

Sanitation and Hygiene in Africa: Where do We Stand?

Analysis from the AfricaSan
Conference, Kigali, Rwanda

Edited by Piers Cross and Yolande Coombes



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Foreword

Ministers responsible for water in 41 African countries met in Abuja, Nigeria, in April 2002, and decided to form AMCOW to promote cooperation, security, socioeconomic development and poverty eradication through the management of water resources and the provision of water supply and sanitation services.

Since its inception in 2002 the African Ministers Council on Water (AMCOW) has strived to strengthen intergovernmental co-operation in order to halt and reverse the water crisis and sanitation problems in Africa. For sanitation, one of the key ways AMCOW has achieved this is through an 'AfricaSan dialogue', which since 2002 has become a movement for change and progress in sanitation and hygiene in Africa.

Through the pan-Africa and regional AfricaSan conferences, AMCOW has been able to facilitate the sharing and adoption of best practices in sanitation service development, as well as rewarding success. The AMCOW AfricaSan Awards for sanitation and hygiene were formally launched during the 2nd AfricaSan Conference in 2008. The awards are dedicated to recognizing outstanding efforts and achievements in sanitation and hygiene in Africa which result in large-scale, sustainable behaviour changes and tangible impacts.

Also in 2008, AMCOW led the development of the eThekweni commitments. A set of specific commitments, formed during the International Year of Sanitation to get Africa back on track to meet the MDGs. Since then, AMCOW has monitored progress towards these commitments, which is another key element of AMCOW's remit.

The Third Africa Conference on Sanitation and Hygiene (AfricaSan 3) was held from July 19th–21st, 2011 in Kigali, Rwanda. The Government of Rwanda and AMCOW hosted the event which brought together nearly 900 participants from governments, multilateral agencies, development banks, local and international civil society organizations, youth groups, gender interest groups, utilities, local governments and universities from 67 countries.

The conference featured a political dialogue amongst 23 Ministers responsible for sanitation and the launch of the UNSGAB 5-year Drive for Sustainable Sanitation in Africa. Ministers reviewed progress against the 2008 eThekweni AfricaSan declaration and produced a Kigali Ministerial Statement on Sanitation and Hygiene. Forums for leaders of utilities, local government and civil society also produced commitments to strengthen performance and impact. A rich array of technical sessions was organized on topics prioritized in country preparation meetings held in 37 African countries prior to the conference.

AMCOW felt that documenting these technical papers would bring the knowledge to a wider audience and present a body of knowledge against which to measure progress in future AfricaSan events. This book presents in depth, much of the learning and knowledge generated at AfricaSan 3. It is a great pleasure to extend our thanks to the agencies (in particular WSP for organizing this publication) and to the individual authors for taking the time to develop their presentations into chapters. By taking stock of

progress and identifying technical assistance that countries need, we have been able significantly to improve the sanitation status in Africa. There is a great deal still to do and this book testifies that whilst there is no room for complacency, there is much reason for optimism. We hope that this book will be a useful aid to countries in the final push towards achieving the eThekweni commitments and the Sanitation MDG.

Bai-Mass Taal
Executive Director
African Ministers Council on Water

Overview

Chapter 1

AfricaSan: From conference to movement¹

Piers Cross

Conference Director

The Third Africa Conference on Sanitation and Hygiene (AfricaSan 3) was held from July 19th–21st, 2011 in Kigali, Rwanda. The Government of Rwanda and the African Ministers' Council on Water (AMCOW) hosted the event which brought together nearly 900 participants from governments, multilateral agencies, development banks, local and international civil society organizations, youth groups, gender interest groups, utilities, local governments and universities from 67 countries. The conference featured a political dialogue amongst 23 Ministers responsible for sanitation and the launch of the 5-year Drive for Sustainable Sanitation in Africa.

The concept of AfricaSan is to generate political momentum for sanitation and hygiene as well as provide a pan-African forum to show-case best practices and support problem-solving. The opening chapter to this book on AfricaSan 3 explores the origin of the AfricaSan conferences, charts their growth and looks at how they might evolve for the future including the potential for progression into a social movement. This paper was developed from a review of all the regional sanitation conferences, including AfricaSan.

1.1 LOOKING BACK

1.1.1 Where did the idea of AfricaSan come from?

The idea of organizing Regional Sanitation Conferences (SAN) was a joint initiative of the management of the Water Supply and Sanitation Collaborative Council (WSSCC) and the Water and Sanitation Program (WSP) for Africa in late 2001. Ahead of the World Summit on Sustainable Development (WSSD) to be held in 2002, the Executive Director of WSSCC and the Principal Regional Team Leader of WSP-Africa met with Minister Ronnie Kasrils, Minister of Water and Forestry in the South Africa, to discuss how to build political momentum for the neglected topic of sanitation in Africa. This meeting led to the first AfricaSan conference, hosted in Johannesburg in June 2002. One hundred and fifty decision-makers and sanitation experts (including 11 Ministers) attended the first AfricaSan meeting. Its main achievement was that it contributed to building political momentum for the World Summit on Sustainable Development (and subsequently the UN) to adopt a specific MDG target on sanitation.

1.1.2 What was the vision of the first AfricaSan meeting?

The vision of the first AfricaSan meeting was: (i) to provide a platform specifically for sanitation leaders in developing countries – since there was no other; (ii) to generate political momentum for sanitation; and (iii) to provide a forum for technical discussion to show-case best practices and support problem-solving.

From the outset, AfricaSan recognized that a blend of political support, technical advance and knowledge exchange was needed to develop momentum for sanitation. The vision was that Governments should lead sanitation improvement, whilst engaging the private sector, civil society, consumer/community bodies, the research community, finance institutions and development agencies. AfricaSan was never meant to be purely technical exchanges between practitioners. They recognized

¹This chapter is based on 'A Synthesis of Regional Assessments' a paper commissioned by WSSCC for the Global Sanitation Forum in 2012.

that to reach the goal of safe, sustainable sanitation services for all, broad dialogue should accommodate the diversity of approaches needed to resolve sanitation problems.

AfricaSan obtained political leadership with the formation of the African Minister's Council on Water in 2002, now a specialized technical committee of the AU on water and sanitation. In 2008, AMCOW set up an AfricaSan Task Force to manage the AfricaSan process, drawing membership from support agencies and civil society organizations.

1.1.3 Regional expansion

From this start in Africa, the concept was quickly taken up in other regions, beginning in South Asia. Table 1.1 shows the growth of the SAN movement, across regions. Sanitation leaders from about 80 developing countries have participated in this global dialogue. The SAN process gained most traction in Africa and South Asia, the regions of the world with the greatest sanitation challenges. AfricaSan has established a 3–5 year meeting frequency. In 2004, 2005, 2010 and 2012 sub-regional AfricaSan events were held. In South Asia SACOSAN has a consistent track record of meetings every couple of years and has consistently attracted over 500 participants, except at SACOSAN II, a huge event in Delhi with 1600 participants and high-level political participation. South Asia has consistently attracted a strong civil society attendance. East Asia and Latin America have established a 3-year cycle. Civil society organizations in the newly emergent countries of Central Europe have been building momentum to host their own regional SAN dialogue.

Table 1.1 Regional SAN Meetings Held from 2002 to 2012.

| Year | Africa | South Asia | East Asia | Latin America |
|------|--|---------------------------------|----------------------------|--|
| 2002 | AfricaSan 1, Johannesburg, 150/11 ² | SACOSAN I, Dhaka, 500/8 | | |
| 2003 | | | | |
| 2004 | AfricaSan South, Gaborone | SACOSAN II, Islamabad, 550/7 | EASAN-1, Beppu, 135/15 | LATINOSAN 1, Cali, 900/22 |
| 2005 | AfricaSan East, Addis Ababa AfricaSan West, Ouagadougou | | | |
| 2006 | | | | |
| 2007 | | | | |
| 2008 | AfricaSan + 5, Durban, 800/23 | SACOSAN III, Delhi, 1600/6 | | |
| 2009 | | | | |
| 2010 | AfricaSan East, Kampala | SACOSAN IV, Colombo, 500/7 | EASAN-2, Manila, 160/13 | LATINOSAN 2, Foz de Igauçu, not known/22 |
| 2011 | AfricaSan 3, Kigali, 900/38 | | | |
| 2012 | AfricaSan East, Addis Ababa | | | |

1.1.4 Who has led the SANs?

From the outset governments, with the participation of Ministers responsible for sanitation, have led the SANs. The SANs have attracted increasingly high-level political interest. The early meetings were led by visionary Ministers. In Africa, the creation of AMCOW gave AfricaSan an organized political leadership and the organizational capacity from the AMCOW Secretariat. To retain the engagement of support agencies the AMCOW Secretariat created a Sanitation Task Force which amongst its responsibilities was the organization of AfricaSan activities.

SAN leadership has been at an increasingly high level. The President of Sri Lanka opened SACOSAN IV and the President of Rwanda addressed AFRICASAN 3. Senior international agency leadership has generally matched local leadership: the Chair of UNSGAB, HRH Prince Willem Alexander of Orange, has consistently supported the movement. Regional governmental

²Number of participants/number of regional countries represented.

authorities, are playing an increasing role in the regional SAN dialogues. Leading international agencies working in sanitation: in particular: IWA, UNICEF, UNSGAB, Water Aid, WHO, World Bank, WSP and WSSCC have played strong support roles in realizing SAN meetings, including support for the preparatory process and financing of participants to attend. Whilst some organizations have made greater contributions in different regions, it has been no accident that the four regions to have consistently delivered SAN meetings have been the regions where WSP and UNICEF have regional programs and full-time country staff in place. Donor agencies and development banks including the ADB, AfDB, Aus Aid, BMGF, DFID, IDB, SIDA and the World Bank have given generous support to the SANs. Governments have also made significant financial contributions to hosting SAN meetings. The research community has also increased its engagement in SANs.

1.1.5 Civil society engagement

The participation of civil society organizations (CSO) has been strong and critical to the growth of the SANs. Overall, CSO engagement has been both strategic and opportunistic: levels of engagement sometimes being limited by the hosting arrangements. The emergence of CSO WASH networks helped to mobilize and articulate a civil society perspective. At SACOSAN I, a session for grassroots people to share their experiences, chaired by a minister, was included in the formal programme and a CSO rep was invited to give an address in the inaugural session. FANSA, WSSCC and WaterAid joined forces well in advance of SACOSAN IV to bring in the voices of CSOs that contributed to the final outcome. The idea of a pre-meeting, held well in advance, to provide a strategic space for community leaders and NGOs to review government commitments, and agree on issues that should be highlighted, has added to the quality of the dialogue. In Africa ANEW (the CSO African Network) gave key-note addresses in plenary sessions at AFRICASANs in Durban and Kigali, but were less engaged in a preparatory process than the CSOs in South Asia. In transitional states in Central/Eastern Europe and Central Asia civil society started the regional dialogue. EASAN and LATINOSAN have offered fewer opportunities for large-scale CSO engagement.

1.1.6 What have been the SAN meeting products?

SAN products have focused on regional and country political commitments and knowledge exchange: the eThekwini (AfricaSan + 5) and Cali declarations (LATINOSAN 1) are examples of political commitments endorsed by a range of country Ministers. Since the eThekwini Declaration, there has been an attempt to make commitments easily measurable and trackable. SAN meetings have sought to achieve binding resolutions, which are followed up in post meeting actions. Leading up to AfricaSan 3, 38 countries analyzed progress against the eThekwini declaration score, the Country Status Overview scorecard and undertook a multi-stakeholder dialogue to identify priority areas for action.

Learning products have ranged widely according to current demands and concerns. Significant focus has been given to services targeted towards the poor. In Africa the launch of the AfricaSan awards has tried to stimulate a continuous stream of innovation by different stakeholders. In South Asia there has been a focus on lessons from large-scale CLTS approaches. Financing is a theme that has attracted increasing attention, such as in LATINOSAN 2. The documentation of success stories, for example on the experience of Rwanda, Thailand and Malaysia and the achievements of CLTS, has been a source of inspiration to many and given confidence that sanitation problems can be addressed. SANs have stimulated UNICEF and WHO to produce attractive and easy to read regional snapshots that summarize the status and the evidence behind key sector challenges. A clear understanding of regional status and challenges has improved the quality of SAN dialogue.

Regional commitments may help frame solutions, but sanitation and hygiene are local concerns and the main product sought from SANs has been action on the ground. The real SAN achievements have been specific country follow-up actions to: create budget lines for sanitation, increase budget and donor allocations to sanitation, adopt new policies, initiate CLTS programs, and heighten sanitation awareness or adopt new approaches to hygiene promotion. Examples of specific changes are documented in SAN meeting documents, but have not yet been captured in a formal global assessment.

SANs have also played a significant role in creating and extending a global sanitation community. SAN meetings provided an ideal platform to promote the objectives of the 2008 International Year of Sanitation. SANs provide a platform for many global sanitation initiatives launched by international agencies. SANs have, for example, influenced the focus (and title) of Sanitation and Water for All (SWA). SWA is seeking to bring coherence to the global architecture of the WASH sector. Follow up discussions to SAN meetings have been hosted at the Stockholm World Water Week, World Bank Water Week and WSSCC Global Forums: the SANs provide a mechanism for rapid take up of ideas from one region to another and processing their relevance within regions.

1.1.7 AfricaSan's distinctive approaches

AfricaSan set out to stimulate dialogue across sub-Saharan Africa. A common colonial history and common political framework of the African Union bind sub-Saharan Africa and the AfricaSan dialogue benefitted from the fact that countries can draw on a rich set of similar experiences. The meetings have all been bilingual (French/English) and the vision is to make them tri-lingual (French, English, Portuguese). Successive meetings each increased the number of participating countries.

In the early years, with two meetings in South Africa, AfricaSan drew on the impressive early advances made in post-apartheid South Africa. The site for AfricaSan 3 was competitively selected and held in Rwanda, one of only four countries in Africa on track to meet the sanitation MDG.

Without reducing the significance of regional conferences, an early idea was that, given the scale of the continent, AfricaSan might be more effective through sub-regional meetings. Sub-regional meetings are more cost-effective, arguably have more country relevance and impact, and can better sustain the AfricaSan brand and have the support of AMCOW. But support agencies have not had the capacity to sustain this considerable increase in meetings, nor shown the ability to follow-up on these, as well as continental meetings. Sub-regional meetings need to be driven by sub-regional political and economic bodies.

WSP has played a leading role in driving AfricaSan from the outset serving as Chair of the AMCOW AfricaSan Taskforce. WSP has recently signaled to AMCOW that after a decade of its support, and following the successful conclusion of AfricaSan 3, there is need for change. AMCOW Secretariat has elected to take over the Chair of the AfricaSan Taskforce while WSP will continue to follow up on commitments and country actions plans made at AfricaSan 3.

1.2 LOOKING FORWARD

What has been learnt from a decade of AfricaSan and SAN meetings? The SAN meetings have been a highly successful brand, bridging global and country dialogue on sanitation at a time when the costs of the neglect of sanitation – on economic growth, health, the environment and human rights – have become more evident. Large groupings of countries remain off track to meet the sanitation MDGs and, given the diversity in the global sanitation debate, regional SANs have played an important role in stimulating a relevant regional discussion for improving sanitation and hygiene.

Plans are well in hand in all four of the major regions facing large-scale sanitation challenges to continue this momentum, especially seeking to stimulate progress as the world closes in on the target date for achievement of the MDGs. Yet, at the same time, partly as a result of the SAN meetings and initiatives such as SWA and the International Year of Sanitation, many more global conferences are also giving greater attention to sanitation: this is evident at Stockholm World Water Week, the World Water Forum, and the recent WEDC conference. Legitimate questions are asked whether there is a need to continue the SAN meetings in the face of this increased global engagement with sanitation in a world where resources for large conferences are more difficult to justify.

SAN meetings fill a niche that is not filled by other sanitation events and processes in at least three ways:

- (i) The discrete focus on sanitation and hygiene is a great strength of the SAN meetings. The world is off-track to meet the sanitation MDG target and an effort well beyond 2015 will undoubtedly be needed to sustain momentum to improve the global state of sanitation. A lesson of sector efforts since the International Drinking Water and Sanitation Decade is that without specific sanitation-focused initiatives, sanitation is neglected. SAN meetings help retain this focus.
- (ii) The SAN meetings have developed a successful approach which responds to the complexity of the sanitation challenge by blending political considerations, technical exchange and advocacy in a dialogue with a large range of sector stakeholders.
- (iii) SANs provide a useful bridge for integrating global ideas into regional and country policies and approaches and enable relevant and meaningful country level comparisons for what is essentially an area of country and local action.

1.3 RECOMMENDATIONS FOR THE FUTURE OF AFRICASAN

1. Importance of country preparatory work and post conference follow up

A key lesson from the SANs is that meetings should be both the culmination and initiation of actions on the ground taken before and after meetings. The meetings themselves are not the main SAN products, but a milestone in the SAN process and movement. Sustaining interest between meetings requires a strong and accountable country organization team for preparatory (planning, implementing, monitoring, documenting) and follow-up work (implementing specific actions on which commitments were made at SAN meetings). In this, SANs serve to strengthen country level sector processes. Early

preparation by large constituencies like CSOs, such as has happened in South Asia, brings greater quality and structure to the SAN dialogue.

2. A strong, accountable regional body with a specific interest in sanitation is needed to undertake follow-up and preparation between meetings

A critical success factor for inter-meeting activity is having a legitimate and resourced team to support countries undertake follow-up activity, monitor progress, liaise with partners and assist with conference preparation ahead of each SAN meeting. Getting a strong, regional, accountable, politically body to take this on is a stretch target in most regions, but it is an essential long-term step to imbed SANs into regional or sub-regional political processes and have the capacity needed to undertake follow-up activities. Of all the SANSs AMCOW is the best model of regional leadership, since it provides Africa with a legitimate, representative body embodying the views of the continent's ministers of water. A challenge for AMCOW in managing AfricaSan is that in several countries in the region, water ministers do not necessarily have the mandate for sanitation and hygiene issues. Creation of an African Sanitation Ministerial Council, reporting to AMCOW, might significantly improve this representation.

3. Making political commitments measurable and extending commitments to different stakeholder groups

A clear lesson is that political commitments made in SANs need to be realistic and clearly and easily measurable. For example, the powerful eThekweni resolution of making a 0.5% GDP allocation to sanitation has not been able to be monitored. One good set of commitments that can be followed up in successive meetings, to be able to benchmark progress, is more powerful than a changing set of commitments that are not tracked.

An advance made in AfricaSan 3 was to obtain commitments for internal behavior change from different stakeholder groups. For example, associations of utilities and local governments made commitments to increasing prioritization to sanitation by their members. More preparatory work needs to be done to prepare for these resolutions, but the idea of mobilizing utilities, local government, civil society, development banks and donors all to make measurable commitments on prioritizing sanitation and tracking performance in their own constituencies, should be further tested in forthcoming meetings.

4. Improving governance

There are several important steps to improve the governance of SAN meetings. These include:

- *Retaining government leadership, yet getting balanced participation:* Government leadership is essential, but continuing a strong civil society presence, alongside other stakeholders fully integrated into one forum process (though not excluding separate consultations) is necessary to achieve mutually accountable commitments. In some situation, where there are wide divisions between government and civil society opinions, special attention needs to be made in seeking to achieve balanced dialogue and participation.
- *Agencies to play a supportive role:* SANs have benefitted greatly from the support of external agencies. This will undoubtedly be needed to continue in poorer countries, enabling local actors to lead. But support agencies should avoid self-promotion or allow the agency competition for donor funds and profile to detract from local ownership. Individual agencies' web-sites and individual marketing do not always acknowledge the contributions of others and an agreement for credit-sharing between support agencies should be honored. Greater clarity on roles (each agency filling complementary niches) might help to avoid unnecessary and distracting competition between agencies. A constructive division of labour for lead agency SAN support is emerging: WSSCC to lead on advocacy; WSP on analytic work; UNICEF (which has the greatest country representation in the sector) lead most country dialogues (supported by WSP and other agencies that have country presence); WHO/UNICEF JMP lead on producing targeted global data and packaging regional snapshots; WHO package regional finance and process data from GLAAS; and regional civil society networks, with WSSCC's support, coordinate local NGO contributions. These typical partnership roles will continue to fluctuate, especially as not all agencies will be able to continue to fill these roles in all situations. Many agencies will continue to be needed to contribute by funding participants to attend the SANs.
- *Stakeholders that need greater presence and engagement:* include the private sector, utilities, civil society, local governments, the media and the research community.

5. SAN technical meeting agendas need balanced designs and more evidence-based dialogue

Whilst there may be a case for specific foci in some meetings, in general the technical exchange should aim to respond to the concerns of countries, whilst keeping the region up to date with international thinking in all the relevant topic areas. Presentations and dialogue should lead with evidence rather than ideology to help knit the different sanitation dialogues into a common framework. Peer review should be consistently applied to main technical presentations. Tailoring the content of the SANS to country needs and having governments monitor that SANs are responsive to country needs might be another way to support country actions. Issues that have not consistently received the attention they deserve are: capacity building, urban sanitation, sustainable financing, leadership, monitoring and evaluation, hygiene promotion and engagement of the private sector.

6. Sanitation development trajectories and sanitation sector performance models

The definition of the sanitation problem varies from country to country and within countries. For some countries the immediate problem is moving from open defecation; in others it is moving neglected populations up the sanitation ladder; for some the central problem is grappling with maintaining an expensive sanitation infrastructure. The urban, small town and rural debate also has different parameters and issues. The sanitation sector needs country analytic tools that can be used across these different trajectories, to provide country insights on performance and allow cross-country comparisons. Whilst the JMP monitors global sector trends, more robust data-sets are needed at national and sub-national level to provide the evidence to guide local decision-makers. The AMCOW Country Status Overviews³ provide a model and process which might be deepened to reflect the main steps in growth trajectories in sanitation development to give strong guidance to countries on how improve sector performance. Future SANs might consider developing and applying this more rigorous analysis in future country preparations.

7. Fitting SANs into a logical and strategic global architecture

Whilst country sector dialogue is increasingly moving to an annual program of Joint Sector Reviews in a great many countries, at the global level the Sanitation and Water for All (SWA) initiative seeks to establish a regular global platform and regularly update the global evidence base (through the Global Assessment and Analysis of Sanitation and Water – GLAAS) for assessing progress and engaging global political leadership. SANs fill the regional gap and provide another important source of comparative evidence and consensus building to help gear up implementation of sanitation approaches that work.

8. Developing a sustainable SAN business model

A concern for many is the high cost of SAN meetings. Many of the early meetings depended on large and generous support from a few donors. This may be at risk in a more constrained aid environment. Fortunately AMCOW has continued to be highly successful in fund-raising for AfricaSan and recently obtained strong support from the Bill and Melinda Gates Foundation.

AFRICASAN 3, a fee-paying conference, made a significant breakthrough in establishing a more sustainable business model which might be considered for future SAN meetings. With an attendance of 900 people, a participant fee of an order of magnitude \$350 (lower than fees for international conferences – civil society organizations played a lesser fee) can generate a revenue stream of \$300 K. This core finance stream might obviate the need for the large grants where these are not available.

9. Measuring impact

SAN meetings can rightfully claim a great many impacts. But these are hard to measure and direct attribution to regional SAN meetings is hard to establish. An initiative with the ambition, scale and cost of the regional SANs does need to establish a formal planning and results frame. It would be wise for the lead agencies jointly to commission an independent external study of the impact of the SANs to provide the evidence base to guide their future to 2015 and beyond.

10. Competitive selection for the location and topics of future SAN meetings

SAN meetings are by now a known brand that brings many benefits to the host country. Recognizing this, AfricaSan 3 required potential hosts to make a bid and prepare a business case for hosting forthcoming regional meetings. This brought the important element of performance into meeting design and the selection of meeting location. Where competition may not be appropriate, host selection should at least reflect countries with marked progress or displaying innovation.

³Known as Service Delivery Assessments in other regions.

11. A strong national organizing committee

Another clear success factor for a SAN meeting is the planning, fund-raising, and advocacy competence of the local organizing committee. National organizing committees need to fully represent the main stakeholders, but be a workable size in order to direct meeting preparations. Attention is needed to getting quality documentation out in good time, getting participation from participants outside the sector (e.g. health, education sectors) and maintaining strong communications throughout, including professional simultaneous language translation.

SAN meeting designs should put peer review processes in place, such that technical presentations are clearly evidence-based and not confused with advocacy issues: solving sanitation questions needs smarter, better researched and better justified ideas.

12. Taking on messages of poor performance

Whilst there has been enthusiasm for setting measurable performance indicators, the analysis of performance and the take-up of actions by the poorest performers have generally been weak. Peer review processes introduced in AFRICASAN 3 sought to stimulate an analysis of the drivers of good performance, but some of the country presentations in a regional context remained rather defensive. Many country action plans have been developed, but concern remains that these may not translate into owned actions to address weak performance. An attempt to develop detailed sanitation scorecards in Africa (a version of Country Status Overviews but with in-depth indicators exclusively for sanitation) has been attempted and might be reconsidered as a comprehensive country-level analytical tool. AMCOW monitoring and evaluation processes are being developed to monitor the Sharm el- Sheikh Declaration which include a component on detailed indicators for measuring sanitation coverage. Overall the sanitation sector still lacks the maturity of an honest public appraisal of weaknesses or the introduction of performance incentives.

13. Could SANs evolve into a social movement?

Building on the growing global recognition of sanitation, the increased political engagement, the strong interest by civil society, and the stronger evidence-base, a future option for SANs, with other global sanitation initiatives, might be to consciously evolve into a social movement, along the lines of major successful campaigns such as the Campaign for Nuclear Disarmament, the Civil Rights Campaign or woman's right to vote. SAN partners might consider extending their support to create a social movement for human dignity, using a human rights-based approach, which has regional SAN meetings as milestones in the build up of a populist sanitation movement.

Chapter 2

Status of sanitation and hygiene in Africa

Sophie Hickling

Water and Sanitation Program

Africa is off track to meet the sanitation MDG. At the current rate of progress, the sanitation MDG target will be missed by 300 million people. This chapter presents a review of the status of sanitation and hygiene in Africa in mid 2012.

2.1 STATUS UPDATE FOR AFRICA¹

The MDG target for sanitation is to halve, by 2015, the proportion of people without access to basic sanitation. For Africa, in the MDG baseline year of 1990, 221 million people or 65% of the population, were without basic sanitation; the MDG target for sanitation calls for halving that proportion to 32% by 2015.

The MDG indicator for access to basic sanitation is the proportion of people using an improved sanitation facility in urban and rural areas. The definition for improved sanitation is shown in Table 2.1.

Table 2.1 Sanitation definitions.

| Improved sanitation | Unimproved sanitation |
|--|---|
| Use of the following facilities: <ul style="list-style-type: none">• Flush or pour flush to:<ul style="list-style-type: none">◦ Piped sewer system◦ Septic tank◦ Pit latrine• Ventilated improved pit (VIP) latrine• Pit latrine with slab• Composting toilet | Use of the following facilities: <ul style="list-style-type: none">• Flush or pour flush to elsewhere (i.e., not piped sewer system, septic tank or pit latrine.• Pit latrine without slab/open pit• Bucket• Hanging toilet or hanging latrine Shared facilities of any type No facilities, bush or field |

2.1.1 Current progress

There are currently 8 African countries on track to meet the sanitation MDG target, four of which are in Northern Africa. In sub-Saharan Africa 70% of the population remain without access to basic sanitation.

Sanitation coverage trends for each region can be seen in Figure 2.1. Northern Africa has already surpassed its MDG target as can be seen by the very small proportion of the population remaining without improved sanitation. In all other regions progress has been too slow to remain on track to meet the MDG sanitation target (Figure 2.2).

¹All Figures and data taken from: AMCOW WHO/UNICEF (2012).

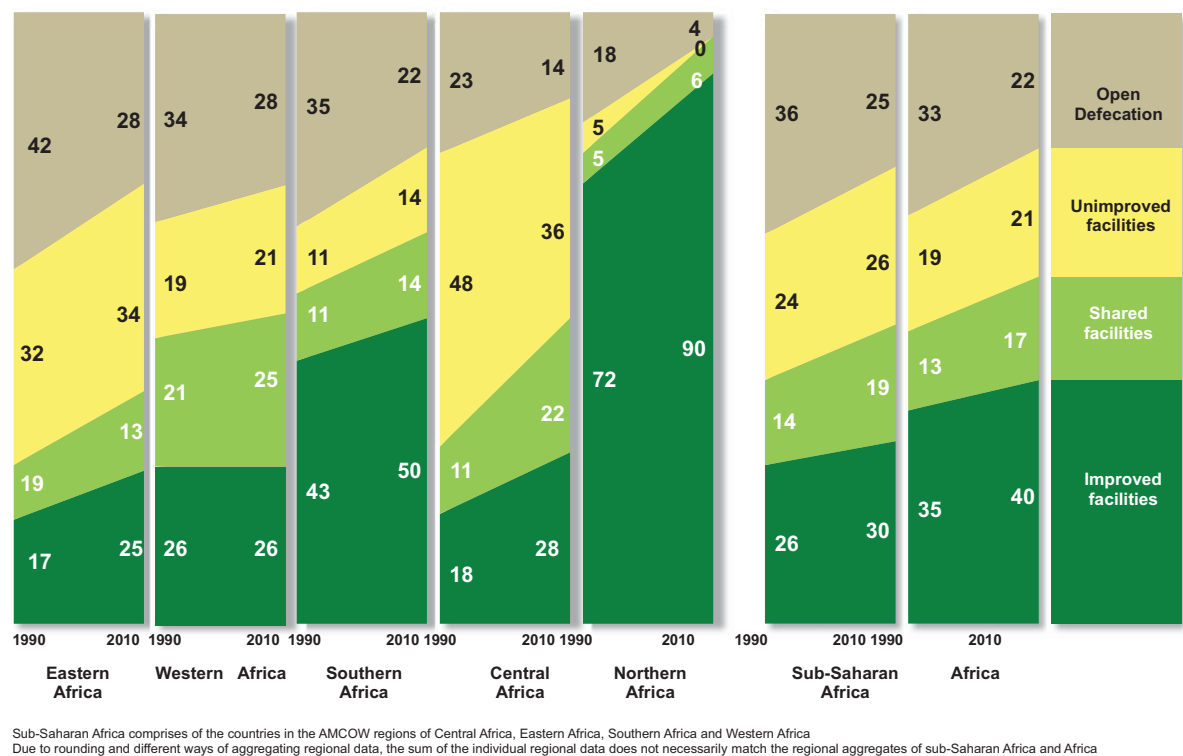


Figure 2.1 Sanitation coverage trends 1990–2010, AMCOW regions, Sub-Saharan Africa and all Africa.

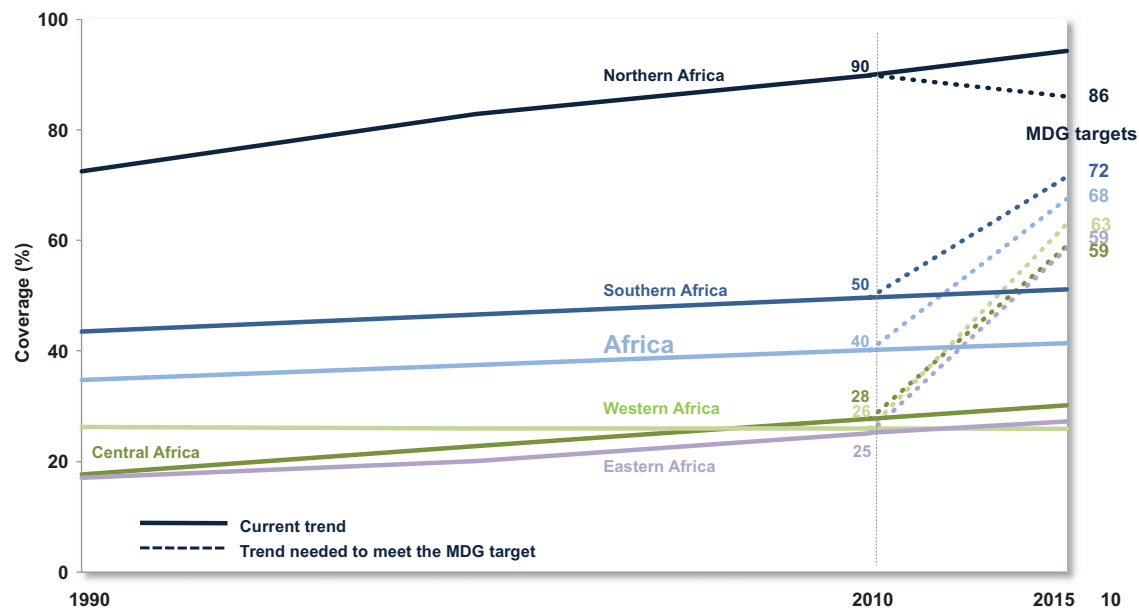


Figure 2.2 Coverage trends and projections, AMCOW regions and all Africa.

Since 1990, 189 million people in Africa have gained access to sanitation. However population growth has outpaced access, 200 million more people lack access now than in 1990. In 19 countries in Sub-Saharan Africa, less than a quarter of the population uses an improved sanitation facility.

Connection to water-borne sewage remains extremely low across Sub-Saharan Africa. According to Morella *et al.* (2008), ‘among utilities serving the largest cities, only half report operating a sewage network at all’ and in most countries even if there is a sewage system only around 10% of the population in the catchment area have access. In view of current urban population growth affordable alternatives to on-site sanitation will need to be found in the near future.

Increased access to sanitation is only half the battle; consistent use by the entire family is required to maximize potential health benefits of sanitation. In Africa, children’s faeces are often not disposed of safely. Unsafe disposal of children’s faeces is more prevalent in rural areas than urban areas with less than 30% of caregivers ensuring that a child uses a latrine directly or rinses a child’s stools into a latrine (UNICEF, 2012a).

Whereas data for sanitation is available through the MDG monitoring process, comprehensive data on the status of hand washing in Africa is not yet readily available. An analysis of data collected since 2006 by Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS) from 8 Sub-Saharan African countries reveals a picture of existing patterns of hand washing with soap (HWWS). Survey indicators measure the proportion of households where a place for hand washing is observed and water and soap (or other locally used cleaning agent) is available as a proxy for HWWS. As can be seen from Figure 2.3, data suggest that overall HWWS rates are extremely poor in all countries for which data is available. Rates were found to be lowest amongst the poorest household quintile with less than 1% in this group washing hands for three countries. However, in half of the countries, the rate of HWWS is below 20% in even the richest household quintile (UNICEF, 2012b).

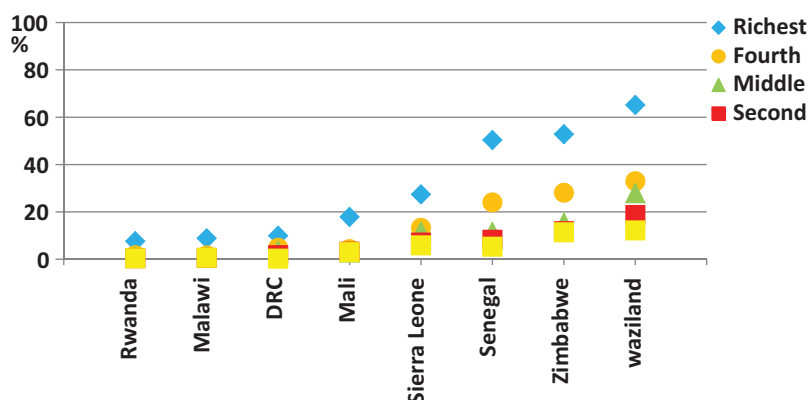


Figure 2.3 Proportion of households observed hand washing was observed with soap.

Finally, having sustainable WASH facilities in schools is essential to supporting a healthy learning environment and promoting attendance, particularly amongst girls. However in 2011, only 52% of the schools in Africa had access to water and 48% of schools had access to sanitation.² For more information see Chapter 10 – Advancing Health, Learning and Participation through WASH in Schools in Africa.

2.1.2 Open defecation

Open defecation in public health terms is the riskiest sanitation practice of all. It also has the greatest negative economic impact on countries and has considerable social costs including loss of dignity, security and privacy (WSP, 2011).

A little over one in 5 people in Africa practice open defecation, an improvement from the 1990 baseline of one in three. Overall there has been an 11% drop in the number of people practicing open defecation in Sub-Saharan Africa, unfortunately due to population growth the absolute number of open defecators has increased by 33 million (JMP, 2012). Currently 223 million people in Africa still defecate in the open (Figure 2.4).

Open defecation is declining in every African sub-region (Figure 2.1) indicating a demand to move onto the sanitation ladder. However, access to improved sanitation has not kept pace, hence the comparative increase in population using shared or unimproved sanitation.

²Based on the UNICEF country office annual reports from 51 countries in Africa.

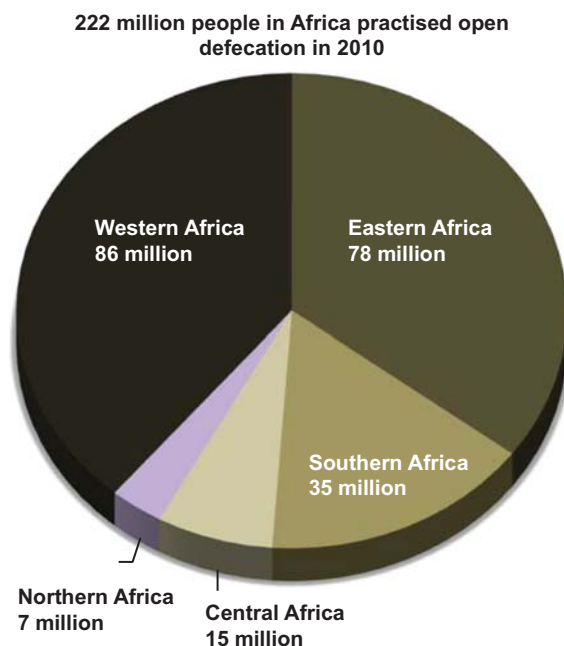
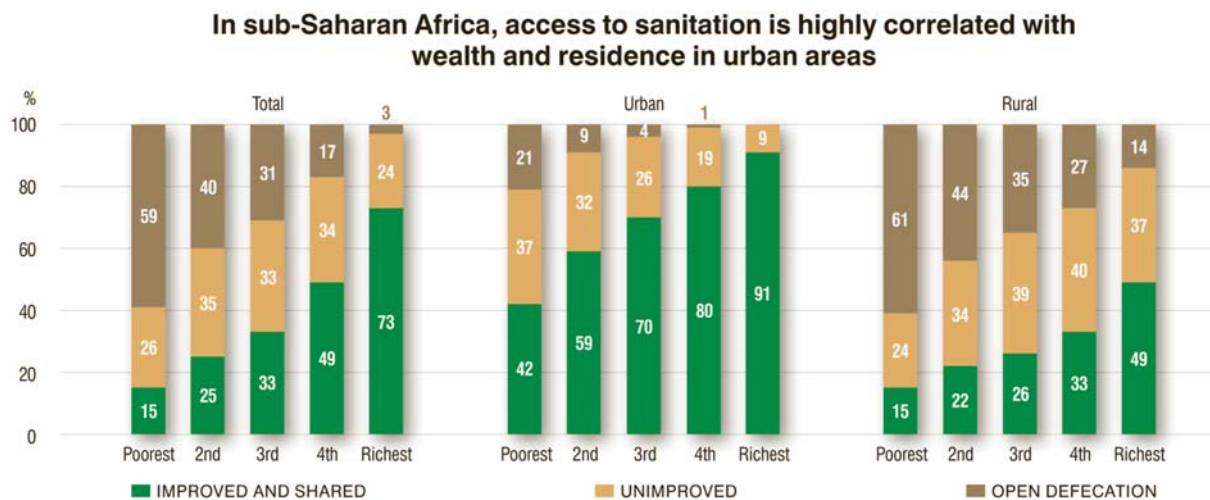


Figure 2.4 Open defecation by region.

2.1.3 The equity imperative

When looking at global, regional or country figures it is important to be aware that average values can mask significant disparities. When viewed through the lens of socio-economic status, sanitation is highly correlated with wealth (Figure 2.5).



Sub-Saharan Africa: Sanitation coverage by wealth quintiles and urban or rural areas, based on population-weighted averages from 35 countries (per cent)

Source: MICS and DHS surveys from 35 countries in sub-Saharan Africa, 2004-2009

WHO/UNICEF JMP, 2012

Figure 2.5 Access to sanitation by wealth and residence.

There is also a correlation between sanitation access and residence of the 223 million open defecators in Africa, 197 million live in rural areas. Whereas use of traditional latrines across Africa is common in both rural and urban areas (approximately 50% of population), 'an urban-rural divide emerges when access to improved sanitation is considered. In rural areas, the bulk of the remaining population (41%) continues to practice open defecation, [whilst] in urban areas, the bulk of the

remaining population (39%) have access to improved [sanitation] with septic tanks much more common than improved latrines' (Morella *et al.* 2008).

The size of the equity gap is underlined when comparing sanitation access according to both wealth and residence in Sub-Saharan Africa (Figure 2.5) – over 90% of the richest quintile in urban areas have access to improved sanitation, whereas in the poorest quintile of rural areas over 60% of the population practise open defecation. Chapter 5 further explores some of the inequities of sanitation coverage, and what needs to be done to address equity and inclusion in sanitation.

2.1.4 Aid environment for sanitation³

In addition to government financial allocations for sanitation, external assistance in the form of development aid from countries, multilateral organisations, NGOs and private foundations are significant across Africa. Development aid commitments to water and sanitation made up 4.7% of total reported development aid globally in 2010. At approximately US\$ 7.8 billion, aid to water and sanitation remains significantly below other social sectors such as health (US\$ 19.5 billion) and education (US\$ 13.3 billion).

Only approximately 34% of development aid to water and sanitation goes specifically to sanitation.

Africa receives over one third of all sanitation and drinking water aid. Twenty seven per cent of global water and sanitation development assistance goes to Sub-Saharan Africa – the most of any region in absolute terms.

2.1.5 eThekwini commitments

The second AfricaSan conference (AfricaSan +5, 2008) produced a Ministerial statement, the eThekwini Declaration, making important commitments by African Governments to improve sanitation and get African countries on track to meet the sanitation MDG (refer back to Chapter one for more information). The commitments were subsequently endorsed by Heads of State in the AU Summit, 2008 Sharm el Sheik Declaration and have been reaffirmed through various regional and sub-regional declarations such as the Libreville Declaration on Health and Environment in Africa. Ministers at AfricaSan 3 reaffirmed the eThekwini commitments.

Through in-country reviews and self-validation, the first all-Africa eThekwini monitoring was carried out and reported on at AfricaSan 3. This all-Africa monitoring (Table 2.2) showed that substantial progress has been made across Africa and that in many cases countries have substantively met the eThekwini commitments (AMCOW *et al.* 2011b).

Table 2.2 2011 eThekwini Monitoring – proportion of commitments met by region.

| | |
|---------|-----|
| Central | 55% |
| East | 71% |
| South | 65% |
| West | 71% |

However, there are areas where more progress is required. Little improvement has been seen in commitments related to budget allocations to the sanitation sector and in development and implementation of sanitation information, monitoring systems and tools to track progress at local and national levels.

The original indicators and criteria were broad and retrofitted to the commitments. As such, some do not adequately measure *implementation* of the eThekwini commitments. For example, previous monitoring indicators and criteria captured the existence of national sanitation plans, but not the second half of the commitment which calls for steps to be taken to ensure national sanitation programs are on track. Other commitments were not included in the all-Africa eThekwini monitoring – for example the commitment to use effective and sustainable approaches or the commitment to build and strengthen capacity for sanitation and hygiene implementation.

At AfricaSan 3 Ministers accepted recommendations for new indicators, proposed for targets for which no indicators exist, and agreed that existing indicators should be refined for those targets which have now largely been met. Progress against these new indicators will be reported on at the next AfricaSan conference.

³All information and figures taken from: UN-Water (2012).

specifically mention scale up of the CLTS approach and a number of countries note that they have experience in CLTS and CLTS scale-up.

Establishment of effective monitoring and evaluation systems at all levels, and development of tracking tools is another clear priority action area from both country preparations and eThekweni monitoring. Countries that noted monitoring and evaluation (M&E) amongst strengths that they could share, also mentioned making M&E an important part of strategic planning, reconciliation of national and global data and community involvement in M&E.

Since the AfricaSan 3 conference, 26 countries have developed and submitted Priority Actions Plans to AMCOW which systematically address these identified needs. In many countries the Priority Action Plans are living documents being used to guide and monitor sanitation work in country.

2.2.2 High-level commitments

Through the Sanitation and Water for All (SWA) partnership, governments from 40 countries (31 of which are in Africa) are working alongside donors, civil society and multilateral organizations to ensure that all people have access to basic sanitation and safe drinking water. During the 2012 High Level Meeting serious commitments were made to extend access to sustainable sanitation facilities to 80 million people over the next two years – increasing access to sanitation by 7% and decreasing open defecation by 15%.

Recognising that current financial flows are inadequate, ministers also committed to bridging sector-financing gaps through national budget allocations as well as external sources – increasing water and sanitation budgets by 15% annually and allocating at least 10% of budgets to hygiene promotion and demand creation. Ministers of finance were requested to create specific budget lines for sanitation and increase prioritization of the sector in budgets.

During the same meeting donors and development banks were also called on to better target resources and to increase the proportion of development assistance going to sanitation and hygiene from 34% to 45%.

2.3 CONCLUSIONS

Although greatly off-track to meet the sanitation MDG, there have been advances in sanitation in Africa. Open defecation is decreasing in all African sub-regions. The fact that the rate of this decrease exceeds the increase in access to improved facilities indicates an un-met demand and the potential to reach those people with improved sanitation.

At country level there is evidence that action is taking place; since AfricaSan 3, 26 countries have developed action plans to address their priority needs and are actively implementing them to address bottlenecks to sanitation progress. The attention given to sanitation in pledges made at the High Level Meeting of the SWA in 2012 is encouraging.

However, there is still a long way to go to reach the MDG target and further, ensure that universal access to basic sanitation becomes a reality in Africa. Of paramount importance is that concerted efforts be made to ensure that actions and financing reach the poorest populations who remain the most critically underserved.

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Understanding the Impacts of Poor Sanitation and Hygiene

Chapter 3

Health impacts of sanitation and hygiene

Sandy Cairncross¹, Oliver Cumming¹, Lisa Schechtman², Yael Velleman²
and Hugh Waddington³

¹London School of Hygiene and Tropical Medicine

²WaterAid

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This chapter builds on the presentations and discussions of the Health Impacts session held at AfricaSan 3. The authors are grateful to all presenters – Dr Godfrey Odongo, Dr Frank Rijsberman and Dr Jean Humphrey – for their contributions to the session and their wider work in this important field, which helped inform this chapter. The primary focus of the chapter is sanitation but it also touches on the wider ‘WASH’ literature where it is not possible, or not useful, to separate the water and hygiene components. The chapter covers four parts: (1) the role and usefulness of health impact information; (2) what we know about sanitation and diarrhoea; (3) other health impacts of sanitation; and lastly, (4) what are the priorities for strengthening the evidence base and using this information.

3.1 INTRODUCTION

The heroic achievement of the sanitary campaigners, preventing the disastrous cholera epidemics in nineteenth century London and elsewhere, have left many with the impression that sanitation is basically a health intervention. Today, many donor agencies list health benefits as the primary objectives of the sanitation projects that they fund, and despite the great cost, unreliable findings and weak diagnostic power of the epidemiological studies involved, they often try to evaluate projects and programmes by measuring their impact on health.

Sanitation does have an impact on health (Barreto *et al.* 2007); indeed, its cost-effectiveness as a diarrhoeal disease control measure compares favourably with more conventional nutritional or clinical interventions (Cairncross & Valdmanis, 2006). In Africa, where diarrhoea is the leading cause of child deaths (Black *et al.* 2010; Figure 3.1 below), this alone justifies sanitation as a public health priority. However, its impact on health is substantially more than that on diarrhoea alone, particularly its effect on intestinal worms and other parasites (Feachem *et al.* 1983; Barreto *et al.* 2010) which significantly affect children’s growth and cognitive development (Brooker, 2010).

In fact, sanitation is about much more than health, and health considerations rank far down the list of ‘selling points’ motivating poor householdes to invest in a latrine or toilet. One study in West Africa, found the most prominent among these are usually safety and security, comfort, convenience, privacy and prestige (Jenkins, 2004). Sanitation campaigns based on these factors have been very successful (Scott *et al.* 2011), arguably more so than campaigns based on health awareness. These other factors are significant benefits of sanitation, and since they are sufficient to motivate households to invest, they clearly have a monetary value.

Non-health benefits do not mean that the health dimension is of no concern. Rather, health impacts are difficult to measure, and so attempts to measure them should be separated from operational programme evaluation and reserved to a few world class research studies. Part of the difficulty is the political, ethical and logistical constraints to a randomised intervention trial of sanitation. Provision of even very basic sanitation to the study population would cost hundreds of dollars per household. Only in recent years has it become clear that promotion of sanitation in a random set of communities could produce similar

results at much less expense by leveraging the investment of individual households. Nevertheless, unless the adoption of sanitation is ultimately almost universal, then ownership and use of a latrine will mainly depend on a household decision whether to install one. In other words, the exposure groups in an epidemiological study will largely be self-selected. This in turn can cause a strong bias, giving the impression of an association with diarrhoea, even where none exists.

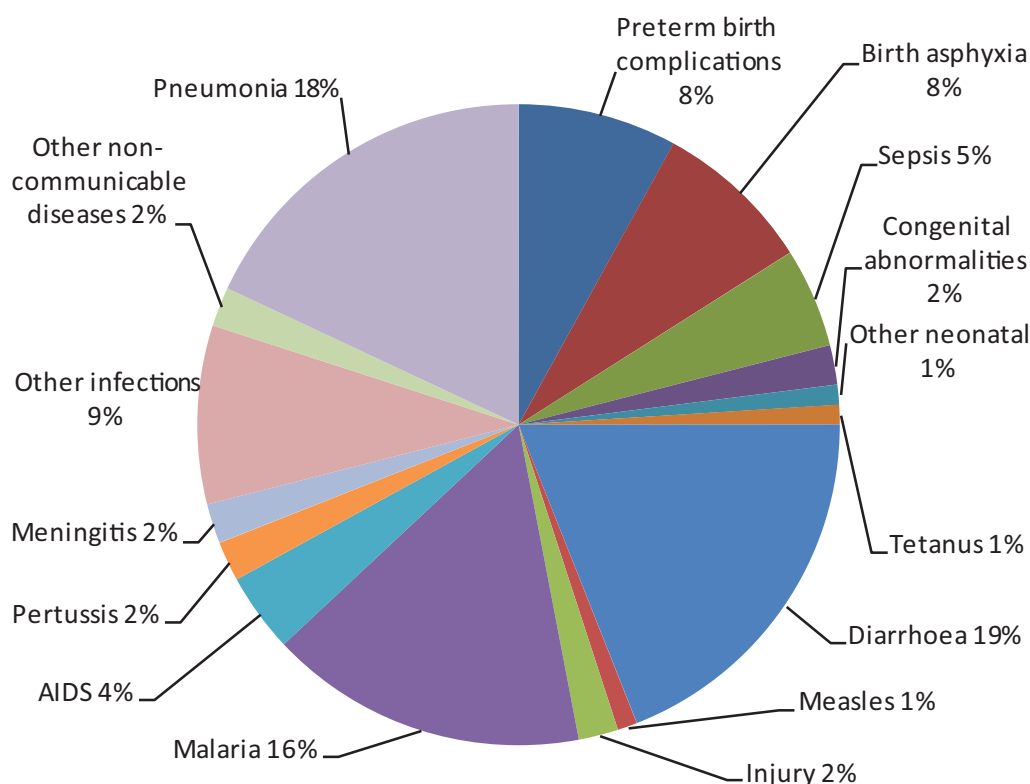


Figure 3.1 Estimated causes of child deaths in Africa, 4.2 million/year (Source: after Black *et al.* 2010).

For example, data from various countries show that in households with a toilet, people behave more hygienically than the members of households which do not have one. In Bangladesh for instance, toilet-owning mothers wash their hands more thoroughly after defecation (Hoque *et al.* 1995) and in Brazil toilet-owning mothers whose child's dummy falls on the ground are more likely to wash it before reinserting it in the child's mouth (Strina *et al.* 2003). In these circumstances, it is impossible to tell whether sanitation improves people's health, or if hygiene-minded, healthy people tend to improve their sanitation.

The best way to eliminate such ambiguity in studies of sanitation and health is to consider only randomised intervention studies, in which the group benefiting from sanitation is chosen at random. It is therefore striking that almost all the studies in the literature are observational studies, where households that have chosen to install sanitation are compared with those that have not. These studies show reductions in diarrhoea incidence associated with sanitation that are fairly consistent at around 35%, but in the absence of enough intervention studies, we cannot be sure that the reduction is genuine.

Moreover, the outcome contributing most to the burden of disease is diarrhoea mortality, whereas most studies in the literature examine diarrhoea morbidity. If sanitation reduces diarrhoea, it still does not follow automatically that it reduces deaths from diarrhoea. Few studies have considered mortality as an outcome (Victora *et al.* 1988), and most of those had major methodological defects (e.g. Messou *et al.* 1997).

Focussing the lens exclusively on Africa, the body of evidence becomes even smaller and less reliable, as discussed below. As described above, the primary outcome of interest in epidemiological studies of sanitation specifically and WASH more generally has been primarily diarrhoeal morbidity. However, sanitation and hygiene influences human health and well-being across a range of outcomes, that extend beyond diarrhoea. Some of these other health impacts, and in particular undernutrition and gender-based violence, are addressed in the next section. Here we consider the best available evidence globally and in Africa for diarrhoea only.

3.2 SANITATION AND DIARRHOEA

A large body of systematic reviews exists examining the effect of sanitation interventions on diarrhoea. These include both interventions that directly provide ‘hardware’ for excreta disposal, through new or improved latrines or connection of existing latrines to the public sewer, and that provide the ‘software’ for hygienic practices, including hygiene and health education and the encouragement of specific behaviours such as hand washing with soap (Esrey *et al.* 1991; Curtis & Cairncross, 2003; Fewtrell *et al.* 2005; Clasen *et al.* 2010).

In the most recent published review, Cairncross and colleagues (2010) summarise the global evidence on sanitation and hygiene as follows: ‘[the] effect of handwashing with soap is most consistent at roughly 47% reduction in diarrhoea ... Evidence for sanitation is weakest ... but may be 36% reduction’. Sanitation also enhances human dignity and provides alternatives to unsafe places for defecation for women and girls, but very little evidence – and no evidence in Africa – appears to have been systematically collected on these benefits.¹

But what does the evidence from Africa say? The most striking finding is a marked lack of high quality studies conducted in Africa for the effect of both sanitation and hygiene interventions on diarrhoea, as well as more generally (Clasen *et al.* 2010). Figure 3.2 depicts results of the four studies we have been able to identify which measure the effect of latrines, hygiene promotion, or a combination of these, on diarrhoeal disease rates in Africa.²

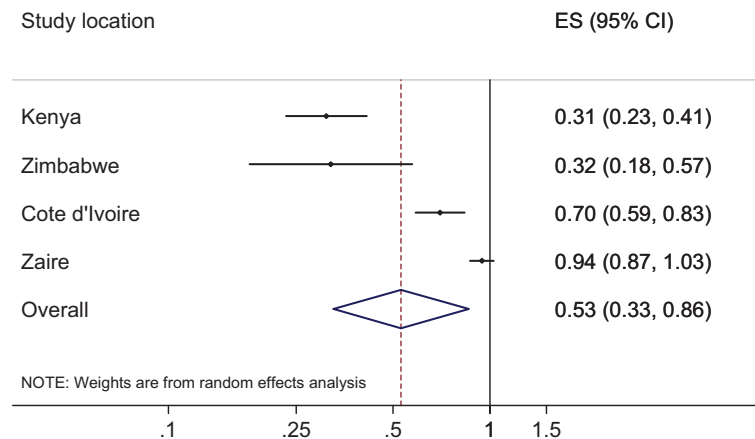


Figure 3.2 Relative risk reductions in diarrhoeal morbidity reported for sanitation studies conducted in Africa. *Abbreviations:* ES = Effect Size, or risk ratio; CI = Confidence Interval.

The graph plots the relative reduction in diarrhoeal disease rates and 95 percent confidence intervals, with values of the effect size less than 1 indicating a proportionate reduction in disease over the control group. The evidence suggests that, if we are to believe the findings of these relatively low quality study designs, large reductions in diarrhoeal disease rates of around 50 percent on average, but with wide dispersion of effects in different studies. Unfortunately, none of these studies were conducted using rigorous intervention study designs such as randomised control trials (RCTs), which seriously undermines the extent to which we are able to trust the causal inferences made.

The lack of high quality studies in Africa examining hygiene promotion is a surprising finding, given the large number of rigorous studies which have been conducted elsewhere (see Waddington & Snilstveit, 2009), the emergence of innovative approaches like community-led total sanitation (CLTS), and especially due to the low costs of the intervention itself (Cairncross & Valdmanis, 2006). It is rather less surprising that high quality studies have not been conducted for sanitation hardware, given the high costs of latrine provision and sewer connection. Moreover, given the potentially substantial

¹In a systematic review of WASH impacts, Waddington & Snilstveit (2009) were only able to identify one impact study of improved sanitation which estimated savings of 17 minutes per family member per day in walking to defecate (Pattanayak *et al.* 2007 in rural India).

²The studies were found using a systematic literature search and appraisal conducted in 2012, following the methods outlined in Waddington *et al.* (2009). Cote d'Ivoire: Messou *et al.* 1997. Kenya: Garrett *et al.* 2008. Zaire: Haggerty *et al.* 1994. Zimbabwe: Root, 2001.

community environmental health spillovers from sanitation³, adequate measurement in prospective trials requires expensive community cluster study designs. However, due to low rates of sanitation coverage in Africa (WHO/UNICEF, 2012), and the pressures for continent-wide scale-up, there may well be opportunities for conducting rigorous prospective evaluations of sanitation provision, including those based on cluster-RCTs in the near future. There are also greater opportunities to conduct low cost evaluations by exploiting existing data such as Demographic and Health Surveys (DHS) than have generally been attempted so far (Jalan & Ravallion, 2003; IEG, 2008; Roushdy, 2011).

The famous ‘F-diagram’ (Wagner & Lanoix, 1958; Figure 3.3) of faecal transmission via fluids, fingers, fields, flies and food, provides a useful theoretical depiction of the potential efficacy of sanitation; that is, the primary barriers to disease transmission which occurs when excreta carrying faecal pathogens are removed from the environment. However, the effectiveness of sanitation technology in preventing death and disease depends on both the efficacy of the technology itself in preventing disease transmission, and the extent of compliance with the technology – whether people consistently use latrines or wash their hands, and so on. Distinguishing between these different explanations requires measurement of compliance among beneficiaries. Innovative methods have been developed to monitor compliance rates objectively, particularly in the literature on efficacy of household water treatment devices (Wright *et al.* 2004). However, compliance with sanitation interventions has so far largely been measured on a rather more haphazard basis, through measurement of pathogen counts on hands for hygiene interventions, or by observing latrine ownership and use (as conducted in the Garrett and Root studies reported here) or looking for evidence of open defecation. Ultimately, however, it remains unclear if interventions appear effective in combating disease because compliance rates are high, or because of unobserved confounding, including due to Hawthorne effects and courtesy bias since diarrhoea rates are usually measured in efficacy trial settings through self-reporting (Schmidt & Cairncross, 2009). Rigorous studies are needed which are able to measure compliance accurately.⁴

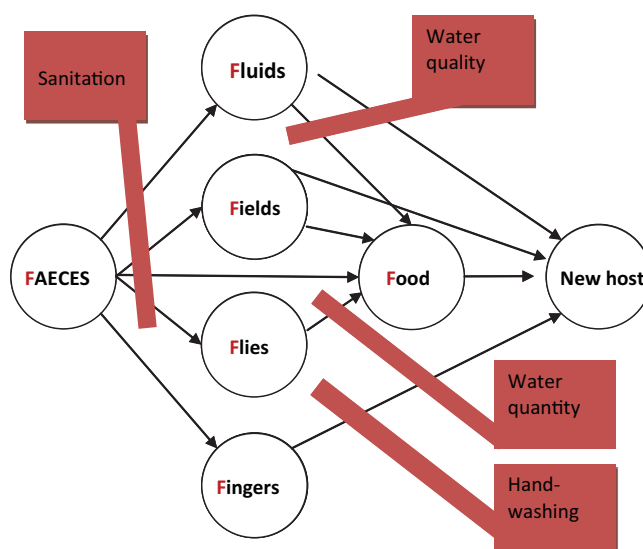


Figure 3.3 F-diagram showing routes for faecal-oral transmission (Source: Adapted from Wagner & Lanoix, 1958).

We also need more evidence to understand how compliance is affected by the methods of implementation and service delivery, and therefore how to ensure impacts at scale. Authors of diarrhoea efficacy studies have referred to lack of convenience and limited observability of health benefits in explaining why compliance rates may be low for water quality interventions (Quick, 2002), arguing for the importance of complementary interventions such as social marketing to accelerate and sustain community-wide adoption. In an early example from Egypt, Rogers (2005) documented the low level of use of public spigots which had been installed by the Egyptian government to provide clean water to villages in the 1960s, despite government media campaigns warning people of the risks from drinking canal water. Interviews conducted subsequently found that users complained of a chemical taste of the chlorinated water and reported rumours that the

³For example, in the Zimbabwe study reported here, households had lower disease rates if their neighbours had a latrine than if they did not (Root, 2001; see also IEG, 2008).

⁴Clasen and team are using sophisticated monitoring apparatus to measure latrine use objectively in India: <http://clinicaltrials.gov/ct2/show/NCT01214785>

government's family planning programme had added chemicals to decrease population growth. Socially, the women preferred gathering water from the canal banks where they also washed their clothes and dishes; and because of long queues and low water pressure there were reports of fighting in the queues. Ultimately, the piped water was perceived as unreliable. The study also highlighted that the government did not enrol village religious leaders in promoting the improved drinking water source. These findings have been echoed more recently in a study on implementation of water and sanitation improvements in Egypt (Roushdy *et al.* 2011), which suggests firstly that convenience and reliability of service are important for adoption, and secondly that public awareness messages need to be reinforced by efforts to change behaviour at home.

3.3 THE WIDER HEALTH IMPACT OF SANITATION

Whilst the health impact literature for sanitation and hygiene is dominated by studies that focus on diarrhoea, these interventions affect a number of health outcomes. The links to childhood undernutrition and the role of poor access to sanitation in gender-based violence and insecurity are examined here in particular because of increasing interest globally but also because studies have been completed in or are underway in Africa now.

Beyond these two specific areas, though, there are a number of important health outcomes related to sanitation and hygiene that should be considered when estimating the full health impact of these interventions. There is an increasing body of evidence around these wider effects but two in particular stand out: respiratory infections and helminth infections. On respiratory infections, which remain the leading cause of child deaths globally (Black *et al.* 2010), two systematic reviews have been published with meta-analyses. Both reviews reported similar risk reductions of 23% (Rabie & Curtis, 2006) and 21% (Aiello *et al.* 2008) respectively for the effect of improved hygiene and respiratory infections. Helminth infections are responsible for 39 million DALYs which is similar to the combined global morbidity burden for malaria and tuberculosis (Stephenson *et al.* 2000). A recent systematic review for the effect of sanitation on helminth infections concluded that the availability and use of latrines reduced the risk of infection by about 50% (Ziegelbauer *et al.* 2012).

It is estimated that undernutrition causes 2.2 million deaths and 21% of global disease burden for children younger than 5 years (Black *et al.* 2008). There is growing attention to the effects of poor WASH on childhood undernutrition with WHO estimating that repeated bouts of diarrhoea and nematode infections cause up to 50% of childhood under-nutrition (WHO, 2008). As diarrhoea causes undernutrition, it also reduces a child's resistance to subsequent infections creating a vicious circle (Brown *et al.* 2003). Further evidence suggests that sustained exposure to excreta-related pathogens – including helminths referred to above – in early life limits cognitive development and lowers immunity (Prüss-Üstün & Corvalán, 2006). Critically, much of the damage that is done – particularly in the first two years of life – may be irreversible (World Bank, 2006).

More recently it has been hypothesised that a key cause of child undernutrition is a subclinical disorder of the small intestine known as tropical enteropathy or environmental enteropathy. This condition is characterised by increased gut permeability and nutrient malabsorption that may be caused by faecal bacteria ingested in large quantities by young children living in unhygienic conditions (Humphrey, 2009). Improved WASH offers the potential to reduce or prevent environmental enteropathy and its adverse effects on growth through preventing faecal ingestion. Presenting at AfricaSan 3, Humphrey posited that environmental enteropathy rather than diarrhoea may be the primary causal pathway by which sanitation influences childhood undernutrition – a hypothesis that is currently being tested in a large trial in Zimbabwe (Humphrey, 2009a).

Whilst there is growing interest in the links between sanitation and hygiene and undernutrition, there are still relatively few high quality studies. A Cochrane systematic review for the effect of sanitation and hygiene, alongside water, on childhood nutrition was begun in 2011 to review studies in this area (Dangour *et al.* 2011). This review found few high quality interventions studies, with most studies included being ranked as poor quality, and the only randomised controlled trial being for point of use water treatment (Du Preez *et al.* 2011). Partly in response to this lack of evidence, there are studies underway that, with the Humphrey study, will shed further light on this (Clasen *et al.* 2010; Luby *et al.* 2012).

WHO defines health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO, 1948) yet much of the literature on the health impacts of sanitation is confined to disease transmission. Recent work has highlighted other important dimensions that effect women specifically may go some way in further explaining why the value accorded to safe sanitation by women is often greater than that afforded by men.

UN Women estimates that 150 million under-18 girls suffered some form of sexual violence in 2002 alone⁵, and the WHO indicates that one in five women will experience rape or attempted rape in her lifetime. In Uganda, a Demographic Household

⁵UNIFEM, 2012.

Survey in 2006 showed that over 70% of women have experienced physical and or sexual violence (UNIFEM, 2012). The contribution of inadequate sanitation to these risks is rarely reported and difficult to quantify.

Quantifying these risks is critical to understanding the specific vulnerabilities and related health issues faced by women in relation to poor access. Poor sanitation may be a greater concern for women due to wider gender-based discrimination that increases the need for privacy and enables sexual violence. While the physical consequences of sexual violence have been well-researched, the psychological and behavioural consequences are harder to document and quantify. The extent to which lack of access to sanitation contributes to this problem has not been quantified but is likely to be more acute in high-density urban environments as documented by Amnesty International (2011).

In the absence of more rigorous studies in this area, three case studies were completed in 2011 by two post-graduate students from the London School of Hygiene and Tropical Medicine (Massey, 2011; Lennon, 2011) and WaterAid in India. An analysis drawing on these case studies conducted in slums in Kampala, Uganda and Delhi and Bhopal in India suggests that poor sanitation compounds existing vulnerabilities faced by women in slums and affects their health and well-being in multiple ways.

Many people living in slums are in rented accommodation, with their right to basic services either ignored by landlords or unacknowledged by authorities. Households rarely have private toilets, leading to reliance on communal toilet facilities, open defecation or methods such as defecating in buckets or in plastic bags. In the studies in Uganda and India, women referred to inadequate provision of toilets, poor maintenance and cleanliness of facilities, and the locking of public toilets at night. Lack of provision for menstrual hygiene management was also mentioned, as well as unaffordable user fees.

Women are particularly vulnerable, in the absence of toilets, to violence and attack. This vulnerability is exacerbated as lack of sanitation leads to a violation of social and cultural expectations that female defecation and urination should not be visible. Women in Kampala emphasised that defecation should be kept secret and private, and it is shameful to be seen on the way to a toilet, especially during menstruation. Shame also prevents women from discussing the issue and its impact with each other. The practice of defecating in a bucket or plastic bag was particularly humiliating. Most women also identified the lack of privacy for menstrual hygiene management with changing pads or cloths as a serious problem.

Attempts to quantify the full extent of the health impact of poor sanitation and hygiene are fraught with difficulty but it is clear that the combined health consequences are profound. Estimating the full health impact must take account of wide range of disease outcomes, as well as the effects on an individual's state of complete physical, mental and social well-being. In turn, the costs of sanitation should be set against the full health, and indeed non-health benefits, associated which extend far beyond diarrhoea.

3.4 CONCLUSION

Poor sanitation and hygiene are responsible for a large disease burden. Africa is the only region in the world where diarrhoea is the leading cause of child mortality (Black *et al.* 2010) and promotion of sanitation and hygiene offers a cost-effective means of tackling this. The health impact of sanitation is far greater than that mediated by diarrhoea alone and affects the health and well-being of populations through multiple and often overlapping pathways. As highlighted here, it is often vulnerable groups who suffer most – whether this is children or women – which may explain why greater urgency has not been attached to these interventions.

Whilst there is sufficient evidence to justify sanitation and hygiene as public health priorities, studies of higher quality are rare and higher quality studies conducted in African settings even rarer. The relative paucity of health impact literature for sanitation and hygiene reflects at least two issues: firstly, rigorous field trials of sanitation are logistically and technically challenging to deliver; and secondly, this area of research has historically been under-resourced. Fortunately in recent years, there has been more investment in this area with larger health impact evaluations underway to investigate the effect of sanitation on diarrhoea as well as other outcomes such as undernutrition.

The WASH sector has traditionally placed greatest emphasis on health impacts for the purposes of advocacy, as a means to capture political interest and mobilise greater levels of investment. As more studies are conducted in this area as a means to test the efficacy of different delivery approaches, this evidence can and should also be used to inform the development of better interventions. This requires that studies collect more data on intermediary variables – such as the efficacy of technologies or compliance – that will yield useful information for operational redesign. The information generated should be used to build dialogue with policy and practice audiences on how to maximise the health returns for sanitation and hygiene investments. Beyond the WASH sector, evidence on health impacts provides an important bridge to engage the wider health sector and strengthen coordination across ministries and cadres.

While studies of the impact of WASH on health should not regularly form part of WASH service delivery, routine health data can play a useful role in broader programme design and evaluation. National Health Management Information Systems (HMIS)

gather routine data on several WASH-related health outcomes, and the identification of areas of high disease burden or frequent disease outbreaks can help inform both WASH and health sector interventions.

When African ministers came together in 2008 to sign the ambitious eThekweni Declaration they did so ‘mindful that one million Africans die every year from sanitation, hygiene and drinking water-related diseases’. Poor sanitation - and the resulting deaths and disease – remain a major public health challenge in many countries in Africa but one that is now firmly on the political agenda. Overcoming this challenge will require sustained investment and political leadership but the potential returns are huge and measured in lives saved. Whilst more evidence will strengthen our response, we have sufficient evidence now to act decisively to realise the potential health gains offered by accelerating progress on sanitation in Africa.

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Chapter 4

Economics of inadequate sanitation in Africa

Sophie Hickling and Guy Hutton

Water and Sanitation Program

The Economics of Sanitation Initiative (ESI) in Africa aims to enhance understanding of the economic impacts and costs to society of poor sanitation. Whereas there is a considerable literature on the health benefits of sanitation (see chapter 3) the evidence base supporting the economic arguments for investing in sanitation is weak. Current allocations to sanitation across Africa are low; in most cases less than 0.1% of Gross Domestic Product (GDP) (AMCOW et al. 2011). More funds and better-selected and managed programmes are needed to meet the sanitation MDG target. Economic evidence plays a key role in advocating for sanitation investments and enabling decision makers to make efficient choices.

This chapter presents the methods used by the ESI in Africa, selected results from 18 African countries¹, and a discussion regarding how economic evidence from ESI is being used and how it can be augmented to deepen its impact in the future.

4.1 METHODOLOGY

The desk study on the total economic cost of poor sanitation was estimated using a list of potential damages drawn up and applied across all countries specifying the factors that are assumed to have the greatest negative impact on society. The methodology was similar to that developed by the Water and Sanitation Program for earlier ESI studies in five countries of Southeast Asia¹ and also used in three South Asian countries.² Given the large number of African countries in which ESI was to be applied, a simplified methodology with fewer variables was developed based on the main contributors to economic impact found in the Asian studies.

The negative economic impacts of inadequate sanitation included in the total economic impact estimates for Africa were health care costs of treating diseases associated with poor sanitation, value of the time lost from productive activities due to the included diseases, value of premature deaths, and time lost accessing the site of open defecation. Disease cases include diarrheal disease for the entire population, as well as increased vulnerability to malaria and respiratory infection for children under five, via the impact of repeated cases of diarrheal disease on malnutrition and the immune function.³

Rates of disease and treatment seeking, as well as rates of sanitation access, were accessed from Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), and the Joint Monitoring Programme for Water Supply and Sanitation (JMP). The economic costs of treating cases – both outpatient and inpatient care – were taken from the global database on health care costs maintained by WHO (using the WHO-CHOICE database for 2012). The value of time was estimated using 30% of the GDP per capita, valued at an hourly rate, recognizing that people value time savings even if it is not all used for productive activities and/or actual income earning. The value of life was estimated using the human capital approach (HCA), which aggregates the discounted future income stream of a person who dies prematurely at different ages.

¹Studies for Cambodia, Indonesia, Lao PDR, Philippines and Vietnam can be downloaded from www.wsp.org

²Studies for Bangladesh, India and Pakistan can be downloaded from www.wsp.org

³For methodological details and algorithms see Annex A and Annex B of WSP, 2011.

Compared to other methods of valuation of life, such as the value-of-statistical-life (VSL),⁴ the human capital approach provides more conservative (i.e., lower) estimates of the value of life. HCA produces value of life estimates of between US\$ 1700 and US\$ 62,000 across the 18 countries, variable according to GDP per capita; the VSL methodology produces estimates of over four times the HCA values, of between US\$ 8000 to US\$ 280,000.

Past global and regional studies indicate a major share of the quantified economic costs are accounted for by lack of access to nearby drinking-water source and sanitation facilities (Hutton & Haller, 2004). However, except for a few national surveys in Africa that collect information on time and distance to water source, there is a lack of information on total water collection times and sanitation access times. To fill this gap, an informal survey was conducted of 25 sanitation experts in Africa to estimate the average time per family for a roundtrip to their place of open defecation (experts were mainly those who had first hand experience of visiting open defecation sites through CLTS triggering exercises). While the estimates of the experts varied based on a range of different country locations and field experiences, the average value of 10 minutes per round trip for open defecation was taken as the loss in time for all countries included in the ESI study. A conservative value of one trip per day was assumed, thus considering only defecation and not urination.

Additional quantified impacts such as funeral costs, loss of tourism and cholera epidemics were also estimated and presented separately from the total economic losses. Although these are likely to be significant, they are difficult to estimate and were therefore not included in the overall costs of the model.

Underlying data sets to estimate economic impacts are weak; the study therefore used objectively verified data sources and conservative numbers to estimate economic impacts. Other impacts that were partially valued in the Asian country studies, such as economic losses associated with water pollution and land degradation, were excluded due to lack of data in Africa that could be easily compiled from surveys and government records. Welfare impacts such as loss of dignity, privacy, social status, and security were omitted due to difficulties in valuing these impacts in monetary terms. Therefore the total costs of poor sanitation presented in this chapter are likely to be a significant underestimate of the real welfare impacts of poor sanitation on society.

4.2 RESULTS

The key results of the Economics of Sanitation Initiative in Africa can be seen in Table 4.1.⁵ The 18 African countries studied so far⁶ are losing a combined total of almost US\$ 5.5 billion each year due to poor sanitation. At national level these economic losses are equivalent to between 1% and 2.5% of GDP.

The results of the Economics of Poor Sanitation in Africa initiative can be broken down between mortality, health care, access time and health-related productivity. The following paragraphs elaborate on the types of costs included in the study, giving country examples of each.

Premature death. In all countries, premature death, directly or indirectly attributable to sanitation, constitutes the largest cost found (reflecting between 48%–90% of the total costs of poor sanitation). For example in Burkina Faso the cost of premature death due to poor sanitation is estimated at US\$ 136 million each year, 80% of the total costs of poor sanitation. Directly attributable deaths include the 88% of diarrhoeal deaths attributed to the faecal-oral route. Indirectly attributable deaths include those deaths for which poor sanitation is a contributing factor through its impact on malnutrition, for example as a leading cause of child mortality such as malaria, ALRI and measles.⁷

Health Care. Diarrhoeal disease directly, and indirectly via malnutrition (and its consequences for other diseases such as ALRI and malaria) is a leading cause of morbidity and associated costs. In Ghana health care costs due to poor sanitation are approximately US\$ 54 million annually – placing a heavy burden on households and government spending. For healthcare costs the study used disease rates and treatment seeking behaviour information to estimate outpatient and inpatient costs such as consultation, medication, and patient travel costs. These health care estimates present a compelling argument for addressing sanitation as a priority within the health sector also.

⁴Due to lack of value-of-statistical-life studies in Africa, a median value of VSL studies from developed countries of US\$ 2 million was adjusted to African countries based on the ratio difference in GDP per capita.

⁵Although presented together for reporting purposes, the study is not designed to be able to draw direct comparisons between countries.

⁶Accounting for 489 million people, approximately half the total African population.

⁷Indirect deaths were estimated using attributable fractions based on data from WHO (Fishman *et al.* 2004).

Table 4.1 Key results from 18 study countries.

| | Population (millions) | Annual cost of poor sanitation to the national economy (US\$ millions) | National economic loss as % GDP | Annual cost of open defecation (US\$ millions) | Number of latrines required to eliminate open defecation (approximate) |
|-----------------------------|--------------------------|---|---------------------------------------|--|--|
| Benin | 8.8 | 104 | 1.5 | 75 | 1,000,000 |
| Burkina Faso | 15.8 | 171 | 2.0 | 124 | 2,000,000 |
| Central African Republic | 4.7 | 26 | 1.2 | 9.1 | 200,000 |
| Chad | 10.3 | 156 | 2.1 | 114 | 1,500,000 |
| Congo, Rep of | 4.0 | 144 | 1.1 | 20 | 65,000 |
| Congo, Dem Rep of | 68.7 | 208 | 1.6 | 32 | 1,500,000 |
| Ghana | 23.9 | 290 | 1.6 | 79 | 1,000,000 |
| Kenya | 39.0 | 324 | 0.9 | 88 | 1,200,000 |
| Liberia | 3.6 | 17.5 | 2.0 | 11 | 350,000 |
| Madagascar | 20.7 | 103 | 1.0 | 48 | 1,500,000 |
| Malawi | 15.0 | 57 | 1.1 | 14 | 300,000 |
| Mauritania | 3.1 | 41 | 1.2 | 30 | 350,000 |
| Mozambique | 21.7 | 124 | 1.2 | 70 | 2,000,000 |
| Niger | 15.3 | 148 | 2.4 | 128 | 2,000,000 |
| Nigeria | 149 | 3,000 | 1.3 | 1,000 | 6,500,000 |
| Tanzania | 41.0 | 206 | 1.0 | 46 | 1,000,000 |
| Uganda | 32.4 | 177 | 1.1 | 41 | 650,000 |
| Zambia | 11.9 | 194 | 1.3 | 71 | 420,000 |
| TOTAL | 489 | 5,500 | 1.4⁸ | 2,000 | 23,500,000 |

Productivity losses. Productive time lost takes into account time absent from work or school due to diseases attributed to poor sanitation, seeking treatment from a health centre or hospital, and time spent caring for children under five years of age suffering from these diseases. As primary caregivers, these costs, which in Kenya amount to US\$ 2.7 million per year, fall most heavily on women.

Access time. Each person practicing open defecation spends almost 2.5 days each year finding a private location to defecate. Valued at 30% of the daily GDP per capita for adults, and 15% of the daily GDP per capita for school-aged children, this leads to substantial economic losses. For example, in Niger where 79% of the population practice open defecation, access time costs an estimated US\$ 23 million annually. Again, this costs falls disproportionately on women as caregivers who may spend additional time accompanying young children or sick or elderly relatives. As noted earlier, urination was not included due to the complexity of the issue and absence of data – therefore this cost is likely to be an underestimation as those without toilets, particularly women who will be obliged to find a private location for urination as well as for defecation.

Open defecation emerged clearly as the most costly form of unimproved sanitation, due to the continued high rates of open defecation practice in Africa. Across the 18 study countries open defecation accounts for US\$ 2 billion every year. In most countries open defecation costs more per person than any other type of unimproved sanitation as shown in the example from Uganda (Figure 4.1) where open defecation costs US\$ 3 more per person practicing open defecation compared with either a private but unimproved latrine or a shared latrine. The additional costs for open defecation are mainly due to access time taken to travel to and find a safe, private location for defecation. In all cases the cost of open defecation as a proportion of total costs far exceeds the proportion of people actually practising open defecation – for example in Kenya 15% of the

⁸ Average proportion of GDP.

population practise open defecation but open defecation costs account for 27% of total costs. These findings highlight the urgent need to address open defecation as a priority.

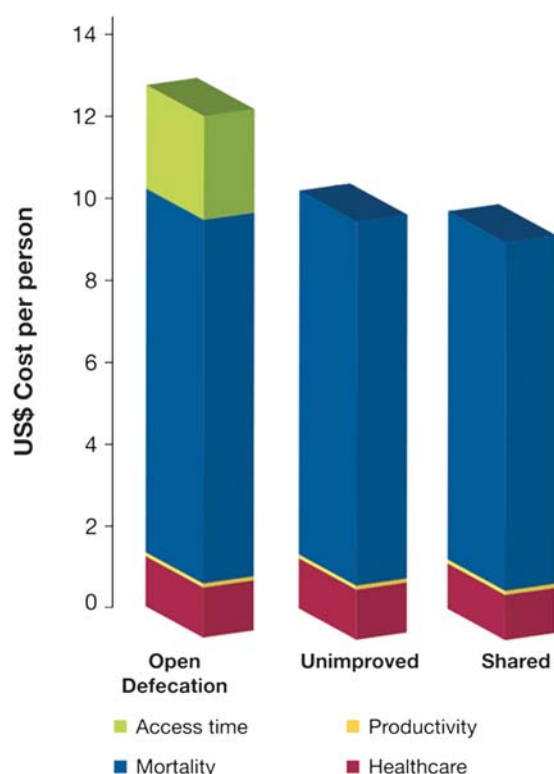


Figure 4.1 Cost per capita of different types of unimproved sanitation in Uganda.

Open defecation also has considerable social costs. Loss of dignity and privacy, risk of physical attack and sexual violence are not easily valued in monetary units. However, these are common events and concerns of those who lack private sanitation facilities.

Costs associated with shared sanitation are likely to be higher if information on time taken to reach and queue at a public latrine as well as user-fees were included. As it is not possible to estimate the proportion of public latrine users in the shared latrine category, these costs were not included in the model.

Also important to note is that health costs cannot easily be assigned across latrine categories.⁹ There exists inadequate data on health risk differences between open defecation and sanitation technologies or options that are classified as ‘unimproved’. Hence, health costs per capita are estimated as the same, but in reality they may differ, depending on specific practices, defecation locations and environmental factors. Indeed, sanitation is recognized as a *public* health issue – people are affected by the sanitation status of their neighbours and community as well as their own and the costs of poor sanitation practices are felt throughout the community.

An important finding of the study was that the burden of poor sanitation falls disproportionately on the poor. The average cost of poor sanitation constitutes a much greater proportion of a poor person’s income than that of a wealthy person, as shown in the example taken from Liberia (Figure 4.2). Not only that, but there exists considerable inequality in sanitation access: in all countries the poorest quintile is more likely to practice open defecation than the wealthiest quintile. Poverty is therefore a double-edged sword, the poorest are not only more likely to have poor sanitation, but they also have to pay proportionately more for the negative effects it has. Pro-poor implementation approaches and sanitation solutions need to be developed and applied to mitigate this inequity.

⁹There is a lack of scientific evidence to enable distinction between the health impacts of different types of unimproved sanitation, however an attempt to do so was made through disaggregation of diarrhoea rates by unimproved category.

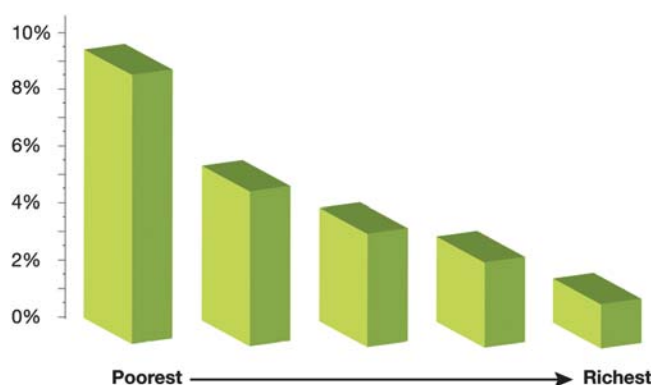


Figure 4.2 Cost per capita of unimproved sanitation as a % of income by wealth quintile in Liberia.

4.2.1 Use of study results

More important than the analysis itself is the way in which the results are used at country and global level to advocate for greater investments in sanitation. With limited resources and competing sector priorities, decision makers require compelling evidence to persuade them to allocate more finances to sanitation in comparison with other development interventions. Therefore, from the design phase, the need was identified to ensure that key messages from the study resonated with decision makers outside the sanitation sector as well as inside it.

At global level, the results of the study were effectively re-packaged for inclusion in background briefing papers developed for the country delegations attending the Sanitation and Water for All (SWA) High Level Meeting (Washington, April 2012). With a large proportion of participating countries being from Africa, the Economics of Sanitation Initiative in Africa was able to fill a clear gap in the existing evidence and provide a compelling argument for the substantial financial commitments that were made during the meeting.

Economic evidence plays a key role in advocating for sanitation investments and enabling decision makers to support increased budgets and policy support. Indeed, in Indonesia economic evidence has been found to be a more powerful tool for pushing the sanitation investment agenda than health evidence (WSP, 2011).



'Improving water and sanitation is an opportunity to ensure continued economic growth'

Figure 4.3 Minister Ngozi Okonjo-Iweala, Nigeria, addressing the High Level Meeting of Sanitation and Water for All (image SWA, 2012b).

Equally at national level the study results have been used to speak across sectors of the adverse effects of poor sanitation and the urgent need for prioritised inclusion of sanitation expenditures in national budgets. Nigeria's Finance Minister Ngozi Okonjo-Iweala spoke of the enormous cost of poor sanitation in Nigeria, with national losses of 3 billion USD or 1.3% of GDP at the High Level Meeting of Sanitation and Water for All in April 2012 (SWA, 2012a). In her speech she recalled previous commitments to increase investments in sanitation and the continued need to fund sanitation through well-targeted domestic resources as well as leveraging external resources. At the meeting Nigeria made specific commitments including to

progressively increase budget allocations for sanitation up to 0.5% GDP within the next 3 years targeting rural areas, urban slums and underserved states (Nigeria, 2012).

4.3 NEXT STEPS

The study has so far raised awareness of the negative consequences of poor sanitation on 18 national economies and further economic impact studies are planned. Once increased financial commitments have been secured the question remains of where finances should be targeted to generate the largest returns. To respond to this need for further economic evidence, and to deepen the impact of the ESI Phase 1 in Africa, a second phase – ‘toolkit’ – is planned. This toolkit will support Governments and stakeholders to assess the costs and the benefits of improving sanitation in terms of the technological options chosen as well as the programmatic approach for delivering sanitation interventions. The toolkit will include detailed assessment of the costs and impacts of different financing, partnership, institutional and marketing approaches in selected countries and provide a valuable tool to help decision makers make efficient choices to address the sanitation gap.

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Chapter 5

Equity and inclusion in sanitation and hygiene in Africa

Archana Patkar¹ and Louisa Gosling²

¹Water Supply and Sanitation Collaborative Council

²WaterAid

This chapter reviews the scale and scope of inequity and inclusion in sanitation and hygiene Africa and the attitudinal, environmental and institutional barriers preventing access for marginalized groups. It uses case studies on menstrual hygiene, people living with aids and sexual violence to demonstrate how support measures are needed to overcome specific impediments that stand in the way of excluded groups accessing safe services. It concludes with a discussion of the discrete roles that need to be played by different agencies within a shared responsibility to apply an equity approach in Africa.

5.1 THE PROBLEM

At the start of the second decade of the 21st century we are faced with the fact that over 200 million men, women and children defecate in the open every day in Africa, contributing to poverty, disease and death and to some of the poorest standards of hygiene in the world. Open defecation, a multi-dimensional problem is the extreme manifestation of a stark sanitation situation.

There are two facets to the problem in Africa, both of which are unacceptable.

The first is a **problem of scale**. Hundreds of millions of people in Africa continue to practice open defecation, especially in rural areas: a silent sanitation crisis that impairs progress in the region. African countries are most off-track to reach the Millennium Development Goals for sanitation. Only nine countries are on track across the continent. Northern Africa already surpassed its MDG sanitation target – all other regions are set to miss it (See Figure 5.1).

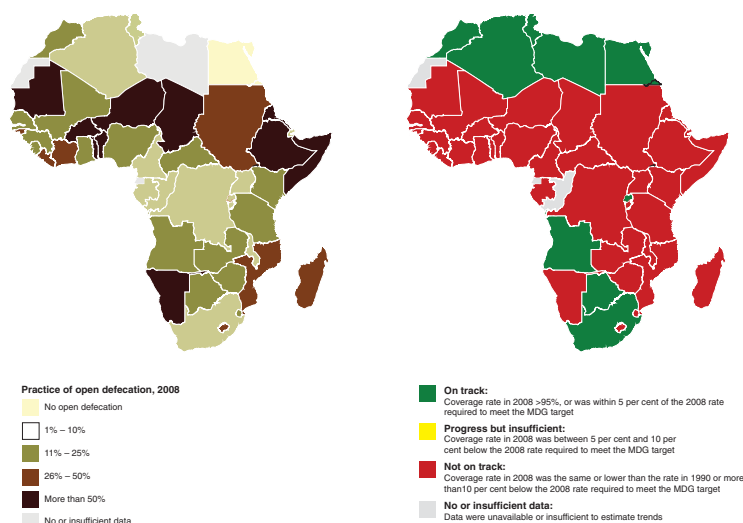


Figure 5.1 Maps showing extent of open defecation and progress towards MDGs by country in Africa (2012).

Sanitation programmes face multiple challenges: poverty, weak or corrupt administration, lack of awareness of personal hygiene (specifically hand washing and the link between exposed faeces and transmission of germs) difficult physical conditions, such as hard rock and high water tables which make the construction, maintenance and use of hygienic toilets, difficult or unsustainable. Sanitation is major challenge in situations of conflict or unrest, or with refugee situations. The issue is one of breaking the inertia, accelerating and scaling up appropriate sanitation programmes. Changing sanitation behaviour also involves changing the habits of a lifetime.

The second, and in many ways *more pernicious problem*, is that of *exclusion*, where different categories of people are not able to access and use safe sanitation facilities. Those excluded include those the socially and economically marginalized and people who cannot use standard designs. For example, women, children, older people, pregnant women, people with disabilities or living with HIV/Aids or other chronic illnesses, and geographically marginalized populations in remote areas. The ‘excluded’, are not only people who suffer from ‘asset poverty’, but also those who are shut out for social reasons. Data and analysis from the region show that:

- The gains in sanitation have been primarily concentrated in the richer segments of the population; in Africa, the poorest quintile is 20 times more likely to practice open defecation than the richest quintile (See Figure 5.2).
- The richest 20 per cent of the population in sub-Saharan Africa is almost five times more likely to use an improved sanitation facility than the poorest 20 per cent.

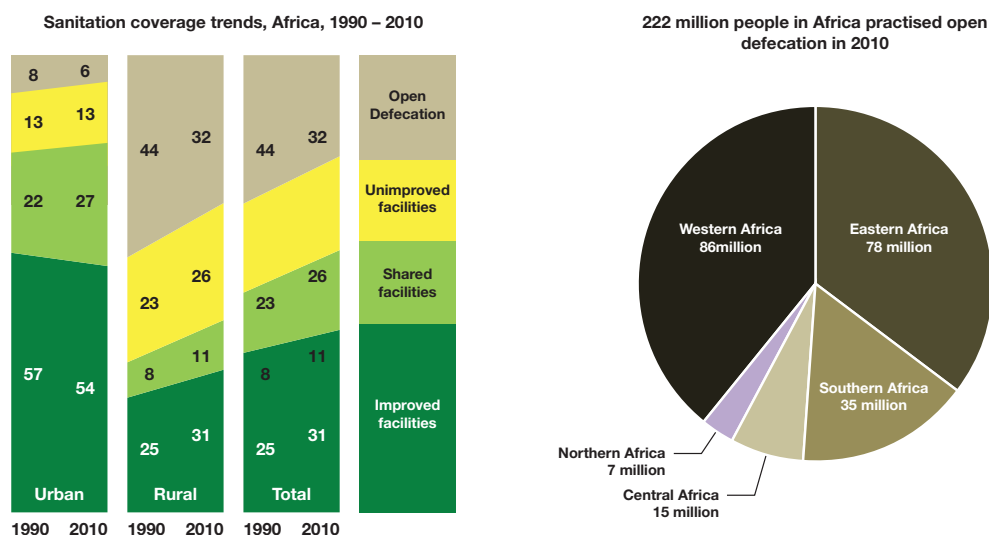


Figure 5.2 Sanitation status by wealth quintile in Africa (AMCOW, 2012).

There is strong evidence of the huge economic costs associated with neglecting sanitation, specifically open defecation, and the resulting burden of disease. Water Aid estimates a yearly 15 billion-dollar economic cost to the continent if the Millennium Development Goal (MDG) targets for water and sanitation are not met in terms of avoidable household and public health expenditure, losses in productivity because of morbidity, and opportunity costs based on loss of time.

Conventional wisdom has been that more lives are saved in poor countries by focusing on the ‘low hanging fruit’ – those most readily reached by extending proven interventions through traditional service delivery modes, thus effectively reaching large numbers of people. To focus on the marginalized, although right in principle, was generally not perceived as being cost-effective.

However, a review of evidence and experience conducted by UNICEF in mid-2010 (UNICEF, 2010) suggests that:

- Excluded populations within countries generally have a larger proportion of children than other groups, owing to higher fertility rates. As their rates of child mortality are also often considerably higher than those of more affluent groups, their burden of child deaths constitutes a large share of the national total;
- In excluded populations, a higher proportion of children die of preventable or treatable infectious diseases or conditions than the children of other groups;
- Most excluded populations have much lower levels of coverage of cost-effective interventions with a proven high impact in reducing major childhood diseases and conditions.

Consequently, these populations have the greatest scope for gains in survival and development outcomes in the next five years. The study concludes that an equity-focused approach will accelerate progress towards the health MDGs faster and it will be considerably more cost-effective and sustainable than the current path. But mere commitment to action will not serve the cause of the excluded, unless policies, investments and actions are based on the principle of equity which is essentially the principle of fairness.

Equity involves recognising that people are different and require specific support and measures to overcome the specific impediments that stand in the way of their being able to access and use services sustainably, in this case safe sanitation and adopting hygiene practices.

- At a local level this would mean examining the context in which people live, work and play, and identifying the immediate barriers which stand in the way of people using hygienic toilets and washing their hands.
- At higher administrative levels such as provincial, state or national levels, equity would be served by directing more resources to areas and communities with low sanitation coverage, and approaches that ensure that every individual has the means as well as the responsibility to use and maintain sanitation facilities and wash hands with soap, to ensure their own as well as their neighbour's health and well-being.
- Equity principles must also apply in special situations that warrant special attention. Emergencies affect millions of people in Africa every year: floods, droughts, earthquakes, landslides and civil strife displace large numbers of people. Often, more than half of those displaced are children under the age of 18 (UNICEF, 2012; Save the Children, 2012; James, 2010). With two thirds of Africa's population practicing open defecation, maintaining camps for the displaced, free of open defecation and with adequate safe drinking water and water for hygiene practices is a major challenge. However it is a fundamental right that cannot be denied.

5.2 THE WAY FORWARD

And so while the case for action cannot be questioned, the action needs to be based on the principle of equity, which requires clear identification of and effective response around specific barriers in the following three categories:

- *Attitudinal* barriers arise essentially from a lack of respect, which results in isolation, prejudice, stigma, misinformation and lack of self-confidence of those who are marginalized. Attitudinal barriers are responsible for much of the social exclusion experienced by people with disabilities or people living with HIV, as well as for the disproportionate burden placed on women and girls in the region – as de facto managers of water, toilets, household and community cleanliness in general, and the teachers of their children and the next generation. These barriers are also responsible for taboos that prevent us from talking about and then ensuring that sanitation facilities address the practical washing and disposal needs linked to menstruation for women and girls, imprisoning millions of adolescent girls and women every month and keeping them away from school, work and play.
- *Environmental* barriers impede physical accessibility to infrastructure and to communication; for example, toilet and squat pan designs which are difficult to use for people with disabilities, older people and pregnant women, pans and traps that are improperly sized and daunting for young children and the lack of suitable options for water logged areas, sandy soils or flood prone areas, or communication materials which cannot be deciphered by illiterate people, or those who are blind or deaf.
- *Institutional* barriers cover a host of issues, acts of omission, such as *lack of* specific policies for the excluded including finance, knowledge, skills and consultation mechanisms, and acts of commission such as administrative and financial corruption. Poor accountability mechanisms perpetuate weak governance, wherein government and civil society officials as well as elected representatives remain systematically blind to the deplorable conditions of the urban and rural poor, especially the most marginalized groups.

All the above barriers are clearly visible in an analysis of excluded minorities. But practitioners at AfricaSan also pointed out the need to focus on the *silent majorities* that is, youth or the elderly who have particular life cycle needs that are also ignored in service design and delivery.

Formidable though these barriers may seem, there are examples throughout the world of individuals and organizations that have overcome these barriers and brought about significant change through their passion, commitment, innovation and systems. ***There is therefore no reason why committed action, based on the principles of equity and inclusion, cannot work on a significant scale.***

The examples that follow are from different countries with their own governance systems and unique challenges. They provide evidence of exclusion in relation to sanitation and hygiene, and they show how it is possible to address the barriers, attitudinal, environmental and institutional in their own context.

5.3 CASE STUDIES

5.3.1 Case study 1: Menstrual Hygiene – initiatives in Zimbabwe, Rwanda and other countries

Zimbabwe is responding in several ways to demands for initiatives in Menstrual Hygiene Management. Aquamor, a local NGO, has produced a guide to menstrual management for school girls. This is based on the guide for school girls to understand and manage menstrual hygiene problems in Tanzania. The booklet is based on the previous work by produced by Marni Sommer of Columbia University (USA). Sommer has produced a simple booklet to help school girls in Tanzania to understand and manage their menstrual management problems. The Zimbabwean version of the booklet covers real stories by girl children on how they manage their menses. The testing of this booklet in Zimbabwe was conducted with the help of Malaika Mushandu, a former Miss Zimbabwe and an ambassador for sanitation and hygiene.

Sustainable Health Enterprises (SHE), Rwanda is a social venture using holistic approaches to address social problems in Africa, Asia, and South America. SHE's first initiative, *she28*, is addressing girls' and women's lack of access to affordable menstrual pads to address the issue of absenteeism from school and/or work – up to 50 days per year – *she28* is stemming these significant costs by developing a franchise model to manufacture and distribute affordable, eco-friendly menstrual pads for girls and women by sourcing local, inexpensive raw materials (e.g., banana fibers) and leveraging existing networks. *she28*'s solution incorporates three components: education, advocacy, and business development. Education equips all members of the community with essential information about reproductive, sexual health and menstrual and hygiene management. Advocacy mitigates the taboo of menstruation causing improved health status and positive policy change. Local entrepreneurs launch businesses to make and distribute menstrual pads, ensuring that women and girls are able to manage their menstruation hygienically (Sustainable Health Enterprises, 2012).

5.3.2 Case study 2: People living with HIV/Aids

People living with HIV and Aids are the most discriminated against in society, economically, socially and psychologically. The immune-compromised status of PLHA renders them more susceptible to opportunistic WASH related infections like diarrhoea, which is experienced by over 90% of patients with AIDS. Easily accessible and sufficient water and sanitation are indispensable for people living with HIV and AIDS as well as for the provision of home-based care to AIDS-affected persons.

In Malawi, an assessment of water, sanitation, and hygiene in the context of Home-Based Care for PLHIV was carried out by CRS in partnership with the Catholic Development Commission of Malawi (CADECOM) in 2006 as part of a six-country study. The findings showed that HBC clients regularly falling ill due to diarrhoea had unmet water and sanitation needs. In response to the assessment, CRS with support from WHO and USAID, implemented a pilot project in Malawi to identify household-scale changes or actions that could improve WASH conditions for PLHIV during 2008–2009. The project focused on practical ways to promote key behaviours including: training and linking with existing HBC and community-based childcare centres at the community level to increase their capacity in WASH and HIV care. Mobilization of community volunteers to negotiate small, do-able actions, complemented by creative community sensitization activities is an effective strategy for promoting WASH behaviours in HIV affected communities without creating undue stigma (Lockwood *et al.* 2006; Seremet *et al.* 2010).

5.3.3 Case study 3: Hope out of conflict – How sanitation plays a vital role in protecting women and children from sexual violence in DRC

Working in the North-Kivu province of DRC, the Programme de Promotion de Soins Santé Primaires (PPSSP) takes an innovative approach to addressing the needs of women and children. Sexual violence is a common tragedy facing women and children in eastern Congo. Diseases, such as cholera, diarrhoea and nematode infections resulting from poor water, sanitation and hygiene are also commonplace in the area. The links between sanitation and sexual violence become apparent when, due to lack of access to private latrines, women faced no choice but to walk outside of their village, often at night, to defecate – increasing their exposure to sexual violence. Prior to this project, in 2009 only 20% of the local population had access to latrines, 60% had access to clean water, and there was no system for waste management. Victims of rape did not have access to medical and psychological support and marriage of underage girls was acceptable by all. PPSSP have adopted a CLTS approach working in schools and health clinics. Maternal and child health in the area has improved and women feel safer with improved sanitation facilities. In addition, through establishing community protection committees, survivors of sexual violence are able to speak out, receive counseling and seek justice (Tearfund, 2007).

5.4 MAINSTREAMING EQUITY AND INCLUSION: WHAT HAVE WE LEARNED FROM CASE STUDIES IN AFRICA

5.4.1 Political commitment

Many countries in the region have ratified the right to water and sanitation in 2010. This is however not reflected in explicit policies that recognize exclusion and seek to address it in sanitation. Few people are actually aware of the obligations that these rights confer on national and sub-national governments.

5.4.2 Monitoring

In order to identify specific groups who remain without access to sanitation and to understand linked reasons, monitoring systems need to disaggregate data at local, sub national and national levels. If we can look at success from the lens of the vulnerable, we will make real progress. The analysis of MICS and DHS data by wealth quintile by the WHO/UNICEF Joint Monitoring Programme for Water and Sanitation (JMP) is an important first step in this direction. Similarly rewards and sanctions must focus on those who are hardest to reach.

5.4.3 Institutional structure and capacity

Sanitation remains an institutionally fragmented subject in Africa with limited financial allocations. The benefits of clear responsibility and better finance for sanitation are bypassing the majority of the poorest and most marginalized. Accountability at corporate and institutional level to ensure that this money reaches those who are usually left out is required to ensure that the benefits of increased investment and mandated responsibility reach the poor. This means that institutions need to ensure social development and monitoring capacity on equity and performance measurement must focus on whether the poorest and most marginalized have been reached.

5.4.4 Approach to creating demand and scaling up

Africa has many examples of approaches to take sanitation to scale. Most recently the community-led total sanitation (CLTS) approach (with different names in different countries) has succeeded in improving access for millions of people across the continent. Countries across Africa report exponential growth in the number of open defecation free communities and positive trends overall in eradicating unsafe practices. They also report the need to integrate inclusive designs, menstrual hygiene management and pro-poor financing for access and maintenance in order to ensure that the worst off actually benefit. Explicit attention to voice and difference based on human diversity, gender and age will be needed in order to ensure sustainability and ensure inclusion as these approaches scale up at sub-national levels. This impressive movement and other successful approaches must explicitly articulate the equity dimensions up front and measure benefits and success against use by specific groups such as children, older people, people with disabilities and those living with HIV/AIDS. It must also move beyond mere households to whole communities to include spaces where people work, play and live and also include pastoralists, migrant workers, and geologically and geographically marginalized people among others.

5.4.5 Technology promotion and supply chain

The promotion of appropriate technology options to meet the different needs of the excluded should ensure that public sanitation always includes provision for menstrual hygiene management and disabled access; child friendly taps; pans; urinals; conveniently located and functioning hand washing stations; adequate light and ventilation; and safety and security. This would be a significant step in moving access for the excluded from intention to reality. Inclusive access designed for life cycle disability including pregnancy, old age or accidents would make facilities accessible for all. The discussions that brought together more than 100 CLTS practitioners across AfricaSan unanimously endorsed the importance of indigenous variations in design for new facilities and the need to make existing facilities inclusive and accessible. A life cycle approach that includes childhood, puberty, pregnancy, illness and accidents and old age will help us design facilities that are accessible to all.

5.4.6 Finance and incentives

Finally, all the above steps will remain mere wishes unless there are dedicated financial allocations available for rural and urban sanitation in general and earmarked allocation of funds, for enabling all the above steps in particular. This would need to be accompanied by a system of incentives for performance, and sanctions to ensure the public responsibility comes hand in hand with rights. Most countries in the region still lack dedicated budgets for sanitation, which must be seen as a

pre-requisite for tackling sanitation programming required to address the sanitation crisis in the region. Since large sums are likely to be involved third party monitoring; public scrutiny; independent audits; and adequate steps are required to ensure that the process of allocation, disbursement and use of funds actually results in better services for those likely to be left out.

5.5 ROLES AND RESPONSIBILITIES

5.5.1 None of these steps will be effective or sustainable unless they are driven by committed leadership at the highest level in each country in Africa and then put into action drawing on our collective strengths

The journey, from recognition and clear articulation of the importance of inclusive sanitation provision, to the translation of this into policy followed by adequate, focused and timely financial provision, to using this to develop capacity (for data acquisition, planning, communication, pro-poor strategies for access, inclusive design and human resource development), and then to set in place an open and transparent monitoring and evaluation system, to ensure accountability ... is a long one. Countries in the region and sub-national administrative units within countries can be positioned at various points on the curve. Whatever the positioning, there is a role for all those concerned, starting from people (not least the more fortunate citizens in the middle class) themselves, to governments, civil society organizations, international financial institutions, bilateral donors, external support agencies, the media, academia and the private sector. This is the challenge for all of us. The examples given in this paper and in the accompanying bibliography show what has been achieved in different contexts. The challenge now, is to build on this experience and scale up to an equitable and inclusive approach to sanitation and hygiene across Africa.

5.5.2 A shared challenge but we have different role and responsibilities

In taking forward actions to develop more equitable inclusive sanitation strategies, we recognize that we all have roles and responsibilities to collaborate as stakeholders in the process. The authors of this paper are committed to mainstreaming equity and inclusion in all our work, recognizing our specific role and responsibilities as set out in the framework below.

- *People*: to promote non-discrimination and active inclusion in sanitation and hygiene.
- *Government (local, state and national)*: institutionally responsible as duty bearers for entire framework and in ensuring that no one is excluded. In many African countries, the role of Government is increasingly one of regulator of standards, quality and inclusion rather than that of providing services.
- *NGOs*: to support the national effort through influencing, monitoring, capacity building, demand creation and demonstration of best practice through delivery. To set an example first, by measuring their own achievements from an equity and inclusion lens. As rights advocates, they are duty bound to work in coalition with larger and broader alliances on health, education and livelihoods, water and sanitation. They also act as independent monitors to ensure the accountability of standards, norms and systems of Government.
- *External Support Agencies*: to support the national agenda, collaborate on strategies, offer relevant technical support and lessons from international best practice, and undertake joint monitoring. To earmark initiatives that seek to bring greater transparency, accountability and innovation to the excluded.
- *Financing Institutions and Donors*: to support the national agenda and commit to equity and inclusion in their financing and ensure aid effectiveness. Support longer term cross-sectoral research on sustainability and inclusion.
- *Media*: to promote awareness and advocacy for equitable and inclusive sanitation and hygiene. Also to bring the voices of the unheard to the fore and act as a watchdog, highlighting gaps and showcasing successes.
- *Academia*: to promote objective research and analysis on inclusion whilst showing sensitivity to the issues and contributing their collective influence; for example engineers to improve inclusive design, social scientists and statisticians to collect and disseminate evidence on different marginalized groups.
- *Elected representatives and Judiciary*: to support the right to sanitation and hygiene through legislation, advocacy and enforcement with a focus on the excluded and marginalized.
- *Private sector and small businesses*: to recognize and promote inclusive sanitation and hygiene design and approaches.

5.6 RECOMMENDATIONS

The history, traditions, pace, structure and trajectory of political, social and economic development vary widely across the countries in Africa. Any set of recommendations will need to be flexible enough to adapt to local situations and context.

However, in broad terms one could track the progression to total and complete inclusive sanitation, access and usage, for all groups along an equity enabled graph as shown below in Figure 5.3.

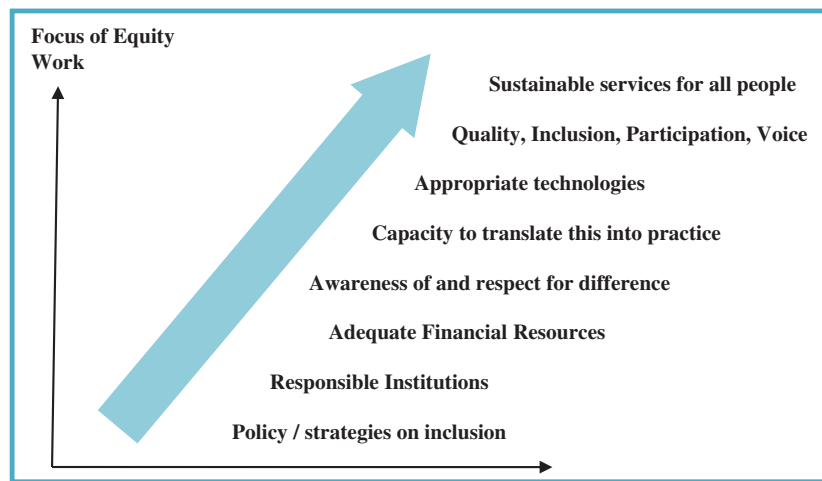


Figure 5.3 Key Steps to Equity.

5.6.1 Looking at services with an equity lens

The Figure 5.3 shows progression in delivering equitable services – starting with policies and commitments, matching these with institutions and investments, strengthening of capacity to interpret policies with sensitive approaches and design, appropriate and cost effective hardware to match user needs, information and widespread awareness around rights and how these can be accessed, and strong demand at every level, every time to eradicate exclusion.

At AfricaSan 3 in Kigali 50 practitioners and policy makers worked on the issues of equity and inclusion and came up with the following concrete recommendations for the way forward:

5.6.2 Applying human rights to sanitation in practice

- Joint Planning & Monitoring – (a) all stakeholder (government partners and users) should be involved in planning for better monitoring and equitable allocation of resources, and – (b) involvement of user groups in implementation of programmes to ensure designs are inclusive. One of the participants reminded us that in this meeting–fully-able-bodied people were discussing disabilities in the absence of any people with disabilities.
- Design and technologies should be inclusive, cost effective and affordable for sustainability and training on appropriate technologies.

5.6.3 Applying an equity lens to the eThekwini framework

- The framework is a simple guide to ensure that equity is not seen as separate or additional to overall implementation.
- Ensure that there is clear understanding at the conceptual level of basics before we try and apply these principles in practice.
- There is the need for routine collection of disaggregated data in order to assess equity in the first place, and to look not only at data but also at personal reports/voice for an individual response.
- Equity/inclusion must be addressed in communal facilities (on the grounds that most domestic ones get adapted to one's family's needs anyway) and in this regard advocacy and awareness raised in the setting (schools, institutions) on the right to sanitation and what that really means in practical terms.

5.6.4 Advocating for an equity approach – key issues for Africa

- *What's missing from the E&I narrative?* To convince ministers of finance and donors we need more evidence and statistics on the cost and benefits of investing in E&I and in particular the economic costs of inaction. There should be a stronger

focus on awareness- raising, training and educational aspects (including school curricula). We should not focus only on minorities and should not forget silent majorities (e.g., youth, adolescents or elderly).

- *How should we approach our advocacy?* Wherever possible our messaging should be positive and uplifting. We want to see women and girls, people with disabilities, pastoralists, and so on speaking up for themselves with dignity and pride. We should identify positive role models (maybe celebrities). We should learn lessons from other sectors (e.g., HIV and Aids) and employ communications professionals in order to ensure that our advocacy materials are creative and effectively targeted towards different audiences.
- *What should be the focus of future narratives on E&I within the sector?* We need to shift the narrative beyond achieving the MDGs and focus on the targeting of investment and equity of access (i.e. not just off-track but off-target). The narrative should focus on dignity and pride (for communities) and cost of inaction (for policy makers). The argument is not just about providing new services for those without but also making existing services more accessible (huge potential gains here). Overall we are winning the argument that inequity in access to WASH is unacceptable (many would agree), but we still have some way to go to convince others that it is also avoidable and that equitable and inclusive services are within our reach.

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For materials and references on equity and inclusion see: www.wsscc.org and www.wateraid.org

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Understanding Demand and Behaviour Change

Chapter 6

Changing WASH behaviour

Robert Aunger¹, Yolande Coombes², Val Curtis¹, Hans Mosler³
and Helen Trevaskis⁴

¹LSHTM

²WSP

³EAWAG

⁴Consultant

WASH programmes need to pay close attention to behaviour. In this chapter we explore some current approaches to behaviour change and provide a brief practical guide as to how to develop an effective behaviour change programme.

6.1 THE IMPORTANCE OF BEHAVIOUR IN WASH

Whilst much of the focus in WASH programming is on providing water and sanitation infrastructure, taps and toilets alone do not ensure that public health is protected. Key to preventing child deaths from diarrhoea is the safe use of such facilities. Having a toilet but then leaving it unused, or only partially, used allows pathogens into the domestic environment. Having water available, but then not using it for washing hands allows foods, drinks and surfaces to become contaminated. Pathogens then find their way to new victims, and cause the deaths of some 800,000 young children every year (Liu *et al.* 2012).

WASH programmes, therefore, need to pay close attention to behaviour; the hygiene practices that are involved in breaking the chain of transmission of pathogens from one host to another. Key amongst these are handwashing with soap, which could cut diarrhea risk by almost half (Cairncross *et al.* 2010). The safe disposal of human and animal stools, whether into a latrine, or at least away from living areas, is clearly important, potentially reducing diarrhea risk by an estimated 23% (Gil *et al.* 2004), as is the safe preparation of foods, especially the weaning foods fed to vulnerable infants (Motarjemi *et al.* 1993). The hygienic management of water in the household may play an important part in diarrhoeal disease reduction (Clasen *et al.* 2006), but surface cleansing, including keeping toilets clean, fly control and the removal of wastes can also contribute to the reduction of disease risk (Curtis *et al.* 2011).

However, getting people to change their long-held practices is not a simple task. Neither is it easy to get people to decide to invest in WASH technologies such as a latrine, a handwashing station or a water filter. Until we can find ways of changing such behaviours on a large scale we will not have won the battle for WASH.

6.2 KEY PREDICTORS OF BEHAVIOUR CHANGE

WASH practitioners have long known that just teaching people about the benefits of this or that behaviour does not automatically lead to real changes in what people do (though it may change what they *say* they do!). New approaches are more sophisticated; they tend to start from a hypothetical model or framework of what the likely determinants of behaviour are, and then investigate if these are indeed associated with the behaviour in question.

Some of the key determinants with proved predictive values from a range of health behaviours are shown in Box 6.1. Other important determinants of WASH behaviour include:

BOX 6.1 KEY DETERMINANTS WITH PROVEN PREDICTIVE VALUE FROM A RANGE OF MODELS

Susceptibility – probability you can get the health problem (e.g. probability of getting diarrhoea or cholera)

Severity – magnitude of the event (e.g. Will cholera kill your child?)

Response efficacy – effectiveness of the suggested intervention in preventing or dealing with the event (the rates of diarrhoea decreasing because you have built a toilet)

Self-efficacy – an individual's perception of their ability to perform the desirable response (how able are you to build a latrine or a handwashing station)

Social norms – what most people think and do about this (do most people wash their hands after defecation?)

Action planning – thinking in advance of exactly how the target behaviour (where to get the cleanest source water, and how to treat it once it is at home?)

Coping planning – finding a way to cope with potential blocks to performing the behaviour (if there is no soap nearby, how will the person manage to wash hands with soap anyway?)

Risk perception can be divided into perceived susceptibility and severity. Susceptibility is a person's subjective perception of his or her risk of contracting a particular condition or illness, and perceived severity as a person's perception concerning the seriousness of the consequences of contracting a particular condition or illness. The use of solar water disinfection (SODIS) was modestly increased by a two-hour training session including information about water contamination, the health effects of drinking contaminated water, and instruction on how to use SODIS. (Rainey & Harding, 2005)

Social norms are an important social constraint on what kinds of behaviours people adopt. Researchers have shown the usefulness of distinguishing between descriptive and injunctive norms (Conner & Sparks, 1996; Nucifora, Gallois & Kashima, 1993). Descriptive norms express perceptions about which behaviours are typically performed. Injunctive norms, on the other hand, describe perceptions about which behaviours are typically approved or disapproved. The most successful strategy to spread SODIS use in Bolivia was shown to be persuasion by promoter house-to-house visits. (Tamas & Mosler, 2009) This finding was confirmed when it was shown that high SODIS consumption in Zimbabwe could be achieved when a promoter intervention was followed by a memory-aiding technique such as prompts or public commitment (e.g., pledging) (Kraemer & Mosler, 2011).

Self-efficacy is described as the belief in one's capabilities to organise and execute the course of action required to manage prospective situations (Bandura, 1997). *Action planning* is defined as the specification of 'when', 'where', and 'how' the action will take place, whereas *coping planning* is defined as the presumption of possible barriers and the invention of ways to overcoming them (Schwarzer, 2008). Such planning is of use as the person plans how to cope with distractions and barriers. Also, to perform a behaviour continuously, the person has to be committed to doing so and the behaviour needs to be remembered at critical moments. Several studies have demonstrated that motivational interviewing (expressing empathy, developing discrepancy, avoiding argumentation, rolling with resistance, and supporting self-efficacy) increased water disinfection practices in Zambia. (Quick *et al.* 2002; Thevos, Quick & Yanduli, 2000).

Motivation. Much of human behaviour is *motivated*, in fact there are in the order of fifteen separate human motives (Aunger & Curtis, submitted). The motives that are most likely to be involved in driving WASH behaviours include Disgust, Nurture, Affiliation and Status (Curtis *et al.* 2009). Disgust is elicited when contaminating, potentially infective materials or situations are encountered and is the evolved driver of much of our hygiene behaviour (Curtis, deBarra & Aunger, 2011). Eliciting Disgust of dirty hands has been shown to improve handwashing behaviour (Drummond *et al.* 2009; Judah *et al.* 2009) and disgust of faeces are a key factor in the CLTS process of 'igniting' communities to eliminate open defecation (Harvey, 2011). Mothers care deeply about the future of their children and can be encouraged to adopt safe WASH practices via the Nurture motive. In a recent successful trial of a handwashing campaign in India, a cartoon showed a child rewarding a mother with admiration and love for her insistence on him washing his hands at key times (Biran *et al.*, forthcoming), a similar approach of 'thanking mothers' was used in the Asante Mama national handwashing campaign in Tanzania (Coombes & Paynter, 2011).

The Affiliation motive makes people want to behave in the same way as they perceive those around them are doing (as discussed in the social norms section, above). Norms based messages such as 'Is the person beside you washing their hands with soap?' worked well to change soap use in a motorway service station (Judah *et al.* 2009). Status is also an

important, if hard to acknowledge, motive behind WASH behaviour, such as the desire to acquire and display a good looking water filter or to build a toilet (Jenkins & Curtis, 2005).

Habit. Because most WASH behaviours concern actions that are repeated daily, they are often neither under the control of the planning, nor the motivational system, but are automatic, ie habitual. For example, it has been shown that the best predictor of observed handwashing behaviour in Kenya is that it is habitual. (Aunger *et al.* 2010) Understanding habit formation is critical to creating *sustained* changes in behaviour. For example, school campaigns for Lifebuoy soap ask children to practice for 21 days, as this is thought to be how long it takes to form a habit. As habitual behaviour tends to occur automatically when a particular cue is present, it is important to identify or create cues. These can be particular behavioural sequences, locations or objects. For example, it was shown that tooth flossing is more likely to become automatic if it is carried out after, rather than before, toothbrushing, as the prior action acts as a cue to the later one. In the Indian handwashing trial people pledged specifically to wash hands at particular times in particular locations in an effort to help make it habitual.

Products. Most approaches to behaviour change neglect the importance of objects, which play a central role in healthy behaviour, from condoms, to seat belts and soap. Marketers, however, know that products have to be designed to be motivating to use, whether in functionality, sensory reward, aesthetics, ability to symbolise status, convenience or brand appeal (Curtis & Aunger, 2011). WASH products are no exception, where unattractive toilets or tippy taps are unlikely to be taken up widely (Biran, 2011), and currently available soap products may be ill-designed for use in the context of the outdoor bathrooms of many developing country households.

Settings. People live in physical, social and biological niches which determine the behaviour that they adopt. Social rules are followed and objects and infrastructure guide behaviour into channels that may have far more influence on behaviour than individual psychology (Barker, 1968). For example, an easily available water supply makes hygiene behaviour easier (Traoré *et al.* 1994), and the design of a latrine influences how likely it is to be used. Once a village identifies itself as ‘Open Defecation Free’, it becomes harder for any individual to be seen to be practicing open defecation. The perception that there may be disease rife in the environment, such as cholera or Swine flu, enhances protective behaviour such as handwashing with soap (Curtis *et al.* 2009; Fleischman *et al.* 2011).

6.3 THE INTERVENTION DESIGN PROCESS

Understanding the determinants of behaviour, and knowing what’s worked to change behaviour in the past is only part of what’s needed to change WASH behaviour. This insight and knowledge has to be channelled into a *process* which starts with the intention to design an intervention and doesn’t finish until after the intervention has been completed and evaluated, and perhaps revised or expanded to larger scale.

Figure 6.1 shows the processes and people involved in the design of a successful behaviour change intervention. There are two types of steps in the process – those that can be cycled between, as shown by the arrows in the diagram – and those that must be completed before the next is begun. This distinction matters, as successful creative process and project management demand that all understand when one part is completed and decisions are ‘locked in’. As important as the process are the people involved. The core team should be small (4–6 people) and relatively stable. This technical team needs to be able to count on the buy in of the key stakeholders; decision makers in line-ministries, implementing agencies, private sector partners or funders, perhaps through the formation of an advisory group. Even great ideas emerging from great process involving great people can be watered down or killed if there is no stakeholder buy-in.

Each of the stages in the diagram deserves a quick overview before we spotlight three parts of the intervention design process – formative research, design and measuring behaviour – which pose particular challenges.

One: Define

Clearly, where you start has an impact on where you end up, therefore a rigorously defined and shared view of the outcomes that are sought is critical. This should include behavioural outcomes – *who* will be doing *what*, *where*, *when* and *why*. Early on it should be acknowledged what types of solutions – irrespective of potential efficacy, are acceptable or unacceptable to those involved – for example, will a range of water treatment technologies be acceptable or is only one solution to be promoted? Though it sounds straightforward, agreeing on, and closely defining, the behavioural outcomes and targets requires time and resource and is often one of the toughest parts of programme design.

Two: Understand

Changing behaviour demands a detailed understanding of what happens now. This means not just understanding the determinants of behaviour, as we have outlined above, but also understanding exactly what is happening – who is doing

what exactly? Why? When? What is the environmental, technological and social context? At this stage the technical team will commission, or carry out, formative research to answer these questions. Even if an external agency is engaged for the research, it's important that the design team also spend some time immersing themselves in the lives of the target audience so as to experience the difficulties of carrying out the desired behaviour first hand.

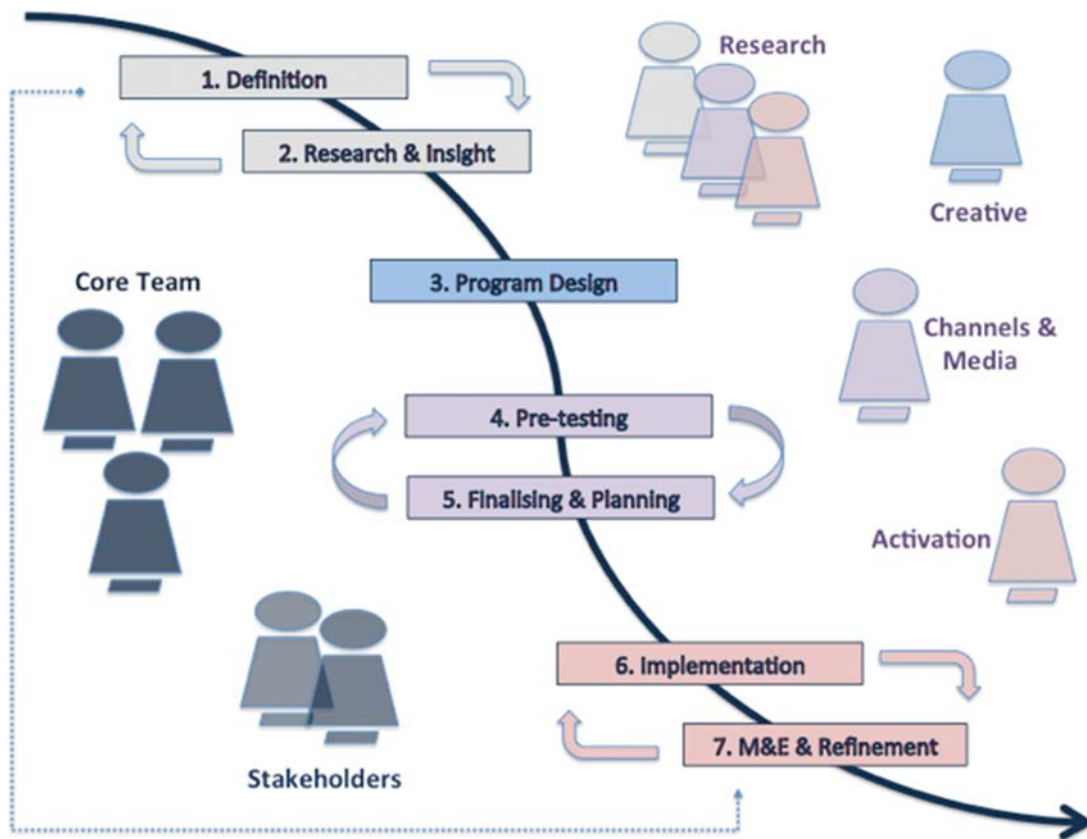


Figure 6.1 Intervention design process & people.

Three: Design

The next stage is to engage a creative team to design the programme. Key to a great design is an excellent design brief. The brief includes both the detailed behavioural objectives as well as key learnings about the current behaviour, its determinants and the local context. Even if resources do not allow for the hiring of a creative agency, the design team will need to pull in a few creative people, media experts, artists, etc and work to a carefully crafted brief.

Four: Pre-test

However good the intervention ideas look on paper, it is essential that they be pretested in the field before being rolled out at full scale. Several rounds of pretesting in target settings allow the team to understand if and how the interventions will work, to seek out unintended consequences and to make changes.

Five: Finalise plan

Once the final plan for the intervention has been designed it is helpful to write an implementation brief, which lays out precise instructions for the deployment of the intervention. A key component is a channel and media plan which ensures that the strategy for getting messages through to people in meaningful ways, via mass media, or via other channels, is robust. It is also important to work out how the elements of the intervention can be simplified and commoditized to ensure that they do not become watered down during implementation.

Six: Implement

Whoever implements the intervention, success demands military precision coupled with an attitude of intelligent resourcefulness and a strong understanding of how the intervention will work to change behaviour. This combination helps a programme flexibly weather the storms of the real world without losing focus on the target it has set out to achieve.

Seven: Measurement and evaluation (M&E)

Though M&E is often mentioned last, it has to have been a topic of conversation from the start. The M&E plan may require a baseline, ongoing process measurement and a final survey. It is not generally a good idea, however, to try to turn an intervention into a controlled experiment, since this is expensive and requires a lot of scientific input. WASH behaviours are typically difficult to measure; we discuss this particular challenge below.

6.3.1 Spotlight on formative research

The objective of formative research is to gain insight into the determinants of behavior, as we saw above, and into how it might change. There are many methods that can be used in formative research, it is rarely a good idea to just rely on Focus group discussions. The first step is to carefully design the questions. Typically we need to know *what* people are doing now, *when*, *who* is doing them, *why* they are doing it and *how* we might reach them and engage them in behaviour change activities. The methods that are chosen are then fitted to the questions that have been asked. Participant observation is a good first start as an intensive, insightful method of seeing just how people situate the behaviour in their daily lives. It is often these situated factors that hold a behaviour in place, constraining change, but it is typically difficult for people to report on such constraints (as they are subconscious), so identification is most easily achieved by experiencing them for oneself.

Participant observation requires the researcher, as much as possible, to live the life of the target population, twenty-four hours a day, in their community, going through the same routines and interactions, and taking notes about what they learn. ‘Teach the researcher’ is a variant of participant observation that can be particularly apropos, as it requires someone in the target population to explain to the researcher, while the researcher tries to perform the target behaviour under naturalistic conditions, just what actions are required, and why. Standard methods are focus groups and interviews, as these are relatively easy to conduct. However, they are most productive when very specific questions can be asked, based on a solid background of knowledge. Focus groups require collecting a small (normally 6–10) group of similar people together for a guided discussion that is often recorded and transcribed to ensure that all potential insights are captured. Behaviour trials are a related formative research technique which requires the researcher to ask target subjects or households to perform the target behaviour (e.g. by giving them the necessary hardware), with instructions for how to make use of it. After some period, the researcher returns to the household to ask questions about what difficulties they had incorporating this behaviour into their daily activities and what solutions they found.

A group of techniques which derive from consumer research are called ‘projective’ because they ask people to use their imaginations to project themselves into novel situations that help elicit new kinds of otherwise unrecalled information. They can be used in a group or individual context, and range from asking people a question (e.g. how do you feel about your life right now?) and getting them to select objects or pictures or music to answer – which they then talk through, to getting people to imagine one thing as another (e.g. if this brand was an animal what would it be and why?) or giving the power of speech to inanimate objects (e.g. if your soap bar could talk what would it say about its day?), or giving people drawings of scenarios and asking them to fill in speech bubbles for the characters involved or tell stories around them, or getting them to create and talk about drawings. Finally surveys can ask about media consumption, contact with health agents, social networks and other channels of communication employed by the targets of the programme.

6.3.2 Spotlight on design

A good design brief is pithy, readable and acts as a rudder for the team involved in subsequent steps where it will be used to plan, make decisions, resolve conflicts of opinion, brief others who are becoming involved, etc. The design brief is the springboard for designing the intervention. As well as including critical background a design brief should summarise: current behaviour and desired new behaviour; what will be measured to know change has happened; the design principles and insights the program should be created around; channels which will be used to touch people’s lives; resource requirements and timings.

The hardest part of writing a brief is arriving at design principles and insights as this involves intelligently and creatively synthesizing all learning with one question in mind – what must we build into this intervention if we want to increase the inevitability of it changing behaviour? These principles help to create the intervention and then to check back that what we’ve created is on-brief. Design principles and insights are a mixed bag driven by the challenge faced and may

include: angles on motivators we believe could help people adopt a new behaviour; pressure points within networks of social influence; infrastructure issues we must resolve or we can exploit; insight into how objects perform within a behavioural setting, and so on.

With the brief in hand, the next stage is to assemble a creative team, either an outside agency or a number of creative experts such as media people, artists, and so on. A growing number of agencies exist, albeit of varying quality. Selection can be tricky but those with commercial as well as social experience are usually preferable as their approaches should be more up to date and they will bring valuable learning and insight from very different worlds that can act as powerful stimulus to help all concerned think from different angles. The brief should be accompanied with a thorough face-to-face briefing, ideally involving time with the target audience, as even the best agency will take time to get up-to-speed and engage with the challenge. Involvement in some of the earlier stages can help with this.

6.3.3 Spotlight on measuring behaviour

Most WASH behaviours are difficult to measure. This difficulty manifests itself in various ways. First, the easiest and simplest way is just to ask people their opinions or about their own behaviour. However methods such as self-report through questionnaire and diary are notoriously poor and introduce systematic biases (Klesges *et al.* 2004; Rose *et al.* 2009; Stange *et al.* 1998). It is also difficult for people to report on the causes of everyday behaviour (such as reliance on environmental cues), because the processes are sub-conscious.

Second, structured observation – or use of one individual to watch the behaviour of another – is the current ‘gold standard’. (Cousens *et al.* 1996; Curtis *et al.* 1993) However, direct observation is expensive, intrusive, and introduces reactivity – people behave in more normative fashion when being watched.

Third, mechanical systems designed to replace people as observers are increasingly being used to measure wash behaviour such as handwashing and toilet use, (Biran *et al.* 2009; Clasen *et al.* 2012). However, they can be logistically complex to deploy, the results can be hard to decipher and the target population may find them as intrusive as observers. Further, they are not yet designed to work robustly for long periods (battery life etc.).

The combined difficulty of all these problems has largely precluded the study of everyday behaviour where it actually occurs, except through participant observation. Nevertheless, any effort to observe behaviour in context is likely to be rewarded in terms of the additional insights that can be gained by observing behaviour in its natural context.

6.4 WHAT WE STILL NEED TO KNOW

Though efforts to change people’s behaviour are as old as human interaction, the science of ‘behaviour change’ is a relatively new arrival on the scene. Progress in learning how best to engender healthy behaviour is hampered by the many and diverse kinds of behaviour that relate to health, the many and diverse settings in which it takes place, and the many and diverse approaches to behaviour change that exist.

We still have no simple lexicon of behaviour change terms, no agreement as to the roles of different social, physical and psychological factors, and we do not know which approaches work best for which behaviours in which context at what cost. Though a precise science of behaviour change is possibly beyond our grasp, much more investment not just in behaviour change programmes, but in behaviour change programmes that are wired up to teach us lessons about what works best are urgently required.

For example, in a review (Parker Fiebelkorn *et al.* 2012) of behaviour change research on point-of-use water treatment interventions only 5 out of 26 studies included in the review specified the details of the interventions applied. Together with one recently published study (Kraemer & Mosler, 2011) we have only a very small basis for determining which behaviour change techniques work for water treatment. Though there are now a number of successful hygiene promotion programmes (Curtis *et al.* 2001; Scott *et al.* 2007; Biran, forthcoming), there are also others that have failed to achieve much behaviour change (Huda *et al.* 2011). We need to learn the lessons of both failed and successful programmes to become much smarter at improving WASH behaviour.

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Chapter 7

Integrating handwashing into other programs – A strategy for governments to reach scale

Katie Carroll

The Global Public-Private Partnership for Handwashing – PPPHW

7.1 WHY HANDWASHING WITH SOAP?

Today, diarrheal disease and acute respiratory infections are the two biggest killers of children in the developing world. The simple act of washing hands with soap can significantly cut the risk of diarrhea from 50 percent to 30 percent, (Fewtrell *et al.* 2005) and that of respiratory tract infection from 45 percent to 21 percent, (Curtis & Cairncross, 2003). Research shows that handwashing with soap (HWS) prevents disease more simply and cost-effectively than vaccination for the same diseases.

Handwashing helps prevent the spread of disease by interrupting the transmission of pathogens that cause disease. Hands often act as vectors that carry disease-causing pathogens from person to person through direct contact or indirectly via surfaces and foods. Together, soap and water form a formidable ally in efforts to combat a host of other illnesses, such as helminths (worms), eye infections like trachoma, and skin infections like impetigo.

The isolation and safe disposal of feces and the provision of adequate amounts of clean water are essential, but handwashing with soap is one of the most effective and least expensive ways to prevent diarrheal diseases.

In the past few years, there has been increasing attention and resources devoted to raising the profile of the importance of handwashing around the world. Advocacy events like Global Handwashing Day, which is celebrated each year by over 200 million people in over 100 countries, in coordination with the long-term handwashing activities of international donors, academic institutions, NGOs, and private sector companies aimed at longer term behaviour change, have helped elevate handwashing on developing country governments' priority lists.

The Global Public-Private Partnership for Handwashing (PPPHW), a partnership of 14 key global organizations working on handwashing behaviour change, serves as a global go-to resource for those working on handwashing. The PPPHW tracks handwashing programs, consolidates and distributes resources, advocates for handwashing at global events, and convenes those working in handwashing to learn from each other. At AfricaSan3, the PPPHW hosted a session to examine handwashing behaviour change best practices and challenges in Africa. This chapter focuses on some of the discussion with respect to integration of handwashing into other government programs to assist governments reach scale with their handwashing interventions in Africa.

7.2 THE CHALLENGE OF REACHING SCALE

Handwashing with soap, when practiced in small-scale, highly-controlled trials, yields dramatic health benefits, especially in the reduction of diarrhea and acute respiratory infections. When handwashing has been promoted on a large-scale, however, authorities have struggled to achieve the same level of results. This is a challenge not only in Africa, but in countries around the world working to get handwashing behavior change to scale. To address this challenge in Africa and elsewhere, national and local governments are stepping up to provide the needed leadership and networks to bring handwashing behaviour change to scale in their respective countries. A topic that once wasn't taken seriously, handwashing behavior change is now a strategic government priority in many places.

7.2.1 The role of government

Governments play an important role in ensuring the success and sustainability of at-scale handwashing in their countries. Because of its inherent interest in public health and its large-scale reach to the population, government are uniquely positioned to help increase the number of people washing hands with soap. In order to scale up HWWS, key government-based handwashing initiatives include:

Policy supporting handwashing at scale. Handwashing-related policies are one of the most common actions that governments can take to promote handwashing behavior change. These include stand-alone handwashing policies and policies that integrate handwashing into sanitation, health, or other topics (e.g., school health, nutrition or integrated child health programs).

The importance of having HWWS national policy increases the likelihood of funding specific HWWS activities and by extending a policy into a national strategy it can guide implementation of interventions for HWWS which will increase the chances of the sustainability of Government efforts. Having a policy and strategy also provides a common direction for the Government but also means that the government provides direction and vision of where handwashing with soap should go so that it increases the likelihood that interventions will be coordinated.

Political leadership for handwashing. Establishing a shared vision and ensuring the political will to implement is the starting point for scale up. Without political will and a shared vision among stakeholders at all levels, scale up will remain an elusive goal. Developing this shared vision in a collaborative manner is also the foundation for coordination and for creating motivation all levels. Having clear political leadership and vision helps to bring all the stakeholders together.

The lack of strong program leadership by government may result in a program that risks being disrupted by the agendas of one or two partners/stakeholders also working in HWWS who are pursuing their own individual organizational agenda. The consequence of this may be that there are conflicting messages or approaches, or even conflicting goals and this may discourage other stakeholders from participating in the efforts to promote HWWS at scale within the country.

However, on the contrary, where there are political leaders who are handwashing champions they become critical to accelerating the passage of handwashing-related policies and allocating government resources to the issue. Many times, Global Handwashing Day has served as a catalyst for high-profile events where government leaders have announced a new handwashing initiative or policy. Without someone to drive the agenda of HWWS forward it is easy for HWWS to get buried amongst other government priorities.

Integration of handwashing into government programs. Handwashing with soap is an important behavior on its own, but it's also an integral part of successful sanitation, nutrition, education, healthcare, and other programs. Governments most commonly integrate handwashing into education and sanitation programs, but are starting to integrate the behavior into other programs like food security and nutrition as its importance is recognized.

With scarce resources for HWWS integration becomes ever more important for HWWS campaigns to succeed in order to deliver large scale HWWS interventions. For Government to integrate HWWS into other programs the roles, responsibilities and accountabilities of different Government departments, line ministries and NGOs need to be well defined, and understood. Institutional arrangements need to be defined at national and subnational levels and need to be articulated and coordinated for the public and private sector actors.

7.3 INTEGRATING HWWS – CASE STUDIES

In the past few years, investments in handwashing behaviour change programs have shifted away from stand-alone handwashing behaviour change programs to a more integrated approach. Handwashing has been successfully integrated into sanitation, education, nutrition, HIV/AIDS, and other programs that are already working on a large scale. Because handwashing often happens in conjunction with other behaviours such as going to the latrine, cooking, eating, and so on many governments are now naturally integrating handwashing into these existing programs.

7.3.1 Case Study 1 – integration with sanitation

One popular area of integration is sanitation. Many governments are already investing in community-based total sanitation methods to bring proper sanitation to communities throughout their countries. As one of the critical times for handwashing is after defecation, handwashing is a natural component of these sanitation initiatives.

In Mali, for example, the Ministries of Health and Environment and Sanitation, along with UNICEF and its partners, have integrated handwashing into their Community-Led Total Sanitation (CLTS) program targeting 1500 villages by 2014 and reach 70% of the population through mass media. The government realized early on in implementing its CLTS program that they needed to move beyond engineering and sanitation hardware to include hygiene promotion and behaviour change. As a result, the Ministry of Environment and Sanitation requires communities to commit to the following action in order to achieve official Open Defecation Free (ODF) status:

- All members of the family use the latrine
- Each latrine has a cover which limits the proliferation of flies from the pit
- Each latrine is equipped with a *hand washing device (water with soap or ash)*

In addition to community handwashing initiatives, the Government of Mali is also implementing a water, sanitation, and hygiene (WASH) in schools program targeting 510,000 school children and their families. Handwashing with soap in school is an essential piece of the WASH in Schools program. Again, by building on an existing at-scale program (i.e., public education and schools), they are able to promote handwashing at scale. Similar programs which integrate handwashing components into CLTS can be found in Ethiopia, and Kenya.

7.3.2 Case Study 2 – integration with education

Another increasingly popular area of integration is handwashing in schools. In 2012, Zambia's Ministry of Education and USAID/Zambia launched SPLASH (a multi-year WASH in Schools program – Schools Promoting Learning Achievement through Sanitation and Health). SPLASH will work in more than 600 primary schools in four districts of two provinces to: (1) improve water supply and sanitation facilities and provide a comprehensive hygiene improvement program; (2) train teachers, PTA members, and student leaders in school-led total sanitation; and (3) strengthen the capacity of the local institutions tasked with supplying, operating, and maintaining improved WASH facilities in schools.

This WASH in Schools program expects its activities to show measurable improvements in the number of days students miss school due to lack of water, illness from diarrheal diseases, or menstrual hygiene constraints, which in turn will increase student-teacher contact time, contributing to improved reading and other basic skills. With a strong focus on gender issues, the program also expects a decrease in girls' drop-out rates and (female) teacher attrition.

In Kenya, the Government is leveraging the private sector to bring handwashing behaviour change to scale. In April, 2012, the School of Five handwashing promotion program, was launched in Kenya with Unilever, the Ministries of Education and Public Health and Sanitation, Water and Sanitation for the Urban Poor (WSUP), and Population Services International (PSI). In 2012, the School of Five will be reaching 300,000 children between the ages 6–12 in about 500 schools across Kenya to teach them the importance of handwashing with soap during the five key occasions – Before breakfast, Before Lunch, Before Dinner, after using the toilet and while taking a bath. The program will engage children in handwashing promotion over a period of 21 days, using fun activities like comic books, quizzes, games and mascots.

7.4 MEASURING HANDWASHING BEHAVIOUR

Integration may be a solid strategy for reaching a large amount of people with handwashing behaviour change activities and materials, but once those populations are reached, how do governments determine if handwashing is actually taking place? Ongoing monitoring of handwashing behaviour is necessary to keep the topic on the national policy agenda and in addition monitoring is needed to ensure that the program stays on track.

Measuring handwashing behaviour is very difficult and often expensive when done on a large scale. For example, structured observation, when an individual observes household behaviour over a period of time and records handwashing activity, is one of the most widely-accepted methods for measuring handwashing with soap at the household level. For small trials or studies this may be feasible, but when trying to track handwashing behaviour at large scale structured observation can become prohibitively expensive.

To address this challenge, leading organizations working in handwashing behaviour change have suggested indicators of handwashing as the best way to determine if handwashing is happening without direct observation. These indicators have been integrated into the global household surveys: Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Survey (MICS) and are:

- Percent of households with a designated place for hand washing where water is present and where soap is present
- Percent of households with soap anywhere in the dwelling

Many of these surveys have been completed with the handwashing indicators included. They are available at:

- MICS: http://www.childinfo.org/mics_available.html
- DHS: <http://www.measuredhs.com/Data/>

This data could be helpful to governments by not only tracking handwashing behaviour, through the indicators, nationally over time, but also in targeting interventions. For example, the survey can identify which regions of a country or what segments of the population are more or less likely to have a handwashing station with water and soap. This information, along with formative and other research, can help target the interventions to those who need it most.

Ideally Government monitoring and evaluation systems for HWWS are not parallel systems set up just for HWWS but are incorporated into existing monitoring systems for other health or WASH related systems. In general, in most countries M&E for handwashing is poor and so governments need to build capacity in this area. An important function of the M&E system is the development of HWWS targets, especially if the HWWS is to be integrated into other programs. Having targets can help to keep implementors focused on result.

7.5 SUMMARY

Governments have a unique opportunity to help bring handwashing with soap, a simple, cost-effective behaviour with enormous health benefits, to scale in their countries. An effective way to do this is by simply integrating handwashing behaviour change activities into already existing national programs in sanitation, education, and other related programs. In addition, there are many international donors, NGOs, and private sector companies working on handwashing behaviour change. The case studies presented in this chapter have shown that cooperation among interested organizations can yield a greater scale and sustainability of handwashing behaviour change. For more information or questions regarding handwashing with soap at scale, please contact us at info@globalhandwashing.org or visit our website at www.globalhandwashing.org.

Matching Supply and Demand

Chapter 8

Moving households up the sanitation ladder through sanitation marketing

Jacqueline Devine

Water and Sanitation Program

This chapter focuses on the value added from a sanitation marketing approach in helping households move up the sanitation ladder. Key principles for a large scale sanitation marketing initiative are provided and emergent learning is shared from programs in Africa and abroad. The chapter concludes with a discussion of roles and responsibilities and of what it would take to enable further uptake of this approach in Africa.

8.1 WHAT IS SANITATION MARKETING?

One of the earliest documented applications of sanitation marketing worldwide was in Benin where the beginnings can be traced to 1996 and the PADEAR Program (Project Support to the Development of the Rural Water and Sanitation Sector). The program piloted a social marketing approach to motivate household demand for sanitation in combination with delivery by small-scale private sector providers (WSP Field Note, April 2011).

Since then, sanitation marketing has continued to receive a considerable amount of attention, both in Africa and abroad. Interestingly though, there is as yet, no broad consensus on what sanitation marketing is. Some sector professionals define it as strengthening supply by building capacity of the local private sector others discuss it in terms of it ‘selling sanitation’ by using commercial marketing techniques to motivate households to build toilets. Both these approaches were actually integrated in the Benin pilot.

Water and Sanitation Program (WSP) of the World Bank defines sanitation marketing as the application of the best social and commercial marketing practices to scale up the demand and supply for improved sanitation, particularly among the poor.

8.2 WHY IS SANITATION MARKETING NEEDED?

Sanitation marketing can be considered an essential part of any program aimed at increasing access to improved sanitation based on several reasons as follows:

- (1) *Potential for scale:* By leveraging approaches that have been used by the commercial sector and social marketing organizations (see Box 8.1 on social marketing in Africa), sanitation marketing has the potential to yield results at the scale that is needed to meet MDG targets.
- (2) *Demand-driven approach:* Sanitation marketing is a demand-driven approach that is based on the desires and needs of households and is consistent with current sector thinking.
- (3) *Complement to CLTS:* Community-led total sanitation (CLTS) is a proven approach to motivate communities and households to stop open defecation. However, households need affordable and desirable alternatives which sanitation marketing can help create.
- (4) *Sustainability through the private sector:* Because sanitation marketing involves the private sector, there is a greater likelihood of sustainability.

8.3 WHAT ARE THE KEY PRINCIPLES INVOLVED?

The key principles for sanitation marketing are as follows:

BOX 8.1 SOCIAL MARKETING IN AFRICA

Organizations such as Population Services International (PSI) use social marketing approaches to stimulate health behaviours such as the use of insecticide-treated nets to prevent malaria. Social marketing relies on commercial marketing techniques but the end goal is social rather than profit. These techniques include the use of ongoing consumer and supply chain research; the use of branding, advertising and promotion; the distribution of affordable and desirable products through easily accessible private sector suppliers and the integration of behaviour change communication. Brands such as Prudence in West Africa and Trust in East Africa are synonymous with condoms and attest to the power of social marketing.

- *Evidence-based:* Sanitation marketing initiatives must be founded on sound evidence from the market place that is typically gathered through some form of research, often referred to as formative research. Broadly speaking, formative research helps answer questions such as:
 - What is the current situation in terms of behaviours and availability of products and services and what are the consequences if nothing changes or if changes are made?
 - What is the goal for change?
 - How can the goal be reached?
 - How well is the intervention being implemented or delivered?
 - What needs to be done differently?

The information to answer these questions might already be available in existing sources such as research reports (e.g., Demographic and Health Surveys, Multiple Indicator Cluster Surveys or WHO/UNICEF Joint Monitoring Program reports). If secondary data sources are not sufficient or recent, primary research on the demand and supply side may be required.

- *Leverages power of the marketing for a social benefit:* Marketers' main working tool is called the marketing mix, often referred to as the '4ps': product (the sanitation product or behaviour), price (the financial and non monetary cost), place (where a product or service is sold and how it is distributed) and promotion (how households learn about a product and how households are motivated to change their behaviour). Determining the right mix of the 4ps based on best available evidence allows marketers to reach scale. See Box 8.2 for how the marketing mix has been defined for the rural sanitation program in Tanzania.

8.4 EMERGENT LEARNING

Since the Benin program, sanitation marketing has spread to several countries, including Uganda, Ethiopia, Tanzania, Ghana, Malawi and Kenya which presently feature rural or urban sanitation marketing programs. Other countries to cite outside Africa include Vietnam, Peru, Cambodia, Laos and Indonesia though this list is not meant to be exhaustive. Through studies, monitoring and evaluation and other data sources, there is global emergent learning to be shared which is most relevant to African countries wishing to initiate or scale up sanitation marketing. Key learning is as follows:

- *Sanitation marketing outcomes can be sustained:* In 2010, WSP and IRC conducted a case study aimed at assessing what happened in Vietnam since the end of the sanitation marketing project in 2005. The study showed that coverage continued to grow in the pilot communes studied and that the small scale suppliers continued to operate and thrive. Community motivators who had been trained continued to promote hygienic latrines albeit at a lesser intensity and their stock of promotional materials had depleted.
- *Training masons is not sufficient to strengthen the supply chain:* A lesson from Tanzania (see Box 8.2) and other countries including Indonesia is that masons lack working capital to buy equipment or supplies and hence are limited to meet any increase in demand generated through CLTS and sanitation marketing. They also tend to be passive sellers, relying on referrals, rather than actively promoting their products and services. Programs are currently looking to focus capacity building efforts 'higher up the supply chain' and are testing different models such as working with hardware stores (Tanzania and Peru), national supplier alliances (Peru), sanitation entrepreneurs (Indonesia) and cement producers (Cambodia). Commercial approaches such as franchising are also being tested in urban Ghana (see Box 8.3).

BOX 8.2 MARKETING MIX IN RURAL TANZANIA SANITATION MARKETING PROGRAM

Key formative research insights. Formative research conducted with technical assistance from WSP revealed that most households were dissatisfied with their basic pit latrine (around 80% of rural households have such a facility) but felt they were powerless to do anything about their situation. These findings suggested that the program needed to propose that good sanitation can be easily achieved and is not just for the wealthy, as many assumed. In addition, sanitation improvements needed to be linked with improvements in status, convenience, and safety – especially for children.

Product. Households are encouraged to upgrade their pit by adding a SanPlat slab which is soft-branded as Sungura (rabbit in Swahili). This 2 foot-by-2 foot concrete slab is a consumer favorite – it is smooth, washable, and safe for children.

Price. A Sungura slab is about US\$5 to purchase and about US\$4 to produce. In some areas, US\$5 includes installation; in others, customers have to pay about US\$1 extra.

Place/distribution. Because villages in Tanzania are separated by large distances, transportation is a major constraint. Sanitation goods and services are not readily or widely available. WSP initially trained approximately 470 masons residing in or around priority villages to produce and sell Sungura slabs. Masons purchase raw materials and manufacture them on-site near village centers, sometimes using makeshift workshops. Orders are taken directly from households. Access to capital is a continuing issue for masons who often cannot buy in bulk on their own. Masons often rely on the district government to loan them the molds needed for manufacturing. WSP is currently testing a different business model to strengthen the supply chain, working with hardware stores who in turn mobilize masons.

Promotion. Based on formative research insights, a communication campaign anchored around the concept Choo Bora (roughly 'A Good Toilet is Possible!') was developed to empower households to make a change in their sanitation. Choo Bora messaging is integrated into all aspects of the intervention and the target audience encounters it through several channels as follows:

Mass media. Initially this was carried out through a soap opera consisting of five 15-minute episodes airing twice a week just before the evening news on the popular TBC Taifa station (AM and FM frequencies). The show was supported by spots, songs, and DJ mentions.

Direct Consumer Contact. DCC brings the communication campaign to villages through highly interactive road shows promoting sanitation upgrading through entertainment, contests, and testimonials. (See Figure 8.1 for a photograph of a DCC event.)



Figure 8.1 Direct Consumer Contact event in rural Tanzania.

Interpersonal Communications (IPC). Initial community engagement comes through CLTS triggering in which the community decides how and when to improve their sanitation facilities. CLTS events are carried out by district or ward facilitators with coaching from resource agencies. CLTS is 'unbranded' and not explicitly linked to the Choo Bora campaign.

Sanitation committees and masons. Once the community triggers and establishes an action plan, a mason can begin promoting upgrades and a CLTS committee is formed to perform day-to-day promotion and monitoring.

Promotional materials. The campaign developed promotional materials (branded with Choo Bora) such as calendars for offices and public places, T-shirts for sanitation committees, masons, champions, point-of-sale branding for masons, kangas for households, and notebooks and pens for local officials.

BOX 8.3 A SERVICED-BASED APPROACH TO IMPROVED ACCESS TO URBAN SANITATION IN GHANA

In Kumasi, Ghana, many households rent their home, have limited space to build a toilet or face affordability constraints in the market place. Lower cost options available to households without onsite sanitation include the use of flying toilets (plastic bags), open defecation or unimproved toilets (such as bucket or simple pit latrines). To improve coverage, WSUP, Unilever and IDEO are partnering to develop and test a new business model through which households could pay to use a branded household toilet that would be regularly cleaned and emptied by a local franchised operator (Figure 8.2). Plans call for a launch with 10,000 toilets in 2012 and a free-standing Ghanaian commercial enterprise to take over by 2013.

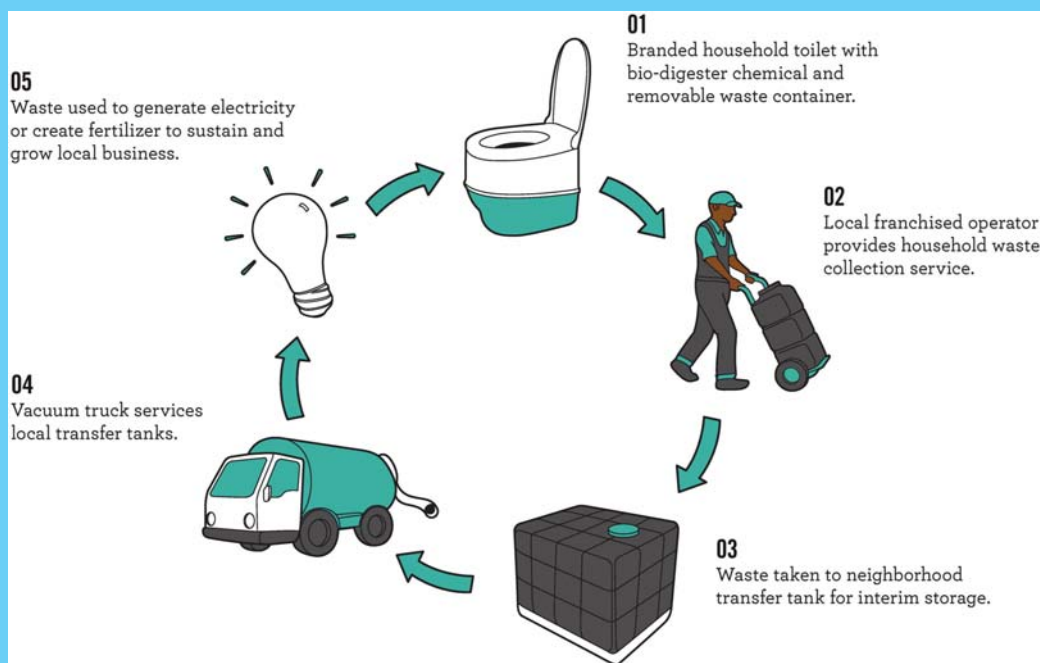


Figure 8.2 Diagram representing the service model used in Kumasi, Ghana.

- *Access to finance needs to be strengthened alongside the supply chain:* To ensure that suppliers have the working capital to purchase materials or equipment or extend credit to consumers, access to finance through microfinance institutions or other organizations needs to be strengthened at the same time as the supply chain is. Strategies to ensure households who wish to can borrow or pay in installments need to be developed through informal savings schemes or more formal mechanisms.
- *A poor-inclusive strategy needs to be developed:* Evidence from Cambodia and the Vietnam case study suggest that sanitation marketing can reach the poor but that a gap in affordability may remain and complementary pro-poor strategies are needed. The use of human-centered design to develop lower cost but desirable products (see Box 8.4) should be considered but in addition, programs are increasingly examining the use of targeted subsidies delivered based on outputs or outcomes that would not hamper the development of a sustainable market place.
- *Sanitation marketing alone may not create open-defecation free (ODF) communities:* The WSP/IRC case study mentioned earlier revealed that none of the communes where sanitation marketing had been piloted were ODF by the end of the project. The initial piloting of the Easy Latrine revealed a similar finding; cement producers were focused on sales and not behaviour change. Once a satisfactory level of sales had been achieved in a village, a producer would move to the next even if it is not ODF, reflecting a preference to 'go wide' rather than 'go deep'. Complementary approaches such as CLTS are critical for ODF to be achieved.

BOX 8.4 USING HUMAN CENTERED DESIGN TO DEVELOP A LOWER COST POUR FLUSH TOILET IN CAMBODIA

In Cambodia, research findings suggested that most households aspire to a pour-flush toilet but cannot afford one. WSP, international NGO iDE, and design firm IDEO teamed up to develop an affordable and simple 'latrine core' (see Figure 8.3) that would confer the benefits of a pour-flush but cost less than half the normal cost due to smarter use of materials, an improved production method, and a streamlined design. Called *Easy Latrine*, the toilet is available through local cement producers who are trained in sanitation and hygiene education, production, and basic business and sales management. In addition, buying an Easy Latrine is a one-stop shopping experience. In the past, buying a latrine involved engaging a mason and visiting several specialized suppliers.



Figure 8.3 The Easy Latrine 'latrine core'.

8.5 ROLES OF VARIOUS SECTORS

There is no single model to use when implementing a sanitation marketing initiative; however, most social marketing initiatives are undertaken by the nonprofit sector or government agencies. The role of private sector collaborators is critical on many levels, but their participation is motivated more by sustaining a viable business than by providing a social good. Following are some general guidelines for consideration.

Non-profit or public sector

The role of the non-profit sector, such as the international development community, or the public sector, such as government agencies, is to design, coordinate, and monitor a sanitation marketing initiative at scale and engage the private sector where it has a comparative advantage. In many countries, international organizations such as UNICEF or WSP or non-government organizations such as SNV or Plan International lead the development of the communication campaign and supply-strengthening strategy, with local governments implementing certain parts but these areas could also be filled by other organizations or a national-level government agency with the appropriate staff. As sanitation programs grow further in scale, it is anticipated that new counterparts within the various ministries might emerge, particularly for the program design phase. A centrally or provincially located counterpart might eventually lead or support the formative research process and another might lead or support the development of behaviour change communication (BCC) strategy and campaign that will be implemented and budgeted through local governments. For example, the communications counterpart could be the Information, Education, and Communication (IEC) cell typically found in the Ministry of Health or the Department of Rural Health Care within the Ministry of Rural Development. Alternatively, the counterpart could be a working group, a cross-departmental committee or a task force. Program managers must determine early in the design phase where candidate counterparts are. Within a given country, it might be instructive to look at the how other large-scale social marketing initiatives in such areas as HIV/AIDS, malaria, and family planning are managed.

The public sector should play a lead role in setting and monitoring quality standards (e.g., safe disposal of the sludge removed from septic tanks) and providing the enabling environment for the sanitation business sector (e.g., reduction of prohibitive tariffs on raw materials). Over time, the public sector will likely assume additional responsibilities.

Private sector

The private sector plays a range of critical roles in helping develop and implement a sanitation marketing initiative. There are two categories of private sector actors:

- Firms involved (usually on a contractual basis) in developing and implementing supporting activities such as conducting research, designing communication materials, and implementing capacity-building activities; and
- Firms who deliver services or products that directly contribute to improving rural sanitation (such as microfinance institutions or small-scale entrepreneurs who build latrines). Over time, associations, cooperatives or other types of networks or alliances could emerge as the business sector evolves.

Box 8.5 showcases how various structures partnered to develop an urban sanitation marketing program in Malawi. It should be noted that ‘partnerships’ are often referred to as the 5th p in social marketing.

BOX 8.5 PARTNERSHIPS IN ACTION IN URBAN MALAWI SANITATION MARKETING

In Malawi, the Blantyre and Lilongwe Water Boards secured funding from EU/EIB to improve sanitation and hygiene practices for 400,000 household members in low income areas by 2013 through sanitation marketing approaches. WSP provided technical assistance by supporting the recruitment of an advertising agency, the development of IEC materials including a low cost technology catalog and the organization of consensus building meetings and workshops on sanitation marketing. NGOs are supporting the Water Boards in implementation. A Technical Working Group was created under the SWAp (Sector Wide Approach program) to lead the development of the marketing strategy, as shown in the process in Figure 8.4 which also included stakeholder consultations at critical milestones.

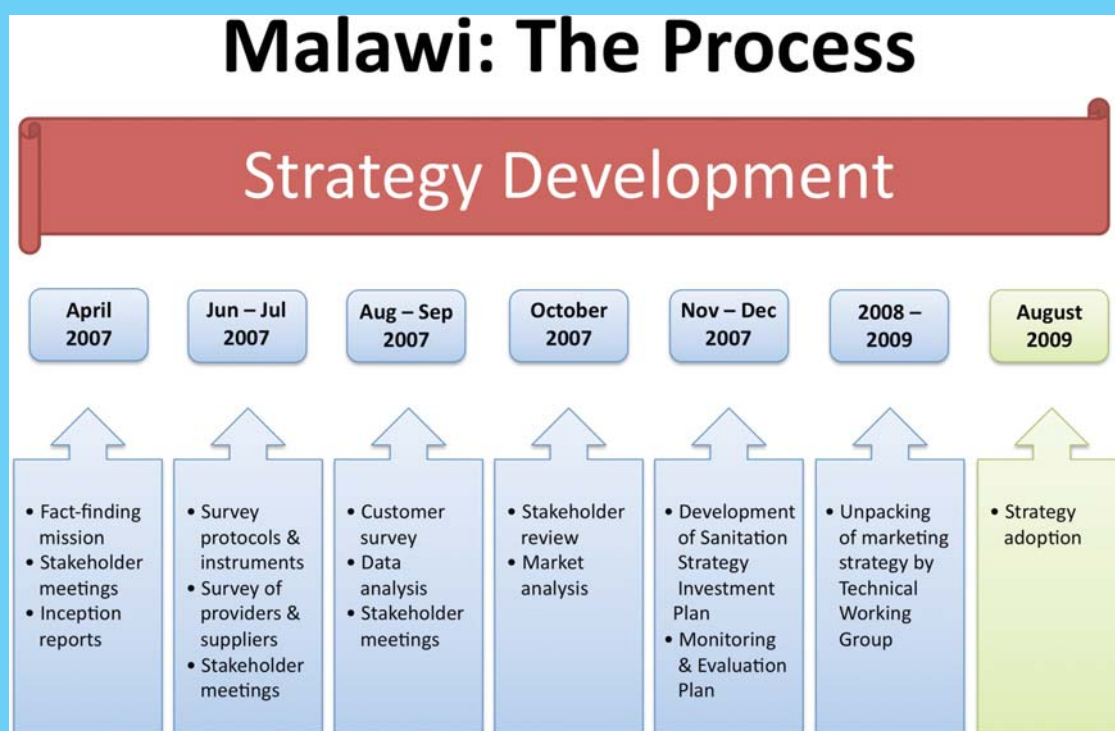


Figure 8.4 Diagram summarizing the key milestones leading to the development of an urban sanitation marketing strategy in Malawi.

8.6 ENABLING FURTHER UPTAKE AND SCALING UP OF SANITATION MARKETING IN AFRICA

Challenges to introduce or scale up sanitation marketing in Africa, and elsewhere for that matter are numerous. Lack of skills and capacity in sanitation marketing within the lead institutions, weak coordination of the various implementation partners, households expectations of subsidies and lack of business acumen and access to working capital by suppliers are just a few that have been identified in the Malawi for urban sanitation marketing programs. In addition, rural sanitation marketing face weak or even nonexistent rural distribution chains and dispersed and hard to reach populations mean greater transportation costs get passed on to consumers, exacerbating affordability constraints.

Despite these challenges, some possible strategies to facilitate the diffusion and quality of sanitation marketing approaches are as follows:

- Capacity-building for lead institutions or partner agencies through online learning (see wsp.org/sanmarketingtoolkit), guidance documents (such as USAID/HIP Sanitation Marketing for Managers Guidance and Tools for Program Development or WSP's Introduction to Sanitation Marketing) or workshops. Such workshops have recently been conducted in Malawi (led by GSF/MoH in February 2012) and Uganda (led by WSP/MoH in June 2012) and also offer the opportunity to discuss coordination and roles.
- Exposure visits and study tours within a country or between countries allow lead institutions and support agencies to get first hand understanding of the approach and share lessons learned.
- Learning through national platforms such as working groups or sanitation committees where experiences, study findings and other knowledge is shared.
- Recruitment of marketing, communication or business development specialists who can apply best practice, effectively manage contracted firms (such as advertising agencies) and develop evidence-based strategies.

Chapter 9

Food security in Sub-Saharan Africa – What could be the contribution of productive sanitation?

Linus Daggerskog¹, Peter Morgan², Dave Still³, Brenda Ochiro⁴, Nelson Ekane⁵, Lucia Henry⁶ and Kate Harawa⁷

¹SEI

²Aquamor

³PID

⁴NETWAS

⁵SEI, Eugene Dusingizumuremyi

⁶WSA

⁷Water For People

Can the productive reuse of sanitation products contribute significantly towards increased food security in Sub-Saharan Africa (SSA)? The present chapter explores this potential and also discusses how such a potential can be realized, addressing the rural and urban differences and giving examples of challenges and successes experienced in some countries in SSA.

9.1 THE LINK BETWEEN SANITATION AND AGRICULTURE

9.1.1 Food security and sanitation coverage in SSA

Healthy and productive lives depend on access to sanitation and good hygiene practices but also on food security, which is achieved ‘when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life’ (FAO, 1996). Presently SSA is struggling to improve both food security and sanitation coverage, with similar trends in both sectors.

Undernourishment (hunger) was affecting 27% of the population in 2006–2008 (Figure 9.1), but in 2010, in the wake of the financial and food crisis, FAO (2010) estimated that hunger in SSA had risen to 30%. This is far from the MDG target of halving the proportion of hungry from 31% in the baseline year 1990 to 15.5% in 2015.

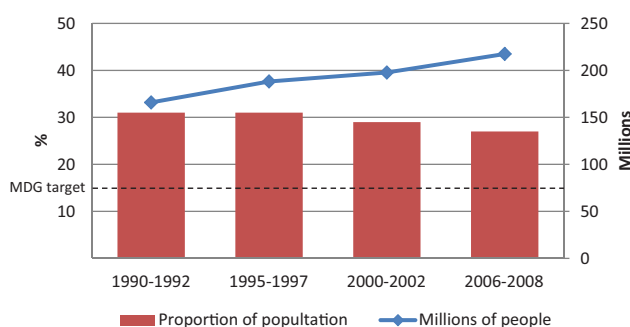


Figure 9.1 Undernourishment in SSA (Source: Data from FAO Food Security Statistics, <http://www.fao.org/economic/ess/ess-fs/fs-data/ess-fadata/en/> accessed 10 August 2012).

For sanitation coverage the JMP (2012) data show a similar slow improvement in SSA (Figure 9.2). Over the last 20 years, the total use of unimproved sanitation facilities only decreased from 74 to 69%, far from the MDG target, aiming for a decrease to 32% by 2015. Open defecation has indeed decreased from 36 to 25%, but the use of improved sanitation facilities in SSA has only seen a slow increase, from 26 to 31% since 1990.

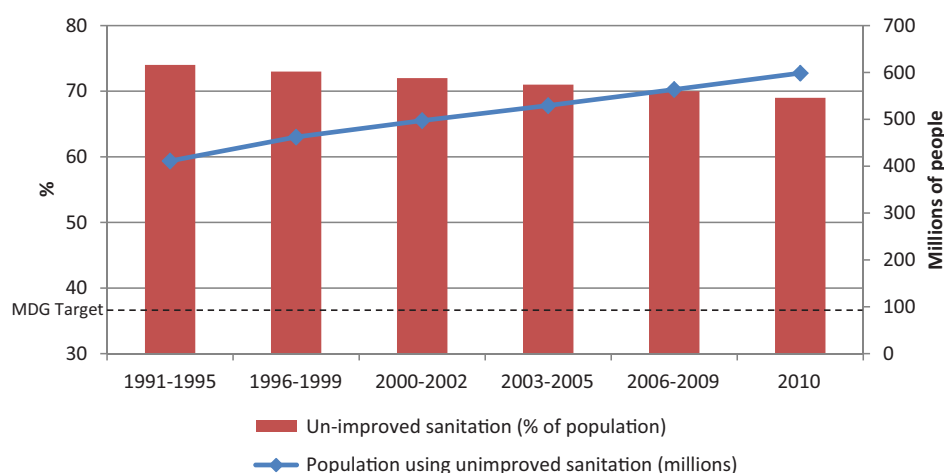


Figure 9.2 The proportion and the number of people using unimproved sanitation in SSA (Source: Data from JMP statistics, <http://www.wssinfo.org/data-estimates/table/> accessed 12 August 2012).

In spite of some relative improvement, the absolute number of hungry people as well as the number of users of unimproved sanitation facilities have increased, reflecting the difficulty to keep up with the rapid population growth in SSA, going from 495 million inhabitants in 1990 to 823 million inhabitants in 2010 (UNDESA, 2012).

The right to food was included in the human rights declaration in 1948, while access to sanitation became a human right first in 2010. The human right status can put extra pressure on governments to increase efforts and resources to meet these basic human needs. Such an increased focus is indeed welcome as massive investments will be needed in both agriculture and sanitation over the coming years.

9.1.2 Productive/ecological sanitation

Productive or ecological sanitation is the term used for the variety of sanitation systems that make productive use of the nutrient, organic matter, water and energy content of human excreta and waste water in agriculture and aquaculture (SuSanA, 2012). To be done safely, recycling should recognize both the dangers (mainly pathogens) and resources (nutrients/organic matter) present in human excreta. If the opportunities of linking sanitation systems to agricultural production are recognized and implemented, multiple benefits can be achieved with positive effects on health, environment and agricultural production (SuSanA, 2012). To achieve these advantages in a *sustainable* way, productive sanitation systems need to be socially acceptable, economically viable, and technically and institutionally appropriate.

9.1.3 Soil fertility in SSA and the potential of productive sanitation

Decline in soil fertility is a major problem in Sub-Saharan Africa. According to Henao and Baanante (2006), 85% of African farmland had net nutrient losses of more than 30 kg nutrients¹/ha/year in the period 2002–2004.

Nutrient losses from productive soils include direct losses from erosion, leaching, and volatilization as well as export of harvest for feed to animals and food to people in rural and urban areas (Figure 9.3).

To maintain soil fertility, the agriculture sector has been focusing on soil conservation by reducing erosion, leaching and volatilization as well as recycling animal manure and crop residues and improving access to chemical fertilizers. However, the nutrients in the agricultural products taken away from the land for human consumption are rarely considered.

¹In terms of N + P₂O₅ + K₂O.

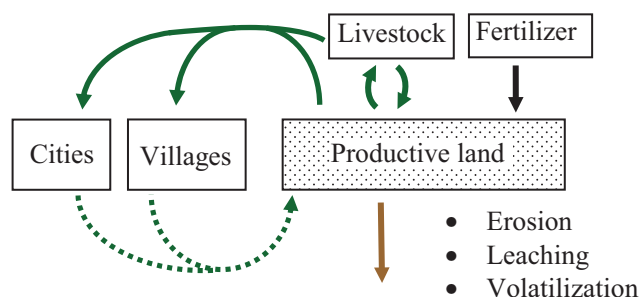


Figure 9.3 Major flows of plant nutrients from productive land, with the dotted lines illustrating the lack of return flow of nutrients from human settlements to productive land.

Most of the main plant nutrients like nitrogen (N) and phosphorous (P) in our food is found in the proteins. A growing human body will incorporate and accumulate a minor part of the nutrients, but in general there is equilibrium between tissue build up and tissue degradation and essentially the same quantity of plant nutrients present in the food consumed is excreted via urine and faeces (Jönsson *et al.* 2004). This implies that N and P in human excreta can be calculated based on protein consumption data, which is readily available. It is also worth noting that urine contains the main part of nutrients excreted by the human body and urine is normally pathogen free if not cross-contaminated by faeces (Jönsson *et al.* 2004).

The linear flow of plant nutrients from productive land to human settlements is indeed a blind spot in soil fertility management – but how significant is it compared to other nutrient flows in the agricultural system?

9.1.4 Relative nutrient quantities – comparing human excreta to chemical fertilizer inputs, manure and erosion in SSA

The quantity of plant nutrients in human excreta in the SSA context can be illustrated in different ways. In this section the flow of nutrients in human excreta is compared to the other main nutrient flows in the agricultural system (see Figure 9.3).

Chemical fertilizers in SSA. Table 9.1 shows an estimate of the annual quantity of N and P present in human excreta in the SSA regions, followed by a relative comparison to the quantity of N and P applied as chemical fertilizer and to the hectares of arable land in SSA. On average twice as much N and 1, 4 times as much P is excreted per year compared to what is applied as chemical fertilizer. Complete recycling of human excreta to arable land in SSA would mean an addition of ~12 kg of N and ~4 kg of P₂O₅ per hectare.

Table 9.1 Relating N and P in human excreta to chemical fertilizer use and to arable land in SSA.

| SSA Region | Population (millions) ¹ | Estimated annual nutrient flow per person in human excreta ² | | Annual nutrient flow in human excreta ² in relation to chemical fertilizer use ³ in SSA | | Annual plant nutrients in human excreta ² related to hectares of arable land in SSA ⁴ | |
|------------|------------------------------------|---|------------------------------------|---|-------------------------------|---|------------------------------------|
| | | N (kg) | P ₂ O ₅ (kg) | N | P ₂ O ₅ | N (kg) | P ₂ O ₅ (kg) |
| Eastern | 342 | 2,5 | 0,9 | 2,3 | 1,3 | 14,0 | 5,1 |
| Middle | 126 | 2,6 | 0,9 | 7,4 | 7,0 | 9,7 | 3,4 |
| Southern | 58 | 3,7 | 1,2 | 0,5 | 0,3 | 13,3 | 4,3 |
| Western | 304 | 2,9 | 1,1 | 3,5 | 3,0 | 10,7 | 3,8 |
| Total | 830 | 2,8 | 1,0 | 2,0 | 1,4 | 11,9 | 4,2 |

1. UNDESA (2012).

2. N and P in human excreta derived from protein supply (average 2000–2007) using the method proposed by Jönsson *et al.* (2004). P expressed as P₂O₅, which is the standard for fertilizers.

3. Fertilizer use taken from FAO-STAT (average 2002–2009).

4. Data on arable land 2009 from FAO-STAT.

Comparisons to chemical fertilizers are valuable when communicating to agriculture professionals and can also be used to give a monetary value to nutrients in human excreta. It should be noted that chemical fertilizer use in SSA is very low in a global context and would need to increase to boost agricultural production. Sanitized human excreta should therefore be seen as a complement rather than a replacement of existing fertilizers. Recycling human excreta helps reduce losses, but to increase fertility in degraded soils all available resources are needed: animal manure, crop and food residues, chemical fertilizers as well as human excreta.

Dagerskog and Bonzi (2010) find that the annual N and P in urine and feces from a family of ten persons in Burkina Faso roughly corresponds to the quantity of N and P in 50 kg of urea and 50 kg of NPK (14-23-14) which costs about 80 \$ (Figure 9.4). In this context the excreta nutrient value is about 8 \$ per person per year. The value will vary between countries depending on protein intake and price of fertilizer. Considering a range of 5–10 \$/person/year in excreta nutrient value and extrapolating for SSA, there are plant nutrients worth 3,3–6,6 billion \$ per year in human excreta. It is worth noting that this value is only based on the main nutrients (N, P, K), while urine and feces are complete fertilizers, also containing important micro elements and organic matter.



Figure 9.4 Two bags of fertilizer used to illustrate the nutrients in the excreta from an average rural family.

Animal manure. Comparing animal manure and human excreta production in SSA, Drangert (2010) estimated that in total there is 1–2 times as much nitrogen in the total quantity of manure generated by livestock compared to what is found in the total quantity of human excreta in SSA. Reuse of animal manure is already a widespread practice and could be complemented by safe recycling of human excreta.

Erosion. Stoorvogel (1993) has done extensive calculations of nutrient budgets for soils in SSA and estimated the average nutrient losses due to erosion to be of similar magnitude as the nutrients taken out with harvested products, which after consumption mainly end up in excreta.

The above comparisons show that human excreta contain a significant quantity of nutrients, but how much crops could be produced based on these plant nutrients?

What could excreta recycling mean for food production?

Yanggen *et al.* (1998) compiled output/nutrient ratios (kg of extra yield harvested per kg of nutrient applied) for various crops in SSA. Using a moderate output/nutrient ratio of ~10 from Yanggen *et al.* (1998), and estimating that human excreta produced annually per person in SSA contain the equivalent of ~5 kg of fertilizer nutrient equivalents², recycling human excreta can give on average an extra production of ~50 kg of cereals per person per year. This would be enough to cover the energy requirement for a person during 71 days³.

²N and P₂O₅ from Table 9.1 and K₂O estimated to ~1,5 kg per person based on P/K proportions in Jönsson *et al.* (2004).

³Based on ~3500 kcal/kg cereal (FAO, 1968) and 2500 kcal as daily energy intake.

9.2 RURAL AND URBAN PRODUCTIVE SANITATION IN SSA

Over the last decade several projects in SSA have been implemented with the intention to also facilitate reuse of sanitation products. The Sustainable Sanitation Alliance (SuSanA) secretariat has listed 84 projects in SSA of which 28 have been described extensively in the SuSanA case study format (<http://susana.org/lang-en/case-studies>). This section discusses challenges and opportunities of productive sanitation in the rural and urban contexts using some examples presented during the EcoSan workshop at AfricaSan3 in Rwanda 2011.

9.2.1 Rural recycling

Productive sanitation is more straightforward in rural areas compared to urban areas, considering the relatively short distances between households and productive land and the self-interest of farmers to maintain soil fertility. In SSA 64% of the population is rural, and this rural majority is projected to remain for another 25 years (UNDESA, 2012). 75% of the extremely poor (<1.25 \$ per day) in SSA live in rural areas and the extremely poor constitute 62% of the rural population (IFAD, 2011). The rural poor have difficulties affording chemical fertilizers which is reflected in the low use of fertilizer per ha in SSA (12 kg/ha⁴). In a small holder farmer environment, the conscious management and use of local natural resources is crucial for sustained crop production. However, the awareness of fertilizer value of human excreta is often low, and sanitation initiatives traditionally focus on health and hygiene, that is the ‘danger’ aspects of human excreta. Attempts to also include recycling aspects have been made at some scale in SSA, here exemplified with different approaches:

Crop production as a driver for sanitation. WSA (previously CREPA) has in some larger projects in both Burkina Faso, Niger and Ivory Coast mobilized funding from the agriculture sector to implement productive sanitation contributing to improved crop production while also improving sanitary conditions (details in Klutse & Dagerskog, 2009). Sanitized human urine and feces have been introduced in the communities as liquid and solid fertilizers, and demand for sanitation has been created mainly through participative testing of these ‘local fertilizers’. Agriculture professionals have been in the forefront, in close collaboration with professionals in sanitation/health. The field demonstrations have been carried out in parallel to the use of adapted PHAST tools that convey the message of the sanitary danger of fresh human excreta as well as the resources in treated excreta and how to achieve this transformation.

This approach has had some success, and in Niger one of the pilot project partners, PPILDA (funded by IFAD), is now scaling out productive sanitation via farmer field schools with the support from the pilot farmers, masons and facilitators. In PPILDA’s intervention zone now more than 2000 households collect and use urine (many times to enrich the composting piles) and 300 households use Fossa Alternas latrines with urine diversion to also produce composted feces. In 2012, 18 farmer field schools will test the fecal compost as base fertilizer for cereals (pers. comm. M. Adamou, PPILDA). For documentation on the Niger pilot project from 2009, see www.ecosanres.org/aguie.

In Burkina Faso WSA has coordinated projects with food security focus and ~10,000 double vault UD-toilets that are used as ‘fertilizer-factories’, and provide 150,000 people access to sanitation and fertilizers (pers. comm. L. Henry, WSA).

In Ivory-Coast, more than 1000 UD toilets have been implemented in workers villages, in collaboration with the rubber tree company SAPH, as part of their sustainability work. The urine and treated feces are used nutrient source for composting in the tree nurseries. Several other agro-industrial companies are in the process of starting up similar work (pers. comm. B. Comoe, WSA-CI).

Taking incremental steps towards closing the loop. Dr Peter Morgan from Zimbabwe has popularized simple composting toilets like the Arbor-loo and Fossa Alterna. The Arborloo is a refinement of the traditional African technique of planting trees in disused toilet pits. The refinement is that soil and ash (and preferably leaves) are regularly added as well as excreta, which reduce odor and fly nuisance and also accelerate the composing process in the pit. The Arbor-loo approach is simple and very low cost, and can be regarded as the first stage of a series of techniques in which the nutrients in human excreta can be recycled, with the Fossa Alterna using alternating composting pits as the next step, see Morgan (2007). The Arborloo and Fossa Alterna has proved popular in countries like Malawi where, by mid 2006, over 12,000 toilets had been built (World Bank, 2007) and also Ethiopia with at least 70,000 Arbor-loos (pers. comm. Chala, CRS Ethiopia). These toilets have also been promoted in Mozambique, Kenya and Tanzania and the total number is estimated at 100,000+ serving about half million people at the present time (pers. comm. P. Morgan). These technologies are relatively easy to grasp and implement for sanitation professionals and households, while providing the opportunity to begin recycling in a safe way.

⁴FAOSTAT.

Composting toilets in a rural business approach. To get away from subsidies and stimulate the private sector involvement in rural sanitation, Water For People in Malawi supported local masons to promote and construct slabs for composting toilets. 333 slabs were installed with humanure production being the main driver for the households. However, despite different payment options the payback rate to masons was very low. One option was to pay back with the compost produced, but the masons faced problems in turn to sell the compost to a reasonable price. With no monetary incentives the masons gave up and searched for other livelihoods. The experience has been documented (Water For People, 2012) and lessons include advocating states and NGOs to stop market distorting subsidies; select masons with entrepreneurial skills; develop messages around agricultural benefits of humanure and establish better credit schemes for households.

9.2.2 Urban recycling

Uncontrolled reuse of sludge and waste water is common in peri-urban farming around many cities in SSA as few municipalities have the financial and human resources to assure the whole sanitation chain from collection and treatment to disposal/reuse.

Closing the nutrient loop from cities to productive land is a challenging task as few urban households grow crops, and a system of collection, treatment and transport for reuse has to be set up in a complex institutional landscape while being both economically sustainable and well monitored.

Presently several initiatives explore the business opportunities in the 'sanitation value chain', aiming to use the value of waste to establish and sustain sanitation services (see for example www.safisana.org in Ghana and www.susan-design.org in Uganda). Entrepreneurs in the chain would make a profit from the sanitation service given to households and as well as from selling the energy/fertilizer in the sanitation products.

In Ouagadougou in Burkina Faso, a bold project (2006–2009) aimed at implementing a new sanitation system, including ~900 urine diverting toilets in four sectors of the city, with local associations doing collection and treatment of urine and feces aiming to sell the sanitized products to peri-urban farmers. Theoretically the household fee and the payment by farmers for fertilizers could cover the running costs, but multiple challenges has threatened the sustainability of the system (see Dagerskog *et al.* 2010) and the municipality has had to support the main share of the associations costs. In spite of extensive participative trainings with urban farmers, urine has been a challenge to sell, even though in 2010 the associations reported a total sale of 68 m³ of urine and 11 tons of treated feces (pers. comm. A. Sienou 2011, Ouagadougou Municipality). In an up-scaling scenario, the limit to recycling would be space and water for urban agriculture. The fertilizer use of the existing 201 ha of urban agriculture in Ouagadougou would theoretically be satisfied by the nutrients in excreta of ~50,000 people meaning, that the bulk of the excreta from 1,5 million inhabitants would have to be transported to rural areas, at increased costs (Dagerskog *et al.* 2010).

9.3 ENABLING ENVIRONMENT FOR ECOLOGICAL SANITATION

To go beyond pilots, it is important that national policies and legislation allow/support both different sanitation technologies and the safe reuse of sanitation products in crop-production. This may require changes to existing sanitation, environmental and agricultural policies, or enactment of a new policy.

The WHO guidelines for the Safe Use of Wastewater, Excreta and Greywater in Agriculture and Aquaculture (WHO, 2006) can be used as a reference when national policies and legislations are developed. The WHO guidelines aim to protect the health of individuals and communities by recommending safe practice requirements and supporting the development of risk management. It should also be kept in mind that a legal framework that focuses on desired functions of the sanitation system rather than specific technologies stimulates innovation and is not outdated as fast as technical prescriptive regulatory frameworks (Kvarnström *et al.* 2011).

In some SSA-countries, sanitation strategies are beginning to acknowledge technologies that facilitate recycling (such as urine diversion toilets) but there is still a lack of policies going beyond technology focus, with a more holistic vision for excreta recycling. An interesting note is that the coming Agricultural Investment Plan by the Ministry of Agriculture in Côte d'Ivoire has included ecological sanitation in the Sustainable Soil Management component (MINAGRI, 2012).

Rwanda. Sustainable waste management is one of the key building blocks in the infrastructure development pillar of Rwanda's Vision 2020. The country's commitment to attain 100% sanitation coverage by 2020 is clearly shown in the National Policy and Strategy for Water and Sanitation services as well as EDPRS (Economic Development and Poverty Reduction Strategy). The Ministry of Infrastructure recently prepared a guideline of latrine technologies usable in Rwanda. This document presents a range of sanitation systems and technologies appropriate for different geographical regions of the country. The appropriate sanitation technologies and systems recommended in the guideline include: simple pit latrine; ventilated improved pit latrine

(VIP); flush toilet; and eco-toilet (Urine Diversion Toilet). The eco-toilets have been focused on the volcanic region of the country where it is difficult to dig pits, and a good number of households have improved their income and livelihoods due to sales of crops fertilized by using human derived nutrients (pers. comm. N. Ekane).

Uganda. In Uganda ecological sanitation is being promoted as an alternative sanitation approach initially in rural areas with difficult geographical conditions that limit construction of ordinary pit latrines and for urban areas. However, the re-use of dried substrates, high rate of filling of vaults especially primary schools and public toilets and poor performance in operation and maintenance continue to pose challenges to up scaling. Uganda developed its first ecological sanitation strategy (2008–2018) that focuses on coordination and networking; change of attitudes; concept and technology and political and policy support. Clear attempts are made to close the loop here by bringing out strategies and interventions on cross-sectoral linkages with research and agriculture in the re-use of by products. In a review of the strategy facilitated by NETWAS Uganda, stakeholders explored strategies of promoting the Ecosan as a system and not a facility through linking with other sustainable sanitation approaches like CLTS and San-Mark.

The National Agricultural Research Organization (NARO) has developed local urine guidelines on application of urine in farming and in collaboration with Kampala City Council Authority, the Ministry of Agriculture Animal Industry and Fisheries (MAAIF) is in the process of developing a national policy on Urban Agriculture in Uganda which also includes a provision on sludge reuse.

9.3.1 Research

Local research is needed for decision support and policy development. South Africa is particularly active with several research activities related to treatment and beneficiation of sanitation products.

For the last three years the Water Research Commission in South Africa has been investigating the suitability of deep row entrenchment of faecal sludges as a disposal option (Figure 9.5). The topics of interest to the researchers have been the effect on the growth of trees planted over or close to the entrenched sludge, the fate of the pathogens and the effect on the groundwater.



Figure 9.5 Research site near Durban, South Africa, where deep row entrenchment of faecal sludge is being monitored.

Results show that trees grow very well, that ascaris eggs have been inactivated after 30 months but nutrients leaked to ground water on a site with shallower soil. One of the topics of further research work is to work out how nutrients such as NO_3 and P are stored and migrate within the soil.

In Durban several research initiatives are ongoing, on for example pit sludge treatment methods and different ways to transform urine to make it a more attractive fertilizer. The University of Kwa-Zulu Natal has also received a Gates grant to take part in the quest of designing the 21st century toilet.

9.4 LOOKING FORWARD

This chapter has discussed the potential of excreta recycling in the context of natural resource management, sustainable crop production and food security in SSA. Social, technical and institutional landscapes might not yet favour excreta recycling, but situations change and here are some suggestions that could lead towards greener and more productive sanitation in SSA:

Plan for the system not for the technology. Sanitation does not end with a functioning toilet. Sooner or later vaults, septic tanks and pits fill up, and something has to be done with the contents. The ecological sanitation concept addresses this aspect from the

outset, but too often the concept is confounded with a specific toilet technology, for example urine diversion dry toilets. Urine diverting toilets can facilitate treatment and reuse but if there is low user acceptance and only vague plans for maintenance including who should take care of the sanitation products, when to collect them, where to bring them and how to apply them, such a technology probably creates more problem than it solves. This is especially true for public and school toilets that depend on a robust technology/system for sustained use. Regardless of the technology the resulting sanitation products should be managed in a safe and if possible productive way.

The rural context – link up with the agriculture sector. If there is an intention for safe reuse of sanitation products, it will be important to create demand for the end product as much as for the toilet. The awareness and know-how on reuse of such organic fertilizers in crop production is promoted with more credibility by the agriculture sector. It should therefore be high priority to involve agriculture professionals in productive sanitation initiatives. With persistently high chemical fertilizer prices, the need to conserve local resources will become more important. If the potential of excreta recycling is recognized, the agriculture sector could drive the demand for sanitation products, and the demand for sanitation systems that can deliver them. This could also channel funds from agriculture for productive sanitation.

Rural families in SSA should also have the right to know about the resources available in human excreta and how to eliminate dangers and use the nutrients in simple ways. Based on such knowledge they can take an informed decision on how to deal with this local resource.

The urban context – developing the sanitation value chain. Urban centers can be seen as nutrient mines with business potential in collecting, treating, transforming and delivering organic fertilizers (and eventually energy). To be done in a safe and sustainable way there is still ample room for development of appropriate technologies, business plans and legal/institutional frameworks. A high quality and attractive end product is crucial to be able to compete on the fertilizer market, especially to compensate for bulkiness and more expensive transport which often is a problem for organic fertilizers.

Cost should not be a limiting factor. Productive sanitation solutions do not have to be fancy or expensive. Heavily subsidized on-site interventions have shown limited sustainability and scalability. The principles of productive sanitation: containment, sanitization and reuse can be achieved in many ways. In rural areas, an Arbor-loo can be complemented with a simple urinal and allow for a very good nutrient recovery to a low cost, risk and complexity. One obstacle has been the handling of collected urine. Storing and applying large volumes of urine as a liquid fertilizer is rarely feasible, but using urine to enhance compost or incorporate it in the field during the off-season can be viable alternatives. The main cost related to productive sanitation will be public investment in awareness raising, research, training, monitoring and policy development.

Turn the present low sanitation coverage into an opportunity. Not yet locked into expensive and unsustainable sanitation systems, SSA is in a good position to take a lead in productive sanitation systems. The rural majority still has a close relationship to the land and rapidly grasp the advantages of recycling. The opportunities for recycling and production is a positive message and should be a good complement (pull factor for sanitation) to the ‘danger’-messages often conveyed in sanitation programs (push factor for sanitation).

Relatively low medical use and few centralized waste water systems minimize problems with medical residues, chemicals and heavy metals encountered when dealing with sludge in developed countries.

Address the need for capacity building and research. To influence policies and induce change, there is a need of raising awareness among all stakeholders. As a complement research will be vital to inform policy with economical arguments and risk assessments, as well as new technical and social methods to facilitate the implementation of productive sanitation. Excreta recycling is by nature a multi-stakeholder cross-cutting issue and needs a platform for exchange and dialogue, preferably led by the Ministry of Agriculture.

To conclude, it is clear that productive sanitation has an important role to play in sustaining soil fertility and hence agricultural production. In SSA, we have shown that nutrients in human excreta represent an estimated annual value of 3.3–6.6 billion \$. Productive sanitation could produce roughly 50 kg of cereals extra per person per year and hence significantly contribute to food security.

Sir Albert Howard, one of the founding fathers of organic agriculture, commented the modern lack of recycling in his *Agricultural Testament* seventy years ago saying that ‘Man is depriving Mother Earth of her manurial rights’ (Howard, 1940). This realization is now gaining ground in many places, and SSA has the potential to play a leading role in the development and adoption of more productive sanitation systems.

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Chapter 10

Profitability of private fecal sludge emptying businesses in Africa and Asia

Doulaye Kone¹ and Sangeeta Chowdhry²

¹Senior Program Officer, Bill & Melinda Gates Foundation, 500 Fifth Avenue North, Seattle, WA 98102 USA.
Email: doulaye.kone@gatesfoundation.org

²Independent Consultant, San Francisco, California 94115 USA. Email: Sangeeta.chowdhry1@gmail.com

Public authorities largely ignore fecal-sludge management, emptying and transporting sludge from household on-site sanitation. At AfricaSan3, participants noted that whilst there is some individual knowledge of those responsible for emptying and transporting waste and some high level rapid assessments of general septage management, there is extremely limited data on the business models of these private emptying businesses. This chapter responds to this need by reporting on the findings of a study examines the profitability of the private fecal sludge emptying business in 119 private fecal sludge emptying service providers across 30 cities in Africa and Asia. The study demonstrates the high costs in Africa and concludes that the key to increasing the financial viability of existing FSM businesses lies in finding ways to support the expansion of truck fleets, in particular the expansion beyond a single truck.

10.1 THE STUDY

Among the reasons for poor performance in sanitation service provision is an ongoing failure to prioritize and finance the sector. A recent report published by the World Health Organization (WHO) (Hutton, 2012) estimates the capital costs of achieving the MDG target for sanitation at \$23 billion a year. While these costs are undoubtedly high, the economic benefits of addressing the issue of safe sanitation are equally significant – being estimated at around \$54 billion a year globally. A 2004 WHO study notes that for every US\$1 invested in water and sanitation would, depending on the region, yield an economic return of between US\$3 and US\$34 (Hutton & Haller, 2004). Given these benefits and the costs of not doing so, there has been insufficient investment in safe sanitation. The focus has tended to be on demand creation for latrines and on infrastructure like sewage networks and wastewater treatment plants. Yet, only 13% of households in Africa are even connected to sewer lines (WHO/UNICEF, 2000). In Sub-Saharan Africa, over 80% of large cities and almost 100% of secondary towns are served by on-site sanitation (Strauss *et al.* 2000). In most developing countries, urban sanitation is a decentralized responsibility with no clear roles and responsibility assigned for fecal sludge management. The public authorities primarily view sanitation in terms of infrastructure provision like latrine construction, sewerage network and wastewater treatment facilities. Fecal-sludge management related to household on-site sanitation emptying and transportation is, by and large, ignored by the public authorities. The majority of cities in developing countries rely on informal services for excreta disposal and the business of emptying and transporting fecal sludge is dominated by private entrepreneurs (Jeuland *et al.* 2004). Despite this fact, the data on this service provision is limited.

At AfricaSan3, participants noted that whilst there is some individual knowledge of those responsible for emptying and transporting the waste (pit emptiers and truckers), and some high level rapid assessments of general septage management (AECOM, 2010), there is extremely limited data on the business models of these private emptying businesses. Given the prevalence and reliance on these services, this data is needed to provide the necessary information on market needs and challenges to enable targeted funding by governments, donors, or other development partners.

In order to address these gaps this chapter reports on the findings of a study that compares the profitability of the private fecal sludge emptying business in cities in Africa and Asia.

The countries in which the study took place were selected based on the range of models and approaches to urban sanitation in these geographically diverse regions. The countries selected in Africa were Burkina Faso, Ethiopia, Kenya, Nigeria and Senegal and in South/Southeast Asia were Bangladesh, Cambodia, India, Malaysia and Vietnam. Within each of these countries, three cities were selected and in-depth case studies conducted in order to better understand the full spectrum of urban-sanitation service-delivery models for differing market sizes. The cities selected in each country included the capital city, a secondary large city and a mid-sized city as shown in Table 10.1.

Table 10.1 List of selected cities.

| | Capital city | City 2 | City 3 |
|---------------------|--------------|------------------|------------------|
| Burkina Faso | Ouagadougou | Bobo Dioulasso | Fada N'Gourma |
| Ethiopia | Addis Ababa | Dire Dawa | Hosaena |
| Kenya | Nairobi | Kisumu | Mombasa |
| Nigeria | Abuja | Ibadan | Yenagoa |
| Senegal | Dakar | Touba | Thies |
| Bangladesh | Dhaka | Khulna | Faridpur |
| Cambodia | Phnom Penh | Siem Reap | Kampot |
| India | Delhi | Jaipur | Madurai |
| Malaysia | Kuala Lumpur | Melaka | Kuala Terengganu |
| Vietnam | Hanoi | Ho Chi Minh City | Hai Phong |

10.2 KEY RESULTS

Across all cities, 50% of the private fecal sludge emptying businesses surveyed own only one truck, 44% are medium sized businesses with two to four trucks, and the remaining 6% run operations with five or more trucks. The levels of profit (as indicated by monthly cash flows) per truck were much lower for single truck operators than those for multi-truck owners (see Table 10.2). Similar results were also reported in an earlier World Bank study (Collignon & Vezina, 2000).

Table 10.2 Monthly cash flows per truck of 56 private businesses in 30 cities.

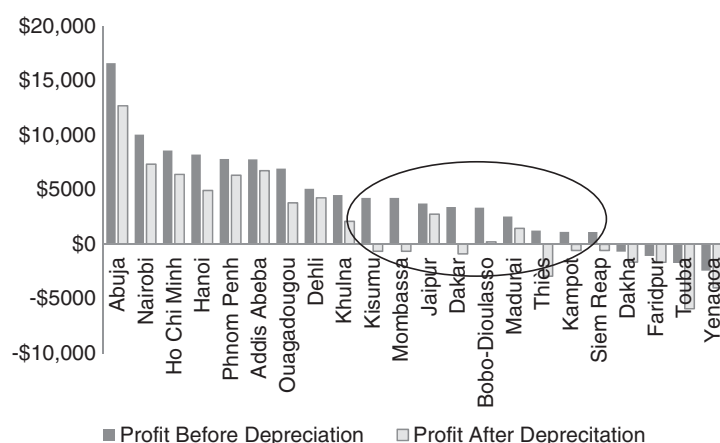
| | Small | Medium | Large |
|----------------|--------|----------|--------|
| Abuja | \$1383 | \$11,164 | |
| Addis Ababa | \$648 | \$869 | |
| Bobo-Dioulasso | \$244 | | |
| Dakar | \$283 | \$1090 | \$1629 |
| Dhaka | –\$58 | | |
| Delhi | \$422 | | |
| Dire Dawa | | \$337 | |
| Faridpur | –\$91 | | |
| Haiphong | | \$708 | |
| Hanoi | \$684 | \$474 | |
| Ho Chi Minh | \$715 | \$999 | \$903 |
| Ibadan | | \$2457 | |
| Jaipur | \$310 | | |
| Kampot | \$93 | | |
| Khulna | \$375 | | \$349 |
| Kisumu | \$353 | \$438 | |
| Madurai | \$210 | | |
| Melaka | | –\$1887 | |

(Continued)

Table 10.2 Monthly cash flows per truck of 56 private businesses in 30 cities (*Continued*).

| | Small | Medium | Large |
|----------------|--------------|---------------|--------------|
| Mombassa | \$353 | \$3231 | |
| Nairobi | \$836 | \$300 | |
| Ouagadougou | \$577 | \$1223 | |
| Phnom Penh | \$650 | \$333 | |
| Siem Reap | \$92 | | |
| Thiès | \$103 | \$365 | |
| Touba | −\$145 | \$1199 | |
| Yenagoa | −\$203 | | |
| Average | \$356 | \$1456 | \$960 |

The business owners surveyed rarely consider depreciation when determining profits, as it is a non-cash transaction. If depreciation were to be included (as it should be), the profit levels drop significantly. As highlighted in Figure 10.1, some single-truck operators with a positive monthly cash flow are actually running at a loss when 10-year depreciation costs are factored in. The impact of not considering depreciation may result in a lack of funds to replace a truck when it is no longer operational. In the case of the single-truck operators, this can then result in overall business collapse.

**Figure 10.1** Profitability of small private businesses – with and without depreciation.

Larger fleet sizes are more profitable than single truck operations because of additional efficiency and less susceptibility to downtime, which in the case of a single truck will entirely halt the company's operation. A multi-truck fleet is also able to take on non-domestic emptying contracts. In this study, 100% of the single truck owners engaged in exclusively domestic emptying, whereas only 13% of the companies with a larger fleet did so exclusively. Non-domestic emptying allows for more income as the size of septic tanks at commercial sites are larger than residential ones, and thus require a greater number of trips (and thus more fees) for emptying.

A study of emptying companies in Dakar (Mbague *et al.* 2010) reported that it was this diversification of revenue sources – that is, the addition of non-domestic emptying contracts – that was the factor that allowed for increased profitability of the fleet.

10.2.1 Trucks used for FSM emptying

The largest capital expense – and the greatest barrier to market entry – is the cost of the truck itself. The purchase price of the trucks in the five African countries was, on average, \$34,000 per truck and in Asia around \$13,000 per truck. This regional difference may be explained by the variation in truck capacity between the regions – which is under 4 m³ in Asia and 10 m³ on average in Africa (Figure 10.2). In addition, in Asia these smaller trucks are assembled locally, whereas in Africa the trucks are usually imported second hand from Europe.

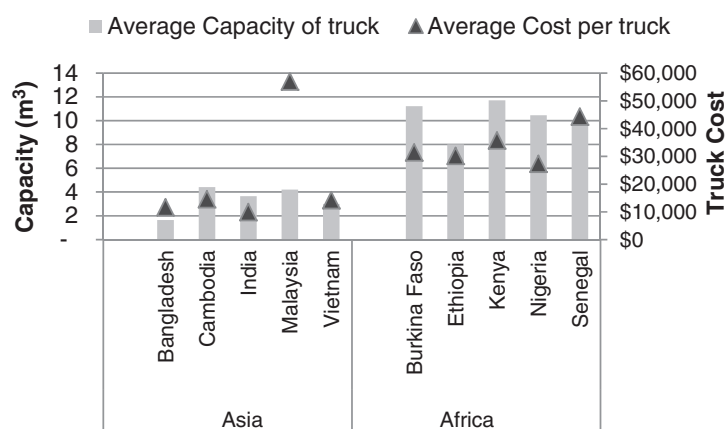


Figure 10.2 Truck capacity and price by country.

10.2.2 Access to finance

Access to finance for the purchase of these trucks is a significant barrier to market entry faced by entrepreneurs and compounds the barrier presented by the high truck costs. With onerous terms for loans – high interest rates (ranging from 11% to 22%), short repayment cycles, and collateral requirements – most of the business owners are unable to qualify for loans and have to rely on personal savings or loans from family and friends to finance their business. This lack of access to finance slows down the growth potential of these businesses. One outcome of this is the dominance in this sector of single truck businesses that are barely profitable. Table 10.3 lists the interest rates and repayment terms for each country at the time of study.

Table 10.3 Source of funding for the mechanical truck owners.

| | Primary source of funds | % owners taking loans | Bank interest rate and terms | |
|---------------------|-------------------------|-----------------------|------------------------------|------------|
| Burkina Faso | Self | 100% | 12% | 3 years |
| Senegal | Self | 15% | 14% | 5 years |
| Ethiopia | Self | 33% | 10.5%, | 5–10 years |
| Nigeria | Self | 9% | 22% | 2 years |
| Kenya | Self | 40% | 18% | 3 years |
| India | Self/loan | 10% | 12%–14% | 3–5 years |
| Bangladesh | NGO | N/A | 17–18% | 3–5 years |
| Cambodia | Self | 0% | 18% | 3 years |
| Malaysia | Self/Lease | 67% | 4.50% | 5 years |
| Vietnam | Self | 15% | 18% | 10 years |

In Ethiopia, FSM companies can borrow at a 10.5% interest rate to be repaid in five to ten years. Proof of collateral of up to 70% of the investment is required to secure these loans. Although there are some schemes through the Development Bank of Ethiopia that support small businesses and provide soft loans under better conditions, these loans are not available for the purchase of vacuum trucks.

In Nigeria, loans are, in theory, available on the satisfaction of certain criteria such as the provision of collateral and guarantees but most FSM borrowers are unable to meet these. Banks typically require evidence that the business has regular customers, and unless the emptier has contracts with commercial or corporate entities such evidence is hard to provide. The commercial banks do not have special concessional loans for small businesses and the high interest rates, short loan period and collateral requirements make it difficult for small businesses to obtain commercial loans.

In Kenya, most operators are unable to use debt to finance start up operations. Most loans from commercial banks or micro-finance institutions for small and medium sized entities are only available for a period not exceeding 3 years. Commercial banks do offer longer-term loans but these are for high net-worth individuals and have to be secured by

collateral or be based on a salary that has attained a certain threshold. These conditions are unlikely to be met by FSM entrepreneurs. In general secured loans are not available as the banks are not interested in using second-hand motor vehicles as collateral and operators are unable to have a proven ability to make regular payments.

Under such conditions, the private business owners are effectively left to their own means of accessing funds for starting their business and purchasing the trucks or other necessary equipment. While financing start-ups and expansion is a critical constraint for emptying businesses, studies and discussions in literature on on-site sanitation are focused on financing approaches for latrine construction, demand generation or financing of conventional sewerage systems. In a comprehensive six-country review of financing on-site sanitation for the poor, the World Bank identified an urgent need for conducting work on understanding the financing mechanisms of other elements of the sanitation value chain like pit emptying and waste reuse (Tremolet *et al.* 2010).

10.2.3 Financial performance

The revenues of the fecal-sludge emptying businesses depend on the fees charged and the number of trips made per day. While in Malaysia the fees are regulated by the government, in the other nine countries in this study these fees are set by market forces. These fees range from an average of \$26 per service in India to \$97 in Kenya (Figure 10.3). In some localities market competition has radically affected prices. Roughly one-third of the private FSM entrepreneurs in Phnom Penh, Cambodia entered the market just over a year ago. Using aggressive marketing techniques such as flooding the market with leaflets, new entrants have taken over the market. This has resulted in a drop in fees paid by households from between \$35–\$50 in 2009 to a rate of below \$35 at the time of this study. The increase in competition that would be facilitated by reduced barriers to market entry is also a way to increase supplier profits while simultaneously reducing costs paid by users (Solo, 1999).

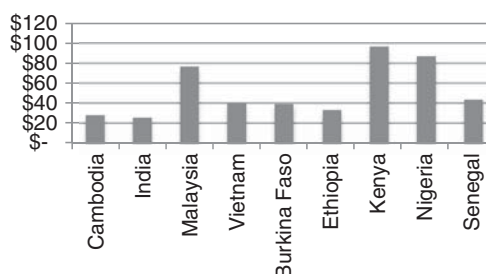


Figure 10.3 Average emptying fees charged per country.

The annual income per truck is higher in the African countries surveyed and reported to be as high as almost \$50,000 per truck in Nigeria and Senegal (Figure 10.4).

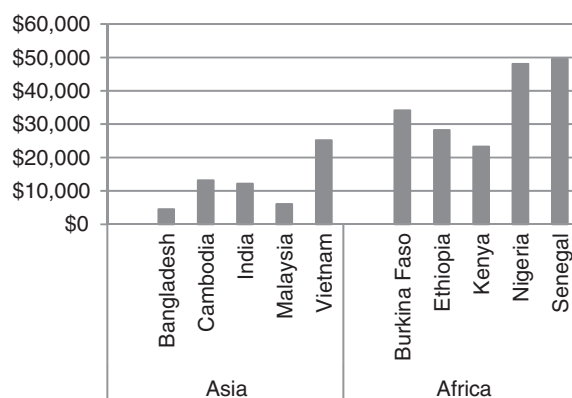


Figure 10.4 Average revenue per truck and for private operators.

Table 10.4 summarizes the financial performance of fecal-sludge-emptying businesses at the country level. The only businesses running at a monthly loss are those in Bangladesh and Malaysia. In the case of Dhaka, Bangladesh the mechanical emptying is done by two 2 m³ Vacutugs operated by local non-profit organizations. In a city of over 14 million people where manual emptying is the norm these two Vacutugs only emptied around 300 pits and septic tanks in 2010.

Table 10.4 Financial performance of private businesses consolidated at the country level.

| | Annual Income/truck | Monthly cash flow | ROI (%) with depreciation | Variable/ Total costs per truck (%) | Fixed/Total costs per truck (%) | Personal/ Total costs per truck (%) | Fuel/Total costs per truck (%) | Maintenance/ Total costs per truck (%) |
|--------------|------------------------|----------------------|------------------------------|---|---------------------------------------|---|--------------------------------------|--|
| Bangladesh | \$4492 | (\$58) | -18% | 32% | 68% | 49% | 9% | 26% |
| Burkina Faso | \$34,149 | \$1974 | 19% | 78% | 22% | 10% | 48% | 28% |
| Cambodia | \$13,158 | \$398 | 7% | 53% | 47% | 40% | 26% | 5% |
| Ethiopia | \$28,213 | \$1095 | 43% | 77% | 23% | 17% | 58% | 19% |
| India | \$12,177 | \$375 | 28% | 52% | 48% | 26% | 39% | 12% |
| Kenya | \$23,326 | \$520 | 3% | 79% | 21% | 30% | 39% | 14% |
| Malaysia | \$6056 | (\$5661) | -50% | 19% | 81% | 46% | 8% | 8% |
| Nigeria | \$48,083 | \$6480 | 85% | 69% | 31% | 28% | 34% | 25% |
| Senegal | \$49,546 | \$5776 | 15% | 78% | 22% | 18% | 46% | 14% |
| Vietnam | \$25,226 | \$2382 | 57% | 27% | 73% | 52% | 17% | 5% |

The return on investment (ROI) for these businesses is a function both of profits and the cost of the trucks used. As such, while Cambodia and India have comparable profits, the ROI in India is much higher at 28% than the 7% in Cambodia. The key difference here is the 31% lower average cost of the trucks in India (Figure 10.2). Similarly, in spite of cash flows 15 times greater in Senegal than in India, the ROI of businesses in Senegal are only 15%. Again, this is the impact of the much more expensive trucks which are on average \$44,000 in Senegal, but under \$10,000 in India.

10.3 WHY IS AFRICA MORE EXPENSIVE?

Besides the cost of investment for trucks, which is three times as high in Africa as in Asia, another key difference between the regions is the distribution of the operating costs themselves, which are much higher in Africa than in Asia. Variable costs include fuel, maintenance and dumping fees and these costs are consistently higher in the countries in Africa than is the case in the Asian countries. At a unit truck level, it costs about \$11,000 annually in Asia to operate a truck. On the other hand, in Africa, the unit operational expense is three times as high at \$31,000 (Figure 10.5).

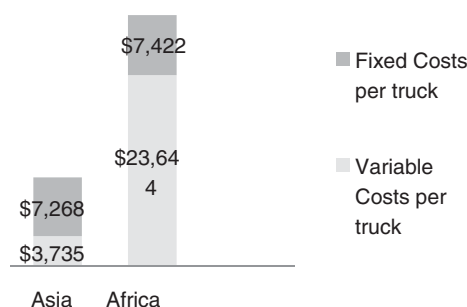


Figure 10.5 Regional fixed vs. variable costs.

Not only is the total amount different between the regions, so too is the distribution of the fixed and variable costs. Fixed costs include personal wages, contributions to staff pension and medical coverage, office rent, office equipment depreciation costs, overhead costs, phone, electricity, supplies, transportation, marketing, company registration, licensing fees, loan payments and other fixed miscellaneous charges. Truck depreciation costs are added separately to highlight the impact of them to the overall profitability levels. Variable costs include truck maintenance, fuel costs, dumping fees, and daily wages paid. In Africa, 76% of the operating expenses for FSM emptying businesses are variable costs, while in Asia, fixed costs make up 62% of the operating expenses. Taking a closer look at the breakdown of these costs, the biggest expense for African operations is in fuel charges and for Asian businesses it is the staff wages (Figure 10.6).

The high fuel costs in Africa could be due to the result of a combination of factors: the age of the trucks (that can be over 30 years); the large capacities of these trucks that are typically 10 m³; and the distances that the trucks have to travel to collect the sludge from households and take it to the dumping grounds (in some cases a 25–30 km round trip).

These higher costs translate to higher emptying fees for households, as truck operators charge higher rates for the longer distances they have to travel per household. In Nairobi, where the longest trip from client to dumpsite to parking bay can be as long as 50 km, charges can vary from \$50 for short distances to almost \$100 for longer trips.

Despite higher costs, the average profit per truck in Africa is \$12,000 compared to Asia where the average profit is only \$5600 per truck. As seen in Table 10.5, in both regions, profit increases as the size of the business grows. The higher profits in Africa are due to the significantly higher revenues they capture by having higher fees and making three to four trips per day.

While the profit per truck is lower in Asia, the return on investment (profit/purchase price) for the trucks is actually much higher in Asia than in Africa, with an average of 53% vs. 19% after a 10-year straight line depreciation is factored in (Table 10.5). This is due to the fact that even though cash flow per truck is higher in Africa, the cost of investment per truck is even higher, thereby lowering its effective return on investment.

To reduce costs for sludge disposal, some countries in both Africa and Asia are working on reducing the distance that needs to be travelled for sludge disposal. Transfer stations have been used or tested out in Ethiopia and Malaysia. In Malaysia the public utility is evaluating the use of the geo-tube as a novel transfer station. The geo-tube is a tube made of a porous membrane with the sludge received through a hose from the truck. Discharge from the tube can be achieved by using a pump or gravity. Leaching through the porous membrane gradually dewateres sludge in the geo-tube, and the leachate is treated in the nearby sewage

treatment plant, while the solids are retained inside. Exposure to the outdoor heat further dries the remaining sludge, and the geo tube is eventually lifted onto a truck and transported out to a landfill or recovery facility. In Abuja, Nigeria the manholes stationed around the city serve as pseudo transfer stations since the emptiers can discharge into certain manholes connected to the main sewer trunk lines. In Addis Ababa, there are four transfer stations built by the public utility to reduce, by an average of 12 km, the travel distance to the treatment sites that are located at the outskirts of the city. However, only the utility trucks are allowed use of the transfer stations and capacity limitations are so severe that only 35% of the utility trucks are currently using these stations.

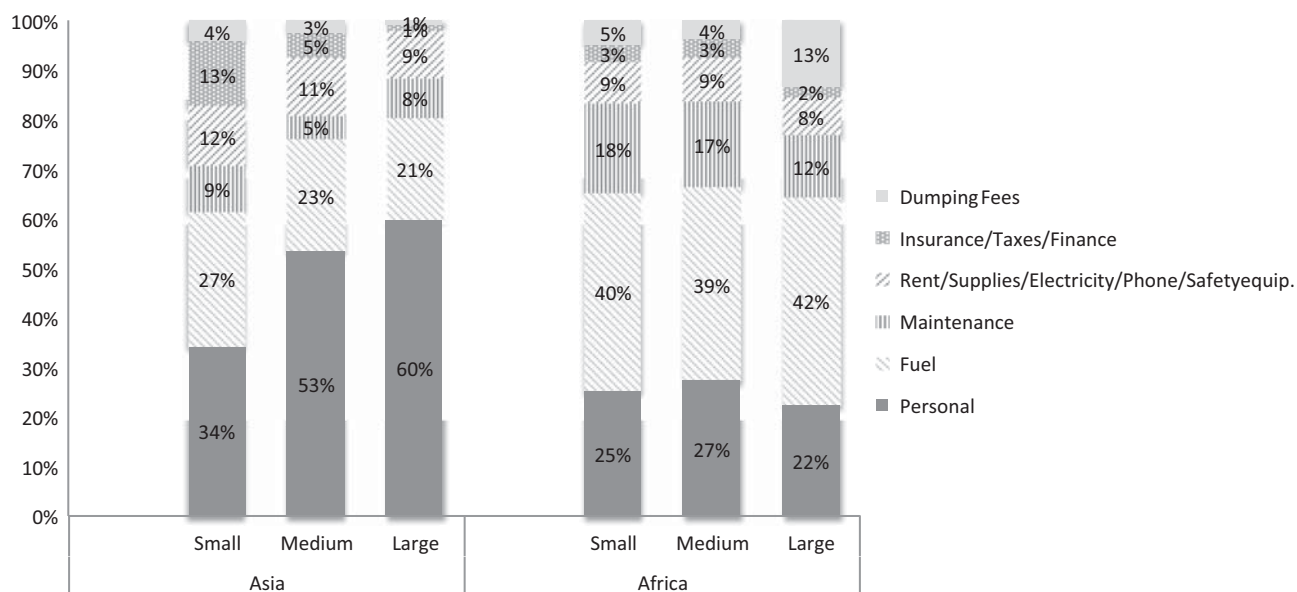


Figure 10.6 Distribution of expenses for different sized businesses.

Table 10.5 Annual profit per truck and Return on Investment.

| | | Annual profit per truck | Return on investment |
|---------------|--------|-------------------------|----------------------|
| Asia | | | |
| | Small | \$3722 | 15% |
| | Medium | \$5697 | 51% |
| | Large | \$7509 | 92% |
| Africa | | | |
| | Small | \$3341 | −2% |
| | Medium | \$13,083 | 23% |
| | Large | \$19,549 | 35% |

10.3.1 Profile of profitable FSM businesses

The typical profile of a profitable emptying business is evident in a review of the top 15 most profitable operations (ranked by monthly cash-flows in Table 10.6).

- A majority (80%) of these top businesses operate two or more trucks.
- Private companies dominate fecal sludge service provision.
- The primary source of funding for FSM service providers is self-funding (Table 10.2).
- Almost 40% of the operating expenses for the African businesses are fuel costs (Figure 10.6).
- The larger the fleet size, the greater the profitability achieved per truck and the greater the business's return on investment (Table 10.5).

Table 10.6 Top 15 profitable businesses based on cash flow per truck.

| Location | | Status | No. of trucks | Annual revenue | Total expenses | Annual profit after depreciation | Monthly cash-flow per truck |
|----------|--------------|---------|---------------|----------------|----------------|----------------------------------|-----------------------------|
| Country | City | | | | | | |
| Nigeria | Abuja | Private | 4 | \$1,022,581 | \$303,075 | \$708,181 | \$14,990 |
| Malaysia | Kuala Lumpur | Public | 14 | \$2,249,079 | \$408,761 | \$1,759,391 | \$10,954 |
| Nigeria | Abuja | Private | 4 | \$499,211 | \$146,956 | \$333,382 | \$7339 |
| Malaysia | Melaka | Public | 8 | \$1,155,483 | \$586,673 | \$494,411 | \$5925 |
| Kenya | Mombasa | Private | 4 | \$267,844 | \$39,015 | \$209,264 | \$4767 |
| Nigeria | Ibadan | Private | 3 | \$226,485 | \$72,879 | \$149,712 | \$4267 |
| Vietnam | Ho Chi Minh | Private | 3 | \$201,320 | \$73,388 | \$123,534 | \$3554 |
| Malaysia | Kuala Treng. | Public | 19 | \$1,275,352 | \$569,834 | \$594,273 | \$3094 |
| Vietnam | Ho Chi Minh | Public | 7 | \$459,211 | \$199,420 | \$246,131 | \$3093 |
| Senegal | Dakar | Private | 6 | \$489,294 | \$310,392 | \$152,656 | \$2485 |
| Nigeria | Ibadan | Private | 2 | \$137,295 | \$78,328 | \$52,676 | \$2457 |
| Nigeria | Abuja | Private | 1 | \$61,151 | \$32,568 | \$25,091 | \$2382 |
| Senegal | Dakar | Private | 7 | \$612,901 | \$413,693 | \$168,551 | \$2372 |
| Cambodia | Phnom Penh | Private | 1 | \$42,000 | \$20,004 | \$20,496 | \$1833 |
| Cambodia | Phnom Penh | Private | 1 | \$43,200 | \$22,235 | \$18,965 | \$1747 |

10.3.2 Growing profitable FSM businesses

One of the greatest challenges to efficient and profitable collection and transportation service provision is the lack of access to affordable, fuel-efficient new trucks – especially in Africa. As the data in this study shows, second-hand trucks imported into Africa cost on average more than \$30,000 to purchase, are fuel inefficient, costly to maintain and sometimes over 30 years old. For these old imported trucks, the maintenance required is not only frequent and therefore costly, but is also challenging due to the lack of availability of spare parts.

As Table 10.6 demonstrates, supporting the growth from small to large businesses is critical for creating profitable FSM businesses. Yet without access to external finance, and with high capital expenses, especially in Africa, financing this growth remains a challenge. Analysis of the income statements of 59 companies in Africa in Table 10.7 highlights the difficulty in self-financed growth. Data in Table 10.7 is taken from 23 small sized, 31 medium sized and 5 large sized private businesses in Africa. For comparative purposes, the cost per truck is assumed to be \$42,000 for all businesses.

The analysis reveals that for a small business with annual profits of \$2639, purchasing a second truck from its profits will take almost 16 years. (The 16 years could actually be significantly longer, if inflation was factored in). The annual profit levels are too low and the businesses too close to the brink of loss for banks to consider loaning money for expansion. On the other hand, the medium-sized companies with only two trucks have sufficient annual profits to purchase a new truck every 1.1 years. This analysis is based on current sources of trucks in the various geographies. Further investigation is needed to determine the viability of local manufacturing and/or assembly within Africa and exporting across free trade zones within Africa rather than importing from Europe.

At present, the only options then for single truck owners looking to expand are to borrow funds from family and friends or to borrow from private lenders at high interest rates. Survey results from ten African countries of hundreds of independent water and sanitation service providers of all sizes, showed 100% of them had self-financed their start-ups with family funds and then funded their expansion costs with profits. (Collignon & Vezin, 2000).

The financial products introduced to address this sector should in the first instance be designed to support the shift from one truck to two. A multi-truck business is the optimum model, but growing from two trucks to more than five will likely require gradual growth over time, as there are considerations beyond finance that need to be taken into account. Each additional truck will require time and marketing to build demand and there will likely be a time lag before each new truck can be utilized fully even with the addition of further staff. These factors will need to be evaluated to determine the optimal pace of growth but the move beyond one truck is a crucial first step.

Innovative financing solutions are needed and ideas such as output-based-aid financing mechanisms should be looked into for service providers (Tremolet, 2011). Clear and well-defined output metrics – such as the number of households served

and evidence of safe disposal – will need to be established for purposes of funding and monitoring. A further idea is for donors and governments to set up loan guarantees for financing the capital expenditure needed for collection and haulage (Kone *et al.* 2007).

Table 10.7 Income statement of typical small, medium and large private business in Africa.

| USD | (1 truck) | (2 trucks) | (7 trucks) |
|-----------------------------------|-----------------|-----------------|------------------|
| | Small | Medium | Large |
| Revenue | \$31,853 | \$104,311 | \$489,294 |
| Expenses | | | |
| Fixed Costs | \$4553 | \$9033 | \$96,443 |
| Variable Costs | \$16,261 | \$38,489 | \$291,015 |
| Depreciation (10yr) | \$8400 | \$16,800 | \$58,800 |
| Total Expenses | \$29,214 | \$64,322 | \$446,258 |
| Profit/(loss) | \$2639 | \$39,990 | \$43,036 |
| Key Performance Indicators | | | |
| Average Revenue per truck | \$31,853 | \$52,156 | \$69,899 |
| Variable Expenses per truck | \$16,261 | \$19,245 | \$41,574 |
| Profit | \$2639 | \$39,990 | \$43,036 |
| Annual free cash flow (FCF) | \$11,039 | \$56,790 | \$101,836 |
| Years to new truck* | 15.9 | 1.1 | 1 |

*Number of years it will take to save enough to purchase one new truck.

Another possibility to explore is asset ownership of new trucks by the public sector with operation by private entrepreneurs. This can take shape under different financial arrangements such as straight leasing, or shared profits. State governments could purchase new sewage trucks and transfer lease management operations to financially capable and competent management companies with proven track records in leasing operations and fleet management services. Alternatively, state governments could partner with leasing companies to handle both the purchase and management of the fleet of sewage vehicles. Another option would be to consolidate the small truck owners into a cooperative entity; effectively creating a large sized business comprised of individual owners and shared profits.

10.4 CONCLUSIONS

However, at least 50% of the entrepreneurs surveyed can afford only one truck. The most significant barrier to expansion, and indeed to market entry, is the high cost of purchasing the truck needed to carry out the emptying services. These costs were particularly high in Africa where trucks are imported second hand from Europe. The lack of access to finance to purchase these trucks compounds this challenge. Most entrepreneurs rely on personal savings or loans from informal sources.

Beyond initial truck purchase, there are also regional differences in business operations that need to be taken into account by those looking to invest in or fund this sector. While FSM businesses in Africa earn more revenue per truck than their counterparts in Asia, their return on investment is lower due to the heavy capital expenditure of the imported trucks. In addition, these large capacity trucks are often over 30 years old at the time of purchase and are extremely fuel inefficient. These costs present not only high barriers to initial entry but also drive up the operating expenses. Long distances to dump sites further exacerbate the problem of high fuel costs (especially in Africa) and erode profitability and encourage illegal dumping in the environment. In this regard experiments with transfer stations offer some promise.

The data in the study suggests that the key to increasing the financial viability of existing FSM businesses lies in finding ways to support the expansion of truck fleets, in particular the expansion beyond a single truck. Further in-depth research is needed in the particular African countries to determine options for local manufacturing or assembly of trucks to reduced dependence on expensive imports. Overall, innovative financing schemes are needed to reduce the barrier of upfront capital expenditure.

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10.5 APPENDIX 1

Typical Income statement data gathered during operator interviews:

Data for Medium sized business in Abuja

| | | | |
|--------------------------------------|-----|--|----------------|
| Personnel Costs | | | |
| Permanent staff | USD | | 23,040 |
| Fixed Operating Costs | | | |
| Registration fees of company | USD | | 448 |
| Licensing fees for truck | USD | | 2240 |
| Insurance costs for trucks, vehicles | USD | | 3680 |
| Office building rent | USD | | 6400 |
| Safety Equipment | USD | | 307 |
| Marketing | USD | | 3072 |
| Telephone | USD | | 2304 |
| Variable Operating Costs | | | |
| Daily wage workers | USD | | 22,464 |
| Trucks Maintenance and repair | USD | | 4608 |
| Trucks servicing | USD | | 7680 |
| Pump servicing | USD | | 2304 |
| Fuel (pumping & transport) | USD | | 53,222 |
| Sludge dumping/tipping Fees | USD | | |
| Tires | USD | | 11,200 |
| Suction pipe | USD | | 256 |
| Total operating costs | USD | | 120,186 |
| Loan Interest paid to Bank | USD | | 6270 |
| Truck Depreciation Cost | USD | | 38,400 |
| Revenue Sources | | | |
| Emptying (Households only) | USD | | 368,640 |
| Emptying (Other) | USD | | 137,472 |
| Other uses of the trucks | USD | | 1728 |
| Total revenues | USD | | 507,840 |
| Profit /Loss | | | |
| Revenue before Tax | USD | | 319,944 |
| Revenue Tax | USD | | 95,983 |
| Profit (loss) after Tax | USD | | 223,961 |

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Chapter 11

Advancing health, learning and participation through WASH in schools in Africa

Therese Dooley and Murat Sahin

UNICEF

“A school is not a school without toilets, water and soap”

In 2011, estimates show that only 52% of the schools in Africa had access to water and 48% of schools had access to sanitation based on the UNICEF country office annual reports from 51 countries in Africa. Fulfilling every child’s right to water, sanitation and hygiene education remains a major challenge for policymakers, school administrators and communities in many countries. The evidence on the impact of WASH in Schools (WinS) programming coming out of Africa demonstrates the real need for improving access to water and sanitation in schools and encouraging habitual (life-long) hygiene behaviours among school children. To focus and improve the situation of access to WinS in Africa this chapter outlines three key actions which were suggested during Africasan.

11.1 INTRODUCTION TO WinS

Water, sanitation and hygiene education in schools – WASH in Schools (WinS) – seeks to provide safe drinking water, improved sanitation facilities and promote lifelong health. WinS enhances the well-being of children and their families, and paves the way for new generations of healthy children and helps fulfil every child’s right to water, sanitation, health and education. Among its many benefits, WinS:

- Provides healthy, safe and secure school environments that can protect children from disease, abuse and exclusion. It helps ensure quality education, because children who are healthy and well-nourished can fully participate in school and gain maximum benefits from their education. Quality education, in turn, leads to better health and nutrition outcomes.
- Encourages children’s pride in their schools and communities by providing dignity and privacy. This is especially true for girls, who are more likely to attend school when adequate WASH facilities are present (Pearson & McPhedran, 2008).
- Is an investment in schoolchildren and the health of future generations. It enables children to become agents of change for improving water, sanitation and hygiene behaviours in their families and communities. It helps children realize their full potential now and prepares them for healthy living as adults, able to share this legacy when they become parents.

11.2 ACCESS TO WASH IN SCHOOLS

Although there has been an increase in access to WinS over the past years much remains to be done. As shown in Figure 11.1, almost half of the schools in developing countries do not have access to water and sanitation facilities. Children commonly miss school due to inadequate facilities, and older girls who have reached the age of puberty are often particularly reluctant to stay in school when toilet and washing facilities lack privacy, are unsafe, or are nonexistent. Even when children are in school, they are often not meeting their learning potential due to WASH-related disease burdens.

Unlike Household Water and Sanitation there is currently no formal mechanism which monitors access to WinS at the global level. The only available data at the global level with regards to access to WinS comes from UNICEF country office annual reporting mechanism. The national monitoring systems (EMIS, HMIS, WIMS) often do not reflect WinS as an indicator,

therefore the quality of data on coverage and access remains questionable. It is not unusual to find that a national monitoring system considers a school to be providing adequate access to sanitation, even though 300 children are using one latrine hole. However the quality data of WinS coverage is a significant barrier to identifying children's needs, establishing and carrying out effective programmes, and monitoring progress.

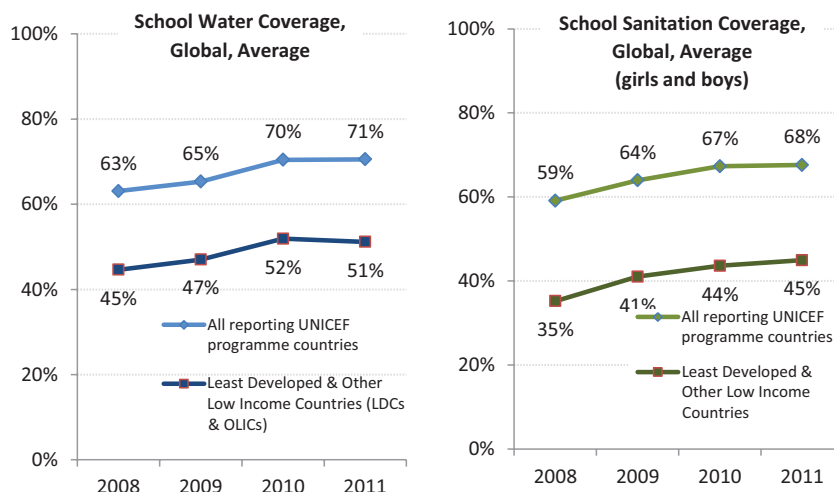


Figure 11.1 Water and Sanitation Facilities in Primary Schools, 2008–2011 Estimates (UNICEF Water, 2011).

11.2.1 WASH in schools in Africa

The situation of access to WinS in Africa is not much different than the global average of developing countries. In 2011, an estimated 52% of the schools had access to water and 48% of schools had access to sanitation based on the UNICEF country office annual reports from 51 countries in Africa. There are also wide disparities between countries on access to WinS. When we take closer look at the 20 countries with least access to WinS in Africa, the situation is alarming: Only 29% of children have access to adequate water supply and 27% have access to adequate sanitation facilities in schools. As in the case of the data with regards to access to WinS at the global level, the quality and functionality of access to WASH facilities in Schools in Africa have always been in question (Figure 11.2).

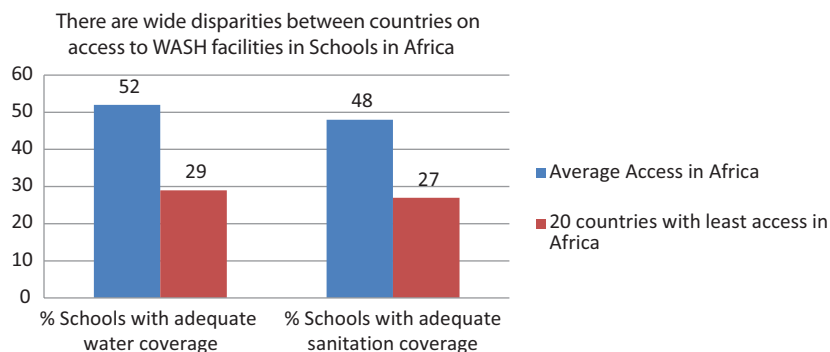


Figure 11.2 Data on water and sanitation in schools presented here is from a variety of government institutional reporting systems (compiled by UNICEF country offices in 2011), and generally not from surveys. School coverage data is based on national standards, which vary from country to country (e.g. on pupil to toilet ratios).

Water coverage in schools may be lower than in schools. One would expect the schools to have similar rate of access to improved water sources. According to the JMP 2012, 61% of the population in Sub Saharan Africa has access to an

improved drinking water source at the household level whereas only 52% per cent of the primary schools have access to adequate water supply (Figure 11.3).

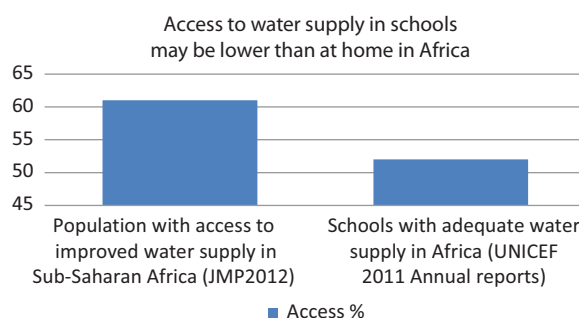


Figure 11.3 Access to improved water source in Sub-Saharan Africa as per JMP2012 vs adequate facilities in public schools as per non-weighted average from 51 countries in Africa. These datasets are not directly comparable: one is from institutional sources and another from household surveys.

However, access to WASH Facilities alone is not enough. It is critical for children to adopt key hygiene behaviours through relevant hygiene promotion activities with adequate supplies of soap and consumables available to enable the behaviours and to allow for operation and maintenance of WASH facilities.

A study in Kenya revealed that less than 2 per cent of children in schools washed their hands with soap, which was available in less than 5 per cent of facilities (Njuguna, 2008).

11.2.2 WASH in schools is effective in Africa

Almost all countries in Africa implement WinS programs at different levels. It is important to note the success stories that have been captured over the years.

- *WinS improves children's health in Africa:* WinS programs are a first step towards ensuring a healthy learning environment. Schools with quality WASH programs can lessen the spread of water and sanitation related diseases such as diarrhoea and worm infestations. Improving WASH conditions in schools helps prevent infection with soil-transmitted worms, of which 100% of annual cases worldwide are attributable to inadequate sanitation and insufficient hygiene (Prüss-Üstün, 2008). In 2008, 66.1 million between age of 5 to 10 are estimated to be infested with worms in Africa (Hall *et al.* 2008). Deworming services, supported by hygiene education, help children avoid reinfection, and proper water and sanitation facilities prevent children from re-exposure. The impact of worm reduction programmes in schools has been remarkable. In Kenya, a deworming programme among primary school-aged children reduced absenteeism by at least 25%, with the largest gains for the youngest children who suffered the most ill health (Miguel & Kremer). A comprehensive program to improve WinS conditions in Kenya resulted in a nearly 50% reduction in diarrheal illness (Freeman, 2011).
- *WinS boosts attendance and achievement in African schools:* Health and education work in synergy. Schools with improved water and sanitation facilities attract and retain more students and teachers. Nutrition deficiencies, diarrhoea and worm infections are all related to inadequate water, sanitation and hygiene – and all affect school participation and learning. In Egypt, an intensive campaign to promote hand hygiene in 30 primary schools reduced absenteeism caused by laboratory-confirmed influenza by 50%, influenza-like illness by 40%, diarrhoea by 30% and conjunctivitis by 67% (Talaat, 2011). The programme included guidebooks, activities, posters, songs, games, drama and contests – all with the objective of having children wash their hands with soap at least twice a day while they are at school.
- *WinS promotes gender equality throughout Africa:* As in other parts of society, gender discrimination is prevalent within schools. In many cases, this discrimination is related to cultural beliefs and traditions; sometimes, it is caused by unrecognized problems and needs. Girls are particularly vulnerable to dropping out of school, partly because many are reluctant to continue their schooling when toilet and washing facilities are not private, not safe or simply not available. When schools have adequate facilities – particularly toilets and washstands that facilitate menstrual hygiene – a major obstacle to attendance is removed.

A WinS evaluation in Kenya indicates that girls were absent less in schools where there was more hand washing and very high toilet use (Njuguna, 2008). The amount of time girls spend fetching water has a significant effect on their school attendance. In Ghana, a study of Demographic and Health Surveys from 1993–2008 shows that a 15-minute reduction in collection time increases the proportion of girls attending school by 8%–12% (Nauges & Strand, 2011). Girls who can take advantage of educational opportunities for education are better able to protect themselves more likely to develop skills to contribute to society. The more access they have to education the less likely they are to marry before the age of 18 (IRCW, 2006). If they become mothers, they are more likely to raise healthy, well-nourished and educated children.

11.2.3 WinS reaches communities across Africa

WinS is a strategic intervention to reach entire communities. Direct engagement with students can lead to community adoption of good WASH behaviours (Onyango-Ouma, Aagaard-Hansen & Jensen 2005; O’Rielly *et al.* 2008) as well as improved health (Bowen, 2007). Children are often agents of change and education for good hygiene practices in schools can link students, families and communities. Children’s involvement with WASH in their communities can be promoted with minimum investment through activities such as environmental health clubs, drama groups and student focus groups. One example of this is the experience of Malawi’s Safe Water Clubs. In 2007, Safe Water Clubs were launched in 11 schools in Neno District, Malawi, reaching about 5,500 students. The Safe Water Clubs promote the importance of clean water, good hygiene and improved sanitation. Club members create their own songs, dramas and games to communicate safe water and hygiene messages within their schools and communities. Since the programme began, there has been a 90 per cent reduction in absenteeism due to diarrhoeal disease in the participating schools, even during the peak of the rainy season. As a result of the students bringing the safe water message to their homes and families, the community clinic reported a 35 per cent decrease in diarrhoeal disease cases in 2007 (Population Services International, 2009).

11.3 KEY ACTIONS TO IMPROVE WinS

Many Governments in Africa are exploring solutions to meet the Millennium Development Goals (MDGs) and are aware of the challenges they are facing and the fact that they are off-track in meeting the MDGs. The third African Conference was held in Rwanda in 2011 attracting Governments, experts on sanitation and hygiene sector from across Africa. A specific WinS Session shared a common vision: All children should go to a school where there is water, sanitation, and hygiene education. Partners came together and reviewed the challenges and progress made in the region and outlined three key action points in order to focus and scale up WinS programming in Africa. They are as follows:

- *Set minimum standards for WinS.* Adopt national, regional and local standards for WinS 13 (United Nations Children’s Fund and World Health Organization, 2009). The minimum standards for WinS should be specific to each context and allow for gradual improvements to facilities and hygiene practices. Where national standards already exist, work with partners to adjust them in light of new evidence and best practices. In 2011, In Malawi, a school sanitation review identified problems with existing standards for handwashing water tanks, prompting a revision that will be incorporated into national standards. Other examples include Ghana, where government partners are incorporating new menstrual hygiene-focused designs for toilet blocks for girls in basic schools into national standards, and Gambia, where a similar approach has already led to a revision in the national standards.
- *Monitor WinS coverage through education management information systems (EMIS).* Advocate for the inclusion of WinS indicators in EMIS. Analyse data annually and use the findings for advocacy and improved resource allocation. Support the compilation of data on coverage and practices at the national and regional level and attract attention to the WinS sector. In 2011, several African countries including Malawi and Mali, conducted comprehensive WinS surveys for the first time. In some cases, the surveys led directly to results, such as in Tanzania, where information from a wide-ranging national survey helped to leverage an additional \$15 million from donors for WinS. Incorporating WASH indicators permanently into national EMIS is a more complex and long-term proposition, but the advantages are clear: they show that the education sector is internalising the need for WinS.
- *Engage with at scale WinS programmes.* Contribute to the bigger picture, bringing individual or small-scale projects into cooperative initiatives that reach more schools, more effectively. Gradual improvements to facilities and hygiene practices require less investment in operation and maintenance and can be sustained with local resources. They are key to establishing sustainable, at scale programmes for WinS with a clear vision and road map to reach to all schools and children.

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Chapter 12

Unleash the sanitation marketplace

Muthi Nhlema, John Sauer, Steve Sugden and Frank Millsopp

Water for People

“Taking the cheapest option of a simple pit latrine and taking into consideration the growth in population, the cost for providing improved sanitation to the world’s population will be over \$300 billion US by 2015”

(Sah & Negussie 2008)

This chapter reflects on the private sector in sanitation development, in particular Water for People’s experience, and discusses factors which promote and limit private sector engagement. The chapter examines case studies and highlight lessons from seeking to stimulate a sanitation market place.

12.1 THE CHANGING LANDSCAPE

Four decades of sanitation projects and programs in Africa funded by aid agencies and governments have had limited impact on the need or the sustainability of sanitation services. Factoring in population growth and migration, essential to sustainability, access to improved sanitation has only increased 4% between 1990 and 2010 in Sub-Saharan Africa (JMP, 2011).

However we look at the sanitation status quo, there are only scattered examples of success with supply-driven approaches, and little evidence to suggest that they are scalable (Jenkins & Sugden 2006). New thinking, new approaches, and taking risks will be necessary to effectively address the global sanitation challenge within an acceptable timeframe.

Part of the need to innovate is driven by the reality of the cost to ‘build’ latrines for the 1.2 billion people who need them. One study estimated that the cost could be upwards of \$300 billion by 2015 for constructing simple pit latrines. Clearly that level of funding will not be available in the sanitation sector¹ (Sah & Negussie 2008). Other factors forcing adaptation in the sanitation sector include climate change, population growth, and migration to urban areas (Lüthi *et al.* 2009).

Another reason for the shift to a demand driven approach is an increased understanding that the supply driven, engineer-based, and donor-focused approach does not provide incentives for enabling sanitation solutions to go to scale. This is in large part due to the fact that it creates the perception at community level and local government levels that the provision of household latrines is a government’s or donor’s responsibility and heavy subsidies are the norm. This creates a situation where households are not involved with the design, technology choice, or financing of the sanitation solution and therefore have little ownership (Evans *et al.* 2009).

The supply driven approach is also heavily dependent on subsidies, which distort the value of the sanitation solution (and the market) and saps the interest of the end-user to pay for and value the solution. The latest thinking about subsidies is that (if they are used) they should be used to leverage other sources of funds for sanitation solutions that the consumer is demanding (Evans *et al.* 2009).

Fortunately supply driven approaches appear to be on the way out in the sanitation sector and demand driven focus on programming is on the rise and taking on many interesting facets. There is a noticeable shift in NGOs and governments to a more facilitatory role and greater reliance on private sector for service delivery and management. It is becoming accepted

¹Sanitation Sector defined as all players – government, UN, development banks, NGO, private sector, faith-based groups, etc.

that the private sector has a key role to play: from latrine and bathroom construction, to emptying of latrine pits and septic tanks, to management of public toilets.

12.2 EMERGENCE OF MARKET-BASED APPROACHES

Heavily donor-subsidized products or services crowd out the emergence of the private sector and the creation of a sanitation market – who would decide to open a business trying to provide something for a price while someone else is providing something similar for free? It doesn't make business sense; any aspiring sanitation entrepreneur would look elsewhere, effectively strangling at the outset any self-sustaining benefit the private sector could have provided. It was this realization, of the detrimental and distortive effects that improperly targeted subsidies can have, that led the sanitation sector to shift their focus from that of a direct implementer of sanitation products or services to a market facilitator. While theoretically this shift seems to be an easy one, putting it into practice has proven to be much more complicated.

Generally, a 'market-based' approach to sanitation (or within other development sectors) rests on the following assumptions:

- That markets are the most efficient mechanism for providing satisfactory goods and services at affordable prices.
- That consumer households buy products and services that they are satisfied and comfortable with, and give them good value for their money.
- That the private sector makes money by providing products and services satisfactory to their consumers/clients and modified in response to consumer demands and stated preferences.
- That within this system, the incentives are in place such that coverage will continue to expand and be sustained because the private sector, with the natural incentives that come along with buying and selling in a market, will continue to target new customers and do everything they can to keep existing ones.

Some key attributes of a market-based approach to sanitation include:

- Minimal or no 'subsidies' directed at households, given their potential to distort markets and crowd out the private sector.
- Direct support of entrepreneurs and enterprises involved in different sanitation businesses – like managing public toilets, construction, pit-emptying, and so on – through training in marketing, business planning, finance, bookkeeping, and other skills that increase the human capital of a business.
- Coordination with the local financial sector to identify credit, loan and other financial alternatives for businesses and consumers within the sanitation sector.
- Advocacy at the local level to reduce barriers to growth and success that the sanitation private sector might face.
- A systems-approach instead of a beneficiary-model; the focus has moved from sanitation coverage statistics at a given point in time to an end objective of a self-sustaining market system that is not reliant on outside support in the long-term.

In short, a market-based approach seeks to foster a *system* as the primary end goal, not a set number of beneficiaries at a given point in time. This system supports a process whereby not only does sanitation coverage grow, but continues to do so and be sustained in the long term because the local private sector is driving the process forward as they do in all other vibrant markets worldwide.

12.2.1 Case study – sanitation marketing failure in Chikhwawa: Were market-based approaches followed?

Chikhwawa district has one of the harshest environments in Malawi. Temperatures reach as high as 42°C (≈108°F), hampering the hopes for good harvests. Flash floods are not an uncommon sight during rainy season, rendering hundreds homeless.

Only five percent of Chikhwawa residents have improved sanitation – one of the lowest in Malawi. The majority of Chikhwawa households prefer unimproved temporary traditional pit latrines (55%) or open defecation (34%). Indeed, some majority tribes in Chikhwawa traditionally view open defecation as acceptable.

It is in this environment that Water For People Malawi tested the idea of *Sanitation Marketing*.

Water For People's approach to rural sanitation marketing, which in Chikhwawa was referred to as the Mason Model, focused on trying to get households to purchase a latrine slab or an improved latrine from a local mason. The idea was that the masons would find this a good side business (in addition to other construction work) and fulfill the market demand for sanitation in the process. Masons were given the following 'capacity building' as a part of the program:

- *Improved Sanitation Technology*, including ECOSAN latrines (Figure 12.1): the masons were sensitized on the different types of latrines and their respective benefits. The training included actual construction of an improved latrine.

- *Basic Business Skills*: general business practices were shared to enable the masons to understand the concept of business, the profit motive, record keeping and other essentials of business development which were central to the thinking around *Sanitation Marketing*.
- *Hardware Seed Support*: the masons were supported with seed capital in the form of bags of cement and reinforcement for slab construction. This *smart subsidy* was to provide the masons with a one-off non-cash start-up for their businesses with the idea that they would re-invest subsequent revenue into more cement, without reverting to Water For People Malawi for additional subsidy.



Figure 12.1 An Fossa Alterna latrine – an example of an ECOSAN latrine in Malawi.

For their part, households were given options for paying for their sanitation solutions, including:

- *Cash Installment Payment*: the stipulated cost of a slab was set at MWK 1500.00 (\$9.00). Households could purchase the slabs by either paying the full amount at once or negotiate on a payment plan with the masons that was mutually agreeable.
- *Humanure Payment*² – Masons could install slabs and construct an improved latrine for the household at no actual cash value. However, the household *pays* for the products/services by allowing the mason to harvest the composted human manure (or humanure in short) from the latrine for an agreed period of time. The masons could choose to either sell the humanure or use it for agricultural purposes to generate income.

Through the program 70 masons were trained between 2008 and 2011 and they provided households in their immediate vicinity with latrine construction services on a fee paying basis. In early 2012, Water For People Malawi conducted a Rapid Market Appraisal³ (RMA) that sampled seven trained masons and interviewed 16 households to evaluate the effectiveness of the program. It was deemed to be a failure for several key reasons:

High Dissatisfaction with Traditional Latrines: There was an almost unanimous negative sentiment from the households towards the traditional pit latrine. Most households cited the traditional latrine as being unsafe (due to the weak infrastructure) and unfashionable (as it was not ‘modern’ like other improved model latrines). This gives an indication that there was not sufficient work done upfront in the planning to find out what the consumer wanted and what the real demand for sanitation was in the program area.

Wrong Price Point: Households expressed concern with the cost of the slab (MK 1500.00 \approx USD 9.00) as being prohibitively expensive and suggested a range from MWK 500.00 to MWK 800.00 (\approx USD 3.00 to USD 4.90) as more reasonable.

Resistance to Pay: There was a general resistance to investing resources into purchasing a slab or paying *one of their own* to build an improved latrine for them. Most of this resistance emanates from a strong awareness of past NGO projects that provided slabs/*sanplats* for free or as low as MWK 20.00 (\approx USD 0.12).

Ironically, Water For People’s intervention with the seed capital seemed to cause some of the community resistance. Mr Ephraim Jimu, a mason from Ng’ombe village, mentioned that, ‘*People know that we had received free cements for the slab construction,*

²This payment option was developed after realisation that instalment payback period was too long making the instalment option unviable.

³This involves semi-structured interviews with 7 masons and 20 Households within the catchment areas of the masons.

[which] made it difficult to sell as it was perceived to be free slabs'. There was a case in one village where the local leadership demanded a portion of the seed cement as 'tax' for the masons to provide services in the community.

12.3 LESSONS LEARNED FROM THE RMA

12.3.1 Masons are not entrepreneurs

Water for People Malawi trained 70 masons in all, of which only 31 are still actively providing sanitation services to households, and not profitably. The same trend was apparent with the seven masons that were visited during the RMA, *only one* of whom had managed to market, sell and re-invest income realized from sales back into his sanitation business.

A closer look at this mason reveals that his success had everything to do with *him*, rather than the product, price, place or promotion.

Besides the sanitation business, he provided different services of varying kinds to the community around him. He was a cobbler, a builder/mason, a carpenter and an umbrella fixer as well. He had a practical understanding of the principles of ownership and sustainability that drive *Sanitation Marketing*, as compared with other masons who believed that *Sanitation Marketing* was either not practical for the rural setting or should be a social/charitable venture rather than a commercial one. Simply put, he not only gets it – he was living it as an actual entrepreneur.

All the other masons were subsistence farmers and were not entrepreneurial at heart. For *Sanitation Marketing* to work, there is need to find and empower more like him vs. trying to create them.

If the idea is to saturate the market with sanitation solutions than a more comprehensive recruitment method has to be explored to locate individuals with entrepreneurial acumen.

12.3.2 The need to complement household financing

The community resistance that masons encountered is a clear indication that, whatever the intervention, community cohesion and ownership must be maintained to ensure *ease of sell* of products and services and sustainability of the intervention. In the rural context, communities apparently prefer that development interventions benefit the entire community rather than a few individuals. Moreover, earning a profit from the poor is often frowned upon by communities as unethical and even, morally wrong. This cultural context complicates the very essence of a market system which is driven by profit.

However, the RMA uncovered a growing social movement that is bringing community cohesion and ownership through establishing rural savings schemes. This social movement, championed mostly by NGOs like CAWVOC, are promoting Village Credit Schemes where the rural poor establish savings groups of anywhere between 10 and 16 people to build a cash reserve that could be accessed for personal or communal use. These credit schemes have harnessed the power of cooperative action where some groups have reportedly saved up to MWK 500,000.00 (≈USD 3030.00) within just 9 months.⁴

There is a very strong expectation that slabs should be free because of past and on-going subsidy programs In one case, households even refused to pay MWK 20.00 for a slab

– Thomas Logea, Mwalija village Traditional Authority Kasisi

Such community systems could help solve the problems of community resistance and cash-flow into the sanitation businesses if payment structures could be created with such schemes to provide sanitation financing to rural households. That way, communities will not feel that the businesses are profiting from the rural poor since they would be accessing vaster communal resources as compared to scarce household ones.

There is a lot of interest for the slabs, however (people) feel you are profiting from the poor

– Vincent Chikumba, Mason from Traditional Authority Maseya

12.3.3 The market area was limited by the program

One of the stipulations of the program for masons was they could only sell in a geographically defined project area, usually their immediate village. This meant that the mason was not free to seek out customers freely and expand their business on their own terms. This program policy removed the incentive to compete and most likely removed the incentive for masons to seek out new markets for their products.

⁴Petros Mkandawire, Chikhwawa Project Coordinator, CAWVOC, 15th December 2011.

12.3.4 Previous subsidies hurt the program

Past NGO projects and government initiatives defaulted to providing hardware subsidies to households as a way of increasing sanitation coverage. Despite the hard lessons learnt and a new government policy disallowing sanitation hardware subsidies, NGOs and local government continue to provide subsidies that are distorting market prices and creating unsustainable market dependency on subsidies (Figure 12.2).



Figure 12.2 An abandoned latrine subsidized by Water For People in Chikhwawa.

12.3.5 Humanure was not a viable payment option

The alternative arrangement for households to pay for their latrine through harvested compost was intended to provide flexibility to entice market demand. However, the actual returns on humanure were unattractive and not worth the time and resources necessary to collect and bring it to market. For example, one mason went to considerable effort to collect 3 tonnes of humanure that only generated MWK 6000.00 (≈USD 37.00) from his buyer.

The burden of waiting 12 months (the recommended minimum duration needed to effectively kill the pathogens in the sludge is one year in Chikhwawa) and the effort required to go house to house to collect it also proved to be unrealistic for many masons. And in truth, the masons had no technical capacity to measure the safety or value of the manure.

12.3.6 Readjusting the approach

The analysis of these failures does provide some ideas on where to start to create successful models of sanitation as a business in rural areas:

- Advocate to NGOs and government on the implications of subsidy-led programs with a view to reducing them;
- Develop a more comprehensive recruitment/selection criteria for masons where actual entrepreneurs are identified, trained and supported with proper business development services;
- Establish accessible lines of credit for sanitation financing for rural households either between households and rural credit schemes or between traditional MFIs and rural credit schemes;
- Redefine the NGO role in sanitation programming. Over the course of the sanitation marketing program in Chikhwawa Water For People questioned their direct role in program implementation. In future programming Water For People will opt for a facilitator rather than a stakeholder role.

While it is still not proven that sanitation marketing can work in the rural areas of Malawi (and other parts of Africa) it is clear that, if these programs are to stand any chance of being successful, the focus has to be on developing business and creating the

enabling environment for the market to exist, sticking closely to the principles of market-based approaches. A market is more than just a statistic of sanitation coverage gaps – it is people, communities, and households who are willing and able to pay for products and services they really want. It might be that some marketplaces are just too distorted (due to community issues, the presence of subsidies, or the lack of relevant products) to be successful. But Sanitation Marketing is a sound concept if the right market exists or can be established.

12.4 NEXT GENERATION MARKET-BASED APPROACHES – BUSINESS DEVELOPMENT SERVICES

Based on lessons and findings similar to the above case study, Water For People is testing an approach called Sanitation as a Business in Africa (Malawi, Rwanda, and Uganda). This approach focuses attention on proven entrepreneurs and looks to enhance their existing skillsets and build capacity within their businesses. This kind of work is called Business Development Services (BDS). In essence the objective is to develop more effective market environments that allow the delivery of demand led services by small and medium-sized enterprises (SME) working in the sector. It is focused on giving the markets greater freedom to function and encouraging new private sector operators to enter the market and develop improved access to goods and services.

BDS are generally defined as services that improve the performance of the SME, its access to markets, and its ability to compete. BDS provide an array of business services both operational (day to day issues) and strategic (medium to long term issues) that improve performance. On the operational side, this includes services such as information, training, technology development, communications, management of accounts and tax records, and compliance with regulations. The strategic services like marketing, product design, business planning, and obtaining finance help to improve performance. BDS are designed to serve individual businesses, as opposed to the larger business community. It is believed that private sector BDS have significant and positive contributions to the growth and health of the SME and this has been re-emphasized by the expansion of the sector in recent years. Using professional BDS helps SMEs to access better technology, finance, and infrastructure, more successful and efficient management of their business.

Traditionally, BDS have been delivered directly by donor organizations and governments but this approach has been largely unsuccessful as it has failed to reach any scale. In addition the overall sustainability of these support programs is usually low as they are governed by the availability of funding and timeframes of the programs.

The current approach targets existing local BDS private sector companies and looks to build up their capacity as well as have them (instead of external actors) provide the SME with BDS support. This is a shift away from the direct provision of BDS by the donors (through outside consultants) themselves to the SME, which also aims to make the donor more of a facilitator than a stakeholder. Instead of a stakeholder, International NGOs and donors should primarily be viewed as an outside facilitator to this process, helping stakeholders to identify incentives, remedy bottlenecks in the system, and increase stakeholder capacity to perform their roles better.⁵

In the new approach, one part of the external investment is targeted to show the success of BDS, for example by demonstrating that BDS involvement enabled SME to secure commercial financing. This will hopefully raise awareness in the sanitation sector that BDS is effective and nurture a ‘willingness to pay’ for the BDS by the SME, as well as other players. As the overall sanitation market was underdeveloped, particular attention was paid to the recruitment of the BDS so as to identify companies that were poised to take initiative and become ongoing sanitation proponents. It was also important to consider their capacity and ability to broaden their scope to deliver a whole new array of services including technical training and moving new technologies to market (Sparkman & Muyana 2012 – BDS Selection Guide).

Figure 12.3 presents the facilitation model within the market development approach, emphasizing the external actor’s (NGO or donor) role in providing direct support to the BDS provider, rather than BDS services to the SMEs directly, as is traditional.

One example of this approach is Water For People’s current work with Captiva as BDS in Uganda, through a program supported by a grant from the Bill and Melinda Gates Foundation. As a part of their scope of work, Captiva have already selected 15 potential SME (from an initial pool of 108) who appear well positioned to benefit from in-depth BDS and expand sanitation services to many new customers throughout Kampala, Uganda. Purposefully, Water For People took a

⁵The key objective of a market-based approach to sanitation is that the market is strengthened in such a way that sustainable access to sanitation services is increased and spread, specifically among households without access to sewerage services. In order for the sanitation market to remain healthy and grow, numerous participants have to be incentivized to play their role, and have the capabilities to do so.

very low profile in this process to avoid some of the more adverse effects of donor involvement that would ultimately distort the reality of a market-led approach. The strategy is led by Captiva with Water for People only playing a facilitating role. The main BDS activities with these initial SME will focus on helping them prepare so that they have a good possibility to access local commercial financing for expanding their business. In this regard, BDS are assisting the SME with aspects like development of business plans and book-keeping to ensure that they have the necessary documentation and books of accounts that will be required before they can access commercial lending. Water For People will be closely monitoring the expansion of the SME and how this impacts access to sanitation goods and services.

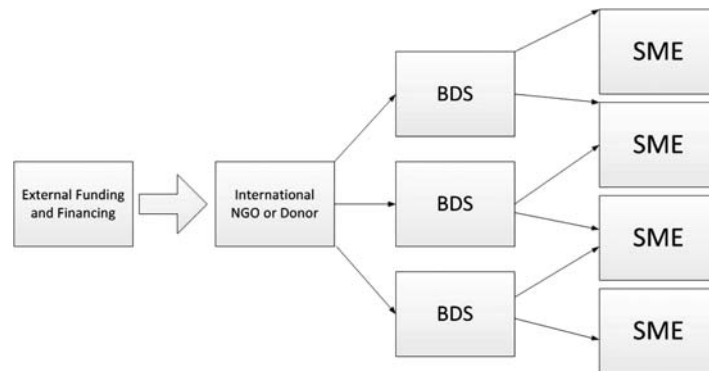


Figure 12.3 Market facilitation model.

In the meantime, it is becoming widely understood that the success of meeting the sanitation challenge hinges to a large degree on activating the sanitation marketplace. As a result, more serious attention and programmatic work geared towards market-based approaches should be considered. NGOs in particular need to rethink their role in the sanitation sector. For a market to be healthy and sustainable, all participants should be satisfied with their roles, have the incentives to continue playing them and even expanding them, and have the capability to do so. For even healthier markets, a viable support structure should be in place, whether from the local public (government) or private (BDS, etc.) sector, and they should also have the incentives and capabilities to carry this supportive role into the future. In such a scenario, the market is not dependent on outside donors, sustainability flourishes and reaching the scale needed to meet the sanitation challenge just might happen.

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Putting it all Together

Chapter 13

Lessons from Rwanda

Nitin Jain

Water and Sanitation Program

Rwanda was selected to host Rwanda AfricaSan 3 through a competitive process assessing locations that offered practical learning opportunities for AfricaSan participants. Rwanda is one of only 4 African countries (the only country low-income country), assessed to be on track to meet the sanitation MDG by the UNICEF/WHO Joint Monitoring Program. The story of Rwanda's sanitation and hygiene sector gave participants confidence that large-scale progress can be made and lessons featured in many sessions. AfricaSan 3 hosted an address by President Paul Kagame of Rwanda and is the only AfricaSan conference to be addressed by a head of state. This chapter provides a summary of lessons learnt from sanitation and hygiene development in Rwanda.

13.1 INTRODUCTION

Rwanda provides a compelling example of approaches that can help governments scale up access to sanitation. According to the 2010 Joint Monitoring Program (JMP) update, household access to sanitation facilities has increased faster in rural Rwanda than in any other country in Sub-Saharan Africa. Almost four million people gained access to improved sanitation between 1990 and 2008. 54% of the population currently has access to improved sanitation, up from a baseline of 23% in 1990.¹ Most of this progress has been with households upgrading 'unimproved' latrines to improved hygienic ones. While the greatest gains have been in rural areas, improvements in urban sanitation are notable as coverage has increased despite tremendous growth in the urban population.

Understanding this progress requires understanding the evolution of the sector through interrelated drivers including cultural factors, the post-genocide reconstruction process, progress in related sectors, and specific sector initiatives. The evolution of the sector can be described through four basic phases of development:

I – Traditional and cultural factors, historical – 1994. Many traditional and cultural aspects have helped more recent improvements in sanitation. Open defecation, estimated at just 8% in 1992, was low historically due in part to colonial laws and regulations. Furthermore, a common language and the government's strategy of drawing on traditional customs have helped drive progress.

II – Focus on reconstruction and reconciliation, 1995–2000. Almost 1.5 million people gained access in the years immediately after the war. The government, donors, NGO's, and communities focused extensively on housing reconstruction programs, which included latrine construction, and other policies and initiatives targeting rehabilitation and reconciliation. While sanitation and hygiene promotion were not always the central goal of these efforts, housing reconstruction had an immediate impact and many initiatives and reforms in this period helped lay important groundwork for the later years.

III – Consolidating the sanitation strategy, 2000–2005. As significant economic and social improvements continued to be made, the government started shifting its focus from short-term measures to recover from the war and genocide, to long term development plans and strategies. National programs laid the groundwork for the current hygiene promotion campaign.

¹While JMP numbers differ from government figures, both sets of data show a similar scale of progress. This Chapter uses JMP for consistency.

IV – Accelerating progress, 2005–present. Recent years have seen government giving emphasis to taking stock and accelerating results. Ambitious targets have been set through national policies and are implemented at the community level through a strong decentralized model of governance, supported with rigorous systems of accountability that draw on traditional practices.

13.2 TRADITIONAL AND CULTURAL FACTORS, HISTORICAL – 1994

Rwanda is one of the most densely populated countries in the world, with almost 400 people per square kilometer (NISR, 2009). Severe economic stagnation in the period leading up to the war and genocide of 1994 was further exacerbated by the tremendous human toll of the war, with an estimated 1 million victims of the genocide, two million refugees outside Rwanda, and some 1.5 million people internally displaced (UNHCR, 2000). In addition to the physical and mental effects, the extended years of war had a significant economic impact on the country. Some estimates suggest the damage caused by the conflict between 1990–1993 cost the country up to \$100 million a year (United Nations Development Programme, 2007).

13.2.1 Drawing on traditional factors

Despite these entrenched economic and social challenges, there have been several positive factors within Rwanda's historical context that have contributed to improvements in sanitation coverage. A survey in 1992 estimated just 8% of rural households resorted to open defecation (NISR, 1992). Furthermore, basic hygienic practices, such as handwashing, have also been common throughout the country. Colonial rules and regulations played an important role by establishing public hygiene laws as far back as 1926. A decree from 1959, for example, enforced the construction of latrines in every house, shop, and establishment.

Traditional factors are often seen to impede improvements in sanitation. In contrast, Rwandan society also has a number of traditional institutions and social structures that the government has called upon to strengthen the reconciliation process and to support reconstruction on a large scale with limited resources (GoR Ministry of Finance and Economic Planning, 2002). By returning to these traditions after the war, Rwanda's leaders were able to draw on social capital to help solve the severe socio-economic problems, reform agriculture and the economy and, most importantly, foster good governance. In more recent years many of these have been formalized into the administrative system, making it easier for national policies and targets to be implemented within a decentralized structure.

13.3 RECONSTRUCTION AND RECONCILIATION, 1995–2000

The challenge in the years immediately after the genocide was to stabilize the precarious condition of the country through reconstruction and reconciliation, reintegration of the survivors and returning refugees, and rebuilding social structures. Recognizing that acute poverty only exacerbated the difficult circumstances, the government's priority in the aftermath of the war was to tackle poverty by putting in place national policies and building the institutional frameworks necessary to transform the rural economy. Structural reforms at this stage prioritized reforms in agriculture, health, and education. While sanitation and hygiene promotion weren't always central to these efforts, many initiatives and reforms in this period helped lay important groundwork for the later years.

13.3.1 Housing reconstruction and villagization

The reconstruction process, which included the construction of improved latrines in new housing, had a very significant impact on sanitation coverage, with almost 1.5 million people gaining access between 1995 and 2000. Villagization, or *umudugudu*, was a cornerstone of the government's efforts to deliver basic services for the thousands of returning families and to confront the demands of land scarcity. The government saw *umudugudu* as a way to provide security for scattered families and improve services including schools, health centers, water, and roads at a lower cost. Developing detailed plans with specific technical requirements helped attract donor funding. Supported by relief agencies, an estimated 300,000 houses, most of which included latrines, were constructed under the program by 2004 (IRIN, 2004).

13.3.2 Land reform

Given the complexity of reintegrating returning refugees with the number of families that died in 1994, ownership of housing and land was a pressing issue for the government to tackle (Wyss, 2006). Historically, land belonged to the state and citizens were essentially given the right to develop it for their living. Following the war, the government changed this approach and, in 1996, started developing a new land law to give full ownership to all landowners (GoR Ministry of Lands, Environment Forests, Water

and Natural Resources, 2004). A key element of the reform was to extend property rights to women, who constituted more than 60 percent of the surviving population after the war. Securing property rights was recognized as an important aspect of economic reconstruction because title to land improved people's ability to borrow money and created incentives to invest their own money in better housing (Global IDP Database, 2004).

13.3.3 Linkages with health sector reform: community health workers

Like most other services in 1994, the health sector in Rwanda was in disarray. As basic capacity was a severe constraint, the government established institutes such as the Kigali Health Institute to train a cadre of skilled doctors and nurses and tapped into community level health workers to extend services to households (IMF Internim PRSP, 2000). Setting up these training institutes was an important factor in building local capacity within the health sector, and may have contributed to important policy decisions in the next phase that emphasized a shift from curative to preventative approaches to improving health.

Community health workers evolved from volunteer health workers that were recruited to provide support for traumatized individuals in the wake of the genocide (Matthews, 2009). Their role was gradually expanded to include basic preventive services including sensitizing community members on child health, family planning, nutrition, hygiene, and various diseases at monthly village meetings (AMREF, 1997). Under the program, each village elected a male and a female volunteer to act as community health workers for the general population. Their role was further formalized in the 2005 National Community Health Policy and in subsequent reforms. Though not government employees, the 45,000 community health workers have become more formally recognized. They are overseen by the Ministry of Health (MINISANTE) through a cadre of around 450 health officers who have targets for improving sanitation included in their performance contracts. This combined network of health offices and community health workers, backed by closely monitored performance targets, is now driving a scale of promotion that is a significant factor in motivating households to maintain and upgrade their latrines.

13.3.4 Shifting from emergency relief to a development path: Vision 2020

Vision 2020 articulated the government's goals in transforming Rwanda's economy and, for the first time, placed access to improved sanitation at the center of Rwanda's development plans (GoR, 2002). The Government developed Vision 2020 between 1998 and 1999 through consultative meetings with citizens throughout the country, laying the framework for all the sector policies and strategies that would emerge between 2001 and 2005. Through it, the government outlined a path to transform Rwanda into a middle-income nation in which Rwandans are healthier, educated and more prosperous by 2020.

13.4 CONSOLIDATING THE STRATEGY, 2001–2005

By the early 2000's, the government was able to consolidate its vision and started shifting its focus from short-term measures to recover from the war and genocide to long-term development plans and strategies. These included critical policies and strategies for the sanitation sector. Sanitation and hygiene emerged as important interventions as stakeholders saw more evidence showing the need to shift from curative to preventative policies. Decentralization was a key reform of this period, laying down a basic institutional framework to improve sanitation coverage (GoR Ministry of Local Government, Community Development and Social Affairs, 2004). Participatory Hygiene and Sanitation Transformation (PHAST) and Hygiene et Assainissement en Milieu Scolaire (HAMS) programs were initiated to promote hygiene and sanitation by influencing positive behavioural change and adoption of better practices among Rwandan communities, they also introduced concepts that later evolved and were mainstreamed under the national community health promotion program.

13.4.1 Placing sanitation at the center of poverty reduction strategies

While the rural water supply sector started being actively managed by the government in the sixties and an urban utility was created in 1976, the first National Sectoral Policy was only developed in 1992 (GoR, 2010). It was subsequently revised four times to include emerging issues including: demand responsive approaches (1997); decentralization and reinforced participation (2004); and hygiene, sanitation, and environment (2010). Until 2010, the policies covered sanitation but, in practice, mainly targeted water supply. Financing within the sector focused on water development. Many donor projects included a sanitation component but this was often ignored in implementation. Health systems emphasized curative approaches. From 2010 greater donor priority was given to preventive measures and in response, the government started investing in effective low-cost promotional strategies to encourage household investments in improved sanitation.

In 2002, the government introduced its Poverty Reduction Strategy Paper (PRSP), developed through an extensive national consultation process, to guide national planning efforts to achieve the targets outlined for Vision 2020. The PRSP recognized that access to water and sanitation was essential to the overall strategy and vision of improving lives and reducing poverty by:

- Improving maternal and children's health;
- Improving enrolment in schools, especially for girls;
- Improving security, particularly for women; and
- Reducing health expenses for households and the Government, particularly for diseases like diarrhea.

13.4.2 Increasing productivity because of better health

This would later evolve under the second Poverty Reduction Strategy Paper, known as the Economic Development and Poverty Reduction Strategy 2008–2012 (EDPRS). Under EDPRS, the government set itself an even more ambitious goal of increasing the proportion of the population with sanitation services from 38 to 65 percent (GoR, September 2007). EDPRS also aligned responsibility for different sectors between the different ministries, districts and other stakeholders. While the first PRSP focused on managing a transitional period of rehabilitation and reconstruction, the EDPRS emphasizes growth and poverty reduction.

In parallel to the PRSP, the government started drafting and revising sector strategies and, in 2004, published its first water and sanitation policy which defined guidelines for efficient use of resources and integrated new aspects such as decentralization, participatory approach, and privatization (World Bank, 2006). The 2004 policy aligned government goals with MDG objectives and Rwanda's Vision 2020. It also complemented the government's 7-year program which emphasized decentralization and participatory approaches to delivering services.

Following the passage of the constitution and presidential and legislative elections in 2003, the government acted to implement institutional reforms to implement the new policy and rapidly increase the scope and quality of service delivery. In related shifts in the health sector, the government prioritized approaches that stimulated public demand for services, aligning health districts with the decentralized local government districts, and improving accountability of facilities and personnel to local government institutions. The community health worker system, while still based on volunteers, was expanded and given a larger mandate, and health facilities, personnel, and communities were incentivized to achieve results with the introduction of performance based financing.

13.4.3 Decentralization and donor harmonization

The government's main strategy to achieve good governance and sustainable economic development was to decentralize decision making to bring the development process closer to the people (GoR, September 2004). The policy drew on lessons from before the 1994 genocide, a period of poor governance characterized by highly centralized authority and lack of citizen participation in leadership and development. The government adopted the National Decentralization Policy in May 2000 as a mechanism to achieve three main goals: good governance; poverty reduction; and efficient, effective and accountable delivery of services, including improved sanitation. To implement the policy, the government set up the Common Development Fund (CDF) in 2002, with the goal of channeling 10% of the annual national revenues to support projects and programs planned and implemented at the district level (GoR, 2006).

The CDF was designed to mobilize and target donors funding. The proliferation of aid partners with different approaches, mechanisms, and agendas had mixed results. On one hand, the influx of millions of dollars contributed to reconstruction of housing and services, thereby improving health indicators including access to sanitation. The influx of external resources, however, often only reflected donor priorities leading to a disproportionate expenditure of funding on too many sanitation models that were not designed and distributed according to the local context. These donor-driven programs were focused on constructing facilities and ignored building local capacity and sanitation promotion programs. Furthermore, funding converged on a handful of districts leaving other areas behind. In order to bring some measure of control, the government started assigning different donors and NGO's different districts and required that their approaches aligned with national strategies.

13.5 2005 – PRESENT: ACCELERATING PROGRESS

Since 2005, there has been a positive, results based shift within the government. The international community and the government have responded to the sanitation crisis and the momentum from AfricaSan and the eThekweni declaration has helped raise the profile of sanitation within the entire continent. Senior government officials right up to the President have actively supported key interventions in the sector. The President has often singled out hygiene and sanitation, noting that

access to and use of hygienic sanitation facilities cannot be donated in the form of aid. These remarks point to the changing perception that personal hygiene and wellbeing are closely linked with economic development.

13.5.1 Community based health promotion

The Environmental Health Policy of 2008 and the National Water and Sanitation Policy of 2010 were developed based on evidence and knowledge from the previous decade of experience in Rwanda's government-led effort to promote sanitation. The key change was in the evolving role of the community who, as beneficiaries, were increasingly expected to view their own health and wellbeing as their most valuable asset. The Environmental Health Policy concretized the shift in the government's strategy to improve health indicators from curative to preventative approaches. In December 2009, the Environmental Health Desk of the Ministry of Health launched a Community Based Environmental Health Promotion Program (CBEHPP) to build on the community-based approaches tested under PHAST and HAMS. CBEHPP is described as 'a hygiene behaviour change approach to reach all communities and empower them to identify their personal and domestic hygiene and environmental health related problems (including access to safe drinking water and improved sanitation) and solve them' (GoR Ministry of Health, Environmental Health Desk, 2010). The Health Sector Strategic Plan 2009–2012 further supports this by identifying sanitation as a high-impact intervention that the government will scale up (Government of Rwanda Ministry of Health, July 2009).

Further impetus for progress was provided following the re-election of the President. In 2010 he dramatically raised the profile of CBEHPP by launching the Hygiene and Sanitation Presidential Initiative (HSPI), noting that hygiene and sanitation in homes, schools, offices, restaurants, and other public places form an important foundation for development because a healthy body in a healthy environment is a prerequisite for development. His party manifesto also urged different ministries to ensure full sanitation coverage countrywide by 2017, beating the vision 2020's timeline. This level of support has had an important effect in accelerating efforts to mobilize resources and implement CBEHPP in all 30 districts.

2010 also marked the first national policy that drew together the key concepts from water and sanitation policies from different ministries into a holistic approach. The National Water and Sanitation Policy of 2010 focuses on six sanitation related fronts: household sanitation, institutional sanitation, collective sanitation, storm water drainage, solid waste management and institutional sector framework. This policy draws greater focus to urban sanitation, defining a policy framework that supports the Sanitation Master Plan for Kigali town.

13.5.2 Strengthening decentralized service delivery

While developing policies and national commitment to improving access to sanitation has been critical to progress, the process of translating these national targets and policies into action on the ground has been Rwanda's biggest success. Adapting *Imihigo*, a tradition that Rwanda has institutionalized as a means to enhance local government reform and stimulate development, has been the key to this success.

Imihigo draws on a cultural practice of publicly committing to achieving specific goals. Failing to meet these commitments is a dishonor for the individuals and the community. Following the reforms in the early 2000's, Rwanda's Ministry for Local Administration (MINALOC) and the Ministry of Finance and Economic Planning (MINECOFIN) developed performance contracts in the tradition of *Imihigo* holding the President of Rwanda and the district leaders accountable for specific goals in each district, including sanitation coverage. These contracts have now been signed at all levels of the decentralized system including households and individuals.

The signed contract between the head of household and local leaders includes baseline data for the district, district development targets, performance indicators, and the budget allocations for each target (GoR, June 2007). *Imihigo* evaluations are carried out three times a year by a task force comprising the Prime Minister's Office, MINALOC and the President's Office. Each district presents its evaluation findings to the task force in the presence of stakeholders.

To strengthen the decentralization process, in 2007 the government developed the Rwanda Decentralization Strategic Framework (RDSF) to reinforce the link between good governance and the attainment of the targets under Vision 2020, the MDGs, and the EDPRS.

13.6 LOOKING AHEAD: EVALUATING SECTOR PERFORMANCE

The Country Status Overview (CSO), which benchmarks African countries and helps countries assess their own service delivery pathways for turning finance into sanitation services, shows that Rwanda is currently performing above the regional peer-group average for both rural and urban sanitation (AMCOW, 2011). There is, however, still a long way for Rwanda to meet its target of 100% sanitation coverage and, more importantly, sustain the gains. The CSO points out that policy tools with agreed national

targets and a subsector policy are largely in place, but there is still institutional fragmentation, mainly because the process of decentralisation is still fairly recent. The central government is developing a coherent and effective coordination role, but districts are not yet sufficiently informed and mobilised.

While promotion programs to trigger demand for better sanitation have been effective, the market for rural sanitation on the supply side still needs to be strengthened. Improved sanitation technologies are still too expensive for many households and the network of suppliers and masons is weak. CBEHPP will address this through incremental upgrades, where communities focus on small actions that they can afford, but private sector interest in investing in sanitation markets needs to be encouraged.

The CSO also highlights that there need to be specific reforms to the budget structure to disaggregate subsector spending. The Africa Infrastructure Country Diagnostic report observes that Rwanda has been able to make considerable progress moving people up the sanitation ladder with very little public spending (Morella *et al.* 2008). Looking ahead, however, the government will need to plan on investing more if it is to meet its targets. The annual capital investment to provide improved sanitation infrastructure for just over 500,000 people a year is estimated at US\$ 41 million per year. Under the government's strategy of leveraging household funds by investing in sanitation and hygiene promotion, users are expected to bear around 70 percent of these costs. The government has already planned for a budget of US\$ 9 million per year, of which US\$ 8 million is allocated for rural sanitation. This leaves a deficit of US\$ 4 million year mainly in urban sanitation. Given the rapid population growth of the capital Kigali, which is expected to grow to over a million people by 2015, there is likely to be demand for more sophisticated and expensive technology sanitation options including sewerage.

13.7 CONCLUSIONS

From the ruins of years of war and genocide, Rwanda has moved to improve household access to hygienic sanitation facilities faster than in any other country in Sub-Saharan Africa. Rwanda's experience shows that progress is possible even in these difficult circumstances. Three key elements stand out from Rwanda's experience that other countries can adapt and implement to improve access to sanitation and improved hygiene:

Turning crisis to opportunity: In the immediate aftermath of the war, the government of Rwanda, donors, relief agencies, and NGO's embarked on a massive housing reconstruction program that brought improved sanitation facilities to hundreds of thousands of people. While this was a response to unique circumstances, other situations can provide opportunities for countries and donors to prioritize sanitation and leverage funding. Furthermore, while sanitation and hygiene were not always central to other structural reforms such as land reform during these years, there are lessons to be learnt on how progress and reforms in other sectors can influence and unlock gains in the sanitation sector.

Formalizing traditional elements into administrative frameworks: Drawing on familiar traditional practices to develop and formalize administrative frameworks has been a particularly successful strategy in Rwanda. While developing policies and national commitment to improving access to sanitation has been critical to progress, the process of translating these national targets and policies into action on the ground has been Rwanda's biggest success. Harnessing *Imihigo*, a tradition that Rwanda has institutionalized as a means to enhance local government reform and strengthen ownership and accountability, for example, made it easier for the government to implement national sanitation strategies into decentralized networks that reached right down to the smallest administrative unit in each village. Similarly, the *Ubudehe* program, based on the tradition of mutual assistance, provided a successful network that helped the government target and support poor households. Similar approaches can be adopted in other countries, particularly other post-conflict nations.

However, while some traditional practices can be beneficial, there are others that the government broke down in order to meet new challenges. Perhaps the most important example in the context of sanitation was empowering the role of women within Rwandan society. Extending the right to own land, for example, was an important reform that improved access to financing and encouraged investments in permanent housing.

Forging strong political will supported at all levels of decentralization: Translating national policies and strategies into results on the ground is critical to improving access. However, these gains are only possible at the national scale if political leadership actively supports and drives progress towards the targets. In Rwanda, this support has come from the very top, where the President identified sanitation as a key approach to reducing poverty under national poverty reduction strategies and other policies. This level of support was unprecedented and was critical in driving action to putting the country on a development path that includes access to these basic needs. Support from lower levels of administration was no less important. While devolution may begin at the centre, it must find equally willing expression at all levels if it is to cascade down to access on the ground.

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Chapter 14

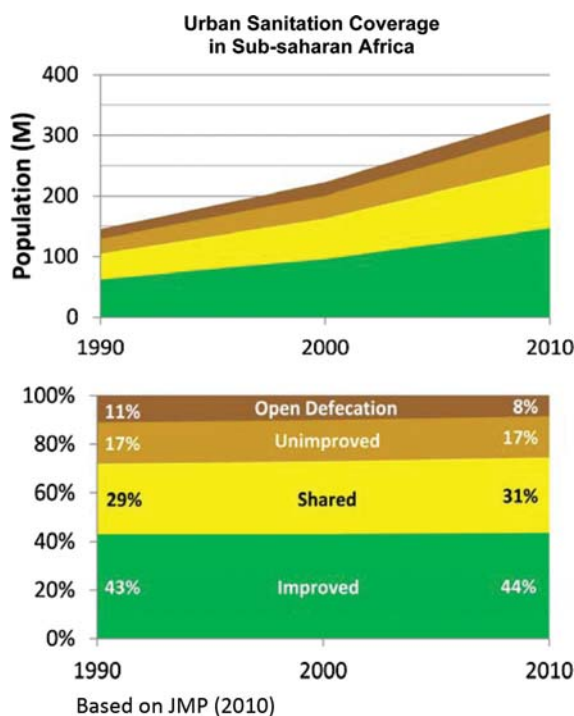
Sanitation in urban areas

Peter Hawkins, Isabel Blackett, Christiaan Heymans and Jeremy Colin

As Africa develops, it is also urbanizing, with the proportion of the population living in cities and towns having risen from 28% in 1990 to about 38% in 2010. People come to African cities for work and a new life, but many are confronted by the squalor of uncontrolled informal settlements. Improving urban sanitation services in Africa is amongst the continent's most pressing challenges.

14.1 SCALE OF THE CHALLENGE

With an annual growth rate of 4.3% Africa's urban population has more than doubled from 1990 to 2010, from 145 million to 337 million.¹ According to UN-Habitat, almost two thirds of these people live in slums, which are growing at a rate of four to five million people per year. Sanitary conditions in these slums are generally lamentable, and public sector interventions to alleviate the situation have by and large been minimal.



¹The figures quoted in this section are based on the JMP report of 2010.

As the charts show, urban sanitation coverage in Sub-Saharan Africa has barely increased in percentage terms over 20 years, and the number of people practicing open defecation has risen by 77%, from 16 million to 28 million. Clearly, ‘business as usual’ will not deliver improved sanitation to Africa’s cities.

The JMP figures hide a huge problem: they address only access to sanitation facilities, whilst in urban areas where there is no space to dig a new pit when a current latrine fills up, hygienic emptying services are an indispensable part of an adequate sanitation service. There are very few statistics to give an insight into this issue, but there is little doubt that many of the sanitation facilities counted by the JMP as ‘improved’ are not hygienically emptied and cause serious pollution and risks to public health when emptied by traditional means.

The CSO2 analysis (AMCOW, 2011) of African countries shows that there are huge disparities in access to improved sanitation in urban areas according to income levels, with the lowest quintile having around 50 percentage points less coverage than the richest. It also shows that of the four subsectors (urban and rural water supply, urban and rural sanitation), urban sanitation has the weakest service delivery pathway.

There is therefore a pressing need to address the urban sanitation challenge, with emphasis on including slum dwellers and the poor, amongst whom the problem is concentrated. In the absence of such concerted intervention, cholera, diarrheas and worm infections will continue to abound, and education, productivity and the quality of life will continue to suffer.

14.2 MEETING THE CHALLENGE: WHAT WE KNOW

14.2.1 Focus on service delivery

While the many and varied urban sanitation challenges in Africa are fairly well known, there is a notable lack of clarity and consensus in the sector on strategies for addressing the challenges and achieving sustainable progress at scale. However, in a recent WSP study on urban sanitation (Hawkins, 2013), the overarching conclusion is that any effective response to the challenge should view it in terms of service delivery rather than infrastructure, as has been the tendency in the past.

Put simply, African cities do not have sufficient space to be able to accumulate excreta around where people live. The current situation where a large proportion is buried in backyards or dumped into natural or man-made drainage ways is neither sustainable nor healthy, and a series of inter-linked services is needed on a daily basis to ensure its removal and disposal in a way that is safe in both environmental and public health terms. Even in the case of the 10%–20% of urban households served by sewerage systems, management of these systems is typically very weak, and broken down pumping stations and non-functional wastewater treatment plants are the rule rather than the exception.

There is therefore a need to make a fundamental shift in thinking away from infrastructure towards a concept of service delivery. Cities need effective urban sanitation systems, consisting of sustainable processes and service providers that will ensure the safe capture, storage, transport and treatment of excreta, not just investments in hardware. This in its turn requires a focus on outcomes rather than inputs, just as in rural sanitation it is now accepted best practice to focus on behaviour change rather than the construction of toilets *per se*.

14.2.2 Existing urban services and infrastructure

Urban sanitation deficiencies in Africa are diverse and there is no common typology of what is ‘broken’ and needs to be fixed. Towns and cities have a mixture of on- and off-site sanitation facilities and services, some provided by householders, some by private developers and some by the municipality or utility. Only some of the challenges are physical, and it may take decades to achieve safe management and disposal of excreta and wastewater city-wide, supported by consumer awareness, sustainable financing and effective systems of decision-making and service delivery.

In established low-income settlements it is rare to find a complete lack of sanitation facilities. Sanitary conditions may nevertheless remain poor due, for example, to poorly constructed or maintained facilities; inadequate water supplies; toilets discharging into open drains which are blocked with uncollected garbage and frequently overflow; and communal toilet facilities which are filthy, malfunctioning and possibly abandoned. This is exacerbated by inadequate services for managing the fecal sludge from on-site facilities. Improving sanitation in such circumstances can be much harder than in communities where there is a complete lack of infrastructure and services so that they present as a ‘blank sheet’.

There is also wide consensus amongst sector practitioners on the need for adequate drainage and solid waste management as an essential complement to excreta management services. Virtually all sanitation systems place the excreta underground (in sewers, septic tanks or latrine pits), and these do not function effectively when flooded; excreta then becomes mixed with stormwater and flows all over flooded areas. Effective drainage is needed to deal with this, and this in turn will not function if it is choked with uncollected solid waste. This is a common situation in Africa; with many of its largest cities located in

coastal or riverine areas, low-lying and poorly drained land unsuitable for formal urban development is often occupied by dense unplanned settlements, and these account for a significant proportion of low-income residents.

14.2.3 Conceptual frameworks, tools and resources

A number of conceptual frameworks and approaches have emerged in recent years for the planning and design of poor-inclusive urban sanitation improvements. These include the Strategic Sanitation Approach, developed in Ghana in the 1990s, Sanitation 21, developed by IWA, and Community-Led Urban Environmental Sanitation, developed by SANDEC. Their emergence was to some extent a response to the fact that too many urban sanitation investments fail to deliver all of their anticipated benefits.

A limitation of these frameworks is that they are predicated on certain conditions being in place at city level, but which in practice rarely are. Lack of capacity for sanitation planning and stakeholder consultation is also a critical gap. Even if city authorities were willing and able to use the frameworks, much remains to be done to develop processes for harmonizing them with established municipal capacities, systems and budgeting processes.

For now, the principal value of these frameworks is that they have encouraged a holistic view of urban sanitation that goes beyond infrastructure, placing greater emphasis on needs of users, including the poor, and the functionality of sanitation service delivery systems at local and city levels.

There is growing recognition that there is a political dimension to decision-making on sanitation. Several donors have therefore been using political economy analysis to understand what factors drive or inhibit government interest in, and commitment to, sanitation, with particular regard to the needs of the poor. There is little doubt that the application of such analysis is of great value for contextualizing policy, resource allocation and operational decisions on urban sanitation programming.

14.2.4 Creating an enabling environment

Whilst there is a clear need in the water and sanitation sector to establish an ‘enabling environment’ for progress, little consensus and clarity exist on what this means in each particular context. What is clear is the need for governments to take urban sanitation more seriously, prioritize support to the poor, allocate more resources to it and establish viable incentives and systems of accountability, so that the agencies responsible expand access to improved facilities and improve operations and maintenance. Although some partial attempts to address this issue have been made in a few African countries, none have managed to do so in as comprehensive a manner as was done, for instance, under the Indonesia Sanitation Sector Development Program (ISSDP) or the National Urban Sanitation Policy (NUSP) of India.

Finance

Presently, when large investments are made in the water and sanitation sector, it is usually water supply that receives the bulk of the funds. Very few countries have put in place sector financing strategies for urban sanitation and some governments are reluctant to allocate funds because improvements (often assuming sewerage as the norm) are perceived as capital-intensive, rarely generate significant revenue and do not always deliver the benefits intended. Wasted investments are common and both central and local governments often have no clear idea about what constitutes a good project that is worth investing in. The challenge is not simply to increase the level of funding available to the sector, but to use funds more effectively and to include the poorer sections of the urban population, where the health risks are typically greater.

Unfortunately, there is little evidence of new initiatives to strengthen sector financing frameworks for urban sanitation, and the CSO studies show that internally sourced public sector capital funding for urban sanitation corresponds to less than 15% of overall requirements. Instead, the emphasis seems to be on how to maximize the impact of donor funding. There is a need to explore how national urban sanitation programs operating within the government framework could be established to support cost-effective, poor-inclusive sanitation planning and investment.

However, there have been some notable successes in capital financing at city level. The use of sanitation surcharges to fund on-site sanitation investments in Ouagadougou under PSAO is a rare case of a utility raising enough revenue to cover not only its operational costs but also some new investment in on-site sanitation.

There is growing consensus that some subsidies may be required for the poorest users to gain access to adequate sanitation, but targeting is an issue. For example, PAQPUD in Senegal (Section 14.4.1) used geographical targeting, working only in peri-urban districts known to have a predominantly low-income population. However, within these areas it was mostly the less poor households which benefited. Concentrating subsidies on the minimum level of service may go some way towards addressing this – as for instance in the improved latrines program in Mozambique during the 80’s and 90’s. There is a

trade-off to be made between the increased transaction costs of better targeting, and the cost of subsidizing those who do not need it. Consideration also needs to be given to striking the right balance between interventions that benefit the poor directly and those that create viable services for the city as a whole.

Institutional arrangements

There are no ideal institutional arrangements for providing poor-inclusive urban sanitation services; what works best is location-specific. However, assigning responsibility for urban sanitation clearly and unambiguously to a single lead agency has been a significant factor in the success of some programs, including PAQPUD in Senegal and PSAO in Burkina Faso (Section 14.4.2). Some programs have established viable institutional arrangements not through the creation of a single lead agency, but rather by improving coordination between the various stakeholders or establishing new multi-stakeholder partnerships. Nevertheless, the coordinating role is important even where implementation responsibility is shared, and there is need for a *primus inter pares*.

Improving sanitation in slums and other low-income neighborhoods where standard service delivery options may not be applicable usually requires direct engagement with households, in order to select service options that are both acceptable and affordable. NGOs, often working closely with CBOs in the target communities, can have a lot to offer here. There is little recent evidence, however, of NGOs on their own facilitating at-scale urban sanitation improvements, highlighting the vital role of local government and/or public service providers.

Small-scale, informal private sector participation in urban on-site sanitation is well-established, particularly in latrine construction and pit emptying. Participation of the formal private sector on a larger scale in sewerage is less common except where combined with water supply. Where large private sector contracts have been established for the operation of city water and sanitation services, rarely do these include specific provisions for expanding access to improved sanitation services for the poor.

Norms and regulations

Official technical standards relating to sanitation, whether national or enshrined in local byelaws, are often quite exacting, and it may not always be possible to comply with them fully, especially when making phased improvements as finances allow, or working in densely populated informal settlements with irregular layouts. In some cities, pit latrines are illegal, although there may be no other realistic alternative, and in Accra, Ghana, bucket latrines have been banned three times over the last 20 years, without a concomitant upgrading program. A degree of flexibility and phasing in the application of standards is therefore important, and where government agencies are unwilling to compromise, this can prevent the realization of significant improvements.

At the international level, too, donor agencies are bound by very strict environmental standards, which may result in the collecting and treatment a small amount of excreta to a very high standard, rather than the more important task of controlling fecal pollution on a larger scale in places where the highest concentrations of people live.

14.2.5 Infrastructure development

In many cities in Sub-Saharan Africa, there is limited coverage not only by sewerage but also storm water drainage and other basic infrastructure such as reliable water and power supplies, street lighting and surfaced streets. The sanitation needs in such locations are usually obvious and the range of potentially viable technical options for improvement is not difficult to establish. In such circumstances the major constraints may be more of a legal, political or institutional nature.

However, the situation may be more complex, particularly where many households use a water-seal latrine with a septic tank or pit, with the overflow discharging into a nearby drain or sewer. Such situations, where the division between on-site and off-site sanitation is blurred, is increasingly common, and it is perhaps surprising that there is no common understanding among government and development partners as to what, in technical terms, the priority problems are in such situations and how they should be resolved.

Sewerage

There is little evidence of large-scale investments in networked services that have benefited the poor at scale. Far more has been written about the limitations of sewerage investments, and what can go wrong.

Entrenched beliefs that sewerage is the only 'proper' form of urban sanitation can lead municipal or government officials to choose this option even where it is not technically viable. Perverse incentives around contracting may in any case reduce the motivation to develop cost-effective solutions. That said, on-site sanitation also has its limitations; as population densities

grow and water consumption increases, it becomes increasingly difficult to manage the large resulting volumes of wastewater, and lack of space limits the use of pit latrines, particularly those that need to be relocated when the pit fills. Finding more affordable and pro-poor options for providing sewerage is therefore a priority, especially where population densities have already reached this tipping point.

The evolution of condominial sewerage in Brazil and some other parts of Latin America has been documented extensively. Why the approach has not been taken up more widely is the subject of much debate but it appears that enabling conditions for the introduction of condominial sewerage, such as technical capacity, financing mechanisms and the regulatory environment are simply not in place yet in much of Africa. Another type of low-cost technology, settled sewerage, has been installed in Dakar, and is currently being developed in Lusaka. This is an option which should be explored further, as in the normal course of events there is a tendency for users of on-site facilities to upgrade towards water-seal systems, which all too often end up discharging into street drains or sewers.

Although these types of system, and the decentralized wastewater treatment systems (DEWATS) championed by the German NGO, Borda, were conceived as community managed, experience has shown that the public sector or utility needs to accept a co-management responsibility by monitoring the facilities and providing technical support and funding for repairs and maintenance, as well as on-going community promotion.

Community toilets

Much has been learned and documented in recent years about effective approaches to the development and management of communal toilet facilities in low-income residential areas. Challenges nevertheless remain, particularly with operation, maintenance and financial viability. It is also questionable whether community toilets can, on their own, fully address the sanitation needs of slums and other low-income areas. Convenience and safety are important issues here – particularly for women.

Much less has been written about shared toilets, with some notable exceptions such as the project supported by Practical Action in Mukuru, Nairobi (Section 14.4.3). This is surprising given that, where space allows but household toilets are not practicable or affordable, shared toilets reserved for the use of small, self-selected groups may be preferable to communal facilities and the sense of ownership created may encourage users to keep the facilities clean.

Integrated slum upgrading programs

Slum upgrading offers the potential to improve sanitation (and other) services for the urban poor on a large scale. Some programs set out to address the needs of slums comprehensively by removing the political and legal barriers which leave slums outside the normal framework of public service provision and city governance, and it is increasingly (but by no means universally) the case that African governments and municipalities are explicitly or tacitly recognizing at least a certain level of land use rights in unplanned settlements. However, there is little evidence of sanitation improvements at scale being introduced under slum upgrading programs. This is an area where there is potential to be tapped, by raising awareness on sanitation amongst urban planners, who are generally in charge of slum upgrading.

Fecal sludge management

After many years of neglect, this subject is receiving increased attention from development agencies and research organizations, though there has so far been no breakthrough in establishing and scaling up services for urban populations in general, or for low-income areas in particular, where the problem is most acute. These efforts need to continue, as the bulk of low-income households are likely to continue using on-site sanitation for the foreseeable future.

Emerging lessons include:

- As many houses in unplanned areas have very limited road access, emptying must in many cases be effected by manual or manually maneuverable mechanical equipment, and then transferred to a tanker vehicle suitable for road transport to the treatment plant. Given frequently poor traffic conditions, it is desirable in the larger cities to have a number of such plants decentralized around the city to reduce transport times, which are costly to operators. Depending on local conditions, transfer facilities (tanks) may be necessary, though they may be quite simple. However, ensuring the regular emptying of transfer tanks may be a challenge. Alternatively, some operators may prefer to use a non-pressurized tanker to accept wastes directly from primary emptying.
- There is a need for a range of emptying equipment, from buckets, through handpumps to trash pumps and vacuum systems, as well as rakes and hooks to deal with solid waste that enters the pits, and these are gradually being developed in a number of places.

- Fecal sludge management can be greatly facilitated by addressing the upstream end of the process – the latrine itself. Thus in South Africa, pour-flush latrines are being introduced to minimize the ingress of solid waste, which is the main factor leading to a need for manual rather than vacuum emptying. This also underlines the need to consider solid waste management alongside excreta management.
- There are a number of initiatives under way to reinvent the bucket latrine. This has the advantage that the pit does not need to be emptied – the ‘pit’ becomes a container that can be tightly covered and removed for disposal of the contents and cleansing at a purpose-built facility. It is also easily accommodated even in very high occupancy accommodation, and, as it involves virtually no on-site investment, may be attractive to slum landlords, or even tenants acting alone.

14.3 THE WAY FORWARD

14.3.1 Service delivery framework

Available evidence shows that to achieve poor-inclusive urban sanitation it is necessary to escape from the ‘conventional’, infrastructure-based approaches widely adopted, towards an approach based on the delivery of a series of complementary services. Whilst it is clear that there is no single universally applicable way of doing this, it is possible to identify a set of key principles, based on cases where urban sanitation improvements have benefitted poor communities. These are summarized in the framework set out below, comprising three types of services which need to be combined to achieve poor-inclusive urban sanitation:

- *Customer Services:* These include supply of materials, construction of sanitation facilities, management of public toilets, and desludging services. They are typically provided directly to users and are often viable on a commercial basis, as they have a large private good component, although the poorest households may need targeted subsidies to access them. They are suitable for provision by small businesses, but may also be provided by a utility company.
- *Public Services:* These include treatment of fecal sludge, operation and maintenance of sewerage systems, maintenance of drainage systems, and solid waste management. They are delivered downstream of users, serving the general public by keeping the environment clean and healthy. They produce public goods, and as such may not be able to be financed entirely by direct user charges. They are usually delivered by local authorities or utility companies, and may be less suitable for provision purely by the private sector, due to the need for substantial upfront infrastructure investment. Operational costs are usually funded through user charges, levies or local taxes, but it is rare for the full capital costs of the infrastructure needed to provide these services to be directly recovered from users.
- *Infrastructure Development:* As capital costs are frequently not recoverable, the planning, design, funding, and construction of public sanitation infrastructure, such as sewerage or drainage networks and treatment facilities, may require recourse to higher level (national, regional or provincial) authorities or external financing agencies/donors. The client is effectively the provider of public sanitation services.

To be effective, these services require an enabling environment that provides policy guidance, rules and incentives to motivate stakeholders to prioritize sanitation, ensure accountability, and promote the development of adequate capacity to deliver the necessary services sustainably and affordably, at three levels:

- *National Enabling Environment:* National government should ensure that local authorities and other responsible agencies deliver services of an acceptable standard, have the legal, financial and technical means to do so, and that monitoring mechanisms are in place to track progress and results.
- *Local Governance:* The need for local authorities to take the central role in ensuring adequate sanitation within their jurisdiction is widely acknowledged. They need to plan, coordinate and monitor the activities by local stakeholders which are needed to deliver effective sanitation. Where these are to be undertaken by citizens or the private sector, the local authority will need to take on a promotion and enforcement role as well. Utilities may be responsible for the actual service delivery, but mostly under overall planning and coordination by the local authority. This is the key locus for accountability – upwards to national policy makers and downwards to citizens.
- *Community Consultation:* This is needed to ensure that sanitation services reach all households, including those which are unable to pay for services, but which are exposed to high public health risks. Consultations are needed to balance community needs and willingness to pay for services, and to agree on how communities will play their role in achieving effective sanitation.

This service delivery framework is summarized in the Figure 14.1:

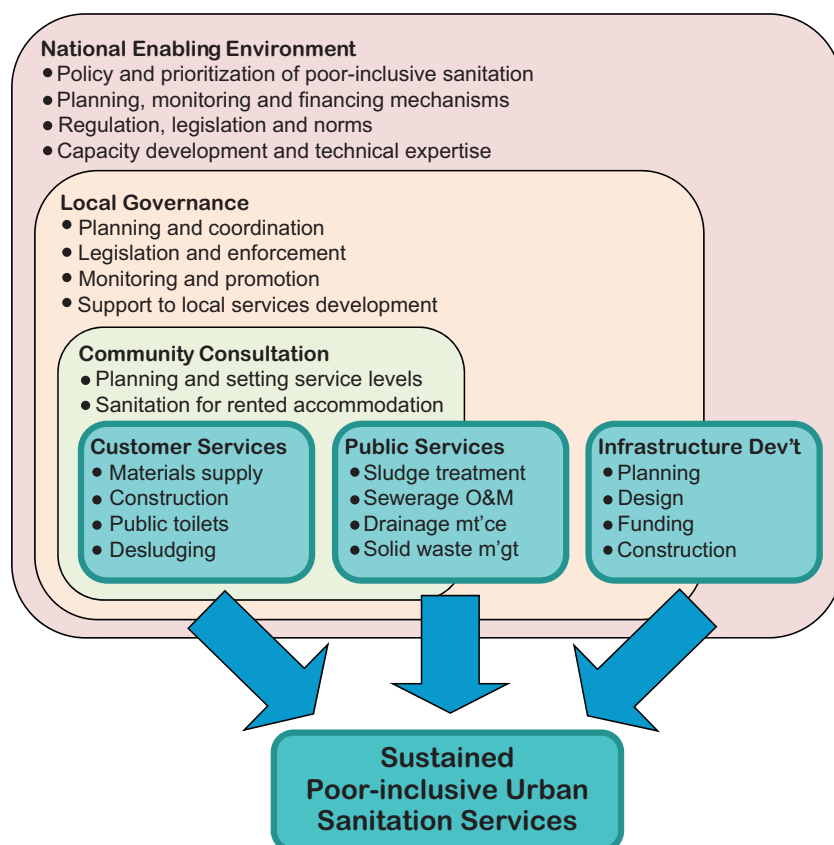


Figure 14.1 A framework for achieving poor-inclusive urban sanitation.

14.3.2 Drivers of change

Such a framework alone will not of itself achieve poor-inclusive urban sanitation, as it requires a series of personal and institutional motivations to put it in place. Whilst much more remains to be done, some of these drivers of change are set out below:

- *Systematic use of political economy analysis* including clear accountability relationships, when planning and implementing urban sanitation projects and programs;
- *Evidence-based advocacy*, such as documentation and dissemination to policy-makers of the economic results of defective sanitation, and international benchmarking activities such as IBNet and the Country Status Overviews (CSOs);
- *Development of improved financing mechanisms* and targeting of subsidies to those unable to afford basic minimum sanitation;
- *Involvement of viable utilities*, where they exist, to exploit their financial and technical strength;
- Improvement of *policy*, coupled with *fiscal and regulatory mechanisms*, to provide incentives for the responsible authorities to act;
- *Pressure from development partners* to include a range of sustainable options that are appropriate for all urban residents;
- *Pressure from civil society* and mechanisms to monitor and publicly name and shame those who are falling behind;
- *Involvement of users in decision-making* on services and service levels, and marketing of the idea and specific practices related to improved sanitation and hygiene;
- *Building coalitions of interests and networks* at all levels, from urban communities to the international arena.

The way such drivers of change function is summarized in the following Figure 14.2:



Figure 14.2 Drivers of change for poor-inclusive urban sanitation.

The introduction of accountability mechanisms is crucial to the service delivery approach, as it is these that ensure continued pressure on service providers to perform.

14.3.3 Key technical challenges

In addition to identifying and effectively using drivers of change, there are a number of technical issues that need to be resolved, so that political will and funding, once mobilized, can deliver the desired services. These include:

- *Managing the service chain*, to ensure that all the necessary complementary services are in place and that best use is made of the potential of all stakeholders, from utilities to householders;
- *Development of at-scale pit emptying services* for peri-urban and informal settlements, and criteria on whether to service existing facilities or build new ones that are easier to service;
- *Development of viable options for slum tenants*, whether in-house or off-plot;
- *Development of systems that work in challenging environments*, such as where houses are built over water, areas subject to flooding, steep hillsides, and other marginal areas typically occupied by the urban poor;
- *Maximizing the use of sewerage systems*, where connection rates in poor communities are often extremely low, negating the major investments made;
- Systematic analysis of *decentralized systems*.

14.3.4 Partnerships

The delivery of poor-inclusive urban sanitation services requires the coordinated participation of many partners – users, landlords, civil society, the private sector, local authorities and utility companies, regulatory agencies, state and national governments, donor agencies, academic institutions, and others. This has probably contributed to the slow progress made in this subsector, since such partnerships are often new and may take considerable effort to establish, especially in a resource-poor environment with many competing priorities.

However, given a will to tackle the large and growing problem of urban sanitation, there is evidence to show that it is possible to make progress by working in such partnerships. Municipal authorities are uniquely placed to take on the crucial coordinating role, and should be supported to do so. This will underpin the necessary change from a sectorial, infrastructure-based approach to one based on service delivery and governance.

14.4 SOME EXAMPLES OF SUCCESSFUL INTERVENTIONS

14.4.1 PAQPUD, Dakar

Context

In 2001, 75% of households in Dakar had a household water connection, at least 82% had access to improved sanitation and 31% had sewer connections. Open defecation was estimated at less than 3%. Unusually for Africa, central Dakar has a large and

functioning sewerage system. While access to sanitation was high on average, it was lower in peri-urban areas of the capital and surveys revealed that the majority considered their toilet to be unsatisfactory.

Reforms initiated in 1995 had split the national water and sanitation utility into three entities: SONES (*Société Nationale des Eaux du Sénégal*), a publicly-owned asset-holder, SDE (*Sénégalaise des Eaux*), a private operator operating under an affermage (lease) contract and a dedicated sanitation office, ONAS (*Office National de l'Assainissement du Sénégal*). During the first phase of the reforms, most investments were allocated to water supply; sanitation was somewhat neglected and there was little political will to promote on-site facilities.

Overview

The *Programme Eau à Long Terme* began in 2001 with World Bank financing, and one component was the *Program d'Assainissement Autonome des Quartiers Périurbains de Dakar* (PAQPUD), the first government-led program to support on-site sanitation. It was overseen by ONAS and implemented by the public works agency AGETIP (*Agence d'Exécution des Travaux Public contre le Sous-emploi*). PAQPUD targeted 33 lower-income urban and semi-urban residential districts, some in Dakar proper and others within Greater Dakar. Targets included 60,000 onsite sanitation facilities; public and school latrines for 30,000 people, and settled sewerage systems serving 127,000 people. A range of options were offered including sinks-plus-soakaways, flush toilets and septic tanks. Masons were paid on completion of a facility and households were required to make an up-front contribution, initially set at 50% of hardware costs, but later reduced to 25% due to low demand. Credit was offered in the second phase. The cost to householders of the most frequently chosen sanitation option (twin-pit pour-flush latrine plus shower) was about US\$185. The subsidy was available to everyone within the project area, provided they paid their up-front contributions.

In eleven districts where on-site sanitation was not viable, due mostly to periodic flooding, the project sewered septic tanks so that solids remained on-site and the liquid fraction was piped away. This system was well adapted to Dakar since most households, even in low-income areas, already had a pour-flush toilet discharging to a septic tank. Over 95% of the connection cost was subsidized by the project, with householders paying US\$14–44 for the connection plus, in many cases, for construction of a new septic tank.

Outcome

By 2008 366,000 people were served by the project, some 22% of the target peri-urban population. Only 57% of the on-site facilities built were for excreta management, however; a large proportion were for grey water disposal.

An independent assessment (Norman *et al.* 2011) found that, within the intervention areas, many of the poorest households did not benefit. Over 95% of non-beneficiary households in the on-site locations stated that they would have liked to participate but had not been able to; very few reported that they were not interested. By far the most common reported reason for non-participation was lack of knowledge of the project; very few said they could not afford to. In the settled sewerage districts, roughly half did not receive a connection. In this case, nearly 75% of non-beneficiary households stated that they had been unable to participate; only 25% said they had not wanted to. The most common reported reasons for not being able to participate were inability to pay the fee and/or lack of a toilet; being a tenant was also a factor in one district. The fact that most households needed to pay not only the connection fee but also cover the costs of internal connection from their toilet to the new septic tank may also have been relevant. The presence of a small number of households who could not access sewers because they had no toilet suggests that the project tended to exclude those in greatest need.

Implications for meeting the sanitation needs of the poor, at scale

Targeting only lower-income districts was valuable, and PAQPUD achieved better pro-poor outcomes than many earlier urban sanitation investments in Africa, where new sewerage had mostly benefited better-off households. There is evidently a need, however, to target within districts if projects are to benefit mostly the lowest-income households. In the case of sewerage, this would need to include measures to ensure that the poorest households would actually connect to the system.

Source. Adapted from Trémolet S. with Kolsky P. and Perez E. (2010) *Financing On-site Sanitation for the Poor: A Six-Country Comparative Review and Analysis*. Water and Sanitation Program; Verspyck R. and Guene O. (2012) *Urban Sanitation Experiences of Senegal and Burkina Faso*, World Bank Report 66827-AFR, February 2012; and Norman G. and Pedley S. (2011) *Exploring the negative space: evaluating reasons for the failure of pro-poor targeting in urban sanitation projects*. *Journal of Water, Sanitation and Hygiene for Development* 1(2) 86–101.

14.4.2 PSAO, Ouagadougou

Context

In 1992, when this program began, very few sanitation projects had been implemented in Ouagadougou. A sanitation fee levied on water bills was introduced in 1985 but the proceeds were used to finance various activities not directly linked to sanitation services. The National Water and Sanitation Agency, ONEA, dealt only with water supply; its sanitation and drainage functions conflicted with the mandates other public bodies and none was able to deliver their responsibilities effectively. While 70% of the city population had access to safe water (half via house connections), just under one third had access to improved sanitation, with nearly two thirds using unimproved latrines.

Overview

The Ouagadougou Strategic Sanitation Plan (PSAO) sought to redress the imbalance between access to water supply and to improved sanitation in the city. It was founded on the Strategic Sanitation Approach and aimed to provide flexible sanitation solutions in a participatory, demand-responsive manner. At the start the Government appointed ONEA as the sole agency in charge of urban sanitation and directed that in future the surcharge would be used exclusively for that purpose. ONEA's team in charge of program implementation was upgraded to a Sanitation Department (DASS).

The PSAO took a long term view and the establishment of sound arrangements, policies and partnerships initially took precedence over quantitative targets; this ground work took five years. The program then offered three investment components:

- (1) Construction and rehabilitation of latrines, septic tanks and grey water soakaways via promotion, technical advice, artisan training and the provision of hardware subsidies.
- (2) Provision of toilet blocks for all primary and secondary schools which needed them, along with a hygiene education program.
- (3) Construction of a sewer network and wastewater treatment plant serving the downtown business and residential districts and major industrial sites. This component received support from IDA, AFD and KfW.

The program operated in all city neighborhoods. Promotion was contracted out, initially to a NGO and, later, consulting firms, while works were executed by masons paid by households, with some construction materials provided in-kind. Quality assurance was assigned to consulting firms. Up until 2006, costs associated with the on-site sanitation were fully recovered from beneficiaries, partly through the surcharge and partly through direct user contributions to construction costs. When new donor support was agreed in 2006, the hardware subsidy was increased from roughly 18% (for toilets) and 30% (for soakaways) to 50%; this boosted demand.

Outcome

By 2009, PSAO had reached 70% of the Ouagadougou population. Overall, it had achieved its objectives though household demand was not as anticipated: grey water disposal accounted for 68% of on-site installations as compared to 32% for toilets. The pace of implementation was also slower.

The program progressively built DASS' technical and operational capacity, aided by the surcharge revenue which covered its operational costs.

Implications for meeting the sanitation needs of the poor, at scale

The sanitation surcharge was widely accepted by urban water customers, whose number increased markedly during the program. The emphasis on on-site services meant that program support went mostly to less affluent neighborhoods, but there were no specific measures to target the poorest households within those areas. A 1999 household survey found that the percentage of civil servants and formal sector employees among the beneficiaries was higher than in the general urban population, while informal sector workers and the unemployed were under-represented.

The quality of the technical design of onsite facilities and attention to quality assurance reinforced the credibility and acceptability of the program. Ouagadougou households (and masons) were familiar with latrines and soakaway pits before the PSAO, but existing facilities were mostly of substandard quality and functioned poorly.

Source. Adapted from Verspyck R. and Guene O. (2012) *Urban Sanitation Experiences of Senegal and Burkina Faso*, World Bank Report 66827-AFR, February 2012.

14.4.3 Shared and community toilets in Mukuru, Nairobi

Context

Nairobi has a partial sewerage network and Nairobi City Water and Sewerage Company (NCWSC) levies a conservancy charge on domestic house connections. This does not apply in informal settlements, however, where most residents purchase water from kiosks.

Mukuru is one of the largest slums in Nairobi, with a population of over 250,000. In 2007, Practical Action launched a project to improve water and sanitation services in three Mukuru neighborhoods with a combined population, most of them tenants, of 67,000.

Overview

Practical Action facilitated a partnership between NCWSC, small water enterprises (SWEs) and the community. The utility constructed ten new water chambers in the heart of the settlement, enabling SWEs to purchase metered bulk water and on-sell it to households. For sanitation, the project developed three communal sanitation blocks with toilets and washing facilities, and 15 stand-alone toilets which were small shared facilities each with four seats and a hand washing facility outside. A 12.5% community contribution was paid towards capital costs. All toilet facilities were connected to sewers and had roof-top water tanks. For each toilet block a self-help group was established to site the facility and run it once completed. Each block occupied about 54 square meters, enough space for four houses. This land was provided by the community. Stand-alone toilets occupied only a single house plot and served groups of 5–29 households. They were built by trained local artisans. Landlords who agreed to build a stand-alone toilet gave up one house plot; each toilet was then shared by the other households on the block, or between households in two or three adjacent blocks. The project also included a hygiene promotion component targeting young mothers and children.

Outcome

The project resulted in increased the number of toilet seats in the settlements from approximately 150 to 225 seats over 14 months. The stand-alone toilets were particularly popular and affordable and by 2011 four landlords had built their own without project support, and more were planned. In order to connect the new facilities to the main Nairobi sewer network the project had laid 950 meters of 225 mm diameter pipe through the settlement. This was a major accomplishment and showed how effective the project partnership had been – both in getting the support of the landlords and in overcoming the logistical constraints of working in such a congested location.

Implications for serving the poor at scale

After project support, toilet provision stood at 300 people per seat, still some way short of an acceptable ratio. Space was a limiting factor and some tenants would need to relocate if a better level of provision was to be achieved. Only part of the project area was covered by sewerage leaving some residents feeling excluded. The capacity of the (very local) main trunk sewer was more than adequate, however, to cope with all the wastewater from the three settlements. NCWSC was willing in principle to develop the sewer network further, and recognized a responsibility to provide disposal and treatment solutions for the informal settlements.

Practical Action considered that communal blocks were not a long term solution for Mukuru, because:

- (1) Space was not available to build the number of facilities needed.
- (2) Entrepreneurs and self-help groups could not afford to build the facilities without external support.
- (3) Women and children used the communal blocks less than men and tended to revert to open defecation or the use of ‘flying toilets’ due to a combination of inconvenience (where the block was more than 15 m from the home); lack of privacy; security concerns at night; and payment methods (women were less likely than men to pay on a daily basis, though they accepted monthly fees).
- (4) There were doubts about the viability of long term management by informal CBOs.

Stand-alone toilets, however, were affordable to landlords without donor support; local artisans could build them to an acceptable standard; were convenient to users; and had low space requirements. Nevertheless, landlords would have had to sacrifice some vacant plots or relocate existing households if the model was to be scaled up.

Adapted from Peal and Evans (2011) Breaking Barriers in Water and Sanitation Service delivery to Informal Settlements, Case Study of the Mukuru Model, Practical Action. Available at: <http://practicalaction.org/case-studies-17>

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Chapter 15

What does it take to scale up rural sanitation?

Craig Kullmann and Eddy Perez

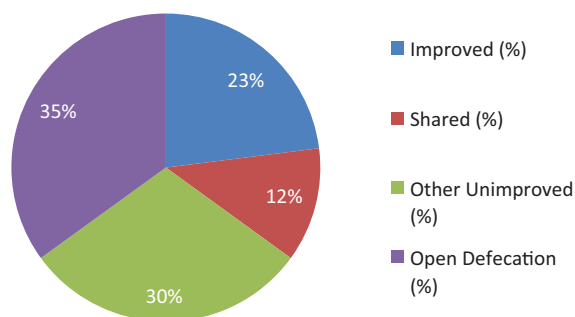
Water and Sanitation Program

The purpose of this chapter is to share evidence, recent results, and learning regarding experiences in scaling up rural sanitation programs. Specifically, areas discussed include strengthening the enabling environment, generating demand, and strengthening supply of products and services.

15.1 INTRODUCTION

15.1.1 Status and challenges of rural sanitation in Africa

The most recent Joint Monitoring Program (JMP) statistics show that over the last twenty years Sub-Saharan Africa (SSA) has not made any significant progress on rural sanitation. Figure 15.1 shows the current breakdown of sanitation access for the region.



Source: wssinfo.org

Figure 15.1 Rural sanitation access in Sub-Saharan Africa.

JMP statistics also show that there are seven countries in the region that account for 59 percent of rural households that defecate in the open (see Figure 15.2). Moreover, there are 16 countries that have more than 50 percent of their rural population defecating in the open. In comparison to urban sanitation statistics it is clear that open defecation is largely a rural phenomena with a sizeable percentage of the rural inhabitants practicing open defecation across all wealth quintiles. Given the prevalence of open defecation, behaviour change needs to be a core part of any scaling up rural sanitation program.

Only four countries in SSA are on track to meet the Millenium Development Goal for the sanitation target. The recent second round of Country Status Overview reports for the region, which assessed the service delivery pathways among 32 countries, found that for rural sanitation 39 percent of the countries have a weak enabling environment and service delivery mechanisms. Another 58 percent have a strengthened enabling environment, but still have some key bottlenecks such as financing to local governments that are inhibiting at-scale programming. There is only one country, South Africa that is

considered to have a well functioning enabling environment and have most of the elements of country-led service delivery pathway in place (AMCOW, 2011).

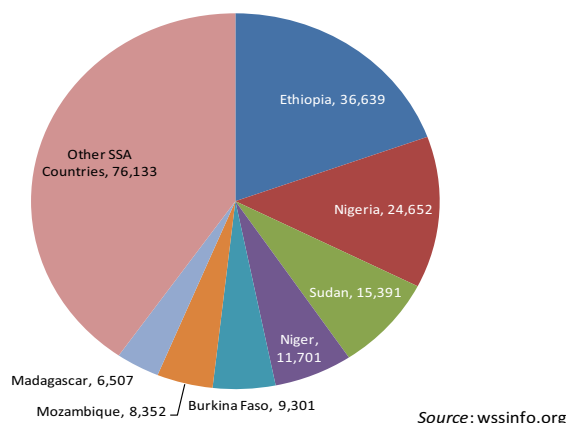


Figure 15.2 Rural population defecating in the open in SSA (millions).

The SSA region has a 161 million people using unimproved and 190 million defecating in the open, which is over 250 million people lacking access to improved sanitation. The lack of priority and investment in sanitation takes a toll on the region's economic development. Analysis carried out by the Water and Sanitation Program (WSP) in the Economics of Sanitation Initiative, assessed the economic impact of not investing in sanitation among 18 African countries. The studies found that these countries lost approximately 1–2.5 percent of their GDP due to poor sanitation, while at the same time most countries' current investments in sanitation is less than 0.1 percent of GDP. Open defecation alone accounted for almost US\$2 billion in annual losses in these countries (WSP, 2012a).

Sanitation in SSA is something that governments cannot afford to ignore. Scaling up rural sanitation in the SSA region requires immediate attention. The barriers to achieving scale are not insurmountable, and are in fact quite doable to overcome, with proper focus and leadership. The next section discusses the key components for achieving scale in rural sanitation.

15.2 WHAT IT TAKES TO GO TO SCALE

Experience from Sub-Saharan Africa, South and Southeast Asia demonstrate that scaling up rural sanitation programs is possible. In the past few decades, there are success stories in low-income countries, as in Bangladesh which has drastically reduced the levels of open defecation in rural areas from 40 to 5 percent of households over a 20 year period. Other countries such as Sri Lanka and Thailand, which have migrated from low-income to middle income status, have almost achieved universal coverage in rural areas by investing early on in sanitation and putting in place the right components to scale up rural sanitation programs.

The experience from these countries along with others in SSA demonstrate that there are commonalities (WSP, 2012b), between these success stories that can serve as a roadmap for others to scale up sanitation programs in rural areas. To achieve scale and sustained use of household toilets, there are four components (Figure 15.3) that require governments and development partners' attention:

Strengthening the enabling environment, to facilitate working at scale and implementing sustainable rural sanitation programs; *Generating demand for improved sanitation*, local government agencies in particular need to be trained in demand creation such as CLTS activities, behaviour change communication, and aspects of sanitation marketing;

Strengthening the supply of products and services, in particularly building the capacity of local builders, manufacturers, and suppliers of sanitation products and services. Sanitation marketing strategies help to expand consumer awareness of product options and costs, strengthen business skills, and improve the design, availability, and affordability of sanitation products and services; and

Learning from implementation, about what does and does not work and sharing that learning among stakeholders.



Figure 15.3 Success factors in scaling up rural.

15.2.1 The enabling environment¹

This section summarizes key dimensions to the enabling environment that are critical to working at scale and implementing sustainable rural sanitation programs. For the purposes of this chapter, discussion on generating demand and strengthening supply will fall under the sub-section of Program Methodology under the enabling environment.

Policy, strategy, and direction. Policy is the ‘set of procedures, rules, and allocation mechanisms that provide the basis for programs and services. Policies set the priorities and often determine the allocation of resources for implementation. Policies are reflected in laws and regulations, economic incentives, and the assignment of rights and responsibilities for program implementation.’ (Elledge *et al.* 2002). Establishing a shared vision and strategy among stakeholders and securing the political will to implement them is the first step in scaling up sanitation.

Institutional arrangements. Before program methodologies such as CLTS and sanitation marketing can be scaled up, institutional arrangements must be in place, and all key roles and functions covered. Institutions at all levels must understand their roles, responsibilities, and authorities, and they must have the resources to carry out these roles.

There is a considerable global body of evidence that a clear institutional home for sanitation is critical for success. In Sri Lanka and Thailand, for example, the sanitation mandate clearly falls with Ministry of Health, which developed the capacity of staff and community health volunteers to address rural sanitation (Luong *et al.* 2000; Das Gupta *et al.* 2009). Several decades of investment by their ministries of health enabled the sanitation sectors to develop in these countries well before they graduated to middle income countries. In Bangladesh, the Ministry of Local Government, Rural Development and Cooperatives provided leadership for their Total Sanitation Campaign. The evidence suggests that so long as sanitation has a clear home and strong leadership it can be located in one of several ministries. However, since most of the costs of poor sanitation are related to health, a stronger engagement by ministries of health is sensible (Bartram & Cairncross, 2010; WaterAid, 2011).

Program methodology. CLTS and sanitation marketing are complementary programmatic approaches to scaling up sanitation, but they are not detailed program methodologies. A methodology consists of rules, specific activities, and these activities’ timing and sequence. Each country must develop a methodology that is specific and appropriate to its context and covers all phases of implementation, including demand creation.

Implementation capacity. Institutions at all levels – including government staff and contracted organizations – must have adequate human resources with the full range of skills required to perform their functions; an ‘organizational home’ within the institution overseeing the program; systems and procedures required for implementation; and the ability to monitor effectiveness and make adjustments.

¹The section is developed from (WSP, 2012b).

Capacity building to scale up rural sanitation programs entails more than just training staff and volunteers on technical skills such as PHAST, CLTS, or sanitation marketing, but also how to adequately plan, budget, monitor, coordinate, and manage a host of activities at various levels of government. A capacity building strategy that articulates the range of skills that need to be built, how capacity building will take place, and how much it will cost is key part of planning an at-scale program.

For a more in-depth discussion on role of local governments and building their capacity in wider range of skills, refer to *Building the Capacity of Local Governments to Scale-Up Community Led Total Sanitation and Sanitation Marketing in Rural Areas* – WSP 2010, and also *What Does it Take to Scale Up Rural Sanitation* – WSP 2012.

Availability of products and services. A key element of an at-scale sanitation program is the existence of a robust local private sector that meets the needs of the rural poor with consumer-responsive and affordable sanitation products and services, where household demand is determined through formative research.

Financing and incentives. Financing costs include social mobilization such as training, staff salaries, transportation, office equipment and supplies, and the development of BCC materials. In addition, programs must establish mechanisms that enable communities to achieve total sanitation and ensure that individual households – including the poorest – can pay for on-site sanitation facilities.

Public expenditure on rural sanitation is dedicated to areas such as demand creation, capacity building, supervision, monitoring, strengthening the supply of products and services, and community reward systems. For more information regarding financing options see WSP publication *Financing On-site Sanitation for the Poor*.

Cost-effective implementation. The potentially high costs of social intermediation at scale make cost-effective implementation a key element. To assess the approach's cost-effectiveness and determine how best to achieve economies of scale, cost data must be collected throughout the implementation.

Monitoring and evaluation. A large-scale sustainable sanitation program requires regular performance monitoring and, and willingness and ability to use the monitoring process to make adjustments to improve and strengthen the program. Overall monitoring responsibility must be at the highest government level of the program but must be based on information collected at the community level and channeled through the local-government or district level.

15.2.2 Country examples of going to scale

The next section illustrates two concrete examples from Sub-Saharan African countries – Tanzania and Benin – on how improvements in the dimensions of their enabling environment framework has helped them move on a path to scale up rural sanitation. In the examples provided below, the service delivery model is through the regional and local government, the accepted way to reach scale in a sustainable manner.

15.2.3 Tanzania – at scale rural sanitation programming

Policy, strategy, and direction

In 2007, WSP conducted a baseline assessment of the enabling environment to understand the barriers and opportunities to help the Government of Tanzania and its development partners scale up access to sanitation in rural areas. The assessment found that a national policy and strategy for rural sanitation was needed and that sector coordination was poor.

Over three years development partners² worked closely together with the government to strengthen sector coordination. In 2010, a follow up assessment was conducted, which found that improved coordination helped facilitate sector ownership of a Memorandum of Understanding (MoU) between line ministries responsible for sanitation, and the establishment of technical working groups. This coordination and common vision enabled drafting of a national sanitation and hygiene policy (WSP, 2011a).

In turn, the draft national sanitation and hygiene policy influenced the Government of Tanzania's National Strategy for Growth and Reduction of Poverty II 2010–2014 (MKUKUTA-2). The MKUKUTA-2 strategy is the government's first official document to recalculate rural coverage that mirrors the statistics reported by the JMP and include definitions of improved sanitation that are aligned with the draft sanitation and hygiene policy. Having a consensus around actual coverage statistics is a major step forward, and the inclusion of the revised targets in MKUKUTA-2 provides a clear roadmap of what needs to be achieved in the sector (WSP, 2011a). With these improvements in the enabling environment, the Ministry

²UNICEF, WaterAid, GTZ, SNV and WSP.

of Health and Social Welfare (MoHSW) in coordination with the other line ministries responsible for sanitation have developed a strategic vision to implement a National Sanitation Campaign to increase access to sanitation in rural areas. The government launched the campaign in 2011 and plans to cover 132 districts.

Institutional arrangements

The Government of Tanzania with its development partners formed the Water Sector Development Program (WSDP) in 2006, which is the main financing vehicle for public investment in water supply and sanitation. In 2010, responsibility for sanitation within the WSDP shifted from the Ministry of Water and Irrigation (MoWI) to the Ministry of Health and Social Welfare (MoHSW) to manage and implement a National Sanitation Campaign. The shift in responsibility was coupled by the signing of a Memorandum of Understanding between the MoHSW, MoWI, Ministry of Education and Vocational Training, and the Prime Minister's Office of Regional and Local Government that articulates the roles and responsibilities of each ministry for sanitation. The MoU is not legally binding, but it has helped strengthen collaboration and cooperation between line ministries and development partners, which will be key in the implementation of the National Sanitation Campaign. The campaign will be managed by the MoHSW and require close collaboration with the other line ministries (WSP, 2011a).

Program methodology

Over the last few years there has been significant progress made in developing a coherent programmatic approach in Tanzania that is accepted by key stakeholders. Previously, the sector was fractured and the government was using Participatory Hygiene and Sanitation Transformation (PHAST) as the main approach to improve sanitation and hygiene. Also, the approaches of Community Led Total Sanitation (CLTS) and sanitation marketing were not well known or used in Tanzania. The government and stakeholders have reached consensus through joint review processes and dialogue that CLTS and sanitation marketing approaches are simple, cost-effective, scalable, and should be the basis for the government's National Sanitation Campaign (WSP, 2011a).

The combined approach of using CLTS and sanitation marketing has been scaled up in 10 districts through local governments, and will be rolled out nationally through the government's campaign. In the ten districts, district Water and Sanitation Teams were trained in the approach and have taken a lead in training community volunteers to carry out behaviour change activities. These interpersonal behaviour change activities were supported through messages broadcast via radio and direct consumer contact events. Behaviour change messages were developed and based on formative research. The formative research also led to product development of the sanplat as a cheaper and more viable option for poor families. Initially, supply side strengthening activities focused on training masons, but resource constraints of local masons has prompted government and development partners to find ways to work more closely with local hardware stores and link them to masons since they are more likely to have access to capital (WSP, 2012b).

Implementation capacity

In scaling up community led total sanitation and sanitation marketing in the 10 districts, WSP supported the government by hiring and training local resource agencies who in turn trained local government (district) Water and Sanitation Teams on a range of activities. With initial support from the resource agencies district governments then went on to train village level facilitators in community led total sanitation. Resource agencies worked with district governments to identify and train local masons to strengthen the supply of sanitation products and services.

As mentioned above, training masons at local level did not result in the intended outcomes. Often masons were not able to meet demand because they did not have the upfront capital to invest in materials and supplies. Additionally, a sizeable portion of the masons that were initially trained became inactive or went on to use their skills in other construction fields. The learning from this experience has led the government and development partners to engage more with the sanitation supply chain and find ways to link masons with local hardware stores.

Financing

In many places such as Tanzania, governments are adopting a no-subsidy policy for on-site sanitation. In these contexts, households are the main financier of capital investment in their sanitation facility.

As previously mentioned, WSDP is the main vehicle to finance water supply and sanitation in Tanzania. The government is allocating \$20 million USD to the National Sanitation Campaign, and cover 132 districts. This equates to approximately USD \$100,000 per district over three years to reach two million households with improved access to sanitation. This financing will

cover costs for social mobilization such as training, staff salaries, transportation, office equipment and supplies, and the development of BCC materials.

Additional program financing – approximately \$4 million USD – specifically for sanitation and hygiene is projected to come from the Global Sanitation Fund (GSF). This financing will support total sanitation and sanitation marketing activities in select districts and also support enabling environment activities strengthening the National Sanitation Campaign (WSP, 2011a).

Availability of products and tools

In Tanzania, formative research was carried out to better understand the target audience. This research resulted in evidence based non-health related communication messages and tools such as pictorial cards used in interpersonal communication or radio advertisements. Research around product development also resulted in the promotion of a sanitation platform that is, sanplat. In Tanzania, this is a 2 ft × 2 ft. concrete slab that is retrofitted to an earthen slab and costs about USD \$5.

Monitoring and results

Out of all the components of the enabling environment monitoring and evaluation remains one of the biggest challenges in the Tanzania context. In the 10 districts where community led total sanitation and sanitation marketing had been implemented at scale significant effort was given to build on existing paper based government monitoring systems; however, even with these efforts it is not clear that this system is viable at a national scale. This is an area that government and development partners continue to explore and work on. Programming results from these 10 districts are estimated to have reached 270,000 people with improved sanitation and over 130 open defecation communities as June 2011.

15.2.4 Benin – national scale up of rural sanitation

Policy, strategy, and direction

Similar to Tanzania, Benin hosts a favorable policy environment that emphasizes demand responsive approaches, decentralized decision making, zero subsidies for latrines, private sector participation, low cost technologies, and the government's role as a coordinator and regulator. The government's policy has been in place since 1990 and a sector strategy was developed in 1994. Box 15.1 articulates four key principals from Benin's National Water Supply and Sanitation Sector Development Strategy (NWSSSDS) (WSP, 2011b). The government's policy and strategy are considered to be enabling factors that allowed for scaling up of Benin's National Program for Hygiene and Sanitation.

BOX 15.1 PRINCIPLES FOR BENIN SCALING UP RURAL SANITATION

- (1) Decentralize decision making process to the community level (allowing households to make informed decisions about their water and sanitation infrastructure)
- (2) Community contribution to initial capital investment and full contribution to cost recovery of infrastructure with households responsible for the full costs of their sanitation facilities
- (3) Prioritize efforts to reduce the costs of technologies, both capital investment and maintenance costs
- (4) Development of the national and local private sector as primary actor responsible for supplying water and sanitation goods and services, along with systematic hygiene promotion in all rural water supply and sanitation programs.

Source: Experiences from Rural Benin: Sanitation Marketing at Scale.

Institutional arrangement

As in Tanzania, the Ministry of Health (MoH) is the lead of institution for rural sanitation in Benin. Within the MoH, the Directorate for Hygiene and Basic Sanitation has championed sanitation marketing to help scale up access to rural households. The MoH at the national level provides leadership and strategic direction to the sub-sector. They also take the lead in the development and provision of promotional and training materials, and are responsible for other functions such as monitoring, evaluation, reporting and budgeting. Other key stakeholders are regional governments who provide leadership at the local level and train a cadre of volunteer hygiene promoters and local masons at the village level. They are also

responsible for program monitoring and quality assurance of latrine construction. While not a paid function, village volunteer hygiene promoters are an extension of the MoH, and are supported by MoH staff at the regional level, and carry out community-based sanitation promotional activities. These volunteers also monitor latrine construction, and household hygiene behaviour (WSP, 2011b).

Program methodology

The programmatic approach in Benin has evolved over time incorporating lessons learned from the government's field experience to refine and improve the approach. As part of the interpersonal communication strategy, PHAST is used to stimulate demand for sanitation and also improve hygiene practices. From 1998–1999, the government piloted sanitation marketing as a complimentary approach to PHAST, and from 2000–2002, they worked on a strategy to combine the two approaches. In 2005, they launched their combined approach in 5 departments and have subsequently scaled up to all 11 departments. The approach uses a community volunteer base system to interact with households over a period of 18 months.

During this cycle, volunteers carry out sanitation and hygiene promotion through community meetings and household visits. Messages delivered through community volunteers are supported by local radio advertisements. The sanitation marketing component focused on the development of cheaper products such as the sanplat, and trained local entrepreneurs on latrine construction and basic marketing and sales techniques. These local service providers were also promoted through mass media and direct consumer contact events. The government's willingness to experiment, learn from new approaches such as sanitation marketing, and ultimately harmonize their approach with their national policy and strategy allowed them to scale up a more effective and sustainable programmatic approach.

Implementation Capacity

The government of Benin used a cascade training approach and began with training the local government hygiene agents (two per district) and local NGOs – where local government hygiene agents were not available – who in turn trained local masons and local health volunteers at the village level. Once local volunteers were trained, it was the responsibility of the Hygiene Agents to provide supervision and follow up. The training of local masons was intended to develop a network of providers.

Financing

The government is committed to investing in rural sanitation by budgeting and planning programs according to its development objectives. It has sustained its budgetary commitments, and has received continued support from donors to fulfill its development objectives for rural sanitation. The government has made a significant financial investment to build the capacity of human resources to implement its rural sanitation and hygiene program at all levels of government down to the community and the private sector (Kpinsoton & Jenkin, 2011).

Availability of products and tools

As in Tanzania, the Government of Benin carried out formative research early on to better understand behaviours around latrine use, preferences for different types of sanitation products. The research resulted in evidence based non-health related communication messages highlighting the advantages of using a latrine and the disadvantages of defecating in the open. This research led to the development of tools such as pictorial cards used in interpersonal communication or radio advertisements. Also, as a result of the research, a sanplat that covers the entire pit was promoted and the minimum investment by households to improve their latrine was USD \$60 (WSP, 2011b).

Monitoring and results

Through sanitation promotional activities, local promotion volunteers develop community maps showing all households in a community and whether they have a latrine or not. These maps provide a baseline of latrine coverage and allow ongoing monitoring. When a household starts new construction or completes construction of a latrine the promotion volunteer indicates it on the community map. After the 18 month promotional cycle is finished, local government officials conduct an evaluation to measure changes in latrine coverage (WSP, 2011b). Between 2005 and 2009, Benin's rural sanitation program helped increase access to over 18,000 households in over 2000 localities (WSP, 2011b).

15.3 CONCLUSIONS

Much has been learned over the last several years on how to design and implement large-scale sustainable rural sanitation programs; how to promote systematic policy and institutional reform; how to strengthen stakeholders' support for at-scale service delivery; and how to develop and support affordable financing strategies that are effective in reaching the poor.

The key take away message is that in order to accelerate progress in increasing access to improved sanitation in rural Sub-Saharan Africa, governments need learn from one another and share experiences on creating an enabling environment that will support large scale sustainable programs. Countries need to analyze their enabling environments to understand the bottlenecks of progress. Only when those impediments are identified can a government take action on each of the dimensions of the enabling environment. Real progress can be made as demonstrated by Tanzania, Benin, and other countries outside of Sub-Saharan Africa. To accomplish this, is not a question of a country's ability to do it, but rather is question of their will to do it. Based on economic analysis, sanitation is a smart investment and by ignoring the issue will only continue to be a drag on a country's economic development.

15.4 WHAT DO WE STILL NEED TO KNOW?

The examples from Tanzania and Benin show that scaling up rural sanitation programs is possible, and putting in motion the levers of change takes time and commitment. Nevertheless, these two examples along with others from outside the region demonstrate that there are solutions to addressing SSA's problem of low access to sanitation in rural areas.

Experience from these examples also shows that there is more to be learned as governments and development partners move forward. Some of these areas include:

- What resources will it take to strengthen the 39 percent of SSA countries with a weak enabling environment to point where they are in a position to scale up rural sanitation?
- What evidence or advocacy will it take to influence line ministries and Ministries of Finance to allocate more resources to rural sanitation programming?
- What are the key political economy factors that inhibiting progress in countries where the enabling environment is weak, but also those that are in transition to improving?
- What are the key constraints in sanitation supply chain for rural sanitation and how can we capitalize on national or multi-national companies that may be interested in sanitation?

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Chapter 16

CLTS in Africa: Trajectories, challenges and moving to scale

Petra Bongartz

CLTS/IDS

At AfricaSan 3 in Kigali it was clear that in short three years since the last AfricaSan conference, and in only five years since its initial rollout in Africa, Community-led Total Sanitation (CLTS) had spread and diversified to become more embedded in Africa than in any other region. This chapter looks at the progress and maturing of CLTS in Africa. It introduces innovations and adaptations, poses questions and challenges and suggests possible ways forward as CLTS goes to scale on the continent.

16.1 A NEW ERA

Community-led Total Sanitation (CLTS) was seeded in Africa in a hands-on training workshop facilitated by Kamal Kar near Dar es Salaam in early 2007. Plan International, which had convened the workshop then spearheaded its initial spread in six countries. Over the five years since 2007, Kamal Kar has made many further visits to Africa to promote CLTS and conduct hands-on trainings and many African trainers have become active. The adoption and spread of CLTS has been little short of spectacular. As of mid-2012, UNICEF estimates suggest that close to ten million people are living in communities that have been declared open defecation free (ODF) in Africa. This has happened in the context of an enabling environment which has been strengthened by the recognition, approval and support of CLTS by governments and external agencies. More attention has been given to sanitation policy and budget issues thanks to the International Year of Sanitation in 2008 and the *eThekwin*i Declaration at AfricaSan + 5, has helped increase the profile of the sector and explicitly includes indicators related to national coordination, monitoring and evaluation and community-led approaches.

At least seventeen African countries have made CLTS central to their national rural sanitation policies – Ethiopia, Eritrea, Kenya, Malawi, Mali, Mauritania, Sierra Leone, Zambia, Togo, Nigeria, Niger, Liberia, Guinea Conakry, Ghana, Gambia and Cameroon. National, sub-national and district level working groups are overseeing the implementation of CLTS. Some governments have set ambitious targets for making their rural areas ODF, for example Northern Ghana by 2012, Kenya 2013, Ethiopia, Mauritania and Zambia 2015, Malawi 2016 and Madagascar 2018. They have adopted the policy of no household hardware subsidy which is a critical condition for the rapid spread of CLTS. Governments have made lenders and donors remove these subsidies from their project proposals: Ghana did this with the World Bank, Chad with the European Union, and Nigeria and Mauritania with the African Development Bank. UNICEF, WSP, bilateral donors, and NGOs such as Plan, SNV and Engineers Without Borders (EWB) have recognised the power and potential of CLTS and supported and promoted its spread. Increasingly, CLTS has become a continent-wide movement, ushering in a new era for rural sanitation.

Nevertheless, many challenges and questions remain, for example concerning appropriate follow up after triggering, monitoring and evaluation, sustainability, equity and the interface and interaction between CLTS and other approaches such as sanitation marketing. Perhaps the most important overarching question for CLTS remains how to go to scale with quality.

16.2 WHAT WE HAVE LEARNED: CHALLENGES AND KEY ELEMENTS OF SUCCESS

16.2.1 Government leadership

Governments have become key actors in CLTS. Whether it's the endorsement of CLTS as national sanitation policy, national ODF campaigns, or the integration of CLTS into the responsibilities of local government staff, health extension workers and so on, advocacy efforts to gain buy-in from government have clearly paid off. Undeniably, CLTS can only be sustainable and scalable if government is at the centre, but government involvement and leadership in sanitation does not come without challenges.

Whilst integrating CLTS with existing government systems and the ongoing work of local government staff seem like an obvious way to ensure wide reach, sustainability and flow of data to national levels, there are questions about whether these professionals are always the right people to take on CLTS responsibilities, especially where training and triggering are concerned. Are they equipped with the right skills and do they have the capacity and time to do CLTS justice alongside their (often) many other responsibilities? Does CLTS come naturally to them, that is, are they able to adopt the role of the devil's advocate, talk freely about shit and avoid falling into a teaching role? Can they 'sing and dance', as Kamal Kar describes the qualities of a good CLTS facilitator? It is clear that government can't 'do' CLTS on its own but needs support, coaching, capacity-building and networking with others (for more on this topic see Raeside (2010) and Soublière (2010)).

16.2.2 Networking, partnerships and peer support

In recognition of these challenges, innovative support systems and peer-to-peer learning have been set up to assist government staff at all levels. In most countries, there are national WASH groups or ODF Taskforces through which different stakeholders work jointly and coordinate their activities better. In Kenya, district level reflection and learning workshops support continuous reflection, peer-learning and finding solutions jointly with involvement of all stakeholders (government, NGOs, INGOs and others), in particular with the view of improving follow up after triggering and sustainability. In Malawi, Engineers Without Borders, Canada staff have set up an innovative model for peer support and sharing of experiences. EWB staff partner with people from the bottom to the top of the water and sanitation sector to create stronger learning and coordination linkages between stakeholders who tend to work in isolation; innovate feasible solutions to deal with challenges of programme capacity or staff motivation; and facilitate leadership development among key leaders throughout the water and sanitation sector (to read more about this, see Raeside (2010)). On an international level, IDS continues to engage in networking via the CLTS website www.communityledtotalsanitation.org, its bi-monthly e-newsletter with over 3000 subscribers and sharing and learning as well as thematic workshops that bring together practitioners to exchange experiences, discuss challenges and share innovations and ideas, make linkages and support each other.

16.2.3 Supporting champions at all levels

Champions at all levels are crucial to successful spread and sustainability. Natural Leaders, those who emerge during triggering and have the passion and commitment to take the lead in implementing action plans towards ODF in their communities, play a critical role. Champions and natural leaders at all levels need to be recognised, identified and encouraged and enabled to have maximum influence. For this, support mechanisms as well as ways of sustaining their interest and motivation are needed.

In Ethiopia, the work of Natural Leaders has been professionalised through forming a legal entity and enterprise, the Natural Leader's Association which can access funding and loans and aims to address issues of sustainability by improving the movement up the sanitation ladder in ODF *kebeles*. The Association focuses on sanitation and hygiene promotion, demand creation and the production and supply of sanitation hardware such as slabs in accordance with community demand (Tunsisa and Beyene (2012)). In Homa Bay, Kenya, a Natural Leader's Forum convenes Natural Leaders from triggered villages to reflect together on the status of CLTS implementation in the district, discuss their challenges and agree on ways forward. This has had the effect of 'energizing them to rededicate themselves to their mission' (Otieno (2011)). In Sierra Leone, a Training Manual (<http://www.communityledtotalsanitation.org/resource/clts-training-manual-natural-leaders>), designed by the Ministry of Health and Sanitation (MoHS), UNICEF and GOAL, helps support Natural Leaders during the pre-triggering, triggering and follow-up of CLTS communities and regular trainings are being held to build the capacity of NLs. Plan Sierra Leone uses rewards and incentives in various forms, from Natural Leaders being recognised by name at ODF ceremonies to distribution of bicycles to make them more mobile and increase their reach. There are debates about whether incentives in the form of rewards are a good way to motivate Natural Leaders. Reward and incentives schemes may be counter-productive and unsustainable in the long term. The best way forward will depend on the local context.

Alternative ways of motivating champions and natural leaders, e.g. through capacity development, cross visits, trainings, recognition, exposure, mentoring and coaching, should also be considered.

16.2.4 Follow-up, monitoring, verification and certification

National policies and ODF campaigns raise issues around the reliability of data. Will ambitious targets lead to false reporting and act against sustainability? Over-reporting of achievements is a risk. There is an urgent need for practical realism as Robert Chambers argues (2011) – a need to balance aiming at high targets with feasibility. An indicator of honest reliable data is that a substantial number of communities fail when they first apply for ODF verification. However, this means not punishing failure but providing encouragement and support to address problems. It is important that communities strive to meet ODF criteria not because an external agency tells them to, but because they recognise the value and benefit of a shit-free environment.

- Verification, certification and monitoring at scale pose many challenges:
- How can monitoring by communities and local level staff provide realistic and comparable data for monitoring, analysis and subsequent appropriate follow up action higher up in the system?
- Who is best placed to conduct verification in order for the data to be credible?
- What reporting systems can capture sustainable ODF status of communities rather than once again reverting to counting latrines built?
- The increasing speed of CLTS means that it can be challenging for verification and certification to keep up with communities' claims to be ODF, so human resource capacity needs to be factored into the equation from the start.

Some promising models for verification are already in use. In Côte d'Ivoire, exchange verification missions are used between the two regions (Bouaké and Tiassalé) where CLTS is being implemented, making verification more objective and aiding inter-regional learning. The teams include members from the government, NGOs, local authorities and community representatives and teams assess communities according to a set of criteria. In Malawi, verification is also being conducted jointly by community leaders, district representatives, and NGOs working in the area. The Government of Malawi's strategy outlines two levels of verification criteria: ODF, meaning every household uses a latrine with privacy, there is no shit in the bush (100 percent latrine coverage, sharing is acceptable) and ODF ++ for which every household has a latrine with cover and handwashing facility (100 percent coverage, sharing is acceptable); all religious institutions, market centres and health centres in the catchment area have latrines with covers and hand washing facilities (100 percent coverage). Similarly, in Ethiopia, the Ministry of Health has developed a verification protocol that is being used by all stakeholders, so that standardised indicators are applied across the board. First, there is self-verification at village level, then verification at kebele (smallest administrative unit) level, followed by verification and certification by district staff and finally ODF celebrations in the community. In Kenya, third party verification is being used and large-scale verifications have been conducted by the NGO KWAHO in Nyanza and Western Provinces. Verification criteria included latrine coverage, existence of handwashing facilities and dish racks. A large percentage of villages (54 percent) were failed, but the process had a positive orientation, calling on evaluators to be 'watchdogs not bloodhounds'. KWAHO reported that '[t]he most critical aspect of the certification exercise was to encourage and celebrate sanitation progress and innovations attained by various communities. Even when the village had not attained ODF status it was our mandate to encourage the natural leaders, the CLTS teams towards attaining ODF status. The approach also encompassed appreciative inquiry in to the way forward for those communities that had not attained ODF status.' (2011: 7).

It is hoped that more learning around these issues will emerge from an international workshop due to take place in Malawi later this year (August 2012) as well as from IRC's proposed symposium on monitoring sustainable WASH service delivery in Ethiopia in April 2013.

16.2.5 Reflection, documentation, sharing and learning, research

Strengthening the evidence base for CLTS continues to be crucial. Continuous reflection, documentation, learning and sharing activities are needed. With the fast rate of development and transformation that CLTS has seen in Africa, much of the territory ahead is unknown and this makes rapid 'learning whilst doing' an imperative. This 'action learning' takes many forms, but the vital ingredients are honesty, transparency and flexibility: recognising what does or doesn't work, admitting failure, adjusting plans, being open to change, and learning from the innovations and successes of others in similar situations. This also has implications for institutional ways of working- there is still some way to go in changing institutional attitudes so that

reflection, documentation, sharing and learning become central to implementation and are not seen as add-ons or extra-curricular activities. Many good initiatives are already taking place in this area:

- International workshops that bring together CLTS practitioners from governments, NGOs and agencies and facilitate cross-country and cross-organisational learning (e.g., the CLTS in Africa workshops in Mombasa in 2009 (Bongartz 2009), Lusaka in 2010 (see Lusaka Declaration (2010)) and Bamako (see Bamako Consensus (2010)) and the workshop on scaling up at Lukenya in 2011 (see Lukenya Notes (2011)), organised by IDS in collaboration with others).
- Regional and international conferences such as AfricaSan, the annual Stockholm World Water Week, the World Toilet Summit due to be held in Durban in December 2012.
- The CLTS website www.communityledtotalsanitation.org, which aims to be a global hub for CLTS, connecting the network of practitioners, communities, NGOs, agencies, researchers, governments, donors and others involved or interested in CLTS and a space for sharing and learning on CLTS across organisations, countries and sectors.
- In country peer-to-peer sharing initiatives, national taskforces and WATSAN groups.
- CLTS Newsletters such as the Malawian S.H.I.T.S. (<http://www.communityledtotalsanitation.org/resource/shits-sharing-highlights-total-sanitation>), the Kenyan S.S.H.I.T. (<http://www.communityledtotalsanitation.org/resource/shared-sanitation-hygiene-information-and-sshit-kenyas-monthly-clts-newsletter>), UNICEF Sierra Leone's Quarterly WASH report (<http://www.communityledtotalsanitation.org/resource/quarterly-wash-report-unicef-sierra-leone>) and Plan Ethiopia's quarterly newsletters (<http://www.communityledtotalsanitation.org/resource/wash-acsearch-newsletter>).
- Emerging national CLTS websites, for example, in Kenya.
- Exchange visits between different districts within countries, between different countries and between regions.

Supporting the ongoing enquiry into what works best and how to achieve scale with quality and sustainability, are a number of research, action learning and implementation projects, for example:

- Plan's Pan African project *Empowering self-help sanitation of rural and peri-urban communities and schools in Africa* (2009 to 2014) which aims to improve sanitation and hygiene practices in rural communities in eight African countries (Ethiopia, Ghana, Kenya, Malawi, Niger, Sierra Leone, Uganda, Zambia) through CLTS as well as urban CLTS and School-led Total Sanitation (SLTS). For more information see <http://www.communityledtotalsanitation.org/country/pan-africa>.
- The ODF sustainability study conducted by Plan Australia, Plan UK and Plan Netherlands in Ethiopia, Kenya, Sierra Leone and Uganda.
- The Gates-funded 3-country Plan project *Testing modified CLTS for scalability* led by Plan USA and the University of North Carolina, Chapel Hill which looks at improving the cost-effectiveness and scalability of the CLTS approach through increased engagement of local actors in Kenya, Ghana and Ethiopia (See <http://www.planusa.org/content2675015>).

The impact evaluation of CLTS being carried out in Mali by the Center for Distributive, Labor and Social Studies (CEDLAS) of Argentina (Universidad Nacional de La Plata) in collaboration with UNICEF and the PEP Research Network and funded by the Bill & Melinda Gates Foundation.

16.3 INNOVATIONS: UCLTS, NEW TECHNOLOGIES AND SLTS

16.3.1 Urban CLTS

CLTS has not just spread into new geographical areas, but also been applied in new settings such as the urban and peri-urban context and in schools (Figure 16.1).

In June 2010, Plan Kenya, together with a CBO called Community Cleaning Services (CCS) initiated an exciting pilot trialling an urban form of CLTS in Mathare 10, an informal settlement in Nairobi (see Musyoki (2010) for the beginnings of this pilot). There are of course major differences between the rural and the urban setting. Communities are more heterogeneous, urban dwellers are more transient, there are issues relating to limited space, tenancy arrangements and pit-emptying, particularly in urban slums. In recognition of this, urban CLTS (UCLTS) has not been about conducting conventional triggering in cities or about people digging pits or erecting structures (the city bylaws would not permit this).

Instead, it has focused on mobilising citizens to become aware of their sanitation situation and of their rights in this respect so that they can challenge the institutions who have so far not met their obligation to ensure that citizens' right to live in a clean environment is fulfilled. Thus, in the Mathare context it has also become known as Citizen-led Total Sanitation. It builds on the history of struggles against forced eviction in the informal settlements, putting sanitation and environmental improvements on the radar of residents and the agenda of structure owners/landlords and mandated institutions such as the Nairobi City Council: *'UCLTS does not concern itself with the hardware solutions rather it triggers the residents to start asking the right questions to the right people.'* (see Musyoki (2012)).



Figure 16.1 Urban CLTS project banner in Mathare, Nairobi (photo credit: Petra Bongartz).

Thus, UCLTS in Mathare was initially demand-driven. However, a new phase has begun: The City Council of Nairobi requested training for their staff from Plan and CCS. This took place in May 2012 (see Musyoki (2012)). The City Council now wants to scale UCLTS up to 5 more wards in Nairobi. Government, local administration and public health officers from the City Council of Nairobi are beginning to enforce environmental sanitation laws and want to leave a legacy of good sanitation in Mathare.

In Zambia, 'urban CLTS through legal enforcement' is being used in Choma and Lusaka. It was initiated as a response to cholera outbreaks in Lusaka. Some aspects of triggering are still used, but the emphasis is on legal enforcement of laws and by-laws to address and confront 'urban nuisances' related to sanitation as well as food and general hygiene. Institutions and businesses are being sensitised with campaigns and trainings to 'clean up their act' and provide proper sanitation facilities (for more information see Zulu (2011)). In Mauritania, UNICEF together with the local municipality, used an adaptation of CLTS in the town of Rosso (32,000 inhabitants), which led to several urban neighbourhoods being declared ODF (for more information see van Maanen (2010)).

16.3.2 Technological innovations

In the context of Mathare, there has also been a lot of innovation in terms of new technologies such as GIS and mobile mapping. The Map Mathare initiative (<http://mappingnbigdeal.wordpress.com/2011/03/03/how-to-map-open-defecation-areas/>) used participatory GIS for open street mapping of the area (Figure 16.2). Youth were trained and equipped with the knowledge and skills to carry out the mapping via mobile phones complemented by digital photography, video SMS and ushahidi (<http://ushahidi.com/>). The results are thematic maps (<http://www.mapkibera.org/blog/2011/02/14/base-map-of-mathare-is-complete/>) on sanitation and other issues affecting the Mathare community (e.g., open defecation areas, open drains,

garbage sites, public and private toilets, water points, types of buildings etc. as well as stories and videos which can be accessed via the Mathare Valley Blog (<http://matharevalley.wordpress.com>). The collected data will be used as evidence for advocacy and for engaging key stakeholders.

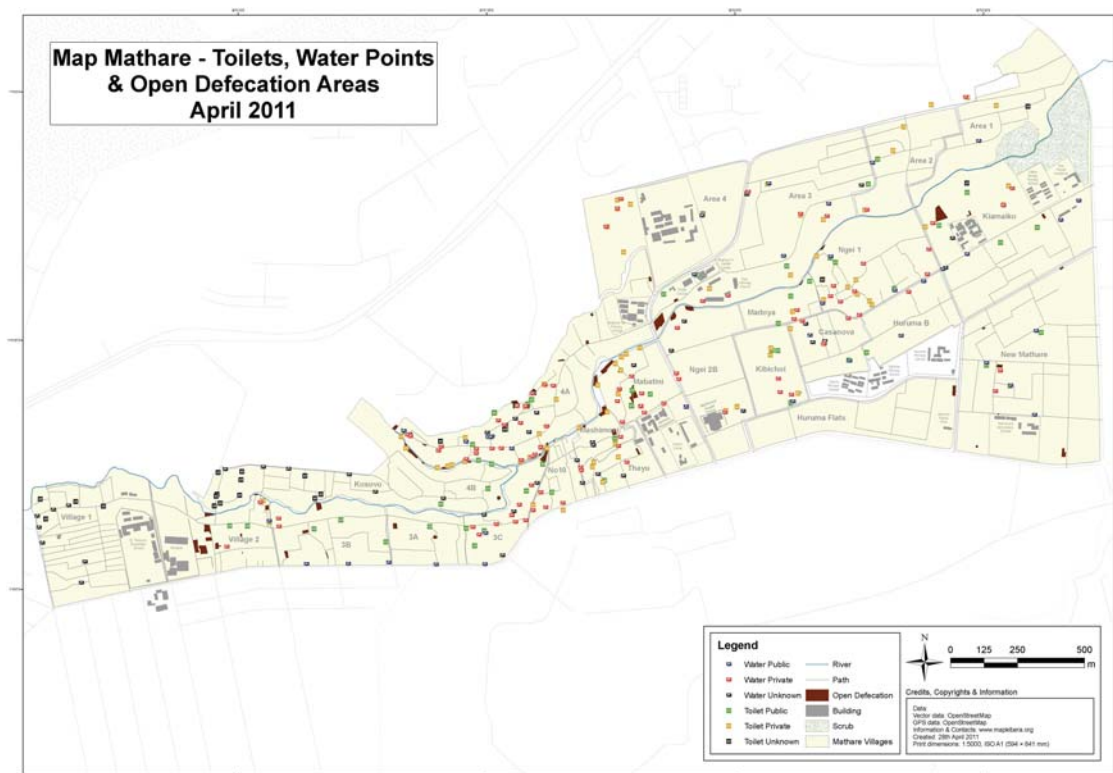


Figure 16.2 Map Mathare thematic map.

In other areas of Kenya, for example Kilifi, the Point of Interest Mapper (POIMAPPER), a customised software that combines mobile and Geographic Information Systems (GIS) technology, has also been used for data collection, analysis, documentation and communication. The resulting data can support planning, monitoring and evaluation (baselines) of programmes.

16.3.3 SLTS

School-Led Total Sanitation (SLTS) is another growing area of innovation. Children generally make good and committed Natural Leaders and schools can serve as a good focal point for community discussions, celebrations and learning around sanitation and hygiene (Figure 16.3). Triggering takes place in a school setting, with children acting as messengers that take their learning and desire to stop open defecation and its detrimental effects back home and into their communities. Plan Kenya uses schools as catchment areas and venues for the actual CLTS triggering. Children are involved in the entire process and they share the outcome of their analysis and action plans with the wider community. In Zambia, Plan uses focus group discussions and transect walks with children for post-triggering follow-up, getting the children to evaluate the progress made with hygiene behaviour change in their villages. In Uganda, SLTS is used by Plan Uganda in conjunction with the child-to-child approach. CLTS triggering in schools encourages children to identify hygiene and sanitation issues within the school environment and to come up with action plans to maintain cleanliness and hygiene there as well as practicing hygienic behaviours at home, too. Perhaps the most developed and systematised variation of SLTS is being used in Ethiopia where Plan and the Local Administration in Shebedino have been using an SLTS approach that engages teachers in triggering CLTS since October 2010 (see Box 16.1).



Figure 16.3 A common children's game has been adapted for SLTS in Ethiopia to raise awareness of sanitation issues (Photo credit: Petra Bongartz).

BOX 16.1 SCHOOL-LED TOTAL SANITATION IN SHEBEDINO – A PROMISING WAY TO SCALING UP

Schools are triggered, with teachers and pupils evaluating the extent of open defecation and the conditions of their school toilets. Teachers also attend a live triggering by an experienced facilitator to learn how it is done. Then, during a Health and Education Development Promotion Day which is part of the curriculum, pairs of teachers trigger all the Development Units (DUs)/Yelemat Budens (typically consisting of 25–30 households) in the Kebele, usually two or three of these together. Pupils bring family and community members to this meeting and engage in a sort of competition as to who can bring the most people. After triggering, a Chilo (shit) Eradication Committee consisting of one elder, one man, one woman, one youth and one child is formed, sets targets and moves the process forward. The pupils on the Committee, i.e. the youth and child, file a weekly progress report with the school, which passes them on to the Kebele Administration which can then follow up. The weekly report includes categories such as toilets constructed, roadside toilets installed, their stages of construction, and 'ashamed people' who had been found doing open defecation. Progress with this form of SLTS has been promising and this system clearly has many strengths that may offer a way of going to scale faster in Ethiopia than normal CLTS.

Source: For more information see <http://www.communityledtotalsanitation.org/resource/school-led-total-sanitation-reflections-potential-shebedino-pilot>

16.3.4 Post-emergency/conflict

Another new environment in which CLTS has been trialled in the last two years are post-emergency and post-conflict settings, including in Liberia, the Democratic Republic of Congo, Sudan and South Sudan. This is still at a relatively early stage of development and there are many challenges, including the dependency culture and the fact that many NGO interventions are modelled along the lines of serving short term needs by giving out subsidies. (For more on CLTS in emergency and post-conflict/post-emergency situations, see Greaves (2012)), and Philip Otieno's blogs on introducing CLTS in South Sudan and Sudan (<http://www.communityledtotalsanitation.org/contributors/philip-otieno> (accessed 19 June 2012)).

16.3.5 Beyond ODF

Once the process of rapid collective behaviour change has been triggered, achieving ODF status is only one of the important milestones rather than the end of the journey. Follow up and long term strategies for sustainability are crucial. Depending on

communities' exposure and access to sanitation and hygiene products and services and their economic status, they step onto different rungs of the sanitation ladder. Since the poorer people usually start with very basic sanitation options, there can be a risk of lapsing back to open defecation, if adequate support for investing in more sustainable options is not available. Therefore post-ODF strategies for sustainability need to consider how to link communities with opportunities for sanitation improvement that cater to their needs and their means.

Sanitation Marketing is one of the approaches introduced to address this. However, it is still relatively new and a much clearer understanding of it is needed. What experience has shown already is that since markets are context specific, there is no one size fits all solution and time and resources have to be invested in understanding the local conditions and creating the right balance and integration of demand creation, market supply and enabling environment. And, crucially, CLTS and Sanitation Marketing needs to be carefully sequenced as experience from Uganda has shown (see Nabalema (2011)). Behaviour change and ODF need to be firmly in place before selling latrines to communities so as not to delay ODF attainment (for more information see Chapter 6 on Sanitation Behaviour Change and at <http://www.wsp.org/wsp/toolkit/what-is-sanitation-marketing>).

Other ways of helping communities move up the sanitation ladder have included:

- Engaging with financial institutions to see if their home improvement loans portfolio can be extended to include help with latrine upgrading (Uganda).
- Artisan Fairs where community members come together to discuss problems, and find solutions to common challenges (Nigeria).
- Promoting micro entrepreneurs as professional sanitation service providers through market research, strengthening of technical and business development/management skills of local micro-entrepreneurs, and facilitating forward (to communities) and backward (to supply chain actors at the regional/national level) linkages of these micro-entrepreneurs based on their business plans (Kenya).

16.4 CONCLUSION: TRANSFORMING AT SCALE

Given the rapid changes with CLTS in Africa over the last two years, it is clear that we have moved into a different landscape with new uncertainties, challenges and opportunities. Recognising its value and potential, and seeing the success across a wide range of country contexts, the key concern of all stakeholders is now *how* to scale up with quality at sub-district, district, province or region, and national levels. Based on experience, the following priorities emerge:

- *Capacity and quality*: Good hands-on training and follow-up mentoring of facilitators and trainers are crucial. Training without mentoring support, and rushed or cascade training, both risk large-scale failure. Plans need to provide for steady exponential expansion of good training with mentoring, bearing in mind that only a minority of those trained will make good trainers. Quality assurance in going to scale depends on their personal qualities and performance.
- *Champions, commitment and campaigns*: CLTS has spread through committed champions who have recognised its power and potential. They have been at all levels from Presidents to local Natural Leaders. Those working in central and local governments have often been critically important. Successful spread of CLTS has tended to be fastest and best as part of multi-faceted campaigns involving many actors in government departments, NGOs, religious organisations, the media and other organisations. Leadership, enthusiasm and competition have played their part. One key challenge is to enable more and more champions to dedicate more and more of their time to CLTS. Those many, like health extension workers, health volunteers and Natural Leaders, who also have other responsibilities, need backing and encouragement. And most critically, a cadre is needed of capable and committed staff who have been released or recruited to be full-time on CLTS.
- *Follow up and rapid realism*: A lot of questions still remain about good follow up post ODF. We need to know more about how to link CLTS with pro-poor sanitation marketing and other post-ODF follow-up activities to move communities up the sanitation ladder and ensure equity and inclusion. The target-driven national campaigns on which so many governments have embarked are at risk of false claims and reports. As in India, these can generate inflated figures and an unfounded fantasy of achievement which is later and embarrassment. To prevent this demands rapid realism – rapid, cross-checked information flows about what is really happening at the grass roots. Many initiatives can support this: recognising and rewarding the realism and honesty of those who report that they have not achieved their targets; regular reflective meetings at different levels to review progress and replan actions; developing M and E and information management systems, increasingly using ICTs, to provide accurate real time data; and ODF verification practices which balance passes and failures, making failures positive learning experiences for communities. The motto at all levels should be 'Learn fast and fail forwards'.

- *Innovating, learning, networking, sharing and mutual support*: Learning from innovations, action and experience, and sharing what works and what does not, are vital for fast and effective navigation in going to scale. Good relationships and communication between the different stakeholders are key. Networking, information sharing and fora for collaboration such as the national working groups, and taskforces are essential tools and sources of mutual support. Action learning, research, workshops like the ones in Lusaka, Bamako and Lukenya (see Lusaka Declaration (2010), Bamako Consensus (2010) and Lukenya Notes (2011)) and exchange visits between countries all have their part to play. Websites (such as www.communityledtotalsanitation.org) and newsletters (see section 3.5 above) are potent means of learning fast.

And, above all, we need honesty, a willingness to learn from failure and the ability to be flexible and change course as field realities continue to change with dramatic speed.

What will next two years bring? Based on what we have seen these past two years, our hopes and expectations are high. If Governments, with support from civil society, can support champions, multiply capacity, foster and reward honest realism, and network, learn, and share with each other, CLTS should become transformative on a vast scale. In rural sanitation and hygiene, Africa can then expect to outstrip much of Asia. But such success is far from a foregone conclusion. Whether such transformation takes place will depend on the vision, commitment, guts and honesty at all levels of the champions who spearhead and spread CLTS. We look to them.

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Chapter 17

Sanitation services in towns

Robert Roche and Letitia A Obeng

Dialogue on sanitation is often in distinct streams: rural or urban focus. Intermediary spatial developments are often neglected, in individual towns. Urbanization is not only creating large urban conurbations, but populations in towns in Africa are also growing fast. Capacity, technical solutions, finance and management in towns are often very different from those in rural or urban settings. This chapter presents a discussion of the individual characteristics, from a sanitation service delivery perspective and outlines what we know about how to address common problems.

17.1 WHAT IS A TOWN?

Some towns are essentially large villages consisting of scattered homes surrounded by farmland, or a cluster of homes and shops along a road. Others may have higher density housing, business centers with shops and hotels, light industrial areas, weekly markets, and both public and private institutions. The population in towns ranges from 5000 to 50,000 people (but the principles set out in this note also apply to small cities and large villages). They fill the space between villages and cities – between ‘rural’ and ‘urban’ where neither informal community-management of water supply and sanitation nor large utility management is well suited. The numbers and sizes of towns in Africa are growing rapidly with most doubling in population every 10–15 years. For every urban center there are three secondary cities, 12 small cities, 50 large towns, and come 150 small towns. Most ‘large villages’ would already benefit from a piped water supply system and will grow to become small towns in the next 15 years (Table 17.1).

Table 17.1 The relative numbers of towns and cities in Africa

| | Population range | No. of cities/towns | No. of cities/towns per urban center | Average population |
|------------------|------------------|---------------------|--------------------------------------|--------------------|
| Urban centers | >500,000 | 9 | 1 | 1,800,000 |
| Secondary cities | 100,000–500,000 | 33 | 3 | 240,000 |
| Small cities | 50,000–100,000 | 110 | 12 | 80,000 |
| Large towns | 15,000–50,000 | 433 | 50 | 25,000 |
| Small towns | 5000–15,000 | ~1500 | 150 | 8000 |
| Large villages | 2000–5,0000 | ~4000 | 450 | 3000 |

Source: Based on town/city population data for Ghana, Ethiopia, Mozambique, Senegal, Tanzania, and Uganda.

With this increase in population there is an increased demand for basic services. Towns are important because they provide an excellent opportunity for inclusive growth which is described by the African Union and the Economic Commission for Africa (2011) as requiring ‘national economic structure transformation, unlocking entrepreneurship across regions and sectors, with well-designed and supportive policy actions underpinned by a vibrant private sector and productive entrepreneurship’. AU Commission (2011).

17.2 DECENTRALIZATION AND THE IMPLICATION FOR SERVICE DELIVERY IN TOWNS

For the last two decades, African governments have been shifting the responsibility for basic services to local government (districts and municipalities). In many countries, the ownership and overall responsibility for water supply, wastewater management, human excreta and solid waste management and associated hygiene education are now with local authorities.

Service delivery. The term sanitation service as used here means the provision and operation of a safe and easily accessible means of disposing of human excreta and wastewater. In the delivery of sanitation services in towns, water supply must also be considered.

As more water comes into the town, there is more wastewater to collect, treat and dispose of. Also, as the quality of life in towns improves, there is an increasing demand for more sophisticated forms of human waste disposal. Unfortunately, neither informal community-management nor large utility management is well suited as a service delivery mechanism in towns, so alternatives have to be found. The majority of households in towns will continue to rely on pit latrines or pour flush toilets, and can dispose of greywater on site through seepage pits. However, increasing numbers of households and small businesses are using more water than can be disposed on their property. In addition, it has to be remembered that towns also face increased water stress and in water scarce environments and approached to minimize water use including alternative technologies, conservation and reuse should be part of the service delivery discussion.

Ownership and regulation. Higher level regulatory authority is normally held by the Ministries of Health and Water as part of their policy and resource allocation functions. Their responsibilities include permits for water abstraction and wastewater discharge, monitoring of public health (water quality and environmental sanitation), and approval of business plans and designs for facilities financed by the central government.

In its regulatory function for on-site sanitation, local government can do much by: (i) promoting improved hygiene and on-site disposal of human excreta, (ii) arranging training for local artisans to construct proper latrines and seepage pits according to standard designs, (iii) facilitating savings/loan schemes to help households accrue sufficient cash to construct improved facilities, and (iv) taking enforcement action against those who disregard sanitation statutes. Furthermore, because of the inter-linkages, between water and the wastewater produced in towns, local governments find themselves with a challenge to ensure appropriate service delivery systems that will deal with the management of both the solid and liquid wastes.

As the regulator of on-site sanitation and the owner of public water supply and wastewater collection/treatment facilities, local government is in the unique position to plan comprehensively for water and sanitation. Plans to address water supply and sanitation services for homes, businesses and institutions, can include bringing more water to towns with the challenge of conserving, reusing and disposing of it.

Oversight and operation of publically owned water and sanitation facilities (Figure 17.1). While local authorities own and/or regulate all aspects of water supply and sanitation, there are various reasons for local authorities to delegate management of public water supply and wastewater collection/treatment facilities to a local board or association, and for the water/wastewater board/association in turn to hire individuals or companies to operate the facilities. These are related to autonomy, accountability, demand responsiveness, and cost effective design and operation outlined in Box 17.1 (Pilgrim and Roche, 2007).

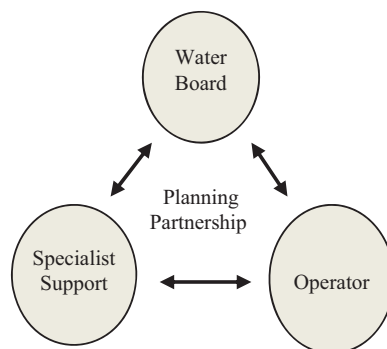


Figure 17.1 Oversight and Operation Arrangements of Publically-Owned Sanitation Services.

Oversight: Local governments should delegate oversight and operations to others. A local board/association whose members live in the town will have the greatest interest in good water supply and sanitation services and the most accountability to

their fellow townspeople. As a result they are most likely to make decisions solely on what's best for local water supply and sanitation services and will see to it that funds are ring fenced.

Operations: Local water board/association members can provide oversight and guidance but lack the time and expertise necessary for operating their facilities. Day-to-day operations can best be contracted to an individual through a performance agreement or a private operator through a contract that sets out performance standards and performance rewards. Considerable authority should be given to the chief operator to hire/fire staff, to procure goods and services, and to make day-to-day operational decisions without delays and needless interference of the water board.

Professional Support: The limited revenue base from town water supply and wastewater collection/treatment means that full time engineers and financial specialists are often unaffordable. The local operator can certainly carry out all routine operations, but should have professional support to improve efficiency and resolve problems. While the town water board/association should get professional help to review operator performance, plan expansion, and update business plans including tariff structures. The water and wastewater board/association, the specialist support to the board and the local operator and the operator all work together in partnership.

BOX 17.1 SUCCESS FACTORS FOR PIPED WATER SUPPLY AND WASTEWATER MANAGEMENT IN SMALL TOWNS

- *Autonomy:* Wastewater treatment and town water supply are marginal from a business perspective, so revenue from the sale of water and treatment of wastewater should be ring-fenced to prevent their use for the other needs of the town, no matter how important. Diverting revenue for other purposes will certainly preclude proper maintenance and the ability to expand facilities to keep up with the growing population. In addition, the service provider should be able to hire and fire staff, set attractive salaries, and offer bonuses for achieving performance goals.
- *Accountability:* Local boards whose members represent households and other consumers should be responsible for overseeing the treatment, disposal or reuse of wastewater collected as well as the operation and expansion of the town water supplies. They in turn should be accountable to the owner of the facilities (usually the local municipality or district) which delegated management to them. Transparency is essential to gain and maintain the trust of users. Regular reports on operational efficiency and income/expenditures should be presented for public review and a specialist should be hired each year to review technical and financial performance.
- *Demand responsiveness:* A range of water services should be offered including house connections, yard taps, and public standpipes. At the same time, households and other consumers need to be aware of the wastewater collection, treatment, disposal and reuse options associated with each type of water supply service. This underpins sustainability by selling sufficient water to finance recurrent and expansion costs as well as wastewater management costs. Innovative payment schemes are always helpful. Where local water sources are constrained, the pricing structure can control demand, particularly for high end uses.
- *Cost-effective design and operations:* Small town water supply systems are over-designed when conventional urban piped water design criteria are employed, significantly increasing both construction and operating costs and limiting options for establishing financial viability of systems constructed. Households and other consumers require accurate information about costs of different services so they can make informed choices.
- *Professional Support:* A common mistake that many small towns make is underestimating what is required to manage their water supply and wastewater facilities successfully. Many towns assume that they can go it alone, but most do not have adequate capacity to do so. Local operators can be trained to handle routine tasks, but experienced professionals are needed to check that town water supplies are being operated efficiently and to plan their expansion to keep up with a growing population.
- *Water Resources Management:* The 'Achilles heel' of a small town is its water source. Small towns rely on groundwater unless there is a large surface source nearby. Given the increasing water stress and scarcity in Africa, many are finding it hard to meet the growing demand, despite their efforts at source protection and recharge augmentation. Where sewers and pond systems are employed to convey and treat wastewater, reclaiming wastewater for irrigation can augment freshwater sources.

17.3 THE WATER SUPPLY AND SANITATION LINK

The demand for water is increasing in towns, particularly in those with expanding businesses and institutions, and growing personal wealth. An improved water supply means increasing volumes of water that must be disposed of on-site; conveyed through sewers to treatment facilities; or discharged into community streets, paths and street drains. Meanwhile, the type of sanitation facility and related wastewater depends on the type of water connection.

BOX 17.2 WATER SUPPLY & SANITATION OPTIONS

Water Options

- *House Connections*: Households with internal plumbing and multiple fixtures.
- *Yard Taps*: Households with a tap in their yard.
- *Shared Yard Taps*: Households that draw water from a neighbor's tap.
- *Community/Public Water Points*: Households that draw water from a public tap.
- *Alternative Sources*: Traditional and other sources besides the piped system.

Sanitation Options

- *Pit latrine*: unimproved or ventilated with floor plate that is easy to clean.
- *Pour flush toilet*: Low volume flush toilet with discharge to seepage pit.
- *Flush toilet*: Flush from tank with discharge to septic tank and leach field or directly to a sewer.
- *Sewer*: Can be simplified: small bore if solids are first removed in a individual or shared septic tank or shallow.
- *Wastewater stabilization pond*: Remove suspended solids, stabilize organic material, and reduce pathogens with longer detention times and ponds in series if reclaimed for irrigation.

Water Supply. People want more water delivered more hours each day. Households that must queue for water at a public standpipe would like a tap in their yard or to share one with a neighbor. Those with yard taps in turn want to move up to house connections with internal plumbing and various water fixtures (i.e., sinks, showers, and toilets).

Sanitation. Households that carry water home or have a yard tap usually have an unimproved pit latrine and are able to dispose of the resulting wastewater on their property, or could if they employed a properly designed seepage pit or trench. Increasingly, households, businesses and institutions are installing flush toilets with septic tanks. However, most septic tanks do not remove solid materials effectively and their overflow is usually discharged to a street drain.

The biggest problem when wastewater is treated on site is that there is a lack of understanding about septic tank design, and particularly about seepage pit and leach field design. Most countries have appropriate design standards for septic tanks, but they generally are not adhered to at the local level. Tanks need sufficient volume to store solids as they decompose, two chambers to effectively separate solids from the overflow, and outlets at mid-depth between the scum layer that forms at the surface and the sludge blanket at the bottom. Furthermore, seepage pits/trenches are either absent or seriously undersized to keep the wastewater on-site. To design a seepage pit or trench, it is important to take into account the reduction in the infiltration rates. Over time microbial activity creates a slime layer in the water-soil boundary (2–5 cm thick) which greatly reduces the initial infiltration rate by two to three orders of magnitude. For example, an initial 1 gallon/ft²/min percolation test rate will reduce to about 1 gallon/ft²/day (45 liters/m²/day) over the period of a year, and then hold constant for a number of years. Table 17.2 gives acceptable loading rates of wastewater in seepage pits/trenches which correspond to percolation rates in a standard test hole.

Table 17.2 Sizing of Seepage Pits/Trenches.

| Percolation Test* Water Level Drop in Test Hole (min/cm) | Seepage Pit/Trench Design Rate (liters/m ² /day) |
|--|---|
| 1 | 45 |
| 2 | 30 |
| 5 | 24 |
| 10 | 14 |
| 15 | 12 |
| 20 | 10 |
| 30 | 8 |
| 60 | 6 |

*Percolation test measures the water drop when the depth of water is 15 cm in a 35 cm diameter hole presoaked overnight. California Regional Water Quality Control Board (1979).

For example, if the test percolation rate is 5 min/cm, the acceptable loading rate of a seepage trench would be at 24 liters/m²/day. Accordingly, a family of five that generates 200 liters/day of wastewater would need a trench with wetted surface area of 8.3 m² ($200/24 = 8.3$). If the trench is 0.5 meters wide and 1 meter deep, 2/3 of which is filled with gravel, its wetted surface area would be 1.8 m² per meter of trench ($2 * 0.67 + 0.5 = 1.8$) and its required length would be 4.6 meters ($8.3/1.8 = 4.6$).

17.4 STRATEGIC PLANNING FOR SANITATION IN TOWNS

Strategic planning is all about setting priorities based on real demand (matching what people want to what they are willing to pay for) and doing what can be done with available resources. As a result designs must be staged base on available financing, water sources should be augmented through groundwater recharge and reuse, and planning should include both water supply and sanitation. One starts by engaging the community in a planning process to prioritize their needs and determine their demand for improved services. Immediate service improvements implemented during the planning process build the confidence in people that something will come out of the process and motivate them to participate in it. Cost effective design, linked to business plans helps build sustainability.

Engaging the community. Much can be gained from engaging officials and community members up front in clarifying institutional arrangements and responsibilities, in introducing different service options and associated costs, in discussing water sourcing, drainage needs and in mapping out options for location of different services. Surveys, discussion groups and workshops are common tools to facilitate the planning process. It is also important to identify and take action on things that can be done right away to improve services such as training of local artisans to design/construct on-site systems, introducing a revolving fund to cover the initial cost of these systems, identifying and stopping wastewater discharges that are causing problems in the community, facilitating the collection and disposal of sludge from on-site systems, and constructing public sanitation facilities, engaging small service providers for drainage work.

Cost effective design. It's also worthwhile at least preparing a preliminary design to identify the wastewater –related facilities and investments needed. Cost effective design is fundamental to balancing costs to revenues. It takes account of the limited funds that government can grant for new construction, the limited revenues that can be generated from the sale of water for maintenance and expansion of the system or of treated wastewater and unpredictability in population growth.

A cost effective design starts with initial assessment and mapping of the town, according to the expected demand for water and wastewater facilities. Again, the focus here is on wastewater management, but similar considerations are needed for associated water supply services. The focus of the initial assessment is on the types of wastewater facilities that households/businesses want, their capacity to dispose of wastewater on-site, and the identification of areas that require sewers. In thinking through options for disposal of wastewater in towns, simplified sewerage should be a viable option. *Mara (2005)* demonstrates the favorable cost comparison between simplified and conventional sewerage.

The operating and expansion costs for the preferred types of service will determine the tariffs that must be charged to produce/distribute water and to collect/treat the resulting wastewater. A financial model linking service levels to the price of water supply and wastewater collection and disposal provides a means to evaluate alternative service levels in an iterative consultation process until expenditures for operations and expansion match income from the sale of water and collection/treatment of wastewater. An iterative design and consultation process is therefore required.

For water supply, costs can be minimized through modular designs of most components that are sized to meet today's population plus five years of average growth. The components can be duplicated to meet actual demand. Considerable costs can also be saved by relaxing design standards for daily/seasonal peaking factors and for water pressure within the piped network. Where the yield of available sources is constrained, residents would need to take measures to recharge the groundwater source, combine surface and groundwater sources, and introduce measures to conserve water through customer awareness and the tariff structure.

For wastewater, cost effective design means the continued utilization of on-site systems to the extent possible, and use of either street drains or sewers where it cannot. Often a combination of on-site solids removal (effectively primary treatment) and simplified sewers can be the best way to upgrade existing systems.

Business Planning. The business plan brings the overall planning process together. It combines the proposed management arrangements, investment schedule, financing strategy, operating staff/procedures, monitoring/reporting program, and customer relations.

The key aspect of a business plan is its recognition that public water supply and sanitation services can only be sustained and expanded if (i) people want them and are willing to pay for them (in other words, that there is demand for the services); and (ii)

funds are available to pay for ongoing operational costs and expansion of services to meet demand. The business plan should contain a plan for maintaining, extending and improving the supply system over time while taking into account water resource availability.

BOX 17.3 STEPS IN COST EFFECTIVE DESIGN PROCESS

- Engage officials and the community at large in the planning process, starting with the preparation of a map of town and identification of service areas and corresponding stakeholder groups.
- Determine current service level and projected demand for water connections and sanitation facilities.
- Assess the water production and distribution capacity of existing components.
- Assess the demand for treatment of wastewater dependent in part on the supply source.
- Assess the capacity of households, businesses and institutions to dispose of wastewater on site, and identify areas where sewers may be required.
- Determine the need for public water supply and sanitation facilities at schools, market centers, and transport stations.
- Determine the current supply gap and identify additional water sources.
- Prepare preliminary engineering designs.
- Carry out a financial model and continue stakeholder dialogue to arrive at sustainable water supply and sanitation services.

The business plan includes:

- *Management arrangements*: Defining the roles and responsibilities of the oversight body (the water board) and water utility operator, plus professional support arrangements.
- *Expansion schedule*: The works required to meet actual demand during the first five years as part of 15 year expansion plan. Financial modelling is essential to ensure that the community can afford recurrent, replacement and part of the expansion costs.
- *Conservation schedule*: The steps needed to increase conservation of water use, given resource constraints.
- *Financing strategy*: Including how and from whom the money to pay for the investment plan will be raised.
- *Operating procedures*: Describing the systems and procedures used for accounting, billing and collection, unit operations, budgeting, and procurement.
- *Monitoring and reporting program*: Setting out the monitoring plan for reporting performance and regulatory obligations to the Water Board.
- *Customer relations policy*: To offer informed choices to consumers, including the type of connection, and to keep performance records and decisions transparent.

17.5 EVOLVING CONSIDERATIONS FOR TOWNS

According to the World Water Assessment Report (2012), more than three hundred million people, (almost 40 percent of the population) in Sub-Saharan Africa live in a water scarce environment. Given this fact and the challenges that climate change is bringing across the continent, the populations and leaders in towns, like other urban areas, need to think about the implications of these with respect to their development needs around water supply, wastewater and human excreta management. Some considerations follow for national and local government:

- National governments should support the evolving needs of towns, by considering alternative and water-saving appliances and technologies which are also cost effective but have had little relevant research in SSA (e.g., simplified sewerage).
- Education and sensitization programs need to emphasize the importance of water conservation, augmentation and reuse.
- Planning for water supply and wastewater management should be considered together by towns.
- 'Green' or 'Eco' on site systems should be considered where they are culturally acceptable.

17.6 SUMMARY AND CONCLUSIONS

The populations of towns are growing rapidly, as they evolve from big villages to centers of growing businesses and institutions. The demand for improved services is growing even faster, making it increasingly difficult to contain wastewater on individual

properties. At the same time decentralization processes are shifting ownership and responsibility for public water supply and sanitation to the town level. This is added to their traditional responsibility for regulating on-site sanitation facilities.

Given the convergence of water supply with wastewater collection/disposal, the move to local ownership of public water supply and sanitation facilities is fortuitous. Proven factors in successful town water supply, however, point to the delegation of oversight of both piped water supply and wastewater collection to local water boards and operations to individuals/companies contracted by them. Going forward a central technical issue for towns will be cost effective design. In addition, as demand for water exceeds the capacity of local water sources, water conservation and wastewater reclamation/reuse will play an important role in meeting demand.

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Sector Management and Financing

Chapter 18

eThekwini commitments monitoring and national sanitation action plans

Sophie Hickling¹ and Yolande Coombes²

¹WSP Consultant

²Senior Sanitation and Hygiene Specialist, WSP

18.1 THE eTHEKWINI COMMITMENTS ON SANITATION

In 2008 the AfricaSan + 5 conference, which coincided with the International Year of Sanitation, brought together over 600 participants including ministers from 32 African countries. The conference culminated in the eThekwini Declaration – a strong statement of commitments by African governments to prioritise sanitation (Box 18.1). In many ways the eThekwini declaration has been the launchpad for concerted efforts to improve the sanitation situation across Africa.

BOX 18.1 ETHEKWINI COMMITMENTS ON SANITATION (FEBRUARY 2008)

- (1) Bring the outcomes of AfricaSan 2008 to the African Union Heads of State Summit;
- (2) Track implementation of the eThekwini Declaration and report on progress at the AfricaSan 3;
- (3) Update country sanitation and hygiene policies; establish one national plan for accelerating progress to meet national sanitation goals/MDGs; and ensure national programs are on track;
- (4) Increase the profile of sanitation and hygiene in PRSP and other strategic planning processes;
- (5) Ensure one, accountable institution takes leadership of the national sanitation portfolio; establish one coordinating body for sanitation and hygiene, involving all stakeholders;
- (6) Establish specific public sector budget allocations for sanitation and hygiene programs with a target allocation of a minimum of 0.5% of GDP;
- (7) Use effective and sustainable approaches, such as household and community led initiatives, marketing for behaviour change, targeted at the poor, women, children, youth and the unserved;
- (8) Development sanitation information systems and tools to track progress at local and national levels; produce regular regional reports on Africa's sanitation status;
- (9) Recognize gender and youth aspects of sanitation, and involve women in all decision-making;
- (10) Build and strengthen capacity for sanitation and hygiene implementation including research and development, and support knowledge exchange and partnership development;
- (11) Give special attention to countries, or areas, emerging from conflict or natural disasters.

At AfricaSan + 5 in 2008, 17 countries became signatories of the eThekwini commitments; other countries have signed them retrospectively. The eThekwini declaration was subsequently endorsed by Heads of State at the AU Summit, 2008 through the Sharm el Sheik Declaration, ratified by all members of the African Union. The eThekwini commitments have also been reaffirmed through various regional and sub-regional declarations such as the Libreville Declaration on Health and Environment in Africa (AMCOW, 2011a).

18.2 FROM COMMITMENTS TO ACTION

While the commitments provided the broad framework of what needs to be done to advance sanitation, their operationalization at country level needs to be planned, financed and monitored in order to achieve results. To support countries in this process, one of the key outputs of AfricaSan + 5 was the AfricaSan Action Plan guidance.

The National Action Plan Matrix is divided into 8 themes, broadly aligned to the eThekwini commitments. As a first step the matrix can be used for countries to assess the current situation. From there the country is able to determine what action is required, timeframes and responsibilities.

The AfricaSan Action Planning process was highly useful in guiding countries from commitments to action. After 2008, very good progress was made in certain areas of the eThekwini commitments. For example between the first and second East Africa Sanitation conferences almost all countries had taken steps towards developing a national sanitation plan and most had designated a coordinating body (ANEW *et al.* 2010).

However in some cases, possibly due in part to the matrix format covering 8 broad themes, the AfricaSan action plans delinked the process of planning from the overall goal and the process became the end in itself rather than the means of achieving sanitation improvements (East Africa Sanitation Plans Peer and Panel Review, 2010). Some country plans became in effect static documents, parallel to sector processes and updated infrequently. Indeed a 2010 review of five AfricaSan Action Plans in East Africa found that only one had been revised and updated since it had been developed, bringing into question its utility as a sector planning and resource mobilisation tool (East Africa Sanitation Plans Peer and Panel Review, 2010).

To address this, in the lead-up to AfricaSan3, countries reviewed their AfricaSan action plans and other sector documents to identify a small number of key priority action areas which had seen least progress since AfricaSan + 5 and which were effectively bottlenecks holding back overall progress in the sector. The results of this process were used to develop more detailed Priority Action Plans for Sanitation with shorter-term, tangible goals which could be re-set in a rolling 6-month review process. The Priority Action Plans for Sanitation dovetail into - rather than replace - the National Action Plan, with a view to focussing efforts where they are most needed.

A unique and important feature of AfricaSan is its structure as an on-going process rather than a series of conferences. Between the main AfricaSan conferences held in 2008 and 2011, various sub-regional AfricaSan meetings took place to review progress and provide opportunities for peer learning.

The importance of continuity of dialogue and action to the AfricaSan process is also evident at country level. In advance of AfricaSan3, 38 countries held preparation meetings involving government, development partners and civil society. Through evidence-based review, countries generated eThekwini monitoring scores and identified current strengths and weaknesses in the sector.

The outputs of in-country preparation meetings informed the design of the main conference, helping to ensure that session themes addressed key concerns in the region (see Figure 18.1).

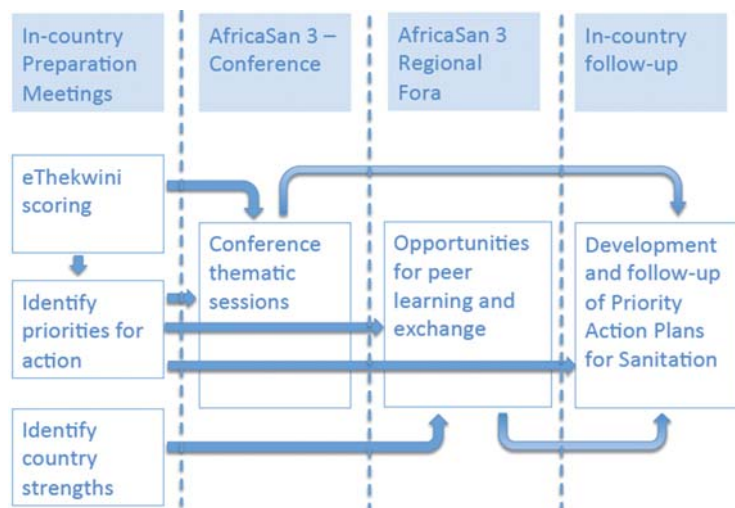
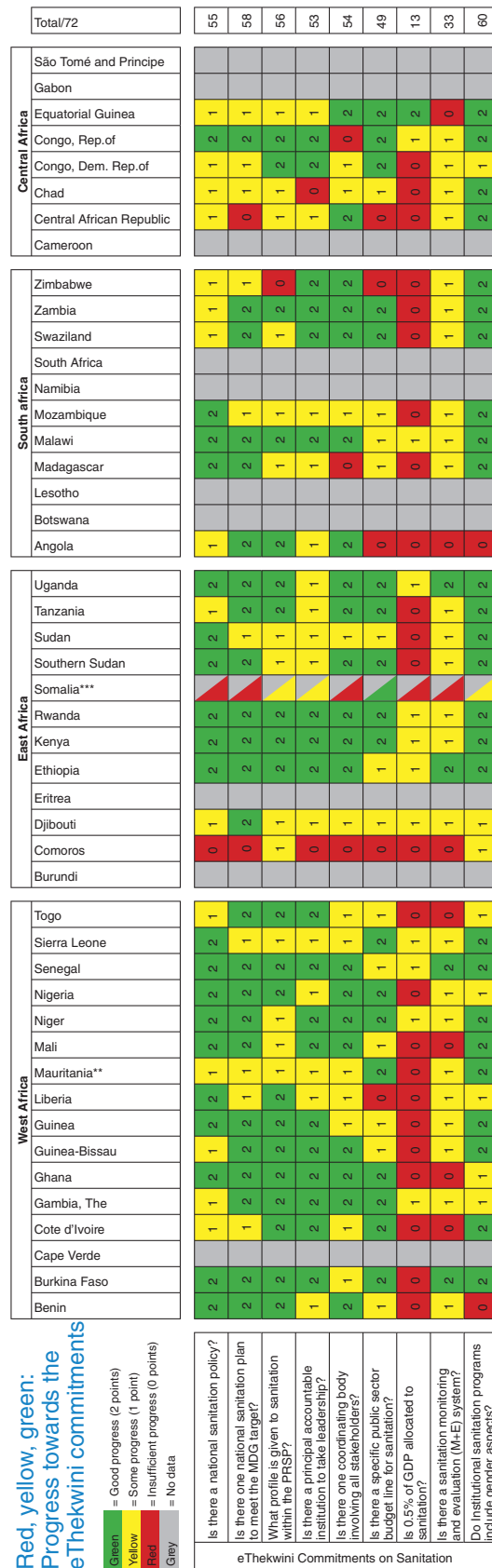


Figure 18.1 Process flow from AfricaSan 3 preparation meetings to Priority Action Plan for Sanitation development.



To track these commitments between AfricaSan meetings, visit WASHwatch.org

Figure 18.2 All Africa eThekweni Monitoring Results, AfricaSan3 2011 (AMCOW et al. 2011b).

Throughout AfricaSan3 the focus was on planned, realistic and sustained action towards improving sanitation. New knowledge garnered through the conference thematic sessions combined with strengthened regional linkages and opportunities for technical assistance, peer learning and exchange through the conference sub-regional fora, helped countries develop robust priority action plans for sanitation.

18.3 MONITORING THE eTHEKWINI COMMITMENTS

At the end of 2008, as part of the commitment to track and report on implementation of the eThekwini declaration, AMCOW and partner agencies requested the Sanitation Task Force to lead the follow up on the commitments to sanitation (AMCOW TAC, 2008). Through the AfricaSan Task Force Sub-Committee on eThekwini Monitoring and Action Plans, indicators were subsequently developed along with criteria for measuring them. These indicators and criteria were reviewed during in-country preparation meetings and the first All Africa eThekwini Monitoring report was produced and presented at AfricaSan3 (see Figure 18.2).

The high degree of variation in the sanitation environment across Africa limits the utility of the eThekwini monitoring as a country benchmarking tool. Comparisons cannot be made between an upper middle-income country such as South Africa and one that has had no functioning government for 20 years such as Somalia. However, reviewing results *across* the commitments provides useful insights into commonalities in commitment achievements. At a glance one can see that there has been progress across most countries in developing national sanitation policies and action plans, but that securing adequate budgets and rolling out monitoring and evaluation systems has remained a challenge.

At county level, commitment monitoring can also be used to gauge progress over time and triangulate priorities to ensure that resources are being targeted towards sector shortfalls.

18.4 AFRICASAN3 MINISTERS STATEMENT AND IMPLICATIONS

The all Africa eThekwini monitoring report presented at AfricaSan3 showed that countries had substantively met the eThekwini indicators, with both East and West Africa having scored green in over 70% of cases (see Table 18.1). However, in some cases the original indicators and criteria did not adequately measure *implementation* of the eThekwini commitments. For example, the indicator used to measure national policies and plans, captured only their existence and not the second half of the commitment which calls for steps to be taken to ensure national sanitation programs are on track.

Table 18.1 2011 eThekwini Monitoring – proportion of commitments met by region.

| | |
|---------|-------|
| Central | 55% |
| East | 71% |
| South | 62.5% |
| West | 71% |

Other commitments were not included in the all Africa eThekwini monitoring – for example the commitment to use effective and sustainable approaches and that to build and strengthen capacity for sanitation and hygiene implementation.

To address these issues Ministers at AfricaSan3 recommended –through the sanitation taskforce – to:

- (1) Review and propose indicators for those targets for which no indicators exist where necessary
- (2) Refine indicators for those targets which have now largely been met
- (3) Test and consult widely on the proposed new indicators and
- (4) To report back at the next AfricaSan meeting using the new proposed indicators

In response to this ministerial directive, the AfricaSan Sub-Committee for eThekwini Monitoring and Action Plans have developed a monitoring methodology which matches eThekwini commitments to existing country data generated and validated by two on-going processes: the AMCOW Country Status Overview (CSO) and the UN-Water Global Annual Assessment of Sanitation and Drinking-Water (GLAAS). Both these processes include indicators that capture eThekwini Commitments and in most cases provide more depth to be able to gauge the degree to which the sector is *implementing* commitments.

As both CSO and GLAAS report on sanitation indicators for urban and rural settings individually, it will be possible to disaggregate data and present results for urban and rural settings independently to allow for more detailed analysis and better targeting.

Three of the original commitments are not included, as they do not specifically target country government action, rather regional bodies, donors and other non-state actors. These are:

| | |
|---|---|
| 1. To bring the messages, outcomes and commitments made at AfricaSan 2008 to the attention of the African Union at its 2008 Heads of State and Government Summit to raise the profile of sanitation and hygiene on the continent. | AU Heads of State endorsed the eThekwini commitments at the 11 th Ordinary Session, 2008, Sharm el Sheik |
| 2. To support the leadership of AMCOW to track the implementation of the eThekwini Declaration and prepare a detailed report on progress in mid 2010, when AMCOW will provisionally host a follow-up AfricaSan event. | All-Africa eThekwini monitoring completed by AMCOW and reported at AfricaSan 3, 2011 |
| 11. To give special attention to countries or areas which are emerging from conflict or natural disasters | Directed to donors' (and NGOs') engagement in fragile states. |

As a baseline, indicators will be drawn from the 2012 GLAAS report (2011 data) and the CSO2 (2009/10 data). The baseline will be drafted through desk review, and countries given the opportunity to present evidence and supplement information through regional dialogue and meetings in 2013. Against this baseline, a second All Africa eThekwini Monitoring will be measured and reported back at the next AfricaSan Conference in 2014.

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Chapter 19

Sustainable financing

Catarina Fonseca¹, Kwabena Nyarko², André Uandela³ and Guy Norman⁴

¹IRC – International Water and Sanitation Centre

²KNUST – Kwame Nkrumah University of Science and Technology

³Co-Water Mozambique

⁴WSUP – Water & Sanitation for the Urban Poor

Sanitation, and particularly rural and peri-urban sanitation, is still widely seen as a purely household responsibility. As a result, most large-scale interventions to increase access to a basic level of service tend to focus exclusively on promoting demand for latrines, capacity building for the development and setting up of small businesses for latrine construction, and awareness raising for hand-washing at critical moments. Based on studies by IRC, KNUST and WSUP in Mozambique, Ghana and Burkina Faso, and supported by data from other countries, key findings presented in this chapter conclude that households are already financing the construction and maintenance of their facilities; that the poorest will need subsidies for accessing and using basic sanitation services; and that unless funds are available for continuing hygiene promotion on a regular basis, long-lasting impacts on health and convenience expected from latrine construction will not be achieved. Existing data shows that coverage ‘averages’ mask the reality of poor use and poor reliability of sanitation facilities, and sanitation interventions need to seriously consider the finances needed to maintain both the facilities and the hygiene behaviour changes over time. Coverage figures also hide existing inequalities in access to service. This paper compares existing expenditure on different cost components against benchmarks, and suggests how to reformulate financing strategies for sanitation services.

19.1 THE CHALLENGE

Two and a half billion people are still without basic sanitation access (37% of the global population); almost three-quarters of these people live in rural areas; open defecation is still practised by 1.1 billion people (15% of the global population); the sanitation MDG is not going to be met. If these figures sound bad, reality is proving even worse. Extensive data collection on the services received by households in Mozambique, Ghana, Burkina Faso and India concludes that the level of sanitation services delivered to rural populations is very poor, below national or international norms (Burr & Fonseca, 2011).

Additionally, the poorest are more likely not to have water and sanitation services than the wealthy, and rural areas have much lower coverage than urban areas. Inequalities extend beyond wealth and geography: girls and women are more likely to bear the burden of water collection, women without access to sanitation suffer the indignity of being forced to defecate in the open and are at risk from rape and assault, and the widespread lack of menstrual hygiene management facilities limits the participation of women in education and the workplace.

Universality is about ensuring WASH services for all – even the hardest to reach – without exception. Currently, there is limited equality in access: the poorest are more likely not to have sanitation services than the wealthy; rural areas have much lower coverage than urban areas. The latest JMP report shows that in many of the countries which have increased access, there is a disproportionate increase in access by those in the wealthier quintiles and those living in urban areas. This is especially true for sanitation.

WASHCost teams in Burkina Faso, Ghana, Andhra Pradesh (India) and Mozambique collected and analysed cost and service level information for water, sanitation and hygiene in rural and peri-urban areas, applying the life-cycle costs approach. The

life-cycle costs approach examines the complex relationships between expenditure, service delivery, poverty, effectiveness and sustainability. The research has identified expenditure on provision, support and long-term maintenance and replacement required to ensure that sanitation services meet national standards and serve families into the future. It offers a financial perspective on sanitation problems, which are exacerbated by limited affordability and limited effective demand.

WASHCost findings on costs and service levels include among others:

- (1) In Mozambique, the very poor are twice as likely to defecate in the open as the less poor and less likely to have access to anything other than a traditional latrine. Three quarters (73%) of those classified as 'less poor' have access to sanitation, compared with two thirds (67%) of 'poor' families and half (52%) of the 'very poor'.
- (2) In Andhra Pradesh, 17% of households received a financial incentive from the government to construct latrines, but only 32% of household latrines are used by all family members and 17% are not used at all. Households were more likely to use latrines when they have invested their own resources. Even in villages that won government prizes for becoming 'open-defecation free' slippage is a problem, meaning that people return to open defecation.
- (3) Technically advanced latrines cost more but do not necessarily deliver significantly better services.

19.2 WHAT NEEDS TO BE FINANCED?

To understand what needs to be financed, we first need to break down costs (fixed and recurrent) and compare them against the services delivered. The costs for sanitation services can be roughly divided into six cost categories illustrated in Table 19.1. Most costing methodologies compare the costs of different technologies along the sanitation chain, that is, a technology-based approach. However, the same technology – for instance a single pit latrine – can provide different levels of service depending on the quality of construction, on the availability of pit emptying, or on whether the waste is disposed safely. This is at the heart of life-cycle cost analysis: comparing sanitation costs with the service levels received by households (Fonseca *et al.* 2011). Analysing disaggregated data provides guidance on finance gaps and how value for money can be achieved.

Table 19.1 WASHCost life-cycle cost components.

| Cost Components | | Brief Description |
|--|--|---|
| Capital Expenditure(CAPEX) The costs of providing a service where there was none before; or of substantially increasing the level of services. | Capital Expenditure Hardware (CapExHrd) | Capital investment in fixed assets, such as cost of excavation of pit, lining, slabs, superstructures and drainage pipes, drainage systems, solid waste disposal systems. |
| | Capital Expenditure Software (CapExSft) | Expenditure on one-off work with stakeholders prior to construction or implementation, extension, enhancement and augmentation (including one-off capacity building). |
| Recurrent expenditureExpenditure associated with maintaining an existing service at its intended level. | Operational Expenditure (OpEx) | Recurrent (regular, on-going) expenditure on labour, materials and purchases of cleaning products for sanitary facilities, soap for handwashing, minor repairs. |
| | Capital Maintenance Expenditure (CapManEx) | Asset renewal and replacement cost: occasional and lumpy costs that seek to restore the functionality of a system, such as replacing slabs, superstructure or irregular pit emptying. |
| | Cost of Capital (CoC) | Cost of interest payments on micro-finance and any other loans taken to construct sanitation facilities. |
| | Expenditure on Direct Support(ExpDS) | Expenditure on on-going support activities for service providers, users or user groups. Costs of regularly conducting awareness campaigns and training programmes. |
| | Expenditure on Indirect Support(ExpIDS) | Expenditure on macro-level support, including planning and policy-making, and support to decentralised service authorities or local government. |

Source: Fonseca *et al.* (2011).

WASHCost has tested over 1000 indicators in its 5 years of action research. Of these, there are four key criteria of services that are critical to define a sanitation ‘service’, namely: accessibility to sanitation facilities which separate faeces from users; use of the facilities by household members; reliability and cleanliness of the facilities; and non- problematic environmental impact (Potter *et al.* 2011). For sanitation, a basic level of service is achieved when the following criteria are met by the majority of the population in the service area:

- (i) At least some members of the household use a latrine with an impermeable slab available at the house, in the compound or shared with neighbours.
- (ii) The latrine is clean, even if this may require high user effort for pit emptying and other long-term maintenance.

The disposal of sludge is safe and use of the latrine does not result in problematic environmental impact.

Under each of the criteria there are several indicators which also feature in many country standards and norms. There are also many other possible indicators, including affordability and acceptability: however, these require considerable resources to collect, and are not easy to compare within a country or across different countries. The criteria and indicators chosen to identify a minimum level of service have been tested at scale and are replicable with meagre country resources when included in on-going monitoring systems. Therefore, they have the potential for being used and collected with some regularity.

The capital cost of building latrines varies widely within and between countries, reflecting differences in local conditions and markets, and in construction quality and standards. The minimum expenditure required to provide a basic level of sanitation service ranges from US\$ 7 for a basic pit latrine to US\$ 36 (2011 prices) for a VIP latrine. Where the cost of materials and construction is comparatively high, the benchmarks suggest that a pit latrine can cost US\$ 26 and a VIP latrine as much as US\$ 358 to provide a basic level of service.

In general, latrines cost more to construct in urban and peri-urban areas than in rural areas, and the cost rises with the sophistication of the technology. The cost of VIP latrines in more densely populated peri-urban areas can be two to three times higher than in rural areas. The cost of constructing VIP latrines is five times higher in Burkina Faso than in Ghana and Mozambique (Burr & Fonseca, 2011).

Building a latrine is only a first step towards an effective sanitation service. The latrine must be used, kept clean, maintained and replaced at the end of its useful life if families and communities are to benefit. Table 19.2 provides recurrent expenditure benchmarks for basic sanitation services.

Table 19.2 Recurrent expenditure benchmarks for basic sanitation services.

| Breakdown of recurrent expenditure* | Cost ranges[min-max] in US\$ 2011 per person, per year | | |
|-------------------------------------|--|-------------------|------------------------------------|
| | Traditional pit | VIP type latrines | Pour-flush or septic-tank latrines |
| Operational and minor expenditure | 0.5–1 | 1–4 | 1–4 |
| Capital maintenance expenditure | 0.5–1.5 | 1–3** | 2–6** |
| Expenditure on direct support*** | 0.5–1.5 | 0.5–1.5 | 0.5–1.5 |
| Total | 1.5–4 | 2.5–8.5 | 3.5–11.5 |

*‘Cost of capital’ and ‘expenditure on indirect support’ are not included owing to insufficient and unreliable sources of information.

**Based on pit-emptying figures derived from Chowdhry and Kone, 2012. Figures used for pit-emptying assume that traditional VIP-type latrines require emptying every five years, and pour flush/ septic tanks every two years. These figures may be adapted to context-specific situations.

***Derived from a soon-to-be-published dataset from a large implementation programme in the sector.

The most problematic recurrent costs – because they are inadequately financed and result in poor services – are the direct support costs and the capital maintenance expenditure. Expenditure on structured efforts to support sanitation and environmental protection is known as expenditure on direct support. Direct support covers the promotion of latrine construction and use, stimulating demand, and working towards sustained behaviour change. These ‘software’ costs are usually neglected in cost estimations. Regular campaigns are needed to promote regular pit-emptying and environmental protection, including checks to ensure that water sources are not contaminated with faecal material.

The WASHCost benchmark expenditure on direct support on sanitation ranges from US\$ 0.5 to US\$ 1.5 per person per year to maintain a basic service. In reality, the actual expenditure on direct and indirect support found in the WASHCost research countries is five to ten times lower than this, ranging from US\$ 0.1 and US\$ 0.2 per person per year in rural Andhra Pradesh and Mozambique (Verhoeven & Smits, 2011).

The recurrent costs of keeping the latrine clean and maintained, of emptying the pit and safely disposing of sludge, and of 'capital maintenance' to ensure that major repairs are carried out, are essential for sustainable sanitation and were found to range between US\$ 0.5 per person per year for traditional pit latrines and up to US\$ 6 per person per year for pour-flush or septic-tank latrines. Data on pit-emptying is especially scarce, underlining that this is a rare event. Without proper attention to emptying latrines and to high-cost major repairs, most fill up or fail within two years in peri-urban areas, and within five to eight years in rural areas. If latrines do not fill up, it can indicate that they are not being used by all family members. Widespread lack of use and failure of household latrines are both public health and environmental issues: not simply family problems.

In Burkina Faso, Mozambique and Ghana, higher levels of service are achieved in peri-urban/small-town areas in comparison with rural areas, due to improved environmental protection and reliability. This coincides with generally higher expenditure on construction and recurrent costs.

In addition to widely observed deficits in the financing of specific sanitation cost components, there are deficits in the financing of sanitation for specific groups in the population. Inequalities in access to sanitation services are present in every country of the world: inequities related to gender, age and disability are consistent across the world, while others related to ethnicity and caste are country-specific. The existing data available for WASH coverage per wealth quintile (JMP) implies that in many countries in the world, coverage has increased in the higher quintiles but has stagnated in lower-income groups. This implies that funds will need to be targeted specifically for the poorest in these countries.

19.3 WHAT IS BEING FINANCED BY WHOM?

Although governments have policies to develop safe sanitation and programmes to build latrines, in rural areas sanitation is largely left to families. Local expenditure on sanitation in the countries where WASHCost has carried out detailed costing research is too low, and is focused almost entirely on the capital costs of building latrines. The expenditure is largely met by households or government subsidies directly to households, or – more commonly – to small businesses to reduce the costs of latrine construction. On the other hand, the largest sanitation programmes in the sector (typically grant-funded) tend to focus on innovative and expensive infrastructure and/or ensuring the 'right' enabling environment, promoting local business and creating demand for sanitation and hygiene programmes.

As a result, there is a striking gap between the expenditure required to provide a basic level of service to the poorest, and what is actually being spent. Too little is spent on stimulating and sustaining demand for hygienic latrine use, and on ensuring that latrines are kept clean and in good repair on a yearly basis until there is evidence that hygiene behaviour has really changed. Further, the absence of arrangements for pit emptying and measures to ensure environmental protection is adversely affecting service levels achieved.

The findings of WASHCost research in Burkina Faso, Ghana, Mozambique and the state of Andhra Pradesh in India show that expenditure on keeping latrines clean and in good condition is generally far too low. However, there exists a constituency of families who highly value their facilities and regard them as a worthwhile family investment. A significant minority (10–15%) of households in Burkina Faso and Ghana spend more than US\$ 15 per person per year on keeping their latrines clean and in good condition. These 'high-spending' households – many of whom beautify their latrines and bathrooms – are more common in peri-urban areas and amongst households with more technologically advanced latrines. It would be of great benefit to identify the key factors that motivate these families and to try to replicate that in stimulating demand.

Actual expenditure on indirect support – policy-making, planning and training at a higher level to strengthen the sector – was virtually invisible for sanitation in WASHCost research countries.

19.4 HOW TO MEET THE FINANCING GAP?

The cost of sustaining basic sanitation services for 20 years can be 5–20 times the cost per person of building a new latrine. As described in this paper, even although households are already contributing to meet many of the costs, the actual recurrent expenditure on the smaller and regular operational maintenance, as well as the larger and irregular expenditure on capital maintenance is extremely low. This is assumed to be strongly linked to the high observed levels of low use by all or some members of the household, and low reliability once the pit is full or the slab needs to be replaced.

The most conspicuous finding from the different studies has been the poor level of sanitation services delivered to rural populations. WASHCost data demonstrates a completely inadequate level of expenditure on recurrent costs following initial construction associated with low service levels. This situation can be remedied if, following construction of new infrastructure, there are people and finances in place to ensure that latrines and hand-washing facilities continue to be used and assets are maintained (with regular pit latrine emptying, for instance).

We suggest that instead of a lack of finances, a re-allocation of some of the existing expenditure to ensure follow-up activities and pit-emptying would deliver more value for money in the medium and long term. Ensuring that higher recurrent costs (slab replacement, transport, pit-emptying, water seal replacement, etc.) are being paid, either by households or by implementing agencies, can improve value for money by protecting assets and avoiding a waste of capital expenditure. A system where life-cycle costs are transparent and fully covered can be a system in which capital investments can be used to extend and improve services, rather than replacing services that have failed prematurely.

Households are already contributing much more than is generally acknowledged. WASHCost research suggests that it is unlikely that poor families can meet the costs of basic sanitation. A better understanding of the real costs of sanitation for the poorest families is needed, together with a more detailed picture of affordability. An important message emerging from the IRC-WASHCost data and WSUP implementation experience is that without a clear commitment from governments, NGOs and donors to subsidise (i) latrine construction for the poorest and (ii) major recurrent costs over the long term, sustainable sanitation services for poor communities in developing countries will remain unachievable.

For an analysis of potential pro-poor sanitation financing mechanisms, WSUP has produced discussion papers on progress linked finance and sanitation surcharges collected through water bills, assessing the feasibility for these mechanisms to address some of the financing gaps mentioned above (WSUP, 2011–2012).

19.5 LOOKING FORWARD

What is not measured is not costed, what is not costed is not done. Applying the life-cycle cost approach to sanitation services and assessing the level of service delivered after the interventions, ensures that implementing agencies start to monitor the sustainability of their programmes. How many of the household members are still using the latrines after 2 years? Is non-use more common among the poor? How reliable are pit latrine emptying services in the area? How many of these problems are a result of lack of appropriate financing?

IRC, KNUST and WSUP have identified the following areas where there is still relatively limited knowledge for financing sustainable sanitation services at scale:

- (i) The use of correct and appropriate costing language in the sanitation and hygiene sub-sectors is critical for comparing like with like when financing needs are discussed. Over recent years, more studies in which sanitation costs are made explicit are becoming available, but it is unclear what cost components are taken into account. The life-cycle cost approach provides a standard language which is commonly used in urban infrastructure.
- (ii) The WASHCost life-cycle cost benchmarks for a basic sanitation level are based on a limited data set. It is critical that large scale sanitation programmes share and make their costs publicly available. This would ensure more accurate benchmarks and, as a result, more realistic and robust financing approaches.
- (iii) There are at present no cost benchmarks for delivering effective school sanitation and hygiene programmes which include menstrual hygiene education and facilities. This is an area of research which is critical, specifically to ensure that girls continue to attend school once they reach puberty.
- (iv) For those countries with a high sanitation coverage level, little is known on the cost of reaching the last 20% or 10%. Will these households cost more to reach because they either live in remote areas or are destitute? Will specific measures be needed to reach them, including different intervention and financing models?
- (v) There is a strong case for policy makers to refocus sanitation priorities. Planning for demand creation and latrine construction is important. It is also critical to plan for higher expenditure on support and measures to promote latrine use and environmental protection, including systems for pit emptying and the safe disposal of faecal sludge.

Looking forward, there needs to be progress overall in access to sanitation services, for all the wealth quintiles, for the whole population. Success cannot be measured with averages, it cannot come at the expense of stagnating coverage and inadequate services for the poorest.

Success will need to be measured in terms of reducing existing inequalities in access to sanitation - between rich and poor, urban and rural dwellers, slums and formal urban settlements, and disadvantaged groups and the general population. This also implies a need for tracking patterns of discrimination and inequality in access to sanitation services across countries so as to encourage targeted efforts to improve them. This means improving the monitoring and analysis of different forms of discrimination and inequality, and disaggregated datasets.

Ultimately, setting targets specifically for reducing inequalities in access to sanitation and hygiene services will enable countries to strike a balance between investing in sustainable and better services while at the same time investing in reaching the ones that have been, so far, left out.

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Chapter 20

Monitoring sanitation in Africa Ongoing initiatives and lessons from the field

Abdou-Salam Savadogo¹

World Health Organization²

Monitoring sanitation and hygiene has been a challenge in many countries in Africa, when, for decades sanitation was little more than hardware provision. Behaviour changes, such as hand washing, safe management of excreta and water at household level, are private and sensitive issues in most cultures and difficult to measure. At AfricaSan 3, the sessions on monitoring provided opportunities to address these and other issues and share approaches and best practices. This chapter summarizes the discussions in Kigali on the status and challenges of monitoring WASH and examines ways of strengthening monitoring at all levels.

20.1 THE AFRICAN REGION: LONG ROAD TO THE SANITATION MDG

Africa as a whole is not on track to achieving the sanitation MDG: the only sub-region on track is North Africa. Only four countries are currently going to meet the sanitation MDG. Progress is slow: according to a recent snapshot on WASH published by AMCOW, sanitation coverage only increased from 35 percent in 1990 to 40 percent in 2010, representing 189 million people that have gained access. In the same period the population grew by almost 400 million people. More than one in five people in Africa still practice open defecation. A few African countries have performed well above the others and show a substantial growth in coverage since 1995. These include Angola, Cape Verde, the Democratic Republic of Congo, Gambia, Malawi and Rwanda.

The Joint Monitoring Program (for water and sanitation managed by UNICEF and WHO) has recently undertaken an analysis of the access to sanitation by wealth quintiles. An analysis of the data from 35 countries in sub-Saharan Africa (representing 84 percent of the region's population) shows that over 90 percent of the richest quintile in urban areas uses improved sanitation. However, in the poorest rural quintile, open defecation is practiced by over 60 percent of households.

20.2 RECONCILING JMP AND COUNTRY SANITATION COVERAGE DATA

Even though sanitation is specific to context, the JMP endeavours to produce estimates that are comparable among countries and across time. This means that global definitions need to be standard, whilst countries use their own definitions, standards and classifications of sanitation facilities. Issues in reconciling JMP and country data include:

- The JMP uses a linear trend line for its estimation, whereas countries use different data sources and different methods of estimation, resulting in different datasets. JMP helps to explain these differences through a 'data reconciliation' process.
- The current JMP method of monitoring assesses progress solely on the basis of the types of facilities used, whereas sanitation (at large) includes many other considerations that go beyond the infrastructure alone. In fact, many stakeholders recommend that the estimates of the JMP consider aspects such as usage of toilets, treatment of excreta, etc.

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²Disclaimer: The author alone is responsible for the views expressed in this chapter; they do not necessarily represent the decisions, policy or views of WHO.

- The exclusion of shared facilities from the category of improved sanitation is contentious, especially as shared sanitation is widespread, can be a public health improvement and is the only alternative in many urban areas.
- The use of MDG monitoring indicators at the country level is also questioned and some stakeholders recommend that the current JMP indicators be 'localized' to increase their value for sector planning, policy development and investment.

These are all valid points and WHO and UNICEF is seeking to address them in future monitoring initiatives. As a global monitoring mechanism, the JMP is required to produce global access estimates to describe trends, track progress towards the MDG target and provide evidence to global decision-makers to enable them to shape future global strategy to improve sanitation.

20.3 COUNTRY MONITORING CAPACITIES ARE WEAK

National capacities are inadequate to produce timely and reasonably accurate monitoring data (GLAAS, 2012). CSO2 has reported that only two countries (Uganda and South Africa) have dedicated national mechanisms for monitoring the quality and quantity of sanitation facility uptake. However, even in these countries, the relationship between public interventions and the quality and quantity of household uptake of sanitation has not been established (CSO2, 2012). A common bottleneck is the lack of budget for the WASH sector monitoring as a whole.

In Africa, there are few countries where the information on hygiene – on a national scale – is available and regularly updated. Data on hygiene are scarce and what there is may even be distributed amongst several institutions. Some countries have yet to establish a meaningful baseline. Lack of attention to monitoring is indicative of the low profile given to sanitation and hygiene by the country authorities. An exception is the case of Ethiopia. Box 20.1 describes how Ethiopia has prioritized sector monitoring and what it has taken to put a system in place.

BOX 20.1 THE ETHIOPIAN NATIONAL WASH INVENTORY TRACKS THE HYGIENE PROMOTION OUTCOMES

Since 2009, the Ethiopian Government has set up a consolidated National WASH Inventory (NWI) to capture information on the status of water supply, sanitation and hygiene in the country. The inventory, for the first time, establishes comprehensive baseline data for the whole of Ethiopia and for all stakeholders. The NWI is able to track the hygiene promotion outcomes (e.g. hand washing) and feed information into the district and national monitoring systems. Sector monitoring by NWI increases responsibility and ownership by implementers at different levels both inside and outside of Government.

NWI is phased as follows:

- The 1st phase (June 2010) comprised the regions of Afar, Harari and Dire Dawa, where data collection has been completed.
- The 2nd phase (June 2011) included the remaining regions: Oromia, Amhara, Southern Nations and Nationalities People's (SNNP) regions, Tigray, Benishangul-Gumuz, Gambella, Somali and Addis Ababa. The data collection of Phase 2 regions is completed and data are being checked and analysed.

NWI has been established after several major steps in building the sector in Ethiopia. These include: the civil service reform and the hiring of health sector staff, the drafting of a Universal Access Plan for WASH, the establishment of a MoU between the Education, Health and Water sectors and the development training modules on hygiene and sanitation promotion. The NWI is a data collection exercise on a vast scale covering all Ethiopians districts and municipalities; over 730 *Woredas* and over 16,600 *Kebeles*. The exercise required training of over 46,000 *Kebele*-level enumerators and intensive coordination of logistics. NWI has made steady progress as a result of good preparation, delegation of roles, cooperation with non-state actors and a well-designed incentives. Local capacity remains a challenge: *Woreda* staff require more knowledge on reporting and analysis and more financial resources and logistical support.

20.4 SUB-NATIONAL MONITORING AND THE CHALLENGE OF NATIONAL ALIGNMENT

Many encouraging sanitation initiatives have been undertaken in Africa, as reported in various sessions at AfricaSan 3. Many of these occur at the local level and are monitored as projects or through local institutions, but this information is not fed into national monitoring systems. A case in point in Community-Led Total Sanitation (CLTS): at AfricaSan 3 it was reported that over 34 countries in Africa are actively tackling the problem of open defecation through the adoption of approaches on

CLTS. These approaches are even included in national sanitation policy and strategy documents in more than 10 African countries (CSO2). A sample of countries includes Ethiopia, Madagascar, Ghana, Mali, Nigeria. The Sierra Leone case (Box 20.2), gives a sense on how a multi-stakeholder partnership, built by Government, civil society organizations and communities can support the spread of CLTS. Some countries have even set targets by which they will eliminate open defecation on a national level. This is the case of Rwanda where a target was set for the elimination of ODF by 2017 and Kenya where the target was set for 2013.

BOX 20.2 MONITORING CLTS IN SIERRA LEONE

Community Lead Total Sanitation (CLTS) is known as a participatory learning and action approach which stimulates a collective community sense of shame, fear and disgust, as community members confront the harsh realities of poor sanitation and its negative effects on the entire community. In 2009, the Government of Sierra Leone (GoSL) adopted a comprehensive policy aiming to achieve 100% open defecation free (ODF) in one district and 50% in five others. Since then, the CLTS process has been led by GoSL through the Ministry of Health and Sanitation and includes NGOs as GOAL, PACE, MUWODA (local NGOs), and local councils and communities.

CLTS has become a strategic priority in Sierra Leone's Poverty Reduction Strategy Paper (PRSP II). It is implemented in six districts with a plan to scale up to another six. The activities already carried out included training for Government staff, NGO staff and Natural Leaders. In schools, child-friendly WASH facilities were built and health clubs were established. A regularly updated, functional database on CLTS is established within the Ministry of Health and Sanitation (MOHS). All these achievements *'triggered'* 3949 villages, of which 1534 are declared ODF. It is anticipated that the first district (Kenema) is planned to be 100% ODF by the end of this year and remaining 5 districts in 2013.

Despite this encouraging progress, ensuring regular data collection and monitoring visits is a problem. Not all the enumerators are able to perform data using a GPS. The Implementing Partners do not have the resources needed to cover large areas assigned to them, sometimes located in remote areas. Advocacy to decision-makers could also improve. Communications could improve such as on radio programs, talk shows, drama series, and videos etc. One idea is for district councils to reward ODF communities by providing them with safe drinking water as part of a WASH package.

CLTS typifies the problem of aligning local and national monitoring. Many CLTS activities are only monitored as the district level and data is not fed up into national monitoring systems. This disjuncture between sub-national and national monitoring is also prevalent in urban areas. Monitoring of services to slums is generally neglected by utilities and service data is not always disaggregated. Utilities also usually monitor sludge offloaded at sewage plants, leaving out the neighborhoods predominately served by on-site sanitation facilities. As a result, the waste produced in cities is grossly underestimated. The use of mobile phones and GIS offer potential for improvement of urban monitoring but these have not yet been applied on a national scale.

Alignment of sub-national to national monitoring systems is a generic problem in sanitation and hygiene monitoring. Improvements should be based on the following pillars of action:

- Capacity building at each step to strengthen monitoring processes.
- Alignment with and inclusion of local monitoring in the national one, in terms of definition, indicators and timeframe, in order to accurately reflect national figures
- Provision of institutional strengthening and support mechanism by the Government to leverage community participation and involvement.

20.5 THE ENABLING ENVIRONMENT MATTERS

Monitoring the enabling environment for the water, sanitation and hygiene sector helps to increase effectiveness and efficiency of funding injected into the sector. In Africa, this is monitored and analysed in two ways: the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) and the AMCOW Country Status Overview (CSO).

20.5.1 The UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS)

The objective of the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) is to monitor the inputs required to extend and sustain water, sanitation and hygiene (WASH) systems and services. This includes the components

of the ‘enabling environment’: documenting government policy and institutional frameworks; the volume, sources and targeting of investment; the sufficiency of human resources; priorities and gaps with respect to external assistance.

The GLAAS report is an invaluable input to the Sanitation and Water for All (SWA) High-Level Meeting, where ministerial delegations from developing countries and donors discuss ways to overcome bottlenecks in the process of providing basic sanitation and safe drinking water to all people.

The GLAAS uses the data collected from countries and supplements these with new data collected from External Support Agencies (ESAs). At the country level, the production of the report is facilitated by national focal points with the support of the WHO country office and in some cases, an external facilitator.

The second UN-Water GLAAS report, released in April 2012, presents data received from 74 developing countries (of which 37 African countries), covering all the Millennium Development Goal (MDG) regions, and from 24 external support agencies (ESAs). A total of 35 Sub-Saharan countries and 2 North African countries (Egypt and Morocco) participated in the reporting.

The report pointed out that in 2010, some countries from Sub-Saharan Africa have reported a shortage of funding, and have high needs. These include the Democratic Republic of Congo, Guinea-Bissau, Liberia, Madagascar, Mali, Nigeria, to name a few. Despite the shortage of funds, some of them have also reported a limited capacity in using funds that are allocated by domestic governments or committed by external donors. Other countries have done particularly well in policies and financing. This category of countries includes Burkina Faso, Ethiopia, Ghana, Kenya, Rwanda and South Africa.

In many countries, the use of periodic reviews to monitor and evaluate the performance of sanitation and drinking water uptake and services has been increasingly institutionalized as a basis for planning.

Finally, the need to strengthen the collection of the WASH financial information, a harmonized method of data monitoring was also emphasized in the report.

20.5.2 The AMCOW country status overview (CSO)

Country Status Overviews (CSO) analyse the ways in which inputs (finance) are translated into outcomes (coverage or use) through government systems. The report identifies the barriers in the WASH service delivery pathways and presents remedial priority actions of each country surveyed.

The development of the CSO2 was commissioned by the African Ministers’ Council on Water (AMCOW) and led by the World Bank-administered Water and Sanitation Program (WSP) in collaboration with the African Development Bank (AfDB), the United Nations Children’s Fund (UNICEF), the World Bank and the World Health Organization (WHO). This followed the initial development of CSO1 by the Water and Sanitation and published in 2006. The CSO2 assessment covered a total of 32 countries in Africa.

The main findings of CSO2 were:

- Countries that have done better in extending WASH services are not necessarily the wealthiest. In fact, low-income stable countries³ made the most progress in reducing open defecation in rural areas and in increasing access to sanitation in urban areas.
- Disparities among countries in the sanitation are striking and are sometimes huge.
- Disparities between richest and poorest quintiles persist in most countries.
- A key action is to ensure that service delivery pathways are embedded within, and linked to, core government systems.

CSO’s are a useful instrument because they provide an analysis of the sector country by country. This collection of data not only to decision-makers to see the overall status and achievements of a country, but to all stakeholders in a sector to see where they can position their contributions towards a greater good. Several other initiatives also provide a country-based analysis. Box 20.3 describes the country assessments undertaken by the UNDP MDG GoAL WASH project.

20.6 MONITORING eTHEKWINI COMMITMENTS

During the AfricaSan +5 held in Durban, South Africa in February 2008, the Ministers and heads of delegations responsible for sanitation and hygiene from 32 African countries made the eThekwini commitments for sanitation. These included creating sanitation policy, developing a national plan to meet the sanitation MDG, establishing one institution accountable for leading the sanitation and allocating 0.5% of GDP to sanitation.

Since the eThekwini Declaration was signed, a group of agencies, including UNICEF, WaterAid, and the World Bank’s Water and Sanitation Program (WSP), has been tracking progress using a ‘*traffic light*’ system. This simply records, against

³Benin, Burkina Faso, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Senegal, Tanzania, and Uganda.

each commitment, whether a country has made good progress (green), some progress (yellow) or insufficient progress (red). The most recent traffic light summary was created for AfricaSan 3 in July 2011. Thirty eight countries participated in the exercise, and thirty three of these completed and endorsed their reports, before including them for consideration in the regional report.

BOX 20.3 THE MDG GoAL WASH PROJECT

MDG GoAL WASH is a UNDP programme that aims to accelerate achievement of the water and sanitation MDGs through strategically targeted interventions that strengthen governance of the water and sanitation sectors at appropriate levels. The approach begins with a country assessment that identifies the gaps, needs, constraints and opportunities in national water and sanitation sector and analyses national strategies, aid coordination, institutional arrangements, sector financing, sector monitoring and evaluation and sector capacity.

By the beginning of 2010, detailed sector assessments were completed in 11 countries (five in Africa: Djibouti, Madagascar, Mali, Sierra Leone, Zambia) and project documents developed for 10 of them. The data is derived from various sources available at the national level and endorsed by the sector Ministries. The programme has now moved to implementing country projects in 10 countries, based upon the assessments made earlier. A gradual expansion of the programme is envisaged, as new resources are identified and become available. It has already received numerous requests from national governments and UNDP Country Offices to expand into new countries including, in Africa, Botswana and Sierra Leone.

All GoAL WASH programmes are run by national managers, responsive to the local culture and context. The UNDP with its leadership role in the program is capable of building contacts at the highest levels of the Government and its Resident Coordinators have access to senior decision makers who can really drive change in water governance.

An overview of consolidated scores of participating countries shows that the region has performed by mainstreaming gender in sanitation programs in institutional settings (especially schools). Moreover, most countries also have a national sanitation plan to meet the MDG target. Nevertheless, the region does not do well in meeting the commitment of allocating 0.5% of GDP to sanitation and implementing the sanitation Monitoring and Evaluation (M & E) system.

20.7 WAYS FORWARD MONITORING SANITATION AND HYGIENE IN AFRICA

20.7.1 Global initiatives

In the preparation of the Post-2015 monitoring landscape, the JMP has initiated a review of the current global drinking-water and sanitation target and indicators. This process aims to propose a new generation of targets and indicators, considering the principles underlying the Human Right to Water and Sanitation. With the participation of countries in this process, the expectation is that most of their concerns are taken into account in the new monitoring frame. The new targets and indicators are supposed to be adopted by the UN General Assembly in September 2013.

The JMP has also taken some steps to address all technical and methodological shortcomings prior to 2015, by organizing task force meetings to work out appropriate solutions. This work will be strengthened in the future, based on country requests and JMP specific needs. Despite this engagement in countries, it is worth noting that sub-national monitoring is not a JMP remit and that the national MIS should take care of this monitoring level, even though the JMP could provide technical backstopping.

As for the GLAAS process, the regular review and advisory meetings allow to receive advice from partners in order to improve the methodology of data collection and the sharing of the outcomes of the report.

20.7.2 Regional and national initiatives

Monitoring and evaluation still faces big challenges at various levels despite positive efforts made in recent years. Very often, it is difficult to diagnose the specific bottleneck along the chain of WASH service delivery because of a lack of information caused by ineffective monitoring.

As ways forward, the ministerial commitments made at AfricaSan 3, undoubtedly, provide a basis for sanitation and hygiene improvement in the region. These commitments relate to strengthening the monitoring by revisiting current indicators, refining and testing them, and reporting back at the next AfricaSAN meeting using the new proposed indicators.

The African Union (AU) Assembly, held in Sharm El Sheik in July 2008, requested the African Ministers' Council on Water (AMCOW) to set up a Pan-African Mechanism for Monitoring the Water and Sanitation sector and to annually report to the AU

Assembly on the progress made. Since then, AMCOW has worked with other monitoring mechanisms⁴ on a Core set of indicators considering a number of sub-themes and performance categories related to the WASH services. The first continental report is being prepared. It is based on countries' self-reports and aims to produce data on the use of toilets and collection systems, both in urban and rural areas.

Country consultations and data gathering started in May 2012 and the inaugural report is expected by October 2012. It is worth noting that GIZ/BMZ and the African Water Facility African Development Bank are providing support to AU in implementing this ambitious project.

Sub-regions in Africa have set up other individual initiatives on WASH monitoring that need to be sustained and better valued. For instance, the Eastern Africa Regional Sanitation Conference, the SADC Water and Sanitation Sub Regional Conference and the MDGs Monitoring and Evaluation of water in North Africa – MEWINA- are part of these initiatives.

With the rapid spread of CLTS in the African region, it is likely that future monitoring, at least at the sub-national level, will heavily repose on community-led types of monitoring. To this end, corrections must be made in order to make sure that the results obtained at the local level can feed the national and the international levels. This is only in way that monitoring can be useful for decision making.

In addition, the next IRC's flagship symposium, which will focus on monitoring WASH services, is planned for April 2013 in Addis Ababa (Ethiopia). This symposium will offer an opportunity to technicians to discuss and share the latest tools, including discussions on indicators, from the national to the international level. During the forum, the life-cycle costs approach, seeking at better understanding the costs related to providing WASH services, will be featured as a means to increase countries' capacity in planning and monitoring of WASH services.

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⁴JMP, GLAAS, Aquastat, Mewina, etc.

Chapter 21

Capacity building

Sophie Hickling

Water and Sanitation Program

Without adequate capacity, sanitation programmes cannot be successful and sustainable in the long term. The need for capacity building in sanitation was a key theme emerging from several country preparation meetings prior to AfricaSan 3 and cut across sessions throughout the conference. And yet often times it is not clear what ‘capacity building’ exactly means and how to do it well. This chapter first defines what capacity building is, and assesses the need for sanitation capacity in Africa. Previous and current actions on capacity building are explored using examples, followed by a discussion on where future efforts might focus to bridge the capacity gap and ensure that capacity building becomes a central part of sanitation planning and implementation.

21.1 INTRODUCTION

Sanitation capacity is a broad term that includes having sufficient numbers of appropriately skilled human resources in place at national, regional and local level, both within government and externally within development partners and civil society. In addition, these skilled staff need to have adequate material resources, equipment and financial resources to carry out their roles effectively, as well as opportunities to generate and share knowledge to advance the sector.

Capacity development can be viewed in three levels (Spuhler *et al.* 2012), each of which should be addressed by sector plans to ensure that capacity building is cohesive, comprehensive and effective in bringing about results:¹

- (1) *Individual level*: people / staff having appropriate skills and competencies to carry out their role.
- (2) *Organizational / institutional level*: having procedures, systems, policies and cultures in place to carry out the institutions role.
- (3) *Enabling environment*: having governance structures, institutional arrangements, policies etc consistent with achieving sanitation goals.

Capacity building is a continuous process of securing skills, resources and knowledge rather than a one-off training event. It needs to be embedded in sector plans to ensure that gaps are identified in each of these three levels (individual, institutional and enabling environment) and addressed strategically and efficiently as a central part of the sectors core business.

21.2 THE CAPACITY BUILDING CHALLENGE

Several aspects of sanitation present challenges to capacity building. Human resource planning and coordination for sanitation is a complex issue involving many skill-sets, cutting across multiple line-ministries at central and decentralized level, and also including the private sector, NGOs and civil society. Assessing scattered capacity is a challenge as is using existing capacity efficiently.

The 2012 GLAAS report found that although shortages of extension staff for sanitation and hygiene promotion, technicians and skilled labour were reported as a bottleneck to the sector, ‘half of countries did not report on how many

¹A similar 3-level approach is used by SNV Kenya (see Box 21.2).

WASH staff were in place', indicating that accurate information on actual resources available is largely unknown (UN-Water GLAAS, 2012).

The recent process of decentralization has in many cases passed the onus of sanitation provision to local authorities that do not have the staff, skills or experience to deliver results (AMCOW *et al.* 2008).

Many times, multiple actors are engaged in capacity building in an unplanned way by to meet immediate needs. Without a clear capacity building strategy or plan, disjointed, ad-hoc efforts to build capacity do not produce results. Without results, future investment in capacity building is deterred.

Frequently capacity building initiatives focus only on staff numbers and human skills, without consideration for the interconnectedness of other 'levels' of capacity building (i.e., institutional and enabling environment). Even a full cadre of highly trained individuals cannot sustainably achieve sanitation goals without strong institutional arrangements, policies and systems in place.

21.3 SANITATION CAPACITY BUILDING AS A PRIORITY IN AFRICA

A review of sanitation and hygiene status in 32 countries carried out in 2008 [AMCOW *et al.* 2008] found sanitation capacity to be a critical constraint to making progress towards the sanitation MDG. Country reports highlighted a lack of capacity at all institutional levels: public institution, local government, private operator and civil society.

Agreed priority actions in country reports of the second AMCOW Country Status Overview frequently refer to the need for sector capacity building at different levels including at local or district level for improved implementation. Other key needs are for central sanitation departments to assume a strong advisory role in support of districts, and for a stronger private sector.

In the lead up to AfricaSan 3, 38 countries undertook country preparation meetings, and 33 submitted endorsed country reports detailing priority actions to get back on track to meet the sanitation MDG. One of the key priorities that emerged, common across 13 countries, was capacity building.

For the majority of cases capacity building priorities referred to decentralized capacity building of local government, district or commune teams. However a significant number of countries referred to reinforcing capacity of newly established national sanitation departments.

At district or local level, capacity building priorities reflect the practicalities of implementing programmes on the ground - in particular contract management, planning and implementation. At national or regional level the focus was more on capacity building to equip technical teams to assume an advisory role in support of districts or communes.

21.4 ACTION FOR CAPACITY BUILDING

Building sanitation capacity is being given higher priority in Africa. At the 2012 Sanitation and Water for All High Level Meeting, ministers made a commitment 'to assess and address capacity gaps to improve sector performance; Ministers will assess capacity deficits in human resources, skills, at national and decentralized levels and implement appropriate actions to address these gaps. Ministers will set out a course of action to build capacity to deliver services for all' (SWA, 2012a). This type of high-level commitment will not automatically translate into greater capacity on the ground, however it does hold governments accountable to addressing the issue.

Action is taking place at country level. Both Zimbabwe and Ethiopia have significant experience in building and maintaining sanitation capacity. Box 21.1 gives details of how success was achieved in Zimbabwe. Ethiopia has defined a capacity building strategy for scaling up sanitation and hygiene and an approach to knowledge management, learning and sharing which is clustered into four thematic areas:- increased number of trained personnel at all levels, strengthened systems for action research, platforms for networking and dissemination, and coordination (SWA, 2012b). A tangible example is the cadre of 38,000 skilled Health Extension Workers developed and supported by the MoH, which has contributed to the gains seen in the sanitation sector.

As the Zimbabwe example illustrates, the use of dedicated resource agencies to build capacity for sanitation at different levels can be efficient and effective. In West Africa a strategy of working with WSA (Water and Sanitation for Africa)², an experienced and regionally active training organization, has led to a rapid increase in the number of skilled CLTS facilitators available (Bevan, 2011). Another organization with a specific focus on capacity building is SNV, Box 21.2 provides more information on SNVs approach to capacity building for sanitation in Africa. A study of the WSP total sanitation marketing

²Previously known as CREPA (Centre Regional pour l'Eau Potable et l'Assainissement à faible cout).

(TSSM) program in Tanzania found that using national NGOs as resource agencies to build the capacity of local government was an effective approach. However potential limitations to the approach include insufficient suitably skilled organizations in-country, and whether those resource agencies themselves have the ability to scale up activities to a national programme (Rosensweig & Kopitopoulos, 2010).

BOX 21.1 ZIMBABWE: PLANNING FOR CAPACITY FROM INCEPTION

The successful Integrated Rural Water Supply and Sanitation Programme (IRWSSP) implemented in Zimbabwe from the late 1980s to 2000 exemplifies how capacity development, in terms of human resources, institutional capacity and knowledge management, was integrated into program development at the outset of a national program. A vital success factor for Zimbabwe was the government leadership and prioritization of capacity building as a way to achieve long-term goals.

A first full capacity assessment took place in 1987 with subsequent, periodic capacity assessments taking place, to establish what skills were needed at each level to attain Programme goals - from national coordination units, to provincial and district water supply and sanitation committees, to local private sector, village committees and pump attendants. From this a coordinated approach to training, material support and knowledge sharing was developed.

Specialized training institutes such as the Institute of Water and Sanitation Development (IWSD) have been instrumental for capacity building, providing tailor-made courses to meet identified needs. For example, in terms of formal training, the IWSD offered a postgraduate diploma aimed at creating a generation of government sector managers to drive water and sanitation programmes. Government and donors supported candidates to attend this diploma course. IWSD also offered short professional and skills development courses in response to demand. Ministries also prioritized training: the Ministry of Health and Child Welfare trained latrine builders, and the District Development Fund trained pump mechanics. Training was also made available at the sub-district level, for example, through community health clubs.

Other elements of success included: clarity on roles and responsibilities, standardized training curricula, and dedicated funding from the government budget to support capacity building. A strong link was created between research (such as through the Blair Research Institute), policy and training.

Information provided by Noma Nesen, Institute of Water and Sanitation Development.

Several countries that identified capacity building as a priority to reach the sanitation MDG, have since developed concrete action plans detailing specific activities to address capacity building amongst other priorities. For example the Tanzanian Sanitation Sector working group is currently finalizing a capacity needs assessment. Against a backdrop of recent progress in the sanitation sector in Tanzania and new financing for scaling up activities, the study will compare existing human resource capacity with the requirements for delivering a national programme. It will examine the capacity of government, NGOs and the private sector at national and decentralized level, as well as addressing capacity requirements in the enabling environment for example institutional arrangements and coordination platforms.³

In the case of Malawi, as well as including capacity building in district investment and strategic plans, the sector will focus on the importance of knowledge management for capacity building by engaging with academia and higher learning institutes for research and development as well as improving documentation and dissemination of knowledge.

There are several instruments available for building capacity: education, training, research and documentation and knowledge and information management and sharing (Spuhler *et al.* 2012). As noted, identifying existing national and regional resource centres and training institutions is a first step in building sector capacity (GLAAS, 2012). Embedding sanitation into existing courses and degrees, or developing new curricula dealing with sanitation such as in Zimbabwe will ensure a cadre of trained individuals. In order to be effective, training should include a clear strategy, objectives, methodology, trainers with expertise in the subject matter as well as training skills, materials and a way to monitor and evaluate the effectiveness and impact of the training (Rosensweig & Kopitopoulos, 2010). Knowledge generation through research, reflection, documentation and knowledge sharing, such as in Malawi, which holds regular stakeholder discussion forums and produces a national CLTS newsletter are essential to building sector capacity (Nyimba in Hickling & Bevan, 2010). At the local level capacity building could be promoted by institutionalizing mechanisms for districts to share experiences and lessons learned (Perez *et al.* 2012). The sector could set up a community of practice for sanitation, to share ideas and solve common problems: an approach that has been successful in the health and private sectors.

³Private communication – WSP Tanzania.

BOX 21.2 CAPACITY BUILDING RESOURCE AGENCIES: SNV KENYA EXAMPLE

In Kenya, SNV, an international not-for-profit development organization, works alongside government and other partners building capacity in the Kenya CLTS/ODF programme. The table highlights the key elements of the capacity development approach adopted by SNV in this programme.

Dimensions and examples of capacity building in Kenya

| Dimensions | Key Elements | Practical Examples from up-scaling of CLTS in Kenya |
|---|---|---|
| Institutional: Setting norms and improving interaction between institutions in the sanitation sector | Sector policies, strategies, planning, coordination platforms, approaches, monitoring framework, financing mechanisms | <ul style="list-style-type: none"> • Development of national sanitation policy and CLTS road-map • CLTS steering committee meetings • District level coordination mechanisms • Learning alliances and sharing events |
| Organisational: Capacity of organisations to set and reach their own goals | Organisational structures, systems and procedures, staffing arrangement, finances, logistics, organisational culture | <ul style="list-style-type: none"> • Development of CLTS monitoring tools, ODF standards and verification tools • Process monitoring and documentation • Monthly newsletters publication • Development of training manuals, tools and methodologies |
| Human resources: Individual staff knowledge, skills, attitudes and behaviours | Management skills, technical training, knowledge, skills, attitudes and motivation | <ul style="list-style-type: none"> • CLTS Training of Trainers • CLTS Facilitators training • Coaching and on-site back-stopping support to CLTS facilitators • Study tours |

In SNV's Approach, the first step is to identify key systemic constraints using a holistic market analysis tool and to carry out the situation analysis. SNV uses an approach that brings together key stakeholders in a multi-stakeholder platform, helping identify capacity gaps and develop a joint strategy towards addressing them. Once such platforms are established at various levels, SNV facilitates the action planning process of key institutions aimed at addressing the systemic market constraints and related capacity gaps. Three strategies are used to deliver capacity development services: (i) advisory practices (based on a shared development vision agreed upon earlier) ii) knowledge development (focusing on learning together) and iii) evidence based advocacy.

Information provided by Chiranjibi Tiwari, SNV.

21.5 FOCUS FOR THE FUTURE

The 2008 review of sanitation and hygiene status in Africa (AMCOW *et al.* 2008) concluded that 'capacity building must be a priority and should focus on learning and knowledge sharing – not just exclusively on training'. This conclusion still resonates.

Whilst many dimensions of the enabling environment are difficult to influence, support for capacity building is an area where external technical assistance can be garnered (Perez *et al.* 2012). Dedicated external technical resource agencies exist for capacity development; learning exchange and peer support can equally provide valuable opportunities to build capacity.

Long term capacity development in sanitation programmes will take preparation: firstly a clear articulation of the skills and competencies required for positions along the sanitation value chain, followed by capacity coordination across a number of concerned sectors, strategic allocation of existing skills and capacity and identification of remaining capacity gaps.

Priority should be given to building decentralized capacity, for local governments bearing the responsibility for sanitation as well as for newly formed central departments with the responsibility to advise and support them (AMCOW *et al.* 2008).

A comprehensive sanitation sector capacity building plan should be developed to ensure that efforts are focused towards building all aspect of capacity (staff, skills, knowledge, materials, equipment, financing) at all levels (individual, institutional and enabling environment) and can be continuously monitored and reviewed.

Finally approaches need to take a broader view of capacity building, to encompass individual, institutional and enabling environment aspects fully embedded within national policies, strategies and programmes to promote sector accountability for building and sustaining capacity towards meeting sanitation goals.

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Chapter 22

Making the case for sanitation and hygiene

Giving the issue the priority it demands

Saskia Castelein and Amanda Marlin

Water Supply and Sanitation Collaborative Council

AfricaSan 3 was, amongst other things, an advocacy event. Advocacy work during the past decade has broken the taboo around sanitation: clean toilets and good hygienic behaviour are now considered essential for the economic and social development of a country. However, despite the progress, there is a continuing need for targeted action: specific budget lines with sufficient funding, transparent tracking systems and solid plans which target the poorest. This chapter reviews the state of advocacy for sanitation and hygiene in Africa and considers what is needed to better make its case.

22.1 WANTED: LEADERSHIP FOR SANITATION AND HYGIENE

Sanitation and hygiene is increasingly discussed more openly: events and conferences are attracting high-level participants and powerful voices are championing the cause. We know that success requires not just funding and plans, but also committed leadership. The impressive progress made in Rwanda (see Box 22.1), the host country for AfricaSan 3, can readily be seen as a result of leadership – from the highest level, the President, right through to decision-makers at local level.

BOX 22.1 AFRICAN LEADERS STAND UP IN SUPPORT OF SANITATION AND HYGIENE

Paul Kagame set the tone when he spoke at the gala dinner at AfricaSan 3. He quoted an African proverb ‘even if you need to ask your brother to wash your back, you should still be able to wash your stomach’. He went on to say that he understood that African countries might have, in the past, needed some help from donors – and that some might still need help – but added that they should also be able to contribute to the efforts themselves, in other words, they should ‘wash their own stomachs’. Twelve months after Kagame’s speech, at a sanitation meeting in rural Uganda, Kagame’s comment was quoted – proof that good oratory sticks in the mind, and thus is good advocacy! Rwanda led not just by word, but also by deed. Visitors from around the continent noted that this country is one of only four Sub-Saharan countries that are on-track to meet the MDG target for sanitation and remarked on the clean streets and availability of public toilet blocks as they drove around the capital.

Kagame was not the only African leader to make a strong stand at AfricaSan 3. Eng. Ebele Okeke, of Nigeria, a WSSCC WASH Ambassador, participated in a number of sessions and shared her experiences in high-level advocacy in Nigeria and beyond. Mrs Mary Broh, the dynamic Mayor of Monrovia, Liberia, used her time at AfricaSan 3 to plan towards a renewed push to improve sanitation in her hometown, gathering ideas, and building a strong plan for community action.

22.2 NEW MATERIALS AND NEW WAYS OF WORKING TOGETHER

22.2.1 New advocacy materials using economic arguments

The sector has had considerable impact with health related messages, such as the links between poor sanitation and diarrhoeal disease, and these arguments will always be core to our advocacy. However, especially in the current harsh economic climate, and thanks to the emergence of new research, advocacy messages that focus on the economics of sanitation and hygiene are both

possible and needed. New materials launched at AfricaSan 3 highlighted the economic benefits of investing in sanitation, and the costs of failing to do so.

One of those new sets of advocacy materials came from WSSCC, with the launch of its new WASH campaign – GDP for GDP, which stands for Good Dignity Practices for Gross Domestic Product. With this campaign slogan, WSSCC aims to redefine what ‘shit’ stands for – a source of economic gain, rather than a drain on government or donor funds. Gross Domestic Product (GDP) is an internationally recognized term and understood by those in key decision making positions across governments, the private sector and the development sector. Increasing GDP is considered a sign of progress. The underlying message is that sanitation, whether in the literal context of reusing human waste, or in a broader development context, has a positive economic value. This could be from an increase in productivity, an increase in tourism revenues or a reduction of health costs. By linking good sanitation and hygiene with economic benefits, the GDP for GDP campaign aims at convincing and engaging decision-makers, as well as entrepreneurs, to take and sustain action based on evidence. Economic case-studies studies on sanitation address a previous gap in evidence that is needed for advocacy, especially when seeking to convince governments to act. In Kigali, the Water and Sanitation Programme presented the Economics of Sanitation Initiative showcasing socio-economic returns to households, businesses and the wider community. Benefits include increased productivity through time gains and health benefits, increased tourism revenues through clean environments, and other benefits related to dignity and safety. The studies also provided indications of economic losses when sanitation facilities are non-existent or not used. AfricaSan 3 presented a number of studies ready to be used for country advocacy work.¹

These advocacy materials, based on economic studies, have since been used to good effect in a number of countries – most particularly in the discussions that took place at national level in the lead up to the Sanitation and Water for All High Level Meeting held in Washington in April 2012. The High Level Meeting engages Ministers of Finance, and these economic analyses focus directly on the issues, and use the language, that we know resonates with them. As a sector, we would do well to develop equally well-tailored advocacy materials to reach decision-makers in related sectors: in the fields of nutrition, education, climate change or human rights.

While making the most of economic arguments, it is important to ensure growth with equity. Too often, efforts to reach the largest possible numbers of people result in programmes that ‘pick the low hanging fruit’. Studies presented at AfricaSan 3, analyzing the gaps between rich and poor, men and women, urban and rural, showed that, over time, the gaps in access are in fact increasing. Encouragingly, new thinking, led by UNICEF, among others, indicates that pro-poor approaches are, in fact, the most cost-effective way to achieve improvements in health and development. Sanitation advocates will not need to make a choice between economic arguments *or* equity arguments, but advocacy messages will need to be well-crafted, to capture these subtleties and will need to coordinate efforts to ensure that consistent messages are being communicated.

22.2.2 New global platforms

AfricaSan3 was also an opportunity to look at some key global initiatives, and to consider how they could be used to help strengthen work being done at national and regional level.

22.2.3 Sanitation and Water for All

The Sanitation and Water for All partnership (SWA) brings together governments, donors, civil society organizations and development partners to achieve sustainable sanitation and drinking water for everyone in the world. It was set up in 2010 and, unlike previous initiatives, developing country governments are in the driving seat. Donors are there to support. The SWA partners work towards a higher prioritization of political leadership, a stronger evidence base that supports good decision-making; and towards solid national plans with targeted investments, so that money is spent where it is most needed and in a way that is most effective.

AfricaSan 3 was held in July 2011 – nine months before the second SWA High Level Meeting (HLM) which took place at the World Bank in April 2012. This was ideal timing – it was a great opportunity for participants from each of the countries to find out more about the plans for the meeting, to strategize on how best to encourage their finance ministers to attend, and to hear the latest facts and figures, which could be used to underpin their advocacy.

The HLM and national meetings are an opportunity to promote decision-making based on evidence. The HLM is timed to utilize the findings of the Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) and the UNICEF-WHO Joint Monitoring Programme report (JMP), both of which are key sources of evidence for decisions and advocacy.

¹Currently, there are studies for: Benin, Burkina Faso, Central African Republic, Chad, Democratic Republic of Congo, Ghana, Kenya, Liberia, Madagascar, Mauritania, Mozambique, Niger, Nigeria, Tanzania, Uganda, Zambia.

22.2.4 Drive to 2015

A special event on the first night of AfricaSan 3 provided the chance to launch *Sustainable Sanitation: the Drive to 2015*. Key note speaker and champion of this advocacy initiative, Ms. Ushchi Eid, the Vice Chair of the Secretary-General's Advisory Board on Water and Sanitation (UNSGAB), invited all those present to take on the sentiment at the heart of the drive – to make the right to sanitation a reality.

The Drive to 2015 builds on the success of the 2008 International Year of Sanitation. In 2010, the UN General Assembly adopted a resolution calling upon Member States to 'redouble efforts to close the sanitation gap'. The resolution gave birth to the Sanitation Drive to 2015 to focus attention on the sanitation target by mobilizing political will, as well as financial and technical resources. The resolution also made history by calling for an end to open defecation, the most dangerous sanitation practice for public health.

A few months before the AfricaSan 3 conference, the Drive to 2015 was launched in New York by UN Secretary-General Ban Ki-moon along with members of the Secretary-General's Advisory Board on Water and Sanitation and other dignitaries. In his speech, the Secretary-General highlighted the importance of improved sanitation and its link in contributing to development goals stating, 'it is time to put sanitation and access to proper toilets at the center of our development discussions'.

The Drive to 2015 was certainly visible at AfricaSan 3 – with the logo on each participant's lanyard, sessions in the programme, and fact sheets available addressing the main key messages:

- Sanitation for all: making the right a reality
- Sanitation is vital for good health
- Sanitation brings dignity, equality and safety
- Sanitation is a good economic investment
- Sanitation sustains clean environments

22.2.5 Civil society – a growing voice within the Regional Sanitation movement

For the first time civil society played a central formal role in the AfricaSan 3 agenda. ANEW, a network of networks of 23 African countries, was fully involved in the preparatory processes and used the opportunity in Kigali to engage on issues of coordination, capacity building, planning, monitoring and transparency, and on equity and inclusion. Civil society's presence in AfricaSan may be further enhanced. In a review of the Regional Sanitation Conferences coordinated and published by WSSCC (2012), Cross *et al.* (2012) observed that civil society participation in the South Asia regional sanitation conference (SACOSAN) is particularly strong. In SACOSAN civil society hosts a workshop in the lead up to the conference, CSOs develop a statement to feed into the final conference statement, and civil societies are represented on the drafting panel for the final conference statement.

22.3 WHAT NEXT FOR WASH ADVOCACY?

The climate in which WASH advocacy needs to take place is changing, and if we are to be successful we will need to change too. Various options are available, none of them mutually exclusive.

One option, raised by Cross and colleagues in their paper 'Synthesis of assessments of Regional Sanitation Conferences: looking back to look forward' (WSSCC, 2012), is for the regional sanitation conferences to grow into a fully-fledged social movement. This is an intriguing prospect. When one looks at other global health and development issues, such as the efforts to control HIV/AIDS, climate change or gender equality, they are characterized by broad-based understanding and support by people in both developed and developing countries. Teles and Schmidt (2011) note that 'Successful efforts to change public policy often require both grassroots as well as elite strategies'.

Arguably the importance of clean drinking water has broad-based, global support, but sanitation and hygiene do not. Members of the general public in rich countries, and those who do have access to toilets in developing countries often seem unaware of the extent of the issue or, if aware, are not taking action. They are not calling on their governments to act or lending their voice to the debate on the issues. Recent advocacy efforts around World Water Day – 'The World's longest toilet queue' in 2010, and 'The world walks for water and sanitation' in 2011 and 2012, are starting to build this type of international social movement. Emerging campaign work around 'World Toilet Day' has a similar aim. The strong role of media (Box 22.2) and civil society in Kigali could be seen as a step towards the growth of a social movement, with the regional sanitation conferences as a key point for documenting and sharing successes from grassroots campaigning, learning from the experience of others, and joint planning for future activities.

BOX 22.2 THE WEST AFRICAN WASH JOURNALIST NETWORK AT AFRICASAN 3

The West Africa WASH Journalist Network was created in late 2010 to influence policy, to express the perspective of the unserved poor and improve the quality and quantity of information on WASH. It is a network of networks from 13 West African countries supported by WSSCC and WaterAid. The network was active at AfricaSan 3: journalists increased their contacts and knowledge and organised, *Sanitation HARDtalk*, a dialogue between the media and high profile panelists including the General Director of the Ministère de l'Eau in Madagascar and the Minister of Sanitation in Ghana.

Although the link between media and policy or social change at a large scale might not always be evident, the power of a strong story together with coordinated efforts has a huge potential for impact. A network can give an influential voice to the local story by sharing it at regional level. However, journalists do not only have the opportunity and responsibility to highlight the reality of unserved communities, they can and will increasingly play a role demanding commitments and actions from governments, eventually leading to policy changes. The West Africa WASH journalist network gathered interest from communications and development professionals and replicating a similar network in other regions, both Africa and Asia, was explored.

Another trend seems to be the development of more, and more sophisticated, advocacy messages (Box 22.3). In AfricaSan3 there was considerable discussion around economic and equity issues, and the UN recognition of the right to water and sanitation. Increasing talk about 'moving people up the sanitation ladder' sees advocacy going beyond the simple message that people need toilets, to more complex discussions about what sorts of toilets are needed. Advocacy and behaviour change are closely linked – as are efforts to both stimulate demand and meet supply. There is an increasing body of work in the areas of 'Sanitation Marketing' and 'Sanitation as a Business'. No matter what you call them – and whether you consider these latter topics to fall within or outside the box marked 'advocacy' – these are emerging concerns that are a feature of our current environment, and they bring with them a rich and complex web of messages, aimed at a range of audiences, and with a range of intended outcomes. Our advocacy messages, and the materials we develop to support our campaigns, need to reflect this complexity of messaging, while nonetheless aiming to retain the holy grail of advocacy – a simple 'ask' that the recipients will be both motivated and empowered to fulfill.

BOX 22.3 ADVOCACY MESSAGES HEARD – LOUD AND CLEAR – AT AFRICASAN 3

Access to water and sanitation is a human right

The overarching ambition of Sustainable Sanitation: the Drive to 2015 is to 'Turn this right into a reality'. Civil society groups talked about the importance of putting people at the centre of decision-making, and UNICEF, WSSCC, WaterAid and others highlighted the extent to which it is the poorest, and most marginalized who suffer most.

Investing in water and sanitation makes good economic sense

WSP and WSSCC both introduced new advocacy materials outlining the economic benefits of investing in water and sanitation, and the costs associated with not doing so.

African leaders must be in the driving seat

President Paul Kagame urged his fellow politicians to take on responsibility for improving water and sanitation in their own countries – not be reliant on donors.

Civil society voices must be heard

Civil society has a vital role to play – too many programmes have failed because of poor consultation ... and promises made on the international stage must be kept.

Get the numbers right

'If CSOs can work with governments to monitor what is spent, what structures are put up and what they are promoting then we can make progress. Data collection is a big issue for us in Zambia. We often don't agree with government when we compare our information on coverage and service provision.' Kalaluka Mubu, Guest Blog from AfricaSan3, July 2011.

A third consideration, and one that is also true for other sectors, is the need to work in coalition. Good advocacy has always been characterized by the building of alliances. The fight against slavery, movements to secure the vote for women, the gradual erosion of the tobacco industry – all these have been championed by diverse – often surprising – combinations of advocates. Cox (2011) argues that ‘coalition is king’. In reviewing a number of recent development campaigns, including ‘Make Poverty History’ and ‘The global campaign for climate action’, he notes a number of factors currently undermining functioning coalitions – including funding pressures that drive organizations to act independently, in order to claim successes, and too few opportunities for joint strategic conversations at CEO level.

In WASH, there are now more organizations involved – a sign of previous success in advocacy – but that brings with it the need to pay more attention to collaboration. We need to ensure that we’re collaborating with the right groups, and in this sense national level organizations with timely, relevant knowledge of peoples’ experience are key, and we need to ensure that, in our efforts to be able to collaborate we do not end up with the ‘lowest common denominator’ – messages and activities that offend no-one, but achieve nothing. Globally, the Sanitation and Water for All partnership is providing a framework for dialogue and action at the highest level. The regional sanitation conferences, such as AfricaSan can provide a crucial opportunity to continue that dialogue, and consider its particular relevance and application at regional level.

On reflection, AfricaSan3 delivered in terms of advocacy. Through high-level statements and media coverage it was itself an advocacy activity. Participants discussed advocacy materials and activities and shared experience. And the technical sessions on a range of issues – from sustainable technologies, to economic analyses – equipped advocates with the facts and figures they need as the evidence base for their work. If AfricaSan 4 can achieve these same functions, it will be serving a useful function in the sector. If it can go further, fostering a strong, civil-society-led social movement, providing a platform for the development and sharing of nuanced advocacy messages, and strengthening coalitions between organizations, then it will be doing even better.

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Looking Ahead

Chapter 23

Conclusions

The MDGs and Post 2015

Yolande Coombes

Water and Sanitation Program

23.1 AN AfricaSan BOOK

In the introduction to this book, Piers Cross reminds us that AfricaSan is more than just a series of meetings, but has become a movement for change in sanitation. The processes that take place *between* the conferences and meetings are just as critical to the success as the events themselves. To build on this momentum, and to broaden the audience, it was decided to produce an 'AfricaSan' book. This book has three main objectives:

- To document the technical papers presented at AfricaSan 3 to bring the knowledge to a wider audience.
- To capture the discussion and new knowledge that was generated in the interactions at AfricaSan 3.
- To update that knowledge with new learning generated since the conference.

These objectives were used as the criteria to decide on what chapters to include in this book, as well as using the feedback from the country preparation meetings ahead of AfricaSan 3. The country preparation meetings outlined (i) key priority areas where countries were requesting technical assistance, (ii) a review on progress against the eThekweni commitments and (iii) a review of the action plans countries had put together. These three pieces of information helped to identify those topics where more information was needed. Figure 23.1 summarizes the country priority actions in a word cloud and these address many of the specific chapters and cross cutting themes of this book. But the intention of this AfricaSan book was not only to explore the challenges that countries face, but also to document what has been learned in the past 10 years of the AfricaSan movement, which could assist countries to accelerate their rate of progress towards the MDGs and ultimately universal access to sanitation.



Figure 23.1 All Africa word cloud highlighting country priorities for technical assistance.

23.2 WHAT HAVE WE LEARNED?

23.2.1 Impacts of poor sanitation

Our understanding of the impacts of poor sanitation and hygiene increases as we gather more and better evidence. In Chapter 3, we learned how the burden of disease from diarrhoea is greatest amongst African children under 5, but that

interventions to improve sanitation and hygiene are one of the most cost-effective ways of relieving this burden. Similarly, as the evidence base grows from more impact evaluations, more of these are needed within the African context, and should be used not just for advocacy, but also for assessing cost-effectiveness of different methods of implementation over time. This point was echoed in Chapter 4 on economic impacts of sanitation and hygiene, where it was also noted that current investments in sanitation and hygiene are still low (less than 0.1% of GDP): quantifying the damage of poor sanitation and hygiene can be a way to both advocate for greater resources, and to demonstrate the impact of eliminating open defecation in the continent. The burden of poor sanitation falls disproportionately on the poor, and tackling these and other inequities was the theme of Chapter 5 which presented case studies on menstrual hygiene, people living with aids and sexual violence to demonstrate how support measures are needed to overcome specific impediments that stand in the way of excluded groups accessing safe services. For universal access to be achieved, the needs of all groups must be addressed.

23.2.2 Behaviours and market-based approaches to tackle hygiene and sanitation

A recurring theme throughout the book is the importance of the correct behaviours for sanitation and hygiene: this theme is specifically addressed in Chapters 6 and 7. Provision of hardware is not enough; intrinsic motivation to practice safe sanitation or handwashing with soap is the key to sustainability and health impact. One approach to achieving this is through sanitation marketing which was reviewed in Chapter 8, where key lessons from sanitation marketing programs in Africa and beyond were shared.

Two emerging topics, especially important in the context of the Post 2015 targets (see next section) are: re-use and faecal sludge management (FSM). Good FSM becomes increasingly important as it becomes evident that the safe management of excreta out of the household is as important as the containment within. In Africa, lack of appropriate finance is hampering the scale-up of FSM services and thus its profitability (see Chapter 10). Chapter 9 explores how the productive re-use of sanitation waste can contribute to increased food security, how this could be introduced in both rural and urban settings in Africa and how income could potentially be generated from the reuse of excreta.

The role of the private sector was a recurring theme at AfricaSan 3, both in the technical café presentations as well as the main thematic sessions. Chapter 12 focuses on market-based approaches, building on sanitation marketing from Chapter 8 and looking to the future and the engagement with small and medium enterprises working on sanitation through business development services. In order to accelerate the rate of progress to sanitation, market based approaches, which work at scale, are needed.

23.2.3 Specific Settings

Many countries requested guidance with respect to specific sanitation issues from particular settings. Chapter 11 reports on how only half of schools in Africa have adequate sanitation facilities, yet improved WASH facilities in schools is known to impact on lifelong habits and behaviours. The chapter helps countries think through how to improve WASH in schools based on recommendations provided by counties at AfricaSan 3. School WASH has specific targets in the post 2015 agenda. Chapters 14, 15 and 17 address the settings of Urban, Rural and Small towns and review the progress that has been made as well as the existing challenges for the continent. Across all three settings there are some common issues such as scale, the enabling environment and the service delivery pathway, all of which need to be addressed in the efforts to accelerate the rate of access to sanitation.

In Chapters 13 and 16 on the case of Rwanda and on Community-Led Total Sanitation (CLTS) in Africa we learned about some of Africa's success stories with respect to sanitation. Rwanda as the host nation for AfricaSan 3 was, at the time, one of only four countries on track to achieve the sanitation MDG in sub-Saharan Africa. Rwanda has made great strides in solid waste management as well as household sanitation. CLTS in Africa documents how in a relatively short period of time since its introduction to the continent, great progress has been made, and has contributed considerably to scaling up access to sanitation. This was a very vibrant session of the AfricaSan conference and the chapter captures the discussion and recommendations made at the conference.

23.2.4 Core country priority themes

The end section of the book reflects some of the most important themes of the conference, which relate back to the country priorities as highlighted in the word cloud – financing, monitoring, capacity building and advocacy. Many of these priorities are areas where countries are struggling in terms of progress against the eThekweni commitments, and Chapter 18 flags those

commitments where more needs to be done. In addition, it reviews the changes to the indicators to measure the eThekweni commitments that the Ministers at AfricaSan 3 put forward.

Chapter 19 analyses how sanitation is financed and how the burden falls mainly on the household and how a lifecycle approach to costs and financing sanitation needs to be taken. The cost of sustaining basic sanitation services for 20 years can be five to twenty times the cost per person of building a new latrine. Chapter 20 on monitoring reviews some of the challenges such as monitoring behaviour change. At AfricaSan 3 the sessions on monitoring provided opportunities to analyse challenges and share approaches and best practices which are captured in this chapter. The need for capacity building in sanitation was a key theme emerging from several country preparation meetings prior to AfricaSan 3 and cut across sessions throughout the conference. Chapter 21 assesses the need for sanitation capacity in Africa followed by a discussion on where future efforts might focus to bridge the capacity gap and ensure that capacity building becomes a central part of sanitation planning and implementation.

At the heart of the AfricaSan movement is the core aim to raise the profile of hygiene and sanitation within Government, within other sectors and on the international stage. Chapter 22 reviews how advocacy work during the past decade has broken the taboo around sanitation: clean toilets and good hygienic behaviour are now considered essential for the economic and social development of a country. The chapter ends by setting a challenge to AfricaSan 4 to provide a platform for the development and sharing of nuanced advocacy messages, and strengthening coalitions between organizations.

23.3 WHERE ARE WE NOW?

In the ten years since the first AfricaSan in 2002 the 2012 JMP update on sanitation shows that coverage rate for improved sanitation in Africa is now 30% (compared to 28% in 2002). This equates to 127 million people who have gained access to improved sanitation since 1990, but because of population increases, the rate of change is marginal. In sub-Saharan Africa 45% of the population use either shared or unimproved facilities and an estimated 25% practice open defecation (31% in 2002). What this shows us is that although progress is being made, the rate of progress is only marginally ahead of the rates of population growth. This rate needs to be accelerated to realise the MDGs.

However there are some success stories (such as the Rwanda story in Chapter 16) and Table 23.1 taken from the 2012 JMP update highlights countries in Africa which have performed above the regional average.

Table 23.1 Countries in Africa, which have performed above the regional average.

| | Population in 2010 (millions) | Sanitation coverage in 2010 (%) | Population that gains access to sanitation since 1995 (millions) | MDG progress | Proportion of 2010 population that gained access to sanitation since 1995 (%) |
|--------------------|-------------------------------|---------------------------------|--|---------------------------|---|
| Angola | 19.1 | 58 | 6.8 | On track | 35.9 |
| Rwanda | 10.6 | 55 | 3.6 | Not on track | 33.7 |
| Cape Verde | 0.5 | 61 | 0.2 | On track | 32.3 |
| Gambia | 1.7 | 68 | 0.5 | Progress but insufficient | 28.5 |
| Botswana | 2 | 62 | 0.5 | On track | 25.8 |
| Malawi | 14.9 | 51 | 3.4 | Not on track | 22.8 |
| DRC | 66 | 24 | 10.7 | Not on track | 16.3 |
| Sub-Saharan Africa | 856 | 30 | 105 | Not on track | 12.2 |

Source: JMP 2013 update.

Table 23.2 Progress on commitments reported at AfricaSan 3.

| Commitment | Indicators | Score |
|--|--|-------|
| 1. Bring the outcomes of AfricaSan 2008 to the African Union Heads of State Summit; | Outcomes taken to AU | Done |
| 2. Track implementation of the eThekweni Declaration and report on progress at the AfricaSan 3 | eThekweni reported at AfricaSan 3 | Done |
| 3. Update country sanitation and hygiene policies; establish one national plan for accelerating progress to meet national sanitation goals/MDGs; and ensure national programs are on track; | Is there a national sanitation policy? | |
| 4. Increase the profile of sanitation and hygiene in PRSP and other strategic planning processes; | What profile is given to sanitation within the PRSP | |
| 5. Ensure one, accountable institution takes leadership of the national sanitation portfolio; establish one coordinating body for sanitation and hygiene, involving all stakeholders; | Is there a principle accountable institution to take leadership? | |
| | Is there one coordinating body involving all stakeholders? | |
| 6. Establish specific public sector budget allocations for sanitation and hygiene programs with a target allocation of a minimum of 0.5% of GDP; | Is there a specific public sector budget line for sanitation? | |
| | Is 0.5% of GDP allocated to sanitation? | |
| 7. Use effective and sustainable approaches, such as household and community led initiatives, marketing for behaviour change, targeted at the poor, women, children, youth and the unserved; | NOT MEASURED IN 2011 | |
| 8. Development sanitation information systems and tools to track progress at local and national levels; produce regular regional reports on Africa's sanitation status; | Is there a sanitation monitoring and evaluation system? | |
| 9. Recognize gender and youth aspects of sanitation, and involve women in all decision-making; | Do institutional sanitation programs include gender aspects | |
| 10. Build and strengthen capacity for sanitation and hygiene implementation including research and development, and support knowledge exchange and partnership development; | NOT MEASURED IN 2011 | |
| 11. Give special attention to countries, or areas, emerging from conflict or natural disasters | NOT MEASURED IN 2011 | |

Legend:

- = Good Progress
- = Some Progress
- = Insufficient Progress

One way to measure progress is in terms of the outcome numbers of those who have gained access to sanitation, and that is the way that progress towards the MDGs is measured. Another and arguably more important way to review progress is on the programmatic conditions and enabling environment for sanitation as the intermediate outcomes. If attention and focus is not made on improving intermediate outcomes then hope for accelerating access to improved sanitation will remain out of reach.

As is pointed out in Chapter 18, AfricaSan 3 provided an opportunity for countries to report back on progress on the eThekweni commitments, and Chapter 15 discussed key elements of the enabling environment. Table 23.2 identifies some areas of progress that the sub-continent has seen on average, to improve the enabling environment, but this table also highlights some key bottlenecks that persist. What is important to note is that improving all dimensions of the enabling environment (e.g., policy, institutional arrangements, implementation capacity, financing, cost-effectiveness, and monitoring and evaluation systems) at the country level is what will enable countries to move from current trends in access to those that are needed to achieve universal access. As mentioned in Chapter 18 some of the commitments were not measured in 2011 and at AfricaSan 3, Ministers recommended that indicators be developed for all the commitments, and that a revised scoring system be developed in line with other pan-Africa processes. As Chapter 18 states, in some cases the original indicators and criteria did not adequately measure *implementation* of the eThekweni commitments. For example, the indicator used to measure national policies and plans, captured only their existence and not the second half of the commitment, which calls for steps to be taken to ensure national sanitation programs are on track. AMCOW have taken the lead to ensure that monitoring of the commitments better reflects their intention.

23.4 AFTER THE MDGS – POST 2015 TARGETS

As has been mentioned elsewhere in this book the MDG for sanitation in Africa will not be met. A few countries are on track, but the continent as a whole will miss this target. However, having a target such as the MDG to strive towards has been positive and motivating for many countries and sector stakeholders. As a result technical experts have been deliberating about what targets should be set for sanitation and hygiene under the post-2015 global development agenda. Many different individuals and organisations have been consulted over the past two years and there are four main targets for WASH (which are subsequently broken down into a series of sub-targets and indicators). As with the MDGs the purpose in setting these targets was to be ambitious, and give countries something to strive towards but they may not necessarily be achievable by all countries in Africa in the given timeframe without concerted efforts to accelerate the rate of access to sanitation.

23.4.1 The Post 2015 Targets for WASH

- (1) No one practices open defecation.
- (2) Everyone has safe water, sanitation and hygiene at home.
- (3) All schools and health centres have water, sanitation and hygiene.
- (4) Water, sanitation and hygiene are sustainable and inequalities have been progressively eliminated.

23.4.2 Indicators for the targets include

- The percentage of population using adequate sanitation.
- The percentage of households with soap and water at a handwashing facility.
- The percentage of primary and secondary schools with safe drinking water, separate toilets for boys and girls, and provisions for menstrual hygiene management and washing hands with water and soap.
- The progressive reduction of inequalities between disadvantaged groups and the general population.

To assist countries interpret and operationalize these targets within a rights based approach, a series of working groups was set up to refine the targets and indicators along 4 themes: (i) Water, (ii) Sanitation (iii) Hygiene and (iv) Equity and Non-Discrimination.

23.4.3 Sanitation and Hygiene (household/population) sub-targets and indicators

2025 Target: no one practices open defecation, and inequalities in the practice of open defecation have been progressively eliminated.

Supporting indicators:

- Percentage of population not using any sanitation facility.
- Percentage of households in which open defecation is practiced by any household member.
- Percentage of households with children under 5 reporting hygienic disposal of the stools of children under 5.

2030 Target: everyone uses basic handwashing facilities when at home, and inequalities in access have been progressively eliminated.

Supporting indicators:

- Percentage of households with soap and water at a handwashing facility commonly used by family members.
- Percentage of households with soap and water at a handwashing facility within or immediately near sanitation facilities.
- Percentage of households with soap and water at a handwashing facility within or immediately near the food preparation area.

2040 Target: everyone uses adequate sanitation at home, and the excreta from at least half of households with adequate sanitation are safely managed. Inequalities in access have been progressively reduced.

Supporting indicators:

- Percentage of population using an adequate sanitation facility.
- Percentage of households where the sanitation facility is used by all members of household (including men and women, boys and girls, elderly, people with disabilities) whenever needed.
- Percentage of households with adequate sanitation whose excreta are safely managed.
- Share of human excreta that reaches designated disposal sites.

Additional sub-targets have been put together for schools, and health centres. For more information on the Post 2015 targets please visit www.wssinfo.org

23.5 LOOKING AHEAD

The post 2015 targets have been designed around a vision where everyone in Africa would use adequate sanitation when at home and that the excreta from at least half of schools, health centres and households are safely managed and most importantly, that inequalities in access to sanitation have been progressively reduced. To reach this vision of universal access we need to accelerate the rate of access to sanitation. Figure 23.2 shows the number of years it will take to achieve universal access if countries maintain the same annual coverage rate they have had from 1990 to now. For sub-Saharan Africa it will be 123 years before the continent achieves universal access if it maintains the current annual trend of 0.81% per year, and for some countries it will be more than 200 years from now (Tanzania, Niger and Nigeria).

But the rate of acceleration needed to achieve the 2040 target in most African countries is not a big leap; on average it means accelerating the rate of progress to 3.5%. Table 23.3 shows the additional annual percentage needed to achieve the 2040 target of universal access.

If countries which are part of the AfricaSan movement commit to accelerating the rate of access then an Open defecation Free Africa where there is universal access can be a reality in our lifetime.

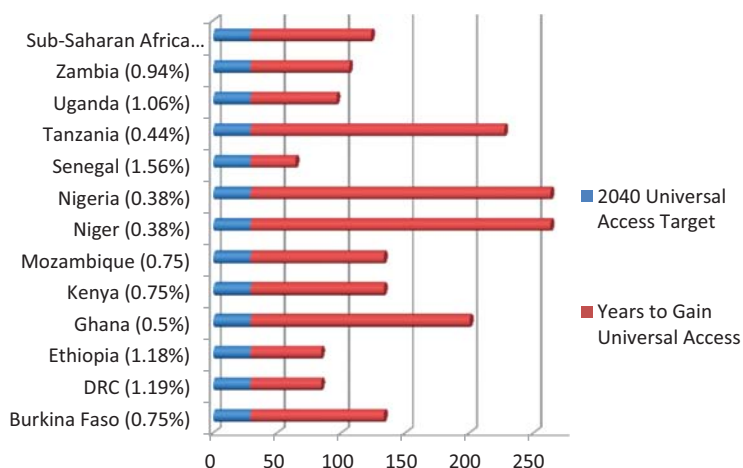


Figure 23.2 Number of Years to obtain Universal Access if current rate of annual progress continues (Source: Data from JMP 2013 update).

Table 23.3 Additional annual percentage needed to achieve the 2040 target of universal access.

| Country | Annual rate since 1995 to 2011 | Years to gain universal access | UA achieved will be achieved by | Additional annual rate of acceleration needed to reach 2040 target |
|---------------------------|--------------------------------|--------------------------------|---------------------------------|--|
| Burkina Faso | 0.75% | 133 | 2146 | 2.65% |
| DRC | 1.19% | 84 | 2097 | 2.21% |
| Ethiopia | 1.19% | 84 | 2097 | 2.31% |
| Ghana | 0.50% | 200 | 2213 | 2.90% |
| Kenya | 0.75% | 133 | 2146 | 2.75% |
| Mozambique | 0.75% | 133 | 2146 | 2.75% |
| Niger | 0.38% | 263 | 2276 | 3.12% |
| Nigeria | 0.38% | 263 | 2276 | 3.12% |
| Senegal | 1.56% | 64 | 2077 | 1.94% |
| Tanzania | 0.44% | 227 | 2240 | 3.06% |
| Uganda | 1.06% | 94 | 2107 | 2.44% |
| Zambia | 0.94% | 106 | 2119 | 2.56% |
| Sub-Saharan Africa | 0.81% | 123 | 2136 | 2.69% |

Source: Data from JMP 2013



Sanitation and Hygiene in Africa: Where do We Stand?

Analysis from the AfricaSan Conference, Kigali, Rwanda

Edited by Piers Cross and Yolande Coombes

The Third African Sanitation and Hygiene Conference was held in Kigali, Rwanda in July 2011. It was hosted by the Government of the Republic of Rwanda, and the African Ministers' Council on Water. The meeting attracted extraordinary interest: over 1000 people registered and nearly 900 people attended from a total of 67 countries, including representatives of 42 African countries.

The content of AfricaSan 3 was aligned with the needs of countries as defined in country preparation meetings which took place in advance. AfricaSan 3 looked to address the country needs and to commitments and country action planning. Different groups (ministers, civil society, local government, utilities, and donors) committed to actions to support the goals of AfricaSan. The goal of the AfricaSan process is to support countries to achieve the Millennium Development Goal, (MDG) for sanitation and hygiene.

Sanitation and Hygiene in Africa: Where do We Stand? takes stock of progress made by African countries through the AfricaSan process since 2008 and the progress needed to meet the MDG on sanitation by 2015 and beyond. This book addresses priorities which have been identified by African countries as the key elements which need to be addressed in order to accelerate progress.

- Reviews progress on implementing the eThekweni Declaration to meet the MDG for sanitation and progress generally in Africa. It analyses what is needed to accelerate the rate of access to sanitation in Africa.
- Shares advances in the evidence base on sanitation and hygiene in Africa to be able to assist decision-makers to overcome key blockages in implementing large-scale sanitation and hygiene programs.
- Raises the profile of sanitation and hygiene as a determinant of sustainable development in order to strengthen leadership and advocacy for sustained sanitation and behavior changes.

This book is essential reading for government staff from Ministries responsible for sanitation, sector stakeholders working in NGOs, CSOs and agencies with a focus on sanitation and hygiene and water and Sanitation specialists. It is also suitable for Masters courses in water and sanitation and for researchers and the donor community.

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