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Environmental sanitation: a global challenge for the 21st century

This issue of *WATERfront* is dedicated exclusively to environmental sanitation and hygiene. Most of the content comes from presentations by participants at the UNICEF workshop on these issues held in New York in June 1998.

The week-long workshop, organized in partnership with the UK Department for International Development and USAID, was attended by over 70 professionals—30 from UNICEF country and regional offices, 12 from UNICEF headquarters offices and almost 30 from partner agencies, governments and NGOs.

The workshop focused on practical field experiences and the lessons we can learn from them. These are also the focus of this *WATERfront* issue, which reports on all 19 of the country case studies presented at the workshop. We hope our readers will use these country experiences as a tool to accelerate the promotion of environmental sanitation and hygiene in as many ways as possible.

For it remains a sad fact that our efforts to supply clean surroundings for the world's poor have consistently lagged far behind our efforts to supply them with clean water. And sanitation programmes have failed to keep pace with population growth. The total without access to sanitation rose from about 1.7 billion in 1980 to almost 3 billion in 1994 and is projected to reach 3.3 billion by the year 2000.

Rapid urbanization in developing countries has compounded the problems of people living in cramped, fetid city slums. Over 2.5 million

children still die each year from the diarrhoeal diseases largely preventable by sanitation. A greater number survive, their physical growth stunted by the vicious cycle of frequent infections and nutritional depletion, their mental growth stunted by the loss of energy to learn, play, explore, go to school.

Why is sanitation not happening?

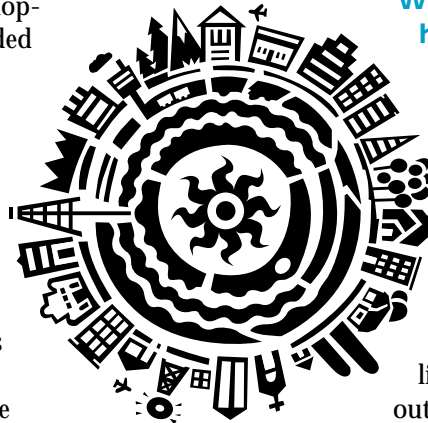
How we dispose of our bodily wastes is a highly personal matter, so private it is not discussed openly in many cultures, yet it affects all of us. Faeces are allowed to contaminate other people's drinking water; villages and towns dump their solid and liquid wastes into rivers without any compensation or concern

for those who live downstream. Communal solutions, such as sewerage, still depend on individuals changing their behaviours and maintaining their new habits lifelong. This partly explains why it has been so hard to solve this fundamental problem.

Past efforts to promote sanitation often gauged success solely by the numbers of latrines set in place, without considering how they were then used, if they were used at all. This hurry to impose increased 'coverage' sometimes caused more problems than it solved.

We now know that long-lasting behavioural change is a prerequisite to sustained improvements in sanitation. Change of this kind calls for time-consuming approaches involving user participation, education, aware-

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In UNICEF medium-term strategies, environmental sanitation and hygiene are priorities

As part of its medium-term strategy for the period around the millennium change, UNICEF has launched the Programme Priorities Initiative—an intensive effort to accelerate the pace of programme implementation in specific areas and countries. The Initiative's objective is to help countries reach the targets set by the World Summit for Children in 1990—and to ensure that this progress is carried into a broader vision of child rights in the coming century.

Environmental sanitation and hygiene are key concerns under the Programme Priorities Initiative, especially within the goal of reducing under-five mortality and morbidity rates. Action 1.5 of the Initiative—support to integrated community-based approaches to improving child health, nutrition, sanitation and hygiene—specifies a range of programme support activities including hand-washing, hygienic preparation of food and sanitary disposal of human excreta. Action 1.6 of the Initiative focuses on improved environmental sanitation in urban areas and emphasizes capacity building in the fields of communication skills for behavioural change, solid and water waste disposal, and latrine construction.

Environmental sanitation and hygiene are also underscored in the Initiative under the 'emerging issue' of actions to improve early childhood care for child growth and development. Under this heading the importance of hygiene practices for young child care and development is stressed, as is the provision of clean play areas. The role of sanitation and hygiene in schools, too, receives special attention in the Initiative, especially in the context of improving the learning environment for girls.

The Initiative's spotlighting of environmental sanitation and hygiene was one of the principal reasons for conven-

ing the UNICEF workshop on these issues in June. Many of the recommendations made by the workshop participants relate directly to specific Initiative goals, and the experiences shared by the participants can be directly applied to programme acceleration.

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Focus on schools

Over the coming years UNICEF's education and sanitation teams will be joining forces regularly to focus water supply, sanitation and hygiene education on schools and the people connected to schools.

We believe that the school as an


entry point has powerful advantages. Children at school can more easily change to new behaviours as a result of their new knowledge, reinforced by well-designed sanitation facilities encouraging hand-washing and other sound habits. The schoolchildren can then influence the behaviours of their family members, both adults and younger siblings, and thereby influence the whole community to look after their immediate environment and adopt hygienic practices. Schoolteachers, as professionals and influential individuals, can play an important part by training their pupils and providing a role model for their communities.

The absence of separate toilets for girls has proved to be one of the main impediments to their attending school (along with their time-consuming chore of water collection, which can be lightened by water points closer to home). Upgrading school sanitation will help to keep children healthy and in school—especially girls.

UN reaffirms commitment to GESI

In October 1998 the Subcommittee on Water Resources, UN Administrative Committee on Coordination, endorsed GESI—the Global Environmental Sanitation Initiative first proposed by UNICEF two years ago.

This follows on the unanimous endorsement of GESI by the Water Supply and Sanitation Collaborative Council (WSSCC) at its meeting in Manila in November 1997. The participants at the Manila meeting—donors, UN agencies, NGOs and more than 80 developing-country professionals and decision makers—called for worldwide concerted efforts to promote sanitation under GESI, to accelerate the provision of hygienic conditions for all in the coming millennium.

GESI activities will centre on helping all agencies to share information, fostering cooperative programmes, and initiating an advocacy campaign to raise public and political awareness of the urgent need for action. Participation by UNICEF staff at country level will be crucial. 

The impact of sanitation and hygiene on health and nutrition

Workshop presentation, 10 June 1998, UNICEF New York

Dr. Sandy Cairncross, Director, WELL Resource Centre (Water and Engineering at London and Loughborough)

Current UK policy

I have been asked to speak on behalf of Dr. David Nabarro, Senior Health Adviser of the UK Department for International Development (DfID), who unfortunately was unable to be present here today. The fact that he had hoped to attend this workshop, and the presence here of myself and two colleagues from WELL at DfID's behest, shows the importance which DfID attaches to sanitation and hygiene. Environmental health is one of the five global themes in DfID's new health policy. DfID has also funded important research work in this area, such as the development of hygiene evaluation procedures and the recent study on user perceptions of on-site sanitation in Ghana, Mozambique and India by Darren Saywell of the Water and Engineering Development Centre (WEDC), University of Loughborough. However, the most forceful demonstration of DfID's commitment is last year's undertaking by the Prime Minister, Tony Blair, to double DfID's spending on water, sanitation, hygiene and health in sub-Saharan Africa.

DfID's new policy framework emphasizes partnership, with UK centres of expertise such as the London School of Hygiene and Tropical Medicine and the University of Loughborough, our partners in WELL, and also with international organizations such as UNICEF. An increasing proportion of DfID's budget has been allocated to multilateral organizations over the years; with an increase in Britain's aid budget likely to come soon, much of the additional allocation will go to United Nations organizations. In particular, DfID is proud of its past support to UNICEF and keen to see its partnership strengthen in sanita-

...it involves two-way communication with poor people. It is relatively easy to talk to them, and offer them preconceived solutions; but it is far harder to listen to them, and analyse their problems first.

tion and hygiene. DfID knows how difficult it is to do good work in this sector.

One reason for the difficulty is that it involves two-way communication with poor people. It is relatively easy to talk to them, and offer them preconceived solutions; but it is far harder to listen to them, and analyse their problems first. UNICEF is particularly good at this difficult work, largely because of its unique and precious resource of technical people based in the field. It is thanks to that cadre that most of the best and most sustainable sanitation and hygiene programmes I have known were developed or implemented with UNICEF support.

Health impacts of sanitation Diarrhoeal diseases

I have been asked to speak about the health impacts of sanitation and hygiene. The chief impacts relate to the reduction of diarrhoeal diseases. Thanks largely to the efforts of UNICEF to promote good case management of diarrhoea, these diseases cause fewer deaths than they used to; but over 2.5 million child deaths a year is still far too many. It is equivalent to the death of a child every 10 seconds, or to a jumbo jet full of children crashing into the sea every hour. As oral rehydration therapy

(ORT) continues to bring the total down by tackling the lethal symptom of dehydration, it will become increasingly true that only the prevention of diarrhoea itself, for instance by sanitation and hygiene, can reduce the toll any further.

For example, one diarrhoeal disease unaffected by ORT is bacillary dysentery, causing persistent, bloody diarrhoea which, though not dehydrating, can be lethal to children and is also a major cause of adult mortality. Sixteen years ago, Dr. M.U. Khan showed that the simple measure of washing one's hands with soap could prevent six out of seven cases of dysentery transmitted in the home.

To assess what proportion of all diarrhoeas could be avoided by improved sanitation and hygiene, I cannot do much better than the estimate compiled in 1990 by Steve Esrey and colleagues from a thorough review of the literature, shortly before Steve joined UNICEF. They found that improvements in water supply, sanitation and hygiene were associated with a median reduction of 22% in diarrhoea incidence, and of 65% in the rate of deaths due to diarrhoea. Research tells us that the water benefit is due to the hygiene improvements which water supply makes possible, so that it would not be entirely wrong to attribute the entire improvement to sanitation and hygiene.

It should be stressed, though, that reviewing this literature is extremely difficult. The published studies were conducted in a wide variety of circumstances, and it is obvious that the impact of sanitation will depend on the condi-

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tions prevailing before the intervention. In addition, the studies are of variable scientific rigour. Studies of diarrhoea epidemiology are not for amateurs, as there are many potential confounding factors and a host of other difficulties. Apparent demonstrations of a health impact can often be deceptive. For example, it would be easy, even with sophisticated statistical controls, to conduct a study demonstrating that televisions protect one from diarrhoea, as those who own televisions are less likely than others to become ill for a host of reasons unconnected with sanitation. So it is with latrines....

In particular, and contrary to what has recently been suggested, I know of no firm evidence that the more expensive water-flush toilet systems requiring piped water show a greater health impact than cheaper but well-maintained facilities such as pit latrines. On the contrary, we know that a facility which is too expensive for a family to install will offer them no benefit at all.

Intestinal worms

There are other important health impacts from sanitation, particularly the control of intestinal worms such as *Ascaris* (roundworm), *Trichuris* (whipworm) and hookworm. *Ascaris* diverts about one third of the nutritional intake of a child with a typical worm burden, and is also an important cause of asthma in poor communities. Hookworm is a major cause of anaemia. *Trichuris* is a serious cause of stunting in children, and of chronic colitis in toddlers, so long-lasting that their mothers rarely think of taking them for treatment as they tend to think that this diarrhoea is a normal condition for these children. The nutritional impact of these worms is evident from cases where children have been treated with deworming drugs, and have then shown an immediate spurt in growth. Treatment, however, is not a sustainable option to prevent reinfection; the sustainable option is sanitation.

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Externalities

The impact of sanitation on intestinal worms was first demonstrated by the studies of the Rockefeller Foundation 70 years ago. An important conclusion from these and other studies relates to the externalities of this impact. The externalities arise from the fact that my latrine helps to protect you, my neighbours, from my diseases. Indeed, there is an impact on the health of the community as a whole from the overall level of sanitation it enjoys. For advocates of sanitation this is good news, as it means that sanitation is not only a private good, but also a public good, and that there is therefore a case for public intervention, by subsidy or regulation, to promote it. No individual can be expected to pay voluntarily for a benefit which others will enjoy.

It has been suggested that a piece of bad news comes with this good news, in that some threshold of coverage must first be achieved before any health benefits will accrue. However, I can tell you that there's good news on both sides of the coin. In practice, there are health benefits to the individual households which install latrines (indeed most of the studies showing health benefits have considered just this case), with additional benefits to the community when overall coverage is sufficient to prevent

disease transmission in the public domain.

Hardware is not enough

Another result of the Rockefeller research is that the provision of sanitation alone is not enough. Changes in behaviour are required for the full benefits to be achieved. This is eloquently illustrated by the following quotation from Cort, Otto and Spindler (1930), writing about their work in south-western Virginia in the USA. Their style reminds us that this was written nearly 70 years ago:

“Several groups of negroes, one of which was extremely poor, as well as numbers of poor white families, showed little or no *Ascaris* infestation because of the control of the children and the use of privies by all members of the families. On the other hand some of the better-off rural families with well-kept yards and good privies, and certain families in very well-sanitized mining-camps, had heavy infestations. Such infestations were almost always due to soil pollution near the houses by the young children, who were not taught to use the sanitary facilities provided.”

Other benefits of sanitation

Other benefits are less well documented, such as the impact on trachoma, the second most important cause of blindness worldwide. Studies from Mexico and Malawi have shown the importance of washing children's faces in preventing this disease. One study from Lombok in Indonesia suggests that even hand-washing helps to prevent conjunctivitis. It is less well known that even latrines can help to control trachoma; where much of the infection is transmitted by flies such as *Musca sorbens*, which breeds in scattered human faeces, latrines can prevent this transmission by depriving the vector of a breeding-site.

All these health impacts may be our reason for seeking to improve sanitation and hygiene, but they may not be the most important factor for the users. The following were the responses of latrine

Development of Uganda's national sanitation policy

Workshop presentation, 10 June 1998, UNICEF New York

by the Hon. Dr. C.W.C.B. Kiyonga, Minister of Health, Uganda

In Uganda our operational definition of sanitation involves:

1. Safe disposal of human excreta
2. Personal and public (including food) hygiene
3. Solid and liquid waste disposal
4. Vector control
5. Keeping drinking water safe until consumption (locally referred to as the safe water chain).

The situation in Uganda

In the 1960s and 1970s latrine coverage was reported to be very high at 90% to 95%. During that period,

public health legislation and by-laws regulated food preparation in public restaurants and institutions, refuse disposal, and the numbers of latrines in households, institutions and public places. Policy was strongly enforced by the Health Inspectorate with the support of parish chiefs. Other hygiene practices were generally poor; for example, very few people washed their hands with soap (or ash) after using the latrine or before eating.

Later political turmoil and the breakdown of law and order in the 1970s and 1980s saw a reduction in enforcement and a significant reduction in latrine coverage. The lowest recorded average level of latrine coverage was

30% in 1983, reported by UNICEF in 1984. Latrine coverage levels had risen to an average of 48% by 1993 but with significant regional variation, from 4% in the north-east and the Sese Islands of Lake Victoria up to 89% in Rukungiri and Kabale in the south-west. Many health centres and schools still do not have adequate numbers of latrines and hand-washing facilities for the numbers of clients and students. A recent study by the Uganda National Examinations Board of schools in several sample districts found that 67% had water supply; only 8% had an adequate number of latrines, and only 33% had separate latrine facilities for girls.

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owners in the rural Philippines when they were asked why they were satisfied with their new facilities. Note the order:

1. Lack of smell and flies
2. Cleaner surroundings
3. Privacy
4. Less embarrassment when friends visit
5. Less gastrointestinal disease


The first four are not just selling-points; they are real benefits, for which poor people are willing to pay cash. Economists therefore can attribute a money value to them. There may be other such benefits, which are still more important though the respondents did not mention them. For instance, the availability of a household latrine may be a major factor protecting women from sexual harassment and even rape

on the way to or from the village defecation ground; yet few women may feel able to mention this, and few men may care to. We should study carefully why people may want sanitation; best of all, we should ask them. However different their reasons may be from ours, we should use them for promotion.

The quotation above from Cort and colleagues illustrates the importance of hygiene behaviour as a determinant of health benefits, yet changes in behaviour are rarely measured in impact studies. If they were, it is likely that greater impacts would be found when behaviour changes were achieved. By the same token, changes in behaviour are rarely promoted effectively; if they were, many sanitation programmes could achieve greater health impacts than they have done. Recent research has shown that, in the same way that other benefits are more important than health to most

latrine owners, talk of disease, doctors and death is a less effective lever to behaviour change than messages based on what people know, do and want.

Let me finish with a quotation from Sir Ronald Ross, one of the founders of my institution and the man who, 100 years ago, discovered that malaria was transmitted by mosquitoes:

“Great is sanitation; the greatest work, except discovery, I think, that one can do.... What is the use of preaching high moralities, philosophies, policies and arts to people who dwell in appalling slums? You must wipe away those slums, that filth, these diseases.... We must begin by being cleansers.” 

■ Development of Uganda's national sanitation policy from previous page

Rural areas. Ninety per cent of Ugandans live in rural areas. Most rural people live in family compounds and in villages with less than 300 people in them. Average household size is 4.8 people. Not all family members use latrines, and the excreta of young children are unlikely to be disposed of safely. Hand-washing with soap or ash after defecation, after handling children's excreta and before cooking or eating food is rarely carried out. Drinking water collected from safe sources is often contaminated prior to consumption during handling and storage. Lack of perceived responsibility, lack of knowledge and facilities, and certain cultural taboos or myths together contribute to these low levels of sanitation. In the east (Tororo) taboos exist whereby some in-laws are excluded from using the latrine of their host family. In the same area, some people believe that persons with diarrhoea should not use a latrine but should practise open defecation instead. Other myths existing around latrine use include fears of causing infertility in women, fear of pregnant women losing their unborn infants down the latrine, fear of being poisoned or bitten by snakes in the latrine, and even fear of catching AIDS by using a latrine.

Urban centres. Ten per cent of Ugandans live in urban areas, but their numbers are growing by more than 5.5% each year (nearly twice the national growth rate). The largest towns in Uganda were constructed with sewerage systems which are operated and managed by the National Water and Sewerage Corporation. However, the sewer network usually covers a minimal area of the town, often the original commercial centre and colonial residential areas. High-income residential areas without access to sewers have usually constructed septic tanks. Lower-income residential areas are usually served with pit latrines. Solid and liquid waste disposal is also inadequate. Kampala City Council estimate that they collect and dispose of refuse from only 20% of the population; the

rest is dumped indiscriminately. Most other urban centres also have difficulties in collecting and disposing of solid waste. Conditions are worst for the high-density low-income informal residential areas which may house 25% of the urban population. During the social mobilization activities to combat the cholera outbreak in 1998, the communities in Kampala singled out as especially vulnerable were found to have general access to latrines (81% of households), but only 23% had a separate latrine, and 30% were sharing one latrine with more than four other households (more than 21 people). The result was that 41% of households had excreta visible in their compounds, thus increasing the risk of diarrhoeal disease transmission. Fifty-two per cent of households had no facilities for solid waste disposal, while 57% had no facilities for liquid waste disposal.

Displaced communities. Communities displaced by natural disasters and insecurity experience different sets of problems. Often forced to flee with little or no warning, they consider themselves to be transitory. This brings a reluctance to carry out any sorts of improvements to their new environment. This is exaggerated with poverty. Often wealthy displaced persons are able to relocate relatively easily, but the poorer sectors of the community will not have the cash to move long distances or purchase required services. In the course of an emergency, particularly following displacement, normal patterns of water use, excreta disposal and hygiene practices are often disrupted, and individuals are rendered more vulnerable than usual to water and sanitation-related diseases, especially in overcrowded situations. Women may experience additional problems given their role as caretakers of the family and their requirement for additional privacy.

Technological problems. Pit latrine construction is difficult in some parts of the country because of collapsing soils,

rocky soils and high water-tables. The challenge in this case is to produce a design that is affordable and acceptable to the affected populations.

Effects of poor sanitation

Socio-economic costs. Poor sanitation has a significant negative effect on the national economy. Hundreds of thousands of education days and workdays are lost each month because of the diseases which improved sanitation can prevent. On average, 2.7% of all students' time and 3.5% of all work time is lost to sickness or injury. Given that 49% of all reported sickness and injury in Uganda is related to poor sanitation, and estimating that 8 million of Uganda's 20 million population are between 15 and 60 years of age and working a 24-day month, some 39.5 million workdays are lost in Uganda each year because of poor sanitation. Expenditure on treatment of sanitation-related diseases including malaria currently amounts on a very rough estimate to about 27 billion Uganda shillings (some \$22 million) a year.

Environmental impact. Lack of adequate sanitation is also a major threat to the environment. Examples include the degradation of the urban environment by indiscriminate disposal of solid and liquid wastes and the eutrophication of freshwater lakes by untreated human waste, the result being smaller, contaminated fish catches. The costs of environmental damage include discouragement of the tourist trade, reduced overseas markets and revenue for fish products, reduced production from fisheries, and increased purchase costs for chemical and mechanical clean-up operations. The export value of Lake Victoria's fisheries is estimated at \$320 million per year (not including revenue from the home market), but exports from seven of the nine Ugandan processors have been banned. The causes of this are all sanitation-related, either from poor lakewater quality or poor hygiene during catching, storage and processing.

Impact on education. In 1995 there were 8,531 government-aided primary

schools for a total number of 2,626,406 students. Of these schools, 3,812 (44.5%) had a water supply and the reported ratio of students to latrines was 328 to 1 (Ministry of Education Planning Unit). Many schools, particularly rural schools, had no latrines at all, and of those with latrines, most did not have separate latrine facilities for girls and boys. Lack of latrines, especially separate latrines for girls, was identified as the worst school experience for girls. This draws attention to the special conditions and experiences which prevent girls from fuller participation and achievement: privacy issues relating to sanitation are a major factor forcing them out of school. Following the recent implementation of the policy for universal primary education, the ratio of pupils to latrines may now exceed 700 to 1, and may encourage further dropping out, especially among adolescent girls.

Impact on health. Morbidity figures available from outpatient diagnoses show that diarrhoea, worm infestations, eye infections and skin diseases accounted for 23.5% of all outpatient visits to health units in 1996, while malaria (another disease related to poor sanitation) accounted for a further 25.5% (i.e. a total of 49% of all outpatient visits are accounted for by poor sanitation).

Undernutrition. The level of nutritional stunting in Uganda is still among the worst rates of nutritional stunting in Africa, and is partly attributable to the high incidence of diarrhoea—an average of 5.2 episodes a year for children under five.

Cholera and malaria epidemics. Following El Niño this year, Uganda was hit by cholera and malaria epidemics. By the end of April 1998, an estimated 35,000 people had been taken ill with a total of 1,500 deaths. This gives a case fatality rate of 4.3%. Causes identified for the diarrhoeal outbreaks included overcrowding, lack of sanitary excreta disposal facilities, high water-tables, lack of safe drinking water, poor food hygiene in markets (vendors and purchasers),

The new approach to improving sanitation will build on the grass roots: local government councils and development committees are to plan and maintain their own sanitation improvement activities, and promote individual action for change, with the support of technocrats from all sectors including health, education, community development and water.

and inadequate solid waste disposal. Along with a higher incidence of diarrhoea, slum dwellers in swampy areas suffer a greater incidence of malaria.

Special gender needs

- Women and girls in Uganda are the caretakers of the home. In homes they are responsible for cooking (86%), water collection (70%), firewood collection (73%), child care (62%), washing clothes (88%), and care for the sick and elderly (62%).
- In northern Uganda, women are responsible for constructing homes including latrines. In other parts of Uganda, only men construct houses and latrines.
- Women work an average of 15 hours each day. No comparative figure is available for men, but it is estimated to be significantly lower. While 70% to 80% of the agricultural labour force is female, only 7% of women cultivate their own land and only 30% have access to and control over the proceeds, including the resources needed for sanitation services. Twenty per cent of formal-sector employees are women, and those women are mostly in the lowest-paid jobs.

Sanitation affects men, women and children to different extents, but is generally worse for women. Problems of

privacy for urination and defecation are especially acute for women and adolescent girls in urban areas, and are heightened during menstruation.

Further study and gender analysis are required to determine the needs of men, women, boys and girls and to determine the optimum course or strategy to involve the active participation of them all.

Raising the profile of sanitation

President Museveni's 1996 election manifesto referred to the importance of improved sanitation in Uganda. The national Constitution states that it is the duty of every citizen in Uganda to create and protect a clean and healthy environment. The first step in the process of improving sanitation in Uganda was to gather all existing data on sanitation. The work on this developed into a concept paper entitled 'Promotion of sanitation in Uganda' which was published in June 1997. This is the most comprehensive statement on sanitation ever written in the country. It covers the overall situation in Uganda, both past and present; discusses the effects of poor sanitation and the reasons for its marginalization; and calls for an accelerated national sanitation programme.

Empowering the people to improve sanitation

We have decided to make sanitation improvement a highly political process targeting all elected officials in Uganda, starting with the President, who set the ball rolling through his election manifesto, and moving down through to the village level. Indirectly, therefore, we intend to reach the entire population through the elected leadership and, by coordination using a community-based participatory approach, change the norms in Uganda in regard to sanitation. A Cabinet memo based on the concept paper was drafted, discussed and approved in July 1997.

The new approach to improving sanitation will build on the grass roots: local government councils and development committees are to plan and main-

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What is the highest priority: Internet access or sanitation? In the article below, which appeared in The New York Times on May 12, 1998, Internet and sanitation coverage trends are compared.

A new measure of disparities: Poor sanitation in Internet era

By Barbara Crossette, *New York Times**

Around the world, more people are getting telephones and access to the Internet while at the same time an increasing number are without basic household sanitation—toilets, or even simple latrines—according to a new report.

The report, "Vital Signs 1998," was published on Saturday by the Independent Worldwatch Institute, a Washington environmental group.

It is the latest in a series of annual surveys pulling together a wide range of disparate indicators—crop yields, climate changes, medical advances and retreats, military expenditures or the production figures for bicycles compared with cars—to spot new trends.

"There are a lot of important trends that never get reported," said Lester Brown, who originated the survey in 1992. It is now published in 21 languages.

Looking at sanitation, an important factor in health crises in poor nations, the 1998 "Vital Signs" concluded that

the "sanitation gap" has become the greatest risk to public health in some countries. Using the latest available World Health Organization figures, the report says the number without facilities in the developing world increased by 274 million in the first half of the 1990s.

"In some countries," the report reads, "less than half the population is adequately covered." These include Afghanistan, Brazil, Cambodia, China, Congo, Egypt, Haiti, India and Senegal. The report notes, however, that some countries, like Brazil, have more exacting definitions of basic sanitation than others, so the statistics are not completely comparable.

On telecommunications the numbers are firmer and more recent. They indicate "tumultuous changes," the report said. International Telecommunications Union statistics show that more than 200 million telephone lines were installed worldwide from 1990 to 1996, bringing total telephone lines to 741 million. In 1960 there were 89 million.


Some countries have leapfrogged over the use of traditional telephones into the wireless era, the report found. In Cambodia, one of the world's poorest

nations, where a national network of telephone cables is considered a long way away, 60 percent of telephone subscribers use cellular phones.

Worldwide, cellular phone users have increased an average of 52 percent a year since 1991, with 135 million users by 1996. This trend accentuates the differences between the rich and the poor in many under-developed nations with poor communications networks.

As for the Internet, its use has grown "exponentially," the report shows. Most of the users are still in industrial countries. Of the estimated 107 million people on line, about 62 million are in the United States and 20 million in Europe.

But the Internet has been harnessed to public services in a number of small, poor countries, the report found. It mentions human rights work by the Kuna indigenous people in Panama, agricultural marketing by cooperatives in Peru and shared medical expertise for countries like Uganda and Bhutan.

"With 500 million people—8 percent of humanity—projected to be on line by 2001," the report reads, "we can barely guess how the Internet phenomenon will shape the 21st century." 

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■ Development of Uganda's national sanitation policy from previous page

tain their own sanitation improvement activities, and promote individual action for change, with the support of technocrats from all sectors including health, education, community development and water.

The approach is based on the principle of empowering people to help themselves. This process will start with participatory information collection, leading to action plans also developed in

a participatory manner. The plans will provide people with increased knowledge (education) and increased understanding (free discussion), building on the collective wisdom, strengths and best practices in the community around them.

In urban centres, pressure may need to be exerted on landlords and service providers to comply with minimum service standards. In rural areas, more emphasis may have to be placed on

discovering positive images for promoting sanitation within the context of the local traditions and beliefs. At the same time specific efforts will be made to discourage negative taboos and beliefs.

The national sanitation forum. The holding on 16–17 October 1997 of a national sanitation forum under the theme 'Better sanitation: a responsibility for all' brought together the elected and civic

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“Hygiene, hand-washing and behavioural change are key issues, not only in developing countries where UNICEF works, but also — as this article points out — in industrialised countries such as USA where poor hand-washing practices are being blamed for an increasing incidence of certain diseases.”

Dirty hands can have tragic, deadly consequences

From *The Washington Post**

In the two recent years since the largest recorded outbreaks of Escherichia Coli 0157:H7 bacterial infection made 501 Washington state residents ill, hospitalizing 151 of them and killing three children, the lasting lesson learned from the tragedy is this: “It’s best not to eat rare hamburgers”. But its forgotten lesson is more likely to plague our daily lives.

While public officials trace the source of that E-coli epidemic to Jack-in-the-Box fast-food restaurants serving uncooked hamburgers undercooked, 16 month old Riley Dewiler of Bellingham, Wash, had not eaten the tainted food. He died of complications after contracting E-coli at his day care center from another toddler who had suffered a mild illness after eating a Jack-in-the-Box.

Nor had two-year old Celina Shribbs eaten tainted burgers before she died of the infection. In all, 48 patients got sick not from eating hamburgers but by coming in contact with someone who had.

Most likely contributing to those cases of secondary infection was unwashed or poorly washed hands. Somebody in their daily lives — at day care, at school, at home, at work — passed on the deadly bacteria by hand. “Washing hands can sound like a trivial matter” says physician Marcia Goldoft, and epidemiologist with the Washington State Department of Health who investigated the E-coli outbreak. “Very rarely it is a fatal error, but it can be”.

Most likely contributing to those cases of secondary infection was unwashed or poorly washed hands. Somebody in their daily lives — at day care, at school, at home, at work — passed on the deadly bacteria by hand.

Like many public health authorities who have watched with concern the resurgence of infectious and drug-resistant diseases in this country, Goldoft believes too many people don’t bother to wash their hands regularly and thoroughly. “It is, unfortunately, a difficult habit to get into” she says.

Medical statistics and the rising threat of hand passed diseases should be convincing enough. More than 80 million cases of food poisoning and 10,000 deaths due to food-borne diseases occur annually in the United States, estimates the Food and Drug Administration (FDA). One in four (25%) of food-borne illness outbreak starts from poor hygiene, generally unwashed or poorly washed hands, according to the US Center for Disease Control (CDC) in Atlanta. The CDC calls hand washing the single most important means of preventing the spread of infections from bacteria, pathogens and viruses causing diseases and food-borne illnesses.

Besides the common cold and influenza, infectious diseases for which proper hand washing is the first line of defense include strep throat, ear infections and gastrointestinal disorders —

all of which have become routine in school-aged children.

Some serious illnesses that can be passed by unwashed hands are on the upswing in this country. The viral liver infection Hepatitis A, for instance, is transmitted by fecal-oral contamination. Someone infected does not properly wash his hands after using the bathroom and then passes along microbes of his feces to someone else who is handling food, shaking hands, touching the railing on the subway, direct contact. The virus ends up in the other person’s mouth and he gets sick.

A generation or two ago, society seemed to be more aware of the risks of unwashed hands. Parents cautioned their children coming from outdoors to clean up. The standard preamble to dinnertime was “Did you wash your hands?” Some families even held hand inspections before meals.

But today, parents seemed to have washed their hands of hand washing vigilance. In general, adults are in too much of a hurry or are too complacent to grasp what medical science the most widely available low-tech prevention to illness — scrubbing hand regularly with soap and water. And children aren’t being thought how and why to wash thoroughly.

“I don’t know if there are more reasons to wash your hands today than there were when we were children, but the reasons certainly are equally as good. Germs haven’t gone away” says Charles Inlander, president of the People’s Medical Society, a consumer-health advocacy organization based in Allentown. Because his job alerts him of

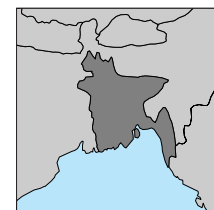
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Note on Case Studies: A total of 19 case studies of sanitation programmes were presented at the UNICEF Workshop on Environmental Sanitation and Hygiene in June 1998. All of these case studies have been summarised here by WATERfront editorial staff for the interest of our readers. To obtain the original case study, please contact the author as indicated.

Designing a national communication strategy

Case study by Deepak Bajracharya, UNICEF Bangladesh



Bangladesh

Behavioural change for a healthier environment is the goal of a comprehensive new communication strategy for sanitation, hygiene and safe water use, developed in 1998 for scaling up in 1999.

The strategy deploys multiple media to reach the family, centring on messages developed for, by and with children. Since primary schools are a natural focal point, the strategy features a strong hygiene education component for the school water and sanitation programme. Students and teachers from both primary and secondary schools will map and monitor latrine construction and hygiene behaviours in the school catchment areas, complementing wider advocacy efforts using influential community members. Support activities include provision of safe water in underserved regions, and fostering a decentralized approach to planning, implementation and monitoring.

Key elements of the strategy

- Establishing a campaign identity, with a cartoon character—Kamal Chacha or Uncle Kamal—to create visual linkage
- A primary school package with games, songs, comic books and child-to-child activities to carry messages to the home and community
- A media package using TV spots and ‘infomercial’ and radio spots
- Developing ‘sanimart’ stores, with lively selling aids to attract and educate, for local masons constructing latrine slabs and rings
- Information packages for interpersonal communication by those closest to families—health workers, religious leaders and NGOs

- Advocacy materials for local government personnel.

Best practices

These suggestions for best practices derive from UNICEF’s experiences in Bangladesh with social mobilization, social marketing, and the school sanitation programme.

continued on next page, top



Promoting hygiene in Bangladesh: Kamal Chacha and friends.

■ Development of Uganda’s national sanitation policy from page 8

leaders of all the 45 districts of Uganda along with members of Parliament, the Cabinet, the donor community, NGOs and concerned citizens. The forum spent two days discussing the issue of sanitation, all of it heavily covered by the local press. The culmination of the forum was the signing of the Kampala Declaration on Sanitation by the chairmen of all the district councils in the country as well as the Ministers of Local Government and Health and the representatives of the World Health Organization and

This declaration, written by the district council chairmen themselves, represents the boldest statement made to date on sanitation in Uganda and includes a 10-point strategy for action.

UNICEF. This declaration, written by the district council chairmen themselves,

represents the boldest statement made to date on sanitation in Uganda and includes a 10-point strategy for action. A final agreement was a commitment by the districts to return in a year’s time to report on progress made in implementing their 10-point plan of action.

Legislation. A critical problem that had been identified along the way was the lack of appropriate legislation policy and guidelines. The current public health act was passed in 1965 and has been out of

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COUNTRY BRIEFS



- **Bangladesh** from previous page
- **Communications**
- Use private-sector expertise to develop and test the campaign strategy
- Establish standard operating procedures
- Build communications capacity in-house and with government counterparts

- Create intersectoral linkages to other programmes.

Programming

- Approaches should be transparent and accountable, with maximum community participation and sense of ownership
- Schoolchildren are an effective me-

dium for prompting parents to build, use and clean sanitary latrines

- Involve NGOs
- Recognize the important role of private latrine producers.

The 8-page case study is obtainable from dbajracharya@unicef.org.

A better life for garbage pickers

Case study by Fabio Atanasio de Moraes, UNICEF Brazil

Large numbers of families survive by picking through garbage in the mushrooming shanty towns around Recife and its satellite cities in Pernambuco state. Sanitation is precarious: exploitation and violence are commonplace. This programme was spurred by the perception that for children and teenagers to have to live off garbage picking is inhumane and unsustainable, both for society and for the environment.

Objectives

- To remove children and adolescents from garbage dumps and help them return to school
- To improve their living conditions
- To organize them into associations and generate jobs and income
- To reduce the impact of careless discarding of trash
- To reduce the high mortality rates of garbage pickers and their families.

Start-up activities included seminars and information gathering in the 60-plus shanty towns of the city of Olinda, bordering Recife. The aim is to create an administrative model for managing urban solid waste which will take into account the intersectoral nature of the problem; strengthen the understanding that education, health, social mobilization and promotion are all fundamental; consider the relationships between the



The city dump problem in Brazil: different partners, different priorities.

various actors involved; and respond to local needs. The approach expands on the traditional role of public sanitation systems, so that engineering solutions are combined with other initiatives addressing the community's relationship with its living environment.

Challenges

- The community organizations, sanitation services and UNICEF personnel all had difficulty reconciling the environmental solutions and the human development needs: the methodology

was therefore adapted to allow for continuous interactive participation, learning and monitoring

- Discussion between communities and decision makers is not customary
- In general the population has been apathetic, perceiving the public authorities as unreliable.

Lessons learned

- The goal can be reached only if everyone participates from the outset, including the growing number of community organizations; the project should be seen as belonging to the city and not just city hall
- The project was hampered by shifts in political power. Political commitment has to be strong enough to weather such changes
- Since projects of this kind are somewhat controversial, good communications are essential to ensure effective and sustained commitment
- Instruments to guarantee continuity should be encouraged. This would include identifying further leadership among the relevant municipal departments, to plan work in partnership with the communities.

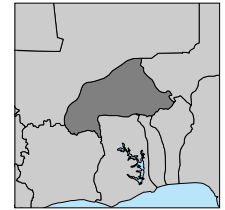
The 6-page case study is obtainable from ademora@unicef.org.



Brazil

Marketing hygiene in a West African city

Case study by Lizette Burgers, UNICEF Burkina Faso



Burkina Faso

High diarrhoea and mortality rates among the young children of Bobo Dioulasso, the nation's second city, prompted a three-year hygiene promotion project launched in late 1995. It was intended to complement earlier water supply and oral rehydration programmes, and to become a model for future projects of this kind.

The primary target audiences were the mothers of children under four, other caretakers, and children of primary school age; the key messages were that children's stools should be safely discarded in potties or latrines, and hands should be washed afterwards. Preliminary work with women's focus groups showed that they rarely connected hygiene with diarrhoea but rated it an important communal virtue. The messages were therefore positioned differently for adults—hygiene is socially desirable—and for schoolchildren—hygiene helps to avoid diarrhoea.

Main activities

- The creation of *responsables saniya* (hygiene workers)—women volunteers, largely illiterate, elected by their community and working in teams to promote hygiene in some

15–20 households each. They were trained in communication and in soap-making to generate revenue

- Training of health workers to organize hygiene discussions in the street and at baby clinics
- A street play performed in every neighbourhood and in schools
- Local radio spots, programmes and interviews
- Materials development: teaching manual and posters (primary schools); visual reminder sheets (volunteers); portable placards (health workers).

Problems encountered

- It took longer than expected to identify and formalize new forms of collaboration between all the project partners
- Project staff had trouble with UNICEF procedures, especially the timely reporting required to justify continued funding. Training has helped somewhat
- Progress was hindered by changes of personnel.

Lessons learned

- It is difficult to maintain volunteer motivation in an urban setting. The role of the *responsables saniya* is therefore being revised to one of liaison between the local health centre and its community, working in smaller teams of three or four, paid by the health centre under the Bamako Initiative, and possibly assisting in other health campaigns
- A strength of the programme was its detailed knowledge of the target population. The preliminary community research spanning several years has generated a toolkit of techniques that could shorten such research to three months*
- Institutional clarity, especially on the division of responsibilities, is extremely important for programme implementation.

The 9-page case study is obtainable from lburgers@unicef.org.

* Details are given in the case study and in V. Curtis *et al.*, 'Dirt and diarrhoea: formative research in hygiene promotion programmes', *Health policy and planning*, vol. 12, no. 2, 1997.

Push and pull for rural sanitation

Case study by Vathinee Jitjaturunt, UNICEF China

Despite major strides in recent years, over 600 million people are estimated to lack sanitary latrines in China's countryside, where sanitation is traditionally discounted and night-soil traditionally used untreated to fertilize fields. High rates of diarrhoeal disease and intestinal worms place children in jeopardy.

UNICEF is currently assisting with environmental sanitation and hygiene education (and water supply where needed) in 21 poor counties of eight provinces. To tackle the two fundamental problems—absence of grassroots demand for sanitation, and the low level of staffing assigned to this sector—the projects use a combination push and

pull strategy. The 'push' is to gain government commitment at every level: the measures include advocacy meetings, establishing regulations, and promoting intersectoral linkages with other national initiatives (in agriculture, education, poverty alleviation, promotion of women, and pro-



China

COUNTRY BRIEFS



tection of the environment). The 'pull' uses social mobilization to motivate communities to want hygienic conditions: the measures include using mass media and interpersonal contacts to disseminate key messages, using primary schools as entry points for behavioural change, and strengthening the involvement of communities, especially women.

Principal activities

- Advocacy meetings with national, provincial, county and township officials
- Training—in project management for provincial and county officials, and in communication and appropriate technologies for government technicians and trainers
- Development of communication strategies, all media
- Grassroots training, using participatory methods, of village leaders, health workers and other allies

- Training of village masons in latrine construction and maintenance
- Action research to design latrines for desert and cold regions
- Installing demonstration models of affordable latrines in project villages
- Instituting school water supply and sanitation alongside the health and hygiene education now mandatory in schools
- Monitoring and evaluation of all activities.

Factors for success

Strong government commitment at all levels is a factor for success, as is the decentralizing of project planning and implementation. Once the gains were understood locally, local resources came available: UNICEF's seed spending on promotion and on demonstration latrines was a tenth of the money put up by villages to complete the latrines and then build their own. Attitudes have changed in many places, and reductions

have been reported (to be confirmed) in child diarrhoea and worms.

Henan province launched its sanitation drive in 1989, independently of UNICEF, and has raised the proportion of country-dwellers with improved latrines from 1% to 55%. The province could be considered a model for best practices. These have included ensuring political commitment; developing an affordable, acceptable latrine design using local materials; using small subsidies as an incentive; publicizing the benefits of improved latrines; enlisting every possible ally in the community; and patience and persistence, since behavioural change takes time. Some problems remain, chiefly with maintenance and proper use of the new latrines.

Henan and Anhui provinces recently started preparations for going to scale in every county. The lessons learned are expected to supply the model for the nation.

The 11-page case study is obtainable from vjitfajurunt@unicef.org.

Helping squatters back to their feet

Case study by Julian Duarte, UNICEF Guatemala

This case study surveys a recently concluded project to improve conditions for some 3,000 poor families who settled in 1984, illegally at the time, in the hills of El Mezquital on the outskirts of Guatemala City. In Guatemala as in other developing nations, massive migrations from the countryside have severely taxed the authorities' ability to provide safe water, drainage, sewerage and garbage collection.

In collaboration first with NGOs and then with government, UNICEF's programme for urban basic services supported a variety of community-based initiatives. These included an innovative network of health promoters selected by their community, and new models for community day-care centres.

From the start, the settlements rated water supply a critical need. Two models, both community-managed, were developed: households install their own connections from community-run wells, or from tanks kept fed by the municipal water service for which the local community association collects the fees, setting a portion aside for maintenance and other expenses such as drainage, sewers and latrines. Volunteers received technical training in basic environmental sanitation: public taps and dry latrines were installed, existing latrines improved, and sewage drains and cobble sidewalks built in alleyways. Volunteers planted trees to supply fuelwood and prevent gullies eroding. Two plants for waste-water treatment are running

and three more in the process of being installed by their communities.

Lessons learned

- Community education and training have been the nucleus activity, even more important than infrastructure. Over the years every family has been briefed on health and sanitation
- Horizontal linking of different initiatives, and the interinstitutional coordination to go with it, are helpful
- Community participation is vital
- Raising funds for projects in peri-urban settlements is not easy



Guatemala

COUNTRY BRIEFS



■ Success lies not only in a participatory methodology but rather in achieving integration: no single institution has the resources to make significant inroads into the problems of servicing poor settlements like El Mezquital, nor does anyone have a single-issue approach that can adequately address the complex realities faced by the inhabitants.

Problems encountered

- A lack of solid community organization and participation
- A rigid government structure making it hard for communities to handle their own solutions
- Difficulties in obtaining financial support from international credit banks

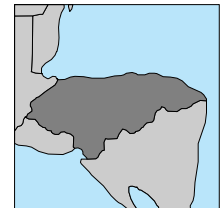
■ Intercommunity disagreements and disputes.

Progress was slow overall, which is partly inherent in work of this kind.

The 11-page case study is obtainable from jduarte@unicef.org.

Is low-cost sewerage feasible for the urban poor?

Case study by Annemarieke Mooijman, UNICEF Honduras



Honduras

The 'Tegucigalpa model' for water supply in peri-urban settlements built its reputation on community participation, cost sharing and use of a rotating fund to cover start-up costs. After seven years the water needs were largely met and attention turned to sewerage in 1995: settlements housing 300,000 people—a third of the city's population—had pit latrines but no waste-water systems.



Community participation in Honduras.

By the end of 1997, four simplified sewage systems had been installed at community request, with full coverage envisioned for the end of 1999.

The households supply manual labour, some materials and an initial payment for connection. The systems are installed by the national water service and run by the community's *junta de agua* or water board, which makes the key decisions on technology, tariffs, maintenance, operation, and speed of loan repayments. During the first year of the first system, only one in five households hooked up; a rotating fund is now supplying small loans to help families make the investment, and four out of five are hooking up.

The water service provides hygiene education within three months of installation, training schoolteachers, who promote hygiene in the classroom, and community volunteers, who visit about 10 of their neighbours' homes with flip charts to help explain new behaviours.

The communities have so far chosen a simplified conventional design (wide, shallow collector pipelines linking household pipes to the main sewers) over the locally more suitable small-bore solids-free design (solids settled on site in a septic tank, with only fluids released to the system. Reassuring them that 4-

inch collector pipes are adequate has been uphill work.

Challenges

- Even with hygiene education, some misuse has led to partial breakdowns
- The initial connection costs are too high for some
- The city's network of collector pipelines linking household pipes to the main sewers is nearly at capacity; massive investment is required to expand capacity before the community systems can be added on a large scale
- None of the city's waste water is treated before discharge into the river downstream of Tegucigalpa.

Are these low-cost sewage systems feasible? If we look only at the health benefits to the poor and the relatively small operating fees required of them, it is worth trying to raise the start-up funds; but a proposed study of the overall costs and environmental impact has yet to be carried out. So the answer, for now, has to be 'possibly'.

The 10-page case study is obtainable from amooijman@unicef.org.

India's rural sanitary marts

Case study by Rupert Talbot, UNICEF India

Rural sanitary marts evolved from indications that poor people will construct toilets without government subsidy provided they have the motivation, the know-how, and available, affordable materials. The marts are conceived as commercial enterprises albeit with social objectives, affiliated with rural production centres and credit mechanisms for the poorest, and supported by social mobilization: the privatized system is collectively known as the alternate delivery system, and has swiftly become an integral component of the government's strategy for achieving 75% rural sanitation coverage by the year 2002.

The first experimental marts started up in Uttar Pradesh in 1993. Strategically located in public places like markets and staffed by trained managers and motivators, the marts showcase the health benefits of sanitation and hygiene, and counsel potential users on choice of latrine design and mason. Of three arrangements tested—high subsidy, low subsidy, or none—low subsidy worked best. In Uttar Pradesh, manufacture of the cement or mosaic squatting slabs, pans and traps was undertaken by the local *panchayat udyogs*—rural industrial complexes run by groups of village councils.



India promotes 'total sanitation.'

Key activities

- Training of managers and motivators in sanitation and marketing
- Selection and training of masons (including women, through women's production centres, and young people, through youth employment schemes)
- Mobilization—village contact drives, pamphlets, posters and films
- Home visits by motivators. Both motivator and family receive a small incentive, about \$1.50, for each toilet

equipped from the mart.



When properly sited and run, the rural sanitary marts have shown a profit within 12 to 18 months. Nearly 700 marts are now active in more than 10 states; NGOs, entrepreneurs, and even dairy and sugar cooperatives are offering sanitation supplies; and zero subsidy is increasingly the aim. Surveys show that for every toilet recently built through the main government programme, four were built by households on their own.

Best practices

- Ensure a good balance between the subsidized and self-financing components of any programme promoting sanitary toilets
- Capitalize on the employment potential offered by the construction of large numbers of toilets.

The 10-page case study is obtainable from rtalbot@unicef.org

The Clean Friday movement

Case study by Y.D. Mathur, UNICEF Indonesia

Gerakan Jumat Bersih or the Clean Friday movement draws on the religious and cultural values of communities to promote hygiene. Starting as a district initiative in West Lombok and declared national policy in November 1994, the movement calls for community self-help engaging all com-

munity members—individuals, families, organizations and government agencies. The nation's religious leaders, who successfully promoted family planning in the past, have been given materials on water and sanitation according to Islamic teachings to help them promote hygiene during prayer and other meetings on

Fridays, Islam's holy day.

The objectives are to promote healthy living through religious and other communal activities; to increase community awareness of the importance of hygiene, specifically the use of sanitary latrines, hand-washing,



COUNTRY BRIEFS



consumption of properly handled drinking water, and proper garbage disposal; and to facilitate hygienic behaviours by installing sanitary latrines, water supply and waste disposal in households and in public places such as schools and houses of worship. In West Lombok, activities included training the village women volunteers of the family welfare movement to deliver hygiene messages.

The movement has an established organizational structure, growing latrine coverage in the provinces with action plans, and continuing political commitment. Though other factors may have been at work, West Lombok has experienced a noticeable decline in acute respiratory infections, diarrhoeal diseases and skin conditions.

Problems encountered

- Lack of commitment from regional leaders
- Most district heads have yet to draw up local action plans
- Insufficient coordination between agencies, overcome in West Lombok by setting up an interagency team
- Minimal data collection: detailed record-keeping has been a motivating force in West Lombok, but for a 1997 national sanitation survey, only 12 of 27 provinces provided data.

Lessons learned

- The district head's commitment is key: these officials are close to the communities and also have the authority to influence budget alloca-

tions and issue regulations having legal force.

- Agencies can improve sanitation if they approach communities in an acceptable manner, particularly through religious channels; for example, going to prayer meetings with a receptive attitude can provide opportunities to impart hygiene education.
- It remains difficult for women to take on non-traditional roles in mobilizing for hygiene.
- General support gestures, such as visits by distinguished figures, can enhance local authorities' commitment.

The 8-page case study is obtainable from ymathur@unicef.org.

Rebuilding after war

Case study by Zaid Jurji, UNICEF Iraq

Water supply and sanitation suffered severe deterioration throughout Iraq following the Gulf War in 1991. The nation's high-technology, high-cost systems were hard hit by the dwindling of operating funds to a trickle of humanitarian aid; by an exodus of skilled manpower; by the shortage of spare parts for sewage treatment plants and for the truck fleets that collect garbage and empty cesspools; and by prolonged power cuts causing sewer mains to clog, corrode and back up.

After years of habituation to highly subsidized government services, communities lack the knowledge to handle water and waste rationally. Garbage is collected erratically and dumped ever closer to homes. The result has been a resurgence of typhoid together with a nearly threefold increase in underweight and an eightfold increase in diarrhoeal deaths among children under five.

From 1991 to 1997 only the gravest problems could be tackled—preventing further breakdown, interim repairs for

schools and hospitals, and temporary measures to keep sewage away from homes, schools and health centres. Attention is now turning to permanent solutions, as part of the emerging Oil for Food programme to meet humanitarian needs. This programme is expected to include situation analyses to determine priorities; a special focus on the poor—both urban and rural—and on schools; pilot projects to generate community participation since no precedents exist; and local capacity building.

Current challenges

- Although the Oil for Food programme will likely fund supplies and equipment, a key need will be locating and training competent technical personnel.
- Ways should be found to interest the private sector in water and sanitation.
- New legislation could be considered that would transfer some costs from government to users; increase profit

margins and encourage competition in the private sector; and stimulate communities to make better use of water and sanitation services. The new approach would have to be properly planned, justified and communicated so as to win support and help the population adapt.

The 6-page case study is obtainable from zjurji@unicef.org.



Iraq



A woman washes her pots in the Euphrates River near the city of Babylon.



Tackling sanitation and guinea worm

Case study by *El hadj Moustapha Diouf and Hamidou Maiga, UNICEF Mali*

In the early 1990s, child mortality was above the national average in the largely rural region of Mopti: only 14% of villagers had a safe and convenient water supply, and the region accounted for over half Mali's cases of guinea worm.

Earlier water supply programmes had had little impact on hygiene, so the 1993–1997 programme stressed hygiene education and sanitation in some 600 villages, centred on women's and children's needs as well as schools; safe water was also supplied for the 150 villages with the highest guinea worm rates.

Main activities

- **Water supply.** Drilling and reconditioning wells; training village handpump caretakers
- **Hygiene education and sanitation.** Training village animators and hygiene committees; introducing latrines and hygiene education in schools; training village masons; helping households install simple test latrines
- **Guinea worm.** Close monitoring; training of health workers and community agents; teaching households to filter pond water harbouring

guinea worm; chemical treatment of ponds.

Overall, the programme improved community understanding of water-borne diseases: more than double the planned number of latrines were built, and the number of guinea worm cases fell from 9,200 in 1992 to 450 in 1997. Some problems require attention:

- Lingering preferences for open-air defecation and for using pond water, especially when handpumps malfunction
- Difficulty in meeting the high demand for latrines
- Insufficient involvement of communities, especially women, and especially during planning and follow-up
- Poor intersectoral coordination, since the public authorities are used to vertical project management
- Too few baseline surveys, and no overall impact study
- Low private-sector interest in sanitation, and low political commitment in rural areas.

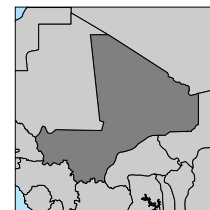
Factors for success

Success was greatest when the varied activities were integrated. Some interventions were decisive:

- The monthly hygiene activities in every village
- Ensuring continued functioning of handpumps (even more than setting up new ones); together with filtering, this had particular impact on guinea worm
- Monthly follow-up and surveillance
- Improving village workers' skills and decentralizing project management.

The programme succeeded better with guinea worm than other water-borne diseases, but introduced tools and methods that could be used elsewhere. The next phase is consolidation, and extension to other regions of Mali. The focus will be on decentralized management and on meshing health and nutrition activities with water supply, hygiene and sanitation.

The 10-page case study is obtainable from mdiouf@unicef.org or hmaiga@unicef.org.



Mali

Changing gear on sanitation

Case study by *Philip Wan, UNICEF Myanmar*

The sanitation programme launched by Myanmar in 1982 promised a free plastic latrine pan to every family: by the mid-1990s coverage was high in 25 townships, of 88 in the pilot programme and 324 in the nation. Since supplying the plastic pans

was proving too expensive and did not ensure proper use, UNICEF and the Government developed a low-cost self-help approach, designed to enable a critical mass of townships to achieve coverage fast enough to generate confidence and have an impact on health.

The new approach shifts the community from passive recipient to active provider and draws on existing strengths: a good health infrastructure of some 7,000 health centres and subcentres, the vast school net-



Myanmar

COUNTRY BRIEFS



Latrine use in Myanmar

work, earlier experience in mobilizing for universal child immunization, growing private-sector activity, and community support for sanitation.

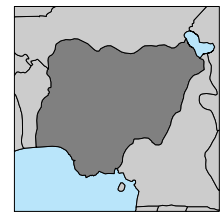
The plastic latrine pans were phased out in mid-1995; community self-help was promoted along with a workable minimum latrine standard (excreta to be contained in a covered pit). Social mobilization was moved to the forefront to motivate behavioural change, tapping every available resource—schools, NGOs, local health workers, village mobilizers, the 10-household village leaders, the government’s mobile communications team, local video parlours and the mass media, especially television.

Since 1996 UNICEF has supported these social mobilization activities in 100 townships. A 1998 survey of 22 townships showed that in two out of five, over 70% of families were now using sanitary latrines. The majority of latrines were new: a third had cost less than \$4 to build and another third less than \$7. Poverty had been offset by using local materials, by families doing all the work themselves (74% of households), and by occasional help from other families.

A highly publicized national sanitation week in May 1998, headed by national leaders and by key NGO and private-sector partners, set the goal of a *continued on page 24*

Keeping girls at school

Case study by Mohammed Kamfut, UNICEF Bauchi (Nigeria), Comfort Olayiwole, UNICEF Lagos, and Z. O. Agberemi, sanitation consultant

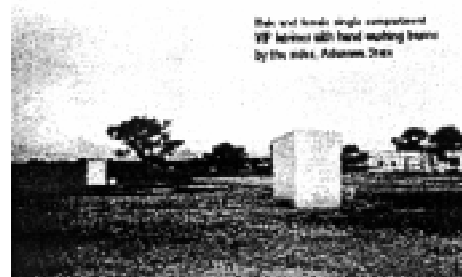


Nigeria

Village schools in Nigeria often lack a safe water source and separate toilets for boys and girls. These are major reasons why fewer girls than boys attend school, especially in the largely Muslim north where cultural norms require girls to have privacy and not share toilets with boys. In the arid north-east, the girls and women of villages without water supply often have to sacrifice hours of their day—including school hours—to fetching water.

Spot checks of primary schools in the north-east showed that barely a quarter had a latrine and water supply. In the rare schools with a pit latrine, it had to service over 100 pupils, both girls and boys. Children were defecating in the playground and nearby compounds, adding the health hazard of exposed faeces to parents’ reasons for withdrawing daughters from school.

Against this background, a project was launched in December 1996 to organize a package of interrelated services for 10 selected primary schools in each of three north-eastern states: health and hygiene education to influence the chil-



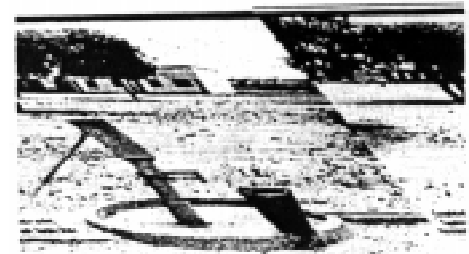
Privacy for girls: school latrines in north-east Nigeria.

dren, and hence their families and community, to adopt hygienic practices; a double-compartment latrine or two single-compartment latrines, with basins for hand-washing and a design ensuring privacy; a well and handpump; and a school garden around the handpump.

Construction was completed within 15 months, with the communities and parent-teacher associations contributing labour. The school principals supervise maintenance. Students take turns to clean the latrines and fetch the water for hand-washing, while the handpump is maintained by a teacher in term time and a community member during

school holidays, both trained for the purpose.

Though there has been no formal evaluation, monitoring reports note that the school surroundings are cleaner. The pupils are maintaining hygiene and complaining less often of diarrhoea. The community benefits, too, as well as the children and teachers: water no longer has to be fetched far afield, and the school latrines are inspiring households in the vicinity to install their own. The new facilities have sparked considerable interest from neighbouring villages and local authorities.



School vegetable garden in north-east Nigeria: using handpump waste water to teach nutrition.

COUNTRY BRIEFS



Lessons learned

Child-friendly water and sanitation in village schools can serve as models for community improvement, influencing villagers to build household latrines and protect water sources. The project provided an excellent opportunity to build intersectoral linkage between programmes (water supply and sanitation, education, nutrition, and health).

Challenges

- The huge number of schools still in need, and the lack of funds for expanding the project
- Overuse of the school latrines by villagers lacking their own
- Environmental sanitation and hygiene are not yet officially on the school curriculum.

UNICEF supplied two thirds of the funding. Expanding the project will require systematic research and planning around such issues as technology development, on-the-job training, and measures to make the services affordable and sustainable, such as revolving funds for sharing costs and stimulating community entrepreneurship.

The 6-page case study is obtainable from mkamfut@unicef.org, colayiwole@unicef.org or zagberemi@unicef.org.

Turning garbage to profit

Case study by Olushola Ismail, UNICEF Lagos, and Z.O. Agberemi, sanitation consultant

Nigeria's recent economic troubles have brought massive migrations from country to town, swamping the cities' already overloaded systems for waste disposal. In Lagos and Ibadan, 1995 surveys of market neighbourhoods, which generate the most refuse, found that none of the markets had adequate arrangements; 71% of households were depositing trash in any available open space, risking pollution of nearby wells. Cholera breaks out regularly in both cities, and children, especially, suffer high rates of diarrhoeal disease. The task of household waste disposal falls mainly to women and children, who have to trek long distances to a usable dump or pay refuse collectors from their meagre earnings.

The case study reviews a pilot demonstration project which set up a composting plant to make fertilizer of the 40 to 50 tons of refuse discarded daily by Ibadan's largest produce market. The composted manure, safer and cheaper for local farmers, sells at \$3 a bag. The plant's biogas pro-

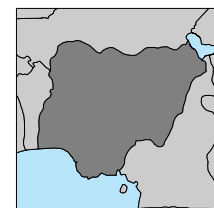
duction is managed entirely by local women, and the community's women and schoolchildren earn further income from collecting and sorting cans, plastic and glass for resale to industry, recycling paper for handicrafts, and raising seedlings.

Training was provided for 42 state and local government staff and for 60 community artisans. Market women, schoolchildren and community leaders, educated to the value of environmental care, were actively involved in every phase from planning onwards, and have become proud stakeholders. Costs were shared—government 65%, community 25%, and UNICEF 10%.

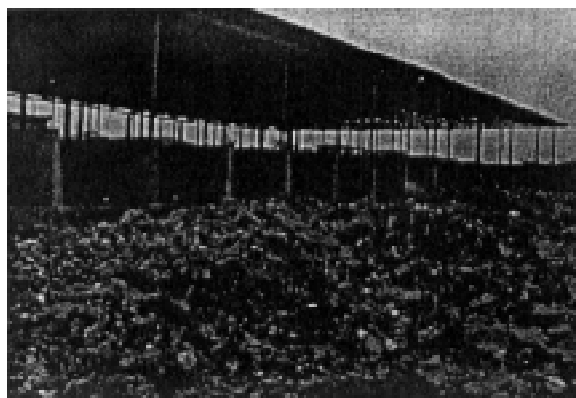
The project has not been formally

evaluated, but conditions in and around the market have visibly improved, and other Nigerian cities have requested similar projects. The key elements for replication will include close liaison with all the key partners; building capacity via on-the-job training; funding research and development of suitable technologies; involving the private sector; instituting workable arrangements for cost sharing; and using revolving funds to empower community-based entrepreneurship.

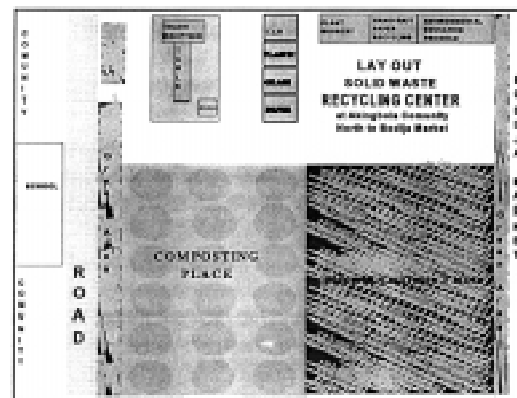
The 6-page case study is obtainable from oismail@unicef.org or zagberemi@unicef.org.



Nigeria

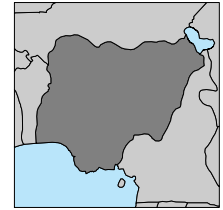


Bodija market, Ibadan: a day's workload at the composting centre.



Making SanPlats a household word

Case study by Comfort Olayiwole, UNICEF Lagos, and Z.O. Agberemi, sanitation consultant



Nigeria

Because incomes have been plunging in Nigeria for several years, a cheaper alternative was needed to the ventilated improved pit latrines previously promoted for the rural and peri-urban poor. After a 1995 study of hygiene beliefs and practices nationwide, and a pilot project in the south-east to test and modify SanPlats for cultural acceptability, SanPlat latrines were adopted as the new norm (see box).

In order to both achieve and sustain sound hygiene practices, the promotion strategy emphasizes community leadership and management, with the federal, state and local authorities providing the enabling environment. Latrine construction is supported by social mobilization and hygiene education, by skills training for the local manufacture of SanPlats, and by the setting up of community-run sanicentres (sanitation centres) to serve as promotion, counselling and sales outlets.

Within three years more than a million people had acquired safe excreta disposal, increasingly paid for by the householder, in 22 of Nigeria's 36 states. Hygiene practices have improved, and SanPlats became a household word in the project areas. Since demand was too great for the original production centres sited at local government headquarters, SanPlat manufacture is now handled mostly by numerous community sanicentres. Over 12,000 people have been trained. In the villages, the proportion of women receiving technical or management training soared from 2% in 1995 to 50% in 1997. On the 10-member community sanitation committees, five are usually women.

Factors for success

- Conducting studies before starting work
- Setting up clear institutional arrangements for sustainability at every level—federal, state and local government as well as communities
- Ensuring community participation and ownership, and increasing women's involvement
- Using low-cost technologies compatible with local culture
- Providing an initial subsidy for the very poor
- Using the earning potential from sanicentres to spur interest and commitment.

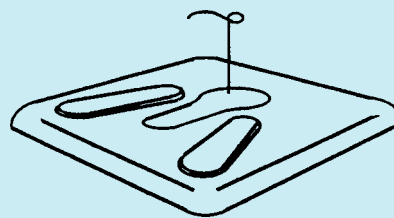
Active community participation, and building the local capacity for it, are key. The needs for the future include continuous quality control over the manufacture and installation of SanPlats; funding to expand coverage while maintaining the existing programme; and greater private-sector involvement and revolving funds to meet the demands placed on the sanicentres. Roughly half of the nation's rural population currently has sanitary excreta disposal: if the present funding and pace can be kept up, coverage could pass 70% by the year 2000.

The 11-page case study is obtainable from colayiwole@unicef.org or zagberemi@unicef.org.

SanPlats at a glance

SanPlats or sanitation platforms are durable squatting slabs in finely moulded concrete that can be cheaply added to existing pit latrines. The drop hole is small enough to be safe for children; a fitted lid controls fly and odour nuisance; slab and surround are easy to keep

clean. The slab design can be adapted to local conditions and the slabs manufactured locally. The upgraded latrine as well as the slab may be called a SanPlat.

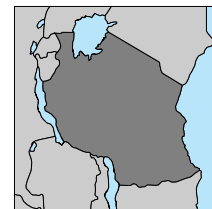


Drawings from Björn Brandberg, *Latrine building: a handbook for implementation of the SanPlat system*, Intermediate Technology Publications, 1997.



Sanitation and hygiene promotion in Tanzania: The hare and the tortoise

Case study by Ken Maskall, UNICEF Tanzania



Tanzania

The 1990s have brought tighter fiscal policies in Tanzania and cuts in public-sector spending. A 1995 survey of poor households confirmed disturbing trends—significant numbers with latrines in a state of collapse and not using a latrine regularly (especially children aged 7 to 14), and not washing their hands properly after defecation or before handling food. Four out of five local schools lacked sanitation, and only one out of two rural families discarded infant faeces safely.

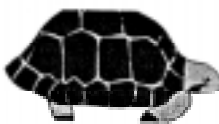
Since the government's subsidized latrine programme is now too costly and cannot maintain standards, attention turned to developing a simple latrine improvement package using SanPlat technology (see box on previous page) to build partnerships with the growing informal artisan sector and the growing number of community-based NGOs.

With the help of a national NGO, more than 230 artisans across the nation were trained in SanPlat making during 1996 and 1997. But demand remained low even though purchasers rated the slabs both affordable and highly satisfactory. SanPlats needed a clear, Tanzanian identity.

After pre-testing, Sungura was chosen as the brand name in early 1998, *sungura* being Swahili for hare; the image exploits both the visual resemblance and the hare's reputation in Tanzanian folklore as clean, honest and clever. The hare logo appears on all the posters, information flyers, flags, comic strips and stickers that boost promotion and make SanPlat outlets more visible. The point-of-sale materials target men, who control the family budget; the messages use the slabs' acceptability to children

and popular concerns about the growing incidence of cholera.

SanPlat sales rose during the pre-testing, a promising sign. Artisans' wives and daughters became involved on their own initiative, and training for women promoters was scheduled to start in mid-1998, alongside further training of artisans and distribution of promotion materials.



The hare logo for Tanzania's SanPlats. In the Tanzanian folktale, hare and tortoise cross the finish line together, the tortoise having held onto the hare's tail. An emblem of teamwork, perhaps, for the multiple stakeholders in better health and hygiene?

The Sungura promotion is one element in a comprehensive programme to improve hygiene where it most affects children and mothers: other concerns are the home care of children under four, home birthings by traditional birth attendants, and home care of family members with HIV/AIDS and cholera. The case study reviews the challenges of working in Tanzania's new economic climate and details the participatory

A 1995 survey of poor households confirmed disturbing trends—significant numbers with latrines in a state of collapse and not using a latrine regularly (especially children aged 7 to 14), and not washing their hands properly after defecation or before handling food. Four out of five local schools lacked sanitation, and only one out of two rural families discarded infant faeces safely.

community research—notably a new technique for mapping individuals' perceptions—that has strengthened understanding of people's health needs and beliefs.

The 15-page case study is obtainable from kmaskall@unicef.org.



Uganda's sanitation drive: the UNICEF context

Case study by Bill Fellows, UNICEF Uganda

The UNICEF five-year country programme, 1995–2000, takes an intersectoral approach to the needs described by Dr. Kiyonga. To break down the vertical project thinking hitherto prevalent in Uganda, needs and services are handled on four levels: community enablement, for actions villagers can take on their own; service delivery, for the services villages need but cannot supply; resource mobilization and management, to ensure provision of services; and overall policy development and quality assurance. These levels correspond very roughly to the current tiers of government administration.

At all four levels, water supply was receiving priority at the expense of sani-

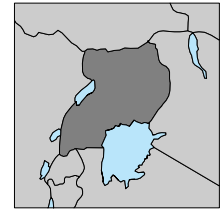
tation. Reversing this trend was tackled from both ends—by advocacy with national leaders to give sanitation the highest possible profile, and by community research and communications to set the stage for new behaviours. The work in communities follows four main strategies:

- Creating awareness through social marketing
- Using knowledge of the community as the basis for planning
- Adopting participatory approaches to effect behaviour change
- An integrated approach to school sanitation.

The President's inclusion of sanitation in his 1996 election manifesto was probably the single most important event, as it initiated the acceleration process. Two workshops in early 1997 on sanitation and on communications, attended by international experts as well as key government personnel, were instrumental in clarifying priorities and action plans.

The cholera outbreaks from December 1997 onwards somewhat sidetracked the longer-term planning process but brought a new immediacy to popular perceptions about sanitation as a safeguard for health. The recent district elections were fought over sanitation

continued on page 25



Uganda

Testing intensive sanitation

Case study by Nguyen Quang Quynh, UNICEF Viet Nam

Starting in 1986, the government funded demonstration latrines and issued leaflets on hygiene in the hope of inspiring communities to upgrade their surroundings on their own. Some 150,000 latrines were built in over 3,000 communes, but rural areas continued largely unaware of the connection between a clean environment and health.

A more intensive approach was tried out from 1993 to 1996 in the 39 communes of a rice-growing district in Thai Binh province, preceded by over a year of pilot activities in one commune to develop the necessary experience. The main elements were water-seal latrines and well drilling; work was also done on building bathrooms, garbage pits, animal sheds and smokeless stoves. The

objectives were to educate communities on sanitation; introduce affordable and acceptable technologies; develop a methodology to make the project both self-sustaining and self-expanding; and engage the commune members, especially women, in planning and operations.

Every commune set up a project management board supervised by a district committee, and procedures were established to manage funds and activities. Local branches of the nation's mass organizations—including the national front and women's and youth unions—helped with coordination. More than 1,200 specially trained motivators promoted sanitation and other health measures through meetings, home visits and the mass media.

By final evaluation, 90% of commune members understood the benefits of sanitary latrines and safe water; 80% of households were using good water and over 60% were using hygienic latrines, new or refurbished. Every school, kindergarten, day-care centre and government office was properly equipped. Under-five sickness rates had been halved, and the rates for diarrhoea, trachoma and hepatitis (all ages) had fallen by about a third.

The principal constraint was commune members' poverty (average per capita income \$80 a year). They contributed labour but were hard pressed to invest in home improvements.

continued on next page



Viet Nam

Bringing sanitation to the fore

Case study by Isaac Mbewe, Chairman, WASHE

Over half of Zambia's largely rural population lacks safe water and two thirds lack sanitation. With the economy in trouble, incomes have fallen and child mortality is on the rise, much of it from diseases preventable by sanitation. Cholera breaks out every year, and the drying up of dug wells from the decade of drought that ended two years back still forces villagers to use distant or unsafe water sources.

Policy reform, first for water supply and then for environmental sanitation, began in 1993: the resulting programme for Water, Sanitation and Hygiene Education (WASHE) stresses decentralization to local authorities and private entrepreneurs, and aims at eventual recovery of all costs. A key role goes to the district and village WASHE committees, with concomitant upgrading of the community members' skills for their new tasks. Activities started up in September 1995 in the nation's 10 most drought-stricken districts:

- Some 1,100 wells and handpumps were installed or rehabilitated, freeing girls to attend school instead of trekking for water. With private entrepreneurs working to improved specifications, the cost of new boreholes was nearly halved
- 200 of these private-sector personnel were trained in well drilling and handpump repair, reducing pump failures from 40% to 15% within a year

- 200 community organizers were trained to mobilize village households for the five WASHE basics—hygienic latrine, hand-washing, safe storage of food and drinking water, garbage pit, and soakaway pit or similar provision for waste water
- 200 masons were trained in latrine building. Latrine construction started slowly but by end 1997 over 12,000 had been built. Some villages achieved 100% coverage
- Village and district WASHE committees were trained in support skills—planning, maintenance,



Handwashing in Zambia

management, rainwater harvesting, and participatory communication techniques

- A Zambian manufacturer developed fibreglass moulds for local casting of Zamplats, the national version of SanPlat latrine slabs.

Among the factors for success were energetic government commitment and the district committees' pride in ownership. Frequent workshops involving all the partners have helped to build a well-informed support network. The programme is now active in some 30 districts.

Issues for the future

- Adapting WASHE to urban areas
- Sustaining its high profile and support
- Maximizing impact on health by meshing WASHE with other activities such as income generation and schooling
- Strengthening monitoring and evaluation, currently a weak area
- Addressing gender concerns and women's needs.

The 11-page case study is obtainable from Isaac Mbewe c/o Sham Mathur, smathur@unicef.org.

- **Viet Nam** from page 22

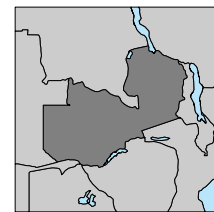
Lessons learned

- The key factor for success was commitment by the commune People's Committees
- The mass organizations proved very effective in social mobilization

- Communities have to take part in project planning and financing if new habits are to take root
- The staff of Thai Binh Medical College played an essential role in guiding, monitoring and evaluating the project activities.

The project is being expanded during 1998 to 10 more districts in 10 northern provinces.

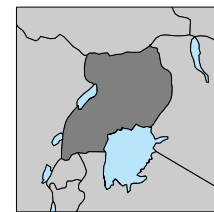
The 9-page case study is obtainable from nquynh@unicef.org.



Zambia

Participatory hygiene education

Case study by *Bijaya Rajbhandari, UNICEF Zimbabwe*



Zimbabwe

Diarrhoeal diseases and malaria are leading causes of child sickness, malnutrition and death in Zimbabwe. The pace of latrine construction has slowed since the 1980s and has been outstripped by population growth: less than a third of villagers have access to a hygienic latrine. Although a majority know about washing hands after latrine visits, the challenge is to convert such knowledge into sustained behaviour change.

Since 1993, an intensive programme in participatory hygiene education (PHE) has set out to replace didacticism by a teamwork approach more likely to have lasting impact. Starting out small in each district for demonstration, the programme is now active in 44 of Zimbabwe's 56 districts.

Key activities

- **Training.** Supervisors are teamed up in the same workshops as community extension workers. The three-stage training system generates a support team for each province, a support team for each district, and

training of extension workers in each district. Most districts opt to train all extension workers regardless of sector.

- **Development of learning tools.** The custom-designed learning modules use visuals to involve as well as instruct. They were developed from field up rather than top-down so that extension workers and villagers would be comfortable with them; village women, in particular, have gained the confidence to contribute in PHE sessions.
- **Support to households.** The programme subsidizes family efforts to build latrines, upgrade wells and provide for hand-washing. Householders contribute 75% of the costs.

All the programme districts report increased latrine building and better hygiene practices. Key tasks ahead are identifying indicators for behaviour change that can be used to gauge progress, and incorporating PHE principles into the standard training for all extension workers.

Lessons learned

- Participatory hygiene education is a strong tool for changing individual and community behaviours
- Impact is greatest when communities identify and evaluate their own health practices
- Back-up support is crucial at every level for building confidence
- Schoolteachers, church groups and other community activists should also receive training: hygiene is more than just a health issue
- Training should distinguish between the support staff who need only a general grasp of process, and the extension workers who need to be fully trained and equipped with the learning tools
- Procedures should be built in for systematic reporting, periodic review of activities, and impact assessment.

The 9-page case study is obtainable from brajbhandari@unicef.org.

■ Myanmar from page 17

million new latrines (12% of the population)—a challenging but doable goal. Early indications are that the week sparked a livelier interest in sanitation. Meanwhile, the successes achieved in some townships are boosting confidence elsewhere.

The case study concludes with a brief description of WESNET, the regional Internet forum for UNICEF's water and sanitation staff in East Asia and the Pacific.

The 6-page case study is obtainable from pwan@unicef.org.

Communication strategy in action



■ A global challenge from page 1

ness raising and two-way communication. While water supply projects can usually take community interest for granted, sanitation and hygiene education have to create understanding and demand, focusing intensively on individual households and persons. The approaches that have traditionally worked for water supply have failed when applied to sanitation, since they lack the flexibility to take account of the complex interplay between consumer wishes, behavioural change, and market mechanisms.

In sum, sanitation programmes must tailor their proposals very closely to the users' socio-economic conditions, needs, desires and perceptions. Sanitation professionals need to listen to the 'clients' and be sensitive to their priorities and habits. Local knowledge about sanitation and the environment has to be incorporated into programme designs.

The way ahead

Creating community demand is a first step. Sanitation programmes also have to be financially self-sustaining, at least in part, given the present reliance on free enterprise to shoulder burdens once relegated to government. Moreover, we now know that improved sanitation systems and hygiene practices show far greater longevity when communities 'own' the services from which they benefit. Recent years have witnessed the development of a wide range of affordable technologies, together with creative arrangements for credit and revolving funds that enable producers and users alike to make the necessary investments in these technologies.

That said, the marketplace alone will probably not provide the satisfactory technologies that are still needed. Despite the crucial importance of sanitation,



the private sector has shown surprisingly little interest. So experimental low-cost technologies will therefore have to continue to be supported, and functioning solutions continue to be replicated elsewhere as appropriate.

The workshop report will be available shortly from the WES Section, UNICEF New York. For copies of the country case studies, please contact the authors. [📧](#)

■ Uganda from page 22

issues, and the national newspapers carried over 400 articles on the topic during the first six months of 1998. Home and school improvement competitions are being held; hundreds of schools have built latrines; entrepreneurs are setting up garbage recycling businesses. In the meantime, more than half of UNICEF spending for water supply and sanitation is now dedicated to sanitation, up from 4% two years ago.

Lessons learned

- A few highly committed and politically well-placed individuals can have tremendous impact
- In particular, the President's support was crucial, supplying both motivation and credibility
- Sanitation is not just a health issue
- UNICEF should lead by example, promoting sanitation in every aspect of its work and showing personal commitment.

The 11-page case study is obtainable from bfellows@unicef.org. [📧](#)

■ Dirty hands from page 9

medical issue that effect the public, Inlander says that he washes his hand twelve times daily. He is convinced "hand washing has slipped" because of a misplaced public faith in modern medicine and the risky belief that antibiotics can thwart most infectious diseases before they get out of hand. "We think we are too smart for infections" he contends. "It is obvious we are not. Our mothers were far more aware of those kind of things than we are today."

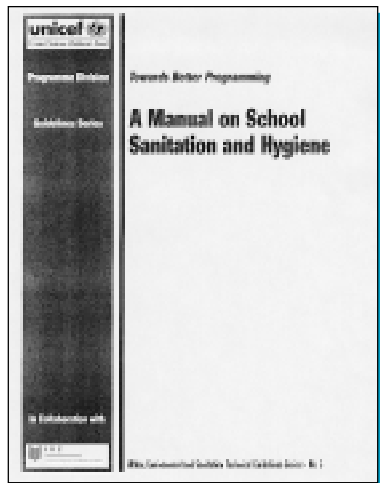
Marc Micozzi, a physician and director of the National Museum of Health and Medicine points out that most of the usual suspect illnesses such as colds and flu, primarily are transmitted by contact — making them largely preventable with an old fashion dose of prevention. "Even today the simplest things really account for keeping us healthy — good nutrition, simple sanitation washing your hands" say the editor of The journal of Alternative Medicine. "Even the bacterial that aren't killed by antibiotics can be killed by soap if you can get them on the outside before they get

...most of the usual suspect illnesses such as colds and flu, primarily are transmitted by contact — making them largely preventable with an old fashion dose of prevention. "Even today the simplest things really account for keeping us healthy — good nutrition, simple sanitation washing your hands"

inside your body" — *LA Times/Washington Post*.



New Publications



Towards better programming: A manual on school sanitation and hygiene

This manual, part of the UNICEF Programme Division technical guidelines series on water, environment and sanitation, is the result of collaboration between UNICEF and the IRC International Water and Sanitation Centre in The Hague. Building on experience from a number of country programmes, the manual advocates integrated approaches towards a safe school environment for all children, with linkages to community actions and relevant education for healthy and sustainable development.

Children are agents of change. If we focus on school-aged children, giving them the tools and knowledge to change behaviours today, future generations will be better prepared to care for their families' and communities' health and environment. This is an area long recognized as worthy of support, and UNICEF has worked in partnership with both donor and implementing governments worldwide.

The manual deals with both the 'hardware' and the 'software' needed to bring about changes in hygiene behaviour in students and, through them, in the community at large. The

hardware is the total package of sanitary conditions and facilities available in and around the school compound. The software is the activities aiming to promote the hygienic conditions and practices at school, among staff and children, that will help to prevent water- and sanitation-related diseases.

For more information, or to order copies, please contact the WES Section, UNICEF New York, wesinfo@unicef.org



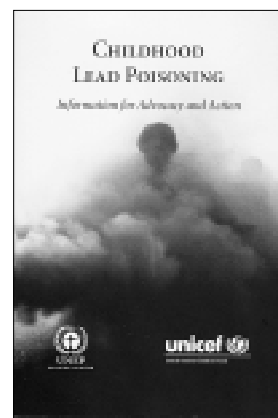
Hacia una mejor programación: Manual sobre saneamiento

(Spanish version of *Better sanitation programming: A UNICEF handbook*, issued in April 1997)

There is an urgent need for development planners throughout the world to give sanitation priority attention. The number of families without access to adequate waste disposal in poor urban and rural areas continues to grow in many places, and the programming challenges for UNICEF and other partners are considerable. This handbook, prepared in collaboration with USAID's Environmental Health Project, is designed to help working professionals who are responsible for sanitation programming to prepare realistic and better sanitation programmes. It is based on a broad definition of sanitation as a process

whereby people demand, create, and sustain a hygienic and healthy environment for themselves.

To order copies, please contact the WES Section, UNICEF New York, wesinfo@unicef.org.



Childhood lead poisoning: information for advocacy and action

Lead poses an environmental and child health hazard of global proportions, demanding urgent action. This 20-page booklet published in 1997 is a contribution to reducing the adverse health and environmental impacts of lead, particularly on children. It is intended as a tool for advocacy and action in the hands of policy makers, communities and everyone caring for children.

The booklet is the first of an information series dealing with environmental pollutants and their effects on children, co-published by UNEP and UNICEF as part of a wider effort to raise awareness of the linkages between environmental factors and the well-being of children.

Copies can be obtained from the WES Section, UNICEF New York, wesinfo@unicef.org, or from the Human Health and Well-being Unit, United Nations Environment Programme, PO Box 30552, Nairobi, Kenya.

Useful resources

Training manual on women, environmental management and sustainable development

This 1996 training package, prepared by Borjana Bulajic, Martha Dueñas-Loza and Adelina Guastavi, was published jointly by the United Nations International Research and Training Institute for the Advancement of Women (INSTRAW), the United Nations, and the International Training Centre of the International Labour Organization. It consists of four modules:

- Women and environmental health
- Women as agents of change in the development sectors
- Women as managers of the environment
- Women, environmental indicators and capacity-building programmes.

The overall aim is to contribute to the integration of women's needs and their participation in sustainable development programmes, and to increase awareness among planners and officials, as well as NGOs and women's organizations, of the need to involve



women in the planning, management, implementation and evaluation of environmental programmes and projects.

The package is intended for use by various target groups, such as senior government officials, development planners, engineers, university professors, trainers, and representatives of NGOs and women's organizations; it is also a good sourcebook for project officers on almost all issues relating to women and sustainable development.

For further information or copies of the complete training package, please contact INSTRAW, 102-A, PO Box 21747, Santo Domingo, Dominican Republic, tel (809) 685 2111, fax (809) 685 2117.

Jelly Jam, the people preserver

Jelly Jam, created in 1972 by Judi Friedman, an American environmental educator, is a gentle, humorous cartoon rabbit who shows young children how to help the environment—and hence themselves—in very practical ways. A teacher's guide accompanies this activity book for children aged 3 to 10, which uses colouring, puzzles and other activities to spark children's concern for the planet.

Travelling under many guises, including *Yeli Yam, el amigo de la gente y la naturaleza*, Jelly Jam has recently been adapted for children in Azerbaijan, Bermuda, Brazil, Costa Rica, Kazakhstan, Romania, Russia and Ukraine, with editions for China, New Zealand and South Africa soon to come. Some of these editions were sponsored by UNICEF country offices.

For further information on Jelly Jam, please contact the WES Section, UNICEF New York, wesinfo@unicef.org, or The Jelly Jam Program, 101 Lawton Road, Canton, CT 06019, tel (860) 693 4813, fax (860) 693-2822, e-mail: JFriedeco@aol.com.

■ Development of Uganda's national sanitation policy from page 10

print since 1971. Additionally, it is based on British legislation and clearly reflects normative behaviour in Britain and not Uganda. Accordingly, draft legislation and policy on guidelines for environmental health and sanitation have been developed which more accurately reflect realities in Uganda. These will be submitted to Parliament in the 1998 legislative session.

Conclusion

The potential gains for Uganda from improved sanitation include:

1. Reduced morbidity and mortality from diarrhoeal diseases
2. Enhanced school education, particularly for the girl child
3. Reduction of severe undernutrition
4. Millions of workdays saved each year, which will contribute to poverty eradication in the country
5. Savings of millions of dollars on environmental clean-up campaigns
6. Great potential for generating in-

creased revenue from tourism, fisheries and recycling of wastes.

The Government of Uganda is accordingly highly committed to improving sanitation. However, resources will be required to sustain this process and we count on our development partners to continue supporting us in this effort. 🌍

A global initiative for basic sanitation

Notes for workshop presentation, 12 June 1998, UNICEF New York

by Richard Jolly, Chairman, Water Supply and Sanitation Collaborative Council (WSSCC), and Special Adviser to the Administrator, United Nations Development Programme (UNDP)

Over the years before and after the World Summit for Children in 1990, UNICEF has learned much about how to work with countries and communities in accelerating action towards key goals for children and communities, especially in health and education. We now need to draw on this experience in accelerating action for sanitation and hygiene.

Six points


1. *We need a goal for sanitation and hygiene*—a global goal translated into country-by-country goals, perhaps regional and district ones. This is a lesson for all, but especially for the many members of the WSSCC who have major doubts about the value of goals. UNICEF needs to share its more positive experience.
2. *We need to mobilize behind the goal.* Mobilization means leadership, advocacy, and alliance building. We need to tap the energy and mobilizing skills of the gender and women's movement. Here there are lessons to be learned for UNICEF field

personnel. There is no need for conflict with other goals. There are also lessons to be learned by UNDP, especially its resident coordinators, for mobilizing theme teams around sanitation and hygiene.

3. *We need to concentrate on low-cost approaches that can go to scale.* This was the lesson we learned from accelerating to the 1980s goals for immunization and oral rehydration therapy, and the 1990s goal of eradicating iodine deficiency. But water supply and sanitation have made only a small fraction of progress towards their targets. UNICEF, convey your experience to others: go low-cost and go to scale.
4. *We need to build on the success stories of practical experience.* Excellent examples have come from Bangladesh, India, Thailand, Uganda, Zambia and Zimbabwe, to name only a handful. Here there are messages for all.
5. *We need to mobilize the finance*—by restructuring budgets, by pushing for the 20/20 initiative to dedicate 20%

of aid and 20% of government funding to basic services, by mobilizing community resources, by charges in appropriate cases. Here there is a message for the World Bank and the International Monetary Fund, among others: do not be overly fixated on recovering the full cost of programmes.

6. *Country-by-country monitoring is vital.* Detailed country monitoring proved critical to the success of the drive to expand immunization worldwide. Monitoring of water supply and sanitation is at present very inadequate, and standards of coverage differ. It would be good to see access to clean water incorporated in the Human Poverty Index, published yearly in UNDP's *Human development report*. This is a message for UNICEF and the World Health Organization.

The WSSCC remains ready to help, as a secretariat for sharing information and for helping to mobilize interest and commitment. 

Royal accolade for WEDC

Buckingham Palace announced in November that one of the 1998 Queen's Anniversary Prizes for Higher and Further Education had been awarded to the Institute of Development Engineering/Water, Engineering and Development Centre (WEDC), in recognition of WEDC's 27 years of teaching, research and consultancy in over 65 countries worldwide, helping to ensure that the world's poorest people have access to essential services. The prize will be formally presented by Queen Elizabeth

at a special ceremony at the Palace on 11 February 1999.

The official press release says of WEDC: "Key strengths include the practical, in-country experiences of its staff; its interdisciplinary approach coupled with the appropriateness of its technologies; and the huge network of alumni serving as development professionals throughout the world. Its proven expertise and the humanitarian nature of its work make it the first choice adviser of many front-line development organizations."

WATERfront


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