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REACHING THE MDG TARGET FOR SANITATION IN AFRICA – A CALL FOR REALISM –



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Reaching the MDG target for sanitation in Africa – A call for realism

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Preface

This leaflet contains a set of Good Practice Notes on challenges in connection with provision of sanitation services from the perspective of international development assistance. It contains a synthesis paper:

- *Reaching the MDG Target for Sanitation in Africa – A Call for Realism*

and four issue papers:

- *Building political commitment for sanitation in a fragmented institutional landscape*
- *Hooked on sanitation subsidies*
- *Challenges in supporting hygiene behavior change*
- *Measuring progress in sanitation*

The general purpose of Danida's Good Practice papers is to provide operational and technical guidance for use within Danish development assistance.

The synthesis paper has been prepared by the Technical Advisory Services (UFT) of the Danish Ministry of Foreign Affairs with assistance from Flemming Konradsen, Jens Bjerre and Barbara Evans. The authors of the issues papers are credited in the respective papers. A draft version of the papers was discussed during the Danida Water & Sanitation Sector Seminar in Livingstone, Zambia in October 2009. The participants comprising Danish Embassy staff, partner country officials, sector technical advisors, researchers and consultants provided comments and suggestions that have contributed to the final version of the papers. The Technical Advisory Service would like thank all those that have contributed for their valuable input, time and assistance.

Comments to the Good Practice Notes may be addressed to the contacts point in Danida's Technical Advisory Service: Senior Advisor Jens Fugl (jenfug@um.dk).



Photo: Miriam Feiberg

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List of Abbreviations

CHC	Community Health Clubs
CLTS	Community-Led Total Sanitation
DALY	Disability Adjusted Life Years
DCD-DAC	Development Cooperation Directorate
IEC	Information, Education and Communication
IDE	International Development Enterprises
IMCI	Integrated Management of Childhood Illnesses
JMP	Joint Monitoring Programme
GDP	Gross Domestic Product
GWP	Global Water Partnership
MDG	Millennium Development Goals
OECD	Organisation for Economic Co-operation and Development
ORT	Oral Rehydration Therapy
PHC	Primary Health Care
PHAST	Participatory Hygiene and Sanitation Transformation
SWAps	Sector-wide approaches
TPPF	Twin Pit Pour Flush Latrines
VIP	Ventilated Improved Pit Latrines
WHO	World Health Organisation
WSP	Water and Sanitation Programme
UNICEF	United Nations Children's Fund

Reaching the MDG target for sanitation in Africa – A call for realism

Introduction

It is estimated that 2.5 billion people (app. 38% of the global population) do not have access to basic sanitation. Globally, the shortage of such essentials contributes to the estimated 2.2 million annual deaths related to poor personal hygiene, lack of sanitation and insufficient water supply (1). In 2006, 62% of the population in Africa lacked access to improved sanitation facilities with only five of the 54 African countries on track to meet the Millennium Development Goals (MDG) sanitation target (2). For Africa, to meet its MDGs for sanitation, the number of persons reached must double from 350 million to 700 million by 2015; even if achieved; this will still leave 200 million people unserved. The low sanitation coverage is illustrated by countries that have such programmes supported by Denmark: Bénin 19%, Burkina Faso 10%, Niger 5%, Ghana 31%, Kenya 43%, Uganda 58% and Zambia 13% (3).

Denmark has a long history of support to the sanitation sub-sector and played a proactive role in setting the MDG target on sanitation in Johannesburg in 2002. Danish assistance to sanitation and hygiene comprises both bilateral and multilateral support. Despite significant efforts to push the sanitation agenda – in particular in rural areas - a recent evaluation of Danish bilateral support to this sector highlighted sanitation as an area that has not received adequate attention from either Danida or the recipient country governments and stakeholders (4). This assessment mirrors the current global situation in the sanitation sub-sector, i.e. not enough has been done. The current global response is that “we must do more” if we are to reach the MDG targets for sanitation. The questions are what exactly should and can be done, and what aid modality for support to the sector would be the most effective to follow considering the lessons learned – good or bad – over the past 30 years.

The purpose of this paper is to discuss central challenges in connection with providing sanitation services from the perspective of international development assistance.

Environmental sanitation encompasses management of human excreta, storm water, grey water, solid waste, hazardous, and industrial wastes. For public health reasons this paper will focus on management of human excreta and the prevention of diseases associated with the faecal-oral transmission route.

The discussion in this paper will primarily concentrate on sanitation interventions to separate, contain and dispose of human excreta focusing on the construction, use and proper management of some sort of latrine. Key hygiene behaviour will also be considered, especially hand washing at critical times and disposal of children’s faeces. The technological and institutional aspects of central treatment options for human excreta or issues of reuse will not be covered in any detail.

An historical review of sanitation

Industrialised nations

Historically, in now-industrialized nations, funding for sanitation was provided by central and local governments, local industry and philanthropists. Such funding or subsidization was usually

provided to stimulate the provision of public sanitation services in dense industrialized urban settlements in the interest of public health. The typical pattern saw local authorities providing main sewers or dry sanitation systems, storm-water drainage and solid waste management services. Provision of in-house facilities was either left to individual households or landlords, with some enforcement of legislation to encourage this investment, or provided through public finance. Full coverage of networks of water borne sewerage systems took many decades to achieve. Meanwhile, many households continued to use dry privies or shared facilities. Once urban areas were fully covered, systems expanded outwards into rural areas, although generally with a lower level of public finance. Today, in most of the industrialized world, coverage of hygienic sanitation is universal and enforced by legislation.

Transfer to Africa and Asia – The international decade

In the 1960s and 1970s, the dominant paradigm of urban industrialised sanitation was transferred through development projects and international support to countries in Africa and Asia – which had already by and large inherited the associated technical norms and standards. It was only in the 1980s, due to the work of a few pioneering thinkers, that the realisation dawned that rural sanitation in Africa bore little resemblance to urban sanitation in Manchester (5).

During the late 1970s, development of new, simpler and more appropriate technologies (for example Ventilated Improved Pit Latrines, VIP, and Twin Pit Pour Flush Latrines, TPPF) began. Subsequently, there was increased thinking about how to improve long term operational sustainability through, for example, community management. In the water sector this was most notably characterised by the concept of Village Level Operation and Maintenance or VLOM Handpumps. At this time, most sanitation programmes had some kind of subsidy for the hardware and often subscribed to one choice of technology.

The 1980s and 1990s: Questions of scale and sustainability

During the 1980s and early 1990s, the approach of supply-driven latrine construction with subsidies provided to a target group who satisfied certain preconditions was highly successful in boosting the coverage numbers. This method was particularly successful in South Asia where sanitation latrine construction targets of tens of thousands per year were common. However, in the early 1990s there was growing concern that even with the availability of new, ‘appropriate’ technologies, water supply and sanitation systems were not being used or maintained, but were frequently falling into disrepair. Later, the approach to sanitation changed to include not only subsidies, but also hygiene education, including mass media campaigns, however, increased access to latrines and water facilities plus increased knowledge about hygiene was not necessarily sufficient to motivate hygiene behaviour change.

A number of studies found that hardware subsidies were not effective and tended to increase community ‘dependency’ rather than generate and respond to real demand (6). In India, a 1997 evaluation of the UNICEF programme showed that very few subsidised latrines were actually being used, this was later confirmed by the World Bank/UNDP (7). Primary discussion on this topic at the time included a focus on the market for sanitation goods and services (supporting entrepreneurs and artisans) and the need for demand-responsive programming. During this period Danida had a strong focus on India’s sanitation campaigns and concentrated on promoting demonstrations on how latrines should be used rather than the provision of wholesale subsidies (4).

Into the new millennium

In the late 1990s and 2000s, a pioneering approach to rural sanitation emerged in Bangladesh. Community-Led Total Sanitation (CLTS) moved away once more from the use of hardware subsidies and focused on community-wide empowerment and joint action to eliminate open defecation. Successful examples are now seen in Asia and recent programmes like the one in Choma District, Zambia offer examples of Africa's success in this area also (8). While CLTS has proved highly effective at triggering a shift away from open defecation, the question of how to provide long term support for continued behaviour change and improved sanitation provision remains to some extent unanswered (9). A major challenge of the new era is how to achieve widespread, national sanitation coverage using a model that is inherently time consuming and requires a high level of effort at the community level

The UN declared 2008 the International Year of Sanitation (10), which resulted in increased political focus on the issue. It also provided an opportunity for reflection on progress towards meeting the MDG targets and afforded involved actors an opportunity to review past efforts and gather lessons learned. Currently, there is a global acknowledgment that the major share of the responsibility to improve sanitation rests firmly with the African and South Asian regions. To that end, a number of African countries have or are developing sanitation policies and sanitation implementation programmes.

The Sanitation Challenge – Globally and in Africa

Having discussed the historical development of urban and rural sanitation, it is also necessary to clearly understand the context and contributors to the global sanitation challenge. These challenges can be grouped into political, economic, participation, technical and monitoring barriers, each of which is addressed below.

Political Barriers

Lack of political commitment

Sanitation is not given the attention it requires by governments, civil society or donors as evidenced by the meagre priority assigned to the issue in most poverty reduction strategies. It is often stated that water is life but sanitation is dignity. If so, then it is a puzzle why sanitation so often is “left behind”. Why schools and health centres are still built without toilets; and access to toilets lags behinds access to water supply; and that sanitation has failed to be translated from commitments to national policy and into budget lines in the ministries of finance in most countries.

There is some evidence this is slowly changing at higher levels of policy making, for example from the African Ministers' Council on Water. Additionally, while there are positive examples of local commitment to improved sanitation including: the Ethiopian Ministry of Health which is spearheading an initiative to roll out effective support for rural sanitation through health extension workers (11) and the government of Nigeria's work with NGOs to renew its approach to sanitation through piloting and implementing new ‘community-led’ approaches (12), there is scant evidence of commitment among many key line ministries and at local government levels.

Economic Barriers

Limited economic growth and restricted social development

Without accelerated economic growth and social development it is unrealistic to expect significant advances in rural sanitation coverage. As long as communities and governments have limited resources, the available funds will most likely be directed to productive activities. Awareness about sanitation and hygiene issues may often be present, however, for the households and for governments the priority would be on feeding the family and creating an environment for growth, respectively. Unfortunately, few governments and households identify poor sanitation as an impediment to economic growth and seem to not to have acknowledged that investing in sanitation brings very significant economic returns (8). As a result of modernization in some Asian countries, sanitation coverage has increased gradually as economic growth spread in Asia's poorer countries. It remains to be seen if the same will happen in Africa.

Lack of funds

According to the Development Cooperation Directorate (DCD-DAC) of the OECD, aid for water supply and sanitation has increased since 2001 following a temporary decline in the 1990s. The combined annual bilateral and multilateral support to water supply and sanitation in 2007 was USD 6.2 billion, with approximately 26% for support to Sub-Saharan Africa. Unfortunately, the information from the OECD does not allow for a breakdown of the support into separate components of water, sanitation and hygiene promotion. However, a closer review of a sub-sample of programs found an estimated 50% for water supply, 20% for sanitation and 30% for activities combining water supply and sanitation. Separate information on hygiene promotion cannot be obtained. The Global Water Partnership (GWP) estimates that the expenditure for basic sanitation to meet the 2015 MDG sanitation target is USD 17 billion annually, indicating a significant deficit in the current funding allocation before the targets can be achieved (13). It is estimated that basic sanitation improvement in Africa needs an investment of between 40 and 90 USD per capita and between 26 and 50 USD in Asia.

Inappropriate use of funds

A study by the World Bank in the late 1990s found that investments in sanitation tended to be skewed towards urban sewerage and wastewater treatment. These are services which tend to serve small sections of society (usually the rich) and have little or no public benefit unless universal access is achieved. Studies have noted that public funding for rural sanitation has tended to be poorly targeted (14;15) and there is insufficient attention to recurrent budgets to support extension work and long term support to communities (16).

Much of the financing for sanitation has been supply-driven pushing subsidies that do not take into consideration household preferences, behaviour and access to capital. Many private organisations and government departments have focused on providing toilets aimed at achieving high coverage rates rather than motivating their use and maintenance (17). The end result is the construction of toilets that are either not wanted, inappropriate or unused. If the households are unwilling to bear the cost of maintaining the established infrastructure, the significant investment in increasing coverage will, in effect, be a waste.

Insufficient private sector involvement

When compared with sanitation, water remains a more attractive field for investment (by donors, government and community) and the lack of a commercial market for sanitation services undermines the sustainability of the sector. Sanitation is often seen as a field with low creditworthiness and low potential for income generation and aid programs and governments may lack the focus on policies and incentives that make sanitation services more attractive for the commercial sector. A recent study of WaterAid programmes in Bangladesh, Nepal and Nigeria found that the reach of the private sector was a significant factor in improving the cost effectiveness and scale of the programme in Bangladesh (9).

The demand problem

Cultural barriers, market failure and lack of information, hamper households from making informed decisions about sanitation (18). Traditional approaches to improving sanitation, which are aimed at building facilities, have not resulted in significant and sustained coverage. Where sanitation coverage is low, demand may be ‘latent’ – that is, demand may not emerge until an external stimulus is applied. Changing sanitation behaviours requires an understanding of the market stimuli that will enable increased use of improved sanitation. Recent promising strategies have focused on creating demand for improved sanitation by changing behaviours while simultaneously strengthening the availability of supporting products and services (19). The experiences with CLTS illustrate this effect particularly well. To make progress, households must prioritise sanitation and allocate resources out of an often tight household budget. Demand for improved sanitation is usually only expressed by those who have some type of sanitation already and who have surplus in the “household budget”.

Participatory and Technological Barriers

Choice of appropriate technologies

Choice of technology and the demand problem are closely linked. Latrine designs are hardly rocket science, but deciding what solutions to promote still causes much controversy. For both rural and urban areas, it is still difficult to strike a balance between cost, functionality, security, risk, and adaptability to local context (both technically and culturally.) It is further difficult for technocrats to agree on the definition of improved sanitation - improved according to whose standard? Piped sewerage or individual septic tanks are often preferred by utility engineers, but both are expensive solutions. Onsite sanitation is frequently considered to be a suitable solution for the urban poor (and in so-called peri-urban areas,) but there is often insufficient space and no facilities for managing sludge. In rural sanitation the problem is often less about technology choice and more about good engineering. Many thousands of latrines are built in rural Africa that are neither properly designed nor built well enough to provide real protection.

There are many innovative technologies and approaches that have been successful at pilot level. However, they remain largely unproven at the scale of millions of people. Going to scale is multi-dimensional and complex and probably the greatest challenge for sanitation in the near future. To reach scale the central government needs to establish the policies, but the decentralised government agencies, the private sector and the NGOs need support in the efforts. The emergence of CLTS has refocused attention on the fact that most people develop their sanitation status progressively – for the very poor and in many rural areas, this gradual improvement (sometimes referred to as the sanitation ladder) may be wholly appropriate. However, few policy makers have developed approaches that respond to this common reality.

Monitoring Barriers

What is being measured?

The defined target for MDG 7 is to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation. As defined, the indicators used to measure the achievement of this target are: 1) Proportion of the population using an improved drinking water source; and 2) Proportion of the population using an improved sanitation facility. While the indicators properly designate *usage* as the measured variable, *coverage* is most often what is actually measured. The WHO/UNICEF Joint Monitoring Program for water supply and sanitation seem to use the terms usage and coverage interchangeably, but the actual measurement used is coverage (i.e. the physical presence of an improved sanitation facility.) The use of this rather simplistic indicator may be leading to short term strategic choices that compromise long term sustainability. Counting only the number of available latrines may be masking the extent of the real global sanitation problem. For example, in South Africa the very rapid scale up of sanitation in urban areas has resulted in millions of single pit latrines being constructed in municipalities that have neither developed strategies nor capacities to empty them. A study by UN Habitat in the Lake Victoria region also suggests that coverage figures significantly overestimate those with 'adequate' sanitation (20).

Even if the target for MDG 7 is reached by 2015, millions will remain uncovered and many of the latrines that 'count' as coverage for target tracking purposes will still offer only very limited disease protection. Also, for investments in sanitation to reach their full potential, appropriate personal and sanitary hygiene practices will be needed, requiring a long term effort and much greater focus on effective hygiene promotion than in the past.

The Response

There are a number of important steps that can be taken to address the global sanitation challenge in each of the discussed areas. Political, financial, technological and monitoring approaches are addressed below.

Political Approaches to Improved Sanitation

Increased policy focus

While sanitation is often the province of water institutions, systematically linking water supply and sanitation in policy making is often unhelpful to sanitation. Sanitation frequently loses out to water in policy and budgetary priorities and coordination between sanitation and hygiene promotion activities is often poor. It might be helpful to review sanitation and hygiene interventions based on outcomes, instead of sectoral inputs, to achieve coordinated policies and link budgets across several responsible agencies. Sanitation and hygiene issues need to be elevated from an add-on to other programmes and be supported in its own right by policies and regulatory framework.

Coordination and alignment

The emerging new development assistance architecture in the form of Sector-wide approaches (SWAp) and joint funding mechanisms opens new possibilities in sanitation development. The adoption of a SWAp creates the opportunity for reaching consensus around the best national strategic sanitation development policies and programmes and facilitates improved government leadership of sanitation development. The SWAp is a tool to coordinate the contributions of development partners and other stakeholders within a common framework. It identifies whether and how partners can support the national strategy and ensures that contributions from all partners are consistent and complimentary with each other (21).

Advocacy

Too often sanitation takes a backseat in the national reform agenda and does not attract the necessary attention among decision makers or in the public at large. It is clear that, to facilitate an increased demand for sanitation and to secure public investments in the sector, more professional and well targeted advocacy initiatives need support. This will demand a dialogue between civil society organisations and departments responsible for water, sanitation and hygiene promotion, support to media activities dissemination of studies highlighting the benefits of sanitation and documented successful approaches for a sanitation transformation

Improving Funding and Resource Practices to Improve Sanitation

Use of funds within the sector

Because funds are so scarce, it is clear that the focus in national policies will have to shift towards investments in demand creation and to supporting a private sector capable of providing a commercially viable service. The problem for poor households may not be the unwillingness to pay, but that the upfront investment may be cost prohibitive for them. In such a situation, government or international support for the establishment of community based or commercial microfinance schemes for household latrines, construction of public toilets, latrine cleaning services etc., may provide significant opportunities to close the financial gap encountered by most families in the start-up phase (22). In this context, subsidies may be used to offer low interest rates on loans or to be exempted from certain administrative charges. However, subsidies should never be used in a way that undermines the existing private providers in the market or the established credit organisations.

In some urban municipalities, models that allow cross subsidies from water into sanitation could be further explored. Even if financing the construction of household level latrine systems in urban areas is achieved, ensuring the revenue for the operation and maintenance of sewerage and pit waste collection and management and treatment systems may still be an enormous challenge for public budgets. Revenues from the water sector could potentially be used to support the long term operation of sludge management in many urban areas, although this does require the political willingness to levy realistic water tariffs. In urban areas, the relationship between land tenure and the right to access basic services must also be clarified if we are to create incentives for investments in sanitation for the millions of rented and informally settled homes that remain without sanitation.

Increasing the human resource capacity

It is clear that the new approaches required for successful sanitation and hygiene outcomes need professionals with new skills and a change in mindset. Therefore, the specialised training institutions and universities need to be in close communication with the sector and the capacity

within the education system needs to be increased to raise both the number of professionals and the relevance and quality of the graduates. Also, it has to be acknowledged that human resources need to be available within the government system at the decentralised level to ensure essential coordination and monitoring.

Concepts and approaches

Using Modern Approaches

The sanitation sector should make better use of hybrid solutions including a combination of gender sensitive community-based participatory interventions and marketing based promotion such as Participatory Hygiene and Sanitation Transformation (PHAST), CLTS, Community Health Clubs, and social marketing strategies. In 2008, The Water and Sanitation Program launched a framework designed to assist sanitation project managers and staff design research methods and strategies aimed at eradicating open defecation and strengthening the supply of sanitation products and services (19). It has been successfully deployed in Tanzania, India and Indonesia and is a good representative of innovative hybrid approaches. Also, embedding hygiene promotion in the work of health professionals and schools is critical may further support the participatory approaches.

Monitoring Approaches to Improved Sanitation

Improved monitoring systems

Many countries have unreliable systems to report status, progress and to feed this information into the development planning process. Monitoring systems tend to be unreliable and often measure the wrong things (facilities built rather than working services for example). This is a missed opportunity since good quality monitoring and benchmarking can often create strong incentives for local administrations to improve their performance. Locally-agreed definitions of ‘improved’ ‘adequate’ ‘basic’ sanitation etc. are essential to avoid needless debates which only serve to slow down progress. For example, recent disagreements in Bangladesh about the speed of progress in rural sanitation were largely fuelled by the fact that the government was measuring the shift away from open defecation while the UN system was measuring the availability of ‘improved’ sanitation in line with the definitions used by the Joint Monitoring Programme (JMP). Both are important developments and a mature monitoring system would be able to capture both with a key focus on measuring use of sanitation services, quality of the services, and sustainability of the services.

So far, the focus has been on the generation of coverage information and less emphasis given to the generation of information assessing the actual use of sanitation infrastructure and hygiene behaviour change. However, new methodologies to facilitate participatory monitoring and assessment of hygiene behaviour change have been developed to generate data providing insights into the range of actions that should improve sustained access to water and sanitation services. Such approaches need wider implementation to make sure that the investments made in sanitation infrastructure and hygiene promotion actually results in behaviour change and improved health outcomes.

Conclusions

The MDG targets established for water supply and sanitation provide a great opportunity to advocate for both increased funding and increased political commitment at all levels of government

for the sector. However, an exclusive focus on reaching the MDG targets may cause development agencies and governments to focus exclusively on coverage. This will have a detrimental effect on the sustainability of the established infrastructure and may leave out the most important components of sanitation programs i.e. the motivation to use sanitary facilities and the need to change personal hygiene practices to improve health status.

The best use of public resources in the sanitation sector is likely to focus on building demand for sanitation, establishing clear policies on subsidies, building capacity among local government entities to enable coordination and monitoring of progress and quality of service, facilitating the creation of a commercially viable private sanitation service, allocating financial resources to essential large scale sanitation infrastructure and supporting educational institutions to produce a new generation of professionals in the sanitation sector. Once the financial regime for these long term elements has been worked out, additional funding can be earmarked or sought for specific short term interventions, including hardware subsidies based on micro-credit schemes or subsidised hardware sold through commercial outlets.

Continued innovation is crucial in the field of health promotion in close collaboration among decentralised government departments, NGOs and research organisations. Overall, there is an urgent need for investment in human capacity at decentralised levels of local government, and in a broader sense, the need to build up a cadre of professional promoters to deliver well-coordinated national programmes.

International aid organizations and donor agencies can support sanitation and hygiene promotion most effectively by allocating an increased level of funds to the sector, supporting line ministries with technical expertise, assisting with the establishment of best practices manuals, building on international experiences and providing support to civil society organizations. Building regional networks and investing in research will be another important avenue in the interest of sanitation. Support to international and national NGOs may be a feasible approach to facilitate innovation and to build an advocacy base for sanitation.

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Building political commitment for sanitation in a fragmented institutional landscape

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Lack of political commitment to sanitation

In public statements, the terms water supply and sanitation often appear together as an inseparable concepts and are occasionally paired with the term “hygiene” as a general term for personal cleanliness. There is a disparity, however, between the relative importance of each in public statements and the importance assigned to each during policy-making, planning, budgeting and implementation. In these processes, sanitation and hygiene promotion usually disappear (1), while water supply remains a prioritized focus area. In this seemingly global trend, sanitation generally takes a secondary role in national reform agendas and political leadership on the subject is mostly absent. In addition, the economic burden and hardships associated with the lack of sanitation are not sufficiently discussed in national public debates creating an information deficit which results in a negative cycle where pressure to change is not sufficiently applied to political systems and the public demand for sanitation is accordingly not adequately expressed.

The UN Secretary-General Advisory Board on Water and Sanitation has stated that one of the primary reasons Africa is not on pace to meet in the MDG targets for sanitation is because of the lack of political commitment from national leadership in Africa (2). The practical manifestations of this leadership gap include: inefficient government institutions, policy and legal obstacles to sector expansion and coordination, insufficient will for private sector involvement and inadequate budget allocations to local governments. Further, support to research organisations and civil society to innovate around technologies and approaches to create demand for sanitation is not sufficiently encouraged to meet the challenges faced by the global South.

Lack of funding to support sector needs

There are a number of indicators which provide insight into the relative value governments place on sanitation and hygiene, including sector related funding allocations and the placement of sector administration within the overall organizational structure of the government. When looking at the funding allocations made to the water and sanitation sector, it is clear that sanitation is insufficiently provided for by both national governments in the South and by global funders in the North. From 1990 to 2000 sanitation received only 20% of the 16 billion USD invested in water supply and sanitation by national governments and external agencies (3). The 2006 Human Development report articulates the reasons why resources for the sanitation sector lag behind those provided to water supply and concludes that the biggest barrier for sanitation improvement has clearly been the political reluctance to put excreta and its safe disposal on the national and international development agenda. (4). It can also be argued that the greater emphasis on water in the allocation of government funding may be a reflection of a more apparent business case and income generating potential in the water sector when compared with sanitation services, making this sector more

appealing to both the private sector and government institutions. Also, water supply may be compared with the services provided by a power company distributing electricity as an essential input to all productive sectors of society where the benefits of sanitation may be less apparent to the decision makers and the communities at large.

Decentralisation and a diversified institutional landscape

Organizationally, a lead agency for sanitation is lacking in most countries and without a strong steward, sanitation usually disappears from the agenda. The institutional landscape is fragmented and sanitation is often delegated to the lowest level of governance, i.e. struggling municipalities. Prior to 1990, water and sanitation industries were national monopolies in many countries. Since then, an impressive and unparalleled reform has taken place, not from public to private operation, but from centralized to decentralized public provision (6). Drastic and rapid decentralization has taken place in Asia, Latin America, Eastern Europe and Central Asia. Also, in Africa many countries are now transferring the responsibility of service provision to local authorities. However, decentralization was not a studied response to the specific problems of the sector but the by-product of a wider reform of the state. As a result, local governments found themselves in charge of service delivery while lacking the capacity to step up to their role. Private sector participation has proved difficult to implement. In larger urban centres, this is primarily for political reasons, while in smaller cities and rural areas there is the additional problem of commercial viability. The real transition for most consumers has not been from public to private but from *unregulated centralized* public provision to *regulated decentralized* public provision.

The cost of inaction

Failure to implement the MDG target for water and sanitation would have an economic cost of around US\$38 billion per year, with sanitation accounting for 92% of this value (10). In cost-benefit analysis, total benefits of the interventions include time savings due to easier access, gain in productive time and treatment costs saved due to less illness, and the value of prevented deaths. The results showed that water and sanitation improvements are cost-beneficial in all developing world sub-regions (5; 11). In developing regions, the return on a US\$1 investment was in the range of US\$5 to US\$46, depending on the intervention. The global return on investments in low-cost sanitation provision may be around US\$9 for each US\$1 spent. Achieving MDG target 10 would, therefore, outweigh the investment cost by a ratio of 8:1. The main contributor to economic benefits was time savings associated with better access to water and sanitation services, contributing at least 80% to overall economic benefits.

The many actors in sanitation

Clearly, policy-makers working on sanitation issues operate in a complex environment with many actors and competing demands, including national and international financing institutions, service providers, consumer representatives, water resource and land management entities and the health sector. It is essential that the government assumes a key role in facilitating and regulating the other players. A strong public sector is therefore essential. The private sector may act as an investor, supplier, contractor or consultant. NGOs can be very flexible and some of them have played an important role in trying out new ideas and in policy dialogue and advocacy. Donors have tended to be very dominant – in terms of ideas and influence, if not always in terms of financial impact. For

real and lasting change to take place, it is important that ownership of policies, strategies and the change process are in the hands of national public, private and civil society institutions.

How to build political commitment

Several organizations in their efforts to build political commitment for sanitation focus on three communication elements originally proposed by McKee in 1992 (7), I) advocacy II) social mobilization and III) program communication. Advocacy is seen as the action of presenting an argument to gain commitment from political and social leaders and to educate the public about issues of importance for hygiene (8). Social mobilisation emphasizes the establishment of partnerships across sectors to assist with the generation of resources, services, knowledge sharing and community participation and contributions. Program communication involves the targeting of specific groups with specific messages or training activities. The Sanitation for All in Bangladesh program that followed these three communication strategies aimed at building political commitment, managed to build effective alliances in support of sanitation and achieve a tremendous increase in the coverage and use of latrines (8). Experiences show that an essential first step in the advocacy process is the identification of all stakeholders of importance to reach the target. Here, the essential stakeholders beyond the families will be the local and national government, private sector representatives, donors, NGOs and other civil society groups.

Although interpersonal meetings may be the most effective and participatory advocacy tools, the cost, the limited availability of advocates in the field and the potentially very large number of people to be reached makes this a less feasible approach. An effective advocacy strategy is likely to include an alliance of stakeholders, who, based on a well researched agenda, communicate through targeted meetings, letters, and seminars or by the use of mass media with the aim of building awareness and consensus on sanitation issues. Skilled organizations advocating sanitation may also include specific lobbying experts communicating with key individuals in the political and government structure trying to influence decisions and may provide specific comments to legal and policy documents.

Increasingly, advocacy initiatives involve members of the general public and mass media, hoping that increased public attention and media coverage may influence policy makers to give more attention to sanitation and hygiene issues. An approach that will work best in a policy process based upon democratic processes.

Communication with district and local governments gain increased attention by advocacy groups as they play a vital role in coordinating, allocating resources, facilitating the involvement of other stakeholders, providing support to local institutions and may support local business through proactive tender processes. At the same time that NGOs communicate with local governments, the commercial interest groups may lobby for a more active role for the private sector in the provision of sanitation services and the support to household level access to the best and cheapest spare parts.

A way forward

There are encouraging signs that improved sanitation has been adopted as a priority by governments in low as well as in high income countries. In response to the latest JMP figures, that showed 62% of the population in Africa lacked access to an improved sanitation facility in 2006 and only five of

the 54 African countries on track for meeting the MDG sanitation target, 32 African Ministers decided to take action (9). In February 2008, they signed the eThekweni Declaration in which, among other undertakings, they pledged to create separate budget lines for sanitation and hygiene in their countries and to commit at least 0.5% of GDP to sanitation and hygiene. International funding also seems to be improving with contributions from a number of countries to the Global Sanitation Fund, which was recently launched by the Water Supply and Sanitation Collaborative Council to help meet the MDG sanitation target. The UN General Assembly declared 2008 as the International Year of Sanitation in response to one of the recommendations of the Hashimoto Action Plan launched in March 2006 at the 4th World Water Forum and in so doing aims to increase attention on global sanitation challenges.

At the national level, governments should follow up on commitments to the sanitation sector through the drafting of policies that formulate standards on subsidies to the sector, review and update policies and institutional arrangements governing its promotion, and sale and construction of sanitary infrastructure. In discussions with bilateral donors, the government should also ensure that sanitation and hygiene programs are included as priority areas and the governments themselves can, through the inclusion of sanitation and hygiene into the national poverty reduction strategies, facilitate funding allocation to the sector and supports the demand creation by the public. Increased direct budget allocations to national and local programs and institutions aimed at sanitation and hygiene improvements that will significantly support the sector are still needed. Also, specialized training institutions and universities need to be included as a significant resource to educate the next generation of professionals and leaders in the sector and government need to be active partners in promoting research, innovation and documentation in the sector.

International organizations and donor agencies can support the sector most effectively by allocating funds to the sector, supporting line ministries with technical experts, assisting with the establishment of best practices manuals, and building on international experiences and provide support to civil society organizations. Building regional networks and investing in research will be another important avenue in the interest of sanitation.

We live in exciting times for sanitation, with some signs of increasing political commitment. In some African countries (notably South Africa and Ethiopia) a sound policy and institutional framework for sanitation has been created. Models that can increase the mobilisation of resources for sanitation have been developed and new approaches to sanitation demand creation have been implemented. Further scaling up of new approaches depends on the commitment to and ownership of sanitation as a household issue. With good leadership at top levels, willingness to experiment and stimulated ownership of the problem by households and communities, progress in sanitation can be made. If the decision makers miss the opportunity of the time huge development potentials will be missed!

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Hooked on sanitation subsidies

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Background

Some estimates suggest that in Africa, at its current rate of progress, the MDG target for sanitation will not be met until 2076 (1; 2) and, even then, there will still remain millions of households that do not have access. While reaching the target now looks increasingly unlikely, it is still possible to accelerate its progress. This depends, at least in part, on the availability of finances to cover the capital costs of new infrastructure and the significant investment in demand creation, feasibility studies, ongoing operations and maintenance and general capacity building in the sector.

One area of sanitation financing that attracts strong debate is the use of public money to finance household investments in sanitation (usually referred to as ‘hardware subsidies’). Subsidized latrines, either alone or combined with other promotional tools, have been used in many national rural sanitation programmes, notably in Malaysia, Thailand, India and many countries of Africa, for over 30 years.

This paper aims to briefly highlight the rationale behind the use of subsidies, the experiences from the use of these subsidies and highlights alternatives to the use of subsidies in future financing and sanitation promotion models.

The rationale behind subsidies

There are a number of economic and ethical theories which argue in favour of the use of subsidies as a positive sanitation development solution. The following section provides a brief overview of these arguments.

Economic arguments

Proper sanitation results in the removal of harmful pathogens from the environment and as a result has broad health benefits. For this reason, governments have a strong positive motivation to support the sanitation sector. Poor health carries with it the significant cost associated with health care provision and reduces income generating potential (i.e. reduced productivity.) Sanitation related morbidity is also associated with a reduction in school attendance and childhood development, which creates a generational cycle of disadvantage (3). Accounting for these factors, various cost benefit analysis on the expansion of sanitation services has estimated that the benefits of effective sanitation to the national economy often far outweigh the costs. Globally, the WHO estimates that a dollar invested in sanitation yields an annual benefit of around \$9 (4).

Because improved sanitation decreases the overall public health burden and reduces health sector costs the benefits of improved sanitation accrue to society as a whole. As such improved sanitation

is considered a ‘merit’ good – something that most governments or societies value more highly than it is valued by an individual or household. Many elements of a sanitation system, for example, the long term management of excreta in urban areas, are also public goods – the benefits of which accrue to everyone irrespective of their individual behaviour. This is particularly true and of particular importance in realizing widespread benefits when sanitation coverage is low. This is because individual investments in toilets and management of excreta at the home have little benefit, even to the implementing household, if others in the community do not make similar investments. Governments are therefore motivated to intervene to change community sanitation at a scale that impacts the entire population positively.

Cost Barriers

An analysis by the WSP estimates that the investment cost for latrines is typically USD 30 to 60 per capita with an annual operational cost of USD 3 to 10 per capita. Capital costs of a sewer based system range from USD 120 to 160 per capita with an annual operating cost of 5 to 15 USD per capita. This constitutes a very significant expenditure for many households in low income countries and is cost prohibitive for large portions of the population. The costs associated with the building and maintenance of improved latrine facilities may, therefore, undermine the aim of achieving full sanitation coverage (5). As a result, it is frequently argued that a subsidy that reduces this cost to the household will increase both the ability and willingness of poor households to invest in improved sanitation.

Equity and Moral Duty

Some advocates of sanitation sector subsidies argue that the cost of improved sanitation is a significant barrier for poorer households, which disproportionately affects the most vulnerable members of society since this population is least likely to be able to access improved sanitation facilities. This dynamic promotes continued social inequity in many developing countries. Subsidization advocates, therefore, promote the use of targeted hardware subsidies in order to reduce such systemic inequities and protect the most vulnerable social populations.

Finally, many commentators suggest that governments have a moral duty to ensure that everyone has the potential to live in a clean, healthy and dignified environment. Moral imperative proponents argue that subsidies for sanitation facilities are an obligation of governments because they promote human dignity, equity, compassion and solidarity, which are longstanding values shared the world over.

The arguments briefly reviewed above make a convincing case for government intervention in sanitation. However, before employing a subsidization strategy, it is important to look more deeply at both the history and legacy of sanitation subsidization. Two critical questions need to be answered before undertaking a public subsidization program:

- Firstly, do hardware subsidies work and, if so, under what conditions do they work best?
- Secondly, are hardware subsidies the most effective use of scarce public money in the sanitation sector?

Do Hardware Subsidies Work?

Historically, both water supply and sanitation infrastructures have been heavily subsidised in developed and developing countries. In the UK and other European countries these investments were made relatively late in the process of industrialisation and urbanisation. This can, in part, be explained by the poor state of knowledge about the mechanisms of disease transmission until the latter part of the nineteenth century but was also a product of the very low value placed on the health and welfare of the labouring population in the early period of industrialisation.

Later, proper investment in sanitation and water supply came to be seen as a precondition for healthy living and a core element of civic responsibility (many of the leading proponents of investments having already made their fortunes and many of the cities have robust tax bases from which to finance these major investments). The outcome was undoubtedly an impressive, albeit expensive, system which effectively guaranteed access to adequate sanitation for all.

The experience of the late twentieth century has been rather different. Reticulated sewerage is a costly technology (with high capital and operating costs) and tends to require high water and energy. However it has been the technology of choice for the vast majority of cities and towns in Africa, even where the municipality or utility is small, inexperienced and lacking in strong financial underpinnings. Often households were not asked to pay more than a fraction of the cost for services (following the financial models seen elsewhere and also for legitimate reasons discussed above,) but this has tended to result in financially starved systems with inadequate maintenance and sometimes even insufficient funds for basic operations (5). There have been exceptions, but these are invariably linked to strong management of urban services as a whole and a rigorous attention to the long term financing requirements of the system.

In rural sanitation, the experience is less dominated by the experiences of Europe. It is likely, however, that the strong government role in sanitation financing in high income countries did influence the promotional strategies followed by the international donor agencies in the 1970s and 1980s. Notable successes of rural sanitation programmes with limited subsidies (Lesotho for example) have been eclipsed by massive national programmes that have tended to use subsidies. These have had mixed success. In Malaysia and Thailand the use of subsidies for rural toilets have been integral to what can only be described as very successful national programmes. The experience in India, to take a contrasting example, was less successful; in the mid 1990s relatively few latrines had been constructed compared to the scale of the national rural sanitation programme.

In the face of some high profile ‘failings’ of subsidised sanitation in the 1990s donors increasingly promoted systems where the users would bear a greater share of the cost of sanitation services. Nevertheless, requesting such contribution from the community for water supply and sanitation services has been a politically sensitive issue. It rapidly became clear for example that it is neither feasible nor economically progressive to ask new users to bear the full cost of capital investment in expensive urban sewerage and treatment systems.

At the same time, the removal of subsidies from rural sanitation programmes created significant barriers for poor people in countries which continued to use expensive standard latrine models. Other problems have also been identified by several observers and these are discussed below.

What goes wrong with hardware subsidies for rural sanitation?

Evans (5), in a review of literature, concludes that public subsidy does not fail per se, but fails when it is closely associated with a supply-driven approach that does not take into consideration household preferences, behaviour and access to capital. Many private organisations and government departments have focused on providing toilets aimed at achieving a high coverage rather than motivating their use and maintenance (6).

The key argument for a shift away from pushing sanitation hardware is the growing evidence that supply driven approaches to build more toilets with household subsidies often end up financing toilets where they are either not wanted or inappropriate or unused.

Lack of motivation for use and Sustainability

The first problem is that building a toilet does not necessarily mean it will be properly used or used at all. A number of studies (7, 8), have shown that many subsidised toilets are built but never used.

Even where toilets are used initially, their continued use, proper maintenance, emptying and management of the excreta (if relevant) remains in doubt. An unwanted latrine may be used until it fills up, but this is no guarantee that behaviour has been permanently changed. If the households are unwilling or unable to bear the cost or technical requirements of maintaining the toilet, the significant investment in increasing coverage will, in effect, be a waste.

Problems with targeting

Targeting the poorest or most disadvantaged households with subsidies may be a challenge. Adverse power relations, political influence and even outright prejudice may make it difficult to reach a specific group within the community. In such cases the program may become more costly as the entire community may need to be targeted with a subsidy. Often the neediest do not access subsidies because they may be least able to fulfil the requirements of the programmes, for example, by completing an application or digging the initial pit before accessing a subsidy. The assessment and monitoring of targeted subsidies can be expensive and difficult and is sometimes subject to 'capture' by influential groups. Considerable additional resources (money and staff) may be required.

Dependency

Jenkins and Sugden (9) point out a further perverse outcome of highly subsidised national sanitation programmes; where communities prefer to wait for hardware, cash incentives or other forms of subsidies to be provided rather than take the initiative to begin the construction themselves. This will potentially undermine community initiative

Lack of financial resources to back a subsidised program

The Global Water Partnership (GWP) estimates that the expenditure to meet the 2015 MDG sanitation target is USD 17 billion annually for basic sanitation and that the current estimated gap is around USD 16 billion (11). At the national level these numbers translate into significant expenditures, to which many governments are unable to commit to. It is common and proper for global health and development organizations to declare access to improved sanitation a basic right; as such declarations promote awareness and bring attention to significant development problems. But given the reality of significant financial shortcomings and a number of competing priorities in other sectors (housing, education, health) which are also promoted as basic rights, a pragmatic

analysis of what is possible is needed and solutions beyond public hardware subsidies are more likely to sustainably meet the challenges faced by the sanitation sector. A recent study by OECD for the water sector as a whole (including water supply and sanitation) suggested that some countries have funding gaps that have actually been increasing since the Millennium Declaration (10). It seems that few African governments will have sufficient funds to finance all or even part of the costs of hardware required to meet the targets. It is all too likely that programs based on subsidies will run dry of cash after a relatively short period and the available finances will be insufficient to meet the demand (7).

Undermining the business potential and distorting the market

Finally, large scale infrastructure and operational subsidies may distort the non-public financing of the sector by ‘crowding out’ other sources of funds including direct household investments and market-based financing. Mehta and Knapp (11) point out that public money could rather be used to leverage these additional funds, which might flow into the sector if the policy environment were more conducive.

Are hardware subsidies the most effective use of public money?

The starting point for thinking about subsidies is to stop focusing on subsidizing the construction of private home sanitation facilities and to begin focusing on ways to use public finance (16). The overall aim is to achieve public health gains and ensure human dignity and adequate living conditions with respect to sanitation. Commentators at Hygiene Central argue that the approach must be to encourage home owners to build latrines themselves and to find financing and promotional models that encourage the use and maintenance of the sanitation infrastructure. The same opinion is put forward by Mehta and Knapp (11) who argue that focus needs to be shifted from subsidies and grants for sanitation facilities to funding sanitation promotion and leveraging resources. Increasingly, strategies should consider both the demand and supply side within a marketing approach. Greater investments by household and community are asked for, including user fees for public toilets and cross tax from water to sanitation, while greater public investments are made in building a market for sanitation.

The market approach and building demand

Cairncross (7), in a review of experiences, argues one set of actions that are often neglected relate to the effective marketing of a range of sanitation products so that people can choose what they want and are willing to pay for. This often means accepting and even promoting a greater diversity in sanitation designs and prices. What is needed are latrines that are suitable for the consumer, are linked to a workable system of pit waste management (for example, an emptying service), if required, and can be delivered within a sustainable business model to ensure a regular supply of hardware and services. Cairncross argues that communities already do invest tremendous resources in sanitation and that we have to support this effort even further and enable the environment for further investment.

In Bangladesh, toilet construction financed by the poor themselves increased when external agencies supported its promotion, production and the sale of affordable models. From the 1980s the government financed local production centres. From these centres people bought low-cost subsidised material for building toilets. Later, the private sector acknowledged the market potential and a large number of private shops sprung up (12).

In many settings it is argued that significant investment may have to be made to mobilize the interest of the community before a demand is generated and this may be where outside investments are most needed. A review of the experiences in Asia with community-led total sanitation shows that the move away from subsidy-led toilet construction towards encouraging behaviour change at the community level, and a focus on creating “open defecation-free” villages has been both successful and cost-effective (13). The motivation for this shift in approach has been, as argued above, that individual level subsidies aimed at increasing coverage have not necessarily translated into usage of the infrastructure (6).

Micro credit

Where demand exists but upfront costs are relatively high, poor people may benefit from micro finance services. For the poor however it may be a challenge to gain access to credit through traditional channels. Even for households with relatively good creditworthiness, lenders may be unwilling to offer loans for sanitation as it is not perceived as generating an income that would influence the capacity to repay. For a costly investment in sanitary infrastructure, the lack of formal land tenure in urban informal settlements may also hamper access to credit (7).

However, in such a situation, government or international support for the establishment of community based or commercial microfinance schemes for household latrines, construction of public toilets, latrine cleaning services etc., may provide great opportunities. In this context, subsidies may be used to offer low interest rates on loans or to be exempted for certain administrative charges provided these do not introduce unsustainable distortions in the market (7). Governments may enact schemes that provide incentives to micro-credit lenders to serve poor communities and households who wish to improve their sanitation situation. Such schemes could take the form of tax credits to lenders or limited public insurance programs which help offset the risk of such lending practices. In urban areas, public financing can assist in the creation of Joint Liability Groups who borrow money together to build and maintain shared sanitation facilities which may also help reduce risk by spreading repayment responsibility and therefore increase market based micro-financing.

In a presentation of the introduction of low-cost sanitation in Lesotho, Blackett (14) highlighted the important factors for the success of a microcredit approach to the sanitation sector, including the access to affordable and acceptable latrine designs; minimal general direct grants or subsidies to households; a comprehensive program of Ventilated Improved Pit latrine promotion; integration of projects into existing government structure and coordination among departments in promoting sanitation.

Subsidies that work

Having identified marketing, demand and micro-finance as possible areas for public funding, many governments may still feel that there are situations which justify hardware subsidies. A recent study by WSP suggests that hardware subsidies remain an essential part of the strategy to accelerate progress towards the sanitation MDG (15). Considering the problems with subsidies outlined above it seems reasonable to say that where they are used hardware subsidies need to be:

- Simple and transparent to ensure that the intended beneficiaries can access them
- Well defined and linked to specific and explicit objectives (equity, universal access etc)

- Well targeted to ensure that the subsidy achieves these objectives (this could mean targeting on grounds of income, levels of service, geography or any number of other factors)
- Time bound and well monitored – to ensure that market distortions are kept to a minimum
- Tightly monitored and frequently reviewed.

Some relatively more successful hardware subsidy regimes include:

- Subsidised or amortised connection fees for urban sanitation
- Subsidised credit for on-site sanitation in rural and urban areas linked to a wide range of sanitation options and focusing on outcomes not standardised latrine designs
- Fully subsidised waste management (pit emptying and treatment for example) in urban areas
- Output-based subsidies to encourage service providers to extend access to less-favoured communities
- Output-based subsidies for effective waste management

Conclusions

The debate on subsidies has tended to be characterized as a yes-no dichotomy, but in fact it is clear that there are strong justifications for public finance in sanitation, a strong historical track record of success and an enduring interest on the part of policy makers to put money into the sector. Therefore, rather than focusing exclusively on the question of hardware subsidies a much more important and useful debate is needed on the best use of scarce public resources.

Governments need sanitation programmes which are effective (reaching the intended objectives), efficient (cost-effective) and affordable (at a scale that can be financed in the long term). This means that the starting point must be a thorough understanding of available (long term) funding which will primarily come from the government and householders. This money is needed to pay for the ongoing costs of the programme in the long run – the costs of operating latrines, cleaning them, maintaining them, managing the waste stream and the costs of long term promotional activities and support. Costs also include the salaries of health extensionists or sanitation workers, local government staff who support community-led programmes, and the costs of monitoring. Once the financial regime for these long term elements has been worked out, additional funding can be earmarked or sought for specific short term interventions including, where they are deemed necessary, hardware subsidies.

The key problem historically seems not to have been with the hardware subsidy per se, but with its application in a non-sustainable manner and the relatively poor performance of some of the programmes within which subsidies were embedded. Improved attention to overall issues of public finance and more careful design of well-monitored sanitation programmes could be an important element in the battle to accelerate progress towards the MDG sanitation target.

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Challenges in supporting hygiene behaviour change

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The rationale for hygiene promotion

Hygiene promotion is commonly linked to programmes that deliver improved water supply and sanitation. In this context, hygiene promotion tends to focus on interrupting faecal-oral transmission routes for water-related diseases such as diarrhoea and is seen as having merit both in its own right and as an intervention that improves the effectiveness of water and sanitation programmes.

There is evidence from large studies in less developed countries that simple hygiene measures, especially hand washing, reduce respiratory infections and diarrheal diseases significantly (1-4) and may result in significant improvements in nutritional status resulting from a reduced number of diarrheal diseases and worm infections (5). Overall, investments in water and sanitation linked with hygiene promotion have proven to be more effective in reducing diarrheal diseases as compared to investments in hardware alone.

When looking at the rationale for hygiene promotion and the underlying factors that may promote a community to change practices, it is fundamental to understand that hygiene goes beyond health and disease. Local definitions of hygiene include many aspects of life and are highly context specific. Several studies have now shown that social and moral drivers are strong factors in motivating and maintaining good hygiene behaviour. These include, amongst others social norms, cleanliness, nurture, pride, dignity, social status and acceptance (6-8). Structural factors such as media exposure and poverty have also been found influential for maintaining good hygiene behaviour (9;10).

Cost-effectiveness

The World Bank recently suggested that hygiene promotion is amongst the top five most cost-effective health interventions and has estimated that promoting sanitation and hygiene will cost US\$11.15 and US\$3.35 respectively per DALY saved. (11) A recent review aimed at assessing the cost of changing key hygiene behaviour found that at costs ranging from US\$1.05 – 1.74 it was possible to achieve almost complete abandonment of open defecation and considerable improvement in toilets hygiene, safe disposal of child faeces, and washing of hands with soap at critical times(11). This compares favourably with the cheap, life saving and widely available *treatment* of diarrheal diseases with oral rehydration therapy (ORT), which costs \$23 per DALY saved(12). When hygiene promotion reaches scale it can be very cost-effective, since it can target large population groups and produce sustainable behavioural changes. Studies from developing countries in Africa and South Asia (Ghana, Kenya, Uganda, Nepal and India) indicate that hygiene behaviour changes and health benefits sustain even years after hygiene projects have ended (13;14); latrines were used and handwashing was still practiced among most of the targeted populations.

In short, hygiene promotion is a beneficial, feasible and highly effective strategy towards improving health. The central question for this paper remains: How can we move forward in supporting hygiene behaviour change and what would be the most effective and cost-effective approaches to ensure maximum health impact?

Approaches in Hygiene Promotion and Hygiene Behaviour Change

Hygiene promotion initiatives take many forms and have changed considerably over time.

Hygiene Education

Hygiene education, relying on one way communication, has been going on for decades using traditional IEC (Information, Education and Communication) campaigns, with posters, leaflets, local media, loudspeakers etc. Over the same period the developing world has seen a substantial reduction in mortality from diarrhoea as a result of improved case management, especially the widespread use of oral rehydration therapy. However, there has been little change in the incidence of diarrhoea over the years(15). One of the lessons learned during the 1980s, the decade of Water and Sanitation, was that investments in infrastructure linked with traditional hygiene education was able to improve *knowledge* about health and hygiene, but to achieve the targets set for health, this improved knowledge must translate into improved attitudes and behaviour.

Participatory hygiene promotion

The lack of effect from hygiene education, led to a growing interest in the deeper motivations and local meanings of hygiene behaviour. Through the 1980s and 1990s, participatory hygiene programmes, such as the Participatory Hygiene and Sanitation Transformation Programme (PHAST)(16) and the Community Health Clubs (CHC) were developed, in which communities identify problems, suggest solutions and develop problem solving strategies amongst themselves(17). Such community based projects, targeting small geographical areas with dense populations have been very successful. An example is a project in Indian urban communities using intensive community mobilisation and interactive methods, such as meetings, exhibitions, health camps, street dramas, health clubs, medical camps and guidance on how to construct latrines(14). Health clubs in Zimbabwe have succeeded in increasing good hygiene behaviour significantly and coverage of latrines with 43% among club-members (compared with only 2 % among non-members) in an area historically depending on subsidies. The communities also developed new improved hygiene norms and participation (18).

School based hygiene promotion

School programmes for water and sanitation have been in existence in many developing countries for decades and coverage is expanding rapidly. But hygiene is often taught in dogmatic ways. The 'WASH for schools' approach developed by IRC(19) is a good example of participatory teaching methods aimed at a key target group in hygiene promotion - children. Schools, being an institutional entry point, make it relatively easy to scale up promotional activities, and funding can be distributed readily through existing channels without massive time input and planning. Apart from laying the foundation for good hygiene behaviour of the next generation, this approach hopefully can have a spill over effect on hygiene behaviour in their homes and families.

Community –led total Sanitation

Community-led total sanitation (CLTS)(20) sounds like a sanitation approach but does promote one critical hygiene behaviour – the elimination of open defecation. CLTS works to motivate the entire

community to change this central behaviour and has had some demonstrable and striking successes. It is now being progressively scaled up across a number of countries because policy-makers recognise that it is a cost effective strategy for communities that practice open defecation. In contrast with most other earlier promotional techniques, CLTS uses the negative motivator of shaming to increase awareness of 'dirty behaviour,' such as open defecation. This is highly controversial in hygiene promotion, but nevertheless effective. The sustainability of the behaviour changes achieved appears to be quite good, but more work is needed to understand how changes embed over time. PHAST is now widely used in African and Asian countries. CLTS is spreading but relatively few countries have national programmes using participatory models(16) and many IEC agencies in health and hygiene around the world still draw heavily on one way education.

Social marketing of single products or behaviours

Social marketing theory has been used in hygiene promotion for many years. The most recent social marketing hygiene promotion methods were developed during the late 1990s. They are inspired by consumer and marketing based methods, and takes advantage of creating consumer demand for latrines¹, by stimulating lucrative private markets for local artisans or by creating partnerships with commercial producers to reach large population groups with cheap soap etc.

Linking consumer research with the private commercial sector (e.g. soap producers) and the public sector (doing the hygiene campaigning) seems to be a promising hygiene promotion recipe with many opportunities for mutual beneficial partnerships(21). It is now being rolled out via The Global Public-Private Partnership for Handwashing in Ghana, Nepal, Senegal, Peru, Vietnam and other countries². Intensive use of radio and TV-spots for marketing of soap and using positive motivators, such as being a good mother who cleans her children, is changing behaviour. In Guatemala the campaign increased the number of mothers using good handwashing practices by more than 30%. This result was associated with a 4.5% overall reduction in diarrhoea for children under five and 322,000 fewer cases of diarrhoea a year (22). In Ghana the initiative included a mass-media campaign; district-level activities in health centers, schools, and community groups; and a travelling road show of events that provide direct community contact in rural areas. The evaluation found that 71% of target mothers could describe the television ad, 82% could recall the 'clean hands' campaign, and 48% could sing the campaign song. Reported handwashing rates from baseline to follow-up increased by 13% after using the toilet, and by 41% before eating(21). Table 1 lists some advantages and limitations of the different approaches.

¹ See <http://www.ideorg.org>

² See <http://www.globalhandwashing.org/>

Table 1: Approaches in hygiene promotion: advantages and limitations

Approach	Advantages	Limitations
Hygiene education including mass media campaigns	<ul style="list-style-type: none"> - Raises knowledge on health, disease transmission and the benefits of good hygiene. - Can act as a support for other promotional activities (providing basic knowledge and awareness). - Can reach large population groups, and potentially cost-effective. 	<ul style="list-style-type: none"> - Does not provide people with either incentive or motivation to change behaviour and may not take into account local values etc. - Does not have a long term effect, unless backed by other initiatives.
Participatory community based hygiene promotion	<ul style="list-style-type: none"> - Motivates and supports behaviour changes, using local language, situations and perceptions - Can become a platform for people to take action on others' aspects of life also - People can be active in developing sustainable and locally appropriate solutions 	<ul style="list-style-type: none"> - Does not reach large groups of people at once, but needs a community-by-community approach. - Expensive in facilitation and demands staff with local knowledge and good communication skills - Takes time and is an intensive programme
Social marketing strategies	<ul style="list-style-type: none"> - Creates a <i>demand</i> for behaviour change via social marketing of consumer goods and behaviours - Can generate sources of income for locals 	<ul style="list-style-type: none"> - Can be difficult if there is no strong culture for private sector activities - May not reach the poorest of the poor and the most vulnerable, who have no resources to invest

Today, many hygiene promotion initiatives are hybrids of various approaches and new innovative models are continuously developed. Hygiene projects targeting special vulnerable groups receive increasing attention, e.g. school going children, ethnic minorities, people affected by conflict or emergencies, people living with HIV/AIDS (23). These new trends have drawn hygiene promotion out of the traditional health domain and water and sanitation sectors and now work with a number of other sectors (e.g. education, local businesses, culture and agriculture etc.). This stresses the importance of mainstreaming hygiene promotion approaches and professionalising the hygiene sector.

The need for focus

Many observers of hygiene promotion note that programmes that focus on a few central hygiene messages in multiple fora are more likely to succeed (24).

Some programmes try to reach many people with many messages, often with little resources, but these seem to be less successful. An example of focused promotion is the hygiene programme 'Saniya' in Burkina Faso. It achieved significant improvement in levels of handwashing with a three year programme which exclusively focused on handwashing but via many different institutions and local actors (25). Handwashing with soap by mothers after using the toilet increased

from 1% to 17% and by mothers after cleaning up a child from 13% to 31%. Thus, public health specialists need to make decisions on which key hygiene behaviours to concentrate on.

A range of other messages, such as sweeping, keeping houses clean, washing clothes, cutting nails etc., with no or low documented effects on health, are also promoted in hygiene projects. These messages are of intuitive importance to hygiene for many of us and therefore easy for us to grasp and for advocates to communicate. Nonetheless they may add layers of complexity and make it hard for the recipients to prioritise the most important behaviour. The evidence suggests that to be effective, hygiene promotion needs to target those few hygiene practices with documented effect on the greatest risks for disease transmission(26). These include behaviour that prevent stools from getting into the domestic arena and, in particular, into mouths, causing diarrheal and respiratory diseases. Washing hands with soap, safe disposal and handling of excreta, preventing open defecation across all age groups, and food hygiene (especially for children) are the key messages that seem to deserve the highest attention.

The challenge of coordination and delivery

As with many development initiatives, hygiene promotion tends to be fragmented at the local level with multiple levels and agencies of government, donors and NGOs promoting their own messages. At the local level, people may often receive a muddled impression of what is to be done, with conflicting messages and limited follow up or support. The impacts may thus be limited despite the number of agencies involved.

Inevitably hygiene promotion activities need inputs from many actors and this can be seen as a strength – so that messages in schools and health clinics are mutually reinforcing rather than in conflict – but achieving this level of coordination is challenging.

Hygiene promotion is not just a cheap add-on for water or sanitation programmes

Far from just being a cheap-add on, hygiene promotion is vital to the effectiveness of investments in water and sanitation. All too often, however, the design and delivery of the hygiene promotion component is left to engineers who lack the specialised knowledge and skills, or to younger inexperienced health promotion staff who may have limited resources. In fact, to be effective, hygiene promotion calls for specialised professional skills, experience and strong leadership. Technocrats and engineers in the water and sanitation sector do not necessarily hold such skills and will need assistance.

Hygiene promotion not automatically a priority in the health sector

At the same time, relying solely on health staff may also lead to problems. At the local level health extensionists are often over stretched and lack resources. They have a full agenda of health messages to pass on and key hygiene behaviours may often be overlooked. At more senior levels health staff may find the promotion of basic handwashing to be outside of their ‘natural’ remit and they may prefer to allocate more attention and funds to hospital or clinic based activities(27).

School hygiene programmes do not always work

It is not automatic that designing and rolling out a school hygiene programme will result in sustained changes either. Similar to the water and health sectors, education has many priorities and few resources. Hard pressed teachers may lack the time or inclination to teach hygiene while school sanitation facilities, if they exist, are often in a parlous state. Also, we lack evidence that

school based promotion aimed at primary or secondary school children will result in hygiene behaviour change at household level.

The private sector is not being effectively harnessed to promote hygiene

The potential of the private sector is greatly overlooked in hygiene promotion, especially in countries with a strong tradition of public sector health service delivery. New approaches which work with the private sector have shown promise. International Development Enterprises³ (IDE) in Vietnam, for example, has shown that supporting private entrepreneurs in water, sanitation and hygiene can be highly effective and cost-efficient, resulting in improved community hygiene, poverty alleviation and improved hygiene behaviour. Earlier work by the Water Utilities Partnership in Africa (28) also showed that private sanitation operators in urban areas had much to contribute in the debate on promoting improved hygiene outcomes.

Identifying golden opportunities for hygiene promotion

As we have seen, many actors have an interest in hygiene promotion but their performances may be variable. Few countries have managed to establish a strongly-led and well coordinated programme of hygiene promotion that draws in the skills and resources of water engineers, health workers, educationists and the private sector. What is needed are strong incentives and resources to ensure that efforts are coordinated and prioritised as required while hygiene promotion needs to be built more robustly into existing work programmes – rather than being imposed from outside as an add on. For example, in Ethiopia in the early 2000s the Regional Bureau of Health had significant success in reducing cases of Acute Watery Diarrhoea when hygiene promotion and sanitation were embedded into the work programmes of District Health Officers(29).

Finding these levers or ‘hooks’ for key promotional activities are critical. Hygiene promotion can, for instance, be incorporated into routine patient-carer meetings at the district or local health post (for example, at an antenatal meeting or when a mother seeks treatment for a sick child). Treating children with ORS is a clear opportunity for health staff to approach receptive parents with messages of hand washing and safe disposal of excreta. Health staff need to be equipped with communication skills and information to make this a meaningful conversation.

Reducing diarrheal diseases is already a major focus in the Integrated Management of Childhood Illnesses (IMCI). The WHO’s current revitalization of the Primary Health Care (PHC) strategy is also a strong platform for starting community mobilisation(30) and pushing hygiene promotion further into local communities. Village health workers, local health posts etc., have strong local knowledge about the living conditions, hygiene and health status of their communities.

Hygiene promotion can also be embedded into water and sanitation planning at the local level, by creating strong links between health and engineering staff and by providing resources to employ professional health promotion expertise on water and sanitation project teams. Teachers can also be more strongly encouraged to focus on hygiene at school by ensuring that home hygiene is a full part of the curriculum and subject to examination, as well as by ensuring that all new schools have adequate sanitation facilities and the budget to maintain them. In South Asia the experience of providing ‘prizes’ for local government jurisdictions that achieve significant improvements in

³ See <http://www.ideorg.org>

sanitation and hygiene (through the elimination of open defecation) has had some notable success and clearly creates incentives for local government staff to coordinate their work more closely(31).

How can aid make a difference in hygiene promotion?

This multi-sectoral nature of hygiene promotion itself sends a signal to donors about where their actions can add most value. Crucial to the success of hygiene promotion programming must be robust local coordination and planning, rooted in strong local consultation that ensures that all the required actors have the interest and incentive to act towards an agreed goal. External support agencies can often play a helpful role in such processes, supporting facilitation and providing links to expertise in other countries. In addition, donors can add value through;

- Financing strong impact evaluations and other research to develop an adequate evidence base for effective policy making
- Coordinating closely with other donors to provide a reliable and coherent flow of funds for all actors engaged in hygiene promotion activities
- Supporting the development of an agreed common framework and approach to hygiene promotion and encouraging alignment amongst all external support agencies
- Avoiding channelling funds to long standing and inefficient IEC based hygiene promotion programmes, if they prove to be ineffective
- Delivering funds to appropriate levels of government and departments in line with the agreed plan and in ways that allow for serious long term planning and staffing
- Supporting the private sector where appropriate and ensuring that financing is not inadvertently used in ways which ‘crowd out’ private sector actors and financing
- Financing capacity development, cross visits, training and work experience to build up a cadre of professionally trained and experienced experts in communications and promotional techniques who are equipped and incentivised to work in the local context.
- Financial and technical support to the specialised training institutions and universities to produce a new generation of modern hygiene promoters

Conclusion: A Way Forward?

How can we move forward in supporting hygiene behaviour change with the best approaches and models of funding to ensure maximum health impact? Hygiene promotion is now recognised as key to the prevention of water-related disease. It’s cost-effectiveness has been well documented and the task now is to scale up the most promising approaches to hygiene promotion to achieve lasting behaviour change.

The evidence suggests that the way forward should encompass the following:

- A focus on key hygiene behaviour, namely handwashing with soap at critical times and safe containment of faeces.
- A move away from old-fashioned exclusively education-centred hygiene promotion and make better use of hybrid solutions that use a combination of community-based participatory interventions, particularly when baseline behaviours are very poor, and marketing interventions, particularly where the private sector is weak.

Embedding hygiene promotion in the work of health professionals and schools is critical. This will require a steep change in the working practices and incentives of health staff and teachers. It will also require investment in human capacity at decentralised levels of local government, and in a broader sense, the need to build up a cadre of professional promoters to deliver well-coordinated national programmes.

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Measuring progress in sanitation

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Introduction

Only 62% of the world's population has access to improved sanitation, with the lowest access rates in Southern Asia (33%) and Sub-Saharan Africa (31%). (1) Significant disparities between urban and rural populations exist as do unequal access between those with financial means and the poor.

The process of program monitoring is a critical dimension in the implementation of public policy and strong monitoring programs are both descriptive and instructive in that they tell where implementations stand and inform where they should go. Monitoring programs for public policy implementations, in this case the expansion of improved sanitation programs in low-income countries should be designed to determine whether government, donor and management actions are moving sanitation systems toward desired future conditions and trajectories, more specifically, toward measurable goals and expectations. The five core elements in evaluating the maturity and effectiveness of any monitoring program are:

- **Frequency** - How often and how timely is the performance data collected and reported?
- **Breadth of Data** - Are the measured areas appropriately wide and do they encompass all affected locations, processes and populations?
- **Depth of Data** - Is a sufficient amount of data collected to adequately and correctly measure implementation status?
- **Validity of Data** - Does monitoring data accurately reflect the true situation of the program implementation? Is it verifiable or repeatable using other methods? Is performance monitoring done in an unbiased and independent manner?
- **Utilization of the Data** -. Measurement data must be used by the right people and in the right way, particularly in decentralized governments.

Using this framework, this paper aims to discuss current trends and future approaches to monitoring increased usage in the sanitation sector.

Current Global Monitoring Programme Description

Background

Sanitation goals are included in Millennium Development Goal 7, which aims to ensure environmental sustainability in low-income countries. According to Target 10, the aim is to halve by 2015 the proportion of people without access to improved sanitation. Before the year 2000, data on sanitation coverage came from utilities and ministries in charge of drinking water and sanitation services. There were no common definitions for basic sanitation and as a result the data were not comparable. Since 2000, the Joint Monitoring Programme (JMP) for Water Supply and Sanitation, managed by WHO and UNICEF, has based its reporting on population-based data gathered through

large household surveys and national censuses. JMP is the United Nations (UN) mechanism for monitoring progress towards Millennium Development Goal 7, target 10 (1). To measure progress toward this goal, the Joint Monitoring program has established the following sanitation related indicator:

- **Proportion of population with access to improved sanitation (Urban and Rural)** - An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. To allow for international comparability of estimates, JMP uses the following classification to differentiate between "improved" and "unimproved" types of sanitation facilities.

Table 1 – Definition of Improved Sanitation Facility

Improved sanitation facilities	Unimproved sanitation facilities
Flush or pour-flush to: <ul style="list-style-type: none"> - piped sewer system - septic tank - pit latrine Ventilated improved pit latrine (VIP) Pit latrine with slab Composting toilet	Flush or pour-flush to elsewhere ⁴ Pit latrine without slab or open pit Bucket Hanging toilet or hanging latrine No facilities or bush or field (open defecation) Public or shared sanitation facilities

Source: WHO/UNICEF, 2008 (1)

Frequency of Monitoring Programme

In order to monitor sanitation progress, JMP uses data from a variety of independent sources, including:

- DHS – Demographic and Health Survey
- MICS – Multiple Indicator Cluster Survey
- LSMS – Living Standard Measurement Study
- CWIQ – Core Welfare Indicator Questionnaire
- WHS – World Health Survey
- HBS – Household Budget Survey
- National Census Data
- Other user based household surveys

Information from these varying independent sources has been combined into a single database and assessments were made in 1991, 1993, 1996 and 2000. The most recent report was published in 2006. In 2008, a representation of the same data from 2006 was produced to include further disaggregation. On average, global monitoring happens every 3.1 years.

Country level data can be roughly assumed to happen with the same frequency within countries as the data sources for government sector monitoring are often the same as for JMP monitoring.

Breadth of Monitoring Program

Data from the JMP is collected 190 countries and has included over a 1000 surveys. The estimates are based on consumer surveys instead of service provider statistics and results are standardized. Because the JMP tracks progress using the same indicators from a variety of sources it permits the comparison of progress between countries and over time. Beginning in 2006, the JMP data has been disaggregated by facility type, wealth quintiles and by rural and urban populations. There is some regional data available. Although the target reflects total populations, progress toward the

⁴ Excreta are flushed to the street, yard or plot, open sewer, a ditch, a drainage way or other location.

target is based on the sum in both rural and urban areas and highlights discrepancies that would otherwise be masked by total numbers. Unfortunately, disaggregation at other important levels is not available in the JMP data. For example, there is no age or gender specific data, which could be important as usage among these groups is affected greatly by issues of safety, time of day and proximity of facility to the living space. Additionally, data is not disaggregated to monitor progress in slums or peri-urban areas, which, in light of the massive rural to urban migration happening in many developing countries, reveals a significant data gap.

There is also insufficient data in the monitoring program related to financial and human capital investment in improving sanitation. Currently, it can be very difficult to disaggregate data between the sanitation and drinking-water sectors because the two sectors are usually combined in the same projects or programmes, and data are generally maintained to meet OECD guidelines (which do not require separate reporting of data for the two sectors). Because funds for sanitation and drinking-water are often aggregated in budgets and disbursements, donors and recipient governments have little information on how much (from all sources) is being spent on sanitation. Likewise, there is little to no formal monitoring on the use of human resources deployed to address the sanitation challenges.

The latest (2008) JMP report refined the distinction between ‘improved’ and ‘unimproved’ by introducing the ‘sanitation ladder’ which allows JMP to show what is considered improved and unimproved in a more refined way than the only pass/fail former presentation without changing the MDG definitions. (2) This ladder currently allows a disaggregated analysis of trends in a four-rung ladder – 1) open defecation, 2) unimproved facility, 3) shared facility and 4) improved facility. This more defined categorization is a move toward a broader monitoring of sanitation practices globally. One important noticeable gap in the current program is the lack of data from the JMP on hygiene behaviour (i.e. hand washing after defecation) which is closely linked to realizing the benefits of improved sanitation.

Depth of Monitoring Program

JMP collects data over time from multiple sources. The continual addition of new survey data should improve accuracy of the questions asked over time. Individual data is collected at the household level, but is not disaggregated to local or district levels. This may be a reflection of an insufficient amount of data to create an appropriate precision level. There is significant discussion about the need to strengthen and promote the linkages between national data and more localized monitoring programs. A number of countries from East and South Africa have recently convened at forums aimed at monitoring MDG 7 targets at more micro levels (district and local.)

Because the JMP uses various household surveys as data sources, there is no information available for the usage of improved sanitation facilities in public buildings, including public offices, schools, health centres, hospitals and marketplaces. Cumulatively, time spent in these places is significant and the lack of data in this area reflects an important gap in global and national monitoring programs.

Validity of Data

While the official JMP data clearly indicates they measure usage and not simply access, the sole reliance on household surveys may introduce a response bias. The recommended survey question for the sanitation indicator reads: “What kind of toilet facility do members of your household usually use?” With such a question, it is difficult to avoid bias and impossible to capture the

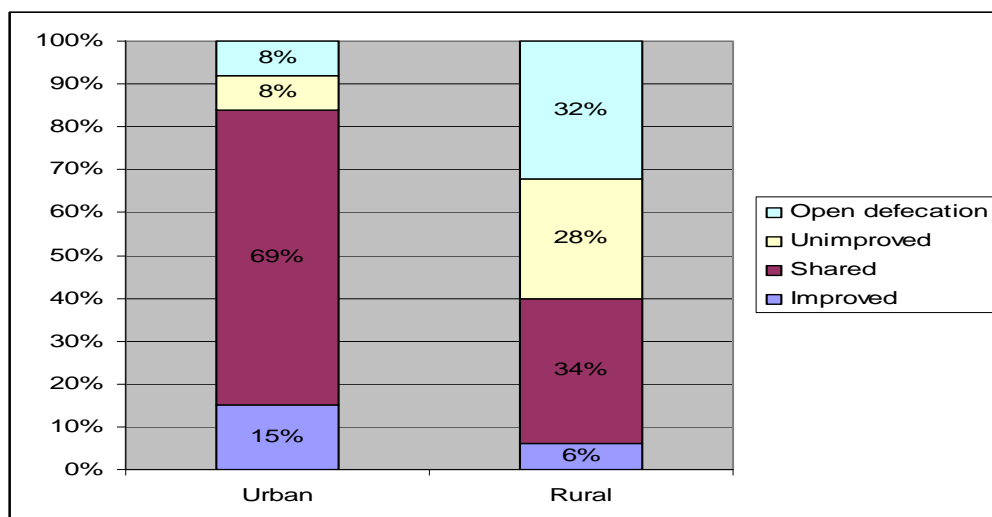
behaviour pattern of all household members at all times of the day. It is highly likely that some respondents will answer with the kind of facility the household has, instead of what they really use. The nature of the question may be compromising the validity of the data reported as described by the indicator. Most monitoring programs focus on physical access with little information recorded on quality, maintenance, and use of the sanitation facilities. Having access to or even using a sanitation facility, does not imply that the level or quality of services is ‘safe’ or ‘adequate’ to guarantee positive impacts on human health and well being. Monitoring actual use by all family members at all times can only reliably be done through either observation of actual behaviour or the latrine, or by checking the immediate household environment for excreta.

Further, the focus in monitoring progress has been on global goals set for sanitation. As a result, there are often gaps between the sanitation data reported by country programs and the measurements reported by JMP. These gaps seem to be attributable to three primary reasons:

1. **Difference in Indicator Definitions** - Some countries define shared sanitation facilities as “improved,” but the JMP does not because of hygiene concerns due to difficult maintenance. This can account for significant differences in coverage estimates.
2. **Difference in Calculation Methodologies** - JMP uses total population as the denominator when calculating coverage percentages, but some countries calculate this figure using number of households as the denominator.
3. **Difference in Data Sources** - Country data is usually selected from a single data point (i.e. one type of survey) while JMP data is generated using a variety of data points from different sources.

As an example, Figure 1 shows disaggregated sanitation coverage for Ghana using JMP’s sanitation ladder approach. JMP reports Ghana’s improved sanitation coverage as 15% in urban areas and 6% in rural areas in 2006. In contrast, Ghana, which has made substantial investments in public latrines, includes these shared facilities in its definition of improved sanitation coverage, which brings the coverage, as defined by Ghana to 84% and 40% for urban and rural areas, respectively.

Figure 1. Sanitation coverage in Ghana, 2006



Source: WHO, 2008 (3)

The global coverage of improved sanitation stands at 62%, but this 2006 JMP figure is difficult to reconcile with the reality of millions of slums residents in developing countries. People in such

slums might be considered to benefit from an ‘improved’ sanitation technology according to the JMP criteria. In reality, the sanitation systems are in extreme disrepair in many developing country cities. For example, Nairobi records access to improved sanitation at more than 90%. That figure is hard to square with the living experience of poor people. In Kibera, Nairobi, the largest slum in Africa with a population of around one million, an estimated 13% of latrines are unusable because they are too full. The ‘flying toilets’ of Kibera—plastic bags in which people defecate and then throw onto the street—bear testimony to the limited extent of sanitation coverage in Nairobi, as do the slums’ high child mortality rates. (4)

Utilisation of Data to Improve Services

The World Bank estimates that 70% of Poverty Reduction Strategy papers include the MDG indicator for sanitation. (5) While this represents significant progress, the inclusion of only a national indicator may have limited impact on local authorities who need more specific data for planning and budgeting. The main aim of establishing monitoring systems should be to be able to guide decentralized and national planning and to provide the basis for monitoring progress in the sector to improve effectiveness of aid.

Many countries have recently begun to convene working groups to address the gap in data at local levels and to design strategies for closing the gap and making more rapid progress toward sanitation targets. One significant shortfall is the capacity of low-income countries to produce accurate and reliable statistics. In 2004, the World Bank calculated the statistical capacity of all IBRD (International Bank of Reconstruction and Development) and all IDA (International Development Association) countries and found sizeable gaps in the local capacity. (6)

PRSPs are intended to be country-owned development strategies and as such their monitoring plans should be based on country-owned statistics. However, PRSPs are often ambitious and imply high levels of statistical capacity. In many cases, data requirements exceed the capacity of statistical systems to deliver timely and good quality data. In general, the capacity of the country to conduct in-depth policy analysis and evaluation was also judged a serious limitation. (6)

Toward the Future: Improving Monitoring Systems to Meet the MDG Target for Sanitation

At the current rate of growth, targets for sanitation will not be met until 2076. It is important for national and international actors to identify and agree on critical steps to improve the speed and effectiveness of improved sanitation programs. The following section highlights a few recommendations in this area.

Frequency of Data

Many surveys are now based on approved survey formats that allow data to be compared across regions. JMP has built an impressive data base, which makes comparisons between countries possible. However, national governments need support to improve monitoring systems according to the standard definitions. Also, countries will need to recognize the reliability of consumer-based information and the need of allocating more time and funds to conduct regular surveys. Governments and donors should continue to work to improve data collection systems which collect data with more regularity. Identifying and funding repetitive, country specific processes in which local governing bodies and NGOs can report data at micro-levels, which can be rolled up to macro

levels and be validated through random quality assurance processes or existing national data collection programs would improve monitoring frequency.

Breadth of Data

All available data still show a great inequity in coverage between rural and urban areas. This means that monitoring efforts need to continue providing disaggregated data. At the country level, standardization of definitions and expansion of indicators is needed while simultaneously recognizing the need for flexibility to ensure relevance to the country situation. This can be undertaken by systematically bringing together the relevant stakeholders within a country at national level to harmonize their efforts. In addition to measuring access to sanitation facilities, indicators should be developed to measure use of these facilities and related hygiene practices, especially hand washing after defecation. The current challenge is to develop appropriate indicators that can be used in household surveys to collect information about disparities in access to services, affordability of services, per capita water quantity use, hygiene practices, and the sustainability and reliability of services.

Lastly, the focus in monitoring access to basic sanitation has been at the household level, which corresponds to the MDG target. In addition, a practical indicator which measures usage and impact should be developed for sanitation facilities at public institutions, especially schools. To that end, the first Global Annual Assessment on Sanitation and Drinking-Water (GLAAS) an initiative of UN Water was published at the end of 2008. This should complement the UN World Water Development Reports (WWDR) and JMP reports as it analyzes the institutional, the human resources and the financial capacity of countries in relation to status and trends in drinking-water and sanitation service levels on a global scale. GLAAS is still in a pilot phase and has been tested in 7 countries.

The MDG sanitation target includes the notion “sustainable”, which implies that it is not just a matter of providing new sanitation infrastructure to those who are currently unserved. Equally important are investments to prevent the existing covered population from falling back into the unimproved coverage category, and to ensure the ongoing maintenance of these improved facilities (9). In fact, the cost of maintaining existing services far exceeds the estimated annual spending required in developing countries for new coverage to meet the MDG. Sanitation monitoring programs rarely include the issue of operation and maintenance of sanitation infrastructure.

Depth of Data

Until recently, participatory monitoring has not been quantifiable and therefore could not be aggregated over a large number of communities. However, a promising new methodology for participatory assessment (MPA) was developed by the WSP and the International Water and Sanitation Centre (IRC) (10). The assessments use standard tools such as transect walks, ranking, social mapping, pocket voting and then converts this information into numbers using a range of standardised scoring methods that generate comparable results across a large sample of stakeholder groups. Tools to manage the monitoring include peer review of scores, use of a database to store and analyse information, stakeholder meetings to validate findings and identify action, and action planning reports. The MPA methodology is designed for both one-time assessment and continuous monitoring.

The water and sanitation sector has traditionally focused on the household. This ignores the fact that adult men and women are often out in agricultural fields or in another job and children at

school. In the developing world, there are 600 million children of primary school age and roughly 75% of these children's schools lack basic sanitation. Sanitation in schools with separate facilities for boys and girls has been shown to stimulate girls' school attendance. It also leads to greater in-school attention by pupils of both genders. Reliable estimates on sanitation coverage and hand washing facilities for schools should be made available. The definition of basic sanitation should include access at public institutions, especially schools, health centres, hospitals and other public settings like market places.

Validity of Data

Most water supply and sanitation projects have focused on *outputs*, i.e. the products or services provided in their monitoring and evaluation. One can easily measure the number of tubewells or latrines constructed, but whereas drinking water is a prerequisite for survival, the use of sanitary facilities is voluntary. Mere physical access to such a facility is not sufficient to protect the user and its immediate environment from coming into contact with human excreta; people should actually use a sanitary facility properly to be included among those having access to basic sanitation. Observations of sanitary facilities are, therefore, best confined to sanitation specific surveys, conducted by sanitation staff used to dealing with the subject.

A number of NGOs and national operational research organisations have piloted locally appropriate survey approaches and monitoring systems in support of decentralized planning efforts. Lessons learned from these experiences needs to be shared. However, it should be encouraged that local initiatives use globally acknowledged definitions as spelled out in the Global Water Supply and Sanitation Assessment 2000, which was originally completed to arrive at clear and common definitions and to move from data sources of service providers to household-level data.

Sanitation is one of the primary drivers of public health. Improved sanitation impacts on several of the Millennium Development Goals (MDG), notably a reduction in child mortality from diarrhoea, better growth and scholastic performance of children when worm infections are prevented, higher school enrolment, especially of girls, and improved environmental sustainability. Ideally, measuring these impacts should be part of monitoring programs. However, this requires well-designed epidemiological studies and will not become a routine component of monitoring and evaluation programs. At the macro level, the WWDR (11) provides a small number of robust impact indicators for monitoring progress towards achieving the health-related Millennium Development Goals and targets: (I) the burden of water, sanitation and hygiene related diseases, expressed in Disability-Adjusted Life Years lost; (II) child mortality; and (III) malnutrition expressed in height-for-age.

In poor urban areas and informal settlements, millions of people have no choice but to rely on public or shared toilets, as there is often no space for a private facility in such high-density areas. What is needed in such situations is determining an evidence-based maximum of the number of households using one improved sanitation facility in the own or neighbours' plot or yard that still allows for physical and safe access. This should be part of local-level monitoring and evaluation. Additionally, an adequate access indicator must be developed for those households including aspects of cleanliness and safety, as well as distance from the household, with special attention for groups such as the elderly or those living with HIV/AIDS who are often in poor health and not able to go long distances

Utilization of Data

As indicated by the World Bank data on statistical capacity, there is a critical need to support capacity building efforts in this area including at the decentralised area. In country monitoring systems should be expanded to the program level so that the impact of individual interventions can be determined. Support for such efforts should be encouraged so that local authorities can better direct future efforts.

Conclusion

For monitoring at the global and regional level there is no workable alternative to JMP at the moment. Strong points of JMP are the clearly defined indicators and a global level of the data that permits comparisons. Weak points apart from quality of data sources are that reliability of services, use of services, maintenance, sustainability, and impact are not measured. Some of these shortcomings are being addressed and GLAAS might provide a useful addition with attention for institutional, human resources and financial aspects of sanitation. Going to scale is the greatest challenge for sanitation programs. This is a careful process that needs regular macro monitoring. Approaches in scaling-up sanitation should primarily focus on stopping open defecation and on improving hygiene behaviour on a community-by-community basis, with success measured not only by number of toilets built, but by measuring use of sanitation services, quality of the services, and sustainability of the services.

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