

Monitoring the Sanitation Status of African Cities

ZAINAB ALI, ADRIANA ALLEN, YOLANDE COOMBES, BERTHA DARTEH, BARBARA EVANS, TIM HAYWARD, RIFAT HOSSAIN, GUY NORMAN, JONATHAN PARKINSON, STEVE PEDLEY, VIVEK RAMAN, ABDOU-SALAM SAVADOGO, PIPPA SCOTT, KEVIN TAYLER and ALY TOUNKARA

Summary

Current monitoring procedures, notably the UNICEF-WHO Joint Monitoring Programme (JMP), are probably under-estimating the severity of the sanitation deficit in African cities, for reasons including under-representation of informal settlements in data collection. Furthermore, household access estimates are probably not a sufficient indicator of urban sanitation quality: this would require consideration of the effectiveness of downstream sewage/sludge management processes. This article, originating from a discussion workshop held at the University of Surrey (UK) in June 2010, proposes possible adjustments to urban sanitation monitoring procedures, and considers whether it would be useful to obtain monitoring data for specific cities. We suggest that it might be of value to implement city sanitation rating schemes in Africa, similar to the scheme recently introduced in India. In any such process, it is essential to take account of the needs and aspirations of all stakeholders, and especially national and municipal-level watsan planners and service providers.

Keywords: urban sanitation, African cities, monitoring, evaluation, JMP, knowledge sharing

Zainab Ali is with the African Civil Society Network for Water and Sanitation (ANEWS); Adriana Allen is with the Development Planning Unit (DPU) at University College London; Yolande Coombes and Vivek Raman are with the Water and Sanitation Program (WSP) in Nairobi and New Delhi respectively; Bertha Darteh is with SWITCH Accra and the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana; Barbara Evans is with the School of Civil Engineering, University of Leeds, UK, and is a member of the JMP Strategic Advisory Group; Tim Hayward is with Water and Sanitation for the Urban Poor (WSUP); Rifat Hossain and Abdou-Salam Savadogo are with the JMP team at the World Health Organization; Guy Norman (guy_norman@yahoo.es) and Steve Pedley are with the Postgraduate Medical School, University of Surrey, UK; Jonathan Parkinson is with the International Water Association (IWA); Pippa Scott is with WEDC at Loughborough University, UK; Kevin Tayler is a sanitation consultant; Aly Tounkara is a sanitation consultant currently with the Senegalese National Sanitation Authority (ONAS). Support for this work was provided by the Engineering and Physical Sciences Research Council (EPSRC) under a Knowledge Transfer Fellowship to GN, and this support is gratefully acknowledged.

Sanitation in African cities is an increasingly pressing problem, as the population of both megacities and secondary cities continues to rapidly increase, often through growth of informal settlements with practically no prior planning and very limited infrastructures and service provision (AMCOW, 2008; UN-Habitat 2008). Against this backdrop, how accurate are our current estimates of sanitation status in African cities? How might monitoring procedures be improved? Would it be feasible and useful to monitor sanitation status at the individual city level? Who might be the end-users of any such monitoring results? With support from the UK Engineering and Physical Sciences Research Council (EPSRC), a discussion workshop was held at the University of Surrey (UK) on 29th June 2010 to explore these questions, and the related issue of information needs for capacity building and knowledge sharing within and between African cities.

The workshop also looked at the Indian Cities Sanitation Rating Scheme recently introduced by the Indian Government with technical support from the World Bank's Water and Sanitation Program

(WSP), and considered whether a similar initiative might be of value for improving sanitation in African cities.

This report summarizes the conclusions of this workshop, and presents tentative proposals for improved monitoring of the sanitation status of African cities. Participants at the workshop included representatives of various key stakeholder organizations, including the World Bank's Water and Sanitation Program (WSP); the African Civil Societies Network for Water and Sanitation (ANEWS); the WHO team within the WHO/UNICEF Joint Monitoring Programme (JMP); the JMP Strategic Advisory Group; Water and Sanitation for the Urban Poor (WSUP); and the International Water Association (IWA). Researchers and watsan professionals from the UK and several African countries including Ghana, Kenya and Senegal were also present.

1) Sanitation monitoring in African cities: specific issues and challenges

Sanitation monitoring in urbanized areas of sub-Saharan Africa presents a number of specific challenges. As discussed by Satterthwaite (2003), urban watsan data often tend to appear better than they actually are, for various reasons:

- i) Surveys and census will often include only the formal city within their definition of urban: informal settlements in central and peripheral locations will often not be included in sampling, and when urban settlements at the periphery of the agglomeration are included they will often be lumped into "rural". In many cities in sub-Saharan Africa informal settlements make up more than 50% of the total population; sanitation will invariably be much worse in such settlements than in the formal city, so that full or partial exclusion of these areas from sanitation monitoring will tend to over-state sanitation status in the country's urban areas. Population density, rather than administrative divisions, should be the basis for urban sanitation planning and monitoring; so reliable mapping data are essential.
- ii) The very rapid urban population growth seen in many megacities and secondary cities throughout sub-Saharan Africa compounds these problems. Data collection procedures often tend to under-represent both recently populated districts (often informal settlements) and newer residents in already-urban districts. Often, data may be collected as "rural" from a district that was indeed rural 10 years ago, but that is now urban. Again, this is a serious problem, since the districts incorrectly excluded from the urban sample are often precisely the districts with worst sanitation.
- iii) Independently of the above issues of data collection, densely populated urban areas require more sophisticated sanitation solutions than rural areas: in rural areas a properly designed latrine is generally an adequate solution, but in densely populated urban areas adequate solutions are more complex, requiring not only adequate toilets but also adequate downstream processes (sewerage systems and/or sludge management systems). Therefore, characterization of urban sanitation quality simply on the basis of type of toilet and coverage (as in existing JMP methodologies) is not sufficient. This point cropped up repeatedly throughout the workshop.

Key challenges in ongoing monitoring of sanitation progress in Africa are therefore a) to improve the representativeness of urban sampling, ensuring representative inclusion of all populations within any given urban area, and b) to improve classifications of sanitation status, taking into account not only toilet type but also downstream excreta management. These challenges apply equally to monitoring programmes that distinguish simply between “urban” and “rural”, and to possible future programmes that consider monitoring data for individual cities.

2) Assessment of sanitation status in African cities

2a) Data collection under current JMP procedures

The Joint Monitoring Programme (JMP) of WHO and UNICEF collates and presents data on water and sanitation access: for example, the percentage of households with a sewerage connection, or with a ventilated improved pit latrine. The access estimates are based on survey data (including Demographic and Health Surveys, and Multiple Indicator Cluster Surveys) and on national census data; these surveys and censuses are not carried out by the JMP, nor do they follow a JMP-imposed timetable; the JMP team simply collates this data and applies various data harmonization procedures in order to extract best estimates for access in a given country in a given year. For details of JMP methodology, see various documents available for download at <http://www.wssinfo.org/>

The JMP is currently preparing for the last rounds of reporting before the MDG target date of 2015, and will have an important role to play in reporting on the effectiveness of the “MDG era” for improving access to water and sanitation. In addition, the experience gained by the JMP over the last ten years can be used to consider and inform about what sort of meaningful, and measurable, targets might be appropriate in the post-2015 period.

A key point made by various participants was that the JMP is currently doing an excellent job with a very small team; it is important not to compromise this role. However, there was broad consensus that the current JMP approach, looking at household access data only, can provide only a crude picture of the quality of sanitation systems in urban areas. The key end-outcome of interest is sanitation-related faecal-oral disease transmission risk, and household access data are often likely to be a poor indicator of this risk. More accurate indicators would need to include better assessments of sanitation quality: so for example, flush toilets are classified as improved under the JMP system, despite the fact that such toilets often discharge directly to open street drains. Likewise, a well-built and well-managed toilet block serving 5 households is likely to be much more hygienic than a decrepit toilet block serving 100 households. Furthermore, in urban habitats, sanitation quality is related to the systems in place for removing excreta from the populated area. If there is a sewerage system or any sort of non-piped system for the management of excreta (as nightsoil, wet faecal sludge or dry composted faeces): how well is this system functioning for minimizing population contact with faecal pathogens?

Ideally, national censuses and surveys should collect more accurate data on sanitation quality, and JMP would ideally be able to use this data to more accurately assess sanitation progress. But there are no easy answers here: more accurate data is, evidently, more difficult to obtain. There is a need for research and analysis to identify reliable and easily measurable indicators of urban sanitation

quality in terms of faecal-oral disease transmission risk reduction. This is certainly not straightforward: as is well known, direct assessment of disease burdens is complex and costly, and any improvement over time in disease burdens may reflect not just sanitation improvements but also diverse other factors. Thus we are likely to be more interested in proxy measures of sanitation-related faecal pathogen exposure risk: these might include observed presence of faeces or faecally contaminated water in the local environment; indicators derived from quantitative or semi-quantitative microbial risk assessments; more sophisticated classifications of sanitation type (e.g. clear distinction between flush toilet discharging to open drain and flush toilet discharging to functional sewer system); or measures of the effectiveness of existing piped or non-piped systems for the removal of excreta from the populated area. Efforts to identify such indicators might usefully involve epidemiologists, public health microbiologists, GIS specialists and sanitation specialists.

In addition, it might also be of value to consider not only on downstream impacts, but also upstream factors: in other words, to consider the use of broader indicator systems incorporating assessments of the adequacy of the upstream enabling environment. Such systems might include (for example) indicators of the adequacy of sanitation policy, institutional arrangements and capacity, availability of finance, and operations and maintenance. In practice, inclusion of indicators of this type would imply integrating JMP with data of the type being collected under the AMCOW Country Status Overviews by the African Development Bank, the World Bank, UNICEF, WHO, and WSP. However, it should be stressed that upstream indicators do not resolve the problems of assessing downstream impacts, nor is it clear how such indicators might be weighted in any overall assessment. Some cities (e.g. Dhaka) have had apparently well-designed institutional arrangements for decades, but still have very poor sanitation.

2b) Would it be of value to obtain sanitation data at the individual city level?

JMP presents data for urban and rural areas of each country, but not disaggregated data for individual cities. It is not in the JMP's mandate to produce sanitation access estimates at the subnational level. Indeed, its primary role is to assess *global* progress towards the watsan MDGs; national-level assessments (with disaggregation of urban and rural) are produced as a tool towards this global assessment, but at present there is certainly no mandate (or sufficient human resources) to produce subnational regional assessments or specific city assessments.

Although JMP does not present disaggregated data for individual cities, city-level data is often available from national censuses, which can be freely accessed via IPUMS (Integrated Public Use Microdata Series; <https://international.ipums.org/international/>) or national sources. For example, sanitation access data is available via IPUMS for Dakar, Dar es Salaam and Kampala. In the case of South Africa, detailed city-level data is available from Statistics South Africa (<http://www.statssa.gov.za/>).

National census data offers very large sample sizes and wide coverage; however, the value of these data sources for assessing the sanitation status of individual cities should not be over-stated:

- i) Categorizations of sanitation access in national censuses are often crude and unhelpful;

- ii) National censuses often use formal administrative definitions of each city, rather than more objective definitions based on the actual extent of dense urban habitat;
- iii) You can “mine down” into existing data sources, but eventually sample sizes will become too small for statistical validity.

Thus mining of existing sources will probably be able to produce some useful city-level data, though this approach will certainly not provide such detailed information as we might like. It was suggested that it might be of value to do “quick and dirty” exploration of a combination of census, DHS and MICS data, to see what could be achieved at the city level.

It was also suggested that the JMP (or some organization working in collaboration with the JMP) might pilot data collection in a small number of individual cities. JMP representatives present at the workshop stated that it might be possible for the JMP to highlight the status of certain cities in its report, but the current available data and resources would not allow for a systematic monitoring of all major African cities, or to have a specific section dedicated to city monitoring.

Yolande Coombes noted that the design of surveys and censuses is sometimes open to consultation at the country level (this is often the case with DHS); so it might be possible to lobby for DHS to obtain more detailed disaggregated data for individual cities, or for other relevant geographical categories (for example, it might be useful to have disaggregated data for individual cities with population over 0.5 million, and pooled data for cities with population between 0.1 and 0.5 million). However, Rifat Hossain noted that survey design and implementation is a hugely complicated process, and of course it is the national agency conducting the survey that has the final say about how it should be done; in the case of DHS and similar surveys, more detailed disaggregation would probably necessitate a larger sample sizes and thus greater cost.

One application of sanitation data obtained at the individual city level would be as a basis for some sort of cities rating scheme: this is further discussed in Section 4.

3) How can we enhance knowledge-sharing within and between African cities?

Tim Hayward reported on the particular experience of WSUP (Water and Sanitation for the Urban Poor) in capacity building at the municipal level. Working with municipal-level LSPs to develop their capacity to deliver services to the urban poor is at the heart of what WSUP does, and in line with this WSUP has developed a set of self-assessment tools for LSPs in African cities, both as within-city planning aids and between-city knowledge-sharing resources. These tools aim to collect data on diverse aspects of watsan system function, including access, faecal sludge management processes, and efficiency and financial indicators of utility function. They have a specific focus on pro-poor service provision.

A key message here was that detailed within-city data collection on watsan service provision, as well as effective watsan-related knowledge sharing within and between cities, is strongly dependent on the development of long-term relationships of trust with service providers. Service providers are more likely to cooperate with data collection and sharing processes if “there’s something in it for

them” (whether personally or institutionally). In this connection, no process of data collection and dissemination is neutral; rather, the process will generally be driven by a specific institutional agenda (often the agenda of an international donor organization and its staff). There is a need to ensure wider ownership and a genuinely wider input to the data collection process and development. One particularly important driver may be internal lobbying: data collection on watsan status in a given city, and participation in wider knowledge-sharing and monitoring initiatives, may help professionals working in city-level LSPs to lobby decision-makers higher up the chain of command.

Bertha Darteh reported the experience of SWITCH Accra, an EU-funded project to support learning about water and wastewater management in Accra (Ghana); a central component of the project has been to generate and collate information on water and sanitation in Accra, and to act as a central hub for this information through a learning alliance. [A learning alliance is group of individuals or organizations with a shared interest in innovation in a topic of mutual interest. It consists of a series of structured platforms at different institutional levels (national, river basin, city, community, etc.) designed to break down barriers to both horizontal and vertical information sharing, and thus to speed up the process of identification, adaptation and uptake of new innovation. SWITCH has learning alliances in more than 10 cities around the world, with Accra being the only participant city in sub-Saharan Africa.] As one example of the ways in which hubs of this type can function, SWITCH Accra has produced a data disk bringing together extensive information (from LSPs, NGOs and local and non-local academic researchers) on watsan status and management in Accra, and this resource has proved useful for stakeholders ranging from research students to project management staff in LSPs and in international development organizations; this resource will be made available through the IWA WaterWiki resource page for this workshop (see Section 7 below). A particularly useful resource, attracting wide interest from stakeholders including LSP staff, has been a detailed map of sanitation status and sanitation need in Greater Accra; throughout the workshop, participants noted the great utility of mapping data of this type. The SWITCH Accra project has favoured communication *within* the municipal administration, i.e. between departments, and with CSOs; other workshop participants provided independent confirmation that SWITCH Accra resources are indeed used by LSP personnel.

Several participants noted that it would be of great value to have similar watsan information resources in other major African cities; though of course this would need to be financed. It was suggested that a solution like SWITCH Accra (externally funded but managed and staffed by local university researchers) perhaps helps resolve the ownership issues already mentioned: SWITCH Accra in a sense mediates between the agendas of the international donor community, of local decision-makers, and of local communities. Nevertheless, identifying the appropriate institutional home for a resource centre of this type is not straightforward: wherever you place it (on the website of an international donor; in the offices of the city’s watsan utility; in a quasi-independent body like SWITCH Accra) it will almost certainly come to reflect the agenda and interests of that group. The most appropriate home for a resource of this type will probably vary from one city to another.

4) City Sanitation Ratings

4a) The Indian Cities Sanitation Rating Scheme

Vivek Raman from the Water and Sanitation Program in New Delhi described the Indian Cities Sanitation Rating Scheme that is currently being implemented in India. In 2008, the Ministry of Urban Development (MoUD) of the Government of India launched a National Urban Sanitation Policy, with a vision of making all cities and towns “totally sanitized, healthy and livable”. Key targets were creation of open-defecation-free cities, and achieving 100% safe treatment and disposal of all wastes. Under the policy each state and city is required to develop its own sanitation strategies. As a tool to incentivize and promote urban sanitation and recognize excellent performance in this area, the Government of India instituted the National Rating and Award Scheme for Sanitation for Indian Cities, including the annual “Nirmal Shahar Puraskar” (*Clean City Award*). The rating and the award are based on the premise that periodic and public assessment of cities’ performance will lead to greater public awareness and competition amongst cities. The ratings are intended not merely as an assessment of hardware or expenditure on urban sanitation, but of how these are leading to genuinely improved sanitation; though, as noted below, some participants expressed doubts about whether the current rating system is robust enough to achieve this. The rating system takes into account management of human excreta, treatment, disposal and recycling of wastewater, solid waste management, storm water drainage, the operation and maintenance of sanitation and drainage infrastructure, and improvements in water quality and health. Detailed documentation, including the full scoring procedure, is available from the IWA WaterWiki resource page for this workshop (see Section 7 below).

In 2009, the MoUD carried out a rating of 423 cities with population > 100,000, and the results were published nationally in May 2010. The cities were scored out of 100 points and colour-coded into four categories (from Red, the worst, to Green, signifying a healthy city). About 45% of cities fell into the Red category, and none were rated Green. Vivek Raman reported that media reporting of these results has sent a very strong message across the country to prioritize this area, and that the response thus far has been encouraging, from governments as well as from the general public.

This is clearly an exciting initiative, and its potential value in impacting on municipal services performance is perhaps best evidenced by quotes from local newspapers: see Box 1.

Box 1. Article published in the Times of India (Chennai edition) on 12 May 2010.

City’s clean image takes a beating

When a private survey of capital cities released in 2007 hailed Chennai as the second cleanest city in the country followed by Chandigarh, there was fanfare. Now, a survey of all cities by the Union Urban Development Ministry has pushed Chennai down to rank 13, below Mumbai at 11 and Bangalore at 12 [...] So what pushed Chennai down? Was it the poor garbage clearance or bad sewage system [...]? Maybe all of the above. We have an ambitious master plan but failed to adhere to it, said Rajesh Rangarajan, environment researcher [...] Many others felt the city would have got a better ranking if some glitches in the underground drainage system and solid waste management were removed. Chennai Corporation officials [*say that they*] have been making efforts. “Being ranked 13 in a list of 441 is not all that bad. There is a lot of scope for improvement. We have identified the deficiencies and those will be sorted out soon”, said Corporation Commissioner Rajesh Lakhoni.

It is very important to note that any rating system of this type is likely to impact on policies and investment: indeed, this is surely the primary reason for setting up such a system. So of course it is essential that the individual rating metrics, and the weightings applied to obtain each city's overall score, are causally linked to the desired outcomes, most notably improved health. Arbitrary selection or weighting of metrics may lead to perverse incentives: so for example if prevention of urination in public places is given a high weighting, municipal governments may then invest a large proportion of their sanitation budget with this aim, despite little or no effect on disease burdens. Some participants questioned whether the current indicator set and weightings can offer an accurate picture of city-wide sanitation quality. Vivek Raman noted that the Government of India plans to become more stringent over time regarding indicators and weightings, and the specific indicators will be revised or modified in order to improve validity and to adjust to ongoing change in sanitation systems; for more details refer to <http://www.urbanindia.nic.in/>

Another potential concern is that ratings of this type are necessarily based on rather rapid assessments, not on detailed city-wide sampling. So there is a danger that, at the next assessment, cities will drop down (or indeed move up) the ranking for basically random reasons. Furthermore, since the rating scheme is partially dependent on self-assessments by the municipalities themselves, there is the evident danger that municipalities will try to fix the results in their favour. In response to these comments, Vivek Raman noted that data collected from municipalities is verified by the implementing agency and validated through detailed field visits and cross-checks, so that the danger of municipalities "fixing the results" is reduced; furthermore, at the next round further third-party verification, including participation of international donors, will be introduced.

4b) Might it be of value to set up an African Cities Sanitation Rating Scheme, and if so how?

The group was broadly positive about the potential impact of such a scheme or schemes in the African context; nevertheless, caution was urged. Most participants thought that it would not currently be useful to attempt an Africa-wide Cities Sanitation Rating Scheme: rather, it would be better to start with within-country schemes, and/or a pilot-scale scheme involving a small number of willing countries.

In going forward with any such scheme, it would be important to clarify exactly why, and who for. Key reasons would include i) motivating municipal governments and other relevant institutions to improve sanitation; ii) increasing debate about sanitation needs in local media, and thus favouring transparency and accountability; and perhaps iii) facilitating the task of governments and other stakeholders in identifying priorities for investment.

However, the stimulation of competition between cities apparently seen in India might not necessarily occur in Africa: we might expect competition between cities in Ghana, but perhaps not between (say) Accra and Dar es Salaam. In addition, power relations are absolutely different: in India, the scheme was initiated by central government, which is of course a major source of funding for city governments; no such uniform financial power relationship applies across the numerous countries of sub-Saharan Africa. Furthermore, it would be very difficult to obtain data of comparable detail and quality from all cities across Africa. These observations led many participants in the workshop to argue that such a scheme could be most usefully applied within individual countries,

rather than across Africa. Implementation of such a scheme at the national level would also allow inclusion of smaller cities, which are accounting for an increasing proportion of urban population growth. However, some participants in the workshop argued that trans-national implementation of this idea should not be ruled out at this stage. It was pointed out that the AMCOW-led eThekweni traffic-lights scheme is an opt-in system (i.e. there was no attempt to rate countries without their agreement), and 19 countries signed up and are still signed up, with some new countries wanting to enter the scheme now: so most national governments are willing to accept external monitoring processes of this type as long as they are given the opportunity to validate the data. The validation process is itself a sanitation advocacy opportunity. One possibility would be to look initially at a pilot-scale scheme involving a small number of willing countries (probably better-performing countries), with in-country process management but perhaps an over-arching set of procedures. Another approach might be to expand the eThekweni traffic light monitoring already established throughout Africa to include key cities.

Several participants noted that a rating scheme does not have to be based on value judgements or “naming-and-shaming”: it would be better to focus on indicators of better sanitation than of poor performance, and on developing a system that allows provision of tailored feedback to cities on possible actions that they could take to improve their sanitation status. Furthermore, naming-and-shaming is perhaps more politically sensitive between countries than within a single country. A dissenting view was however expressed: that naming-and-shaming is newsworthy and important for stimulating change.

Finally, it was suggested that, in any city rating exercise of this type, involvement of AMCOW, AfWA (the African Water Association, formerly UAWS = Union of African Water Suppliers) and ANEW would be essential. ANEW might be able to play a role in getting engagement for data collection from municipalities. AfWA is the main Africa-wide forum for water and sanitation utilities, who are not directly represented in AMCOW.

5) Metrics for sanitation evaluation in African cities

As noted above, there was consensus that a more highly developed way of measuring urban sanitation quality is needed, whether for future use within a JMP system distinguishing as now only between urban and rural, or as a basis for the evaluation and rating of individual cities. Various categorizations of indicator were considered. The Indian Cities Sanitation Rating Scheme groups indicators under “output”, “process” and “outcome”. Other participants argued for indicators of function at different levels in the sanitation chain (access, emptying/transport, treatment/reuse); or for indicator sets including and distinguishing between metrics of a) sanitation quality (including household access but also other indicators of function at different levels in the sanitation chain), b) upstream indicators (institutional capacity, institutional pro-poor commitment, donor commitment, etc.), and c) the degree of sanitation challenge (e.g. “easy” city with low densities and sandy soils, or “difficult” city with high densities and swampy habitat).

Furthermore, some participants questioned whether considering only the excreta management chain is appropriate. Wider definitions of sanitation (and especially of the francophone term *assainissement*) can include such aspects as hygiene behaviour, greywater and stormwater

management, special waste management, and solid waste management; and indeed, as is well known, deficits in stormwater management and solid waste management can have profound impacts on sanitation systems and faecal-oral disease transmission. So there was no consensus among participants that sanitation should necessarily be restricted to excreta management. As noted earlier in the workshop, monitoring needs to be relevant and useful to all stakeholders including national and municipal-level watsan planners and service providers, and concern was raised that being too prescriptive about the scope of sanitation could hinder local ownership.

No clear consensus or detailed strategy for development of a set of indicators of urban sanitation quality was achieved during the workshop: this was certainly too complex a task for a single day, and we limit ourselves at this stage to the recommendation that further work is required to identify appropriate indicators. One general strategy suggested (similar to that used for the UN Urban Indicators, <http://ww2.unhabitat.org/programmes/guo/>) is to develop a core set of sanitation metrics focusing on excreta management, but supported by auxiliary metrics taking into account wider sanitation issues of particular interest and significance at the local level. This would provide a normalized international framework, but with flexibility to generate ownership and relevance within context.

6) Key observations and recommendations

6a) Key observations

- i)** Current data collection procedures are likely to under-estimate the severity of the sanitation deficit in African cities, for reasons including the frequent exclusion of poor peripheral settlements from cities as formally defined.
- ii)** Household-level access data alone is almost certainly not a sufficient indicator of the quality of sanitation in urban habitats. Reliable indicators of sanitation quality must include consideration not only of the type of toilet facility, but also of the effectiveness of the sanitation chain for reducing faecal-oral disease transmission risk.
- iii)** Good metrics are critically important. In any sort of comparative evaluation or rating process, inappropriate metrics (or inappropriate weightings of individual metrics) can have a profoundly negative effect, if decision-makers then make investment decisions based on those metrics.
- iv)** In any data collection or knowledge-sharing process, it is essential to recognize that different groups of people have different needs; so all data collection and knowledge-sharing processes should be demand-led. Who needs what information?
- v)** In any data collection or knowledge-sharing process, it is also essential to ask “what’s in it for them?” For example, if we need data from municipal-level watsan utilities, is the data collection and dissemination process of any real value to the individuals and organizations concerned? Any process that doesn’t pay attention to this is likely to fail.

6b) Recommendations and actions

i) There is a strong need for analysis, review and research to identify reliable and feasible metrics of urban sanitation quality, and particularly metrics of the effectiveness of downstream systems (sewerage or faecal sludge management systems) for reducing faecal-oral disease transmission risk.

ii) It is proposed that JMP consider the possibility of modifying its procedures for assessment of urban sanitation status, with the aim of adopting indicator sets that more accurately evaluate the effectiveness of the sanitation chain for reducing faecal-oral disease transmission risk.

iii) Knowledge-sharing initiatives like SWITCH Accra, in which a hub is created to collate and disseminate city-level watsan information resources, are very promising. For many cities, extensive information has been generated by local and international organizations, but is not readily accessible: there is a clear need to develop city-level resources for coordinating information and making it more widely accessible. At the workshop, IWA expressed a particular interest in facilitating processes of this type in collaboration with key stakeholders including UN-Habitat, WSP, WOPS Africa, AfWA, ANEW, WSUP and SUWASA.

iv) The possibility of some sort of African Cities Sanitation Rating Scheme or schemes is certainly of interest. It is proposed to introduce this idea to the AfricaSan Task Force (convened by WSP on behalf of AMCOW). This task force has representation from AfDB, African Union, UNICEF, UNSGAB, WaterAid, World Bank, WSP and WSSCC; it would be of interest to explore the views of these organizations. A longer-term goal is to work towards formal presentation of a rating scheme at the AfricaSan conference to be held towards the end of 2011. The IWA offers support in the organization/staging of a further meeting.

7) Additional resources

A webpage with resources relating to this workshop has been set up on the IWA WaterWiki at <http://www.iwawaterwiki.org/xwiki/bin/view/AfricanCities/>. This webpage will also offer a platform for ongoing discussion and reporting of the issues covered here: readers are actively encouraged to contribute to this discussion. Resources available include various documents describing the Indian Cities Sanitation Rating Scheme, and documents from the SWITCH Accra data disk described in Section 3 above. In addition, a draft reference document on the sanitation status of the major cities of sub-Saharan Africa, written by GN under the EPSRC Knowledge Transfer Fellowship that provided funding for this workshop, has been posted as an open-access editable resource on the IWA WaterWiki, under a Creative Commons License. This document presents summary information on the sanitation status of the 40 urban agglomerations in sub-Saharan Africa with population of 1 million or more. We invite individuals and organizations with detailed knowledge of specific African cities to edit and expand this resource as appropriate, so that it can evolve into a useful knowledge-sharing resource.

References

- AMCOW (2008) *Can Africa afford to miss the sanitation MDG target? A review of the sanitation and hygiene status in 32 countries*. Joint Report of the African Ministers' Council on Water (AMCOW), the African Development Bank (AfDB), and the World Bank Water and Sanitation Program (WSP).
- Satterthwaite, D. (2003) 'The Millennium Development Goals and urban poverty reduction: great expectations and nonsense statistics', *Environment & Urbanization* 15(2): 179–190.
- UN-Habitat (2008) *The State of African Cities 2008*. UN-Habitat, Nairobi.