

# Sanitation and hygiene in South Asia: Progress and challenges

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*What can the world learn from achievements and challenges in the field of South Asian sanitation provision? Considerable progress has been made in 10 subject areas: policy development, low-cost solutions, user choice, decentralization, mapping poverty areas, funding of demand creation, motivating users, local production and supply, phasing out ineffective subsidies, and going beyond numbers to healthy practices. Ten others are still under-developed: diversification between and within households, cost-effective promotion, targeting remaining subsidies with equity, upgrading toilets over time, environmental safety, scope for dry toilets, sanitation in urban slums, short-term versus long-term programmes, sustainability of facilities and programmes, and organizational and human capacities, especially at intermediate level.*

*This paper provides an overview of the South Asian Sanitation & Hygiene Practitioners' Workshop organized by IRC, WaterAid and BRAC in Dhaka, Bangladesh, 29–31 January 2008.*

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In 1990, THE BASELINE YEAR of the WHO/UNICEF Joint Monitoring Programme, South Asia had a sanitation coverage level of 20 per cent, the lowest of all world regions. In 2002, it had surpassed sub-Saharan Africa as the worst-off region (36 per cent) by just 1 per cent. In absolute numbers, the largest number of people without safe sanitation still live in South Asia: 938,502,000 – more than twice the 437,224,000 unserved people in sub-Saharan Africa.

Rapid coverage in the remaining years is widely desirable, but must also be effective. Ultimate aims are, after all, not only construction, but also hygienic use by all, and that the remaining unserved *and* all households newly formed after 2015 also acquire safe sanitation. Only then will open defecation end forever and toilets themselves not become new health hazards. With these outcomes and targets in mind for the remaining eight years, the focus of this paper is on what

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The ultimate aim is not only construction of toilets, but also hygienic use by all

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has been learned so far on sanitation in South Asia and which issues are still unresolved or unrecognized. The report covers the following:

- The main factors that have emerged as being integral to success in recent years: what has been learned?
- Areas for further consideration: what is unresolved?
- Future challenges and opportunities: where can we make the greatest difference?

### Sanitation and hygiene in South Asia: Areas of progress

This section covers *10 areas of progress* or parameters on which consensus has been developing in South Asia. Accepting that these might not be exclusive, they are listed and then covered in the text which follows:

1. Political will is required.
2. Priority is given to on-site sanitation.
3. Low-cost models can increase coverage – at what cost to sustainability?
4. Government has a role, at different levels, and must perform it.
5. Mapping conditions across poor urban areas triggers action.
6. Effective information, education and communication (IEC) is required for sustainable hygiene/sanitation behaviour change.
7. Effective motivation is based on the desires of users, not the desires of agencies.
8. The belief, and evidence, that direct household subsidy is unhelpful is gaining acceptance.
9. An active local private sector is required.
10. What to measure – installations or behavioural impact?

#### *Political interest, policies and strategies*

Politically, there has long been little interest in sanitation and hygiene, perhaps because they are female rather than male priorities. Few countries have a specific sanitation policy that is distinct for rural areas, towns and the urban poor. Combined policies are dominated by domestic water supply. Government expenditure on sanitation has

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also been low, although amounts may be less important than ways of spending (see sections on IEC, motivation and subsidies, below).

In Bangladesh, work on water supply started in 1935. Safe sanitation came 19 years later. Government outlays dropped from the first to the fourth FYP (Five Year Plan) and only sharply increased during the fifth, but mostly for arsenic mitigation in water supply. Overall, government expenditure stayed at the same level (Kabir, undated). Bangladesh needs three times the current outlay of Tk8.3 bn per year on sanitation to meet its national target. In India, central budget allocations to the water sector started in 1951. A national rural water supply programme began in 1972. A rural sanitation programme came 13 years later. India's outlay for the sector grew from 1.8 to 4 per cent in the first to the eighth FYP, but the funds went mostly to water. In the eighth plan, the budget for water supply was 96 per cent, for sanitation 4 per cent (Kolsky et al., 1999; HoC, 2000). In Nepal, 70 per cent of the national budget for the sector in 2000–2015 will go to one water supply scheme (Melamchi). The estimated shortfall for sanitation is US\$6 m per year (WaterAid, 2004). Between 2002 and 2005, Pakistan's annual budget for water and sanitation was 0.1 per cent of GDP, again mostly for water (Government of Pakistan, 2006). Sri Lanka had the highest sanitation coverage in the region in 1990: 69 per cent. It had reportedly grown to 91 per cent in 2004. However, the *tsunami* of 2004 destroyed an estimated 60,000 household toilets. The estimated costs of emergency sanitation and rebuilding toilets are US\$4.4 m (<http://www.irc.nl/page/16188>) and funding is threatened by the growth in military expenditures, doubling from US\$69 bn in 2006 to \$139 bn in 2007.

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The *tsunami* of  
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This situation is gradually improving. Both Bangladesh and India formulated new national sanitation strategies and campaigns with earmarked funding, although without specific attention to the urban poor. Nepal approved a national sanitation policy in 1994 and formulated national guidelines in 2005. It does not, however, specify the range of solutions and only states that toilet subsidies are to be eliminated gradually. Institutionally two national agencies are still both responsible for sanitation: the Ministry of Physical Planning and Works with the National Sanitation Cell and the National Steering Committee for Sanitation Action and the Ministry of Local Government (MLD) with often inactive District and Village Water and Sanitation Committees. MLD further provides technical assistance through District Technical Offices. Sri Lanka formulated a new policy in 2001, but it addresses both rural water supply and sanitation. Both are made demand-responsive; that is, people and communities install the technologies and service levels that they want and can install and sustain. Users can form community-based organizations (CBOs) to plan, implement, finance and manage schemes and so can

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*Pradesiya Sahas* or village councils, the lowest government level. Targets for total coverage have been set for 2025 (<http://www.cosi.org.lk/page/418>). Pakistan published a national sanitation policy in 2006. Communities, housing societies and investors from the private sector are to build and finance toilets, lane sewers and collection sewers in settlements with over 1,000 people and local governments the trunk sewers. In smaller communities, promoters from different agencies, e.g. Ministry of Health, NGOs or local government are to stimulate households to build their own sanitary toilets. Successful agencies are then to become the capacity builders for other actors, such as government officials, elected representatives, community activists and *Tehsil* (sub-district) management administration staff who should replicate the approach in other areas (Government of Pakistan, 2006).

#### *Priority for on-site sanitation*

Quite an achievement in South Asia is the high acceptability of on-site solutions in rural and urban areas. Virtually from the start, individual household pour-flush toilets – direct one pit or off-set two pits – were the promoted options in Bangladesh, India, Nepal and Sri Lanka. In the same period Pakistan experimented successfully with low-cost community-built and financed primary sewerage. A recent case from Quetta (Qutub et al., this volume) presents the sustainability and impacts four years after completion. Technically the service is working well and impacts are excellent, but there is some local lack of upkeep and the institutions in which users organized themselves for action have not continued to function.

In spite of this innovative outlook, the initial on-site models were still too expensive to be affordable for the poor. In Bangladesh, the subsidy helped to create initial demand, but the promoted toilet model was unaffordable for 80 per cent of the population. Installation began to increase when the local private sector noted the demand and came up with cheaper parts and lower transport costs. In India, the government and UN agencies jointly adopted the double vault pour-flush model (originally an urban model) as the country-wide standard for rural toilets, an imposed choice that was too costly for most households, rural or urban. Other shortcomings were the emphasis on technology, the lack of effective promotion, programme implementation by state engineering agencies without organizational interest, career opportunities and specific capabilities for sanitation, supply-driven construction goals, and environmental risks. Many toilets were unused or used for other purposes.

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The acceptability of on-site solutions in South Asia is quite an achievement

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There seem to be no generally adopted standards to judge the quality and durability of installations

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Engineers have little incentive to become low-cost sanitation specialists

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### *Acceptance of low-cost models*

Successful pioneers showed that households installed low-cost toilets without subsidy when they could choose a model that they want and can afford. From 1990, Ramakrishna Mission Lokasiksha Parishad (RK-MLP) in Midinapore, West Bengal, offered a choice of 12 models costing one-tenth to one-sixth of the standard twin-pit pour-flush model (Kolsky et al., 1999). The CLTS approach by VERC and WaterAid in rural Bangladesh focused not on toilets, but on the shameful and unacceptability of open defecation, and community responsibility and social pressure to end this practice. As part of CLTS, VERC documented over 31 designs, many developed by villagers, with unit costs starting at \$1.27 (the famous Tk15 model, see Allan, 2003; Kar and Bongarts, 2006; Huda, 2008).

The community-managed sanitation programme in Kerala reduced costs because local committee members identified local materials and negotiated the best price-quality ratio from the local private sector. This lowest local cost design then became the local construction standard. Unit costs were two-thirds that of the government programme and half that of the World Bank.

Within programmes, only WaterAid India and VERC seem to use standard criteria to judge if toilets are sanitary, such as minimum depth, protection against flies, absence of bad smell and absence of visible excreta. There seem to be no generally adopted standards to judge the quality and degree of durability of installations.

### *Shift to decentralized planning and implementation*

One major constraint to improved sanitation is that for a long time it was seen as a private issue. Supporting improved sanitation is now accepted as part of the responsibilities and authority of local governments, especially in rural areas. Local governments in Bangladesh and India also get devolution of funds under the national programme. Going beyond roles, responsibilities and allocations to processes and development of support capacities is much rarer. As far as could be found there are no documented procedures for local organization, participation, promotion and management of large-scale sanitation programmes apart from those documented in NGO-based programmes of CLTS (Halim et al., 2002; Kar, 2003) and Panchayat-managed sanitation in Kerala.

Within the engineering departments, engineering staff and managers (usually also engineers) have little incentive to become low-cost sanitation specialists and engage social experts in sanitation to support rural *Panchayats* and the urban poor. Nor are there indications that the education and career criteria of engineers have changed to reflect progress made in community planning and management of

sanitation programmes. While bureaucrats want *Gram Panchayats* to take up sanitation under new decentralized and demand-responsive sanitation policies, *Panchayats* lack the interests and capacities for effective sanitation programmes (Kumar and Kumar, 2008).

### *Mapping of conditions of the urban poor*

There are now NGO initiatives in India, Nepal and Pakistan to identify all legal, semi-legal and illegal settlements in metropolitan areas and map all conditions of water supply and sanitation. In Nepal, the Centre for Integrated Urban Development (CIUD) prepares urban profiles and poverty maps using GIS and other IT-based techniques and social surveys. GIS also helped achieve credibility for community sewerage plans in Faisalabad, the fourth city in Pakistan (Haider, 2008). In four cities in Madhya Pradesh, WaterAid India and partner NGOs have mapped all 'poverty pockets'. In Karachi, local male youths trained by OPP in basic mapping and computerization have by now mapped the broader sanitation conditions in 60 per cent of all informal settlements and other NGOs have followed suit in at least 11 cities and two of the four provinces (Welle and Wicken, 2008). The unit cost of mapping is not yet widely reported, but CIUD invested Rs50–60 per household (US\$0.7–8.4).

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In Karachi, young men have mapped the sanitation conditions in 60 per cent of all informal settlements

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The resulting hard data has been a means to exert pressure on the authorities, initiate community actions, bring about partnerships between communities, NGOs and municipal governments for accountable and measurable improvements, and help prioritize the worst areas for action in a transparent manner (Dabruse et al., 2007; Qutub et al., 2008).

### *Funding IEC to create demand*

Demands for sanitation are low when people still have open space, vegetation provides privacy or other demands have a higher priority. Rural and urban women often have a higher need and demand, but lack opportunities to express them and influence to see them met. Hence, stimulating household motivation in a gender-specific way to want, build and use toilets is usually needed.

To raise awareness and motivate demand, programmes have increasingly added an information, education and communication (IEC) component.

Since 2001, Indian national (rural) programme guidelines include an allocation of 15 per cent of state programme costs to IEC, with shared financing between central and state governments of 80 per cent and 20 per cent (Government of India, 2001). However, as shown by Kumar and Kumar (2008), more funds for IEC do not automati-

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More funds for IEC do not automatically lead to good results

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cally lead to good results. This depends also on the quality of implementation, including the training and human resource management of the promoters. There is a clear need for evidence-based guidance for good quality programmes which can come from cost-effectiveness (action) studies.

### *Motivating factors of users, not agencies*

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Greater convenience, dignity, privacy and status have more immediate relevance for toilet users than health

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While programme agencies have promoted toilets on their health benefits, users generally have other reasons for installing and using toilets. More convenience, dignity, privacy and status are now recognized as having a more immediate relevance for users than health. In the CLTS approach, a combination of disgust over the dirt and stench of open defecation and the frequent ingestion of particles of human excreta via the six F's (faeces, fingers, flies, fluid (water), food and fields), the high loads of human faeces in people's living environments and water sources and the indignity of having to excrete in public have proven to be effective stimuli for improving sanitation from the 'bottom up'.

In studies, economic benefits are not typically recognized as a category by themselves, but they do play a role. Males have mentioned the increased value of their house. For women, long distances to sanitation sites may mean less time for income-generating and cost-reducing work. In Bangladesh, cost savings from reduced disease helped finance further upgrading of toilets (Huda, 2008). The decrease of public land and the wish to avoid conflicts with private landowners have also increased walking distances and productive time losses from open defecation by men. Benefits of composting toilets are the economic value of human waste and avoidance of pit emptying costs. Asian men value privacy for their womenfolk rather than for themselves, reflecting the higher privacy demands and greater safety risks for women and girls. This may also explain why toilet *use* is greater for women and adolescent girls than for children and men (Government of India, 2003).

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Asian men value the privacy and safety of toilets for their womenfolk rather than for themselves

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Reasons *not* to construct and use toilets also vary, showing several weaknesses in promotion: 1) not able to pay; 2) women's fear of being seen (e.g. through windows or under doors), loss of mobility and socialization from visits to defecation areas, no more open air, sharing between relatives of either sex; 3) no awareness of health risks from open defecation, fear of safety for children; and 4) negative reputation of toilets from poor design or construction, such as bad smell, flooding and slab collapse (Baldwin et al., 2004).

Other emerging demand factors (undistinguished for rural and urban poverty areas) are that *men* especially value status (of owning a toilet, but not necessarily also using it), that *women* go more for con-

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Messages must  
be adapted to suit  
different groups

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venience and comfort (which means not only having, but also using a toilet), that *younger* and *more educated* people value toilets as part of a modern lifestyle and better family health, that people with a *higher level occupation* or *tied to the house* (e.g. shopkeepers) have a greater toilet demand than *farmers* who can use their land for defecation; that demand is also higher in *dense settlements* and areas with *less vegetation*, and that both the powerless and the powerful are influenced by *peer pressure* (Baldwin et al., 2004; House of Consultants, 2000; Jenkins and Curtis, 2005; Kurup et al., 1996). This shows that 'one set serves all' does not work and that a high degree of fine-tuning of messages, senders, channels and tools for different groups in different settings is needed, as well as a good system for feedback from each of these groups.

### *Phasing out direct household subsidy*

The national rural sanitation programmes of Bangladesh and India both opted for promoting only one model. When many households did not want to install this toilet because they could not afford it or deemed it too costly, the programmes introduced a subsidy. In India this was 80 per cent and originally went to everyone, irrespective of their socio-economic status. Later, the subsidy was restricted to below poverty line (BPL) households. Recent new models such as dry latrines are also installed with subsidies from 60 per cent (greater Kathmandu, Nepal) to almost 80 per cent (Tamil Nadu, India) to make them more attractive and affordable. Toilets with community-managed sewers were installed with subsidy in Quetta owing to the common practice of subsidization and pressure by politicians (Qutub et al., 2008), whereas in Faisalabad no subsidy was given (Haider, 2008).

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Blanket subsidies  
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total sanitation

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There is growing evidence that blanket subsidies to large groups of people are not the most effective solution to ensure total sanitation (Kar, 2003; Smet, 2007; Swann et al., 2007). The provision of subsidy does not ensure that built toilets are used at all, by all or as intended. The state governments of Andhra Pradesh, Maharashtra and Himachal Pradesh achieved a reported construction of, respectively, 2.95 million, 1.6 million and 0.3 million toilets through subsidy-driven programmes. Random evaluations revealed non-use or use for other purposes such as storage of 50 per cent, 47 per cent and 70 per cent, respectively (Ganju et al., 2007). Reported non-use of toilets built under the national Indian programme was 50 per cent (Government of India, 2003). In Maharashtra, a total sanitation campaign replaced the initial state programme with household subsidies after a visit to the CLTS programme in Bangladesh (Huda, 2008; Khisro et al., 2008; Saha et al., 2008). Instead of individual subsidies, ODF (open defecation-free) villages can sometimes get a financial state award which



they can use for development purposes (Ganguly, 2008; Kar and Pasteur, 2005).

Abolition of household subsidies does not necessarily make programmes cheaper. More funds can, however, go to training, demand creation, supply line establishment and assisting communities to plan and carry out their own sanitation programmes, including providing *internal community support* to the least able families in the form of land, materials and/or labour. Successful community managed sanitation programmes report how approaching sanitation as a community issue has stimulated solidarity between local 'haves' and 'have nots' (see e.g. Huda, 2008; Khisro et al., 2008; Kumar and Kumar, 2008; Pretus and Jones, 2008). However, most information is anecdotal; scope and mechanisms would clearly be areas to investigate as part of success validation and cost-effectiveness assessments.

The wide evidence presented at the South Asian Sanitation conference supports findings that even the poorest families build toilets with their own means, given the right stimuli, models and access to local resources and credit facilities. Nevertheless, the debate on the need for some external subsidy for the extreme poor continues. An important reason given is that without some external support, the hardcore poor are the category that was slowest in moving up the sanitation ladder to more durable and easy-to-clean models (Saha et al., 2008).

NGOs such as WaterAid, Plan International, NEWAH and BRAC, and the Indian and Bangladesh national programmes therefore preserve a limited subsidy for the worst off, the so-called hardcore poor (Ahmed, 2006; Kabir et al., 2008; Kalimuthu, 2008; Pretus and Jones, 2008). It may be concluded that, depending on local conditions, the target groups, sources of funding, size, transparency and accountability are more essential than the subsidy as such.

### *Local production and supply to meet demand*

An important part of the sanitation strategy in the region has been the development of the private sector. Small enterprises produce and sell latrine parts and also install full toilets. In Pakistan, the absence of local supply is a limiting factor for community managed rural sanitation (Khisro et al., 2008). In Bangladesh, UNICEF and the Department of Public Health Engineering (DPHE) established some 900 production centres and 3,000 'sanitary marts' (yards and shops). They sell all materials for self-construction at subsidized prices, although actual numbers fluctuate with demand. NGOs also sponsor some 625–900 production centres. Centres exist, however, mainly at Thana headquarters and over 2,000 unions have no programme suppliers (PAC, 2006).

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Approaching sanitation as a community issue has stimulated solidarity between local 'haves' and 'have nots'

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When the commercial private sector saw the emerging market, they responded by selling simpler and cheaper models, which became very popular. In 1999, there were some 4,500 latrine producers in Bangladesh, of which over half were in the private sector (Fröhlich, 1999). The estimated sales value grew from \$1.5 m to \$4.4 m in three years (PAC, 2006). With so many private outlets selling parts cheaper and closer to people, the subsidized centres became overstocked. In 1993 DPHE cut its production and in 1996 UNICEF stopped supplying cement. However, DPHE still employs some 2,000 sanitation entrepreneurs (Galway, 2000). It is not known how many would survive on their own. A study by NGOF revealed that microenterprises are hardly sustainable on latrine parts only; they need to diversify their production (J. Verhagen, personal communication).

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Women's groups were financed to set up production centres and entrepreneurs to open sanitation shops

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In 1990, the Indian Government and UNICEF copied the approach in India: for example, financing women's groups to set up production centres and entrepreneurs to open sanitation markets and shops. The entrepreneurs get training and a starting-up credit which they have to pay back. Expansion was much slower than in Bangladesh and the current number is not known. As these rural sanitary marts (RSMs) are not always created in response to growing demand, it is doubtful how many are profitable. Neither consolidated data on RSM performance, nor a rigorous external evaluation was found.

Whether RSMs are profitable depends on their prices and minimum annual sales. Under the total sanitation campaign (TSC), each block can establish one RSM. The government provides a maximum of Rs3.5 lakh (US\$88,844) to construct a shed/showroom, acquire equipment, train masons and motivators and pays the promotion materials and a salary of Rs750/month (\$19) for two years. Cost sharing is 80 per cent central government and 20 per cent state government. An RSM will break even when it constructs around 1,000 toilets per year (Gupta et al., 2005). However, it is unclear whether these sales also cover the salary costs. No data was found on the sustainability and profit of RSMs in the TSC.

An important aspect is the number of poor women who get work and an income from improving village sanitation. East Midinapure in West Bengal, for example, has 25 RSMs, which employ over 300 female masons (Cheruvuri, 2006). In Kerala, at least 1,200 poor women were trained as toilet masons in local enterprise groups (Sijbesma, 2006).

### *From numerical to behavioural results*

A significant phenomenon in the region is the shift from reporting *numbers of toilets* to reporting *ODF communities*. However, ODF needs verification, including the hygiene of the installed toilets (especially

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those shared by many such as in schools) because soiled toilets full of flies still constitute a serious health hazard.

Conventional monitoring of financial and physical progress without attention to actual use and ODF status still continues, however: for example, in the national sanitation programmes in Bangladesh and Pakistan (Khisro et al., 2008). In the programme in Kerala, latrine use and hand washing were monitored by the NGO, but there is no evidence that the state programme has continued this. Neither have, as far as is known, the ODF status of CLTS villages been assessed. VERC, for example, was not systematically monitoring and collating field data at district level (Allan, 2003). Data on longer-term practices such as increasing or decreasing toilet use and hand washing over time are still rare. The 2008 South Asian Sanitation and Hygiene Practitioners' Workshop included two papers on this subject. VERC's study on households climbing up the sanitation ladder between 2001 and 2006 included qualitative data showing that hygiene did indeed improve over time (Saha et al., 2008). Safe defecation by children is still a neglected area (Khisro et al., 2008).

### **Areas that need to be developed**

Besides areas with progress, there are also ten areas that are undeveloped or which have been overlooked. These are detailed below.

#### *Households are diversified, not uniform*

All reviewed sanitation programmes in South Asia focus on the household as the lowest level of decision-making on toilet design, installation, financing and use. Yet there are important differences both within and between households that are not always systematically addressed. Within households, men and women have different interests in and priorities for latrines. There are also differences between groups of households, which relate to differences in socio-economic status, and occupational and physical conditions. The same diversification goes for communication channels and materials. Printed media and materials reach men and the better off more easily than women and the poor, with their lower literacy. Different occupational groups have different reasons and urgency to want to have and use toilets and are also interested in different models and locations.

#### *Assessing cost-effectiveness of promotion*

From general research it is known that effective promotion uses a mix of mass information and personal contacts. South Asia has been the subject of few studies on effective hygiene promotion. Only a few

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Printed media and materials reach men and the better off more easily than women and the poor

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More research is needed on the effectiveness and cost of different hygiene and sanitation promotion approaches

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earlier studies were identified in the full paper of which this is a shortened version (Sijbesma, 2008). A recent study in one intervention and one control city in Kerala, Bangladesh and Sri Lanka showed that a gender-sensitive participatory approach resulted in total access and use of toilets in the Bangladesh case and increases to 91 per cent and 89 per cent in the sites in Kerala and Sri Lanka, with no, or minimal, improvement in the control sites. Safe disposal of children's stools, quality of constructed toilets, toilet hygiene and segregation and composting of household waste also increased significantly. Overall, the interventions were over 30 per cent cheaper than the compared



Gender-sensitive, participatory approaches to promotion have resulted in much greater access to and use of toilets. Credit: Lucy Stevens, Practical Action

government programmes (IRC and partners, 2006). Clearly, there is an urgent need for more research on the effectiveness and cost of different hygiene and sanitation promotion approaches in larger and more representative study samples and the effects by gender and for the poor.

### *Targeting subsidies with equity*

Subsidies only make sense if they are not unsustainably high, are targeted to the ultra poor and evidence is available of their actual reach and use as intended. Tested mechanisms exist, but they seem not to be widely used so far. Because poverty is so locally specific, targeting is best done at the lowest level and in a participatory and transparent manner that can be and is publicly accounted for (Ahmed, 2006).

### *Upgrading toilets*

The principle of demand-responsive sanitation (DRS) is that users install what they want and can afford, from a range going from a very basic pit latrine of lowest cost, built in the yard with free material to a fully equipped and tiled bathroom inside the house. Included in the concept is that households may initially build a lower cost model which they upgrade over time: for example, adding a permanent roof, replacing curtains or screens with doors and cementing and tiling floors and walls. Actively promoting upgrading and giving examples of models and costs can help more people build easier-to-clean, more durable and more attractive multi-purpose sanitation facilities.

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Households may initially build a lower cost model which they upgrade over time

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### *Developing environmentally safe solutions*

A lot of experience has been gained with low-cost on-site toilets. There are, however, specific environmental problems that have not yet been resolved: toilets in rocky and dry areas, areas with high water tables, flooding and easy pit collapse, and safe emptying and end disposal of uncomposted sludge. The same lack of information exists for the emptying of double vault pour-flush and dry toilets.

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Dry toilets are particularly appropriate where there are high water tables, rocky soils, a lack of water for flushing and a market for natural fertilizer

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### *Programming for dry toilets*

There is an urgent need to experiment with a range of cheap to more expensive models, especially in high potential areas, such as areas with high water tables and frequent flooding, rocky soils, a lack of water for flushing, a market for natural fertilizer (such as peri-urban communities with market gardening), poor quality soil and high fertilizer prices, and areas where pit emptying is costly. Cultural acceptability may be higher than first thought. In Bangladesh, for example,

traditional use of excreta as fertilizer can be found. Dry toilets need more space and are relatively expensive, but data at the workshop showed them to be competitive with the double vault pour-flush toilet and septic tank.

### *Improved sanitation in urban slums*

Authors at the South Asian workshop presented four types of solution for dealing with sanitation for large numbers of poor people:

1. partnerships between municipalities, NGOs and communities enabling slum households to install on-site toilets (mostly pour-flush, but in Nepal also dry composting toilets) usually still with a subsidy, or a combination of a subsidy and loan (Ahmed, 2006; Rajbhandari, 2008);
2. NGOs helping households in dense and poor urban settlements to build rows of communal toilets, also called toilet clusters, one series for men and the other for women and children;
3. partnerships to establish community-managed sanitation blocks: small buildings with separate toilets, bathing (and sometimes laundry) facilities and water supply for women and children on one site and for men on the other site; Community-managed sanitation blocks can be a solution for urban slums
4. partnerships between slum communities, local NGOs and municipalities to install shallow sewers financed by poor house-



Communal toilet blocks, with women separate from men, are a solution in dense, poor urban areas. Credit: Theo Schilderman, Practical Action

holds and linked to the city-installed mains, a model mainly followed in Pakistan.

Although sanitation blocks are probably the most realistic solution and paid group or community management of the blocks the best management options, a number of issues need further investigation and decision making, e.g. the best mix of service levels, adjustment to special user needs and equity in access.

### *Going for short- or long-term programmes*

There is a lack of quantitative evidence over time on the overall risk-reducing impacts of information, education and communication (IEC) campaigns, CLTS campaigns and social marketing campaigns, both alone and in comparison with more comprehensive approaches. The latter aim at building the capacities of communities to investigate, analyse and effectively and lastingly reduce and eliminate the whole range of risky conditions and practices. Studies on the costs and effectiveness of the different approaches would aim at the sustained adoption of improved practices and the benefits for poor people's livelihoods.

### *Sustainability of facilities and programmes*

Achieving the Millennium Development Goals (MDGs) for sanitation and – in time – freedom from open defecation only makes sense if existing households continue to use, empty and (re)build sanitary toilets and newly formed households also build, use and sustain such provisions. There is a surprising lack of information on what happens on both points after promotion programmes have ended or moved to new communities. More longitudinal studies on toilet adoption and use and revisits to representative samples of communities, which have been proven to be open defecation-free, are urgently needed to fill this gap of insight in effective promotion strategies.

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There is a lack of information on what happens after promotion programmes have ended or moved to new communities

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### *Institutional and human capacities*

Throughout the region, sanitation is one of the development areas that has shifted from a centrally managed, supply driven approach to a decentralized development responsibility of local governments. In this review, most information and lessons learned relate to overall policies and strategies on the one hand, and improvement activities and results on the ground on the other hand. Very little information was found on the resources and capabilities at intermediate level, such as numbers and types of technical and social support staff, capacity building of this staff, the budgets and actual expenditures on the dif-

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There need to be career opportunities for social and technical staff to specialize in all aspects of sanitation and hygiene

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ferent types of support and the in-house and independent monitoring and evaluation and so on. To be sustainable over time, it is likely that sanitation programmes need longer-term commitment and, at intermediate level, enough support staff with strong facilitation skills and training, job performance criteria that go beyond numbers and sufficient career opportunities for social and technical staff to specialize in all aspects of sanitation and hygiene.

### **Further steps forward**

A specific question discussed at the workshop was whether there is a need to cooperate in advancing specific subject areas, and if so, on which subjects and how cooperation would take place. The following four areas emerged as action research priorities for regional cooperation: 1) assessing and enhancing cost-effective promotion and delivery; 2) agreement on indicators of effects and impacts as a condition to validate promising approaches; 3) assessing and improving end disposal of excreta; and 4) action research on citizens' voices and accountability, addressing access to information as well as roles/responsibilities of different stakeholders, government responsiveness and transparency of funds for sanitation and hygiene promotion. Practitioners formed sub-groups, which will take each subject forward. Arrangements were also made for cooperation in advocacy work on sanitation and hygiene in the South Asian region.

### ***Assessing and enhancing cost-effective promotion and delivery***

Promising programmes are currently carried out to make whole districts and cities in South Asia open defecation-free. At the same time, no good field studies could be found that assess the effectiveness and the full costs (i.e. to agencies, communities and households) of these programmes. No good field studies could be found that assess the effectiveness and the full costs of these sanitation programmes. It is therefore proposed that a group of participating partners will together design and implement an evaluation or action research project to do an ex-post evaluation of some district or city-wide sanitation campaigns. Alternatively, the measurement of costs and behavioural effects could be included in ongoing action programmes for ODF districts and cities. Investigations would focus on the resources, costs and results of the approaches and include as many of the issues identified in the workshop as important for effectiveness, sustainability and equity of improved sanitation.



*Validating claimed successes*

Experiences in parts of India (e.g. Midinapure, Maharashtra) and Bangladesh (CLTS) show that with effective promotion, community-managed action and easy access to low-cost designs and material, almost all households will build improved toilets without direct subsidy. Yet independent evaluations of the approaches are extremely scarce. Despite its early success, no evaluation could be found of patterns of use and upkeep of the Midinapure toilets. The same goes for claims that the CLTS approach has resulted in ODF districts. Evaluation of two ODF districts in Maharashtra showed incorrect claims in 10 per cent of the village in one district and 57 per cent in the second (Jain, 2007).

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No evaluation could be found of patterns of use and upkeep of the Midinapure toilets

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*Assessing safe end-disposal of excreta and possible alternatives*

A neglected subject area requiring more data and insight is what happens to human excreta from toilets that are filled up and what alternatives are used for safe disposal. In the South Asian region, very little is known about what happens when single or double pit toilets are full: who empties them (if at all), at what costs and what is done with the raw and composted excreta? Especially in densely populated areas, fewer and fewer households will be able to construct a new toilet, cover over the full pit and use the excreta productively by planting a timber or fruit tree in that spot. Hygienic, safe and socially acceptable ways of emptying and end-disposal of excreta become extremely important.

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Hygienic, safe and socially acceptable ways of emptying and end-disposal of excreta are extremely important

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The workshop participants identified the following specific sub-topics for action research on safe end-disposal: 1) costs of the urban sanitation chain; 2) modification of septic tanks for 'self-treatment'; 3) faecal sludge management, composting and biogas options; 4) cost-benefits of eco-sanitation; 5) public-private partnerships on motorized pit emptying with safe end-disposal; and 6) safe and socially acceptable low-tech and manual pit emptying.

*Citizens voices and accountability for actions*

Participants identified citizen demands and responsiveness to these demands as key areas for action research. Sub-topics identified were how and to what extent and effects different citizen groups get access to information, the roles and responsibilities of different stakeholders on providing effective sanitation and hygiene promotion services, responsiveness of the government and other stakeholders to citizen demands, and transparency on the use of funds for sanitation and hygiene promotion.

### ***Enhancing institutional and human capacity for scaling up cost-effective sanitation***

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Government agencies at the intermediate level lack the required capabilities

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Going to scale on demand-responsive sanitation and hygiene is not possible without supportive organizations and staff with the right mix of skills, attitudes and management systems. This review (although not the workshop participants) indicates that especially government agencies at the intermediate (district) level lack the required human and organizational capabilities. It would therefore be very useful to undertake more actions and do more research in these specific subject areas. More actions should focus especially on the requirements and costs of quality training and management of participatory promotion of improved sanitation and hygiene at the supportive level(s).

Priority areas for sanitation support in South Asia by large investment banks, governments, UN agencies and other supporters of large-scale programmes emerging from this paper are to: 1) promote social marketing of do-it-yourself toilets in different types of environment; 2) assist small enterprises throughout the continent to stock, market and sell locally appropriate materials with designs; 3) encourage local credit and savings programmes including with local state banks; and 4) enable NGOs to build government staff capacities for participatory CLTS/SLTS (school-led total sanitation) and outcome monitoring and for targeting subsidies with transparency to the ultra-poor (e.g. as described by Ahmed, 2008). For implementation, this paper shows a priority need to help municipalities develop city-wide, full-chain and pro-poor and gender-equitable sanitation strategies, programmes and plans. These would reflect current insights on sanitation mapping, social marketing and community-managed approaches to on-site and off-site services and include local experiments and horizontal learning processes at state, city and neighbourhood levels.

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