

Stories on Sanitation

ASIA LISTENING

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India Wash Forum



India Wash Forum (IWF) is a Trust affiliated to the Water Supply & Sanitation Collaborative Council, Geneva, Switzerland. It is a membership-based coalition of Indian organizations and individuals working on water, sanitation and hygiene.

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WAI's objectives are to

- Enable improved access to sustainable, safe and adequate water supply and sanitation
- Creation of a knowledge base for promotion and dissemination of best practices and advocacy
- Develop and foster an enabling environment for effective programme implementation

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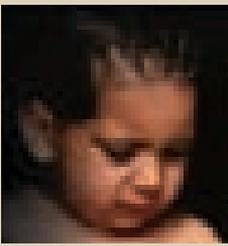
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Introduction

To write about sanitation is most difficult. Nobody wants to think about it, much less write about it. It is one of the great taboos in the media, as it is in most echelons of policy-makers and government officials. Yet, it is literally a matter of life or death, but hardly perceived as such.

In South Asia, which is the worst off region in the entire world in terms of numbers affected, as many as 1 million children under five years of age die every year, many of them due to water-borne diseases which, in turn, is directly related to poor sanitation and hygiene. In India alone, 30 million in rural areas suffer every year from sanitation-related illnesses.

A worldwide WASH campaign—Water, Sanitation & Hygiene for All—has been launched by the multi-stakeholder organisation Water Supply & Sanitation Collaborative Council (www.wsscc.org) in Geneva. For several years, the Council has been fighting a valiant battle to make people aware, globally, of this silent spectre.

As part of its global outreach, it has fostered WASH Forums in many regions and countries. India has witnessed vigorous NGO intervention in this all-important sector. In 2007, these NGOs reconstituted themselves into the India WASH Forum, which attempts to communicate the sanitation message to a much wider public through the media.

The voice of a vast majority of people is not heard in the media and in policy making. Sanitation issues relating to women's dignity—the theme of the third South Asian Conference on Sanitation (SACOSAN III) in Delhi in November 2008—the plight of manual scavengers, migrants and slum dwellers without access to sanitation, are typical

examples. Sanitation is also related to livelihood. It is wrong to look at sanitation access as a programme and project issue alone.

Most agencies, including government and NGOs, look at narrow indicators of sanitation success—the health impact of reduction in diarrhoea, girls' retention in schools with toilets and the economic burden of ill health. While agencies may contribute to these outcomes, the reality of malnutrition, school dropout rates and unemployment, gender and social discrimination are debilitating factors that cannot be ignored by them in promoting sanitation.

One of the Forum's first decisions is to publish this document, titled *Asia Listening*—a South Asian version of the WASH programme's high-profile global document titled, simply, *Listening*, in 2004. The India WASH Forum has decided to publish the regional version in time for SACOSAN, which is organised every two years.

While the original WASH document was written by eminent NGO leaders in sanitation throughout the world, the endeavour this time was to get accounts of successes and failures on this front documented by journalists. The objective was to get more independent assessments of case studies in the region, as well as making such accounts more readable and accessible to a wider public, shorn of jargon and acronyms as far as possible.

It did not take much persuasion to get journalists to contribute to this book because several of them are freelancers who have spent several years documenting development stories. Some have even followed the progress of sanitation in their countries before and during the two previous SACOSANs—in Dhaka and Islamabad.

The India WASH Forum has tried to get as varied a mix of contributions—from respective countries as well as both rural and urban scenarios. Perhaps inevitably, many contributions dwell on the urban situation, given both increasing urbanisation and the distances to reach remote areas in the region. Even so, this document has traversed villages, with success stories in Peshawar, Pakistan to villages in Madhya Pradesh, India where Muslim communities along with others are still subjected to the indignity of being scavengers of what is euphemistically called 'night soil'.

We have tried to illustrate the contributions with photographs from the field—some by professionals but the majority by the journalists themselves. In both cases, in the word and the image, the endeavour has been to see the human face or faces behind the scourge of poor or even abysmal sanitation.

The India WASH Forum would like to place on record its appreciation for the main financial support for this document from WaterAid, the London-based international NGO. WaterAid India serves as the focal point for the Forum and has always lent a helping hand for all its activities.

We believe that this document will serve to focus attention on this most neglected area of human development—one which suffers not so much on account of the lack of funds but rather the failure to make people aware of the need for proper sanitation and hygiene.

Darryl D'Monte
Editor

Public toilets reflect public apathy

Public toilets in Karachi, especially at the city court, are a reflection of the people's sheer civic disregard. **Zofeen T. Ebrahim** assesses the efficacy of a project launched eight years ago



Public toilets built by the government do not have a separate entrance for the women who find it embarrassing to walk past urinals in order to use the facility

KARACHI: "This toilet is really dirty, I'd rather go back to the prison and use the facility there," says 32-year-old Moiz Qamruddin, a graduate and undertrial, present at the city court for his hearing. The cells where undertrials await their turn to appear in court have toilets which are small, dark and windowless. The cell floor is dotted with globules of spit and phlegm, left over food and garbage too.

"But it's not their [prison guards'] fault," continues a visibly disgusted

Qamruddin, "It's these prisoners. Most of them are taking drugs and are hardly ever in their right mind. They read the Quran and consider themselves good Muslims, but do not follow the basic tenets of Islam – of keeping their body and surroundings clean!"

"We clean the toilet every evening," responds one of the guards, accompanying us on the tour. Pointing to the betel nut stains despoiling the place, he says, "We even have to wash the walls, inside and outside the toilet, as they get

filthy by the end of the day."

While the facility for undertrials within the custody area is in a terrible state, outside, a few yards from the gate of the lock-up are clean pay-and-use toilets. These were constructed in 2002 by the Citizen Police Liaison Committee (CPLC), an organisation originally formed in this southern port city to help tackle crime.

Designed by an eminent architect, Shahid Abdullah, these are simple and easy to replicate, using local

materials. The estimated cost of each is about Rs 250,000 (\$3,300). "The commode, wash basin and flush tank are donated by one company that manufactures these sanitary products and the plastic overhead water tank by another," explains Imran Faiz, in charge of managing this toilet network in Karachi. "The emphasis is on ventilation, to keep them free of odour," he adds.

Habits die hard

The committee works in partnership with the City District Government of Karachi (CDGK), which provides land, water, a sewerage system and electricity. Water supply to the toilet is either through a pipeline, borewell or storage tank. A single toilet block takes less than a month to construct. It's eight years now since the toilet project was launched and Faiz does not find much change in people's sanitary habits. "Using the convenience properly will only come with behaviour change, and that is possible only through education," he sums up.

A 1999 survey showed that there were only 38 toilets in Karachi, a metropolis of 16 million, of which only a few were in working order. Some had become hideouts for drug addicts or shelters for the homeless. While in Saddar, the oldest shopping

area of Karachi, women were resorting to visiting two diagnostic labs, "paying Rs 10 (12 US cents) to use their toilets on the pretext of getting their urine tested," says Rehan Shaikh, who is in charge of this toilet project.

The following year, the Committee began constructing public toilets in partnership with the city government. But in the past eight years, only 30 new units (of four toilets each – two for men and two for women) have been built. "Not one new facility has come up in the last two years," says Sheikh. He blames the city government for this and for needlessly demolishing three of these toilets while carrying out development work and widening of roads. They could have been removed and set up elsewhere, says Faiz. Those brought down included one located near a religious shrine and another at Haroon Emporium, a shopping plaza.

Recently, a petroleum company gave them funding to set up six toilets "wherever suitable", says Faiz. Among the sites at which he thinks they are most needed are two hospitals and on either side of a crowded intersection where the one that existed also became a casualty to road widening.

Maqbool Masih, the young caretaker in the city court area outside the lock-up, says between 90 to 100 people use these toilets every day, including the police, but only few pay. Ghulam Haider, a visitor, who has come to meet his brother, says, he'd rather use the walls than pay. His attitude is typical and reflects the way most people think, "Why should I pay when it is inside a government compound and should be for free?" But while men go wherever they can, these toilets have come as a relief for women.

'People should care'

Najma Saad, who has been coming to the court every week for the past two years, says "I feel these are clean, but I wish they would keep the outside area clean too." She points to the garbage, debris and the red stains of betel nut spittle. "I try to keep the place as clean as possible," replies Yaqoob Masih, a caretaker, "but even people should take some responsibility. They throw anything and everything without a thought, and never in the trash cans." The several plastic bins, provided by a charitable organisation, Seelani Welfare Trust, are hardly used.

"I use these toilets as they are clean, there is always water and no lingering odour," says Rukhsana Saleem, a policewoman. She, however, doesn't pay although there is a notice stating a fee of Rs 5 (6 US cents) for use of the facility. According to Mazhar Iqbal, a policeman, "We don't pay because we are working in the government. This facility is for us." But on days he feels generous, a tip of Rs 10 (13 US cents) may come to Masih who is too scared to ask people in uniform for the fee.

While the toilets are odour-free and fairly clean, people tend to vandalise or misuse them. "We do not keep



The typical design of a Citizen Police Liaison Committee toilet



The prisoners, chained together in groups of five or more, find it difficult not only to move in unison, but even to use the toilets

soap out in the open as these get picked up," says Yaqoob Masih. Often the valves and faucets get stolen. Few remember to flush after use and the walls are bespattered with graffiti.

A little distance from the lock-up area, there is an open courtyard, at one corner of which are toilets

maintained by the government. These are for free and open from 9 am to 3 pm. "There are six toilet cubicles, of which two are for women," says Izhar Lodhi, who works in the Public Works Department, Government of Sindh. The management of these toilets comes under him and he estimates that the government spends

between Rs 10,000-15,000 (\$130-200) on their maintenance.

Soap and water

"One thing that I ensure is availability of water and soap," he says. Nobody dares take away the soap as the caretaker, Patras Warivaram, sits inside to keep an eye on vandals. The toilets include urinals, squat pans and the western-style commode. "The elderly may have a problem squatting, and there are some who say they do not like the commode, so we have provided both the facilities," says Lodhi.

But what about prisoners who are fettered and chained in groups of eight, even ten? "We would prefer them to use the toilets in the lock-up area," says Lodhi, conceding that they are in "terrible shape," but if necessary, "we take off the chain and allow them to use the toilet, one at a time while a guard waits outside." Although most times, he acknowledges, the whole group goes inside.

Ms Shabnam Chauhan, a young advocate, says there are no separate facilities for women. "I don't like to use these toilets as we have to go past the men's," she says, and they are "very smelly". She does not know of the CPLC pay toilets. Uzma Aziz, who comes with her year-old son to visit her husband once a week, makes the child wear a disposable diaper. "It's very uncomfortable to go inside the toilet," she says. "The urinals are outside the cubicles and you see men standing and relieving themselves." She thinks there ought to be a separate entrance for women.

Zofeen T. Ebrahim is a freelance journalist who writes on environment and development issues and is based in Karachi. All photographs by author.

In the Pits

A lack of basic hygiene awareness is partly to blame for some 4,000 deaths among children in South Asia every year. Many die each day of a preventable disease like diarrhoea. To boost such awareness, the United Nations has declared 2008 the International Year of Sanitation, and the relevant Millennium Development Goal (MDG) aims to reduce by half the proportion of people without basic sanitation by 2015. Although access to improved sanitation in South Asia has more than doubled from 17% in the 1990s to 37% in 2004, according to the UN Children's Fund (UNICEF) and the World Health Organization, coverage remains low, with two out of three people having no access to basic sanitation.

This translates into 2.6 billion people (40% of the world's population) around the world without basic sanitation facilities, of which 1.9 billion are in Asia (900 million in South Asia). In Pakistan, an estimated 54% of the population has access to sanitary latrines (86% urban and 30% rural), according to government statistics. These figures conveniently mask the fact that over 150 million Pakistanis live in rural areas. A survey of sanitation facilities by Pakistan's Ministry for Environment revealed that only 0.08% of the country's GDP was spent on sanitation in 2002-2003 and 0.1% during 2004-2005. These allocations are clearly insufficient to meet development targets in the water and sanitation sector, the report says.

‘All I want is... a room with a toilet’

Women slum dwellers, with no access to toilets, are put to untold hardship. **Sayli Udas Mankikar** looks at all that has beleaguered the Mumbai Municipal Corporation’s Slum Sanitation Programme, which was based on awareness building and community participation

MUMBAI: Twenty-two-year-old Jumana Shaikh, a resident of the Govandi slum in the north-east of Mumbai, is of marriageable age. A commerce graduate, she works at the cash

counter of a supermarket. She earns Rs 5000 (\$114.50) a month, most of which goes into running the household, while Rs 500 (\$11.50) is put aside as savings for her marriage.

Her parents, both scrap dealers, jointly earn Rs 4000 (\$91.60) a month, which is barely enough to feed Jumana’s five siblings, aged between 8 and 19. Jumana hardly gets any space for herself in the small 200-square-foot room in this densely populated slum.

Despite these hardships in these congested environs, Jumana has not married. She has, in fact, rejected seven marriage proposals from post-graduates who live in bigger homes and earn more than her. The reason: All her prospective suitors live in slums whose toilets are defunct.

“That will mean getting up at unearthly hours and sitting

alongside drains, open grounds or railway tracks. I cannot do it any more,” protests Jumana.

The Govandi slum, housing around 0.65 million people, situated next to the Deonar waste dumping ground – the city’s largest – has only 15 operational public toilets. They were built under the Slum Sanitation Programme of the Mumbai Municipal Corporation (BMC) to cater to about 5000 people.

The rest, almost 100 of them, built through Member of Parliament (MP) and Member of Legislative Assembly (MLA) funds are virtually defunct. This forces women and children to relieve themselves elsewhere, rather than stand in unending queues outside community toilets from 3 am onwards.

Jumana’s father, Azeem Bhai, empathises completely. “It is very difficult for girls. My first priority while marrying away my daughter will be that the home should have an in-built toilet or at least a proper community toilet,” he says.

Like Jumana, most of the girls staying in Mumbai slums have ‘a house with a toilet’ as a top priority on their matrimonial wish list.

Health hazards

Jumana’s neighbour, Fayyaz, a 23-year-old school drop-out who works at a nearby cloth shop, elaborates on their present condition. “We get up between 4 and 5 am before daybreak in groups and squat in the open or



A typical slum in Mumbai, where open drains and uncleared garbage pose a grave sanitary threat to people living in the houses alongside

on the railway tracks. It's not only unsafe but highly embarrassing and unhygienic," Fayyaz says.

The last time when Fayyaz contracted an infection it became difficult for her to urinate for over a month. At least half the women in this slum have visited the doctor for vaginal infections or stomach upsets, caused, they say, by unhygienic living conditions.

Jumana, on the other hand, has worked out a clever way to escape this ordeal. "I go to the toilet at my workplace. At least it is cleaned with phenyl every two hours. All I'm praying to Allah for is to marry me into a house with a toilet. I don't mind if my husband is less educated or earns less," says Jumana.

"Women living in the slums are most vulnerable. In most cases this is because of the cultural set-up where older men think that it is certainly not a big deal to defecate in the open. It is time they understand that women are biologically different," says Ms Medha Somaiya, head of Mumbai University's Centre for Slum Studies.

However, authorities who implement sanitation projects cannot use social apathy as an excuse and show only occasional success in initiatives like the Slum Sanitation Programme, which was based on creating awareness and demand-driven community participation, argues Ms Somaiya.

Sanitation woes

Mumbai is notorious for having the largest number of homeless people in the world – 55% of its population of 16 million. For over a decade, Rs 1000 million (\$23 million) has been pumped into the sanitation project of the civic body but it has been able to fulfill only a tenth of its target of

meeting the deficit of 64,175 seats. There are 10,000 public toilet blocks (about 77,550 seats), half of which are the BMC's responsibility, while the rest are built by NGOs through other agencies and ministerial funds. Surveys show that only 2,000 – a fifth of the total – are functioning.

More surprisingly, ever since Slum Sanitation Programme II took off, the BMC claims to have built only 120 new seats. This is not even 1% of its target of 35,000 seats by 2012.

Achieving some goals

In 2001, when the BMC started it, it had huge targets to meet – a deficit of 64,175 seats. With the World Bank funding its pilot phase with a loan

▯▯ The people's sense of ownership in the slum helped maintain the toilet blocks. ▯▯

of Rs 430 million (\$9.85 million), the civic body was able to meet only 10% of the target, 330 blocks consisting of 6050 seats by 2005, according to official statistics.

The programme worked on a demand-driven approach where a financial contribution from the users was integrated into the programme. "The idea behind this was that the residents of the area must form a community-based organisation. It is this which then becomes responsible for the operation and maintenance of the toilet block," explains Anil Diggikar, Additional Municipal Commissioner (BMC), in charge of this programme.

The slum dwellers would contribute 30% of the construction costs and later Rs 500 per family (\$11.50) or

Rs 100 (\$2.30) per individual for its operation and maintenance as a one-time payment. This is in addition to a monthly family contribution of Rs 30 (70 US cents). It was only after the users' contributions were deposited in a bank account created by the community-based organisation that the contractor would get a No-Objection certificate from the BMC to proceed with the construction.

These toilets, built to a specific design, are lined with sparkling white tiles and bright colours that make them stand out in dingy slums. The blocks, usually with an upper storey for the caretaker, appointed by the community-based organisation, are then connected with water taps, electricity and sewerage lines by the civic body. Each toilet block contains an average 20 toilets, each intended to serve about 50 people.

A community toilet programme which enforced citizen involvement was how the Slum Sanitation Programme was conceived. Other toilet blocks that came up with the help of ministerial funds and through other agencies did not enforce this.

"The people's contribution created a sense of ownership in the slum, which forced them to maintain it. It was a slow, but sustainable, process," says Anand Jagtap, a municipal officer on special duty with the Slum Sanitation Programme. Hence, a toilet block would no longer be open to the public but to a specific community which would be given monthly passes.

"In Slum Sanitation Programme I, the requirement was socially driven and had zero political interference, so the first phase did well, if sporadically," Jagtap adds. But this was not so in the second phase



A slum dweller, like a million others in Mumbai, looking for a spot of open ground

when this idea was scrapped owing to political interference.

After 2005, for about a year nothing moved. But in 2006, the civic corporation realised that the seat deficit had doubled to 1,25,000 for the over 7 million population. The user: toilet ratio, which stood at an average of 81:1 (81 people to every toilet seat) in 2001 had increased three-fold to 263:1.

“As a matter of urgency in providing sanitary services to slum-dwellers, we then decided to go ahead with phase II with our own funds,” says Diggikar. This time the BMC’s target was constructing 35,000 toilet seats by 2012, with a view that the user toilet ratio stand at just 50:1 (50 people to every toilet seat). For this the BMC awarded contracts worth Rs 375 million (\$8.6 million) for building 4700 seats in the city by 2009.

In 2008, in view of the International

Year of Sanitation, the BMC has floated a toilet retrofitting programme as a part of the Slum Sanitation Programme. Through the Rs 260 million (\$5.95 million)-programme, the civic body aims at repairing all the defunct toilets in the city.

Why no results?

Since 2006, the BMC has constructed barely 120 new seats, with over 300 in the pipeline. It leaves us to wonder why the Slum Sanitation Programme has not really taken off the way it should have, despite being in a global city and planned by one of the richest municipal corporations in Asia.

“The reasons are clear. There is a conflicting approach in the service delivery mechanism adopted by us and other agencies. The BMC builds toilets where there is a demand and we form community-built organisations and involve community in the endeavour, which is a slow process. The others are supply-driven, only pursuing targets, thus resulting in defunct unused toilets,” Diggikar explains.

Lack of will

But one of the main reasons for the failure, point out officers, is the lack of political will. Many councillors would not cooperate because it was a citizen-driven effort. They wanted a say in the Slum Sanitation Programme and so they got the people’s contribution of 30% scrapped.

Elected councillors, who were, until then, allowed to use their yearly Rs 3.5 million (\$0.08 million) fund only on building footpaths, tiling pavements and building drains, would now be allowed to put their money into toilets.

“A fund that was restricted will now

go for the most important priority in slums. The 30% clause was not viable, slum dwellers could not afford it,” says Sunil Prabhu, Shiv Sena party leader in the BMC. The Shiv Sena has a majority in the corporation.

From 2008, it was decided that councillors would contribute 30% of the total amount that was earlier contributed by slum dwellers in the Slum Sanitation Programme project, while the BMC would arrange for the capital costs.

Beneficiaries disagree

“We will end up having the same problem of maintenance. The 30% clause was fantastic,” says Dayanand Jadhav, a founder member of the Triratna Prerna Mandal toilet block at a Santacruz slum, who is fretting over the new decision.

“Now on, there will be political interference at every stage, which will spoil the very base of the programme. The politician will decide the community-based organisation, his people, the community and use it as a political ticket,” says Jadhav. In 2007, this Mandal shared the first Deutsche Bank \$100,000 Urban Age award with the Mumbai Waterfronts Centre for initiating an urban project which made the biggest difference to citizens’ lives.

“More funds will mean more toilets but a reserve fund was the need of the day. Several MPs and MLAs have built toilets but not seen to their maintenance. This fund could have been used for operation and maintenance, paying water and electricity bills rather than building toilets which we can arrange for,” adds Abdul Sattar, who heads the Community Built Organisation Federation for Mumbai toilets.

To raise funds for maintenance, Sattar, along with other members, have proposed to the BMC that advertising on the toilet block be permitted and mobile towers allowed to be erected to earn revenue. This is yet to be okayed.

A task force

Lack of awareness is another factor bedevilling the success of such programmes. The BMC has dedicated only three staff community development officers to cover the entire slum area of Mumbai and 120 engineers for the civil works. "There is an urgent requirement of a task force of a sort which will maintain a check on these works and the progress too," says Jagtap, who leads this team of three.



Slum dwellers await their turn in the queue outside toilet blocks, built under the BMC's Slum Sanitation Programme

The BMC also blames bureaucratic difficulties that slow down completion of a project. "On many occasions there is the lack of clear-cut No Objection Certificates from land-owning authorities, such as the forest department, salt

commissioner, defence authorities, Central Government and certain private owners. This delays work," says Diggikar.

While the authorities complain about tactical hassles such as these, contractors building toilets face problems due to lack of accessibility to these facilities. "The slums are shanties, sharing common walls, and have small lanes running between them. We have to jump over water pipes and physically transport material to most of the sites, which is a labour-intensive and time-consuming process," explains Anil Bhatia, a contractor who builds toilets for the BMC's slum sanitation project.

With the Slum Sanitation Programme to implement, the BMC has permanently forgotten about the individual toilet scheme where the State Government pays the civic body Rs 4500 (\$103) to get a toilet installed in a house. But this scheme is not promoted by either the administration or the political parties. "The administration thinks this will mean legalising slums, while politicians will lose their following, having met one of the needs of the people," says Ms Somaiya.

Does this solve the problem? "No, unless the women affected take the lead in the Slum Sanitation Programme themselves, unless they take over the toilet movement," says Jagtap.

In the case of Triratna Mitra Mandal in the Santacruz slum, the men supported the women in coming forward. "We have converted our one-storeyed toilet block into an economic centre. While the toilet is based on the ground floor, on the first floor, our women's Self-Help Group runs computer classes and

Mumbai sanitation: needs and initiatives

- The user: toilet ratio now stands at 263:1 (263 people to 1 toilet seat) in Mumbai slums.
- The seat deficit is 1, 25,000 toilet seats for the over 7 million population living in these areas.
- From 2006 the civic body has only built 120-odd seats, not even 1% of its target of 35,000 seats by 2012.
- Only 20% of the total slum toilet blocks are functioning in Mumbai.
- The BMC awarded contracts worth Rs 375 million (\$8.6 million) for building 4700 seats in the city by the year 2009. An additional Rs 260 million (\$5.95 million) has been set aside for retrofitting and repairing old, defunct toilets.

provides lunches in 40 civic schools, to over 3000 students," says Ms Deepa Mohite, a member of the block.

Jumana who is always in her *naqab* (veil) is proud of Deepa and her team. But she wishes she could do the same too. Jumana is not even allowed to talk to men not connected with her work. Perhaps a day will come when her father will give her more leeway, or if Jumana finds a man who can give her a toilet in the house. But we certainly hope for the first – a revolution in social attitudes.

Sayli Udas Mankikar is a correspondent with the **Hindustan Times** who reports on civic and infrastructure issues in Mumbai. Photographs by **Kedar Bhat**.

Nepal's community-based waste water treatment: cesspool or success?

With waste water treatment facilities non-existent in Nepal, infections and diarrhoea are on the rise. While government initiatives are not always successful, there are lessons to be learnt from nature, writes **Kabita Parajuli**



The settlement tank being checked for the presence of any blockages

KATHMANDU: Kathmandu's creation stories, both mythical and scientific, feature water in a starring role. It is fitting, then, that water is frequently foremost in the mind of many in the Kathmandu Valley. A great deal of publicity – even if not institutional or governmental attention – has focused on access to water, but the discussion of safe water and sanitation remains largely neglected.

Although access to water is certainly an issue in urban Nepal, more pressing are the water-related concerns in other areas of the country. In the south or the Terai, where tubewells are often used to access water, arsenic has been found in 17% of wells. In the hill regions, the questions surrounding water have less to do with quantity or heavy metal contamination than about how easily or quickly one may access the resource. Almost without fail, the burden falls on women and girls, who may spend up to four hours a day fetching water. The subsequent toll on both

health and education is one that has been frequently mentioned, but infrequently addressed through well-established or long-term government initiatives. The common factor in these places, however, is the absence of functional sewerage and waste water treatment facilities.

Sewerage in Kathmandu

It comes as a surprise to most residents of Kathmandu that the city has a sewerage system accessible (according to government figures) to 15% of the population. But the figure is misleading: although this 15% may have access to a sewerage pipe, the end point of the pipe is not often processing plant. Technically, Kathmandu contains a mixed system of urban sewerage and drainage, used for both sewage and stormwater.

Three waste water treatment plants are purported to exist in Kathmandu, Lalitpur and Bhaktapur with total design capacities of 17 million litres per day (mld), 1.1 mld and 1 mld respectively. Even at the time of

their construction, however, the plants met only 20% of demand. The two best known plants, the Guheswori and Teku treatment facilities in the Valley, are based on traditional and Constructed Wetland Technology respectively. One is no longer operational, but the other plant remains in use, supporting 43,000 household septic tanks. It is the only treatment centre serving Kathmandu.

Septic tanks – once considered efficient and environment-friendly necessities – are increasingly less popular; recent efforts to link homes to municipal sewerage systems have failed, leading to massive amounts of untreated sewage dumped directly into the Bagmati River. A study published in 2001 estimates that in 1994 alone, the Bagmati received 87mld of waste water, 6.6% of which came from the industrial sector. Kathmandu's population has nearly doubled since then, but the treatment of waste water remains very limited, while stress on the river has increased dramatically.

Of the 300 tonnes of solid waste generated in Kathmandu in 2006, only between 165 and 210 tonnes were collected. The remainder became part of urban runoff, contaminating water sources and land. Over the past decade, municipal neglect and public apathy have turned the Bagmati, a once roaring river, into an extra-wide sewage canal.

Few systems in place

If this is the situation in the most developed urban area in Nepal, one can easily imagine the reality of "waste water treatment" and "sanitation services" elsewhere in the nation. The question about Nepal's sanitation system, as prescribed or created by the government outside of heavily



Sludge is moved to the lower end of the channel through outflow from the tank

urbanised areas, is answered easily: there are no systematised programmes in place.

According to WHO statistics, diarrhoeal diseases (16,000 deaths a year) are among the top five causes of death in Nepal. Kathmandu is one of the few cities where cholera outbreaks, after a decade of eradication, have once again become a problem. Asked about primary causes of death in Kathmandu, doctors at Patan hospital outline the seasonal nature of disease. In the summer, diarrhoeal diseases cause the most distress; in the winter, respiratory illnesses are to the fore. These are two of Nepal's top killers when it is so easy to protect oneself against them.

Technological solutions to sanitation problems have been ignored as the government lacks the funding to carry out a given plan. A lack of adequate research in this area has also hindered action.

And yet, there is hope. The WHO estimates that between 88 and 94% of diarrhoeal cases are preventable

through modifications to the environment to improve sanitation and hygiene; such changes need not be highly technical or high-cost. Improved hygiene – namely, washing hands and hygiene education – has been known to reduce diarrhoeal cases by up to 45%; access to toilets has reduced incidence of diarrhoea by 32%, and access to safe water by 39%. The absence of reliable data on mortality makes it difficult to assess the real burden of disease on Nepal's economy on either an urban or national level. However, one may be certain of the significant role of sanitation and effective waste management in ensuring the health and productivity of a population.

Community-based action

While easily accessible, large-scale treatment plants may be the ultimate goal in some areas, there are also ways for Nepal to improve its sanitation facilities on a smaller scale. Among its other achievements, the Environment and Public Health Organisation (ENPHO) has constructed and maintained the first municipal community-based

waste water treatment site in the well-preserved, historic town of Madhyapur Thimi in Bhaktapur. But if the problem with the plant in Teku is its small size, how can an even smaller project hope to ameliorate the massive problems of waste water treatment facing Nepal?

The ENPHO's successes, says Executive Director Bhushan Tuladhar, reflect models that have worked: "In Nepal, community-based systems work well – we've seen that," he says. "Decentralised systems are successful, more efficient, and they tend to have low-operation costs." Community forestry, the first such work on this scale, is often cited as a model. Part of the success of such projects is the participatory nature of their implementation, and the planning and outreach that take place before any actual work begins.

"Without community ownership, there is no way for a successful initiative," says Rajesh Shrestha, one of the chief engineers on the project and part of the staff of the ENPHO. Implicit in his discussion of ownership is this rhetorical question: Unless a community deems an idea valuable, or worthy of its investment, what is the purpose of the ENPHO's work? It does not dictate the terms of development, but works with the local population. And so, while it has chosen some areas for development on the initial basis of geography or interest on the part of a team member, it tends to work on sites where people have solicited their technical assistance.

Constructed Wetland Technology

The Sunga waste water treatment plant in Madhyapur Thimi uses Constructed Wetland Technology, which simulates the work of natural wetlands and reed beds. It looks little like one would expect of a domestic

waste water treatment facility. From the slope above, one's attention is drawn to the lush green reed beds and the flowering plants around their edges, designed thus to make it all less intimidating.

"When we first broached the idea of having a plant, people's responses were very negative. 'Not in my back yard!' they'd exclaim," says Bhushan Tuladhar. Rajesh Shrestha concurs, "There is nothing as challenging as approaching the issue of waste water treatment," he says.

In Nepal – as, indeed, in most of the world – human excrement is not a popular topic of conversation. The notion of water as sacred and human waste as entirely impure further complicates the issue. With earlier attempts in a nearby location having failed, there was strengthened resistance to the idea of treating waste. "A few years ago, another group had attempted to set up a waste water treatment facility close by," explains Rajesh Shrestha. "But they neglected to maintain the site, and eventually lost funding. As a result, untreated waste built up or was dumped into the river as raw sewage, and the land became a rancid cesspool."

The ENPHO started talking to another community. Krishna Lal Goja Shrestha, a community organiser, social activist and political leader attending the meetings, grew very interested in initiating the project in his community. "The community was unwilling to accept the facility, even when we started building," says Rajesh Shrestha. "What about the smell? It stinks!' they'd say, even before coming in. It's true – conventional treatment does release a terrible stench. But this form of treatment does not." With Krishna Shrestha's support, local residents came to trust the

ENPHO, and the site was set up. Today, he is chairman of the Sunga Water Treatment Centre Committee. Tuladhar insists that we change our attitude towards waste, both solid and liquid. "We must look at it as a resource," he says. The water from the treatment can be used for irrigating fields; the methane gas produced serves as an alternative source of fuel for cooking.

Formal and informal research in Nepal indicates that poor access to water and sanitation adversely affects women more seriously than it does men. However strong the resistance to a project may have been from a few members of the community, the benefits have won people over. Asked about their response to the facility, two men of the village grin. "It's great," one says. "We have more water for the fields, and our waste no longer pollutes the river. We're happy this is here."

This acceptance and the rapid rate at which the project is being replicated are noteworthy signs of ENPHO's success, even more significant than the technical successes of the wetlands alone. Its site managers are clearly respectful of community members, who, in turn, stop to chat as they walk by the reed beds.

The results

When built successfully and maintained, Constructed Wetlands – which mimic the action of natural wetlands – achieve a great deal of decontamination. Through physical filtration and biological decomposition they drastically reduce the biological oxygen demand and the total suspended solids of a water supply; remove nitrates, metals and petroleum hydrocarbons, 40-80% of total nitrogen, and more than 99% of fecal coliforms and pathogens. Recent

examinations show that the removal of total suspended solids and the reduction of the biological oxygen demand has been between 90-97% effective.

The Sunga facility was created in 2005, and except for one major accident, has been maintained by members of the community trained by the ENPHO. While it has the capacity to support 200 households, only 90 are involved at present, along with one private school of about 375 students. All financial support was overseen by the ENPHO, which also provided technical support and full funding for the first few years. According to the NGO, there is almost full community involvement, and a 17-member executive committee that reaches out both to it and community members.

While the committee members earn no money from their involvement, Rs 50,000 (\$669), provided by the municipality annually, helps cover the monthly sum of Rs 3000 (\$40) used to pay the caretaker, and to ensure regular maintenance of the system. Part of the beauty of the project is the ease of maintenance: locally trained individuals, not even skilled technicians, play a significant role in its upkeep.

Past mistakes, future potential

The Asian Development Bank has highlighted ENPHO's work in the past, but there is tremendous potential for the Sunga project to revolutionise waste treatment in Nepal. The first mechanised waste water treatment plant in Nepal was constructed at Guheswori. The plant cost Rs 600 million and strived to serve 200,000 people. Unfortunately, it did not succeed due to lack of efficiency and transparency on the part of its managers. Unlike bulky plans dictated by the central

government, or plants that are difficult to maintain, the reed bed treatment system of this first fully community-managed treatment centre has opened up new possibilities.

Scaling up

Subsequent endeavours have shown that scaling up works. The Constructed Wetland system at Dhulikhel Hospital, created in 1997, has earned the ENPHO a good name. Thirteen subsequent sites are now operational, including three in the Dhulikhel municipality, all of which have staff trained by it. One also boasts facilities for generating biogas. There are plans under way for projects in Hetauda and Banepa, two towns in central Nepal where local governing councils have contacted the ENPHO. Meanwhile, a proposal from the Kathmandu Municipal Commission was submitted in 1998, and while it never came to fruition, there are rumours that it will soon be revived.

With a high potential for sustainability, use of local materials, low maintenance costs and high success rates, Constructed Wetland technology is one example of successful human imitation of a natural phenomenon, and the success that results from participatory development. Like the ecosystems they support, such projects take into account multiple factors. The caretaker, for example, is the day-to-day manager of upkeep, and is nominated and selected by the community's board itself.

The project ensures community participation, and with active methods of facilitation, attempts to hear the concerns of the users. The groups also become accessible for future endeavours, address the health of local bodies of water, and support the use of other sustainable

technologies such as ecosan toilets.

Municipal planners and researchers point out the limitations of community-based projects. They say that while Constructed Wetlands may work on a large scale for agrarian communities in more rural areas, the treated waste water – which, as soon as it comes out of the vertical bed and is suitable for little more than a return to the river or fields for irrigation – has no destination. This is particularly of note since the areas producing the greatest amounts of waste water are far from the farmlands in and around Kathmandu. One possible solution is a more effective secondary or tertiary mode of treatment. Furthermore, while costs of maintaining treatment facilities on a community scale are far lower than maintaining large plants, when looking at facilities that serve equal population sizes, construction costs are comparable.

Ultimately, the Nepal government must show its resolve to improve the health and sanitation of its people. Over the decades, however, the trend has been to use community-based projects; in the future, the government should be involved in funding, but local ownership will nevertheless ensure a sense of investment. Subsequent responsibilities regarding maintenance and accountability will rest squarely on the shoulders of the community. Decentralisation, then, will not be an excuse for inaction, but the freedom to engage in greater creativity, improved partnerships and efficient action.

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A community hand pump makes a huge difference to hygiene and health

Leaving out the homeless in cities

Spare a thought for the ‘floating’ population of Bangladesh where even slums have been demolished, leaving hapless residents nowhere to relieve themselves. **Shahidul Islam Chowdhury** reports from Dhaka

DHAKA: For the countless homeless people in Dhaka, answering nature’s call constitutes moments of unrelieved agony. Shakera Banu, 32, lives under a foot over-bridge, about 500 m from the Prime Minister’s Office. “It is disgraceful for me to urinate or defecate under the open sky even if it is in the dark,” she said. “At times, I have to wait throughout the day to relieve myself late in the evening. So, to defer the urge, I had to get myself into the habit of eating and drinking as little as possible during the day as every intake brings sufferings for me by creating nature’s call.”



'Wash your hands and stay healthy,' says this poster in Dhaka, as part of a cleanliness drive

Shakera and her family came to Dhaka from Sirajganj, a central district of Bangladesh, in late June 2008 after their house was swept away by floods. They live on a footpath. The boys defecate in the open or use the few toilets at nearby markets and mosques. Dhaka, regarded one of the world's dirtiest cities, has only 105 public toilets for 12 million inhabitants. And half these toilets are either closed or unusable at present.

Slum demolition

The homeless in Dhaka have also increased because several hundred slums have been demolished in the last ten years without rehabilitation being taken into account. There is a large floating population: Many are out of work, some have just arrived in search of a livelihood. In other cities too in Bangladesh

– Chittagong, Sylhet, Khulna, Rajshahi and Barisal – there has been an increase in the number of people without shelter and sanitation facilities.

▯▯ A World Bank study says that the treatment of hygiene-related disease costs the Bangladesh government about Taka 5 billion (\$72.5 million) annually. ▯▯

Professor Nazrul Islam, chairman of the Centre for Urban Studies, Dhaka, quoting a 2005 study of theirs, said that there were about 5

million people in makeshift shelters in six major cities and of these, over 3 million were in Dhaka while the Bangladesh Rural Advancement Committee (BRAC), an NGO, puts the number of slums in Dhaka at about 5000.

Most slum dwellers have to spend Taka 10-15 (US15-22 cents) per day to buy water, unaffordable for many. In most slums, 20 to 100 families share a single toilet on payment, according to a 2002 survey by the NGO, Democracy Watch.

If they do get water it's through illegal connections, "but more than 60% of them (slum dwellers) are still out of 'toilet coverage'," according to Babar Kabir, director of the water and sanitation programme of the Bangladesh Rural Advancement Committee.

A survey carried out by WaterAid, the London-based international NGO, revealed that the world's five worst countries vis-a-vis sanitation are China, India, Indonesia, Nigeria and Bangladesh. The ministry of Local Government, Rural Development and Cooperatives, which is the focal ministry for implementing the ambitious plan for 100% coverage, formally claimed in October 2008 that 88% families in the country have already been brought under sanitation coverage.

Differing claims

When asked about the dismal state of sanitation in the capital, Dhaka City Corporation Mayor Sadek Hossain Khoka said, "More than 75% families in the city have already been brought under sanitation coverage; the problem lies with the floating population." However, according to the Unicef and the Bangladesh Bureau of Statistics, about 38% of the country's population of 150 million defecates in the open for want of toilets.

The scenario is grim because, as Dr Mohammed Mujibur Rahman, sanitation specialist and a professor at the Bangladesh University of Engineering and Technology, made clear, there is little difference between those who defecate in the open and those who use toilets in luxurious buildings, for the untreated sewage from there is being released into canals and lakes. "There is hardly any hygienic sewerage system in the country," he said, and therefore, in his estimation, only 40% of the people of Dhaka have access to safe sanitary facilities. He cited the WHO's alert about how lack of safe water and adequate sanitation is the world's "single largest cause of illness", 342 children in the country dying every day due to it.

The human costs apart, the

economic losses due to medical treatment, mortality and lost manpower have a major impact on the economy. A World Bank study says that the treatment of hygiene-related disease costs Bangladesh about Taka 5 billion (\$72.5 million) annually.

Attainable goal?

The target may be laudable –100% sanitation coverage by 2010 – but as Feroz Ahmed, a sanitation specialist and a professor at the Bangladesh

∏∏ A survey carried out by WaterAid, the London-based international NGO, revealed that the world's five worst countries vis-a-vis sanitation are China, India, Indonesia, Nigeria and Bangladesh. ∏∏

University of Engineering and Technology, said, the real challenge was to reach the floating population and the hardcore poor. "How much can they spend on sanitation when income and purchasing power are gradually reducing?" He is hopeful though of the Millennium Development Goal being realised – 50% sanitation coverage by 2015 – "as there is a desperate need for change."

With funds obtained from the government and international lending agencies over the last six years, and cheap to moderate technological solutions found, some of these targets are being achieved. But when the government claims that about 85% of the people

are using latrines, this is mere 'latrinisation' (erecting latrines to use up funds), according to Dr Mujibur Rahman.

Although the number of latrines in both rural and urban areas has increased and more water seal latrine slabs and concrete rings have been sold over the past few years, experts feel sanitation is yet to be seen as a priority at a high level. What is being done is "routine work to continue the existing programmes on sanitation coverage," Ahmed observed.

Town planners and architects concur. A town planner with the Rajdhani Unnayan Kartipakkha [Capital Development Authority] admitted that emphasis was laid on "piped water, electricity and telephone services, roads, shopping malls — forgetting that everything that we build around this would necessarily require the disposal of waste." Sanitation is often considered at the end of the process of construction, says Abrar Ahsan, an architect.

The mere installation of a toilet does not therefore translate into actual benefit. "Success must be measured on the basis of the impact [elimination of open defecation] instead of 'structured' output [construction of toilets put it]," as Dr Mujibur Rahman put it. "Hygienic practices have to be ensured to achieve health and the environmental and economic benefits of sanitation," he said, a sentiment echoed by Nazma, a village woman in Gaibandha district, too, who said, "The basic need is to ignite communities and trigger a change in sanitation practices."

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Build and break free



Kamal Kar, centre, the Indian development specialist, training activists to show villagers the visible health benefits of using constructed toilets

The inhabitants of villages in Pakistan's North have been convinced to build their own latrines, thereby reducing exposure to the numerous health hazards of relieving themselves in the open. **Rina Saeed Khan** reports on this remarkable rural initiative

LAHORE: It is only April, but already the afternoon sun is scorching in Gilgit, the capital of Pakistan's Northern Areas territory. The village we are visiting, Danyore, is located on the outskirts of Gilgit town. It is so sandy and boulder-strewn that it's both like a desert and a mountain. In 2005, the Aga Khan Rural Support Programme (AKRSP) helped set up a Local Support Organisation (LSO) in Danyore, which, for the past year, has worked hard to sensitize households in the area to build and use latrines.

A confident young girl climbs up a wooden ladder to show off a newly constructed latrine, consisting of a raised pit, supported by rocks and sheltered overhead by sacking. "It's hard to believe, but she used to be very shy when we first started work here. Now, she's helping us spread the message that everyone

in the village must build a latrine," observed an LSO activist. The construction is very basic, but at least people are no longer defecating in the open. So far, 70 households in the area have been declared Open Defecation Free and it is typically the women who have insisted that their families build these latrines.

"It is difficult work, we have made the construction out of stones, but the area is clean now and we won't be spreading diseases," explains Bibi Aman, a 'natural leader' in her community, who is encouraging all the households in her neighbourhood to build latrines. The message is slowly spreading throughout Gilgit District, thanks to the pioneering work done by the LSO, which has worked extensively in promoting sanitation. There are currently 34 LSOs operating in the Northern Areas and Chitral (which is located in the North West Frontier

Province) at a union council level. They were set up with funding from the AKRSP (through the Canadian International Development Agency). Around 30 men and women's organizations usually make up an LSO. The LSO is also linked to the local government and line departments, and provides services like vocational training and business mobilization. The idea is to operate as a central office in the union council where the local people can come with their problems and seek help – especially in poverty alleviation.

So far, 13 out of 28 villages in the area have been declared Open Defecation Free. Health and hygiene sessions have also been conducted in many schools in the area. Although the local government boys' primary school did have latrines, it did not have access to running water, so the LSO ended up

constructing a water channel to the school. Today the latrines are fully functional. "All the boys now use the latrines instead of defecating in the fields and the neighbouring farmers are really happy. The water channels are much cleaner as a result," explained the principal, Ali Madad.

The problem of open defecation in Pakistan might be embarrassing but it is immense – Pakistan is actually one of the few countries to be falling behind in providing adequate sanitation to its population. At this rate, the country will not meet the UN targets set by the Millennium Development Goals (for the year 2015). It is also an extremely dangerous problem – open defecation eventually results in causing life-threatening diseases.

We later visited a spotlessly clean Basic Health Unit in the village of Nomal, on the way to Hunza on the Karakoram Highway which connects Pakistan to China through the Khunjerab Pass. Here the local doctor told us that the main health issues in the area are stomach problems caused by contaminated water. Due to poor sanitation, most villagers have ringworm in their stomachs. TB is also on the rise due to the polluted water in the water channels and springs.

Community-led sanitation

The LSO is implementing the Community-Led Total Sanitation (CLTS) programme initiated by the Rural Support Programme Network (RSPN) based in Islamabad, Pakistan's capital city. This programme is now spreading throughout the country. "It's like a fire – it catches on immediately," explains Kamal Kar, the Indian development specialist whose initiative triggered behavioural change in villagers. Already three communities organized by the RSPN



A village girl in Pakistan's Northern Areas at her new pit latrine made of boulders

and located in the geographically diverse areas of Gilgit (capital of the Northern Areas), Kotli Sattian (in the mountains near Islamabad) and Tharparkar (in the desert of Sindh) have declared a number of villages as Open Defecation Free.

CLTS was first introduced in Pakistan in the North West Frontier Province by the Integrated Regional Support Programme (IRSP), funded by the Unicef in 2004. According to Mohammed Tahir, the Nazim (elected district official) of Mardan, who encouraged the people of his area to follow this approach, "I told people that this is in line with Islamic teaching. I am proud of the fact that my area was the first to start this work. Now 70 villages here have latrines and a clean environment. The outbreak of disease has gone down. One entire union council is Open Defecation Free. This has inspired other Nazims in the North West Frontier province. Even the *mullahs* (priests) are supporting this work."

Kar points out that this approach is effective only if the entire village agrees to build one latrine per household. Or else there will still be people defecating out in the open, spreading disease in the area. Kar then describes what he calls the "sanitation ladder" with different

levels ranging from 0-10. "Zero is basically scattered, open defecation. With our community-led approach we move the villagers up to level 1, which is your basic closed trench or pit. People dig a pit and then put a cover on it. This blocks the faecal-oral route. Then, as they see the benefits of closed defecation, they move up to more sophisticated latrines like pour flush/water seal." Kar says that there are many different models and sometimes the villagers come up with their own innovations. All these are completely subsidy-free and built by the villagers themselves.

Women as activists

In the mountains of the Punjab, in the sub-district of Kotli Sattian near Islamabad, the National Rural Support Programme (NRSP) introduced the community-led initiative in the area last year and has seen considerable success. The Kotli Sattian sub-district is located in the lower Himalayan region and is a picturesque, but remote, area with little or no impact of tourism. There are vast tracts of chir pine forest here and the land-holdings are quite small.

It is the women of the area who have actively formed the community organizations (since their husbands are mostly away, employed in the large cities of Pakistan). "Their main concern is income generation," explained Mohd Nazir, the programme's district officer for Kotli Sattian. "They come up with the plans and we support them in the implementation of the projects." The NRSP started work in Kotli Sattian in 1997, initially by organizing the local communities and then by giving out micro credit to the locals to buy livestock or set up small enterprises. Now they are working on the community-led programme since there are many cases of typhoid, T.B.

and diarrhoea in the area.

Already, 28 hamlets in the area have been declared Open Defecation Free. The villagers living in these hamlets have themselves built latrines next to their houses with no subsidies. According to Mohd Sabir, a local farmer living in the village of Kamra, "This year, none of the children got sick, especially in the rainy summer months! Cases of typhoid and malaria have also decreased. And building these pit latrines was not even expensive. We did it ourselves. Our fields are also cleaner and the best part is that people have become aware now about the link between health and hygiene." The women of the area also appreciate the latrines



Digging a pit latrine outside a home in the mountains near Islamabad

since it was a problem for them to defecate out in the open. "There was no purdah (privacy) for us. Now we can preserve our dignity and self-respect," says Zuleikha Bibi. "Also, the babies no longer catch colds since we would take them out in the open fields with us. Now, we go to the latrines next door which are covered."

There have been more than 50 training sessions in sanitation in the area, conducted by the NRSP and attended by teachers, health workers and community mobilisers. Wajid Ali Satti is one such mobiliser from the village of Kamra who has

received training from the NRSP. "At first, it was difficult to convince the people. They thought it would be too expensive to build latrines and they were just not interested. We did not get much support – and there was all this propaganda that people might receive money. So then they started asking for money. We slowly had to convince them to build latrines on their own expense. Now, those very same people who said, 'we can't do anything', want to build flush latrines instead of pit latrines! They have seen the benefits for themselves – there is less disease and there's privacy for the women."

Pioneering initiative

Kar pioneered this approach in Bangladesh in 1999 when he was working for WaterAid. He realized then that no matter how much money the NGO spent on achieving sanitation targets by constructing toilets, open defecation was still being practised. "Although the number of toilets increased, it didn't impact the overall health because some villagers would still not have access to these toilets or else they would not use them." explains Kar.

The approach was target-driven and not participatory – Kar made a number of recommendations and then began talking to the villagers about how open defecation affects their health. "I remember one man telling me, 'we might be poor but after what you have told us, we can't live like this for one more day! We will clean up our village in one month'."

Kar told WaterAid to stop giving subsidies and the results were amazing. "I let the communities decide for themselves after self-analysis. Basically, I would say, if you feel good about eating your excreta, then go ahead!" In a couple of years, thousands of villages in

Bangladesh were Open Defecation Free. The aid money was used in training activists and investing in 'natural leaders' instead of building latrines.

Kar then took his approach to India and other surrounding countries like Cambodia and Indonesia. He has travelled to over 20 countries in the region and says that this approach is spreading globally – Unicef has fully adopted it since his old boss at WaterAid, Clarissa Brocklehurst, is now global chief of Unicef. He came to Pakistan first in 2004 at the invitation of the World Bank's Water and Sanitation Project. In

“I am proud of the fact that my area was the first to start this work. Now 70 villages in this region have latrines and a clean environment. The outbreak of disease has gone down.”

Pakistan, Unicef, the RSPN and local governments are all now advocating this approach.

"Kar's approach is the best. I never believed that it would spread so fast. It really is unbelievable," says Mohd Yunus, an activist from Mardan, working for the Integrated Rural Support Programme, who was instrumental in spreading this approach in Pakistan for the first time in 2004. "Can you imagine that this approach worked in a conservative, Pathan community? When people became aware of how their faeces got into their food and caused diseases they

became so ashamed. They were convinced immediately. In fact, in some villages, it was the women who started digging the latrines themselves. They said that they did not want to wait for the men to take a decision!”

Triggering behavioural change

“The bottom line is that they are eating one another’s excreta,” says Kar, who is currently a visiting fellow at Sussex University in the UK. He is talking about the fact that most of the people living in Pakistan’s rural areas (and large sections of the cities) do not have access to proper latrines and are forced to defecate out in the open. Kar was in Pakistan recently to give training to social activists, working for the RSPN, to enable them to bring about Open Defecation Free communities.

“No, I’m not here to preach to you or to lecture you or to give you any money... no, go right ahead if you want to defecate out in the open,” he tells the bemused villagers of Gujjar Khan, located an hour’s drive from Islamabad. We have gathered together with social activists from all over Pakistan for a live demonstration of the “triggering approach to sanitation behaviour change” which has been pioneered by Kar.

He is the author of the ground-breaking study, “Subsidy or Self-respect” and the most remarkable (and in the long run, effective) aspect of his approach to CLTS is that there are no subsidies involved. The villagers end up building latrines themselves, with technical guidance from NGOs like the RSPN once they have been “triggered” by trainers who have learnt his approach. He charmed the crowd of skeptical villagers in Gujjar Khan, asking them to make a map of their village and marking each one of their houses.

“I let the communities decide for themselves after self-analysis. Basically, I would say, ‘if you feel good about eating your own excreta, then go ahead!’”

He then asked them politely to show him where they defecated by placing heaps of sawdust on the map drawn on the ground (only a couple of villagers have latrines). The open areas around the village homes, especially the nearby fields seemed to be the most popular places for defecation and soon we were split into groups to examine these fields in what he terms “the walk of shame.”

It was not exactly a pleasant walk. We soon came across piles of ordure littered all over the field. Kar did not mince any words as he pointed out the human faeces to the villagers and asked them to examine it. “I think this person here had diarrhoea – what do you think?” he asked the villagers. “He’s trying to make them aware that, ‘Look, it’s all around you, so why are you feeling shy in talking about it?’” whispers Tanya Khan, the social sector specialist working for the RSPN.

When we gather back in the village, Kar asks the villagers to calculate how much faeces they produce each day. It comes to the shocking figure of 250 kg each day! The next step is explaining to the villagers how “the waste matter comes back to us”. Kar does this neatly by asking the villagers themselves how all this human faeces dumped around their

village affects their lives. “The flies sit on it and then they come into our house and sit on the food we are preparing,” points out one young mother. “It gets into the shoes of our children and they carry it into the house,” says an old man. “The goats and chickens eat it and the stray cats and dogs carry it all over the village,” explains a young man who looks like he might well become an activist himself. The villagers agree that diarrhoea is a recurrent medical problem in the village.

Kar then asks them to calculate how much money each household spends on medical treatment. The total comes to a shocking Rs 1,40,000 (\$1,630) for the entire village.

By now the villagers are getting visibly agitated. “What do we do? Unless the government helps us what can we do? We want help.” It is at this point that Kar tells them gently, without any pressurising, about this village in Mardan (the first village in Pakistan to become completely Open Defecation Free). Each household started making its own pit latrines, spending around Rs 100-200 (\$1.5-3.0) themselves. “By building these latrines yourselves, your health costs will go down drastically,” he adds. By the end of the afternoon, the villagers are ready to give firm commitments and some promise to start digging right away. Within 15 days, 11 villages in the area were triggered into becoming Open Defecation Free communities by the RSPN’s social activists who had gathered in Gujjar Khan to receive first-hand training from Kar.

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'Toilet boy' six-year-old Biju, whose insistence on a constructed toilet paid off

ORISSA: Although it has abundant supplies of water, Orissa has the infamous distinction of being the poorest state in the country. Poverty gets exacerbated by poor sanitation and lack of access to quality drinking water as these impinge on health and also take a toll on people's productive time. The 2001 population census estimated that only 8% of the state's households had toilets. This makes it next to impossible for Orissa to attain total sanitation by 2012.

However, in about 150 villages spanning nine districts, the situation is different. Here, with the support of small and local NGOs and Water Sanitation Hygiene Promotion Network (WSPNET), communities are scripting a success story where women and children are proving to be the real sanitation ambassadors.

Boy shows the way

Biju Rout of Dhenkanal district's Khandiabandha Raghunathpur village is only six years old and well-known in the locality as the 'toilet boy'. In a state where sanitation is still the last priority, Biju demonstrated that what seem

When sanitation ambassadors take charge

Total sanitation by 2012 in Orissa may seem distant, but a small network of committed NGOs has made inroads into changing mindsets – and toilet habits, writes **Ranjan K. Panda**

like huge hurdles in acquiring sanitation are actually surmountable. The Std 1 student got his unwilling parents to construct a toilet. When his pleas went unheeded at first, he threatened to go on a total fast; he then locked himself in a room and said he would not go out to defecate any more. The reluctant parents relented.

For Biju's father Sheshadev, spending the money he earned from his small agricultural holding on a toilet seemed a waste, but for the boy, this was a matter of dignity, a commitment to keep the environment clean and stay healthy. "We never considered a toilet a necessity, especially as our village has ample open spaces which villagers used to defecate in," said Sheshadev.

"So, I tried to explain to him that it costs to have a toilet, but he surprised me with his innocent, but forceful, arguments. He wanted me to give up my habit of chewing betel nut (*paan*) and use the money saved for a toilet," says Sheshadev, who is now happy that he agreed to his son's plan and proud to be his

father. "He is now a popular boy," he adds, glad that his son derived his inspiration through an awareness drive launched by Freedom, a local NGO.

Several hundred kilometres away from Khandiabandha Raghunathpur where Biju lives, and 60 kilometres from Bhubaneswar, Orissa's capital, two ever warring villages, Durgaprasad and Deuli of Khordha district, are now united and are success stories in water and sanitation. Managing water resources was not an easy task in this water-scarce region where people were traditionally politically opposed and on a collision course.

Ironically, one of the major bones of contention between the two villages was a 50-year-old well, in the centre of the road that divides both villages, that was their only source of drinking water for a long time. A well that was once treated as sacred had become a source of conflict because as the road gradually gained in height, the well dropped lower in relation to it, causing accidents. Five people fell into it and died and numerous animals too. Now political groups were vying with

each other to take credit for filling up the well for it was becoming an issue that could threaten the vote bank, what with demands for its closure gaining ground. During the last state assembly elections in 2004, contention over the well rose again and the villagers were finally about to close it down when Gram Bharati – another local NGO – came to the village, seeking people’s cooperation in improving their water and sanitation.

Their work to rescue the well from becoming defunct first involved resolving the differences between the many divided groups, recalls Bibhuti Samantray, secretary of the NGO, which united the villages. Gram Bharati offered to restore the well by concreting its walls and platforms to preserve it as a sacred and historical monument that would benefit the community, and after many rounds of discussions, their offer was accepted.

A united community formed a Village Water and Sanitation Council. Women took the lead. The Self-Help Group, which is an active part of the Council, motivated women and also secured a loan from the State Bank of India to fund toilet construction for poor families. “Thirty toilets are now complete. We hope to repay the loan as soon as we get the reimbursement from the government and also earn some profit in the process,” says a confident Tillotama Naik, who presides over the Self-Help Group.

The twin villages have about 350 families, with a total population of about 2500. ‘Watsan’, to use the experts’ jargon, has also reached remote places. A hamlet called Durgapur – with abysmal human development indicators – has no electricity but all its houses have a toilet and clean drinking water.

In neighbouring Puri district, Kanakalata, married to a small farmer from a joint family, initiated the process of transforming hers into a clean village. Theirs was the first toilet in a village, which, a few years

later, became the first in Puri district to achieve total sanitation. But it was not a cake walk for her. While she could convince her husband, the other members of the family objected to the additional expenditure it would involve. But with support from Freedom, Kanakalata obtained her

family’s approval.

In a society where people are least concerned about toilets and most are on the look-out for ways to profit, the NGO was looking for commitment towards achieving total sanitation. It offered interest-free loans in the form of rings and covers, used in the setting up of low-cost latrines, in which the people were not interested initially.

Then Kukuma Behera, secretary of one of the three Self-Help Groups in the village, took the lead: she was the first to avail of a loan to construct a toilet. “I felt the need of a toilet and also the need to

show the way to others,” she says, in proud justification of her decision that involved spending an extra Rs 2000 [\$45] from her own funds. Others followed. “We have been given an Agrani Gram Parimal Puraskar (award given by the Orissa government to villages which achieve sanitation targets) of Rs 10,000 [\$222] for which the credit goes to the Self-Help Group members,” says the sarpanch.

Overcoming skepticism

At first glance, these case studies may look ordinary. But what is clear is that there was success to be had despite strong opposition, and women and children were the key drivers in this mission to procure safe water and sanitation for their villages. Biju Rout’s parents and other villagers were shocked at first. “We thought that the NGO has played some mischievous trick to fulfill its own targets,” says the boy’s mother, Mamata, who is now grateful for its intercession.

Gram Bharati entered the scene in a very hostile situation. The well under dispute was constructed only after both villages had arrived at an understanding, but, it was alleged, that the NGO was working for a particular political party. “Some vested interests, who were peeved at losing out on petty commissions from contractors, even spread rumours that we were spending much less than what we had got from the funding agency. Things almost became impossible to move for some time,” recalls Bibhuti. They hung on till matters improved.

“We are almost ready to bag a Nirmal Gram Puraskar (National Sanitation Award) for this gram panchayat. Three years ago, 87 per cent of people were defecating outside. In another five years, we plan to declare all the nearby

At first glance, these case studies may look ordinary. But what is clear is that there has been success despite strong opposition, and women and children have been the key drivers in this mission to procure safe water and sanitation for their villages.

panchayats Open Defecation Free," says a relieved Bibhuti.

Similarly, Freedom entered the arena at a time when there was mistrust of NGOs, people having been cheated by some. "They initially viewed us with a lot of skepticism," says Susama Pradhan, a village animator working with Freedom, but they were gradually convinced of the benefits of sanitation. People like Kanakalata set an example that got everybody moving towards total sanitation.

NGOs apart, community leaders too had a tough time motivating



A round of clean hands, with schoolchildren making hygiene a habit

others. "Biju definitely acted beyond his age and in a most incisive manner too," observes Pratap Rout, director of Friend, the local NGO that initiated the toilet campaign in Khandiabandha Raghunathpur village.

"We were dubbed *besharam* (shameless) even by husbands, family members and villagers for approaching people who were defecating in the open and cleaning up before their eyes," recalls Sulochana Sahu, secretary of the Village Water and Sanitation Council, Terahalapatna village. "Some people would even deliberately come to defecate immediately after we had cleaned the road," she adds. Now she is proud of having been part of the initiative to make their village Open-Defecation Free, and of having followed Kukuma Behera's suit in taking a loan for constructing a toilet.

The 'little more' approach

These villages have shown that total sanitation and hygiene are achievable, but, as pointed out by Chabirani Dei, an anganwadi worker who could not achieve much despite efforts made since 1996, "The credit must go to the NGOs, the network – WSHPNET – that they have formed to coordinate their agenda, and WaterAid, the London-based international agency which has funded the initiative. They have adopted a holistic approach where the initiator of water and sanitation projects has been the community, mostly women and children." Through them, the message has been successfully conveyed that to have a toilet and hygiene is a matter of pride, one's duty, and they have formed Village Water and Sanitation Councils where women, children, schools, panchayati raj representatives, almost everybody in the villages has been involved.

"Our council is very strong now and has been able to make the project a success," says Prafulla Kumar Sahu of Durgaprasad village. "People now call us to their social functions, marriages, and we feel we have really made inroads into the minds of people who were earlier reluctant to listen to us," he adds.

This reflects their newly earned standing in society. The Councils are now not thinking only of the present, but the future too, such as reversing the rapid decrease in the water table in a village. "Earlier, in a tube well, we used to get water at about 180 feet, which has now gone down to 240 feet. And for the wells, the water level has depleted from 30 to 40 feet," says Gopabandhu Naik, a member of the Council.

Another laudable feature of the project is that everyone has pitched in financially. From Sheshadev

to Kanakalata and everyone in between, each has contributed to a cause that they deemed beyond their means and priority. A least a third of the expenditure has come from the people.

The 'little more' approach adopted by this project went further than the Total Sanitation Campaign, a comprehensive programme of the Government of India to ensure sanitation facilities in rural areas with the broader goal of eradicating the practice of open defecation, and also other programmes that are presently geared to achieving sizeable and sustainable success in water and sanitation.

It has shown a way out of Orissa's currently dismal situation where more than a lakh of people annually suffer from water-borne diseases and poor sanitation and where sanitation access is available to only one of every four rural households. Orissa tops the National Habitation Survey, which lists habitations with water and sanitation facilities that revert to unserved households in time. But this example shows how drinking water security was achieved with the state's relatively adequate annual rainfall.

After all, every village has champions like Biju, Sulochana, Kukuma and Kanakalata. What they need is the 'little more' approach that organisations like Friends, Freedom and Gram Bharati have provided, with proper planning and funding advice from their network WSHPNET and WaterAid. Orissa needs champions like them to meet its total sanitation targets by 2012.

Ranjan K. Panda is a researcher, writer and development practitioner, with two decades of experience in issues such as water, sanitation, disasters and climate change. Photographs by author.

Cleaning up in Kabul



*A Sulabh toilet complex where travellers can freshen up upon arrival in Kabul city
Photograph by Anne Feenstra*

KABUL: Sewage seeps down the hillsides, runs along the road, pours into potholes and stagnates, releasing into the air a fetid stench. In South Asia, such scenes are common in run-down slum colonies, makeshift habitations on building sites and the street corners of lower middle-class neighbourhoods. But in Kabul, one comes across such sights on main streets, outside localities that would be on par with New Delhi's Panchsheel Enclave or Golf Links. Affluence is no check to the outpouring of sewage from houses into a city whose sewerage system has withstood three decades of conflict. Currently, those who can afford it, dig septic tanks, but the cheaply and hastily constructed pits often cause more problems than they resolve.

The cost of conflict

Devastated by war, Afghanistan is now rebuilding its infrastructure slowly and painfully, but its citizens still lack many basic services, including water and sanitation. According to its National Development Strategy, adopted in June this year, the country had total sanitation coverage of 12 per cent (28 per cent in urban areas and 8 per cent in rural areas.) When Afghanistan adopted the UN Millennium Development Goals in 2005, only one in three Afghans in urban areas had access to improved sanitation and 1 in 10 rural inhabitants. By 2015, the country hopes to reduce by half the number of people without access to water and sanitation.

As the capital city, Kabul was a

Sulabh International's eco-friendly toilets have worked well in Kabul, a city reduced to rubble and its sanitation system incapacitated by war, reports **Aunohita Mojumdar**

prized possession to be fought over. Rival groups bombarded the 'enemy' territories in the city with rockets and mortar fire, reducing houses, roads and infrastructure to rubble. Recovering now from the conflict, Kabul faces enormous challenges in catering to the increased demand for services.

Designed as a city for 700,000 residents before the conflict, Kabul now has to deal with over 4 million people, an influx over the last six years, consisting of refugees returning home, foreigners and those displaced by economic circumstance, even as the capacity of public utility services has become severely reduced.

Running water is a luxury for most residents, many of whom lack toilet



Dr. Bindeshwar Pathak attends to a lamp powered by biogas, which flickers for want of waste when the toilet was closed temporarily. Photograph by the author

facilities in their homes. The last National Risk and Vulnerability Assessment conducted in the country states that only 2 per cent of households had flush toilets, this rising to 9 per cent in urban areas, while improved latrines were found in 5 per cent of households and accounted for 20 per cent in urban areas. Open pits are often located close to the source of water and lead to a high degree of contamination of the water supply.

Rebuilding infrastructure

The Kabul Municipality and the Ministry of Urban Development struggle to provide services. Laying sewerage lines is an expensive business, made all the more difficult by the remnants of land mines. Traffic is chaotic and moves through the city at a crawl as more and more areas are cordoned off due to rising insecurity. The traffic diversions that would be required to lay down more sewerage lines would add to the urban chaos. Land titling, plot demarcations remain a contested issue as land has changed hands several times during successive waves of migration and new regimes.

The challenges of the mammoth task

ahead are clear from the fact that the National Development Strategy refers to the current “unclear delineation of responsibilities between ministries with regards to the water strategy”, adding that “coordination between water-related institutions remains weak.” The government plans to constitute an Integrated Water Resource Management System, but notes that “until (it) comes into effect, considerable reliance will have to be put on a project by project approach for continued investments in rehabilitation of existing systems.”

Appropriate technology

In the International Year of Sanitation, the technology used by Delhi-based Sulabh International, a sanitation method developed by Dr Bindeshwar Pathak in India – low cost, non-polluting and using waste matter to generate electricity and biogas – seems especially appropriate in restoring hygienic living conditions in Afghanistan. Sulabh, with its self-contained area for the pit and biogas digester, causes no public disruption during the construction of the project. Nor does it create effluents which need a separate treatment plant. The combination of the toilet-cum-

bathing facility is also culturally acceptable in Afghanistan where people, especially the poorer families, are accustomed to using *hamams* (traditional public baths).

Take Mohammad Younus, who earns his living selling cigarettes at the corner of Deh Afghanan, one of the busiest areas of the city, and has to be out on the streets all day. Till a few months ago, he had to use the street to relieve himself. Now, thanks to Sulabh, he has access to a well-maintained facility that, for a few Afghans, offers him use of both the toilet and bath facilities. Mohammad Khurram, owner of a photo shop in the Deh Afghanan area, and Mohamed Nasir, from a pharmacy across the road, are regulars here, having used broken down, dirty toilets in the past.

Sima Gul, who is out shopping in the area, uses the toilet to freshen up and relax, something that Afghanistan’s social customs do not allow women to do in public places. What did she use before? “The street,” she says with a giggle. Sima, however, is only one of around 25 women who come to this toilet daily. Women in Afghanistan society go out much less. The toilet complex, has, however, been constructed to ensure maximum privacy. Therefore, while the money collection counter is common, there is a barrier that shields women from view while paying. The entrances are separate too though housed in the same building complex.

At a cost of Rs 3 crores (\$0.625 m), which has come from the Indian government, Sulabh International has built five toilet facilities in the most congested areas of Kabul, adapting its technology for the first time to the country’s severe winter temperatures, which can drop to -20 deg C. The upper level of the

digester was kept 4 feet below ground level, and covered with thermocol and glass wool. As it happened, Kabul experienced one of its harshest winters last year, with temperatures falling to -25 to -30 deg C. Sulabh stayed open, giving a stream of Kabul residents their only chance to avail of a clean toilet and hot shower even as pipes in most middle-class homes in the city froze.

What's more, the biogas produced in Sulabh's public toilets helps power the lamps and heat water, a noticeable plus point since Kabul remains bereft of power for hours together.

It is only the rich who can afford to use generators, which are noisy, polluting and uneconomical. Says Zainullah, the caretaker of the complex in Deh Afghanan, "We don't need a generator here: we can cook our lunch, and users get hot water." In winter, he had about 700-800

men use the toilets, and in summer, 1200, besides those who come to perform their ablutions before prayers.

Dr Bindeshwar Pathak, the founder of the Sulabh Sanitation and Social Reform Movement in India, developed two technologies, one for individual houses, the other, for public places in non-sewerage areas, like housing colonies, high-rise buildings, etc. "Both are appropriate,

affordable, indigenous and culturally acceptable," he says, the ablutionary habits of the people of Afghanistan being similar to that of Indians. "In individual-household Sulabh toilets, there are two pits," Dr Pathak explains. "When one is full, people switch to the other. After two years, or more, when the second pit is full, the first can be cleaned, human excreta having by now converted to manure from contact with the earth alone, with no use of change agents

or chemicals. The manure, so produced, contains phosphorous, nitrogen and potassium, a good bio-fertiliser for increased agricultural productivity, or for use in flowering plants and fruit trees.

"What's also good about Sulabh is that it has a water-saving mechanism whereby the water required per flushing is only 1 to 1.5 litres per person, and the gas produced

gets absorbed into the soil. It is also economical to set up," Dr Pathak points out, the cost of installation ranging from \$10-15 to \$500, which makes it accessible to everybody. It has definite merits vis-à-vis the septic tank system, which, Dr Pathak emphasises has "found favour only with 30% of the urban population."

Senior Indian diplomat Sandeep Kumar, minister at the Indian

Embassy in Kabul, who is in charge of administering India's aid programme here, says they have been inundated with requests for similar toilets in other provinces in the country. It's "a breakthrough in eco-friendly sanitation technology", he says, which has contributed to the rebuilding of a crippled sanitation sector, given the climatic conditions in Kabul. Kumar also points out that it is one of the few projects that has become self-sustaining, generating revenues of up to 10,000 Afghani (about \$200) daily for the Kabul municipality, which goes towards its maintenance.

One of the most important components of the project was the decision of the Indian government to have an 'Operation and Maintenance' agreement which envisaged monitoring and support for a year. "This is something that is an integral part of all our projects," says Kumar. Engineers from the Kabul Municipality were taken to India for training.

Mohammad Sharif, a regular Sulabh patron, is a contented man. The former Air Force pilot's work as a freelance language teacher keeps him out of the house most of the day and he will not use his students' bathroom facilities. Now, available to him are these clean, cheap and efficient public utilities in the city.

So, while the residents are pleased with the project and the provincial authorities would like to keep it going, it remains to be seen whether such technology will be adopted more widely by the larger donors aiding reconstruction of this country.

Designed as a city for 700,000 residents before the conflict, Kabul has to now deal with over 4 million people, an influx that has taken place over the last six years, of refugees returning home, foreigners and those displaced by economic circumstance, even as the capacity of public utility services has become severely reduced.

Aunohita Mojumdar is an Indian journalist who has reported from South Asia for 18 years. She is currently based in Kabul as a freelancer.



Dyaneshwar Kohale, a resident of Ghoguldara, is glad that the villagers adopted toilet use

Taking matters into the closet

A water connection and a pit latrine, offered as a package deal, not subsidies to build toilets, brought total sanitation to Ghoguldara village, Maharashtra, writes **Sudhirendar Sharma**

MAHARASHTRA: Whenever a villager rises from a squatting position to greet a visiting dignitary, story has it that he does so to avoid being caught in the act of defecating in the open. Regularly retold, this has remained a grim reminder of the fact that one out of every two people in the world, forced to defecate in the open, is an Indian. In absolute terms, the number is an astounding 665 million – or nearly half the country's population.

“Don't count us amongst them,” contends Dyaneshwar Kohale, 48, “as open defecation is history in the entire village.” He is proud to have the village figure in the Open Defecation Free mission and of the 48 households in Ghoguldara whose efforts brought the village on the sanitation map of the country. It's

such initiatives that have brought about a decline in open defecation from 89 per cent in 1990 to 74 per cent in 2007 in rural India. A visit was made to the village a year after successful completion of the project.

Located about 5 km off the state highway that connects Maregaon and Yavatmal in Maharashtra, Ghoguldara is a tribal village with a population of 672, spread across four hamlets. Belonging to the Kolamb tribe, all the families here are undoubtedly below any poverty line one may wish to draw, and yet they wear a smile on their faces as they go about their daily chores.

Most houses, made of local materials, look broken down. Located on gentle slopes, the houses are in close proximity to the agricultural fields. A seasonal

stream, emanating from designated forest land, cuts through the village in the east-west direction. The stream and the few wells, located along its bank, remain the only source of potable water that is also used for protective irrigation.

A different approach

The sanitation revolution in the village has had to confront the long held prejudice against closed toilets. No sooner than project staff would leave after a demonstration of how they work and people would return to open defecation. Lessons imparted on sanitation and hygiene were soon forgotten: it was clear that agencies had to look beyond the simplistic notion of doling out subsidies to build toilets.

'Watsan' may be a handy term that development agencies use, but in



A house in the village, indicative of economic status

the first attempt they made in this village, the core issue of access to water was not addressed. The second attempt took the potable water route. Under the World Bank-supported Jalswarajya Project, the primary focus was the supply of potable water, and how the stream could carry human faeces from the fields used for open defecation. This triggered a favourable response, says programme coordinator S. C. Jain.

The Water and Sanitation Committee, an essential institutional arrangement in such projects, held a series of discussions to put an end to the practice of open defecation in the village. The water-sanitation connect gave renewed impetus to toilet building in the village.

But why were toilets not accepted in the past? We have other priorities, argue the villagers. Unless it is close enough to reality, the fact that a gram of human faeces contains up to 10 million viruses and can spread 50 communicable diseases — including cholera and typhoid — remains merely a slogan.

Laying down rules

Getting toilets erected was one half of the story, making people use them

had, until then, been the unresolved part. At the village council, it was agreed that anyone found reverting to old habits would be ridiculed in public and fined Rs 50 (around \$1). Also, this time, with a water connection and sanitation being provided as a package, the rule was: if toilet use was defied, the water connection would be cut. Besides, the household's suitability in availing of other government welfare schemes would be jeopardized.

Making the community accept such norms was not easy. A series of awareness activities, including corner meetings, street plays, bilateral discussions, field exposure and training led to acceptance of the idea.

Crucial question

Ghoguldara may have earned the distinction of having a toilet for each household, but are they being used consistently? Says a member of the project staff, "Children don't lie, and therefore, we ask them," five-year-old Chaitanya vouching for the fact that there has been no violation of rules.

Clearly, the villagers find it hard to stand humiliated before

peers and friends. Humiliation is, fundamentally, a questioning of perceived assumptions about oneself, and unless such questioning of beliefs and practices is done, as the people of Ghoguldara did, mere toilet construction and target setting do not bring about change.

How the low-cost model won

Action for Food Production, a national-level development agency which celebrated its ruby jubilee in 2008, implemented the total sanitation project in a few villages in Yavatmal district. "Ghoguldara has been a challenge, but its homogenous composition has been a boon," explains Jain, "it helped in defining operating principles for project implementation."

Over a three-year period ending 2007, Action for Food Production contributed extensively to capacity building of implementing agencies in 450 villages under the Jalswarajya project in three districts of Maharashtra, Osmanabad, Satara and Yavatmal. It developed pilot projects in nine villages, Ghoguldara being one of them.

The priority was containment so that communicable viruses would not travel from host to host in human excrement. With the water table at reasonable depth, digging pit latrines was most acceptable in Ghoguldara. However, community members were hesitant to have leach pits in the proximity of their houses. Cost was another deterrent. The challenge was not only to prove the efficacy of the design but make it cost-effective as well. The cheapest of the designs would cost no less than Rs 1,075 (about \$25), beyond the reach of the majority.

A low-cost model was worked on, replacing bricks with stones to construct the pit and the platform,



A toilet from the outside, an acquisition that gives pride

and gunny bags for walls and roof, giving the user the option of building the superstructure whenever they could afford it. At Rs 420 a piece, the new design has helped the village achieve total sanitation.

Cost of the toilet

Item	Cost (in Rs)
Stones (Local available)	Free
Cement (1 bag)	125
Sand	50
Chips	25
Seat	120
Labour charges	100
Total Expenditure	420 (\$9)

As the toilet becomes a part of every rural household, people are picking up better sanitary habits as well, such as keeping separate containers for water for ablutions. Hand washing has gained credibility too amongst women and children. Having a toilet now seems to be a status symbol: one family even built a leach pit some 10 feet away from the kitchen as there was no other place available.

Seeing the results

Speaking on behalf of the village women, Kalavati Kohale, 63, confirmed that their lives have become a lot better after total sanitation became reality in the village. "Safety and freedom are new terms added to our existence," she says. Linked as the toilet is to a water connection, it has considerably reduced the drudgery women endured of fetching water from a

distant well or searching for a private spot to answer a call of nature.

There are incredible hidden gains to be had too. The safe disposal of human excreta is known to reduce diarrhoea by 40 per cent, saving a million untimely deaths of children. Washing hands reduces this statistic still further. Health economists reckon that every dollar invested in sanitation can save \$7 on health costs and lost productivity. Readers of *The British Medical Journal* voted sanitation as the greatest medical milestone ever, surpassing penicillin. The people of Ghoguldara have become its real beneficiaries.

Formerly with the World Bank, Delhi-based environmentalist **Sudhirendar Sharma** is an expert on water, climate change dynamics and a critic of contemporary development processes. Photographs by **S. C. Jain**.

It's not about counting latrines



Father and son build a mud wall around a newly built pit latrine

Community-Led Total Sanitation is a movement that targets behaviour change, it is “social solidarity”, everyone united by the common goal of stopping people relieving themselves in the open. **Huma Khawar** writes about its success in Islamabad

ISLAMABAD: “They showed us the flies on the excreta, and the hens eating it. They told us these flies go and sit on the food we eat. It was then that the women in the community realised that due to open defecation everyone was eating everyone else’s faeces, and this would continue unless open defecation is stopped.” Pathani Begum from Takhat Bhai, District Mardan, 80 kilometres north of Islamabad, capital of Pakistan, was recalling her own ignorance for visiting mediapersons.

“Women and children are the worst victims of open defecation and the suffering associated with it. As a community elder, I understand their suffering and pain and they listen to me.” Pathani Begum, 65, sitting on a *charpai*, surrounded by a dozen village women, explained how she was able to, within 20 days, convince the women in all the 25 houses in her village to stop defecating in the open and build toilets. “I went, house to house. There was no concession given,” she added.

Safooran, a young 17-year-old from the same village, says it took her an hour and a half to make a toilet in her house. “When I came to know how easy it was I took a *matka* (mud water pitcher), dug a pit in the corner and placed it inside it. Next to it, I placed a bucket full of ash and a cover. My toilet was ready.”

Safooran, who got married three months ago, had a toilet in her parents’ house. She had made no demands for one when she married, expecting it to be ‘a very expensive venture’.

“If we want to change, we will have to do something ourselves. We are illiterate, but this is something very

simple to understand. We have to take charge of our lives. It’s about our children’s well being,” says Safooran. Together with other activists from her village, Safooran has worked on the Community-Led Total Sanitation (CLTS) approach in five villages, enabling them to be Open Defecation Free.

When the community leads

To the lay reader, the acronym ‘CLTS’ may seem like new development sector jargon, but it is a very important approach for those toiling in the sanitation sector. Community Led Total Sanitation is an approach that ignites a sense of disgust and shame. This, in turn, mobilises people into immediate action to improve the sanitation situation in the community, without accepting any subsidies to purchase hardware, such as pans and pipes.

The CLTS approach, targeting ‘behavioural change’, after its success in Bangladesh and India in the ‘90s, was showcased in Pakistan by Water and Sanitation Programme South Asia in a workshop in 2004. The idea was picked up by a local NGO, Integrated Regional Support Programme (IRSP), resulting in a pilot project in a Tehsil Municipal

Administration (TMA) in Takhat Bhai in North West Frontier Province (NWFP), Pakistan, about 100 kilometres from Islamabad.

Since 2004, the Integrated Regional Support Programme, as national resource agency, has been building the capacity of civil society and Tehsil Municipal Administrations in CLTS across Pakistan. As a result, due to community participation, more than 132 villages have been declared Open Defecation Free by the villagers themselves without any grant or aid.

Other parts of the NWFP and other provinces in Pakistan have expressed a keenness to know more about CLTS, which is now emerging as a major success story in the country's development sector.

Kamal Kar was the first to pioneer the CLTS approach in 1999 while working in a small community in Rajshahi district in Bangladesh. Since then the approach continues to spread within Bangladesh and has generated a great deal of momentum in a number of other Asian countries in the last five years.

"In late 2004 when I heard Kamal Kar, I was so motivated by the CLTS concept that I immediately tried it out in our district and it worked," said Shah Nasir, Director, IRSP, the first to be replicating the concept. "CLTS is focused more on awareness of hygiene and health as compared to what we were doing, building latrines without making people use them.

"We started off with one village each in five Union Councils and moved on to 30 larger size villages with 100 to 120 houses," Nasir explained. "The work is under way and we want to declare the entire Takhat Bhai Tehsil, (which has 17 Union Councils



A girl entering a recently constructed latrine in a village outside Islamabad

and 670 villages) Open Defecation Free," he added with a sense of achievement.

"Every time a village achieves total sanitation, they receive a certificate and a reward, such as a hand pump from the TMA and other non-governmental organizations working in the area," he said.

Going for the local lingo

One thing that Kamal Kar stresses is to use the local words for faeces, the people's own lingo. "They should not believe that you are there to educate them, change their behaviour or to offer any form of subsidy. The only thing you are there to do is to assist the community in carrying out their own analysis of the sanitation situation. To help them realise for themselves how sanitary or unsanitary their behaviour is and decide whether they need to change."

One cannot convince a community to stop open defecation and start constructing toilets or fixed-point defecation in a covered pit that stops the routes of contamination. The most important element that ignites CLTS is not the knowledge of health hazards, but the element of disgust, shame and the awareness of dirt and impurity. The basic idea in the process of triggering CLTS is the point when the community arrives at a collective realisation that

due to open defecation everyone is ingesting everyone else's faeces, which is going to be inevitable unless open defecation is stopped totally.

CLTS is a movement that goes beyond counting latrines. Challenging the common belief that sanitation is 'expensive' or 'unaffordable', it has become a South Asian phenomenon. According to Kamal Kar, "it is social solidarity – *bhai chara*, all working to achieve one goal: no open defecation."

Lighting a match

When Kar trains people to become activists in CLTS, he tells them, "You are lighting a match at a gas station – igniting people to change."

A National Sanitation Policy developed after a participatory process of consultation with the Tehsil/Town and Provincial Governments, as well as other civil society stakeholders, by the Ministry of Environment, was approved by the Cabinet in 2006. However, the translation of this policy into action poses a significant challenge to the Ministry of Environment.

"The Policy revolves around the incentives mechanism, while the first objective is to create a defecation-free environment," informed Javed Ali Khan, Director, Ministry of Environment.

According to Khan, provincial financing strategies for sanitation are being introduced that reward performance in the delivery of improved sanitation outcomes. "In preference to subsidising the construction of latrine facilities in households, the new strategies provide a system of fiscal incentives for local governments which deliver improved sanitary outcomes

for all the people involved in the endeavour.”

Changing behaviour

Open defecation is a common practice especially in the rural areas of Pakistan. One of the reasons for this is lack of awareness of its adverse impact on health. The mean estimated annual cost of



People learning to draw a village map to see the link between relieving themselves in the open and ill health

environmental and natural resource damage from inadequate water supply, sanitation and hygiene in Pakistan is estimated at Pak Rs.112 billion (\$1.4 billion) or 1.8 per cent of the GDP. Past interventions in the sanitation sector were either focusing only on infrastructure or just addressing the social mobilisation aspect superficially. None of the interventions in Pakistan tried to address “behavioural change” and the connection between human faeces and disease.

“Everyone is aware of the fact that poor access to sanitation (resulting in the practice of widespread open defecation) has negative health and social impacts,” comments Farhan Sami, of Water and Sanitation Programme, South Asia. He referred to the data collected from Rural and Basic Health Units in Takhat Bhai in 2005 that showed 59 per cent of the children in the entire district had suffered from diarrhoea.

“If only people would understand the relationship between unsafe excreta disposal and its health impact, leading to diarrhoea and other diseases, we can achieve total sanitation,” he added with a sense of hope.

This new concept has helped make a paradigm shift in rural sanitation through promoting the triggering approach for changing behaviour rather than hardware subsidies, addressing the collective action of the community, and incentivizing local governments for outcomes.

The missing link

Sanitation efforts contribute directly to achieving the health-related Million Development Goals of reducing child mortality and combating diseases. It is therefore important to understand the link between hygiene and sanitation for human survival, and crucially, for children’s survival.

Return on investment in water doubles with improvement in sanitation. Unsafe drinking water, combined with inadequate sanitation facilities, constitutes one of the major causes of death and disability among the poor in developing countries. According to the WHO, an estimated 80 per cent of all diseases and over one third of deaths in developing countries is water-related. In Pakistan, 19 per cent of deaths from infections are due to water-borne diseases whereas 60 per cent of infant deaths are caused by diarrhoea.

Children under five are most vulnerable. Deaths due to water- and sanitation-related diseases are the major contributing factors to the high mortality of Pakistani children. Every year, diarrhoea, resulting from inadequate and unsafe water, poor sanitation, and unsafe hygiene kills

more than 1.5 million under the age of five. Diarrhoea is a condition that is associated with more than half of all under-five deaths (and half the malnourished children in the world live in our region). Under-nourished children, in turn, have compromised immune systems and are at a higher risk for developing pneumonia – which kills more children than any other disease.

“This chain reaction illustrates that hygiene and sanitation are fundamental for child survival and development,” observes Rehmat Jan, 35, a mother of four. Sitting next to her, is her sister-in-law Khadija in her mid-twenties, who joins in. “Wonder how we never linked the two together,” she adds.

Like other South Asian nations, Pakistan also shares a joint commitment to achieving Millennium Development Goal 7, Target 10 – to reduce by half the proportion of people without access to basic sanitation. These community-led, demand-driven and outcome-oriented approaches have not only successfully overcome the problem of low demand for sanitation, but they have also delivered significant changes in collective behaviour, thus resulting in improved health outcomes for all.

If CLTS becomes a women’s movement in Pakistan, meeting the Millennium Development Goals on sanitation will be an achievable target. It means that open defecation will stop and people will not only construct latrines, but also start using them.

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Making a dent in tough terrain

Children at this middle school have access to safe drinking water and clean toilets. The slogan on the wall reads: 'Build a toilet, banish dirt'

'Total Sanitation', achieved in a village in drought-ridden Banda district, eastern Uttar Pradesh, has reduced illness and banished daily misery.

Sushmita Malaviya reports on two case studies, one successful, the other not

BANDA: There is a likelihood of Barokharkurd village in Banda district, Uttar Pradesh, being awarded a Nirmal Gram Puraskar for it is free of open defecation and, its corollary, disease. This is a significant achievement considering that the Bundelkhand region has been afflicted by drought since 2003. To convince people to opt for household latrines when 70 per cent of tanks and ponds had dried up and depletion of ground water had left thousands of hand pumps defunct was, therefore, no mean task.

Banda is situated in the Bundelkhand area of Uttar Pradesh, and its rural areas still have traditional inequalities of caste and gender

along with abysmal social indices. Village Pradhan Balwan Singh says that for the last 35 to 40 years, the sight of women walking through the village with a *lota* (container), clearly advertising their mission, had troubled him. "I would always wonder if there was a way out of this humiliation they faced," he recalls.

When the Government of Uttar Pradesh introduced Total Sanitation Campaign (TSC) in 2000, Balwan Singh grabbed the opportunity to make a difference. When he began work, only 30 per cent of the village had toilets. Today, 137,241 household latrines have been built for those below the poverty line in this division and 103,734 for those above it, says Sanjay Shukla,

Divisional Sanitation Coordinator, Chitrakoot division.

With toilets constructed – and being used – and the village becoming Open Defecation Free, the number of people falling ill has been checked. Banda district is currently afflicted with malaria, but Balwan Singh says there is no incidence of it in his village since it is now so much cleaner than before. Illness apart, there is time to appreciate the calm of an evening, free of mosquitoes, a fact acknowledged unanimously by Chunnu, a daily labourer, Panchayat secretary Dinesh Kumar and Phula Devi of the Rani Laxmi Bai Swayam Sewa Samooh.

The most grateful advocates of

the transformation are, of course, the women of the village, who have been delivered from their daily misery. There is not a single household in the village that does not have a toilet, a fact that gives Saidullah, Sahodra, Bijrani and Jumiya, considerable pride because they were able to convince many

for awareness building through hoardings and pamphlets.

However, in the same district, barely 25 kilometres away from Banda, Balwan Singh's success story has not been possible to replicate. In village Arjunah, Mahuwa Gram Pradhan Asha Dixit and her husband



Balwan Singh, Village Pradhan, listens to suggestions from a women's Self-Help Group

women members of the Rani Laxmi Bai Swayam Sewa Samooh, even those with a small house.

The privacy of having one's own toilet is a boon. Reena Bano, who has a six-year-old daughter, remembers the embarrassment well, "While trying to attend nature's call I would have to keep standing up just because men or strangers were passing by." Phula Devi finds her son, who is in Std V, happier at the local primary school, where too new toilets have been built. (See box)

Balwan Singh says that he could achieve this only because of the incentives for people living below the poverty line that were built into the programme. Apart from this, 15 per cent of the funds was earmarked

have been trying their best to promote the scheme, but with limited success.

While a divided community is yet to accept the benefits of household latrines, local sanitation motivator Vinod Kumar Mishra, says that he has been ensuring that "those who show an interest in having a latrine in their homes get one".

What often happens though, he says, is that people avail of the initial lot of bricks, cement and other materials, but don't build the latrine, or use it for other purposes, like building a bench to sit on, or to repair livestock dwellings.

Some environmental factors have also hindered the region's

Catching them young

At the Barokharkurd middle and primary schools, there has been an increase in student enrollment – from 36 new admissions last year to 59 this year – ever since the school environment has been cleaned up and mid-day meals provided, according to headmistress Vidya Devi and Pradhan Adyapika Shashi Gupta.

If earlier, the children would urinate anywhere they pleased, the school authorities have now been able to teach them correct toilet habits.

Due to the force lift system that the school has opted for, the water tank that services the toilets is connected to the hand pump. Thus, when the children use the hand pump to drink water, half the water is pumped into the overhead tank.

Another water-saving device being used here is the 30-degree inclination pan, which allows quicker flushing and uses only one litre of water compared to the 20-degree inclination pan.

These facilities have helped create a cleaner learning environment in the village school, which, together with the midday meal scheme, ensure that the children in the village are healthier, says Gram Pradhan Balwan Singh. – S.M.

advancement. Despite being drought-prone from as early as the 1970s, people were meeting their domestic and irrigation water needs through traditional methods of water harvesting.

According to a WaterAid perspective paper, "It was a fragile ecological equation where the forests helped recharging and regulating rain water flow and the vast network of tanks

and ponds captured water for use during leaner periods. The ponds and tanks also worked as recharge pits. Local communities managed the water sources thus making them equitable and sustainable.”

However, deforestation, clubbed with neglect of the traditional systems of water harvesting, has distorted the equation. Now Bundelkhand conserves less rain water than earlier. The results are there to see. First, the overall irrigation water availability came down. Then, getting drinking water became difficult. Over a period of time, this has resulted in less recharge of groundwater, which, in turn, was the main source for the recharging of tanks. With ponds and forests vanishing, thousands of hand pumps have gone defunct, making the region more vulnerable to drought, for without the capacity to conserve water, even a small deviation in rainfall causes drought.

Apart from this, the Banda-Chitrakoot region is infamous not only for its dacoits, but also its petty politics, amply reflected in villages like Arjunah, where a government scheme becomes a bitterly fought turf war.

‘Sheer hell’

On the one hand, daily indignity is still a reality for the young women of this village. Says Sidullari, “When we go out to ease ourselves, the men are already there for the same purpose. Some men sit, gambling. It is sheer hell for us.”

The other face of such suffering is illness, a cause-and-effect that is often not understood. Ramgopal, whose 10-year-old son has had fever for the past year, has been forced to migrate to Punjab to work in brick kilns and has spent Rs 10,000 on his son’s treatment. Arjunah



Handy hand pumps, equipped with a force lift, quench children’s thirst and fill the overhead tank simultaneously

resident Srikanth, on the other hand, understands that the leach pit system will yield him fertilizer in a year’s time, but he has still not got a latrine made.

Meanwhile, of the 220 people who have toilets, 80 per cent do not use

▯▯ The most grateful advocates of the transformation are, of course, the women of the village, who have been delivered from their daily misery. There is not a single household in the village that does not have a toilet. ▯▯

them while those who continue on the path of open defecation do not pay the fine of Rs 50 for the offence, says Ms Dixit. Or there are women like Leelawati who, out of sheer ignorance, say that they do not use their toilets because they fear that the soak pit will fill up too quickly.

The best of intentions sometimes cannot reach fruition for bureaucratic reasons, Ms Dixit points out, like the proviso of only one latrine per household, even if there are many members in it, or the rule that a beneficiary – even if her house has collapsed – cannot avail of the scheme a second time.

What’s more, government schemes arouse mixed feelings in people, observes Mr Manoj Dwivedi, District Coordinator, Total Sanitation Campaign, who has attended community meetings where people are willing to put their might behind a programme, but hesitate to do so.

Balwan Singh, for his part, does not have such issues bogging down his motivation. He is now focusing on the community toilet that is already under construction and is proud of the recently restored pond that has clean water due to the flash floods in the region this year. Next on his agenda is hiring a full-time sanitation worker, through funds garnered in the form of a tax from the villagers, so that cleanliness in the village is maintained.

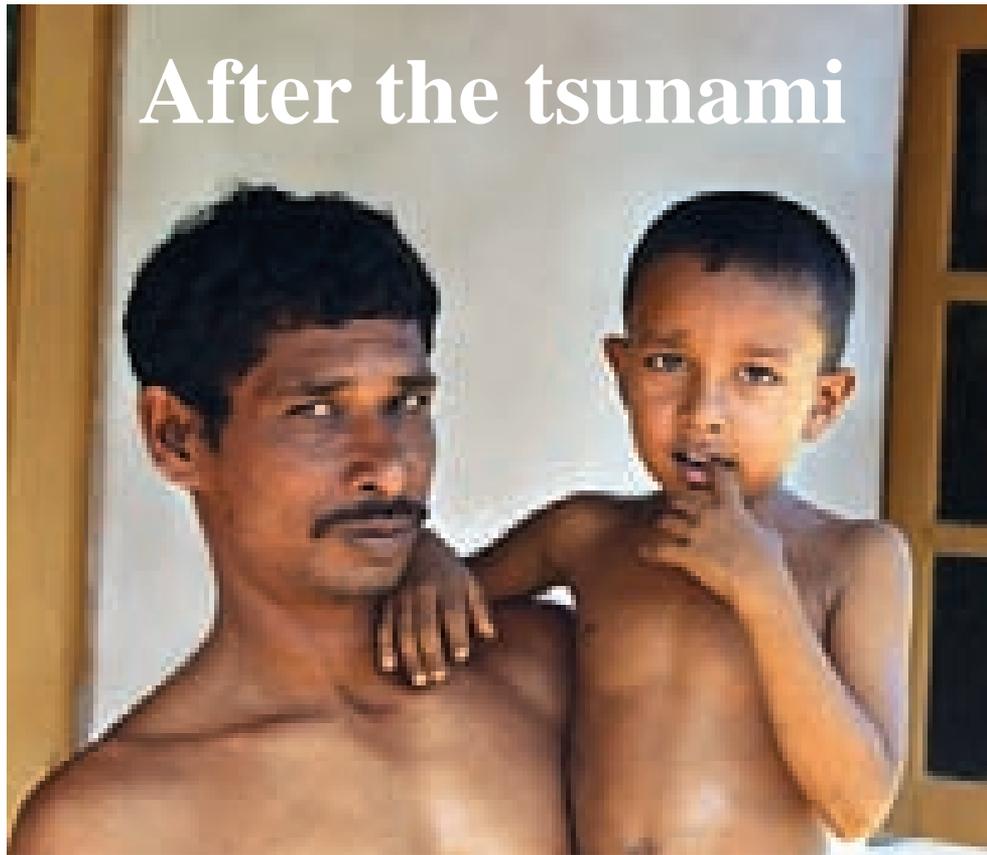
Sushmita Malaviya is a freelance journalist who has worked with the **Hindustan Times**, Bhopal. All photographs by author.

If the tsunami was bad, the crisis that followed on its heels was worse. **Feizal Samath** reports from Sri Lanka on how proper sanitary measures helped restore a newly built housing settlement from the cess pool it became in the monsoon

HAMBANTOTA, SRI LANKA: Ajit Prasanna, once a fisherman, won't easily forget the 'living hell' that his family and 100 others went through whenever it rained. Their new homes in this southern coastal village of Sri Lanka would reek.

"There was not only a stink, but I also had to take my family and run to higher ground every time it happened," he recalled, looking around at a now nice patch of green around his home compared to the scenario earlier when puddles and holes filled the yard. "It was as bad as the tsunami," said Prasanna, a victim of the December 2004 calamity that swept through thousands of homes across Asia.

When Prasanna's family and others moved into Malgampura, a newly built set of post-tsunami houses located on a hill, a kilometre away from the southern beach of Hambantota, 200 km from Colombo, rain water flooded their homes that monsoon and caused the shallow latrine pits to overflow into the yard,



Ajit Prasanna, with his son, one of the worst affected residents of the flooded housing scheme

and often, into their homes.

Thousands of new houses had been built for nearly half a million people hit by the gigantic waves that overwhelmed Sri Lanka's north-to-west coastline, with the eastern and southern shoreline being the worst hit. Some 31,000 Sri Lankans lost their lives and a total of 443,000 people lost their homes while nearly \$1.5 billion worth of property was destroyed, according to the international humanitarian agency, Oxfam GB (Great Britain). When the tsunami struck Sri Lanka's coastline, sea water entered wells and groundwater supply. Waste water from septic tanks and latrines leaked into water supply systems. Preventing an outbreak of water-borne diseases was the priority.

'The worst housing scheme' Oxfam, which has been working on post-tsunami housing projects with

another international humanitarian organisation, World Vision, and concentrating mainly on the water and sanitation needs in the new homes, stepped in to help the residents. "It was probably the worst tsunami housing scheme built. There was no plan for a proper drainage system and latrines," noted Jagath Swarnalal, an Oxfam water and sanitation engineer.

Before the team could address the faulty sanitation system, there were other things they had to contend with, such as the reluctance of fisherfolk to move inland to newly constructed homes. The government's precautionary ban on any housing construction near the beach in the event of similar disasters in the future was not received well. Fishermen who had lived for decades on the beachfront saw this affecting their livelihood and that of women employed in the

coir industry.

Angry protests notwithstanding, the residents of Malgampura and other habitations did settle down in their new homes after initial complaints about the distance. "We didn't have a choice because we didn't have a place to stay," said U.H. Susantha, a 38-year-old fisherman who still goes out to sea. "For many months we didn't have proper latrines as these were filled up with water. The smell was terrible."

Drainage and human waste disposal were major problems at Malgampura, where 80 out of the 100 homes were occupied. A hilly settlement, with no proper drains, the water flowed down the slope during heavy showers, washing away the gravel or mud, flooding homes en route, along with water from the septic pits. In half the houses, the toilets could not be flushed on rainy days due to the limited capacity of septic tanks, about 20 earth slips were blocking the surface drainage, mud flashes were inside 70 houses and five were constantly flooded. This tsunami housing scheme was reportedly the most vulnerable among those built.

Virtual stink pit

People feared sleeping indoors in case flash floods struck. Their environs smelt as bad as a cess pool. Oxfam pitched in with Rs 14 million (about \$130,000) – "not much for a project of this magnitude", says Dharme Bandara, Programme Coordinator – and mobilised the community in the rebuilding exercise to cut costs. A contour survey was done, envisioning a drainage system with retaining walls and proper sewage collection.

The villagers were involved every step of the way, they were asked to provide quotations for raw



U.H. Susantha, another resident of the area

material, dig pits (and paid since they did not have a proper income) and recommend skilled labour. Oxfam offered technical support. Septic tank capacity was increased substantially. These tanks were combined with soaking pits to absorb water. The soaking pits were filled with sand and drainage lines were cut deep to increase the

Simple pits, or grass turf was used in place of more expensive septic tanks and concrete embankments. Water did not enter the houses any more and toilets worked because of the soaking pits.

water absorption capacity. The grey water was directed to sand-filled soaking pits where the deep drains surrounding them improved the rate of absorption: this was a self-sustaining and environment-friendly waste-disposal mechanism that was completed in February 2007. Simple pits or grass turf were used in place of more expensive septic

tanks and concrete embankments. Water did not enter the houses any more and toilets worked because of the soaking pits. Functional surface drainage made it all look pleasant while earth embankments prevented earth slips.

Patches of green

Ajit Prasanna, whose home was like a large puddle, being at the lower end of the hill, is a grateful man. The plot of land, adjoining his house, once a soggy stretch, is now filled with patches of green and rows of pawpaw trees. No more a fisherman though, Prasanna recently found work as a security guard.

The Malgampura housing scheme is a rare example of Oxfam's involvement in a completed project. "This was a crisis and the people were desperate," says Bandara, about taking on the revamp initiative that called upon the expertise of a team of water and sanitation engineers.

The people may have got to live in a "clean, well-lighted place", to use Hemingway's phrase, but many women lost their livelihoods in the course of being rehabilitated. Active in the coir business, wherein coconut husks are dried and woven into rope and matting and sold in the village markets, the women haven't enough room here for such work, which has to be done in the open. Also, most of the pits on the beaches, where the coconut husks were found, disappeared due to the tsunami. Susantha's wife, for example, now runs a shop, earning Rs 750 to 1,000 (\$16-21) a day.

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'Our school has a toilet for girls, does yours?' asks this inscription on a school wall in rural Orissa

Rural schools show the way to go

Sanitation in Orissa's schools is a 'political orphan' on the agenda despite the ambitious targets being set by the government. **Manipadma Jena** details all that afflicts this sector and how school children in the rural areas could be the future advocates of change

BHUBANESHWAR: In the early 1990s, if one took a drive any evening from the seaside town of Puri to the capital city of Bhubaneswar, Orissa, the eastern coastal state of India, the headlights would fall on clutches of women and girls, faces covered, defecating in parallel rows by the highway. Today, this is not such a common sight. Girls, grown and going to school, refuse to head for the sides of roads anymore. The current sanitation slogan, 'Water is life; sanitation is a way of life' is gradually becoming reality as Orissa targets its 51,772 government and aided schools by building 70,000 toilets, with separate

ones for girls, in all upper primary and high schools.

Under the Total Sanitation Campaign, begun in Orissa in 1999, but actually accelerated only since 2004 under the community-oriented Sector Reforms in Water Supply and Sanitation, the State has achieved only 55% toilet coverage, with a dismal 13% of it with a separate unit for girls. Compare this with 70% schools in Uttar Pradesh having separate units for girls while Chandigarh tops the chart with 90%, according to a report, 'Elementary Education in India: Where Do We Stand?', brought out by the National

University of Educational Planning and Administration in April 2007. The Orissa government has set itself a deadline of December 2008 to achieve toilet coverage in all schools, but according to the implementing agency, the Orissa State Water and Sanitation Mission, March 2009 would be a more realistic deadline

Toilets in disuse

Sanitation in Orissa's schools remains an elusive goal because many of the toilets that exist lie in disuse for want of running water. Piped water is available in schools in the urban areas, but 95% of rural schools have access only to hand

pumps, from which water has to be carried 50 to 100 m every time the toilet is used.

▯▯ There is much better maintenance of toilets in rural schools, where there is a new-found pride in having access to education. And where teachers are proactive – unlike urban schools, where they feel affronted by the suggestion that it's their responsibility – toilets are kept clean. ▯▯

'No running water, no maintenance' seems to be the motto. "The government cannot clean toilets in thousands of schools, many of them tucked away in rural corners," says Prashant Panigrahi, Chief Engineer, Rural Water Supply and Sanitation Mission, Government of Orissa. "The schools will have to develop their own mechanism to keep their toilets useable," he adds, pointing out that 25% to 30% of school toilets are cleaned by the students themselves, especially in the rural areas. In fact, there is much better maintenance of toilets in many rural schools, where there is a new-found pride in having access to education. And where the teachers are proactive – unlike urban schools, where they feel affronted by the suggestion that it's their responsibility -- toilets are kept clean.

Every government school which receives infrastructure funding under the Sarva Shiksha Abhiyan is required to set up a School

Sanitation Committee, with at least one teacher monitoring the cleaning of toilets by students.

Rural versus urban

In the backward and tribal-dominated Kalahandi district's Kutrukhamar Upper Primary School, students clean their toilets and some boys even bring simple tools from home to tend a garden patch into which the waste water is channelized. Most parents are daily wage farm hands. Another primary school in Rugudipalli village in interior Kandhmal, which has only a score of students on its roster, the ratio favouring girls, has a clean toilet with sunlight pouring in. A wall of theirs facing the road bears the inscription, 'Our school has a toilet for our girls, does yours?' This was part of an impactful school sanitation campaign, launched by the Rural Water Supply and Sanitation Mission.

The scenario in urban schools is quite different. In Khandagiri High School on the outskirts of Bhubaneswar, where girls form half the 300 students, donations enabled the building of two latrines in a corridor between the school and the boundary wall. The hand pump, maintained by the Bhubaneswar Municipality Corporation, stands defunct since the last two years. The girls, who needed to bring water from the drinking water wash basin some 100 m away, never used the toilet but continued to use the narrow corridor. Soon, an engineering college came up, overlooking the corridor, and down rained crude comments on chits of paper. The toilets are now choked with broken bricks.

This school gets an annual contingency fund of Rs 3500 but none of it has gone to maintain the toilets. The Sarva Shiksha Abhiyan



At a rural school in Orissa, girls seek permission – by placing three fingers on the lips – to go to the toilet

provides funds for infrastructure maintenance up to Rs 5000 per school. Even a contribution of as little as five rupees per month from each of the 300 students could hire a sweeper.

Political interference

In the Government High School, Badagada, on the outskirts of Bhubaneswar, an NGO procured institutional funds to build a toilet for girls, raised the four walls and left after collecting costs for a completed structure. Officials point out how political interference sometimes

nullifies the mandatory third party verification of infrastructure. In other instances, private schools, despite having funds, do not build toilets, causing students untold misery. Swarnanjali Dash, a 10th Standard student in BN Girls High School in Kantapada village, Cuttack district, harboured a low-grade fever that, after months, was correctly diagnosed as a severe urinary infection. Swarnanjali's non-government high school has a semi-constructed room that has been serving as a toilet for nearly 200 adolescent girls.

While poor maintenance deprives students of toilets, sometimes the teacher fraternity keeps clean toilets under lock and key. Their rationale: too many students, no running water, toilets left dirty and unuseable. Would lessons in personal hygiene in the school curriculum help? Yes, say experts, but do's and don'ts about hand washing have to go hand in hand with provision of water in the toilets and the existence of toilets at home too. Children can be taught about hygiene in an interesting, hands-on way, with the emphasis on behavioural change and life skills acquisition which will equip them to be effective advocates of change. That's how the Total Sanitation Campaign will go far.

Unease about the subject

Transmission of knowledge can take place only if there is ease in talking about it. Khandagiri High School's 10th Standard girl students had told their mothers about the poor toilet facilities in school. At the PTA meetings, attended by three or four fathers out of 300 – but no mothers – the topic of defunct toilets has never been raised. The social unease in talking about latrines and urinals has to be dispelled before we can think of community advocacy of

sanitation by children.

With generational change coming about as these students grow up, sanitation will assume priority. True, it's the hardest to generate community demand and an attitudinal change to toilet use among families living below the poverty line. Many of them would rather use a toilet as storage space than for defecation.

▯▯ The Sarva Shiksha Abhiyan provides funds for infrastructure maintenance up to Rs 5000 per school. Additional funds can be generated through the community, or even a five-rupee contribution per month from each student would be enough to hire a sweeper. ▯▯

The urgent need to generate a community-led, broad-based sanitation movement brings us to the role of another important stakeholder, the Panchayat Raj or local self government. Faced with competing social demands, bigger vote-winning issues and the ingrained belief that sanitation is a private concern, political groups push it to the bottom of their agenda. Often, sanitation is a political "orphan". The Local Area Development funds from MLAs or MPs do not go into toilet building.

The Arang Upper Primary School,

deep inside the Bankad Reserve Forests of Banapur block, Khurdha district, Orissa, had knee-high weeds emerging from the four walls of the school toilet. Teachers explained that the headmaster, on the one hand, and Village Education Committee president, who was a Panchayati Raj office bearer, each wanted his chosen building contractor to take on the project. Both hold complementary powers and their joint consent is required for the sanction of many tasks. This standoff had resulted in work getting stalled. A lack of political will remains one of the major roadblocks in Orissa, reflected clearly in the under-utilisation of Central government funds.

Women's participation

Only 36% of households and 55% of schools in Orissa have toilets, according to the Department of Drinking Water Supply, Ministry of Rural Development. With the women's Self-Help Group movement gathering momentum in Orissa, it would make sense to involve them in the sanitation scenario. There is the documented case study of Keerapalayam, in Cuddalore district, Tamil Nadu, where women Self-Help Groups have undertaken jobs—from toilet masonry to waste management – to transform a village, and this could be replicated in Orissa. Involving the Self-Help Groups in building and maintaining toilets along with their current responsibility of managing the mid-day meal scheme could help Orissa achieve by 2015, the Millennium Development Goal of reducing by half the proportion of people without access to improved sanitation.

Manipadma Jena is a journalist and communications consultant specializing in development issues. All photographs by the author.

Converting waste to wealth



Line sketch showing separate plumbing line, and overhead tank for treated sewage, to be used for flushing toilets and watering of lawns

CHENNAI: A tanker drew up near a traffic island on a busy arterial road in Chennai. A man jumped out, uncoiled the hose and began to water the plants. In a car alongside, waiting for the lights to turn green, one of the occupants expressed appreciation for these occasional patches of green still visible in Chennai city. His companion expressed alarm: The rains were good this year, but what would happen if there was water scarcity and traffic islands were being tended this lavishly?

What many people do not know is that even when there is a scarcity, watering of the traffic medians and public parks will go on. For, it is not potable water that sustains the green lungs of Chennai city, but treated sewage water.

There are some rural households in Tamil Nadu that still practice the traditional method of ecological sanitation. The toilet seat is positioned over a deep pit, where

ash is periodically strewn to cover the excreta. Later, the dried contents are sold as manure.

With such an option being impossible in the populous state capital, Chennai, the government adopted environmental sanitation way back in 1974. The government body, Chennai Metropolitan Water Supply and Sewerage Board, or Metrowater, as it is commonly known, is responsible for the water and sanitary facilities in Chennai city.

Restoring it

All the water courses in Chennai, including the Cooum and Adyar rivers, are slow-flowing or stagnant cesspools of black water. This has led to a common public misconception that all the sewage water is let out into these water courses or the sea. This is not so. The river resembles a sewage canal because many commercial establishments drain untreated sewage from their premises into these rivers illegally. Metrowater,

Reuse of treated sewage water is saving more and more companies lakhs of rupees and keeping Chennai's gardens and traffic islands green.

Jency Samuel describes an option that makes sound conservation sense

on the other hand, treats the daily flow of sewage to remove various impurities before discharging it into the nearby water courses.

Chennai city generates domestic sewage of 480 mld (million litres per day). (The industrial areas fall outside the city limits and each industry has to treat its own waste before disposal.) The city is divided into ten zones, with each zone having one or more pumping stations. From each household, the waste water flows by gravity to the street sewer, from where it flows to the pumping station. From the pumping stations, the raw sewage is pumped to the Sewage Treatment Plants. There are nine Sewage Treatment Plants in Chennai with a total capacity of 486 mld.

At the treatment plants, the sewage goes through a process of aeration, disinfection and digestion of sludge. Eight hours after the sewage flows into the Sewage Treatment Plants, the sewage has gone through

Primary and Secondary treatments and is 95% purified. The engineers at the Sewage Treatment Plant take pride in showing the treated water in a glass test tube. It has a slight tinge of colour due to rains the previous day, but is odourless. The reason for their pride is that, no other city in India has such efficient treatment plants, they claim. The treated water with 5% impurities is let into the nearest water course.

This has been the practice since 1974 when Metrowater installed its first Sewage Treatment Plant. Till a few years ago, this treated water was used partially to cultivate paragrass, a cattle fodder. The rest was drained into the water course that was nearest to the plant. The '90s brought a change, with two industries in the public sector beginning to use the treated sewage in their plants.

Reusing it

Madras Fertilizer Limited and Chennai Petroleum Corporation Limited, formerly Madras Refineries Limited in Manali industrial town, were the first to use secondary treated sewage from Metrowater. The two companies were buying water from Metrowater. In 1987, when Chennai faced severe water scarcity, Metrowater suspended supply to these industries among others. Supplying drinking water to the residents was its priority. As a result, these plants had to be shut down for about three months. That is when the Metrowater officials suggested to the industries that they could use recycled sewage water for industrial purposes.

Madras Fertilizer Limited took up



An underground community sewage treatment plant

the suggestion and commissioned a Tertiary Treatment Plant in 1992 and a Reverse Osmosis plant in 1994. Water from the Reverse Osmosis plant is used only in boilers. The company spent a total of Rs 30 crore (\$6.45 million) to commission the plants. After Chennai Petroleum Corporation Limited, Manali Petrochemicals Limited followed suit about four years ago.

Reclamation and revenue

Of the nine Sewage Treatment Plants in the city, the three in north Chennai cater to the industries in Manali. Infrastructure cost towards pumping the secondary treated sewage water to the industries is met by the respective industry, say Metrowater officials. The latter charges Rs 9.25/m³ of treated sewage towards pumping cost.

Kadhiresan, General Manager-Site at Manali Petrochemicals, says they had to buy water from Metrowater earlier, at the rate of Rs 60/m³. Now the company buys 1500 to 2000 m³ of treated sewage per day. They also buy the reject – the waste water from the Reverse Osmosis plants of the two industries to the tune of 1500m³/day – as their refinery's metallurgy can withstand the impurities. While Chennai Petroleum gives its reject free of charge, Madras Fertilizer Limited recovers the pumping cost. The reject is pumped through pipelines laid for this purpose.

At Manali Petrochemicals, the cost of the treated sewage and further treatment processes would amount to approximately Rs 20/m³. The company saves more than Rs 40 lakh (\$85,000) a month by using treated sewage. Kadhiresan adds, "Indirectly, our company saves 3500m³ of fresh water a day. The reject from two companies is reused, reducing the level of impurities in the discharge water."

Though 486 mld of sewage is treated every day, only 36 mld is utilised by industries. N. K. Kuttiappan of L.V.K. Enviro Consultants says Special Economic Zones (SEZs) and industrial clusters can make use of treated sewage. But the infrastructure cost towards further treatment seems to be a deterrent. P. Gnanasambandam, Deputy Manager, Process, at Madras Fertilizer Limited, stresses on the benefits, such as availability of pure water and the possibility of more cycles of usage. As the quality of water is better after treatment, maintenance cost of machinery is reduced.

Supplying a total of 36 mld of treated sewage to three industries, Metrowater generates a revenue of Rs 10 crore (\$2.15 million) a year. Besides the treated sewage being supplied to the said three industries, Metrowater supplies raw sewage to GMR Power Corporation, a private

power producer, at a cost of ten paise/m³.

As for watering of lawns in police department offices, public parks and traffic islands, maintained by the Corporation of Chennai, Metrowater supplies 0.5 mld of treated sewage water free of cost. As the destinations are scattered over the city, the treated water is transported in tankers from two Sewage Treatment Plants in central Chennai.

Environmental benefits

The treatment of sewage leaves a sediment known as sludge. Kadhiresan says the sludge in the Manali Petrochemicals treatment plant is meagre and hence backwashed. The Sewage Treatment Plants of Metrowater produce 100 m³ of sludge per day. As Metrowater has vast reserves of low-lying land, the sludge is used for filling it up. It is excellent manure and Metrowater is willing to give it to farmers free of cost. But as cultivable land is less around Chennai and transportation costs are greater, so far there have been no takers. Gnanasambandam says they use the sludge from their treatment plants as manure for the nearly hundred coconut trees on the premises of Madras Fertilizer.

During digestion of the sludge, biogas containing about 65% methane, 30% carbon-dioxide and a small amount of other gases, is released. As methane has high energy value and is also a greenhouse gas, it is used as fuel to generate electricity. In the four Sewage Treatment Plants that were constructed within the last few years, electricity is produced, using methane as fuel. This has not only prevented the greenhouse gases from being released into the atmosphere, but has made the four Sewage Treatment Plants self-

supporting for their electricity needs. Metrowater officials point out that 2kWh of electrical energy can be produced from one cubic metre of biogas. This enables Metrowater to save Rs 42 lakhs per month (\$88,660) on their electricity bills.

Using treated sewage can save water at source to a minimum of 40%, points out Kuttiappan. In the case of Chennai, 36 mld of treated sewage to industries translates as reserve availability of 36 mld of potable water. If the ten corporations in Tamil Nadu, where piped sewerage systems are going to be introduced, adopt reuse of treated sewage, it

Builders should take a conscious decision to treat sewage within the premises. Sewage can also be reclaimed at source instead of pumping it to a Sewage Treatment Plant.

would mean an indirect saving of potable water and a lesser burden on the sewerage network. Kuttiappan opines that sanitation improvement should be planned along with industrial development.

Waste as a resource

Sewage can also be reclaimed at source instead of pumping it to a Sewage Treatment Plant. In multi-storied residential buildings and apartment complexes, sewage can be treated and reused within the premises. Kuttiappan says that waste water from kitchens and bathrooms, known as grey water, is no less than 40% of the total supplied water.

After treatment this can be used for flushing of toilets and watering of gardens.

“With water shortage becoming more acute by the day, we have to think of alternatives. Technology has improved so that we are able to utilise waste water to the maximum extent possible. But in a country like India the mindset has to change,” says Ms Reeni Cherian, an environmental engineer and educator.

A Metrowater official points out how in California, Florida, Sydney, Adelaide, Singapore and Japan, treated waste water is being injected into reservoirs that supply potable water. The waste water gets diluted since it gets mixed with the water in the reservoir and rain water. Then it goes through the usual treatment procedures before being supplied as potable water. This process is known as Reservoir Augmentation or Indirect Potable Use. He adds, “In another 30 years, Chennai city will need to use waste water indirectly to augment its drinking water supplies.”

Just as the government of Tamil Nadu made rain water harvesting mandatory in every building, so too, it seems, will Sewage Treatment Plants become a requirement. Ms Sulochana, an environmental activist, suggests that builders should consider treating sewage within the premises. “They should not think only of the cost factor, but of the environmental and long-term implications as well,” she adds. As Ms Cherian says, “We should stop thinking of sanitation as a problem and start counting the waste as a resource.”

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Local governance has changed nothing

Garbage overflows from a roadside bin in downtown Peshawar

The devolution of administrative powers to local bodies in 2001 was meant to strengthen civic infrastructure. **Mohammad Ali Khan** shows why this has not improved sanitation for the people of Peshawar

PESHAWAR: Streets littered with garbage, choked sewerage lines, overflowing waste bins and open defecation continue to be permanent features of the lives of over 20,000 people who live here. "I don't see any big difference...the cleanliness and hygiene are as poor as they were before the introduction of the local governance system," says Ghufuranullah, a resident of Sarbulandpur, a small village located a few kilometres from Peshawar, the capital of Pakistan's North West Frontier Province. Construction of drains, an efficient system of waste disposal, which were burning issues before the creation of local governments, remain so.

"We are still living in a hazardous environment."

Pakistan's basic administrative structure underwent massive changes in 2001, when the former dictator, Pervez Musharraf, initiated the devolution of powers to local bodies, repealing the earlier system of 1979, introduced by another dictator. Under the new system, Tehsil and Municipal Administrations (TMAs) and Union Administrations (UAs) were created through the promulgation of a Local Government Ordinance (LGO).

An unplanned move

The devolution plan, say its supporters, was introduced to

improve service delivery in matters of basic civic infrastructure, using greater involvement from public representatives. The plan brought in around 80,000 public representatives at three different tiers of governance, even while billions of rupees, both from the public exchequer and donors, were being spent on betterment projects, areas of sanitation included.

"The new local government system increased the people's representation, but it did not make any difference to service delivery, particularly in sanitation," says Naveed Khan, a political observer. Under the new governance structure, the TMAs were made into corporate



Sewerage water and rubbish are a noxious sight not too far from the Children's Hospital for Infectious Diseases in Peshawar's Haji Camp area

bodies and mandated with provision of all sanitation-related services – from planning to execution and maintenance of sewerage, drainage and waste disposal-related projects. In the seven years that the system has been in place, not a single TMA can be cited as a model for sanitation services, he laments.

Official statistics suggest that in Pakistan, about 91 million people lack access to improved sanitation, half the schools do not have toilets and the total annual cost of diarrhoeal diseases alone is estimated between Rs 55 billion to Rs 84 billion (\$785 million to \$1.2 billion). Even though 70% of Pakistan's population has access to some kind of toilet, less than 40% of these are useable.

Punjab is considered the resource-rich and most populous province, but still 80% of its people do not have any form of solid waste management. Household access to drainage is 65%, but to covered drains less than 4% in rural areas. As a result, the prevalence of water-borne diseases is common and one of the major causes of high infant and under-five mortality rates.

Unwise practice

The poor hygiene awareness of

individuals is reflected in a broader failure to manage the risks of contamination of food and drinking water within the household and the community. Potentially, an even greater concern is the widespread practice of connecting toilets, septic tanks and industrial waste directly to open drains. This greatly increases the risk to the general public, especially children, and sanitary workers who empty these drains.

▯▯ The new local government system has increased people's representation, but not improved service delivery in sanitation, ▯▯

This mixing of 'grey water' with 'black water' in open drains also complicates the treatment process and limits the ability of the grey water to be safely utilised for irrigation or recharging of ground water aquifers.

Service providers believe that the biggest anomaly in the current

system is eliminating the rural/urban divide of the Union Councils, which is promoting regional imbalances in terms of infrastructure building and service delivery. The local bodies system of 1979 offered a rural and urban divide as every TMA was free to undertake uplift initiatives according to the needs and socio-economic conditions of a particular locality.

Historically, TMAs with urban areas had both infrastructure and sanitation services, whereas those with rural areas were only responsible for building the infrastructure with no services. Under the Ordinance, this rural and urban divide was abolished mainly to bring the rural areas on par with towns. But TMAs covering rural areas did not get adequate funds to bridge the disparities, says Bakhtiar Muhammadzai, a Tehsil Municipal Officer.

Shortage of staff

The sanitation staff, he says, was mainly recruited in urban areas. So when the government ended the rural and urban divide the TMAs with more rural areas were affected. "Since the TMAs are not in a position to recruit more staff, meeting unified sanitation standards is not possible," he explains.

A lack of adequate resources for the TMAs, which are the main service providing agencies under the devolved system, is also a major impediment hindering effective service delivery. Under the local bodies system, all the resources have been channelised to districts, whereas service delivery is the job of TMAs who find themselves restricted in their capacity to invest money in sanitation.

Most of the TMAs, with a poor financial base, depend upon grants



Sewerage seepage remains an unresolved problem in Peshawar

from the provincial governments. A major portion of this is spent on non-developmental activities, such as salaries, electricity bills and other administrative overheads. A small portion is set aside for developmental activities out of which sanitation gets the lowest priority.

Similarly, operation and maintenance budgets for most of the TMAs is usually around 15% of their own resources, which is insufficient to ensure sustained and quality operation of the existing assets. In some areas, over-staffing of TMAs consumes a major part of their budgets, leaving very little for any developmental work.

Before devolution, the TMAs were able to independently raise revenue for delivering sanitation services and collect different taxes.

The Ordinance defines three main sources of revenue for the TMAs, which includes their share from the Provincial Finance Commission, a body which distributes resources among provinces and districts, 2.5% general sales tax and their own revenues.

Under the Ordinance, the TMAs may raise revenues through taxes, but in practice, it is done by the provincial government. Since imposing taxes is not a popularity-winning measure for elected representatives, none of the TMAs were imposing a tax or adopting innovative approaches to enlarge their resource base, justifying the stance of provincial governments to collect major taxes on their behalf.

Opportunity for change

Even though local government reforms present substantial

organisational challenges, they also provide a unique opportunity to change the way services are planned and delivered, which has not been exploited yet. Under the Ordinance, all three tiers are responsible for the preparation of annual development plans, whereas long-term planning for municipal services is the job of the TMAs.

At the moment, planning is not proceeding along the lines stipulated in the Ordinance. The focus is on the compilation of project lists which does not amount to planning, as there is no evidence of a vision being developed for district-wide development. The local bodies do not coordinate plans, which should have been an integral part of the reforms.

There is no link between the district, Tehsil and union levels which

often causes duplication of work, resulting in wastage of much needed resources.

It is evident from the current practices that no proper planning is being undertaken at the TMA level as the annual plans only reflect the development component of the budget. "The planning process is geared more to patronage and projects instead of delivery of quality services," says a study conducted in 2006 to assess the working of TMAs in a post-devolution scenario.

For example, it says that a Tehsil Nazim, administrative head of the Tehsil administration, in NWFP, once tried to develop a budget based more on need than on equity. Some disgruntled councillors went to court and were granted a stay. Thus, the imperative of equitable contributions took priority over a laudable effort at innovation, the study noted.

A political issue

Over the years, it seems that investment in sanitation has become a political issue, for actual prioritisation appears to be based more on political patronage than community need. The focus of planning becomes the designing of projects, not the provision of quality services. Ideally, sanitation schemes should be identified and prioritised at the Union Council and TMA levels, but schemes are also selected and executed at district, provincial and federal levels as well as through vertical programmes. This results in significant competition between politicians at the different levels, which affects service delivery down the line.

Sustainability of sanitation projects and schemes remains a missing link in the current local governance system, says Dr Hamaad Owais Agha, a senior government official

and governance sector expert. He explains that without adequate operation and maintenance funds, municipal assets are on the verge of collapse, causing flooding, polluted water, epidemics and misery for poor citizens.

"Ownership and accountability are two critical things, which the TMAs lack," says Dr Agha. "The TMAs, being regulators, should enter into contracts or agreements with providers, such as Union Councils, to operate and maintain infrastructure on their behalf – and make the necessary funds available to them."

Uplift schemes, incorporated in the Annual Development Programme, should also have additional financing for running the facilities for at least five years after their completion. "This will improve the link between investment in creation of new infrastructure and operating and maintenance," Dr Agha says.

For effective service delivery, he believes that administrative powers should rest not with the elected representatives, but only with the Tehsil Municipal Officer and government officials, who can thus be accountable for everything, they being government servants. (The TMA is comprised of both elected people and supporting government officials. The Nazim, an elected person, is head of the administration. The Tehsil Municipal Officer is the principal executor of decisions taken by the Nazim and council, and, as a government servant, can be held accountable for delivery of services if given the authority.)

Who is responsible?

Many believe that service delivery in the post-devolution scenario has been affected because the devolution process has not taken

place properly. "The state of sanitation has deteriorated in the context of incomplete devolution," remarks Mark Ellery, head of World Bank's Water and Sanitation Programme. "Although devolution potentially clarified roles and responsibilities, the situation is that the contested state of devolution has led to greater institutional confusion – 'who is really responsible for what' – and therefore, greater focus on agencies fighting politically for power rather than focusing on delivering services." This is further compounded by the fact that citizens do not have the information with which to pin responsibility.

The local government is a provincial subject, according to Pakistan's 1973 constitution, but it was imposed on the provinces. So this system lacks an inbuilt ownership which was how service delivery got affected, says Ellery. The federal government, in his view, should only play the role of a facilitator by giving grants and incentives to the provinces, thus leading service delivery.

"It should allow the provinces to amend the existing local bodies system according to their particular situation. This will ultimately create ownership of the system." Provincial governments, he notes, should clarify what is expected of service providers. Rewards should be awarded to local governments for the delivery of improved sanitary outcomes. Also, the provincial governments should partner with NGOs and civil society organisations to trigger a sanitation movement from the lowest rung up.

Mohammad Ali Khan is a Peshawar-based staff correspondent for **Dawn**, who writes on development, the economy and local governance. All photographs by the author.

Community-run biogas plants in Galle, southern Sri Lanka, have made garbage golden and taken the stigma out of human waste. **Nimashi Amaleeta Fernando** on the many facets of this transformation



Recycling can smell sweet

A grimy public latrine in Galle that will soon become a community biogas plant

GALLE: I was not feeling exactly at ease. Armed with camera and notebook, we were going to inspect a community toilet in Galle district, southern Sri Lanka, making our way through a lane so narrow that the two of us could hardly walk abreast. "Here live some of the most notorious people – drug dealers, sex workers and all sorts of queer characters," I was told in my ear.

The lane opened out on to an unsightly area, crowded with houses in a variety of sizes. A couple of women stood at a public tap, washing linen and bathing their children. Discarded garments and undergarments were strewn all around. The cemented floors were cracked and the water pipes leaking. The men, clad in shorts, chests adorned with tattoos and

silver jewellery, gathered around us, demanding to know why we were there.

We told them. We were pointed out a high wall just beyond the public tap, with 'Public Latrine' inscribed on it in large letters. "This public latrine will soon be converted into a biogas plant," my instructor, Chatura Weliwitya, explained. Weliwitya is the president of Help-O, an NGO based in southern Sri Lanka. Help-O is famed for its community services, particularly related to garbage and sewage management.

Sewage disposal has long been a problem in many parts of Sri Lanka. Until now, it was pumped into the sea or uninhabited land. This, however, was becoming increasingly difficult due to population growth and urbanisation, and affecting

most the sidelined communities, lacking basic amenities and proper sanitation.

Help-O initiated a programme that provided a simple solution. Household cesspits were turned into biogas plants wherein the sewage was allowed to be digested by microorganisms for biogas generation. Biogas has many useful domestic applications, particularly as cooking gas and power generation. Conversion of organic (biodegradable) waste into biogas is not novel to Sri Lanka. However, these community-run biogas plants happen to be the first of their kind in the south Asian region.

Biogas is actually a composition of several gases, like methane, carbon dioxide and hydrogen sulphide. An adequate composition

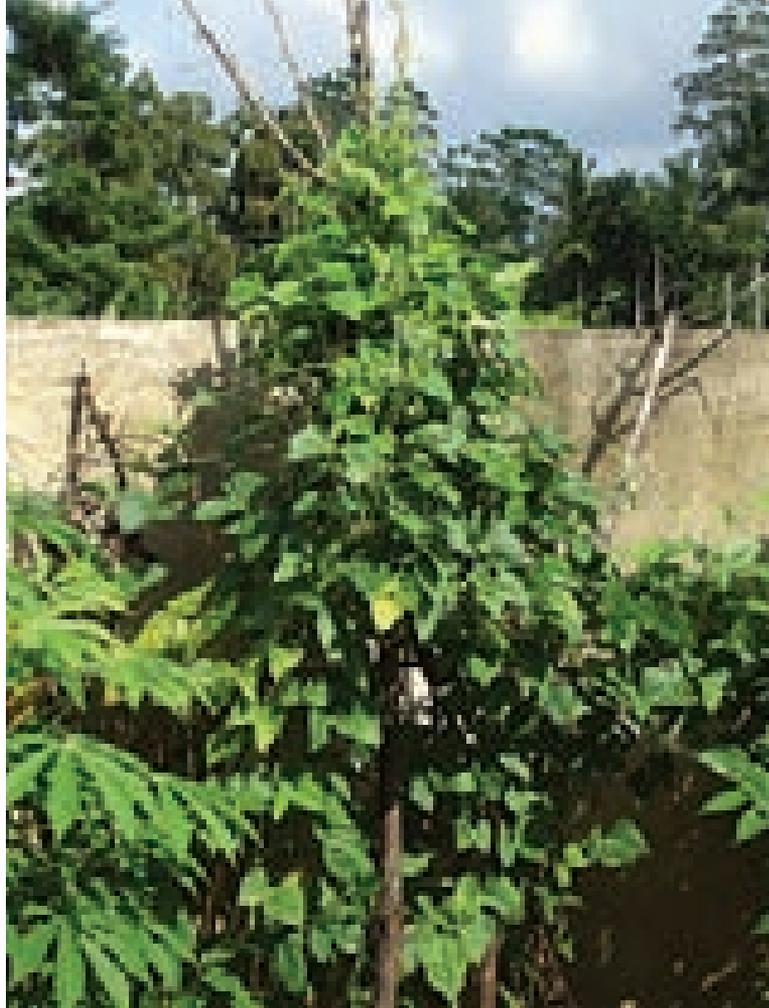
of biogas requires 55-75% methane, 30-40% carbon dioxide and 1-5% hydrogen sulphide. Although biogas is produced from organic waste, not all organic waste can be used to produce biogas. Waste from markets, kitchen waste and sewage are ideal for the purpose.

The digestion of organic waste takes place in a compartment known as the digester. It is usually built underground, and has cylindrical walls and a dome-shaped roof. The capacity of the digester varies from 8 cubic m to 60 cubic m. The smaller ones are more common and more practical. A digester of 8 cubic m is enough to support a family of five, operating on a daily basis. The cost of such a plant is usually around 50,000 LKR (\$500).

From shock to awe

The use of organic matter, such as kitchen and market waste, to generate biogas is widespread within the country. But the use of human waste for biogas generation is not that common. "This is because of the stigma associated with human waste," said Weliwitiya. "People hesitate to have meals cooked with gas generated from human sewage. Fair enough. Therefore a lot should be done to change the perception of people." For him, charity began at home. He initiated the revolutionary sewage-biogas campaign by building a plant in his own home.

Neat rows of lush vegetables and greenery speckle his garden.



Plants flourish due to use of a fertiliser, a by-product of biogas generation

The soil was hard and apparently infertile, but what he sowed flourished. "These are telling indicators of improved soil fertility," said Weliwitiya, pointing to a heavily fruiting pawpaw tree near his biogas plant that looked as if it would collapse under the weight of its own produce. "These trees are nourished by a liquid fertiliser, which is a by-product of the biogas generation process. This fertiliser has awesome properties," he continued. "It is rich in plant nutrients, promoting germination, roots and flowers, and also works as a pesticide."

He pointed to yet another pawpaw tree close to the parapet wall that was full of flowers when for a long time it had neither flowered nor borne fruit. A creeper, blighted by insects, was rid of them upon use of the fertiliser, which is now being tested to scientifically ascertain its

'apparently magical' qualities.

The gas generated by the biogas plant is transported via a pipe to a biogas stove in the kitchen. The gas gives off no odour whatsoever. Biogas behaves like liquid petroleum gas (LPG) when the burners are lit. The Weliwitiya household depends solely on the sewage biogas plant for daily cooking. They get free gas for cooking and organic manure for home gardening. A remarkable achievement, by any standards!

Extending the reach

The tangible success of Weliwitiya's sewage-biogas experiment encouraged him to diversify the endeavour into community sewage-biogas programmes. Accordingly, a few deserving communities in Galle were selected to implement the community-owned sewage biogas plant experiment, and today they own these plants completely.

The success of this venture is double-faceted. On the one hand, it enables communities to manage the sewage disposal issue, and on the other, it generates renewable energy for domestic applications.

A leading government hospital in Galle too has adopted sewage biogas plants. The gas generated hereby is used for cooking. At present, there are four cookers in the hospital, fuelled by biogas. And there's the biogas plant, soon to be constructed near the community

toilet we had visited.

Garbage transformation

Using sewage for biogas generation in Galle is actually part of a larger story. It is a secondary objective of a project known as the Community Biogas Programme, originally concerned with generating biogas from solid waste via community-owned plants.



A community-owned biogas plant, the four yellow pipes providing gas to four houses close by

The need for solid waste management in Galle became a priority only in the aftermath of the tsunami in 2004. Galle was one of the worst hit districts in the country. The displaced families were sent to 'tsunami housing schemes.' Unplanned and speedily executed, these were typical attempts at bringing about recovery in the short term. Various problems, unforeseen during the construction phase, started cropping up, the paucity of proper methods for waste and sewage disposal being the most prominent among them.

Help-O now came to the fore to find sustainable solutions to the

garbage problem. The pilot initiative kicked off in six selected tsunami villages in Imaduwa, Galle, in 2005. Initially, this village had no proper waste disposal practices at all. Help-O started out by distributing compost bins to 106 families and the technological know-how to maintain them. The programme was well received. Additionally, 220 bins were distributed to selected vegetable, fruit and fish markets and stalls in Galle.

As time elapsed, Help-O understood that the manufacturing of compost was not the most practical solution to circumvent the garbage crisis, particularly in grassroots communities. Compost was only manure, and it, in the long run, rendered little service to the smaller communities unless it was sold on a large scale. The initiative of managing garbage was therefore diversified.

Accordingly, Help-O embarked on another project, commonly known as the Community Biogas Programme. They piloted many small-scale community biogas plants for those hit hardest by the garbage problem. Efforts were directed at turning garbage into biogas for household energy applications. The first of the plants was constructed in the village Samagiwatte of Galle. Six of them were commissioned in the first attempt, and each plant sourced gas for four or five houses, located in proximity to the plant. The gas is mainly used in cooking.

The project has greatly expanded now. There are nine plants operating at full capacity and they service 44 houses in total. Thanks to the endeavour, the many markets, streets and neighbourhoods in Galle are free of garbage. Even more surprisingly, many communities are persuading municipal garbage

trucks to unload waste right at their doorstep so that it can be sorted and fed into their biogas plants. The usage of sewage for biogas generation is the latest extension to this programme.

The programme has been acclaimed by the Central Environment Authority and also receives support from the Ministry of Environment and Natural Resources and local government offices in Galle. The project is administered through the United Nations Development Programme (UNDP), Sri Lanka.

Getting this community project off the ground in Galle needed bringing about a change in ingrained attitudes. To have the people realize that garbage was not dirt, but a potential asset, and to get grassroots communities involved, took a lot of lobbying on Help-O's part – and the rewards soon became apparent. Galle looked spruced up as a city. The people felt more confident and in charge. The local government authorities needed to panic no more. And hospitals in Galle lent their cooperation too. A single family was spending 1,000 to 2,000 LKR (\$10 to \$20) per month to purchase kerosene, fuel wood and LPG gas for household cooking applications prior to the advent of the project. Now, they depend on biogas generated by the community plant.

"Our next step is to transform the communities living around the public toilets in Galle," says Weliwitiya, referring to his latest venture of constructing a community sewage-biogas plant for Galle. Improved sanitation, according to him, should lead to better living conditions.

Nimashi Amaleeta Fernando freelances for the weekly, **The Nation**, in Sri Lanka. All photographs by author.

Toilets, yes, but at what cost?



A billboard in a village in Chhattisgarh state, bearing the slogan, 'We will give our daughter in marriage only into a house with a toilet'

Kasturi village in Chhattisgarh may look picture-perfect, but can meeting a statistical target and winning an award be part of a sustainable initiative?

Shubhranshu Choudhary reports

CHATTISGARH: A huge bright new billboard, proclaiming Kasturi's status as a 'Nirmal Gram' (clean village), may welcome visitors, but residents of neighbouring villages and others are critical of such extravagance. They want to know, under the Right to Information Act, how much is being spent on these extraneous things, says Samir Gaur, head of

Public Health and Engineering, Bastar district, Chhattisgarh.

With the billboards bearing smiling pictures of the Chief Minister and the Public Health and Engineering minister, who is also the local MLA, advertising the forthcoming elections, one does wonder whether the money for Total Sanitation is being diverted for electoral

purposes. But Kasturi's roads are clean, almost picture-perfect, and sanitation initiatives have been hugely welcomed in the village, located 18 km from the state capital, Jagdalpur.

It is an unusual village in this largely tribal district for it has only a 30% Adivasi population, with Christians comprising more than 40% of the

whole. There is almost total literacy, which can be attributed to the presence of the Methodist church here since 1933.

A year ago, only the pastor's house had a toilet. "Today, 100% houses in our village have toilets," says Banmali Nag, the Village Sarpanch. Women waiting to talk to us outside the Panchayat Bhavan note what a difference having a toilet has made to their lives. "There is less illness in the village and it is so good for pregnant and ill women," says Samita Sethia.



Raila Nishad, a tribal, is grateful for the toilet built with government assistance

To achieve this, a great deal of work was involved, says Deputy Sarpanch Richardson. A team of volunteers would tour the village from 4 am onwards, on the look out for people intending to defecate in the open. "We took a decision to levy a fine of Rs 50 on those who did not use their toilets and also confiscated their ration cards for some time." A majority does follow rules now.

Not an easy transition

It's true, changing from the age-old habit of open defecation to a single pit toilet in a small room must not

have been easy for middle-aged people like Raila, but Gaur, the officer in charge of this construction, pointed out that it would work well for the next five years at least, and, if used properly, would not smell.

It costs Rs 2500 (\$60) to construct. Of this, the government gives Rs 1200 to families living below the poverty line, the remaining (Rs 1300) comes from the National Mineral Development Corporation which is building a steel plant on land from the village, says Lakhan Sethia, secretary of the Gram Panchayat. "In a special programme, 93 families in the Above Poverty Line category in Kasturi too have got similar amounts from other government schemes, though the Total Sanitation programme itself does not support people living Above the Poverty line," he says.

According to an economic survey of Chhattisgarh, the state spent Rs 442 crore (\$111 million) last year on the Total Sanitation Programme, with a little more than 400,000 toilets being built in the state.

Nirmal Gram Award

Seeking nomination for the Rs 2-lakh (\$41,000) Nirmal Gram Award is a much contested business. The district administration of Bastar has, this year, nominated 27 of its Gram Panchayats for this Central Government award: it claims that all the villages in Bastar district are 'nirmal' now. Women spoken to in Bade Dharaur, which figures on that list, say they regularly use their toilets, but Ms Sharda Khaparde, a local teacher whose services were enlisted for the Total Sanitation Programme for a few months, is vociferous in her refutation. "More than 75% people are not using the toilets. It is very hard to change old habits: (and) this village has lots of open space (for open defecation)."

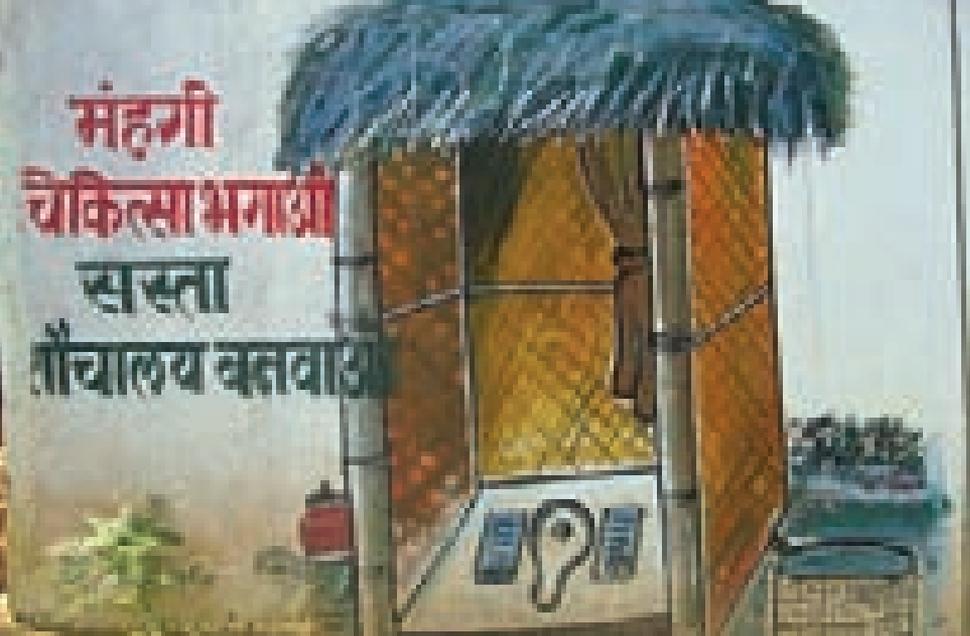
To set an example to the rest however, administration officials have also been penalised for not following rules. Mandhar Bhardwaj, Sarpanch of Baranji Gram Panchayat, was stripped of his post because he had not constructed a toilet in his house – and reinstated when he did. More than 25 sarpanchs in Bilaspur district of Chhattisgarh were also suspended for the same reason. "This is to encourage other sarpanchs to take sanitation seriously," explains Dhananjay Dewangan, officer in charge.

Sometimes an over zealous officer can commandeer the entire administration into working towards winning the Nirmal Gram award – often to no other advantage, his critics opine, but the advancement of his own career. Such sanitation initiatives, it is felt, are not sustainable in the long run.

Ms Khaparde is not the only one who was assigned additional work in the Sanitation programme by the district authorities. The officer in charge of the campaign in Bade Dharaur is the Block Education officer. Out of the 27 Gram Panchayats short-listed for the award, in Dube Umargaon, the District Mining Officer is in charge of the Total Sanitation Programme, and in Ghotia, the Chief Engineer of the Pradhanmantri Gram Sadak Yojna. Other Panchayats on the list are headed by officers from education, agriculture and health departments.

In a leader's role

Rajnandgaon is yet another case in point, the statistic pointing to the fact of sanitation being taken very seriously. According to the Collector's website, of the 29,465 private toilets built until February 2006 (since 2003 when the Total Sanitation Campaign was begun in Chhattisgarh), 22,122 were in



Clever copy to promote sanitation: 'Avoid costly medical treatment, build a cheap toilet'

Rajnandgaon district. The dynamic presence of Ganesh Shankar Mishra as collector, now commissioner of Bastar, had much to do with it. Though the Total Sanitation Programme only caters to those living below the poverty line, Mishra was ensuring that the entire amount of Rs 2500 (\$52) was given to those above the poverty line too.

Jagdulpur town has many posters of Mishra receiving the Nirmal Gram award from President Abdul Kalam in 2006. A follower of Mahatma Gandhi, he likes to be called the 'Chief Servant of Bastar' and wants to convert the collectorate into a Gandhi ashram. "In the colonial era," he says, "the Collector was the one who collected all the taxes, that was his main job, but in a welfare state, all of us are servants of the people and the collectorate should be called Seva Sadan."

There are prayer sessions for employees prior to starting work, and Gandhi's favourite prayers, like *Vaishnava jana to*, are played as background music through the day. According to Mishra, this has improved the work culture dramatically. No one comes late any more and there is no loitering around during office hours.

A question about what he thinks of Gandhi's 'experiment' with toilets does not beget a clear answer. Gandhi would dig a hole and cover it with soil after defecating, digging new holes each time he needed to. It was a low-cost model that may have been suitable to start out with in Bastar's villages.

Mishra prefers instead to be drawn into discussion on how there has been a noticeable reduction in diseases like diarrhoea, malaria and skin problems in all the 27 Gram Panchayats that have been declared Nirmal Grams.

Schools, he says, have been instrumental in changing behaviour, with toilets constructed in 4589 school complexes so far. In some schools in Rajnandgaon district, a register is being maintained by students on toilet usage. "We also provide them a cleanliness kit, consisting of soap, comb, oil etc. Once a child starts using the toilet he also persuades his parents to do the same," Mishra says. The attendance of girl students has improved too.

Education and training

Total Sanitation, taken seriously, has thus involved making "education, training and behavioural change"

a more important part of the programme than merely "making the actual toilets," he asserts. "We have been training many local boys in masonry work, on how to construct toilets, and that has created lots of employment as well," Mishra adds with justifiable pride.

When asked if EcoSanitation's dry latrine model would not be a better one to use, since excreta is converted to manure and local youth could market it, it also being a model followed successfully elsewhere, Mishra says he is hopeful of doing this "in the next stage". His upbeat mood is irrepressible – even if Ms Seema Mahalwal, of the Bangalore-based NGO, Development Focus, observed during her travels in Bastar that many toilets were being used as sheds in which to store firewood.

It's the same story – a 'top down' approach – like the Indira Awas Yojna, where houses were made because government money needed to be spent. "I doubt if a toilet is the primary need of the people here, and whether people actually participated in the decision-making process," she says. In 1995 a government survey had found that only 3% of the toilets built by the government were in use. The Total Sanitation Programme was launched to counter the 'top down' approach through people's participation and education.

Kasturi may be an ideal in cleanliness in Bastar, but can it be replicated, is the question. And only in hindsight will we know whether it has been just so much money down the drain.

Shubhranshu Choudhary is an independent journalist based in Delhi. He is also a founding member of CGNet, a Citizen Journalism experiment in Chhattisgarh state. All photographs by the author.

Removing ‘night soil’: a persistent indignity

Manual scavenging, a sordid reminder of an ancient caste system, still exists in Madhya Pradesh.

Rehabilitation efforts have not gone far enough to free the shackled, writes **Shuriah Niazi**

are therefore untouchables within the untouchables. The Helas, who are equally ostracised, come under the Other Backward Castes category, a notch above the Scheduled Castes, and therefore, additionally deprived from facilities available to the latter. The stranglehold of the caste system has kept these people inured to a sordid practice and any attempt by the untouchables to better their lot has been undermined by discrimination, exclusion and extreme powerlessness.

Take the case of Rekha Bai in Tonkakala village of Dewas district in Madhya Pradesh, who, for 15 long years, carried night soil – as excreta is euphemistically termed – a profession she inherited from her mother-in-law. She had given it up once, but not for long. “It was a question of survival for us. We had no other option,” says Rekha Bai, who was later helped by social activists to leave the profession. Laxmi Bai and Vimla Bai of Devgarh village in Dewas district also quit, but rejoined after a few months under pressure from the villagers.

The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993, is very much in place, but despite such national laws, these people continue to be denied their rights.

Although the Dewas administration denies the existence of dry latrines in their area, the system exists almost everywhere and their actual number is much more than estimated. According to Government of India statistics, more than 80,000 untouchables or dalits are still employed as manual scavengers.



Vimla Bai of Sai village, Dewas district: “Nobody wants to employ us because of untouchability”

MADHYA PRADESH: Even after 60 years of independence, the vestiges of the caste system hold strong in certain parts of India. Untouchability, which negates the very idea of a life with dignity, is a curse still borne by manual scavengers, people whose job is manual removal of

human excreta and disposal of dead animals.

In Madhya Pradesh, two castes continue this inhuman practice – the Valmikis (Hindus) and the Helas (Muslims). The Valmikis, a Scheduled Caste, are placed in the lowest rung of Hindu society, and



Women are the worst hit by this profession, like Munni Bai of Sai village, Dewas district

Municipal and state governments themselves employ such labour – for a pittance. Most scavengers earn around Rs 20 to Rs 30 (40 US cents) per household per month and are sometimes given *rotis* (bread) and old clothes at festivals.

In 1992, the government created a special National Commission for Safai Karmacharis (sanitation workers) and allotted Rs 464 crore (\$97m) for their rehabilitation, but as government experts themselves point out, the implementation of the scheme has been poor.

Today, many of these women in Dewas district have been freed from the occupation due to the initiatives of social organisations, but it continues in several other districts of Madhya Pradesh.

Quitting is the easier part; finding an alternative means of livelihood is the bugbear. Many have tried to get work as farm labourers, but, as Vimla Bai says, "People do not want to employ us due to untouchability." Manual scavengers are excluded from all spheres of life – social, religious, economic and political. They are robbed of an identity. Without being able to own assets or access opportunities, theirs is an extreme powerlessness. Social discrimination persists. Barbers will

not touch them, hotels serve tea in cracked or chipped cups which are kept outside the shop to be cleaned by the user.

Women are kept waiting at sources of drinking water. They are not allowed to pass in front of the homes

Manual scavengers are excluded from all spheres of life – social, religious, economic and political. They are robbed of an identity. Without being able to own assets or access opportunities, theirs is an extreme powerlessness.

of upper caste people nor take out a procession, religious or ceremonial. They are denied entry into public facilities, like *dharamshalas* and community temples.

Opposing the practice

Even though 'untouchability' does not, in theory, apply within Islam, Haila women are still greatly "set apart" due to their work as manual scavengers. Rehana from Tarana

village of Ujjain district in Madhya Pradesh was ordered by her mother-in-law to collect excreta from different homes. "I opposed the practice," she says. "But she refused to listen to my protests. My husband also took his mother's side. I had no other option."

Rehana would set out from home before sunrise, collect excreta from ten houses and trudge a kilometre away to discard the waste. She would then return to the houses to collect her daily wage of one *roti*, apart from the cash payment of Rs 20-30. "My mother-in-law had virtually threatened to drive me out of the house if I did not do this," she says. "She would say this was our only *jagirdari* (inheritance). The more the houses, the better the *jagir*." For these women, scavenging was an age-old tradition, imposed by the older women in the family.

Seven years ago, Rehana gave up the job and now assists her husband in his tailoring business, the change in her being visible at her daughter's marriage celebrations recently. A large number of people, even those from outside her community, attended and even ate with them.

Rehana has also reinvented herself as a social worker in her locality, which is dominated by the Haila community. She persuades other women to quit. "It's your dignity that matters. This cannot be acquired by scavenging," she tells them. Jhabua, Dhar, Ujjain, Dewas and Ratlam are the districts where women from the Haila community work as scavengers. Ali Hussain, 29, who hails from such a family, points out that it's not easy to persuade women to give up the custom since "there is so much social pressure on them."

A survey carried out in 2005

reported that there were 37 women scavengers in Tonkkala, Dewas district, and that today, there are only six or seven. But according to a report by an NGO, almost 18,000 people are still involved in the practice in Madhya Pradesh while the state and district administrations deny their existence altogether. Those found guilty of the offence are also liable to prosecution under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989.

It is noteworthy that 98% of the practitioners are women, a very small proportion men; yet, government assistance in the form of jobs for those leaving the trade is directed mostly at men.

According to Asif, who heads Jan Sahas, a Bhopal organisation helping scavengers, women find it doubly difficult to find alternative jobs, which is why rehabilitation gets stalled. "Because of this, many women have returned to the profession after quitting."

One survey in Hoshangabad district of Madhya Pradesh revealed that 52 manual scavengers who quit were forced to return in the absence of proper rehabilitation and even those who left did not find themselves better off.

Five years have passed since Kiran, Shobha, Santosh Bharosa and other women of Sia village in Dewas district's Valmiki basti, quit, but they are still struggling: the only work they get is harvesting crops, and even this is not easy to procure as it is usually reserved for men.

Education stalled

The other major problem is the education of their children. They are treated with contempt by teachers and classmates and eventually



Women and girls from the Haila community in Tarana village, Ujjain district inherit a loathsome occupation

drop out. According to a study in 10 districts, it was found that the illiteracy rate among these communities is as high as 72%.

The children of manual scavengers are entitled to Rs 700 (\$15) per year in the form of scholarships, but this stops as soon as the parent leaves the profession. Thus, those who leave stand to lose compared to those who stay.

Government officials say that the scholarship is meant for children of people engaged in insanitary occupations; if the job description changes the benefit has to be withdrawn. Munki Bai of Sai village says, "Earlier, our grandsons and granddaughters were given scholarships in schools. Now, we have left the profession, we are no longer in a position to send them to school."

Health at stake

Health is a major concern. Contact with excreta exposes manual scavengers to various diseases and skin infections. Several complain of their inability to eat due to nausea. The women are addicted to chewing tobacco, while men consume liquor to combat the repulsive odour that lingers about them.

According to a report on their safety by the Tata Institute of Social

Sciences, Mumbai, "Close to 90% of all manual scavengers have not been provided proper equipment to protect them from faeces-borne illness." This includes safety equipment like gloves, masks, boots and brooms. Women are the worst off, vulnerable for their gender, for being dalit and for being scavengers.

The state's response

The state is two-faced on the issue. On the one hand, it declares manual scavenging illegal and thereby punishable, while on the other, it employs scavengers in various government offices to perform similar tasks, such as disposal of animal carcasses in the village, bringing back a dead person's clothes from a cemetery, performing the last rites on unclaimed bodies and so on. The government has no firm policy that can put an end to occupations such as these that keep people shackled.

A 2007 deadline, set by the Ministry of Housing and Urban Poverty Alleviation to end the practice of manual scavenging in India, has now been extended to 2010. It remains to be seen whether those who have quit will be suitably rehabilitated.

Shuriah Niazi is a journalist based in Bhopal and writes on development issues. Photographs by author.



When water changed their lives

Pedestrians sidestep waste water and rubble, which were daily obstacles in the absence of sanitation

A slum in Faisalabad was transformed by the Orangi Pilot Project, a community-led sanitation scheme pioneered in Karachi. **Aoun Abbas Sahi** describes the step-by-step makeover

FAISALABAD: Hassanpura is one of the hundreds of slums in the suburbs of Faisalabad, Pakistan's third largest city. According to locals – a reliable enough source of information since there was no government agency in place here prior to 1995 – Hassanpura had 1,000 households, a semi-urban settlement that, despite sundry requests from the community, was not granted a municipal water connection nor basic sanitation facilities. Consequently, says Muhammad

Ali, 60, a resident, there was solid and liquid household waste being released into the streets, which were becoming a malodorous breeding ground for disease. Underground sources of drinking water were being contaminated and waste water was also damaging the foundations of housing.

In 1964, a few young people of Hassanpura formed themselves into the Anjuman Samaji Behbood (ASB) to improve services for the community. When their lobbyist

strategy did not take them far, Nazir Ahmad Wattoo, ASB founder, decided in 1995 to adopt the techniques used by Dr Akhtar Hameed Khan, who had pioneered low-cost, community-driven sanitation schemes in Orangi, a large slum in Karachi. The Orangi Pilot Project had become well known for its mobilisation of basic infrastructure through community participation.

There are two distinct phases to this approach: internal development, or

the placing of basic infrastructure within the house and the streets, which is financed by the households themselves; and external development, or the laying down of trunk and collector sewers – which receive sewerage from lane sewers – whose construction is done by the municipal authorities. This cost-sharing approach allows low-income communities to gain access to water supply and sanitation services.

In Faisalabad, though, the ASB dipped into funds received from WaterAid UK, an international donor agency, to offer loans to households who could not pitch in

area is then mapped through Geographic Information Systems, which has been used extensively by the ASB – “of all other NGOs” – in deploying this system for urban infrastructure development and planning in Pakistan, Wattoo added. An assessment is also made of the socio-economic conditions of the community to determine its willingness to accept intervention and to pay for the improved sanitation facilities.

This took some doing in Hassanpura as the community naturally believed that it was the state’s responsibility to provide water supply and

sanitation services.

People had to be convinced of the benefits of cost-sharing. The members sought out community leaders who would “first learn and adopt the development model, and later, work with the community to develop a consensus for infrastructure development,”

Shahzad Akhtar, social organiser, ASB, explained. “They occupied the forefront, ASB worked behind the scenes. The community leaders organised the people into lane committees, headed by a lane (street) manager,” he said. A Memorandum of Understanding was signed whereby the lane committee would provide labour and financial resources, and the ASB would give them guidance and

technical support.

Next comes implementation. The first task here is a level survey of the neighbourhood and the lifestyle and habits of the residents to determine the technical specifications of the sanitation scheme. The level survey also helps in developing preliminary cost estimates for the internal and external components of the project. “The ASB then mobilizes the lane committees to collect money from the community to finance the internal development of the project. The people are always aware of the actors involved in the development process, and hence, do not hesitate to hand over the funds,” Wattoo said.

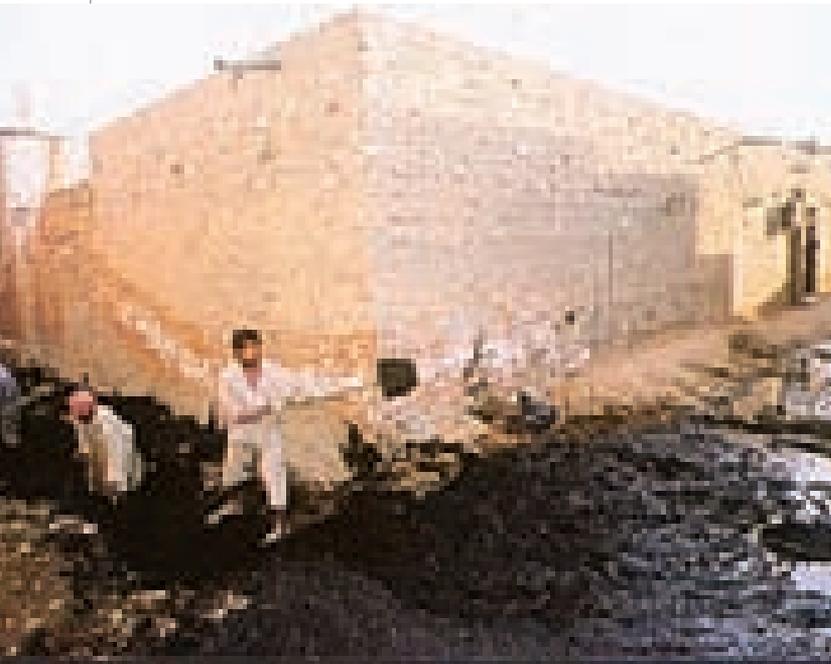
“Hassanpura is now a changed neighbourhood. “Waste water and sewage have disappeared. The streets are paved and clean.”

What does it cost?

The average cost per household came to about Rs 2,200 (\$46), with the collector sewer costing about Rs 600 (\$12.50) to construct and the lane sewers Rs 700-900 (\$15-\$19), with an additional Rs 750 (\$15) for installation. “Compared to government sanitation schemes, the ASB was successful in installing such an infrastructure at a fraction of the price,” said Bao Iftikhar, a community leader and councillor from Hassanpura.

The technology

After collection of funds, comes construction. After the completion of internal development works, the



Sanitation work commenced in 1995 in Hassanpura, which was, until then, a disorderly slum with open drains

to finance internal development. Over the years, a large portion of the borrowed money has been repaid.

How it works

A primary visual survey of the area assesses need and identifies existing infrastructure, which helps planners determine access points to connect the primary sewers (internal development) with the trunk or connector sewers. The

community connects its sanitation infrastructure to the trunk sewers in collaboration with the local planning authorities.

Prior to this sanitation scheme in Hassanpura, open drains in the neighbourhood's 35 lanes discharged their sewage into a canal, which was originally used for irrigation purposes. "The canal was often choked because people disposed of garbage in it. In 1989, the Faisalabad Municipal Corporation (now defunct and replaced by a new district government) constructed an open drain, parallel to the canal, and connected it to a trunk sewer, maintained by the Water and Sanitation Authority. The open drain also choked regularly, causing lanes to be inundated with sewage," Iftikhar said.

Aware of this precedent, the ASB wanted to better it, but affordably. Local experience suggested that open drains, despite being cheap, did not offer a sustainable solution and posed health hazards due to sewage flows. The government-specified standard sewers were cost-prohibitive. After consultation with the residents, underground sewers seemed to be the best option wherein collector sewers would connect the community's infrastructure (lane sewers) to trunk sewers, maintained by the local planning authorities.

Being a model developed by the research team in Orangi, Karachi, the chosen technology comprised shallow sewers, 9 inches in diameter, that linked the single-chamber septic tank in each house with a manhole constructed on site, in the lane. Aziz Ahmed Wattoo, Sanitation Manager, ASB, testifies that it has worked successfully over the last 13 years or so.

No more disease

Hassanpura is now a changed neighbourhood. "Waste water and sewage have disappeared," Iftikhar said. "The streets are paved, clean and full of people." There is space for children to play, women can socialise; trees have been planted too. "The residents have come together to ensure the collection and disposal of solid waste and the sweeping of lanes. There is collective pressure on the councillors for street lights – and this is working," he added.

A strong sense of ownership of the sanitation infrastructure prevails in Hassanpura, which the other communities in Faisalabad lack,

“This cost-sharing approach makes it possible for low-income communities to gain access to water supply and sanitation services.”

notes K. M. Elhai, Director, Water and Sanitation Authority, Faisalabad. "The community not only takes care of the physical infrastructure of the project, but people also clean the sewer themselves most of the time," he added approvingly. Consequently, complaints about choked drains have dropped too, says an official from the Water and Sanitation Authority.

Water and sanitation-related illnesses have fallen by over 60%. "Doctors are losing money," joked Dr Naseeruddin, a local medical practitioner, who has been practicing in the area since the last two decades. Toilet use is

almost total and open defecation has stopped, and so too quarrels over water. Property values in the neighbourhood have risen. Improved sanitation has resulted in the relocation of cottage industry in Hassanpura, creating new jobs and business opportunities. Wattoo said 30% of the households received offers to open small-scale industrial units, such as garment factories, thread fibre making and small printing presses in their homes, after the sanitation project was implemented. Old-timers like Muhammad Ali credit the people and the ASB warmly for effecting this change.

Since the success of this project, the ASB is acting as a franchising agency, having expanded its involvement in sanitation to various districts of the province of Punjab, collaborating with local communities and governments. The organization has, so far, successfully improved water and sanitation facilities for more than 11,000 households in 93 different localities.

With the proven success of the component sharing paradigm in infrastructure development in Faisalabad, the ASB has gained credibility amongst policy-makers. The Urban Unit of the Planning and Development Board of the Punjab government has retained it as adviser on water supply and sanitation schemes planned in low-income communities. The Hassanpura project was, in fact, a runner-up for the Kyoto World Water Grand Prize at the 4th World Water Forum held in Mexico City.

Aoun Abbas Sahi is a reporter working with **The News on Sunday**, Lahore, who writes on environmental issues and politics. Photographs by **Nazir Ahmad Wattoo/ASB**.



People as partners in problem-solving

Maruti Sutar with the toilet unit that he laboured hard to build

From malnutrition to education, Village Planning gets the people involved. **Vidya Kulkarni** on how it helped bring complete sanitation to two blocks in Satara, Maharashtra

SATARA: Every village has a story. For the people of Aambarwadi, a village in Satara, Maharashtra, every toilet has a story, which they willingly share. Their biggest achievement has been total sanitation coverage for all 119 households. Aambarwadi, which had only 12 toilets a year ago, has now acquired 91 units, some next to, some within people's homes. A board at the entrance of the village declares its new Open Defecation Free status. The approach roads are

clean too.

Aambarwadi's makeover is an outcome of collective determination and hard work. Since the terrain is rocky, digging toilet soak pits manually – to cut costs – was difficult and laborious. Those who could afford it hired a drilling machine. But Maruti Sutar, a 54-year-old carpenter, dug on his own for fifteen days in a row. He also traded his carpentry skills with the village mason's – which was more

money saved. But it was the whole enterprise that filled him with pride and a sense of ownership, much more valuable than the money he had saved.

Such examples in motivation abound in Khandala and its adjacent block, Mahabaleshwar, Satara, where all 144 villages – not just a couple – in both blocks have attained safe sanitation and are competing this year for the Government of India's Nirmal Taluka Puraskar

(Clean Block Award) under the Total Sanitation Campaign. To qualify, the village must have complete sanitation coverage of individual households as well as its school and 'Aanganwadi' centres, freedom from open defecation and a clean environment. What is noteworthy here is that the government and the communities have worked together to achieve complete sanitation coverage.

Village Planning

The Sanitation campaign in Satara has adopted an innovative approach to Village Planning, also called 'Micro Planning', which works on a partnership between the government, communities and civil society organisations, and is crucial to meeting development goals. The Unicef in Maharashtra has been experimenting with Village Planning since 2003 in its three focus districts – Chandrapur, Nandurbar and Latur – and reached out, through district administrations and NGO networks, to 3742 villages.

Gopinath Menon, Unicef's State Representative for Maharashtra, who fine-tuned the concept of Village Planning to its present form, says it's a way to get people to address issues that affect them. "They are the ones who are ultimately going to make a difference," he elaborates. "Community participation in planning and decision-making processes is a prerequisite if you wish to sustain the benefits of development programmes."

S. Kadu Patil, Chief Executive Officer, Satara district, was introduced to Village Planning in his earlier posting at Latur, where he saw its potential to change the mindsets of people and service providers. He observed that villagers, usually unwilling to trust government functionaries, became keen to have a dialogue.

After taking over as CEO of Satara, he introduced Village Planning to expedite total sanitation in the Khandala and Mahabaleshwar blocks. It is noteworthy that total sanitation is seen as an entry point, and the process eventually aims at impacting other development indicators, such as malnutrition, immunisation, institutional deliveries and so on.

Patil finds merit in it also as a communication strategy. "Most conventional methods are primarily geared towards mass communication. You need more direct, and preferably, person-to-person communication when you seek community participation in the real sense."

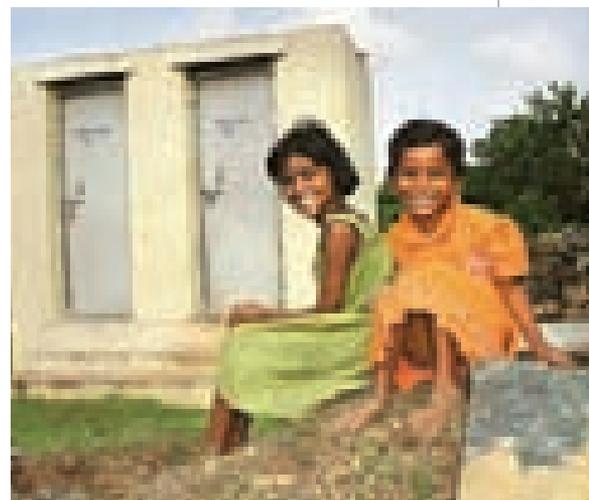
Partnership model

Village Planning starts at the community level with a five-day intensive process of participatory exercises that facilitate an 'assessment, analysis and action' cycle. Communities are helped to assess the current situation vis-a-vis health, nutrition, education, water and sanitation and come up with action plans that improve the quality of their lives.

A team of trained facilitators interacts with villagers. The members use various tools drawn from the participatory learning and action approach and help communities to understand the 'whys, whats and hows' of issues before them. Empowered with this knowledge, communities draw up action plans and start monitoring their implementation.

The focus of the exercise is to impress upon the people that they, along with government functionaries and the Panchayats, can make a difference to their lives through individual and collective action.

"I consider this five-day exercise a 'diagnostic process' where communities are encouraged to identify gaps and articulate problems. What should necessarily follow is a 'remedial process'," says Kadu Patil, a continuous one that includes support to community actions through "responsive and accountable service delivery".



A clean environment keeps children healthy

For Menon, this is a process to empower people by giving them an informed voice. However, what follows after the initial exercise is of greater importance.

There are two tangible outcomes: one is a 'Village-level Action Plan', and the second, the identification of 'Village Volunteers' who first undergo a five-day foundation course that equips them to tackle issues they will commonly encounter, followed by 'refresher' modules. Village volunteers, along with NGOs, form community groups and mingle with existing ones, like women's Self-Help groups and youth groups, to ensure effective delivery of village-level services. Communities discuss the problems faced by various outreach centres and come up with solutions. They are also encouraged to understand human development indices so that these become community

norms that they can monitor for compliance.

There are numerous examples of villages in Chandrapur, Latur and Nandurbar where issues like malnutrition, hygiene and sanitation, use of iodised salt and breast feeding have been taken up by communities. One of the immediate outcomes of the process of Village Planning is the increased demand and compliance for services and an interdependent partnership between communities and functionaries.

In Village Planning, people are partners, not beneficiaries. This changes the entire power equation between government departments and the community.

One could question the rationale for Unicef's presence in Village Planning, but then child rights are embedded in community rights and Unicef's emphasis has always been on holistic community empowerment. Menon explains how they had initially used Village Planning in education; "now we perceive it as a comprehensive concept, applicable to all sectors".

Success in Satara

There were two major schemes, with cash prizes as incentives, that were a definite motivating factor. The Sant Gadge Baba Swachchata Abhiyan (Clean Village Campaign) was started in 2001 by the Maharashtra government and Nirmal Gaon Puraskar in 2003 by the Government of India under its Total Sanitation Campaign. They had got a few villages in Satara to gear up for total sanitation coverage. Of 65 villages in Khandala and 79 in Mahabaleshawar, some had won these prizes at the state and central levels – but these were isolated, village-specific achievements. Despite the block administration's

keenness on sanitation, execution was slow and the community unresponsive. Village Planning gave it momentum and within a record time of one year, all villages in the block were able to stop open defecation. At present, both blocks together have 30,035 toilets, half of which have been built between October 2007 and September 2008. This figure includes a majority of individual toilets, common toilets and toilets within schools and Aanganwadi centres. (The number of households is 21,438 and 8,317 in Khandala and Mahabaleshwar respectively.)

Block level authorities and voluntary organisations involved in Village Planning note how the five-day exercise expedited the community initiative in favour of the Total Sanitation campaign. Clearly the work was not completed in those five days, but the participatory process with the communities proved to be catalytic, and follow-up was systematic.

Village government functionaries worked with NGO representatives to ensure that village plans were executed on time. Households divided themselves up for follow-up. Each one would meet the assigned families at regular intervals, the interaction helping solve attitudinal problems while financial ones were resolved through speedy loan disbursal through credit societies, banks or Self-Help Groups.

Penalties were used to stop people from relieving themselves in the open. Block authorities filed some test cases under the Bombay Police Act 1951, which bars use of public spaces for defecation, but usually as a last resort, to emphasise their commitment to total sanitation. The block development officer admits that they would not have achieved

success of this sort "only through punitive action".

Counting on people

Menon thinks it is now high time that development initiatives shift from 'counting people' to 'counting on people'. For this, development functionaries should start working with communities. "All national programmes today demand decentralised, community-managed programming as a key strategy for sustainable development and results. Thus, building strategies and support systems for working with communities is an urgent need," he says.

Unicef in collaboration with the Yashvantrao Chavan Academy of Development Administration, the apex training institute of the State Government of Maharashtra, has developed a 'Centre for Community Managed Programming' to impact policy and plans. The Centre is engaged in Training, Advocacy and Research and Data Management on community managed programming. The Academy contributed through training and knowledge-sharing in the latest sanitation success in Satara district.

Unicef is also in constant touch with various senior people in government for their endorsement of a policy for Village Planning. A State Task Force has been set up, which amounts to official acknowledgement, though not official policy. So far the success of Village Planning has depended on the right people at the right place. But an official policy will make successes like Satara more frequent.

Vidya Kulkarni is an independent writer and photographer who documents the social work initiatives of voluntary organisations in Maharashtra. All photographs are by the author.

Taking a stand on sanitation

It's whether the glass is half full or half empty: abjuring an age-old unsanitary practice is a major first step for Bangladesh – even if other challenges remain.

Anup Khastagir lists them

BANGLADESH: In the debate on actual coverage of sanitation in Bangladesh, the National Task Force has proposed that the government go in for a second census to get the actual picture. Regardless of differences of opinion on 'statistical data', both the government and private sector are confident of the country making considerable progress: it's the 'first step of the sanitation ladder', in a manner of speaking, compared to the appalling situation five years ago.

At the time of the first baseline survey in 2003, only 33% of households were found to have clean, functioning latrines while 25% had unuseable ones and 42% households (about 55 million people) did not use any form of latrine. But



Increasing the risk of water-borne diseases in coastal and flood-prone areas, with latrines suspended over a river

with the drastic reduction in open defecation, much has changed.

The National Sanitation Secretariat, which compiles data gathered at the grassroots level, showed that until June 2008, sanitation coverage reached 88% in Bangladesh: so there is some kind of latrine used by nearly everybody. Open defecation declined from 42% to below 10% in the period 2003-07, though it remains hard to root out from urban slums, hilly and coastal areas as well as flood-prone regions.

In the face of these promising figures, are the results of a survey by the Joint Monitoring Programme of the WHO and Unicef. According to it, the coverage, taking into account all types of improved latrines, is about 68%, with only about 47% using a

'hygienic latrine', as defined by the National Sanitation Strategy. Definitions can be differently understood, especially with improved latrine facilities in Bangladesh including flush toilets connected to sewage systems, septic tanks or pit latrines, ventilated improved pit latrines and pit latrines with slabs, and composting toilets.

How, for instance, does one define the 'hygienic latrine'? Both WHO representatives and government officials said the difference between the data collected by the Sanitation Secretariat and Joint Monitoring Programme arose from confusion over the definition of the proper hygienic latrine.

Taufiqul Arif, WHO's National Professional Officer on Environment

and Food Safety, assessed what went wrong. "The Department of Public Health and Engineering developed an information collection system from grassroots-level stakeholders, particularly through members of the Union Parishads. Due to lack of adequate training, the data collectors applied a 'self-styled understanding', collecting data liberally, taking into consideration all types of latrines as sanitary latrines – those with and without the water seal, pit latrines and other types of defecation structures. Therefore, government data showed massive progress in sanitation coverage. But the percentage of coverage was much lower when only water-sealed – 'hygienic' – latrines were taken into account."

Said Mohammad Ibrahim, Deputy Project Director of the government-Unicef Sanitation Project, "When we launched out in 2005, we were not told that only the latrines having water seals were the hygienic latrines. We were confused. Now we understand, but in practical terms, how can we attach water seals overnight on the latrines already set up?" Attaching water seals – each costing an affordable Taka 30 (\$4) – would take six months to do, Ibrahim says, but the greater challenge is to enhance the level of people's understanding of water-



Waste mismanagement, as latrines set atop a pond pollute the water body

sealed latrines.

Independent committee

Amidst all this controversy on data on actual sanitation coverage, the government deputed an Independent Monitoring and Evaluation Committee, headed by Dr Mujibur Rahman, Professor of Environmental Engineering at the Bangladesh University of Engineering and Technology. It reported that actual sanitation coverage in the capital city of Dhaka would, by no means, be over 50% though government statistics showed coverage to be over 89% in urban areas.

Surveys do have their limitations, for as Dr Mujibur Rehman pointed out, 'a fixed number of households' (over the last five years) is another methodological limitation of the officially provided sanitation data. All information in this connection is being collected, based on the old households which were brought under the baseline survey in 2003. But over the last five years, the number of households has certainly increased, which remained out of calculation." This was the "big limitation" of the government's survey on sanitation coverage.

The National Sanitation Secretariat defined very clearly the purpose and objectives of total sanitation. But, according to Arif, "a lack of proper guidance" has stymied the success of the initiative, leaving stakeholders, particularly the public sector, unclear about the difference between 'sanitation' and 'latrinization'.

"Sanitation must serve the purposes of hygiene. Confusion has been created also on what types of latrine we should take into account and what type not. So, we are basically working with the target of 'total latrinization' by 2010, and it has created suspicions about whether we will be able to achieve the Millennium Development Goal," Arif said.

Sanitation coverage till June 2008

Area	Coverage as per baseline survey in October 2003		Coverage till June 2008	
	Total Households	Coverage (%)	Total Households	Coverage (%)
Rural areas	1,83,26,332	29	1,61,67,416	88
Municipalities	18,51,337	53	16,51,564	89
City area	12,16,424	70	10,34,437	85
National (average)	2,13,94,093	33	1,88,53,417	88

(Source: National Sanitation Secretariat, 2008; percentages rounded off)



Local traders benefit from the increase in the demand for these concrete ring latrines.

The government's agenda

In 2003, the government announced the ambitious mission, 'Sanitation for all by 2010', observing October as Sanitation Month. The government adopted a policy to use 20% of the annual development budget of the Union Parishads, the lowest tier of the local government, directly for improving sanitation coverage. It allocated Taka 50 million (\$700,000) to carry out nationwide sanitation projects, along with declaring a special monetary award for the Union Parishads that reached the target and could sustain progress. The poor were given a concrete slab latrine for only Taka 520 (\$11), the fee being waived for the hardcore poor.

Bangladesh's National Sanitation Strategy envisages five goals; (i) Sanitation facilities available to all (ii) No open defecation (iii) Use of sanitation facilities by all (iv) Maintenance of sanitation facilities and (v) Improved hygienic practice. If sanitation is to promote sanitary health conditions, in addition to excreta disposal, the term 'total sanitation' includes three things: (i) Solid waste management facilities (ii) Household waste water management and (iii) Storm water drainage.

As evident, 'total sanitation' encompasses many areas, but the

drive all over the country seems to be focusing on human excreta disposal facilities. Urban households are largely unaware about solid waste management while most slum dwellers, even in the heart of the cities, go for open defecation or use hanging latrines set on water bodies. In rural areas, improper disposal of household waste water is a major environmental hazard, including pollution of pond water.

Too much or too little

The sanitation problem in Bangladesh is due to the disproportionate amount of water available. There's either too much or too little. In riverine Bangladesh, frequent floods wash away the houses along with the latrines. In many areas, it becomes quite impossible for a family of four to collect 40 litres of water a day for sanitation, which becomes a major disincentive to use water-sealed latrines. To avoid using too much water, people wilfully break the water-seal at the time of installation of the latrine.

A continued motivation programme to build people's understanding will be necessary, Ibrahim says, to prevent such thoughtless actions and for people to make informed choices, such as the use of the hygienic latrine. He grants though that "The traditional practice will

continue in those areas where the water crisis has deepened and where a suitable technology for a hygienic latrine has not been evolved."

Suitable technology

The challenge remains to develop technologies that are appropriate to the country's needs. "As a natural calamity-prone country and a land of huge hydro-geological and socio-economic variations, there is no universal design of hygienic latrine that can be used effectively in all areas of Bangladesh," Arif said. The devastating cyclone Sidr last year destroyed the entire sanitary system of the areas that were hit.

In such a scenario then, "There should be simplicity in operation and maintenance," Dr Mujibur Rahman said. Technological innovations in sanitation have been slow to fulfill the varying needs of the people, he pointed out, because policy makers and service providers do not always see the economic and social benefits of improved sanitation, which can then be imparted to the people.

Despite this, business has expanded in the private sector, the sanitation campaign having turned into a silent social movement across Bangladesh. According to Ibrahim, "Local traders are convinced that the demand for sanitation technology will not decline in the future; rather, new technology will evolve and local-level provision of low-cost sanitation will continue."

Given the challenges, Dr Mujibur Rahman was glad that people had at least gone a step beyond open defecation, "We have to improve, climb through the sanitation ladder."

Anup Khastagir is a senior reporter with the **Bangladesh Sangbad Sangstha**. Photographs from WHO.



Status symbol or real change?

Water bought in pitchers costs the poor more than if it came from a government utility

Self-congratulation over latrine coverage in Bangladesh is irrelevant if it does not imply latrine usage. **Mostafa Kamal Majumder** highlights the discrepancies between the statistics and the ground realities

DHAKA: The Bangladesh government may boast that it has achieved 87% sanitary latrine usage under its sanitation programme and that it is on target to achieve 100% sanitation by the year 2010, well ahead of the Millennium Development Goal of halving the number of people without sanitation by 2015. But NGO workers demur. To merely procure and install is not to ensure that all family members use the latrine. There is considerable motivational work involved in helping people change their sanitary habits, they say.

Since 2003, when the programme was launched, there have been mass awareness campaigns and coordination of data on the sector through a Sanitation Secretariat created at the Department of Public Health Engineering (DPHE). Official figures show that sanitation coverage increased from 29% to 87% in rural areas; from 53% to more

than 88% in small towns and from about 70% to more than 84% in large cities.

Awareness of the need for sanitary latrines has increased greatly. What was earlier distributed free of cost by the government is now the domain of private enterprise.

Having a pucca or brick latrine has been a status symbol in rural Bangladesh from olden times, except that what was used then was the hanging type that would pollute open waters with faecal coliform bacteria. Now, it's the ownership of a proper sanitary latrine that's the real thing.

It is against this context that Community-Led Total Sanitation (CLTS) represents a shift from centralised, 'top down', supply-driven approaches to decentralised, people-oriented, demand-driven ones, developed in Bangladesh, and

now being simulated in India and Africa.

Changing is not easy

"It's easy to sell a latrine that costs between Taka 150 (a little over \$3) to Taka 700 (\$10) than to change the habits of household members," says Elgin Saha, executive director, Health Education and Economic Development, an NGO involved in the field for many years. NGOs that help poor families install sanitary latrines say they take about six months to repay the micro-credit availed on latrine purchase, which is another indication data collectors may go by.

To base one's conclusions about changed sanitary habits in Bangladesh on such obvious information does not perhaps represent the accurate picture. Those accustomed to open defecation do not shift quickly to safe latrines; changing and motivating them is

a difficult task. Saha observes that even if a family owns a latrine, it is difficult to say if its members use it; rather than await their turn to use the toilet, some may opt for open defecation. Again, even if adults use the improved latrines, children may continue to defecate in the open, jeopardising hygiene for everybody.

Training and motivation are needed also to make people wash hands with ash or soap and flush latrines properly. Those who do not do this end up contaminating taps or pots of water kept there for use in washing, making the installation of sanitary latrines useless.

Few NGOs involved in micro-credit are also involved in social development, Saha says. Most of them engaged in the field, however, work on sub-contract from the government and wherever they work, the hygiene practiced is better. So, statistics on sanitation need to take into account both increased coverage and the changed habits of household members. NGO workers say that even intensive training and motivational strategies to make people change begets only 80% results: what then of areas not served by grassroots organisations?

In an uncertain political climate, commitment to the sanitation campaign is at best uneven. Mostafa Quaium Khan, executive director, Coalition for the Urban Poor (CUP), a network of 53 NGOs, is of the opinion that even if the government's ostensible priority is to achieve the Millennium Development Goal, its level of commitment is not adequate. When elected governments were in power, the sanitation campaign was surer even if the achievement was less. Now under a non-party caretaker government, both the campaign and the targets to be achieved have

lost focus.

Khan points out that the government seems to have slackened in giving priority to sanitation – even when the country's water supply and sewerage system are so weak – because, for the last three years it has been stalling approving an urban policy draft, a prescription for planned urbanisation, taking care of water supply, sanitation and other facilities in both the affluent and the poorer neighbourhoods, to be formulated in collaboration with some donors.

Inequitable standards

Sanitation services in cities and towns vary widely, Khan further points out, from some areas being well equipped to those that have almost nothing. Those that have nothing are mostly slums and newly developed zones where water-borne diseases are most prevalent. Surveys have shown that poor people living in slums actually pay more for water, as they have to purchase it in pitchers, at times at higher rates than those who get water from the government utility, such as the Water Supply and Sewerage Authority.

The slums again have a limited number of latrines that are not maintained. Women suffer the most since they cannot queue up with men to use community latrines and have to opt for open defecation at night, risking assault or rape.

According to Khan, in the absence of an urban policy, public utilities lack the guidelines on how best to extend their services to people living in the urban areas, they fail to plan for the future and thus, fail to ensure planned urbanisation.

Upon the behest of NGOs, the Water Supply and Sewerage Authority has

started supplying water to some slums by waiving their age-old policy guidelines, but sanitation services remain as bad as before. "We have more towns, but due to lack of proper water and sanitation programmes, the new urban areas pose a threat to public health," he observes.

False figures

A senior field level worker of WaterAid, Bangladesh, concurs that the government's method of monitoring sanitation coverage – based on reporting by field-level government officials who go by the number of families that buy sanitary latrines – is inadequate as it is not corroborated by observation of usage of those latrines. What's more, figures are trumped up, say NGO workers, even when latrines have not been installed by some families.

Government officials count sanitation coverage by villages and unions (rural government institutions, made up of ten or more villages each) while development workers do so by families and their members. Latrines that do not have water seals or where excreta is not properly covered are not counted for sanitation coverage by development workers, Khan said.

The Sanitation Secretariat of the government may have its own statistics that claim that the baseline survey from 2003 until March 2008 resulted in a rise in latrine usage from 33% to 87% – a jump of nearly 54%. But perhaps sanitation has to do with a lot more than mathematics and hardware.

Mostafa Kamal Majumder, editor of **The New Nation**, a Dhaka-based English daily, is a leading environmental journalist in Bangladesh. Photograph by **Guy Stubbs/WSP**.

List of Acronyms

AFPRO	Action For Food Production
AKRSP	Aga Khan Rural Support Programme
ASB	Anjuman Samaji Behbood
BMC	Mumbai Municipal Corporation
BOD	Biological oxygen demand
BRAC	Bangladesh Rural Advancement Committee
CDGK	City District Govt of Karachi
CEO	Chief Executive Officer
CLTS	Community-Led Total Sanitation
CMWSSB	Chennai Metropolitan Water Supply and Sewerage Board
CPCL	Chennai Petroleum Corporation Limited
CPLC	Citizen Police Liaison Committee
CUP	Coalition for the Urban Poor
DPHE	Department of Public Health Engineering
Ecosan	Ecological Sanitation
ENPHO	Environment & Public Health Organisation
GIS	Geographic Information Systems
IRSP	Integrated Rural Support Programme
IWRM	Integrated Water Resource Management System
LGO	Local Government Ordinance
LPG	Liquid Petroleum Gas
LSO	Local Support Organisation
MFL	Madras Fertilizer Limited
MLA	Member of Legislative Assembly
MLD	Million litres per day
NRSP	National Rural Support Programme
NWFP	North West Frontier Province
O&M	Operation and Maintenance
OPP	Orangi Pilot Project
OSWSSM	Orissa State Water & Sanitation Mission
PRI	Panchayat Raj Institution
RO	Reverse Osmosis
RSPN	Rural Support Programme Network
RWSS	Rural Water Supply & Sanitation
SEZs	Special Economic Zones
SHG	Self-Help Group
SSA	Sarva Shiksha Abhiyan
SSP	Slum Sanitation Programme
TMAAs	Tehsil and Municipal Administrations
TSC	Total Sanitation Campaign
UAs	Union Administrations
UCs	Union Councils
UNDP	United Nations Development Programme
VP	Village Planning
WASA	Water and Sanitation Authority
WSPNET	Water Sanitation Hygiene Promotion Network
YASHADA	Yashvantrao Chavan Academy of Development Administration

What about safe drinking water for the rural poor?

By Rudolf D'Souza

Fluorosis. For me it was just another word from the dictionary. That is, until I toured some of the villages in Warangal and Adilabad of Andhra Pradesh, south India. People were bent over. They suffered chronic joint pains. They moved about slowly and painfully and some were anaemic. This was the outer manifestation of fluorosis. It is caused by excess fluoride in the water. It plagues a number of districts in India and is found in the groundwater. Till now, people had little choice but to drink this water. But hope is now at hand.

In August 2007, a small beginning was made. World Vision invited Eureka Forbes, India's pioneer in water purification systems, to set up a customised plant at Manikypuram, a hamlet consisting of 221 families, 85 km from Hyderabad. This plant was set up after studying the groundwater contaminants. With fluoride being the major culprit, there had to be a Reverse Osmosis system.

Says Yadamma, leader of the Mahila Mandal (women's committee), "Within 10 days of drinking this pure water my aches and pains just disappeared." This is the experience echoed by the other members of the hamlet too.

What happened at Manikypuram is now being replicated across the country by Eureka Forbes. Eureka Forbes has set up a separate channel whose mission is driven by the vision 'to provide pure and safe drinking water to every Indian'.

The manner of execution of this vision is interesting. Eureka Forbes

engages with NGOs on the ground, like World Vision, which enjoy the community's trust. Funds are partly raised by the community, partly by the NGO, and there is the involvement of the Panchayat (local self-government) through provision of land, buildings or subsidised electricity. It is a partnership in action. The objective is BOT (Build, Operate, Transfer). Over time, the ownership of the plant will pass to the hands of the community.

"Access to water is one of our national priorities," said Franklin Joseph, Director, Humanitarian Emergency Affairs, World Vision India. "We started off with pilot units in Andhra Pradesh to learn from our experience of working together." World Vision has been working towards community development in these mandals (village blocks) for over 10 years. Their community development coordinators had formed Self-Help Groups in the villages. One group, led by Yadamma from Manikypuram, took the initiative of providing safe drinking water to the village. This was supported by the Sarpanch (head) of the village, Narasaiah. World Vision played a key role in uniting Eureka Forbes and the community in the obtaining of safe drinking water.

Water sampling was done, followed by testing, analysis of the sources, consumption patterns, number of proposed beneficiaries and electricity availability. Upon assessment of all the factors, the company proposed an RO plant of 250 lph (litres per hour) capacity.

This proposal was cleared by World

Vision which was funding a major portion. The rest of the funds were put in by the Self-Help Group and the Village Panchayat. The plant was installed and inaugurated on August 15, 2007.

The people of Manikypuram are now free from water-borne diseases. "We knew that water was a basic right for all, but getting clean water by our own effort is a big achievement. We think of this purification plant as the community's asset," said Yadamma proudly.

The unique feature of this 'public-private partnership model' is that her Self-Help Group will purchase the customised water purification equipment, facilitated by World Vision through micro-loans. The loans will be paid back over a period of time with money collected from consumers of the clean water.

Says Aslam Karmali, CEO, Consumer Division, Eureka Forbes, 'The specialised water purification equipment installed in the village is the first of several that will be installed under this partnership, which is aimed at 'developing comprehensive water purification products and solutions portfolios for the rural poor' as laid out in the memorandum between World Vision India and Eureka Forbes. This is one of several partnerships we have in the country and we are motivated to move even more rapidly when we come across heartwarming stories of how a community's health and well being have improved merely by this small intervention."

Technology Implementation Partner: Eureka Forbes Limited



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