

COMMENTARY

Improving on haves and have-nots

All-or-nothing targets for global access to basic amenities such as drinking water and sanitation are outdated. The time has come, says **Jamie Bartram**, for a more fluid approach.

No one can deny the profound effects that water and sanitation can have on public health. In nineteenth-century Europe, municipalities made unprecedented investments in public drinking-water and sanitation to control outbreaks of cholera, typhoid and other infectious diseases. Their success was recalled by a recent survey in the *British Medical Journal* that voted sanitation the most important medical advance since 1840.

Regrettably, shamefully, 150 years after that 'sanitary revolution', the consequences of poor sanitation remain devastating. A cholera outbreak in Peru starting in 1991 killed 3,000 people in 15 months, costing the economy US\$770 million — more than the investment in water and sanitation during the entire preceding decade¹. Around the world, the toll adds up: inadequate drinking-water, sanitation and hygiene cause around 6% of all diseases².

Water and sanitation are therefore frequent targets in development circles. The most comprehensive recent 'agenda for development' — the United Nations Millennium Declaration — includes in its eight Millennium Development Goals (MDGs) and 21 targets halving the proportion of the world population without safe drinking water and basic sanitation by 2015.

From an initial global population of 5.3 billion in the MDG baseline year (1990), this means improving global use of 'safe water' from 77% to 88% and of 'basic sanitation' from 54% to 77% (while keeping up with population growth). But both goals share a basic weakness in regarding every human as either 'having' or 'not having' these key amenities; a formula well past its sell-by date.

The formula hasn't developed significantly, possibly since the 1960s when the World Health Organization (WHO) began reporting on the same simple pass-fail criterion — although between 1990 and 2006



the world population swelled from 5.3 billion to 6.6 billion and those living in urban areas rose from 43% to 49%. There are diverse challenges: lack of basic infrastructure in much of the developing world; ageing and deteriorating infrastructure in transition countries; and new threats from emerging pathogens, chemicals, deliberate acts and climate change.

Counting haves and have-nots has the advantages of simplicity and equity. Tell people that a third of humanity doesn't even have a basic latrine at home and the message is loud and clear. It is simple to present visually (see map, overleaf) and was critical in getting sanitation back onto the MDG agenda in 2002. But although this global counting is simple, robust and easy to present, it also has major limitations, not least by not encouraging progressive improvements.

There is no real incentive for nations either near the top or the bottom of the international spectrum to tackle their water and sanitation challenges — because the current 'reward structure' is not set up to recognize the range of steps they could take to improve health. Countries adopt targets appropriate to their own needs and aspirations, which may not line up with the global pass-fail benchmarks. A traditional pit latrine with an earth floor is ranked as 'improved' by national authorities in Zimbabwe, although without a solid floor slab it does not score in global monitoring. Recently, I was challenged by a minister from one of the countries of the former Soviet Union, which needed to improve its drinking water and sanitation. It wanted to be part of the MDG effort but couldn't find a 'way in' because the definitions meant that it had little left to do.

Even if the MDGs are met in 2015, 875 million people will still be collecting water from distant, unprotected sources and 1.7 billion will not even have a simple latrine at home. Currently, the efforts to maintain, replace and extend water and sanitation will mean that the target for drinking water will almost be met. But sanitation targets will be missed widely — by around 880 million people³. However, it is debatable whether or not this discrepancy between water and sanitation 'progress' is real.

The benchmark for sanitation is use at home, whereas for water it is an improved communal source — a protected well or spring, for example. Applying benchmarks that require both drinking-water and sanitation at home would better represent what is needed to protect health and secure social benefits. Sadly, raising the water benchmark to a household level alongside the sanitation benchmark would mean missing both targets.

Now is the time to debate new international indicators to stimulate action. Agreement won't come rapidly and the underpinning evidence needs strengthening. For a revitalizing platform to be in place by 2015, we need information



Community latrines are a step towards household sanitation for all.

beforehand. That way, we know the baseline we are starting with rather than adopting a retrospective baseline as the MDGs did, effectively forcing continuation of an established system that, frankly, was already looking tired.

Smarter targets

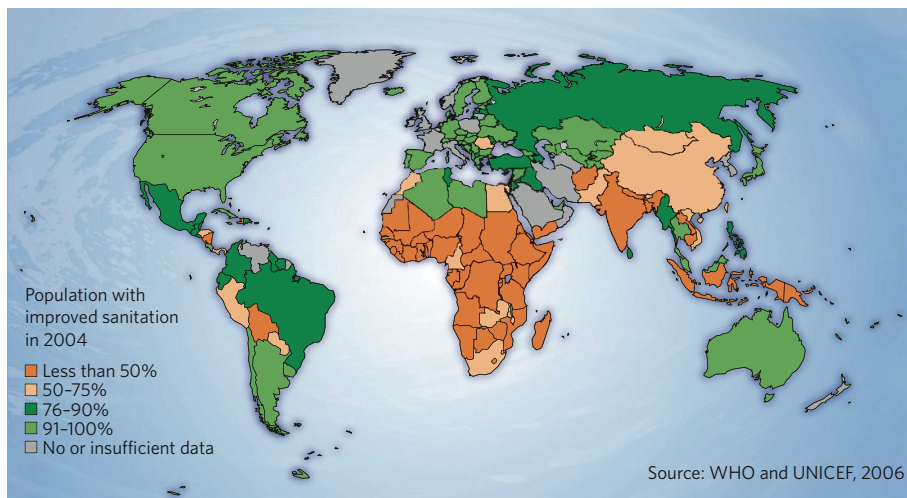
So, what would a better system look like?

First, it would be relevant to all. The pass-fail criterion is a straightjacket that alienates worthwhile efforts. On the sanitation front, we need a system that recognizes not only a latrine at home but also successful efforts to make shared or even public facilities work in fast-growing, peri-urban areas (where the city meets rural). On the water side, the benchmark of a protected well within a 30-minute walk needs to be supplemented by another where water is available at home.

Overall, we need a sequence of benchmarks reflecting individual steps and potentially different routes to improvement. Such a sequence would reward efforts at all levels. In any one country, some of the population would have reached a higher benchmark than others, so assessing progress between benchmarks for its lowest quartile population could help maintain focus on the most needy.

At least one step towards multiple benchmarks was taken in a report at the AfricaSan Conference in Durban, South Africa, in February (see 'Multiple benchmark approach'). It describes a far more optimistic picture than the simple haves and have-nots categorization — showing open defecation and 'unimproved' facilities in decline and other categories increasing. When extended to water, as the WHO and United Nations Children's Fund (UNICEF) now intend, it will be a real step forward.

Second, a better system would have a firm grounding in health, well-being and livelihoods. Present benchmarks for water availability at a community level and sanitation at a household level, probably reflect what was thought achievable in the rural focus from the 1960s to the 1980s. In fact, the benefits to health and household economy of a distant but protected drinking-water source are very limited, whereas there are large benefits when water is available in every household — in



Sanitation targets set by the United Nations will be missed by a large margin.

hygiene, productivity and time saved.

The evidence base for the health gains from potential sanitation benchmarks remains appallingly weak. Public toilets may be considered a key intermediate step and a means to ensure at least some dignity and safety. But some speak of dangers, especially to women, of rape and assault; and poorly maintained facilities are themselves a danger to health.

Third, an improved monitoring system would 'overlay' evidence onto the sequence of benchmarks, although doing so would not be universally popular. For example, if we were to correct statistics on drinking water to account for the fraction of households where it is unsafe, then progress towards the MDGs will appear far more modest. But taking into account the health benefits of treating unsafe water at home and storing it safely would improve health significantly and justify overlaying. If flush toilets were 'marked down' because they discharge untreated wastewater into a nearby river rather than to a treatment facility, then the status in terms of MDG rankings of some middle- and upper-income countries would also drop.

We will need to invest in tools to collect information on these overlays. Often, those available are costly and inappropriate. Testing water safety — for example, to ascertain faecal pollution — is unachievable in many communities worldwide. We will need to rethink our approaches, as is being done by the Aquatest initiative of the University of Bristol, UK, on the technology needed to make testing achievable in even very low-resource settings. Even without testing a preventive approach, focusing on actions to ensure that water is safe, provides real insights.

Fourth, we need to challenge the perception of households as the only place where people drink water, go to the toilet or wash their hands. An improved monitoring system will recognize that safe water and sanitation in schools, workplaces, hospitals, markets and

other public places are also important. There are real grounds for concern, here. One recent report cites half the hospitals of Tajikistan being without water⁴.

Fifth, we need to recognize that sanitation protects health best when practised by all. The benefits of sanitation to a household are limited if other community members defecate in the open. So we need to note whether a household has sanitation, and also the sanitation status of the community it is in. And finally, hygiene offers special challenges, with no target or indicator, and none in sight.

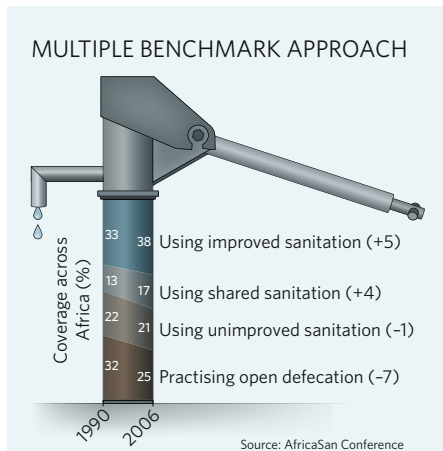
The MDG targets for drinking-water and sanitation represent a very limited ambition — leaving many millions without the most basic needs for health protection and development even if they are met.

Improved targets would recognize progressive improvements and reflect the range of actions that contribute to health and well-being. They would better align with programming needed for stepwise improvements and help ensure that commitment and momentum are not lost after the end of the MDG period in 2015.

The benefits of clean water and somewhere to defecate have been valued at 3 to 34 times their cost⁵. Isn't the potential for the most important medical advance of the next 150 years worth a better investment?

Jamie Bartram is coordinator of the water, sanitation and health programme at the WHO's headquarters in Geneva, Switzerland.

"The pass-fail criterion is a straight-jacket that alienates worthwhile efforts."



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2. *A Snapshot of Sanitation in Africa* WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (2008).
3. *Unravelling Sanitation Practices* (WHO Geneva & UNICEF New York, 2008).
4. www.euro.who.int/emergencies/fieldwork/20080208_1 (2008).
5. Hutton, G. & Haller, L. *Evaluation of the costs and benefits of water and sanitation improvements at the global level* (Water, Sanitation and Health Protection of the Human Environment, WHO, 2004).