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# Muddying the Water? Assessing Target-based Approaches in Development Cooperation for Water and Sanitation

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**ABSTRACT** *In the debate on the post-2015 development agenda, a clear preference exists for simple and quantifiable targets. The water sector provides a useful perspective in which to evaluate the use of this strategy because it has been subject to quantitative target setting since 1976. We critically analyze two early periods of target setting together with their most recent incarnation in the Millennium Development Goals. In so doing, we identify two stories concerning the utility of such a turn to metrics: the first is a perennial and at times justified optimism in target setting, and the second is a more cautionary tale about the dangers of measurement and its tendency to gloss over challenging but significant issues. In addition, we offer some brief conclusions on the implications for the post-2015 agenda and some potential measurement alternatives.*

**KEYWORDS:** Human development; Measurement; Sustainability; Human rights; Inequality

## Introduction

In the debate on the post-2015 development agenda, a clear preference exists for simple and quantifiable targets that will guide monitoring and action. In considering the utility of such an approach, it is important to take heed of the lessons from earlier efforts of target setting. The water sector provides an important case study in this respect. It has been the subject of quantitative target setting since 1976 and thereby offers a useful barometer of the phenomenon.

Within this period we can identify two stories concerning the utility of a turn to metrics. The first is a perennial and partly justified optimism that target setting will shape action. The targets set in 1976 appear to have made some contribution in accelerating progress towards providing access to basic water and sanitation. This effect was conditional, however, on the targets being embedded in a broader institutional and political process, a clear narrative and a concerted “push.” In contrast, the targets set in the 1990s appear to have had little impact since they were more of a “paper variety”: the international development community had shifted its attention elsewhere—to privatization, to permit systems, to water resources management. The impact of the targets set in 2000 is much less clear. Nonetheless, the sanguinity over the effectiveness of target setting continues in the sector, with international officials leading early efforts to shape the post-2015 framework (WHO and UNICEF 2013b).

The second story is a more cautionary tale. Indicator measurement has glossed over challenging but significant issues such as equality, safety, affordability and sustainability while the ambition of targets

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has been gradually adjusted downwards. One needs to read the official statistics with more than a pinch of salt. Moreover, the demand for simplicity in targets and indicators means that significant issues in the sector are excluded or distorted.

In this paper, we begin with an overview of two early periods of target setting. This is followed by a critical analysis of the Millennium Development Goals (MDGs) with respect to water and sanitation and an examination of their impacts. In the final substantive section, we offer some brief conclusions on the implications for the post-2015 agenda and some potential alternative routes to tread.

### Trends and Targets: 1970s–1990s

Whereas the regulation of transboundary water resources has been a topic of international negotiation, treaty-making and adjudication for millennia, the global focus on water resources, supply and sanitation *within* the state is a uniquely modern concern. The 1936 report by the League of Nations Health Organization was the first manifestation of international concern with water supply and treatment (Bartram 2012). But it was not until the 1970s that intra-state water and sanitation issues became a regular subject of international conferences, action plans and political statements. Initially, the focus was on the environmental dimension. Principle 2 of the 1972 Stockholm Declaration proclaims that the “natural resources of the earth, including ... water” must be “safeguarded for the benefit of present and future generations.”<sup>1</sup> The corresponding Action Plan makes further mention of water supply and sanitation.<sup>2</sup>

No specific time-bound targets were set in the Stockholm Declaration and Action Plan. Instead, it was the social dimension of water that first attracted quantification at the 1977 UN Water Conference in Mar del Plata. In Resolution II(a), states declared water a human right: “all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality to meet their basic needs.” The Mar del Plata Action Plan constituted the first comprehensive global water strategy,<sup>3</sup> and notions of justice featured strongly with a call for equitable distribution and priority for the poor and water-scarce areas.<sup>4</sup> States set a target of achieving universal provision by 1990.<sup>5</sup>

This target was reaffirmed in the proclamation of the International Drinking Water Supply and Sanitation Decade for 1981–1990 although the benchmark was more ambiguous. UN Member States pledged “to bring about a *substantial* improvement in the standards and levels of services in drinking water services and sanitation by the year 1990.”<sup>6</sup> Initially, “substantial” was understood to mean *universal* coverage but this ambition was moderated a few years later. The universal objective was maintained for urban water coverage, but targets of 80% coverage were set for urban sanitation and 50% for rural water supply and sanitation (Diamant 1992).

These targets were not achieved. At the 1990 Global Consultation on Safe Water and Sanitation in New Delhi, the assessment was rather disillusioning. Partly impressive achievements in absolute figures were largely negated by population growth. Further reasons enunciated for missing the targets included the promotion of expensive technologies (Diamant 1992, 184 and 186) along with a strong focus on developing new water resources (Klaphake and Scheumann 2001, 5). Natural resource management as well as institutional and societal changes were perceived as receiving too little attention.

Formally, states recommitted themselves to these seminal targets. The New Delhi Statement announced a new date of 2000 for achieving universal access. It called for a greater focus on institutional and social change and its title—“Some for All Rather than More for Some”—reinforced the importance of equality and universal basic access.

This goal was augmented two years later by a blend of environmental and social targets in Agenda 21, adopted at the 1992 Rio Earth Summit. Engineering and water resource development paradigms gave way to an acknowledgment of resource scarcity and the new approach of water resource management together with a re-affirmation of the importance of the “satisfaction of basic needs.”<sup>7</sup> A number of structural targets and indicators were set in relation to water resource management (relating to laws, institutions and programs) while numerical targets were set for sustainable urban development (although, somewhat bizarrely, not for rural areas). Accordingly, by the year 2000 states were to ensure that all

urban residents have access to at least 40 liters per capita per day of safe water; 75% of them were provided with on-site or community facilities for sanitation. In relation to solid waste and wastewater management, industrialized countries (by 1995) and developing countries (by 2005) were to ensure that at least 50% of all sewage, waste waters and solid wastes were treated or disposed of in conformity with national or international guidelines; with a rise to 100% by 2025.

During the cascade of international summits in the 1990s, some of these targets were repeated. In the 1990 Children's Summit there was a commitment to "promote" universal access to safe drinking water and sanitation for children;<sup>8</sup> and in the 1995 Fourth World Conference on Women, states committed themselves to "ensure that clean water is available and accessible to all by the year 2000" and "restore polluted water systems and rebuild damaged watersheds."<sup>9</sup> However, water and sanitation were omitted, surprisingly, from the OECD's (1996) International Development Goals.<sup>10</sup>

These targets were notable but they were not the only game in town: they were largely overshadowed by a paradigm of privatization and cost recovery. The result was a dramatic shift in donor funding. This was preeminent in the World Bank's Water Resources Sector Strategy in 1993, which emphasized the importance of economic incentives and efficiency and laid the ideational framework for the subsequent push for privatization.<sup>11</sup> The dominant conception of water as an economic good was clear in the decade's most influential declaration concerning water: the 1992 Dublin Principles.<sup>12</sup> Principle 4 provides that "Water has an *economic value* in all its competing uses and should be recognized as an economic good" (emphasis added). Whereas the Dublin Principles recognize the "basic right of all human beings to have access to clean water and sanitation at an affordable price," this social conception is carved out as an exception to the general economic principle. This should be contrasted with Agenda 21, where water is predominantly characterized as a "social good."<sup>13</sup>

The effects of this shift in policy and the increasing involvement of the private sector were immediate. In the period from 1990 to 1997 there was more than a 10-fold increase in the award of contracts to the private sector for water and sewerage projects in comparison with the previous seven years (Silva, Tynan, and Yilmaz 1998). The paradigm, however, met with resistance in many countries. While its popularity declined subsequently within the developmental context it has grown in many middle-income states (Marin 2009), while the ideational dimension continues with the strong focus on cost recovery in the sector.

### The Millennium Development Goals: Progress or Regress?

It was in this context that the MDGs emerged. Initially, water featured prominently in the new framework. In the Millennium Declaration, it formed part of the first target and there was an emphasis on both *physical* and *economic* accessibility: by 2015, "the proportion of people who are unable to reach or to afford safe drinking water" was to be halved. Two years later, this was complemented by a target for sanitation. States at the World Summit on Sustainable Development in Johannesburg added the target of halving the proportion of people who do not have access to basic sanitation to the MDGs.<sup>14</sup>

However, these commitments are problematic for a number of reasons. First, the universalism of Mar del Plata and New Delhi was quietly sacrificed. Whereas global targets cannot be completely idealistic, and population growth and economic conditions represent real constraints, it is remarkable that a commitment to achieving universal coverage by 1990 has been extended some time into the distant future, beyond 2015. This normative regression is even more curious when there has been constant progress in actual access to water and sanitation since 1976.

Second, the visibility of water in the Millennium Declaration was subsequently lost. In the process of setting the MDGs, carried out by a small group of representatives of the UN Secretariat, the IMF, OECD and the World Bank, an effort was made to "harmonize reporting on the development goals in the Millennium Declaration and the international development goals."<sup>15</sup> In this revised configuration, the target on water (and then sanitation) was submerged under a broad Goal 7 on Environmental Sustainability.

Third, the affordability criterion in the target was dropped without sufficient explanation, on the basis that it could not be measured (Vandemoortele 2011, 4). This omission is normatively and statistically

troublesome. The importance of affordability had been recognized in a long line of international standards, and high prices of water create unacceptable spending choices for the poor (COHRE 2006; Smets 2009). In its General Comment No. 15 on the right to water, the UN Committee on Economic, Social and Cultural Rights explained that “The direct and indirect costs and charges associated with securing water must be affordable, and must not compromise or threaten the realization of other Covenant rights.”<sup>16</sup> In other words, households must not be forced to make trade-offs between basic water and food consumption, schooling for children and medical care costs.

In reality, particularly in informal settlements, the cost of accessing water can consume a large share of household budgets of households. This is because consumption of basic water is highly price inelastic (Fankhauser and Tepic 2005; Jansen and Schulz 2006). The poor must purchase water regardless of the expenditure consequences and any national affordability standard.<sup>17</sup> Thus, the use of the term “having access” to cover people who spend a significant proportion of their income on water and sanitation represents a very narrow understanding of the concept (Anand 2007, 89). An indicator that conceals such stark injustices offers a poor proxy for measuring effective access to water and sanitation and guiding policy action.

Moreover, affordability is not beyond measurement. At a regional level, OECD (2003) analyzed household water expenditure against income across a range of OECD countries. Fankhauser and Tepic (2005) undertook a similar analysis that includes Eastern European countries where they found that poorer households in some countries expended high amounts on water services. Hutton (2012) undertook a comprehensive global study demonstrating that basic datasets for measuring affordability can be generated.

Fourth, there are question marks over the choice of indicators. The MDG architects agreed on new indicators—“improved drinking water source” and “improved sanitation facility”—which were to be monitored based on household survey data. This was a major achievement in itself: pre-2000 data were largely based on information given by governments and water providers and were measured according to widely differing standards.

However, the new global indicators have been subject to a series of new critiques. The MDG target is preceded by the adjective “safe” but water from improved sources may be contaminated (Anand 2007, 64; Bain et al. 2012; Mboup 2005). During its Rapid Assessment of Drinking-water Quality in five countries, the WHO/UNICEF Joint Monitoring Programme (JMP) found that more than 10% of piped sources and 30–60% of other improved sources failed to comply with WHO standards (WHO and UNICEF 2010b, 31). Based on a model that uses limited data on microbial water quality, Onda, LoBuglio, and Bartram (2012) estimate that 1.8 billion people lacked access to safe water in 2010 (more than double the official figures). Similarly, sustainability is not captured: the monitoring framework does not detect fully whether people fall out of coverage after gaining it, which may further contribute to over-estimating the number of people with access to services.

Fifth, the earlier Agenda 21 targets concerning broader water resource and wastewater management were weakly captured or ignored. Wastewater management is neither covered under environmental sustainability nor addressed under target 7.C related to sanitation. Indeed, the technology-based framing of the sanitation indicator entirely ignores the proper discharge, treatment or re-use of excreta, fecal sludge and wastewater from sanitation facilities.

Hygiene constitutes an additional glaring gap in the framework, even though good hygiene practices, including hand-washing and menstrual hygiene management, are crucial for health and well-being. Arguably, the MDGs are a missed opportunity to boost attention to the issue: only a few countries have established national targets for hygiene promotion programs (WHO and UN-Water 2012, 16), and out of the total water, sanitation and hygiene (WASH) expenditure, only about 2% is spent on hygiene promotion (2012, 29). Menstrual hygiene management, its requirements and impacts are largely overlooked despite the huge implications for gender equality. Without addressing and monitoring this third component of WASH, many of the gains through improving access to water and sanitation will not meet their full potential.

Finally, inequality in access to water and sanitation is poorly captured, representing the MDGs’ most significant “blind-spot” (Special Rapporteur 2012, para. 31). The target does not set incentives for



targeting the hard to reach, but instead risks encouraging the prioritization of “low-hanging-fruit” to demonstrate quick progress. Halving the proportion of people without access can be achieved without reaching a single person with a disability, living in a slum or belonging to a marginalized ethnic minority. It may be cost-effective but it is equality blind.

The occlusion of equality is compounded by two factors. The targets do not require an even-handed progression (e.g. ensuring equitable progress across income classes and geographic regions). And the disaggregation of data is limited to urban/rural and gender, but with only the former implemented and other grounds of discrimination neglected (WHO and UNICEF 2012a). In this sense, there has been a move away from the spirit of previous declarations: the “Some for all rather than more for some” approach as embodied in the Delhi Declaration or the call for “equitable access” in the Millennium Declaration (para. 23).

### Impact of the MDGs in the Water and Sanitation Sector

Parsing the current impacts of the MDGs in the water and sanitation sector is a perilous exercise given the methodological challenges and the fact that the period for their achievement is yet to elapse. It is possible, however, to gesture at some impacts, which we have categorized as achievement, political, distributive and unintended. Some of these are positive, others are negative or non-existent.

#### *Achievement Impacts*

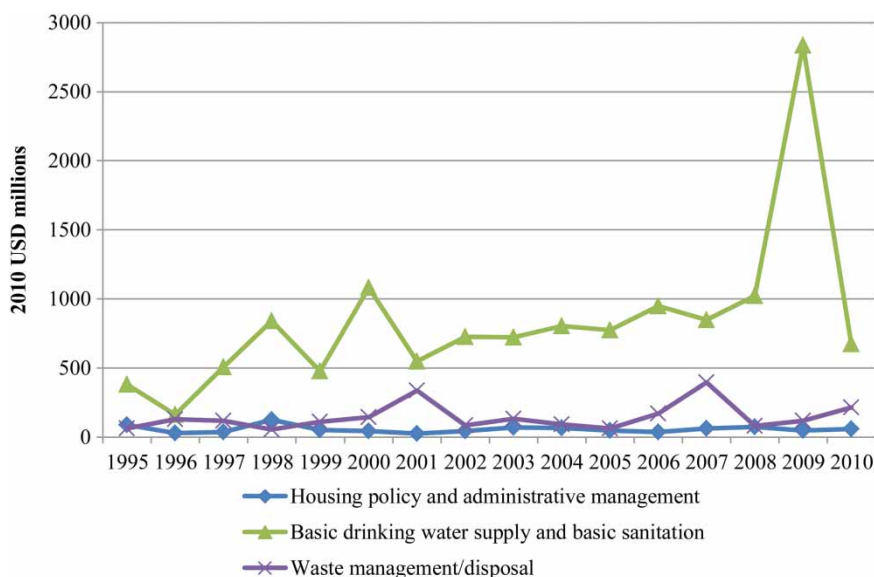
In March 2012, the UN Secretary-General Ban Ki-moon announced that the MDG water target had been met globally in 2010: 89% of the world’s population use improved drinking water sources.<sup>18</sup> Putting aside for the moment the problems over the minimalistic definition of the target and the indicator, this appears to be a significant result. However, the sanitation target has not yet been achieved and is off-track. By 2015 global access to sanitation is projected to rise slightly to 67%, significantly below the 75% required to meet the target.<sup>19</sup>

Whether the success with the water target can be attributed to the MDGs is difficult to say. If one takes official figures for the last three decades, the greatest reported rates of improvement are in the 1980s while the reported rate of improvement is the same for the 1990s and the 2000s: 6–7% per decade.<sup>20</sup> However, the problem is that the measurement criteria have changed over time and the survey coverage increased, making it very difficult to compare the different decades.<sup>21</sup> This would suggest that levels of achievement were overstated in the 1980s and 1990s and understated in the 2000s—improved methods and reliance on survey data generally produce a more accurate picture than counting the number of constructed facilities (WHO and UNICEF 2012b, 5).

The rates of population growth further complicate any conclusion. On the one hand, it has declined over the last three decades: it was 19% in the 1980s, 15% in the 1990s and 12% in the 2000s.<sup>22</sup> This highlights the earlier challenges in the 1980s and the impressiveness of the achievements in retrospect when a billion people were estimated to have gained access. On the other hand, in the 2000s the population increased in the countries with the biggest gap in access to water and sanitation, which may understate achievements in this period.

This ambiguity and complexity is further underlined by the work by Fukuda-Parr, Greenstein, and Stewart (2013) on the rate of post-2000 acceleration. In 78% of 126 sampled countries there was an improvement in access to water, but only one-third of the countries sampled improved at a faster rate in the 2000s than the 1990s.

The critical question is then whether the MDGs were responsible for the acceleration in some countries as well as halting a possible slowdown in others. International donors have claimed at least that their MDG-inspired efforts are part of the causal story.<sup>23</sup> It is correct that aid funding was reallocated towards the social sectors post 2000 (Sumner and Melamed 2010). As Figure 1 shows, there has been a steady increase in aid to the water and sanitation sector since 2000 (and interestingly no change in relation to the excluded targets on wastewater management). The overall aid commitment to the water



**Figure 1.** Aid to water and sanitation sector.  
 Source: OECD (2012; authors' analysis).

and sanitation sector doubled in absolute terms between 1997 and 2008 though declined in relative terms (from 8 to 5%) as a share of overseas development assistance (WHO and UN-Water 2010, 2).

Whether these shifts in aid allocation are the primary reason for the target achievement is difficult to know. WHO and UN-Water (2010, 31) report that only a few donors target a significant portion of funding towards *basic* water and sanitation systems, which would be most likely to contribute to the achievement of the MDGs.

A second question mark over the causal connections between target setting and MDG achievement is the relationship between global targets and national action. Do the former actually provide an effective incentive for enhanced domestic effort? The simplistic translation of a single global target into one-size-fits-all national targets has attracted criticism. Such a linear refraction penalizes poor countries, favors wealthier countries and does not cohere with resource-based human rights obligations (Easterly 2009; Langford 2010; Vandemoortele 2011). If better-resourced countries can easily meet the targets, then the MDG framework does not provide any extra leverage. In South Africa, for example, a target of universal access was already set for water by 2008 and sanitation for 2010. The MDGs have permitted this government to regularly announce it has met these international commitments and deflect criticism that it is failing to meet its national targets, particularly on sanitation (Dugard, Langford, and Anderson forthcoming, 2014).

On the other hand, the MDG framework does not reward huge efforts undertaken by many low-income countries. They are marked “off-track” since the MDG metric does not reward significant progress on water and sanitation for states starting from a very low baseline. Compared with at least middle-income countries, halving the proportion of people in these states requires much larger efforts in absolute terms. Anderson and Langford (2013) recalculate the MDG rankings of progress by adjusting for a range of resources relevant to the provision of water and sanitation.<sup>24</sup> They find that many low-income countries improve their ranking while a range of middle-income countries fall (see Table 1). The most dramatic example of a country climbing the ranks is Ethiopia, which increased access to sanitation from 3% in 1990 to 21% in 2010. This ranks in only 45th place (out of 79 countries) according to the MDG measure of performance but second out of 79 countries once a resource adjustment is made.

In summary, the reaching of the water target may point to a modest contribution of the MDG framework in increasing access. However, the targeting of aid does not correspond with what is needed for the



**Table 1.** Resource-adjusted ranking versus MDG rankings

	Water			Sanitation		
	<i>N</i> (size of sample)	Average rank for resource-adjusted measure	Average rank for MDG measure	<i>N</i> (size of sample)	Average rank for resource-adjusted measure	Average rank for MDG measure
<b>Income group</b>						
Low	23	41	51	21	38	52
Lower middle	32	37	36	30	38	35
Upper middle	21	43	35	24	43	33
High	4	50	39	4	47	45
<b>Region</b>						
East Asia and Pacific	9	33	27	9	39	36
Europe and Central Asia	4	34	27	5	43	36
Latin America and Caribbean	21	39	33	23	40	32
Middle East and North Africa	8	51	27	8	27	16
North America	1	71	68	0	.	
South Asia	5	35	31	5	22	34
Sub-Saharan Africa	32	41	49	29	47	55

*Notes:* Table shows highest/lowest/average rank by income group/region; higher ranks indicate better performer (i.e. 1 = best).

*Source:* Anderson and Langford (2013).

achievement of the MDG target, and the framework as such only sets limited incentives for wealthier countries while penalizing poorer countries. To what extent improvements in access to water and sanitation can, in fact, be attributed to the MDG framework therefore remains an open question, although we identify in the next sections some more indirect causal pathways.

### *Political Impacts*

While the MDGs were originally designed as a monitoring framework, their greatest utility may be political in nature: that is, is to elevate urgent or important issues that previously languished without attention; to legitimize and undergird the political urgency of these issues; and to provide a useful tool around which actors could achieve consensus, coordinate and act (see respectively Gauri 2012; Langford 2012; Sumner and Tiwari 2009). These functions may help spur action on the targets although its overall contribution is likely to be modest.

In this respect, and perhaps ironically, the MDGs may have had their greatest impact in the area of sanitation rather than water. Sanitation has been the poor cousin of water for various reasons: cost, the awkwardness of the theme and a lack of understanding of its health and economic benefits. The boosting effect is clearest here.

The inclusion of sanitation—even if late—had a positive impact by contributing to changing the discourse around sanitation. In 2008, the UN General Assembly declared 2008 the International Year of Sanitation, for the first time considering the issue delinked from water.<sup>25</sup> This was followed up upon with the sanitation drive aiming to redouble efforts to achieve the sanitation target.<sup>26</sup> The eThekweni Declaration of the African Minister's Council on Water pledges to create separate budget lines on sanitation and aims to spend 0.5% of GDP on sanitation. Aid officials have also noted how the MDG target has provided a lever for them to encourage development partners to seek support for sanitation provision.<sup>27</sup>

However, sanitation is still one of the most off-track targets and the sector remains heavily underfunded. Out of the total funding for WASH, only about one-quarter is spent on sanitation. This is the case even though the need for sanitation funding is often greater than for water, in particular due to the size of the gap to reach the MDG target (WHO and UN-Water 2012, 25 and 29).<sup>28</sup>

### *Distributive Impacts*

The MDGs are not premised on eradicating inequalities or ensuring that progress is equally distributed. They do not require or incentivize targeting the most marginalized and disadvantaged people. The question is what the distributive impact was in practice: did the MDGs help spur, spurn or sideline efforts to reduce inequalities in access to water and sanitation? The UN Special Rapporteur on the Human Right to zSafe Drinking Water and Sanitation raised the concern in a series of country missions that patterns of exclusion and marginalization remain constant, disadvantaging indigenous peoples, ethnic minorities, persons with disabilities, women and girls, among others (Special Rapporteur 2012, para. 32).

This was supported by quantitative evidence. UNICEF (2010, 42) found that the bottom wealth quintile in the world has hardly made any improvement in access to improved sanitation since 1995. In 2011, the JMP went beyond its limited monitoring mandate in the MDG framework and produced a report focusing on “equity.” Geographically, it revealed that 84% of the population without access to an improved drinking water source lives in rural areas (WHO and UNICEF 2010a, 18). Looking at social disparities, the JMP found that, for instance, in India the poorest 40% of the population hardly featured amongst the 166 million who gained access to sanitation between 1995 and 2008 (WHO and UNICEF 2013a). It also confirmed the gendered burden of water collection showing that women and girls are most often responsible (WHO and UNICEF 2013a). Examining other stratifiers, the JMP looked at ethnic disparities in the practice of open defecation: in western Nepal the percentage of those practicing open defecation varies between 39 and 73% for different ethnic groups (WHO and UNICEF 2013a). In Laos, a similar divide exists on linguistic grounds: only 39% of Lao-speakers practice open defecation while the figure is between 55 and 85% for various linguistic minorities (WHO and UNICEF 2012a, 7).

Again, it is difficult to determine the causal link between the distributive impacts and the MDGs in the absence of a counterfactual. If the MDGs did not exist, would disparities and inequalities in access be the same? The decision as to which groups and areas to prioritize will depend on multiple factors, which will include levels of influence and electoral representation. However, international targets still risk legitimating or encouraging equality-blind choices. What can be said is that the MDGs did not incentivize the reduction of inequalities. If targets and indicators were framed in a different way, if data were disaggregated according to different population groups, such data would at least point to where action is most needed and provide the basis for interventions to reach the most disadvantaged.

### *Unintended Impacts*

The MDG framework may also have created a number of perverse incentives and led to unintended consequences. First, the once-off end date creates a motivation to adopt short-term solutions, which may not be sustainable. With regard to water, it is estimated that one-third of the hand pumps used in sub-Saharan Africa are non-functional at any given time (WHO and UNICEF 2011, 55). This is reflected in a heavy focus on capital investments and a neglect of operation and maintenance. Less than one-third of expenditure is targeted towards the latter, even though 75% of the estimated financing needs concern operation and maintenance (WHO and UN-Water 2012, 29).

As for sanitation, the target’s focus on physical access disregards the management and disposal of wastewater and excreta. Currently, an estimated 80–90% of wastewater produced in developing countries is discharged untreated (Corcoran et al. 2010, 55). In many major cities, the number and capacity of treatment plants is grossly inadequate. The same applies to septic tanks or pits, which often result in the contamination of ground water with fecal bacteria through leakage. The combination of a lack of investment in infrastructure and services for emptying tanks and the absence of effective

regulation to stop untreated discharge means that there are significant consequences to an access-centric approach to sanitation. Indeed, Baum, Luh, and Bartram (2013) found that incorporation of sewage treatment in the definition of “improved sanitation” leads to a doubling of the sanitation gap to 4.1 billion people.

Second, there is a question as to whether the under-ambitious MDG target for water and sanitation and the choice of minimalistic indicators has undermined the normative expectations of progress in the sector. Target-setting catalyzes a reflexive process whereby an indicator reshapes its parent norm. As Davis, Kingsbury, and Merry (2012, 19) put it, indicators embody a “theoretical claim about the appropriate standards for evaluating actors’ conduct.” If an indicator is too loosely matched with a standard or achieves prominence, it can quickly take on a normative life of its own. Such a development may be compounded by the announcement that the world has met the water target, when in fact it has only met the indicator: billions of people remain without sustainable access to safe (and affordable) water.

This minimalism is entrenched through the binary approach of looking at “haves” and “have-nots” (Bartram 2008). While this simple “pass–fail” method of global counting is “simple, robust and easy to present” it has significant weaknesses (2008, 183). It provides no clear motivation for countries near the top or the bottom of the international spectrum to tackle their water and sanitation challenges—the architecture of the global targets does not recognize the range of steps they could take to improve water and sanitation; nor does it meet the standards of adequacy in international human rights law (Langford, Bartram, and Roaf forthcoming, 2014). For instance, WHO and UNICEF (2008, 284) demonstrate positive developments for a range of poorer countries if one uses a ladder of progress instead of a binary cut-off: e.g., open defecation declines in sub-Saharan Africa (36 to 28%). For wealthier and transition countries, the low ambition of the MDGs hides the lack of progress while officials may also be perplexed as to what further steps they can take to improve sanitation and water (Bartram 2008).

The importance of moving beyond the binary straightjacket of the MDG target can be seen in a comparison of *unimproved access*, *improved access*, and *piped access* (Langford 2013). It is evident for sub-Saharan Africa that a clear challenge remains in elevating people from unimproved to improved (40% remain in the unimproved category according to 2008 figures), but for other regions and some developed countries there is at least an equal challenge in moving from improved to piped access.

### Alternatives for the Post-2015 Agenda

As for the post-2015 agenda, the space is relatively open for different approaches: states have communicated general criteria through the 2012 Rio Declaration, which evince a preference for a delimited set of primarily quantitative commitments and the need to create a balanced, globally legitimate, nationally relevant and action-oriented framework.<sup>29</sup>

As the post-2015 debate moves towards discussion of concrete targets and indicators, it is important that the basis for target design and indicator selection takes account of many of the above concerns. Langford (2012) suggests eight criteria: (i) relevance of indicator to theme and target; (ii) saliency/communicability; (iii) data availability and comparability; (iv) robustness; (v) action orientation, accountability, and national realities; (vi) universally applicability; (vii) equality sensitivity; and (viii) avoidance of perverse incentives. The emphasis on relevance and perverse incentives could ensure that decision-makers turn their minds to the way in which indicators interact with normative demands. The inclusion of equality, accountability and universal applicability criteria can highlight more substantive, often human rights-oriented, demands.

This is not to suggest that questionable data and methodologies should be used when other criteria score highly. The demands of accurately measuring progress and meeting policy objectives need to be carefully reconciled. However, the ability to monitor must not be understood narrowly. Rather, future monitoring must push the boundaries of what is perceived as measurable understanding the ability to monitor as the capacity to *develop* robust datasets.

Monitoring is not solely about finding the holy grail of the perfect indicator. This would not only overlook the incentivizing objectives of target setting but also the dangers that indicators may carry per se incentives and normative consequences. Moreover, the paucity of data has not occurred by accident, but often reflects the low priority accorded to particular issues. For instance, while it is true that monitoring access to water and sanitation in slums is a notorious challenge, there is equally a perception that people living in slums “do not count.” Thus, statistical criteria should not be deprioritized but approached more flexibly, with an eye for the opportunity to improve and expand datasets. Data should be seen “as a servant, rather than a master.”<sup>30</sup>

As regards water and sanitation, there is a range of proposals that meet these normative critiques and seek to provide technically feasible targets and indicators (Hutton 2012; Langford 2013; Luh, Baum, and Bartram 2013; WHO and UNICEF 2013b). Proposals include the following:

- Ensuring *universal applicability* by adopting higher benchmarks (e.g. piped water access) and/or making benchmarks contingent on rates of progress or a country’s available resources.
- Ensuring targets are *equality-based* by requiring the elimination of inequalities and expanding measurement to capture discrimination
- Improving the *water quality* dimension of indicators, particularly those that capture microbial quality and the existence fecal contamination as well as fluoride and arsenic. With regard to environmental sustainability, future targets could build on the range of the “forgotten” targets of the 1990s, particularly on wastewater management.
- Including the dimension of *affordability* that requires expenditure on water and sanitation as proportion of household income to meet an international or regional standard.

Such a holistic approach not only ensures greater relevance with normative standards; it constrains the potential for perverse incentives—water and sanitation services have to be provided in a manner that is affordable, safe, sustainable and on the basis of equality. However, there is intense competition for space in the post-2015 agenda. An overarching criterion of *urgency or importance* would suggest that targets address the most alarming nature of water and sanitation injustice: for example, lack of basic access, stark inequality and dangerous pollutants. However, a general requirement of *universal applicability* would suggest broader targets that are relevant on a global scale, including in middle-income and high-income countries: affordability, access to piped water, and wastewater management. How one chooses between these should be solved ultimately by *democratic politics*.

However, the answer to progress does not lie solely within the water and sanitation sector. Other factors are critical. Krause (2009) finds that the level of broader democratic governance and more specific water governance (including user participation and presence of civil society) has a high correlation with access to water and sanitation. The level of GDP tends to also highly correlate with provision of water and, to a lesser extent, sanitation (Anand 2006). This suggests that goals and targets on democratic governance and possibly economic growth may be just as important in improving access to water and sanitation.

## Conclusions

Quantitative target-setting has a long history in the water and sanitation sector. In its seminal phase in the 1970s and 1980s, it was highly ambitious and correlated with a surge in expansion of access. But by the late 1980s the sector was mired in disillusion due to the failure to fully achieve the target of universal access (although progress seems to have been quite impressive in retrospect). These initial targets may also have had the perverse effect of encouraging overly technical solutions, which promised quick but unsustainable solutions—a factor formally recognized in the 1990s. The second surge of committed target setting in the MDGs in the 2000s has been marked by less ambition (and probably less progress) but curiously more triumphalism, with the meeting of the water target.

However, it is not clear whether the setting of the MDG water and sanitation target had a significant impact on rates of progress in the 2000s. This sudden decade of success with the water target should

engender real suspicion as to whether the bar was set too low, in terms of the benchmark to be achieved and the indicators selected. The reductionist philosophy of the MDGs seems inappropriate when the international community has recognized since the 1990s the complexity of water and sanitation and the importance of tackling the interrelated issues of quality, affordability, equality and sustainability. This highlights the need to address the potential for unintended consequences and perverse incentives in any future framework.

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## Notes

1. United Nations, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, Chapter I, Declaration, Principle 2.
2. *Ibid.*, Chapter II, Action Plan for the Human Environment, Recommendations 1(a), 9 and 10, 102(j), 51–55, 71, 77, 81 and 83.
3. United Nations, Report of the United Nations Conference on Water, Mar del Plata, 1977, E/Conf.70/29, Chapter I.
4. United Nations, Mar del Plata Action Plan, Resolution II, Plan of Action A Para. 1(b). See also Recommendations Para. 16(e) and Para. 44(i), and Resolution II, Plan of Action B Para. 5(a).
5. United Nations, Mar del Plata Action Plan, Resolution II, Plan of Action A Para. 1(b). Note that this target was first articulated during the Vancouver Conference on Human Settlements in 1976 in the context of housing.
6. UN General Assembly, Resolution 35/18 (10 November 1980), U.N. Doc. A/RES/35/18 para. 1 (emphasis added).
7. United Nations, Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3–14 June 1992, A/CONF.151/26/Rev. 1 (Vol. I), Annex II, Agenda 21, Chapter 18.8.
8. World Declaration on the Survival, Protection and Development of Children, World Summit for Children, 30 September 1990, para. 20(2).
9. Report of the Fourth World Conference on Women, Beijing, 4–15 September 1995, para. 266(l).
10. Explaining the omission of water and sanitation from the International Development Goals is difficult since historical accounts of the process are limited. In Hulme (2007, 5–6), the overall process is characterized as rather serendipitous. A possible explanation for the specific exclusion lies in Hulme’s account of the struggle over a sole focus on income poverty and a multi-dimensional list of themes. Water and sanitation may have been a casualty of the eventual compromise.
11. Water Resources Management Strategy, World Bank Policy Paper, 1993. Note that the language was partly opaque in this document due to an internal struggle within the Bank: see Pitman (2002, 2). The causes of the privatization shift are of course more complex and include the model provided by the privatization experience of the UK in the late 1980s and the growing awareness of existing private water corporations of the potential for new markets.
12. Dublin Statement on Water and Sustainable Development, International Conference on Water and the Environment: Development Issues for the 21st Century, UN Doc. A/CONF.151/PC/112 (1992).
13. Agenda 21 states that water users should be charged appropriately only beyond the requirements of basic human needs and even speaks of free access to water for the indigent. United Nations, Agenda 21, Chapter 18.8.
14. United Nations, Plan of Implementation of the World Summit on Sustainable Development. Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August–4 September 2002, A/CONF.199/20\*, Chapter I, Resolution 2, Annex, paras 8 and 25.
15. United Nations General Assembly Road map towards implementation of the Millennium Declaration, A/56/326, Annex, para. 1.
16. UN CESCR, General Comment 15, The Right to Water, U.N. Doc. E/C.12/2002/11 (2003), para. 12(c)(ii).
17. For an overview of national and international standards, which are often based on proportion of budget used for water consumption, see Krause (2009).
18. UNICEF/WHO, Millennium Development Goal drinking water target met: Sanitation target still lagging far behind, Joint News Release, 6 March 2012.
19. *Ibid.*
20. The 1990 baseline was 76% and access was reported at 83% in 2000. It is a real challenge to gain reliable figures for the baseline in 1980. A number of estimates suggest 60% in 1980, which would mean a 16% improvement in the 1980s. It can be calculated from “X. Access to Safe Water” in United Nations, Charting the Progress of Populations, available at [www.un.org](http://www.un.org) and also in Fogden (2009).
21. See Data Table 3, Access to Safe Drinking Water 1970–2008, available at [www.worldwater.org](http://www.worldwater.org)



22. See [http://www.census.gov/population/international/data/worldpop/table\\_population.php](http://www.census.gov/population/international/data/worldpop/table_population.php)
23. See, for example, the European Commission at [http://ec.europa.eu/europeaid/what/environment/water-energy/index\\_en.htm](http://ec.europa.eu/europeaid/what/environment/water-energy/index_en.htm)
24. Gross domestic product (GDP); ratio of “disposable national income” to GDP; total population (millions); land area (km<sup>2</sup>); urbanization (percentage of total population); and the dependency ratio (the share of population aged 15–64 to the sum of the shares aged 0–14 and 65+).
25. United Nations General Assembly, International Year of Sanitation, 2008, A/RES/61/192, 6 February 2007.
26. United Nations General Assembly, Follow-up to the International Year of Sanitation, 2008, 20 December 2010, A/RES/65/153.
27. Interview with Jean-Louis Ville, Head of Unit D1, EuropeAid, October 2012.
28. Although most investments in sanitation take place at the household level, which is not captured very well by the monitoring approaches focused on funding by governments, donors and other actors.
29. Rio+20: United Nations Conference on Sustainable Development, The Future We Want, UN Doc. A/RES/66/288, Annex, paras 246–247.
30. United Nations System Task Team on the Post-2015 United Nations Development Agenda, Thematic Think Piece, “Addressing Inequalities: The Heart of the Post-2015 Agenda and the Future We Want For All,” May 2012, 13.

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