



Building institutional capacity for sanitation

By Kathleen Shordt and Marielle Snel

This article discusses key challenges that continue to marginalize the sanitation sector. It reflects on lessons from some experiences that may have implications for institutional development. It identifies gaps and suggests actions to address these. 'Sanitation', as used here, refers to technologies that are on-site or lower-cost (such as latrines and small-bore sewerage). As construction is only one small part of the sanitation spectrum, the article also refers to the motivation, the demand, cost and behavioural factors required for implementation, use and maintenance of sanitation facilities.

Lack of priority

The lack of priority typically given to sanitation is reflected in the level of government investment shown in Figure 1, from the Fourth UNICEF/WHO Joint Monitoring Programme.

A recent review of completed World Bank projects in South Asia demonstrates the same. The review showed that out of 24 completed water and sanitation projects, in 16 locations around the world, only two devoted more than 10 per cent of their budgets to sanitation.

There may be many reasons for this including:

- Sanitation is not appealing to deal with as it involves culturally-sensitive personal and communal wastes
- The technical aspects of low-cost sanitation are often not very interesting for engineers
- For Departments of Public Health and some other donors, the levels of finance and project timeframes are less attractive in the sanitation compared to the water subsector
- Sanitation programmes are challenging to organize and control as they relate to small budgets over scattered areas, requiring similarly consistent private behaviours by different individuals
- Low-cost sanitation and hygiene are sometimes perceived as being more a 'women's subject' than is water supply

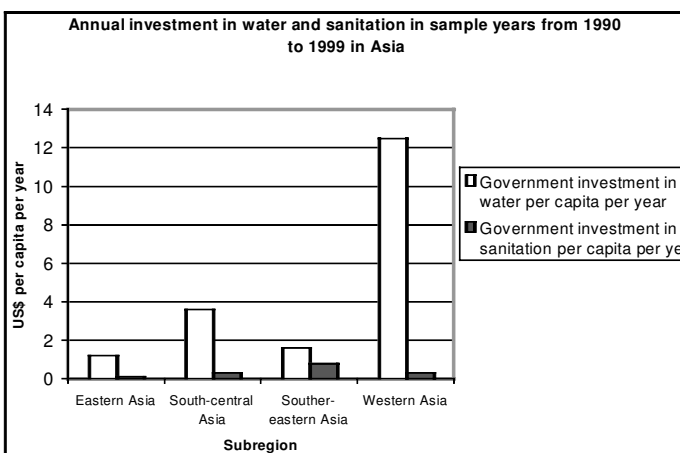
there are interesting exceptions. For example, large national programmes have been mounted in countries such as Bangladesh and Vietnam. In Kerala, southern India, the household and school latrine/sanitation programme is a focal and entry point in a community within Kerala's current effort to decentralize government functions, budgets and decision-making. In this case, sanitation is politically appealing as a mass programme that delivers a product desired by most families and delivers it with some efficiency at the local level. According to Wegelin policy decisions made at the national, regional and provincial level influence development. However sanitation has not been given priority at this decision making level. The politicians (ministers, members of parliament, councillors), professional associations, education institutions, donors, NGOs, charities and the media all involved in the decisions making need important data and information to discharge to their respective audiences (Wegelin, 2000 p. 11)¹.

Perhaps we may take some inspiration from other sectors that have overcome or are overcoming similar obstacles in advocating their concerns among politicians, bureaucracies and within communities. Family planning and AIDS education are two examples. In the early 1970s family planning and contraception were almost taboo subjects in the public dialogue of many nations. In prioritizing these subjects consistent budgets and financial resources have been applied. In addition differentiation and imagination have been used in developing strategies for advocacy at national and local levels by using ambassadors and mainstreaming media. These activities have included:

- Advocacy, using a wide range of channels
- Structured orientation and training programmes

1. Wegelin-Schuringa, M. (2000), *Public awareness and mobilisation for sanitation*, IRC, The Hague.

Figure 1
Source: Year 2000 Global Assessment (WHO and UNICEF, 2000)



- Demonstration programmes
- Research
- Pilot or small-scale experiences to try out and adapt strategies local environments

These have not been one-off efforts but have been sustained for years and at 10-15 per cent of the total project budgets. Such consistent expenditures are rare in the sanitation sector.

Learning from the existing knowledge base

Sanitation programmes suffer from the unsettling habit of 'reinventing the wheel' in determining their strategies and institutional options. There is a large body of literature dating back decades on low-cost sanitation, which deserves to be reviewed. This provides, for example, useful information about 'lessons learned' and technical issues such as leaching. A thorough and intelligent literature review is well deserving of financial support.

2. Cairncross, S. and R. Feachem (1983), *Environmental health engineering in the tropics*, John Wiley & sons, UK.

Learning from the past: quotes from 1983 and 1999

'The problem with rural sanitation is to encourage the rural population to use and maintain the facilities... There are no simple solutions to this problem and it is not an exaggeration to state that the hygienic disposal of excreta for the millions of villagers in the world is one of the greatest challenges facing public health workers. What have emerged from previous experience are a number of guiding principles, which should be borne in mind...

1. Excreta disposal is a sensitive matter about which people have strong cultural preferences. Therefore it is imperative to achieve the maximum involvement of the community in the design and implementation of any latrine programme...
2. People require a reason or motivation for using a new kind of latrine. In general, health improvement will not provide such a motivation...
3. Any type of latrine needs good maintenance and will become fouled and offensive without it... there is evidence that the use of a fouled latrine in rural areas provides a greater health hazard than the practice of casual defecation in the surrounding bush' (Cairncross and Feachem, 1983, p. 108-110)²

'There is a large body of literature dealing with approaches to community participation in sanitation and water projects. ... Most of the literature agrees that, to be successful, participation of users must extend from preliminary planning right through to implementation and operation and maintenance. It must be pointed out, however, that the degree of community participation and users' willingness to pay for improved service levels... depends fundamentally upon household income levels and perceived needs (p. 20)³. The Bank and all donors need to focus on all aspects of sanitation programs to give sanitation a higher profile, improve project preparation and supervision and to build understanding and commitment among clients (Fang, 1999p. 23)³

Fragmented institutional framework

One problem with sanitation is that it is interdisciplinary and therefore a range of institutions are usually involved to the point of fragmenting the overall effort. Those active in one setting or another include:

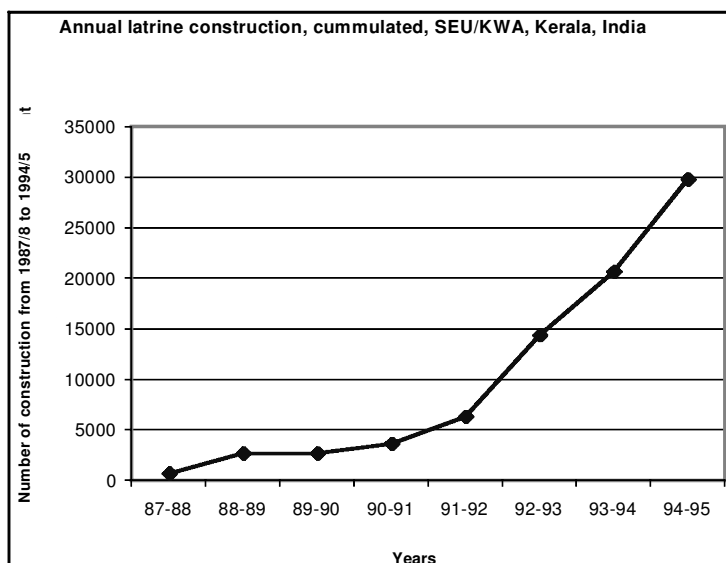
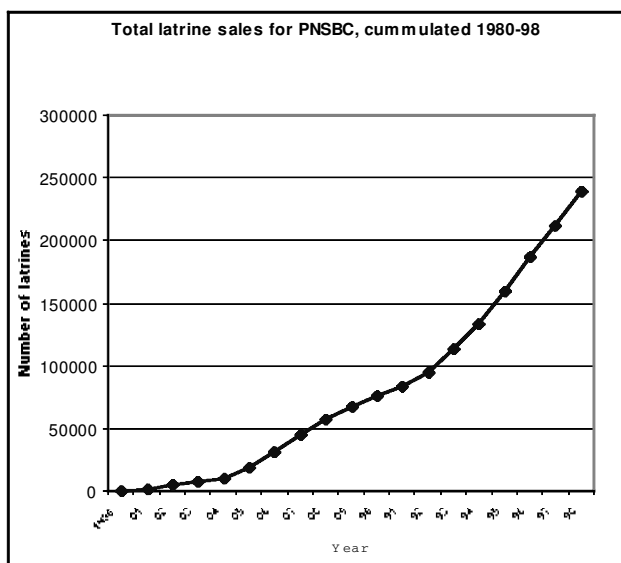
- Government
- Community organizations
- Non-Governmental Organizations (NGOs)
- Private sector
- Project teams

It is suggested that the optimum institutional arrangement cannot be prescribed; it is situational. However, some general considerations about institutional responsibilities may

deserve further discussion:

- Co-ordination: Co-ordination among institutions appears to be easier when responsibilities are clear and separated at least to the extent that they avert conflict or competition for resources. In Guinea-Bissau, the PROCOFAS programme is an unusual example of co-ordination at central levels with co-operative programmes in communities. By contrast, however, some sanitation programmes have succeeded in stimulating robust co-operation among local institutions (clinics, schools, local government, literacy or women's groups), even in the absence of central-level co-ordination.
- Capacity building: Within development efforts disillusionment is starting to set in about the return (or lack of return) on investments in training. In fact, training in isolation and capacity building are quite distinct.
- Distinguishing between urban and rural: Different programme strategies are needed in rural and urban settings. Rural areas are to be characterised by relative social cohesion and homogeneity, where it is relatively easy to reach audiences through traditional and participatory means of communication. Demand for sanitation facilities and hygiene practices may be low or highly variable. Environmental conditions, moreover, are generally supportive to on-site sanitation solutions that can be managed at individual-household level. The reverse is often true in low-income urban areas. These tend to be characterised by high population densities, where it is difficult to find room for toilets or sewage systems. Demand for these services may be high while social cohesion can be quite low and it may be difficult to organize people in communal action. Investment can be seriously obstructed by the high proportion of rented housing and the large, poorer populations in non-legalized settlements (Wegelin, 2000, p. 2).¹ In terms of the roles of each group, the following could be included:
- Government: Governments have a mixed record in mobilizing small constructions in dispersed areas and enhancing real demand.
- Institutional anchors: A mix of institutions with fairly clear responsibilities and institutional anchors are needed and that mix depends on the context. This may change over time. For example, sanitation programmes often begin on a small scale and require considerable flexibility. The implication is that institutional linkages may be ad hoc and experimental initially. Over time this changes. Three very different and interesting sanitation programmes began with unclear institutional

3. Fang, A. (1999), *On-site sanitation: an international review of World Bank experience*, UNDP-World Bank Water and Sanitation Programme – South Asia, India.



Figures 2 and 3

bases/anchors. Of these, the first (in India) has made the transition most effectively to institutionalized, government-supported management. In contrast the sustainability of the programmes strategies initiated in Mozambique and Guinea Bissau are weaker or may be lost altogether.

- Roles of NGOs: When NGOs are active in the sector, their responsibilities should not be limited to community mobilization or IEC activities alone, but should extend to economic and technical tasks such as monitoring or organising construction, controlling or monitoring finance and application of subsidies.
- Control of the private sector: Avoid too much control, for example, direct control of the private sector which must be more demand-led.

What determines successful sanitation programmes?

There are many variables that determine the success of a sanitation programme – five have been selected here due to their salience to institutional capacity. These are:

- Time frame
- Demand
- Technology selection
- Cost
- Monitoring

Time frame

The time frame for sanitation efforts can be rather long with physical and financial implementation developing somewhat like an exponential curve. Specifically, a long time may be needed to stimulate demand and organize inputs before mass construction takes place. This is demonstrated by figures 2 and 3 which show cumulated annual construction in an Indian project and sales in a Mozambican programme. One implication of this is that donors (national or external) should be committed to support programmes consistently. Simple three or four-year project cycles are probably

not sufficient to succeed with sanitation except on a small-scale. Short project cycles without strong institutional anchors are also probably unlikely to create conditions for sustained behavioural change needed to ensure health benefits.

Expenditure on water facilities tends to be distributed more evenly over time; while for sanitation, where demand needs to be stimulated and many individual units (the households) need to collect money and materials, the construction tends to be concentrated at a later stage. Thus the project cycles for water and sanitation can be out of synchronization in a particular location – for instance when the implementation of water services is ‘winding up’ and moving location, the sanitation component is not yet completed. This gap is demonstrated in Figure 4.

Another observation from project experience is that the gap between the planning and construction stages of water facilities is an opportune time for the promotion of hygiene and initiation of sanitation systems. This is not to suggest that water should be conditional on sanitation, or that households should be required to construct latrines before water facilities are provided, (which is ethically questionable and does not contribute to the effective use and maintenance of latrines as experienced in Bangladesh’s UNICEF programmes). Rather in the period before water facilities are constructed, communities and their institutions are receptive to becoming involved in sanitation issues.

Each of these lessons has implications for the design of strategies and deployment of programme resources. However, these conjectures need further detailed investigation. More documented experience is needed to identify strategies for improving the planning of sanitation-project time frames.

Demand

There are examples of successful sanitation programmes that concentrate on so-called ‘software’ (the institutional and managerial

‘Sanitation programmes suffer from the unsettling habit of ‘reinventing the wheel’ in determining their strategies and institutional options.’

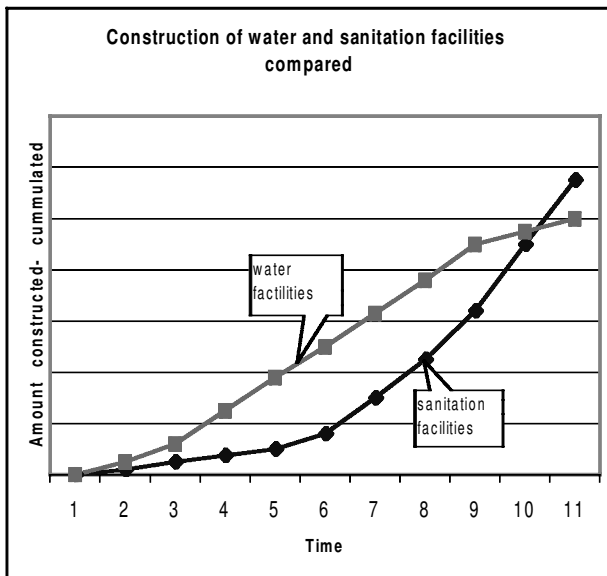


Figure 4

aspects of sanitation as well as capacity building) such as leaving construction activities totally in the hands of the private sector. There are more examples of unsuccessful programmes that have only concentrated on construction. Sanitation is, to a large extent, a social phenomenon, rather than a technical one (Wegelin, 2000).¹ Demand and its cognates – mobi-

lization, marketing, education and participation – appear to be crucial issues.

Demand is somewhat complicated because it may not be fully expressed, may be latent or only partially informed. For example, there may be a real demand for latrines, but if they are not affordable, then there will be little construction. As a more subtle expression of demand: women may be willing (or even want) to develop new hygiene practices which often incur some re-organization of domestic habits. However, these practices may not be realized if the men in the household are uninformed or unsupportive.

It is possible to define the expressed demand for sanitation programmes as the 'entering level' – indicated by the proportion of those who already have a facility or practise a particular behaviour at the beginning of a planned intervention. Different entering levels imply different time frames, expenditures and strategies. For example, where less than a certain percentage – 40 per cent – of the households practise defecation in some type of latrine at the beginning of a project intervention, then more emphasis is needed on demand-creation, social marketing or technology development. It appears that it is difficult to interpret or transform the learning from the baseline study into relevant strategies for the future.

The level and expression of demand can change over time. How to increase the expressed demand has become of subject of heated debate between those favouring social marketing approaches and proponents of community development or health promotion approaches. In practice, most interventions use several channels and approaches. They try to determine the effective mix for a particular situation, of marketing, promotion and education strategies, including interpersonal communication.⁴

These excerpts below are also representative of observations about these issues in sev-

eral other programmes and projects:

- ...it is important to recognise that there may be many levels of demand, including latent or unexpressed and partially informed demand... Passive sanitation promotion led to strongly location-specific awareness that failed to reach out to the wider peri-urban community. Animators were individuals known to local communities, who understood local cultural norms and constraints faced by the target groups. A wide variety of promotion pathways were questioned, ranging from mass media to indigenous media.
- Factors such as comfort and convenience and privacy account for the majority of reasons given why householders constructed latrines on-plot.⁵ Health-related factors, although mentioned, tend to be of secondary importance (Saywell, p. 36 and 44).

Education and hygiene promotion, experience has suggested, should continue beyond the construction period. This is sometimes overlooked and therefore diminishes the initial investment through poor maintenance and use, or inconsistent behaviours. Ideally, in the post-construction period, continuous and sustained institutional solutions should gradually develop. Examples of one element of this gradual institutionalization and upgrading include the School Sanitation and Hygiene Education (SSHE) programmes being given more prominence around the world by UNICEF and partner governments and organizations.

Technology selection

There are many technologies suitable for low-cost sanitation such as the simple pit latrines, sanplat with pit, Mozambique pit latrine, ventilated improved pit latrine (VIP), double-pit, pour-flush and composting latrine, small bore systems, ecological toilets, mechanical flush, septic tanks. In general, however, current so-called low-cost technologies appear to be too costly even for poor households. This is illustrated by the findings of the *Year 2000 Global Assessment: WHO and UNICEF Joint Water supply and sanitation monitoring programme*. Table 1 ranks the construction costs for different types of sanitation facilities. It is the order of magnitude of the data that is illustrative rather than the specific numbers.

It is startling, however, to realize that the level of latrine technology is far behind low-cost water supply facilities options. Specific gaps include:

- There is no truly low-cost technology that can operate throughout the year in high water table areas. Such conditions affect coastal populations including those in the densely-populated urban areas of coastal cities around the world
- Where population density is high, on-site solutions such as mechanical pit empty-

4. Important references include: McKee, N. (1992), *Social mobilisation and social marketing in developing communities: lessons for communicators*, Penang, Malaysia. Murre, T., C. van Wijk-Sijbesma and S. Esrey. (1995) *Motivating better hygiene behaviour: importance of public health mechanisms of change*, UNICEF.

5. Experience in some programmes has shown that the reasons of early acceptors (men/women; rich/poor) can usefully be incorporated into the marketing. These are usually not health-related. Gradually, health and hygiene is added, seeking to create sustained behaviours related to the use of facilities or difficult behaviours such as hand washing.

6. Saywell, D. and Hunt C. (1999), *Sanitation Programmes revisited*, Task No. 161 WELL Study, London.

Type of sanitation facility	Per capita construction costs (median) in US\$		
	ASIA	AFRICA	Latin America and Caribbean
Septic tank	75	97	100
Sewer	64	100	154 (rural) 196 (urban)
small-bore sewer	40	-	140 (rural) 130 (urban)
Pour-Flush on-site	30	42	73
VIP	29	32	42
simple pit latrine	8	16	56
Other	6	3	-

Table 1
Per capita construction costs for latrine facilities

- ing and small bore systems need further refining and dissemination
- Studies on leaching and cross pollution from latrine pit to drinking water source need to be collected, validated and gaps identified in necessary data need to be filled
 - Consistent programme strategies should be applied that enable users, and those who pay for the facilities, to contribute at least in part to the technology selection

Cost

Cost control, subsidies and incentives are three important financial aspects of sanitation programmes about which decision making sometimes seems to be more intuitive than informed.

Cost control relates to the provision of an adequate product at the lowest price. This is particularly important where the public pays all or a percentage of the costs. In the few cases where implementers such as NGOs or government groups worked to control costs, this involved competitive bidding, use of local materials for construction, leaving part of the construction to the household, strong financial monitoring and auditing. Table 2 shows that strong cost control (attempted only by the last group in the table) does indeed result in cost reductions. This table shows the all-in costs for the same technology/model implemented by different groups.

In situations where construction is done by the private sector, prices are theoretically held down through competition among small providers and on the free flow of information to clients about prices. In practice however, information does not always flow freely and small providers can create small cartels. Some projects in Bangladesh and India approach this problem by insuring that clear information about costs and prices (for materials, construction wages and piecework costs) are readily available to the public.

Subsidies: Given the relatively high costs of technologies for poor households, it follows that many programmes offer a subsidy.

Table 2
Source: Kurup, K. B. et al. (1996), Operational lessons from a sanitation programme in Kerala, *Waterlines* 14:3, ITDG Publishing, UK

Costs of latrines, Kerala India 1989-95 (Indian Rupees)	
Programme of	Average unit cost
World Bank	Rs. 3500
Various government agencies	Rs. 3000 to Rs. 3500
(NGO) project with local government	Rs. 2000

There are many approaches, for example, providing money or other subsidies to contractors, subsidized latrine parts, direct subsidies to households, revolving loan schemes, cross subsidies, no subsidy except for free community mobilization and hygiene education. The comparative effects of these different approaches on access, equity and durability of the investment unfortunately do not appear to have been studied. Yet subsidy strategies and rates should be decided taking into account real affordability.

A heated debate has developed about household *subsidies* for low-cost latrine programmes. The tendency is to reduce or eliminate subsidies for household latrines. One argument has been that such subsidies are insupportably expensive on a large scale and have not created conditions for mass acceptance of latrines. Indeed, subsidies do not seem to have had the desired results in terms of mass provision for vulnerable families. Yet the evidence regarding subsidies for other utilities such as water seems to be mixed.

Evidence from a project in Maputo between 1990 and 1998 indicates how sensitive demand can be to subsidy level. Within a year and half of the subsidy being reduced (almost eliminated), sales had fallen by 80 per cent. This demonstrates, as in some other projects, being when subsidy levels change, they must do so judiciously, gradually and be supported by careful information and monitoring activities.

Therefore reducing the cost may be effective but deciding on subsidies on the basis of real affordability is more realistic, however this change cannot take place too quickly.

Monitoring

Monitoring is too often limited to the collection of information for the purposes of reporting through, for example, Management Information Systems (MIS) and frequently monitoring is not done at all. There are examples of national latrine programmes, which have failed as data was collected on implementation, but monitoring was not subsequently carried out. Consequently problems, which did arise could neither be identified nor acted upon. Beyond the collection of data for reporting purposes and audits, monitoring should be used to improve the operation of a programme and its effectiveness over the short-term while leading to adjustments in policy and strategies over the longer-term. To assist this task a 'monitoring for effectiveness' has been developed and initiated in whole or part within sanitation and water programmes. A sanitation programme should be subject to a range of monitoring activities that are used to various purposes such as:

- reporting
- controlling and ensuring transparency of financial operations and flow of materials
- controlling the quality of construction

- checking the understanding of health concepts and hygiene practices so that interventions can be better targeted
- improving maintenance and use by families
- checking cost recovery and identifying ways in which it can be improved
- check public satisfaction with facilities so that aspects of the programme can be improved
- ensuring that actions respond to problems which the monitoring has identified
- identifying gaps in the private service provision and the skills of private sector

in general, identifying unforeseen problems and successes.

Conclusion

This article has presented a number of challenges that continue to arise within the sanitation sector. It should be noted that problems are generic although solutions are not. It is therefore not a question of applying different approaches in different areas. We must continue to learn from past and present experiences and monitored and disseminated our information honestly. That in itself may be one of our biggest challenges.

Further reading: Kurup, K. B., et al. (1996), Operational lessons from a sanitation programme in Kerala, *Waterlines* 14:3, ITDG Publishing, London, UK. McKee, N. (1992), *Social mobilisation and social marketing in developing communities: lessons for communicators*, Penang, Malaysia. Murre, T., van Wijk-Sijbesma C. and S. Esrey. (1995), *Motivating better hygiene behaviour: importance of public health mechanisms of change*, UNICEF, New York. Samanta, B.B. and van Wijk, C. A. (1995), *Criteria for successful sanitation programmes in low-income areas in the south*, UNICEF, Delhi, and IRC, Delft. Shordt, K. (2000), *Action monitoring for effectiveness*, Technical paper series No. 35, IRC, Delft. WHO and UNICEF (2000), *Year 2000 Global Assessment: Joint Water supply and sanitation monitoring programme*, DRAFT.



diary.

March 6-8 2002

International Conference on Flood Estimation, Berne, Switzerland.

The Conference aims to discuss the latest developments within the field of flood estimation. For information contact: The Federal Office for Water and Geology of Switzerland. Fax: +41 31 324 768 or email: floodestimation@bwg.admin.ch. Alternatively visit their website at: <http://hydrant.unibe.ch/veranstaltungen/flood/flood01.html>.

March 13-15 2002

Fractured Rock Aquifers 2002: Managing Land Use and Groundwater, Denver, Colorado, USA.

The Conference aims to foster communication between policy makers, land use planners and groundwater experts to promote sustainable use of natural resources. For more information contact: Bob Masters, National Ground. Fax: +1 614 898 7786 or email at: rmaste@ngwa.org. Alternatively visit their website at: www.ngwa.org/education/fracrock.html.

March 23-27 2002

International Conference on Water Resources Management in Arid Regions, Kuwait City, Kuwait.

The Conference will bring together all those involved with water resources in arid and semi-arid regions. For details contact: Dr. Muhammad Al-Rashed via email at: mrashed@safat.kisr.edu.kw.

April 8-20 2002

Combating Desertification, South Africa and Namibia.

The Conference includes a three-day symposium in Cape Town, South Africa and also time spent with a rural community. For details contact: Mary Seely via email at: mseely@drfn.org.za or visit their website at: <http://des2002.az.blm.gov/homepage.htm>.

April 10-12 2002

International Conference on Assessment and Planning for Emergency Sanitation, Loughborough University, UK

The conference will be divided into four themes: excreta disposal, hygiene promotion and community participation, waste management and emer-

gency sanitation planning and management. For details contact: Contact: Mrs Dot Barnard, Conference Administrator. Tel: +44 1509 223772 or email: wedc.conf@lboro.ac.uk.

May 19-23 2002

Water Institute of Southern Africa (WISA) Biennial Conference and Exhibition, Halfway House, South Africa.

For details contact: Roelien-M Bakker, WISA, PO Box 6011, Halfway House 1685, South Africa. Tel: +27 11 805 6368; Fax: +27 11 315 1258 or email: conference@wisa.co.za.

July 21-26 2002

Women's World 2002: 8th International Interdisciplinary Conference on Women, Kampala, Uganda.

One sub-theme to be covered are the issues related to 'Gender, Water, Sanitation and Housing'. For details contact: Women's World 2002 Co-ordinator via email at: wgs@mak.ac.ug.

September 22-26 2002

4th International Symposium on Artificial Recharge: Management of Aquifer Recharge for Sustainability, Adelaide, Australia.

The Symposium will be an opportunity to discuss issues such as the prevention of clogging, use of aquifers for water treatment and reclamation, water banking, catchment management, economics and new technologies.

For details contact: Louise Carnell, Hartley Management Group Pty Ltd, PO Box 20 Kent Town South Australia 5071. Tel: +61 8 8363 4399, Fax: +61 8 8363 4577 or email: lsar4@hartleymgt.com.au. Alternatively visit their website at: <http://www.groundwater.com.au/conf/isar4.htm>.

November 18-21 2002

28th WEDC Conference: Sustainable Environmental Sanitation Services, Calcutta, India.

Topics for discussion include sustainable wastewater, gender, water resources, solid waste, use of computers and water quality and treatment. For information contact: Dot Barnard via email at: wedc.conf@lboro.co.uk or visit their website at: www.lboro.ac.uk/wedc/conferences/index.htm.