the country as a whole will see similar results, reducing the suffering and debilitation of sanitation-related diseases for both children and adults. The additional benefits of the NRSP, including employment and income opportunities, increased convenience and privacy for latrine users, and a raised sense of confidence in individual and community problem-solving abilities, will certainly add to the long-term viability and sustainability of the program.