



Report
JMP Technical Task Force
Meeting on Sanitation and
Methods for Estimating Progress
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WHO/UNICEF Joint Monitoring Programme for
Water Supply and Sanitation (JMP)

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Introduction

On 27 and 28 July 2010, UNICEF hosted a Technical Task Force meeting of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) in New York City. Eleven international technical experts joined two external observers and the JMP team members from UNICEF and WHO, to discuss a number of technical issues that relate to monitoring sanitation and to methods for estimating progress towards the MDG target for drinking-water and sanitation. The list of participants is presented in annex A.

The two-day meeting had seven specific objectives:

1. Review the decision to consider public and shared sanitation facilities as “not improved”.
2. Review the reliability of data on the use of shared sanitation facilities.
3. Review the current method for estimating trends in the proportion of the population using public and shared sanitation facilities.
4. Recommend a definition for “pit latrine with slab”.
5. Discuss the issue of a “moving base-line” in the JMP estimates.
6. Review the current method for assessing progress towards the MDG targets for drinking-water and sanitation.
7. Review the application of the “50% rule” for survey categories that include use of both improved and unimproved facilities.

Proceedings

All discussions were held in plenary, with a separate session on each of the seven specific objectives of the meeting. The approved agenda is presented in Annex B. Facilitation of the sessions was shared between Clarissa Brocklehurst (UNICEF, Chief, WASH), Tessa Wardlaw (UNICEF, Chief, Statistics and Monitoring), and Robert Bos (WHO, Coordinator, Water, Sanitation, Hygiene and Health), with two members of the JMP/GLAAS Strategic Advisory Group chairing the sessions: Gareth Jones (independent consultant) chaired on the first day of the meeting and Barbara Evans (Leeds University, Senior Lecturer in International Public Health Engineering) on the second. Andy Robinson (independent consultant) served as the rapporteur for this meeting.

Each session began with a presentation on the review topic by a member of the WHO/UNICEF JMP team, after which the floor was opened for questions, comments and debate by the technical experts and other members of the Task Force. Each session concluded with a summary of the findings and recommendations emerging from the Technical Task Force review.

The following sections of the report provide a summary of the main elements of the discussions, findings and recommendations for each of the seven specific meeting objectives.

Objective 1: Public and shared sanitation facilities – rationale for excluding

Since 2008, the JMP has reported on the proportion of the population that uses shared sanitation facilities of an *otherwise acceptable type*. Shared and public sanitation facilities should meet the minimum definition of an improved sanitation facility: ensuring hygienic separation of human excreta from human contact. Households that use shared or public facilities are, however, not included in the population counted as using an improved sanitation facility, due to concerns that public facilities can be less hygienic than private household facilities and as such do not meet the JMP criterion for improved sanitation.

The Task Force was asked to review the rationale for excluding those households that use shared sanitation facilities from the population estimated to use improved sanitation and to suggest criteria that could be used to classify the use of shared or public sanitation facilities as improved.

Objective 1: Background paper and presentation (Rolf Luyendijk)

Shared sanitation is an important issue: in 2008, 751 million people were estimated to use shared sanitation facilities, representing about 29% of the 2.6 billion that did not use improved sanitation facilities. It is recognised that some proportion of these shared sanitation facilities are likely to provide comparable benefits to the use of an improved sanitation facility by a single household, for instance use of a shared facility by several households from an extended family group, or use of a clean and well-maintained public toilet. However, the data currently available to the JMP do not allow differentiation between shared and public facilities. Therefore, recent JMP estimates may have under-estimated the proportion of the population that uses an improved sanitation facility by excluding all households classified as using a shared or public sanitation facility.

Since 2005, the MICS and DHS surveys have included an additional question to determine the number of households that use shared sanitation facilities. Data on household use of shared sanitation facilities is now available for 109 of the 192 countries covered by the 2010 JMP report¹, although only 48 countries have data available from more than one survey or census. These sources provide data on the number of households using a shared facility, but these do not allow differentiation between the use of public and shared sanitation facilities.

An analysis of the MICS and DHS data revealed that the majority of shared facilities are used by less than or equal to five households, with the only notable exception being Ghana², where more than 85% of shared facilities are used by six or more households. One option to include at least part of the shared sanitation facilities in the category of improved sanitation would be to establish a threshold, i.e. to exclude access to a shared sanitation facility from this category when used by more than a certain number, for example five, households. The assumption would be that shared sanitation facilities used by five or less households are more likely to be co-owned, thus better maintained; whereas shared sanitation facilities used by six or more households are more likely to be used by non-owners, or to be public facilities, and thus may be less well-used or maintained. A strong evidence base for adopting any threshold is currently lacking. It should be noted that there is no evidence-base for the current threshold which defines shared facilities as shared between two or more families.

Objective 1: Technical Task Force review

The main concerns expressed by the Task Force related to the possible inclusion of the use of public sanitation facilities in the improved sanitation category, due to the lower reliability of outcomes in public facilities, and the risk that a re-classification might encourage the construction of public toilets at the expense of the promotion of household sanitation facilities.

Task Force members noted that a minority of public sanitation facilities provide outcomes comparable to those in improved household sanitation facilities. In contrast, the majority of shared private facilities are thought likely to provide improved outcomes. It was suggested that the key factor in determining improved outcomes is whether the users know the other people with whom they share the use of the sanitation facility, or shared ownership of the facility. The likelihood of unhygienic outcomes is considered higher when anyone can use the sanitation facility, as in a

¹ Many of the 83 countries without data on shared sanitation facilities are developed countries.

² Among MICS-3 countries where 10 percent or more of the population use shared sanitation facilities.

public toilet. Another important consideration from a basic public health perspective is the reduced likelihood of public sanitation facilities to serve as a reasonable means of faeces disposal for children under 5 years of age, the key target group for the reduction of sanitation-related disease.

The next round of MICS surveys will include a new question: “Do you share [the sanitation facility] only with members of other households that you know?”. This question aims to differentiate the use of facilities that anyone can use, which are expected to be largely public sanitation facilities, from the use of facilities only by a known group of people, which are expected to be largely shared private facilities. In future, the responses to this question are expected to allow for a distinction in the surveyed population using shared sanitation facilities between households that share with a known group and are to be considered as likely users of improved sanitation, and households that use facilities open to anyone and to be classified as likely users of unimproved sanitation facilities.

Several task force members expressed concern, however, that reliable differentiation between the use of public and shared facilities will remain difficult due to the complex factors, including diverse rights of access and variable inter-household practices that influence both behaviours and outcomes. It was also noted that public sanitation facilities are likely to remain the only sanitation option available to some people and that in future there should be some way of measuring the proportion of these public facilities that can be classified as improved sanitation.

The Task Force recognised that survey responses to a question on the number of households using a sanitation facility were likely to be more reliable than responses on hygiene practices, user payments or other sanitation behaviours, but suggested that there is little basis for dividing the population that uses shared sanitation facilities into users of improved and unimproved facilities based on the number of households that share the sanitation facility. No evidence was presented to support a threshold number of households above which sanitation outcomes are more likely to be those of unimproved conditions, thus any division would be based on an arbitrary decision.

It was also noted that the current JMP system classifies sharing (of an improved type of sanitation facility) by two or more households as use of unimproved sanitation, without recognising that one large household may contain more people than two or three small households, or that there is little rigorous evidence that shared use of a sanitation facility by two households necessarily has worse outcomes than use by a single household.

Policy implications

Given the high proportion of shared sanitation facilities used by five or less households, and the likelihood that many of these are shared by extended families, the inclusion of all shared sanitation facilities as improved sanitation would provide a more accurate estimate than classifying use of shared facilities as *not improved*. This revision would, however, also include all public facilities as improved sanitation, which would over-estimate improved sanitation coverage, and result in the world becoming on-track to achieve the sanitation MDG by 2015.

The Task Force felt that introducing this revision in the 2012 JMP report would send the wrong message to governments and sanitation stakeholders and might put the JMP at risk of being accused of manipulating the numbers to improve appearances only three years before the 2015 MDG deadline. In support of this position, it was noted that the low improved sanitation coverage reported in Ghana, due to the exclusion of the widespread use of shared sanitation facilities, had a positive effect in pushing politicians to allocate more resources and attention to sanitation. In addition, it was recommended that any major changes in definitions and methodology should be

resisted until 2015, as regular revisions make it harder to measure reliably over time and risk creating confusion among the JMP audience.

Objective 1: Technical Task Force summary and recommendations

Some proportion of the population using shared sanitation facilities should be considered as using improved sanitation. However, there is currently insufficient data or evidence on the factors that determine outcomes in shared facilities to make an informed judgement on this proportion.

It was recommended that the JMP should work with individual countries where shared sanitation facilities represent an important proportion of the population, and where data or policy issues are significant, in order to work towards more reliable JMP estimates for these countries.

The Task Force recommended that the JMP commissions research to assess whether the use of shared facilities provides comparable outcomes to the use of private facilities, and ascertain whether there is any basis for proposing a threshold number of sharing households below which the use of shared facilities could be classified as improved sanitation.

Prior to the 2012 JMP report, the JMP should collate and review additional information on shared sanitation facilities from the growing body of case studies and grey literature, including already planned initiatives in Bangladesh, Brazil, China, Ghana and India. In the medium term, the JMP should ensure that current and future data collection instruments reflect the need to collect improved data on shared sanitation facilities.

JMP response: the JMP team agreed to formulate a short position paper in response to the Task Force recommendations, which will be circulated to the Task Force members.

Objective 2: Public and shared sanitation facilities – reliability of data

The reliability of the data on the use of shared sanitation facilities is questionable due to the difficulty of ascertaining behavioural information through survey questionnaires, as well as the different data collection methods used by the various surveys utilised in the JMP estimates.

The Task Force was asked to assess whether current survey estimates are reliable enough to be used by the JMP and to recommend ways in which the JMP could best reflect the use of shared and public sanitation facilities in its next global report.

Objective 2: Background paper and presentation (Rolf Luyendijk)

Before 2003, there was little consistency in the collection of survey and census data on the use of shared sanitation facilities. The World Health Survey then introduced a question that did not ask specifically whether the household sanitation facility was shared, but included a response category for use of sanitation facilities located “Outside property/yard, shared”. Starting in 2002, the MICS and DHS surveys specifically asked “Do you share this facility with other households?” and from 2005 onwards asked “How many households in total use this facility?”.

As noted earlier, the JMP now has data on the use of shared sanitation facilities from 109 countries, including most least developed countries³; 48 of these countries have data available from two or more surveys or censuses. Recent analysis of these data has revealed large discrepancies in the

³ Excluded countries are largely developed countries and small island states.

proportion of people found to be using shared sanitation facilities by different surveys in the same country in a short period, casting some doubt on the reliability of the survey data.

For instance, in Mali the 2001 DHS found that 51% of improved sanitation facilities used by urban households were shared, whereas the 2003 WHS found only 7% were shared; in Tanzania the 2005 DHS found that only 20% of the rural improved facilities were shared, whereas the 2008 AIS⁴ found 79%; in Indonesia the 2003 DHS found that only 12% of rural improved facilities were shared, while the 2007 DHS found 34%⁵. Some of these discrepancies may relate to changes in household practice over time, but in most instances such significant differences seem unlikely over such relatively short time periods.

Objective 2: Technical Task Force review

The Task Force expressed concern about the reliability of the data on the use of shared sanitation facilities, but recognised that this remains an important sanitation category and, therefore, that the JMP should continue to report on progress in this area.

It was agreed that data reliability improves over time with the increasing availability of surveys containing data on shared sanitation facilities; the harmonization of survey questions intended to collect data on the use of shared sanitation facilities; and, the addition of a new question to the MICS survey to determine whether facilities are shared with a known group.

In response to a question from the Task Force, the JMP team confirmed that if no data on the shared use of improved sanitation facilities were available, no correction was made to allow that a proportion of the shared facilities provide unimproved outcomes. As a result, the JMP estimates for some large countries like Brazil count the use of all shared sanitation facilities, including all public sanitation facilities, in the population that are estimated to use improved sanitation facilities⁶. The Task Force noted that this policy over-estimates improved sanitation coverage in countries where data on shared facility use are not available, and makes these estimates non-comparable with those from countries where data are available.

The JMP guidelines allow the use of a regional average when data are available for more than 50% of the population of the region, but the JMP team noted that sufficient data to allow an estimate of the use of shared sanitation coverage in Brazil were not available in the Latin American and Caribbean (LAC) region. The Task Force also noted that sanitation use in Brazil, which comprises about one third of the population of the LAC region, was unlikely to reflect the situation found in the diverse group of countries that make up the rest of the region.

Given the political sensitivity of sanitation coverage estimates in Brazil, which remains among the ten countries with the highest proportion of open defecation in the world, and the significant impact that any change in Brazil's improved sanitation coverage would have on the regional estimate, due to its large share of the regional population, special consideration should be given to a country-specific estimate of the use of shared sanitation facilities in Brazil.

⁴ AIS: Aids Indicator Survey

⁵ These proportions are the JMP estimates of use of shared sanitation facilities, sometimes derived from re-analysis of the DHS raw data.

⁶ While Brazil is not readily comparable with other South American countries, as much as 12 percent of the total population in Colombia and 7 percent of the population in Peru are estimated to use shared sanitation facilities in 2008.

A review of the data discrepancies (highlighted in Table 3 of the Objective 2: background paper) confirmed that many of the large discrepancies relate to comparisons between data from the 2003 WHS and other surveys or censuses. Given uncertainty over how shared use could be reliably determined based on the survey question in the WHS03 questionnaire and evidence that the survey findings are often at variance with those from other surveys, it was suggested that the WHS03 data on the use of shared sanitation facilities should not be used in the preparation of the JMP estimates. A rapid review of the tabulated data indicated that this omission would affect estimates in about 32 countries, with 10 of these countries left with only one survey that provides data on the use of shared sanitation facilities.

Objective 2: Technical Task Force summary and recommendations

The Task Force recommended that estimates of the proportion of the population using shared sanitation facilities should be made for all countries, even where survey and census data do not currently exist, in order to avoid public sanitation facilities being counted as improved facilities; that the comparability of the JMP country estimates should be improved; and, that incentives for national governments to improve the sanitation components of their household surveys should be strengthened.

Where the political implications of a downward revision in the JMP estimates are significant, as in Brazil, special efforts should be made to work with the national government and other national sanitation stakeholders to produce the best estimate possible of the use of shared facilities.

It was also recommended that the WHS03 data on the use of shared sanitation facilities should not be used in the preparation of future JMP estimates.

Objective 3: Public and shared sanitation facilities – estimation of trends

Assessment of trends in the use of shared sanitation facilities is difficult due to the limited data available on shared usage before 2003. Given the JMP mandate to report on progress towards the drinking-water and sanitation MDG target, the Task Force was asked to assess how best the JMP could present trends in the use of shared and public sanitation facilities.

Objective 3: Background paper and presentation (Rolf Luyendijk)

Only 27 countries have three or more data points on which to base the trend in use of shared sanitation facilities⁷, and – as noted under the previous topic – there are significant unexplained discrepancies between some of these data points. As a result, real trends in the use of shared sanitation facilities cannot be calculated for the majority of countries.

The current methodology assumes that a fixed proportion of improved sanitation facilities are shared, with no change in this proportion over time. Where only one data point is available, the proportion is fixed by the percentage of improved sanitation facilities shared by two or more households in the only survey or census; where two or more data points are available, the proportion is the average value from all of the survey and census data for that country.

The JMP estimate of the proportion of the population that uses improved sanitation facilities generally changes over time, hence the absolute proportion of the population using shared sanitation facilities, which is a proportion of the improved sanitation coverage, also appears to

⁷ Reduced further if the WHS03 data points on use of shared sanitation facilities are excluded.

change over time. However, this method does not recognise any real trends in use of shared sanitation facilities, due to the averaging of survey differences over time.

Objective 3: Technical Task Force review

The trend line problem reflects the introduction of new reporting categories in the last two JMP reports, without the time series data needed to generate trend lines. This problem is exacerbated by questions over the comparability of the data on the use of shared sanitation facilities taken from different surveys and censuses, which required the conservative approach described above.

The Task Force agreed that the shared sanitation coverage estimates add value to the JMP reports, but suggested that the current data set is inadequate for the purpose of estimating progress towards the sanitation MDG. However, the Task Force also recognised that the JMP has to report on progress trends, and that this task will become easier as more data points become available.

It was suggested that, in future, a minimum number of country data sets (each sufficient for trend line analysis) should be agreed before the introduction of any new indicators.

The Task Force also noted that the proportion of the population that uses shared or public sanitation facilities is likely to change over time, notably due to rising population pressure in urban areas. Future JMP data collection instruments and trend line methodologies should, therefore, be revised to capture these changes.

The Task Force suggested that the outcome of this discussion was relevant to several of the previously discussed topics, as the introduction of any new indicators or methodologies risks subsequent problems due to a lack of time series data with which to generate trend lines and estimate MDG progress.

Objective 3: Technical Task Force summary and recommendations

The Task Force recommended that, in line with the earlier recommendations, the current indicators and trend line methodology should be retained, but that the methodology should be improved as the data set grows and becomes more reliable and as new evidence allows more informed judgements on the treatment of shared and public sanitation facilities.

The Task Force recommended that careful explanation be provided in the JMP reports of the methods used to estimate progress and trends in the use of shared sanitation facilities. It may also be useful to provide examples of how these methods work in specific countries in order to improve transparency and increase understanding. This recommendation applies to the methods used in connection with the previous topics, as well.

The Task Force further recommended that the JMP actively searches for information on the proportion of the population using public or shared facilities in countries, like Brazil, for which the JMP currently has no such information.

Objective 4: Pit latrine with slab – definition

One of the key categories of improved sanitation facility is the *pit latrine with slab*. This form of dry latrine often represents the lowest rung on the sanitation ladder that is recognised as an improved sanitation facility, particularly in rural areas. It is, therefore, central to efforts to accelerate sanitation progress through many sanitation improvement approaches. The Task Force was asked to advise on the minimum requirements and recommended definition of a *pit latrine with slab*.

Objective 4: Background paper and presentation (Abdou Savadogo)

The existing definition of a *pit latrine with slab* is laid out in the *JMP Core questions on drinking water and sanitation for household surveys* (2006):

“A pit latrine with slab is a dry pit latrine that uses a hole in the ground to collect the excreta and a squatting slab or platform that is **firmly supported on all sides, easy to clean and raised above the surrounding ground level** to prevent surface water from entering the pit. The platform has a squatting hole, or is fitted with a seat” *Question 6: Sanitation facility, Definitions, p.13* (emphasis added).

This definition is intended to enable the survey enumerator to differentiate between a pit latrine with slab and other forms of sanitation facility, but the relevant question is only formulated as “What kind of toilet facility do members of your household usually use? (if “flush” or “pour flush” probe: where does it flush to)?”. Most surveys and censuses record this information in broad categories such as *pit, pit latrine, latrine, dry pit, simple pit* or *traditional latrine*.

While increasing efforts are being made to align questions and definitions with the JMP core questions, the JMP finds that many of the pit latrine categories recorded by national surveys and censuses include sanitation facilities that do not meet the minimum requirements of a *pit latrine with slab* (or any other type of improved sanitation facility), thus only 50% of these households are counted as users of improved sanitation facilities (in order to minimise the maximum error).

The presentation stated that any new definition of a pit latrine with slab should:

- Describe the type of slab accurately;
- Be easily measurable through household surveys and censuses;
- Ensure hygienic separation of human faeces from human contact; and,
- Consider the poverty context.

Objective 4: Technical Task Force review

The Task Force suggested that the separation of human excreta from human contact is the primary requirement of an improved sanitation facility and, therefore, that any pit latrine with some form of slab should be considered improved.

There was some discussion of the main characteristics of a latrine slab, with particular reference to the existing *easy-to-clean* criteria. It was suggested that the latrine slab should be a solid platform, unbroken except for the squat hole. It was recognised that these criteria would be difficult to assess reliably through household survey questions as there are no unambiguously measurable definitions for these criteria. Therefore, the value of including these descriptors in the definition may be limited. The Task Force noted that an improved definition would result in a better interview guide, improved training of the survey enumerators and reduced ambiguity in future facility classifications.

It was suggested that the hygienic condition of the latrine is critical, for example that a simple mud-floored pit latrine may be clean while a pit latrine with a concrete slab may be dirty. However, the Task Force recognised that reliable measurement of the hygienic condition of the latrine is difficult (without observation), and that hygienic conditions can vary over time.

The Task Force noted that the JMP definition of a *pit latrine with slab* has important implications for sanitation programming, as different interpretations of the definition can result in large

variations in national policy and objectives directed at the achievement of the sanitation MDG. It was suggested that the French translation of slab (*dalle*) connotes a solid, usually concrete slab rather than the more general term intended by the definition; and that many stakeholders remain uncertain whether pit latrines with non-concrete slabs, particularly those with mud or earth covered floors, qualify as an improved sanitation facility.

The Task Force raised two specific disease transmission concerns: the possible transmission of diarrhoeal disease and trachoma through fly entry into a *pit latrine with slab*, due to the lack of any requirement that squat holes and other access points are fly-proof in improved facilities; and the possible transmission of hookworm through damp, earth-covered latrine floors in improved facilities. The fly entry issue relates specifically to the development of recent national policies and monitoring criteria, for example in Indonesia, that require a *pit latrine with slab* to have a removable cover over the squat hole in order to be counted as an improved sanitation facility (due to concerns about disease transmission by flies and other vectors).

The Task Force recognised that fly control was an important factor affecting latrine use, but questioned whether there was sufficient evidence that fly entry into pit latrines poses a serious health hazard (reference was made to a study that found that the flies that breed in pit latrines are not the same type of flies that land on food⁸). For this issue further research is required.

It was also recognised that earth-covered floors in pit latrines may be linked to hookworm transmission. However, the other benefits of such a sanitation facility in fulfilling the primary requirement of the hygienic separation of human excreta from human contact, appeared to the Task Force as sufficient to justify this technology's inclusion as "improved sanitation".

The Task Force suggested that a range of features should be addressed/included in a revised definition (including suggestions such as smooth, sweepable, without gaps and firm - as presented on a PowerPoint slide) despite awareness that the current survey format does not include any specific questions or any observation of these features. Nevertheless, these features provide the basis for enumerator training and for the pictorial guide, and are, therefore, significant

Finally, the Task Force suggested that little value was added by the separate definition of a *pit latrine without slab* currently defined as one that "uses a hole in the ground for excreta collection and does not have a squatting slab, platform or seat. An open pit is a rudimentary hole in the ground where excreta is collected". Any pit latrine that does not meet the minimum criteria set for a *pit latrine with slab*, or the related criteria set for VIP latrines and composting toilets, should be classified as a *pit latrine without slab*.

Objective 4: Technical Task Force summary and recommendations

The Task Force recommended that the definition of a *pit latrine with slab* should be reworded using simple, easily translatable language that highlights the importance of the separation of human excreta from human contact and defines some minimum characteristics of the slab that will

⁸ However, this reference appears to be contradicted by the following: Emerson et al (2005) *Household pit latrines as a potential source of the fly Musca sorbens – a one year longitudinal study from The Gambia* Tropical Medicine and International Health Vol. 10 No. 7 pp. 706-709 found that only 0.1% of the flies emerging from sentinel latrine pits were the eye-seeking fly *Musca sorbens*, a vector of trachoma whose preferred breeding ground is isolated human feces. However, while the *Chrysomya albiceps* blowflies that comprised 98% of the flies emerging from the pit latrines are not linked to transmission of trachoma, adult *C. albiceps* blowflies are strongly associated with both breeding in human feces and contact with uncooked meat and ripe fruit, thus are considered a potential vector for transmission of diarrhoea-causing pathogens.

encourage hygienic conditions and sustainability, without limiting the construction of the slab to any particular materials. It is also suggested that the pictorial guide should be improved to better reflect sanitation facility definitions.

Given the limited time available during this meeting, it was recommended that the JMP establish a sub-group of the Technical Task Force to produce an improved definition of a *pit latrine with slab* for later review by the full Task Force. The following six Task Force members were co-opted to the sub-group: Kristof Bostoen, Therese Dooley, Rolf Luyendijk, Andy Robinson, Abdou Savadogo and Chris Zurbruegg. The sub-group is expected to propose a revised definition, including any features deemed relevant and appropriate.

It was also recommended that the JMP report should explain the reasoning behind revised and current definitions, with specific explanations provided in case high-profile issues like concrete slabs, fly-proofing and hookworm control do not appear to be addressed by the definition.

Objective 5: Moving baseline for MDG 7c

The current JMP method for estimating progress towards MDG 7c uses a “best fit” line based on all of the acceptable data points available at the time of the progress report. New data points influence the position and gradient of the best-fit line, with a general tendency for the progress line to become steeper as improved sanitation coverage increases over time.

As a result, the estimate of improved sanitation coverage in 1990, which forms the baseline from which the relative MDG 7c target is calculated⁹, moves each time that a new data point is added to the JMP estimates. The Task Force was asked to review this issue.

Objective 5: Background paper and presentation (Rifat Hossain)

The current method uses new data to improve the reliability and accuracy of the JMP estimates but generates some confusion due to the fact that these new data change the 1990 baseline estimates and, therefore, can change national, regional and global MDG targets.

At global level, the changes tend to cancel each other out. Over the last ten years, the JMP estimate of improved water supply coverage in 1990 has dropped from 79% to 77%; and the JMP estimate of improved sanitation coverage in 1990 has dropped from 55% to 54% (although it was reported at 49% in the 2004 and 2006 reports). These small variations mean that the MDG targets have changed by 1% or less during the ten-year JMP reporting period.

The variations in JMP estimates of national MDG progress are more significant, but most revisions are driven by the availability of better or more recent data, and by a desire to provide more accurate coverage estimates. Few countries use the JMP estimates for sector planning or programming, thus these national variations are not considered to be a major disadvantage.

A number of alternative approaches have been considered to reduce the impact of new data points on the 1990 baseline estimate (and MDG target), including the use of non-linear curve-fitting techniques, but no definitive conclusion was presented regarding these alternatives.

⁹ To halve, by 2015, the proportion of people without sustainable access to safe drinking-water and basic sanitation.

Objective 5: Technical Task Force review

While understanding the rationale for the method, the Task Force found it illogical and unhelpful that the inclusion of new data points should result in changes to the 1990 baseline estimates and to the related MDG targets. Furthermore, the current methodology penalises high performing countries and regions as any acceleration in progress will inevitably result in a steeper trend line, lower 1990 baseline estimate, and higher MDG target.

The Task Force found it unacceptable that, under the current method, the 2015 MDG targets will not be known until that date, as any data points used in the JMP estimates before 2015 will influence the 1990 baseline estimate and reset the MDG target.

The Task Force noted that the method for measuring MDG progress should be able to show acceleration in progress (without penalising high performers by moving up their MDG targets). Several suggestions were made for an improved method, including the use of a two-spline linear regression that fixes the initial progress line from 1990 to, for example, 2004 based on existing data, then uses more recent data to produce a second line that makes visible any change in the rate of progress. Other specific suggestions included a “moving average” method.

Members of the Task Force also noted that consistency over time is to be valued and that, with only two more JMP reports to be produced before the 2015 deadline, it may be better to stick with the current method. A previous examination of non-linear methods of estimating MDG progress suggested that a logarithmic regression was the most appropriate, but found that the limited data available in some countries led to negative regressions, and that a considerable amount of work was involved for little gain. It was also noted that non-linear regression techniques might result in higher projected progress, with significant political implications.

Objective 5: Technical Task Force summary and recommendations

The Task Force suggested that there will be little benefit gained (and some costs incurred) from further adjustments to the 1990 baseline estimates over the next five years, and recommends that the feasibility of fixing the 1990 baseline estimates and related MDG targets in future JMP reports should be investigated. A statistical subgroup was charged with this feasibility study.

The Task Force recognised that a large number of new data points have become available since the previous consideration of the use of non-linear regression techniques, hence it recommends that the statistical sub-group should also examine the possibility of adopting a two-spline regression methodology (or some other improved methodology). The following five Technical Task Force members were co-opted to form the sub-group: Kristof Bostoen, Rifat Hossain, Gareth Jones, Rolf Luyendijk and Tessa Wardlaw.

Objective 6: Method of assessing progress towards MDG 7c

The method used to assess whether countries and regions are on-track or off-track to achieve the MDG 7c targets has recently come under scrutiny. It has been suggested that individual country MDG targets are unduly negative for countries with a low baseline and high population growth that require rates of change unprecedented in history to be classified as “on-track” to achieve their MDG targets. The JMP has proposed an additional progress index that recognises the challenge that rapid population growth poses to MDG progress in some countries. The Task Force was asked to review the proposed indicator and its suitability for inclusion in future JMP reports.

It was noted by members of the Task Force that although this index does not quite address the difficulty of countries that started with lower baseline, it is a step towards addressing some of the shortcomings of the progress measurement through 'on/off-track' only.

Objective 6a: On or off-track - Background paper and presentation (Kristof Bostoen)

The JMP currently assesses whether countries and regions are on-track or off-track to meet the MDG targets by checking whether current progress is:

- within 5% of projected progress to achieve the MDG by 2015 = on-track
- within 5%-10% of projected progress to achieve the MDG by 2015 = insufficient progress
- more than 10% off the project progress to achieve the MDG by 2015 = off-track

The 5% error allowed in the on-track estimation is close to the 5.7% average confidence interval found in five DHS data sets from East Africa. Some theoretical basis exists for the 5% deviation allowed in on-track countries, but there is no solid basis for setting 10% as the deviation after which countries are declared off-track.

Objective 6a: On or off-track - Technical Task Force review

The main criticism of the current method was that the acceptable deviation for on and off-track assessments is too large. The current approach pulls down the MDG targets by at least 5%-10% before progress is classified as off-track.

This pull-down is significant, particularly in water supply where the MDG target requires that global coverage is increased by only 12% from the 1990 baseline. In addition, the margin is assessed at the report date, thus increases when projected to 2015. For instance, 4.9% on-track deviation from the projected progress in 2006 represents a 7.7% deviation from the 2015 target.

The Task Force noted that the original intention of the progress assessment was to draw attention to low achievers and mobilise additional support. The method recognised that countries that started with low coverage face a more significant challenge in reaching their MDG target, thus the margins were set deliberately high. Closer to the 2015 deadline, the priorities have changed and the Task Force agrees that a different message is now required.

Objective 6a: On or off-track - Technical Task Force summary and recommendations

No clear conclusion was reached, but the Task Force listed a number of options and recommended that a sub-group review these options. The composition of the sub-group was not fixed, but it could be the same as that of the sub-group assessing the moving baseline issue. The following options are to be considered:

- retain the current 5% margin for on-track progress
- assess the projected margin at 2015 (within 5%)
- use the Average Annual Reduction Rate (AARR)
- assess progress in other categories (e.g. from OD to fixed point defecation)
- rank progress based on the absolute percentage remaining to the MDG target

Objective 6b: New indicator - background paper and presentation (Rolf Luyendijk)

The on-track and off-track progress assessment presents an unduly negative picture of MDG progress in countries that started with low coverage or with other disadvantages. It has been noted that in order for some countries in sub-Saharan Africa to meet their MDG targets, they would have to achieve progress rates unprecedented in history.

In this connection, external reviews have argued that sector progress could be better assessed by examining the size of the population gaining access to improved drinking-water sources and improved sanitation facilities, and that population growth should be an important consideration in any progress assessment.

In the 2008 JMP report, an indicator was piloted that assessed the “proportion of the population that gained access” to improved sanitation and improved drinking-water since 1990. The reporting of this indicator highlighted impressive progress by both on and off-track countries, and gave some much-needed recognition to the best-performing countries in sub-Saharan Africa.

The indicator was not utilised in the 2010 report and now a new variant is being proposed, with the denominator changed from the average population during the assessment period (1998 population was used in the 2008 report) to the current population. The proposed indicator will assess the population that has gained access since the baseline as a proportion of the current population, although it is proposed that the baseline date for this indicator be taken as 1995 due to the larger number of country data sets available.

Objective 6b: New indicator - Technical Task Force review

It was suggested that the use of the median population from the assessment period as the denominator “captures the spectrum of population growth”, but the Task Force found that the statistical advantages of the median population denominator were outweighed by the simplicity of the proposed current population denominator due to the stronger advocacy value and greater understanding associated with a less complex formulation.

The Task Force noted that the indicator presented in the 2008 report had been very useful in highlighting positive progress in Africa and had subsequently been utilised at several high-level meetings and sector conferences. The proposed indicator builds on this success, thus is considered a useful addition to the JMP report.

The Task Force questioned whether the indicator might reward countries with high population growth (or suggest slower progress in countries with low population growth). On balance, the Task Force found that sustaining coverage and coping with population growth are significant challenges in some countries, and that the indicator will perform a useful function in identifying both high and low performers against population growth.

Objective 6b: New indicator - Technical Task Force summary and recommendations

The Task Force concluded that the proposed indicator will be a useful complement to the main MDG progress assessment and therefore recommends that it should be included in future JMP reports. The Task Force also recommends that the indicator should use the current year denominator due to the greater simplicity and wider understanding of this methodology; and that the new performance indicator should always be presented alongside the main on- or off-track MDG progress indicator to highlight high performance in off-track countries and ensure that the performance indicator is not seen as a replacement for the main JMP progress indicator.

Objective 7: Review of 50% rule

A large number of surveys and censuses used in the JMP estimates contain response categories that may include use of both improved and unimproved sanitation facilities. In order to minimize the maximum error, the JMP counts 50% of the households in these response categories as using improved sanitation facilities. The Task Force was asked to review the 50% rule.

Objective 7: Background paper and presentation (Rolf Luyendijk)

Surveys and censuses from 116 countries contain response categories that are likely to include use of both improved and unimproved sanitation facilities, but 69 of these countries have provided new surveys that contain a full disaggregation of the use of improved and unimproved sanitation facilities, thus this new ratio is used to disaggregate older surveys. As a result, only 47 countries now have the “50% rule” applied to response categories such as *traditional latrines*.

An analysis of the data from the 69 countries with disaggregated data found the following average proportion of improved sanitation facilities:

- Global (60 countries): 75% improved (urban); 69% improved (rural)
- Sub-Saharan Africa (24 countries): 64% improved (urban), 49% improved (rural)
- Latin America and Caribbean (12 countries): 81% improved (urban), 82% improved (rural)
- Eastern and South-east Asia (11 countries): 63% improved (urban), 61% improved (rural)
- CEE/CIS (12 countries): 92% improved (urban), 91% improved (rural)

Objective 7: Technical Task Force review

The Task Force noted that the divergence from 50% is not that significant, and questioned whether some of this divergence is just the random scatter found in a small sample size. The 50% rule minimizes the maximum error on a fairly sound technical basis, which suggests that more convincing evidence would be needed before any change could be sanctioned (particularly if this resulted in an increased estimate of the proportion of improved sanitation facilities).

It was also agreed that the regional averages are not relevant in many country cases, due to highly variable national circumstances and local contexts. Therefore, detailed country assessments would be required before the application of a ratio derived from other country data. The rule is also more significant in some countries than others: 80% of the population in Tanzania use facilities currently classified (by the last two surveys) as traditional latrines.

Given that new disaggregated data are becoming available as household surveys and censuses become better aligned with the JMP core questions, the number of countries in which the 50% rule is applied will decrease and, therefore, this issue should soon become irrelevant.

However, it was also noted that, even in countries where more recent disaggregated data are available, the current method applies a constant proportion to all previous surveys and censuses (with unresolved response categories) thus making no allowance for changes in the proportion of unimproved pit latrines over time. As in the case of the treatment of shared sanitation facilities, this issue relates to the low quality and limited availability of the data, with few improved alternatives possible until the data sets improve.

Objective 7: Technical Task Force summary and recommendations

The Task Force recommended that the JMP continues to use the 50% rule in countries that have unresolved response categories. Given the potential impact on global and regional MDG progress, it was also recommended that more detailed assessments be made in Brazil, China, India and any other countries where the size and proportion of the population affected are significant.

Epilogue

Although the focus of the Task Force was on the above objectives, during the course of discussions some other issues were raised by its members. This includes, among others, the need for JMP to address the issue of treating the progress made in dense urban settlements distinctly from that made in sparsely populated rural hamlets.

This JMP Task Force meeting proved productive and covered a number of important issues in an efficient way. Task Force members were satisfied that this meeting generated recommendations knowing that the JMP had resources for their implementation. The JMP team will proceed with the further formalization of a Technical Support Group that would serve the JMP until 2015 in terms of technical advice through the establishment of Task Forces, the organization of country missions, the formulation of research protocols and the review of the literature and of draft JMP publications.

The two SAG members who attended the meeting reported back to the Strategic Advisory Group at its second meeting on 29 July 2010. The draft report of the Task Force meeting would be circulated shortly to all participants for comments prior to its final publication on the JMP web site.

A vote of thanks went to the UNICEF members of the JMP team for the excellent organization, and to the members of the JMP team and Task Force members who produced working papers. The input of all Task Force members was much appreciated, as was the role of facilitators, discussants and the two Chairs.

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Annex A List of participants

International Technical Experts

Graham Alabaster, Chief, Section I, Water Sanitation and Infrastructure Branch
Human Settlements Financing Division, United Nations Human Settlements Programme,
Nairobi, Kenya

Fred Arnold, Senior Fellow, ICF Macro, Calverton, USA

Kristof Bostoën, Consultant, IRC, The Hague, Netherlands

Pete Kolsky, Senior Water & Sanitation Specialist, Urban, Water and Sanitation, Disaster
Risk Management Cluster, Sustainable Development Unit, Latin America and the
Caribbean Region, World Bank, Washington D.C., USA

Gordon McGranahan, Group Head, Human Settlements, International Institute for
Environment and Development (IIED), London, United Kingdom

Kepha Ombacho, Chief Public Health Officer, Ministry of Public Health and Sanitation,
Nairobi, Kenya

Andy Robinson, Water and Sanitation Specialist, Le Fay, St. Bon Courchevel, France

Yaw Asante Sarkodie, Team Leader, WSMP Ghana, Accra, Ghana

Chris Zurbruegg, Head of Department Sandec, Eawag / Sandec, Duebendorf, Switzerland

JMP SAG members

Barbara Evans (Chair, Day 2), Senior Lecturer, Water Engineering and Environment,
School of Civil Engineering, University of Leeds, United Kingdom

Gareth Jones (Chair, Day 1), former Chief, Strategic Information, UNICEF, (New York),
Ottawa, Canada

Letitia Obeng, Director, Office of the President, Bank Information Center, Washington,
D.C., USA and Chair of Global Water Partnership.

External Observers

Jay Graham, Environmental Health Advisor, USAID, Washington, D.C., USA

WHO

Didier Allély, Technical Officer, Water, Sanitation, Hygiene and Health, Department of Public Health and the Environment, World Health Organization, Geneva, Switzerland

Robert Bos, Coordinator, Water, Sanitation, Hygiene and Health, Department of Public Health and the Environment, World Health Organization, Geneva, Switzerland

Rifat Hossain, Technical Officer, Water, Sanitation, Hygiene and Health, Department of Public Health and the Environment, World Health Organization, Geneva, Switzerland

Federico Properzi, Technical Officer, Water, Sanitation, Hygiene and Health, Department of Public Health and the Environment, World Health Organization, Geneva, Switzerland

Abdou Savadogo, Technical Officer, Water, Sanitation, Hygiene and Health, Department of Public Health and the Environment, World Health Organization, Geneva, Switzerland

Peregrine Swann, Senior Advisor, Water, Sanitation, Hygiene and Health, Department of Public Health and the Environment, World Health Organization, Geneva, Switzerland

UNICEF

Clarissa Brocklehurst, Chief WASH Section, Associate Director, Programme Division, UNICEF, New York, USA

Therese Dooley, Senior Adviser, Sanitation and Hygiene, UNICEF, New York, USA

Paul Edwards, Senior Adviser WASH, UNICEF New York, USA

Elizabeth Horn-Pathanothai, Consultant, Statistics and Monitoring Section, UNICEF, New York, USA

Rolf Luyendijk, Senior Statistics and Monitoring Specialist, UNICEF, New York, USA

Tessa Wardlaw, Chief Statistics and Monitoring Section, Associate Director, Division of Policy and Practice, UNICEF, New York, USA

ANNEX B: Approved Agenda

Meeting of the
JMP Technical Task Force
on Sanitation and Methods for Estimating Progress
Church Centre, 2nd Floor conference room, 44th street and 1st Avenue
27 – 28 July, 2010
New York City

AGENDA

Goals

- To make recommendations to the JMP on several methodological issues related to monitoring of the MDG drinking water and sanitation target
- To agree on the JMP’s future reporting on the proportion of the population using public/shared sanitation facilities
- To agree on a definition of a *pit latrine with slab*

Objectives:

- Review the JMP’s decision to consider public and shared sanitation facilities as not improved
- Review the reliability of the data on shared sanitation facilities among household surveys and censuses
- Review the current method for estimating trends in the proportion of the population using public/shared sanitation facilities
- Recommend a definition for “pit latrine with slab” to be measured through household sample surveys and censuses
- Discuss the issue of a ‘moving base-line’
- Review the current method for assessing progress towards the MDGs
- Review the application of the 50%-rule for survey categories that include both improved and unimproved service categories

Day 1 Tuesday 27 July

09:00 – 09:15 Welcome and introductions

*Clarissa Brocklehurst /
Robert Bos*

09:15 – 10:00 Review of the agenda & introduction to the JMP

Tessa Wardlaw

10:00 – 10:30 Discussion

10:30 – 11:00 *Coffee Break*

Chair day 1: Gareth Jones

Objective 1: Review JMP's decision to consider public and shared sanitation facilities as not improved

11:00 – 11:15 Presentation of topic 1 on shared sanitation facilities

Topic 1: Rationale for excluding public and shared sanitation facilities from “improved” sanitation facilities

Presenter: Rolf Luyendijk

Facilitator: Clarissa Brocklehurst

11:15 – 12:30 Discussion

12:30 – 13:30 *Lunch*

Objective 2: Review the reliability of the data on shared sanitation facilities among household surveys and censuses

13:30 – 13:40 Presentation of topic 2 on shared sanitation facilities

Topic 2: Reliability of the survey estimates of the proportion of the population using public/shared sanitation facilities

Presenter: Rolf Luyendijk

Facilitator: Robert Bos

13:40 – 15:00 Discussion

15:00 – 15:30 *Coffee break*

Objective 3: Review the current methods for estimating trends in the proportion of the population using public/shared sanitation facilities

15:30 – 15:40 Presentation of topic 3 on shared sanitation facilities

Topic 3: Method for estimating trends in the proportion of the population using public/shared sanitation facilities for MDG monitoring

Presenter: Rolf Luyendijk

Facilitator: Tessa Wardlaw

15:40 – 17:00 Discussion

Day 2: Wednesday 28 July

Chair day 2: Barbara Evans

08:30 – 09:00 **Review of conclusions and recommendations day 1** Tessa Wardlaw

Objective 4: Recommend a definition for “pit latrine with slab” to be measured through household sample surveys and censuses

09:00 – 09:15 Presentation of background paper
Definition of “Pit Latrine with Slab”

*Presenter: Abdou Savadogo
Facilitator: Clarissa Brocklehurst*

09:15 – 10:30 Discussion

10:30 – 11:00 *Coffee Break*

Objective 5: Discuss the issue of a ‘moving base-line’

11:00 – 11:20 Presentation of background paper
MDG 7C “moving baseline”

*Presenter: Rifat Hossain
Facilitator: Tessa Wardlaw*

11:20 – 12:30 Discussion

12:30 – 13:30 Lunch

Objective 6: Review the current method for assessing progress towards the MDGs

13:30 – 13:50 Presentation of background paper on MDG progress estimation
Current JMP method to estimate progress towards the MDG target

*Presenter: Kristof Bostoan (IRC)
followed by comments by Rifat Hossain
Facilitator: Robert Bos*

13:50 – 14:15 Discussion

14:15 – 14:25 Presentation of background paper on new country performance indicator

*Presenter: Rolf Luyendijk
Facilitator: Clarissa Brocklehurst*

14:25 – 15:00 Discussion

15:00 – 15:30 Coffee break

Objective 7: Review the application of the 50%-rule for survey categories that include both improved and unimproved service categories

15:30 – 15:40 Presentation of background paper
Application of the 50%-rule for survey categories that include both improved and un-improved service categories

*Presenter: Rolf Luyendijk
Facilitator: Tessa Wardlaw*

15:40 – 16:15 Discussion

16:15 – 16:45 Review of conclusions and recommendations of day 2

16:45 – 17:00 Closing remarks

*Tessa Wardlaw, Robert Bos,
Clarissa Brocklehurst*

17:00 Closure of the meeting

