

# Access to Water and Sanitation



One billion people still defecate in the open – a leading cause of diarrhoeal disease. The UK Government has pledged to help 60 million people gain access to safe water and sanitation by 2020 in developing countries. This briefing discusses the challenge of increasing access to water and sanitation in the context of the Sustainable Development Goals (SDGs).

## Background

The UN defines access to safe water and sanitation facilities as basic human rights. Poor water and lack of sanitation have a wide range of negative impacts, for example:

- they are major causes of infectious diseases.
- they have knock-on effects on educational attainment, public health and economic productivity.<sup>3</sup>
- they exacerbate the effects of disease outbreaks such as Ebola<sup>4</sup> and Zika virus.<sup>5</sup>

For these reasons, improving access to water, sanitation, and hygiene (WASH) has been a key aim of international development goals.

## International development goals

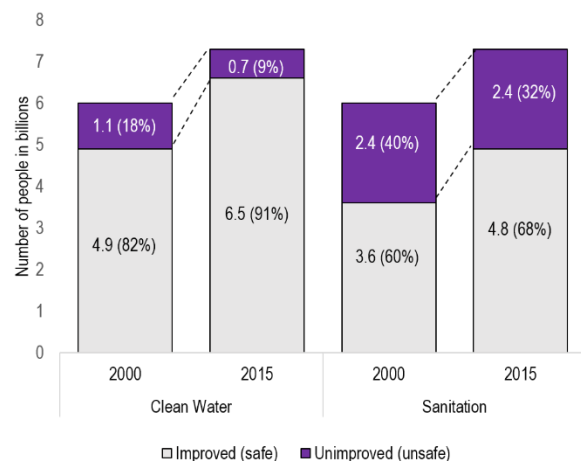
Since 2000, there have been two rounds of UN-sponsored global international development goals. The first of these was the Millennium Development Goals (MDGs) that ran from 2000 to 2015. The MDGs aimed to halve the proportion of people without access to 'improved' (safe) drinking water and sanitation. The water target was met although the sanitation figures fell short of the target by 700 million people (Figure 1).<sup>1</sup> These headline figures mask large variations between countries and between rural and urban populations, and do not capture issues such as the affordability, quality and longevity of services. Furthermore, coverage of vulnerable groups such as women, the disabled and ethnic minorities was not specifically recorded in official

## Overview

- Almost a third of the global population (2.4 billion people) lack access to sanitation facilities. Over 660 million people lack access to clean water.<sup>1</sup>
- The UN's Sustainable Development Goals (SDGs) aim to achieve universal access to safe water and sanitation by 2030.
- More comprehensive data collection will be required to monitor progress towards these targets. Other challenges include engaging communities, financing, and more closely integrating the developmental and humanitarian agendas.
- Research evidence shows hygiene promotion to be one of the most cost-effective ways to improve public health.<sup>2</sup>

monitoring statistics. The MDGs have now been succeeded by the SDGs, which were ratified by the UN in 2015 and will run from 2015 to 2030. The SDGs are a set of 17 goals that aim to eradicate poverty and to protect the natural environment. SDG 6 is dedicated to water and sanitation. The SDGs build on lessons learned from the MDGs (Box 1) and have been the focus of several parliamentary inquiries.<sup>6,7</sup>

Figure 1. Access to water and sanitation facilities



Sources: Global Water Supply and Sanitation Assessment, UN/WHO, 2000 & 25 Years Progress on Sanitation and Drinking Water 2015 Update and MDG Assessment, UN/WHO, 2015

**Box 1. Lessons learned from the MDGs**

It is widely acknowledged by NGOs and academics that the MDGs had limitations. These include:

- a donor-led approach. This has contributed to a lack of domestic capacity to maintain functional services. The SDGs focus on government-led approaches.<sup>8,9,10</sup>
- a focus on short-term targets rather than long-term viability. For example, estimates of the number of hand-pumps that were non-functional a few years after their installation during the MDG-era in sub-Saharan Africa vary from 25% to over 30%.<sup>11,12</sup>
- a failure to exploit links fully with the private sector which is seen as having a key role to play in WASH promotion at the workplace and providing WASH sector knowledge and expertise.<sup>13</sup>
- a focus on absolute numbers. This meant that the poorest were often neglected because providing coverage to them required the most effort.<sup>14</sup> Reducing inequalities is a specified goal within the SDG framework.

**Drinking water and sanitation systems****Types of WASH facilities**

The WHO-UNICEF Joint Monitoring Programme (JMP) has drawn up a ladder of WASH facilities that ranks them according to their degree of safety.<sup>15</sup> Facilities fall into the following categories (from the most to the least safe):

- 'Safely managed' facilities include drinking water sources that are located on premises, and are free of faecal and chemical contamination. Private sanitation facilities where excreta are safely disposed are also included.
- 'Basic' facilities include piped water sources, protected groundwater sources (such as standpipes, hand-pumps and protected dug wells) within a 30 minute round trip of a household. 'Basic' sanitation facilities include flush, or pour-based toilet systems connected to a piped sewer or septic tank and contained pit latrines. Hand washing facilities with both soap and water are counted as basic.
- 'Unimproved' facilities included unprotected groundwater sources, water provided by tankers, or water sources that are greater than 30 minutes-walk from a household. Shared sanitation facilities, uncontained pit latrines and handwashing facilities with no soap are also included.
- 'Open Defecation' is where human faeces are disposed of directly into the open environment.

Only 'safely-managed' and 'basic' systems are considered 'improved' (or safe) water and sanitation facilities. In practice, WASH facilities can be decentralised (on-site), such as local latrines or water sources (standpipes or tankers), or centralised (off-site), such as those connected to a sewerage or grid system. Centralised facilities are usually run by utility companies whereas those that are decentralised are often run by small independent or informal providers, often outside of government control with no formal revenue collection. This can result in the poorest paying higher costs for unregulated, lower-quality water.

**WASH technology**

To a large extent the water and sanitation technologies needed to serve the global population already exist but are not being exploited fully. For example, rainwater harvesting

**Box 2. Using ICT to improve accountability of service providers**

Kenya has a well-regulated water sector, but lacked an effective complaint management system. In 2014, Kenya's water regulator, the World Bank, and various utility companies co-operated to develop MajiVoice, a web-based complaint management system. MajiVoice assigns customer complaints a code, and progress against the complaint can be tracked online. Customers and staff submit and process complaints using toll-free hotlines, SMS, or walk-in centres. The system relies on widely used technologies such as mobile phones. Its benefits have included a full accountability flow from customers to the regulator, expedited complaint resolution time and operational improvements in the water network.<sup>16</sup>

relies on low cost and easy-to-manage technology; it could be more widely employed where groundwater is scarce.<sup>17</sup>

It is also important to ensure that the technology used is appropriate to the context in which it is used. For instance, it can be difficult to guarantee the supply of spare parts for complex technologies particularly when used in isolated, rural communities. WASHTech, a consortium of NGOs and academic institutes, has developed the Technology Applicability Framework, a tool that can assess the suitability of a technology in a specific context by taking account of factors such as affordability, locally available expertise and the local climate.<sup>18</sup> However, some technological gaps exist. These include, for example, finding an alternative to pit latrines in slum environments where access for removal trucks is limited, and there is little or no space to bury waste in a contained manner. The Bill and Melinda Gates Foundation funds research in this area as part of its 'Re-invent the Toilet Challenge'.<sup>19</sup>

ICTs (information communication technologies, including mobile technologies) can improve access to water and sanitation. They offer a faster and more frequent means to collect data about the status and use of WASH facilities. They can also enable better improving monitoring, fault reporting and increase the accountability of service providers. Furthermore, ICTs can allow transparent billing and mobile payment opportunities, improving revenue collection and financial viability.<sup>20</sup> Box 2 gives an example of an ICT initiative in Kenya. As with all development projects, ICT initiatives are most effective when the needs of the end-user are taken into account. Some have failed to have the intended effect because they were unaffordable to the end user, or local patterns of ICT use were not considered.<sup>21</sup>

**Strategies for access to WASH****SDGs and WASH**

One of the SDGs (Goal 6) specifically focuses on improving sanitation and drinking water, and the goals also recognise the importance of hygiene more generally. Goal 6 has eight targets for 2030, including:

- to 'achieve universal and equitable access to safe and affordable drinking water for all.'
- to 'achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.'

Also highlighted in SDG 6 is the importance of supporting and strengthening the participation of local communities in improving water and sanitation as a means of achieving the above targets.

SDG 6 requires monitoring of 'safely managed' facilities to ensure ongoing functionality, unlike the MDGs (Box 2). Other targets under SDG 6 relate mainly to environmental concerns and the protection of the ecology of freshwater lakes and rivers (see [POSTnote 373](#) for a discussion of water adaptation strategies in Africa).<sup>22</sup> Other SDGs relating to public health, urban planning and quality education are interlinked with SDG 6.<sup>23</sup>

### UK activities

The Department for International Development (DFID) leads the UK Government's international WASH efforts. DFID has set a target of helping 60 million people gain access to safe water and sanitation facilities by 2020. It also established a £500m crisis fund, some of which will be used to improve water and sanitation provision in emergencies.<sup>24</sup> The UK funds WASH sector research as part of a £1.5bn 'global challenges' research fund. As the SDGs apply to all UN member states, the UK itself will be expected to progress towards SDG 6 targets relating to water resource management and the protection of the ecology of freshwater rivers and lakes, but this is beyond the scope of this note.

### Challenges presented by SDG 6

The SDGs have been well received by development practitioners,<sup>10,13</sup> although a recent parliamentary inquiry questioned whether the SDGs might be too broad and aspirational in scope to be achievable.<sup>25</sup> Attainment of SDG 6 presents a number of challenges. The following sections examine such challenges including monitoring progress towards the targets, engaging communities, financing, and more closely integrating the developmental and humanitarian agendas.

### Monitoring progress

It is likely that progress against the SDGs will be measured against indicators compiled by the UN Inter-Agency Expert Group (IAEG). The UN statistical commission approved the IAEG's draft indicators in March 2016, but work is still ongoing.<sup>26</sup> Data must be collected that supplies more detail on how access varies according to gender, age, disability, ethnicity, and location. More comprehensive data collection and analysis is seen as an important part of measuring progress and meeting the SDG ambition of 'leaving no-one behind'.<sup>27</sup>

NGOs have pointed out that it is not clear how improved data collection will be supported or on which characteristics it should focus.<sup>10</sup> The SDGs target the whole service chain associated with WASH facilities, from containment, emptying and transport through to treatment and reuse/disposal. The Joint Monitoring Programme (JMP) compiles global statistics on water and sanitation coverage and has therefore committed to monitoring sanitation and

### Box 3. Community-Led Total Sanitation (CLTS) in Niger

NGO Plan International began implementing CLTS in Niger in 2010. By 2013, CLTS had been implemented in 87 villages. It trained community leaders to build village-level capacity for CLTS and contracted local NGOs to facilitate CLTS and lead follow-up activities along with district governments. Only 8% of households had access to latrines prior to implementation, but by 2013, this figure was 33%, and 31% of communities were open defecation free (as compared to 0% in 2010). By 2015, 57 out of 87 villages (66%) were certified as open defecation free. CLTS has been incorporated into Niger's national plan but district governments were unable to make CLTS follow-up visits without financial assistance from Plan International. Government ownership of the CLTS is important to attain long-term success without the need for external assistance.<sup>28</sup>

water service chains beyond the household. The JMP plans to implement more frequent and reliable monitoring of WASH facilities than during the MDGs to measure the quality and reliability of services.<sup>15</sup>

### Effective hygiene promotion

Many households living in poverty are not aware of the importance of WASH practices, such as handwashing with soap, or reducing open defecation. Some opportunities to improve public health have been missed because of ineffective promotion initiatives.<sup>2</sup> SHARE, a DFID funded research body, carries out research to establish best practices for hygiene and sanitation promotion. Community-led total sanitation (CLTS) is an example of an engagement initiative that has been applied in multiple locations (Box 3). It aims to eradicate open defecation by raising awareness that even if only a minority continues open defecation, the whole community's health is put at risk. CLTS seeks to encourage community-led solutions that provide ownership of the initiative and sustained behaviour change. CLTS is one of a number of hygiene promotion approaches; others include sanitation marketing and running community health clubs.

### Reaching disadvantaged groups

The needs and rights of women, and vulnerable groups such as the disabled, are often neglected in the WASH sector.<sup>29</sup> In locations with poor access to water it is usually women and girls who collect and carry water.<sup>30</sup> Research evidence shows that a lack of sanitation facilities at schools is a key factor in poor educational attainment in adolescent girls. One study in Uganda reported that 61% of girls stayed off school during menstruation due to inadequate facilities.<sup>31</sup> To meet SDG 6 special attention will need to be paid to the needs of women and the vulnerable.

### Political challenges

Strong national institutions are required to maintain well-regulated and monitored WASH services. The SDGs emphasise the need to develop governments' institutional capacity to deal with WASH issues. Another frequently cited problem is the lack of co-ordination across different government departments, donors and their agencies, which has previously led to duplication of efforts. 'Sector-wide' approaches to facilitate joined-up support by government

**Box 4. The One WASH National Programme (OWNP) in Ethiopia**

In 2013, the Ethiopian government launched the OWP, a sector-wide approach to WASH with a US\$2.4bn budget. It involves the government ministries of water, health, education and finance, and aims to consolidate planning, budgeting, procurement and monitoring of WASH activities into a single effective programme. A national inter-ministerial water sector working group and regional WASH sector working groups have been established. The Ethiopian Government has also co-ordinated with IRC (a Dutch NGO) in developing a single monitoring and evaluation system with common indicators, which can be applied nationwide at a local level. Development partners have been invited to pool funds into a single WASH fund to allow government-led implementation of the OWP. DFID has pledged £102m to support the OWP from 2013-2018 through this channel.<sup>32</sup>

departments and donors can increase WASH sector co-ordination (Box 4).<sup>33</sup>

UN water argues that governments need to make WASH a political priority, however this can be a challenge.<sup>34</sup> The Sanitation and Water for All Partnership is an advocacy group of over 100 national governments and other development partners. It aims to address this by requiring its partners to report back on progress made against specific commitments on WASH sector improvements.<sup>35</sup> The SWA is primarily an international platform; co-ordination must also take place at national level.

*Engaging with the private sector*

One method of improving private sector engagement in WASH is to recognise where development goals and business goals align. One example of this is a Unilever initiative, which was launched in Vietnam and India. Unilever trains entrepreneurs to promote toilets within their local community, which it hopes will increase public demand for sanitation, and stimulate local economies and develop new markets through the construction of new sanitation facilities.<sup>36,37</sup> Businesses that operate outside of existing regulatory frameworks (the 'informal sector') can pose problems for governments seeking to guarantee the quality of WASH services. However, governments can use the expertise and services of the informal sector to extend water and sanitation access beyond conventional supply networks.<sup>38</sup>

**Financing**

Annual financing for the WASH sector is around \$10.9bn.<sup>34</sup> This is short of the World Bank estimate of \$28.4bn needed to extend basic WASH services.<sup>39</sup> NGOs and think tanks argue that additional funding will need to come primarily from countries' own governments.<sup>13,40</sup> Recoupment of investment and maintenance costs through affordable tariff schemes could increase finance available for extension of networks and services. However, this will require local knowledge and understanding of the needs of low-income communities. For instance, small businesses and the informal sector often implement flexible payment options for households without a reliable income stream.<sup>41</sup>

**Box 5. Increasing resilience through aid in South Sudan**

South Sudan has been in a state of conflict for over 50 years. Most of the population is dependent on humanitarian aid for survival. Oxfam intends to merge its humanitarian projects with development goals in an attempt to break the cycle of dependence. An example of this is its household latrine programme. Oxfam has trained communities and households to build latrines and protective superstructures. Structures surrounding the pit latrines are built from local materials, leveraging local knowledge (e.g. many are 'tukuls', or mud-huts). Training communities on how to construct latrines builds local capacity at a household level and encourages dissemination of knowledge among communities. 510 latrines were built in a five month period. However Oxfam considers the real value of the project lies in the fact that local communities can now build and maintain their own sanitation facilities.<sup>42,43</sup>

Evidence suggests that many MDG projects resulted in only short-term success due a lack of allocated finance beyond infrastructure installation. For example, an EU audit found that only 7 of 23 audited WASH projects planned for financing beyond the installation of infrastructure.<sup>44</sup> The use of life-cycle cost assessments (LCAs) can facilitate long-term budgeting for WASH projects.<sup>45</sup> LCAs take into account both upfront capital costs and the ongoing operational costs associated with a project. DFID and other aid donors have begun to implement impact-based payment schemes, whereby payment, or future collaborations with aid agencies, depends upon the long-term impact of a project. It is hoped that this type of funding will help encourage approaches that are sustainable in the long-term.<sup>11,46</sup>

**Integration of humanitarian and development aid**

The global refugee population is growing, and conflicting priorities can arise between short-term humanitarian aid and longer-term development objectives. This has created a cycle of dependency on humanitarian aid, particularly in fragile states.<sup>46</sup> NGOs and think tanks have pushed for the development and humanitarian aid streams to be co-ordinated more effectively to create long-term resilience strategies to humanitarian crises and emergencies (Box 5).<sup>46,47</sup> This was the focus of the NGO 'GOAL' in Syria. GOAL worked to revive pre-existing water networks damaged during conflict. GOAL considers this project has added value beyond the supply of affordable safe water as the institutional capacity and knowledge to maintain Syria's water network has been restored. Such approaches may offer an alternative to supplying conventional humanitarian aid.<sup>48,49</sup>

**Endnotes**

- 1 25 Years Progress on Sanitation and Drinking Water 2015 Update and MDG Assessment, UNICEF/WHO, 2015
- 2 Personal correspondence with Sanitation and Hygiene Applied Research for Equity (SHARE)
- 3 UN Water World Development Report, 2015, UN Water
- 4 Ebola virus disease: Key questions and answers concerning water, sanitation and hygiene, WHO/UNICEF, 2014
- 5 <http://www.savethechildren.org.uk/about-us/emergencies/zika-virus> - accessed on 15/02/2016
- 6 [Sustainable Development Goals Inquiry](#), International Development Committee, UK Parliament, 2015
- 7 Environmental Audit Committee, 7th Report, Environmental Audit Committee, 2014
- 8 Personal correspondence with Aguaconsult
- 9 Personal correspondence with WEDC, Loughborough University, 15/02/2016

- 
- 10 Personal correspondence with Oxfam UK, 22/02/2016
- 11 A hidden crisis: strengthening the evidence base on the current failures of rural groundwater supplies. Bonsor, H.C. et al., 38th WEDC International Conference, Loughborough University, 2015
- 12 Personal correspondence with DFID, 09/02/2016
- 13 Personal correspondence with ODI, 16/02/2016
- 14 After the Millennium Development Goals: setting out the options and must haves for a new development framework in 2015, Save the Children, 2012
- 15 WASH Post-2015, JMP, 2016
- 16 A new accountability tool to improve public services, WSP, World Bank, 2015
- 17 Rainwater harvesting, Technical Brief, WaterAid, 2014
- 18 Kimera, P., Smet, J., Olschewskid, A., Parker, A. Context-specific validation and introduction of technologies for sustainable WASH services, 36th WEDC Conference, 1-5 July 2013, Nakuru, Kenya
- 19 [Re-invent the toilet challenge](#), The Bill and Melinda Gates Foundation, 2016
- 20 Personal correspondence with SeeSaw, 02/02/2016
- 21 ICTs help citizens voice their concerns over water – or do they? – Welle et al., IDS, Sussex University, 2016
- 22 Water Adaptation in Africa, POSTNote 373, POST, 2011
- 23 Sustainable development goals
- 24 UK aid: tackling global challenges in the national interest, DFID, 2015
- 25 Oral Evidence Session, Sustainable Development Goals Inquiry, International Development Committee, 8<sup>th</sup> September 2015
- 26 Report of the Inter-Agency and Expert Group on Sustainable Development Goal indicators, UN, 2015
- 27 WaterAid briefing on Global Goal indicators, WaterAid, January 2016
- 28 Community-led total sanitation in Niger: Findings from an implementation case study, Plan international, UNC Water Institute, 2015
- 29 Including disabled people in sanitation and hygiene services, Collender, G. et al., WaterAid, SHARE, Leonard Cheshire Disability Briefing Note, 2011
- 30 Eliminating discrimination and inequalities in access to water and sanitation, UN Water, 2015
- 31 Global cause and effect: how the aid system is undermining the Millennium Development Goals, Water Aid, 2007
- 32 One WASH National Programme (OWNP) Ethiopia: A SWAp with a comprehensive management structure, Goyal, K. & Girma, A., 38th WEDC International Conference, L'boro University, 2015
- 33 Aid and Public Expenditure: A Guide Foster, M. & Fozzard, A., ODI Working Paper, 2000
- 34 Global analysis and assessment of sanitation and drinking water, UN-Water, 2014
- 35 A global problem, many solutions. One partnership, SWA, 2015
- 36 Creating business value and development impact in the WASH sector, Water and Sanitation for the Urban Poor, 2015
- 37 [Domex Toilet Academy – improving sanitation practices in India](#), Unilever, 2016
- 38 Private Sector and water supply, sanitation and hygiene, ODI, 2015
- 39 The costs of meeting the 2030 Sustainable Development Goal targets on drinking water, sanitation, and hygiene, World Bank, 2016
- 40 [Now is the time for domestic finance](#), IRC WASH, 2015
- 41 Microfinance for sanitation, WELL Factsheet, Saywell, D. & Fonseca, C., Loughborough Univeristy, 2006.
- 42 South Sudan Humanitarian Resilience Strategy 2016-2019, Oxfam, 2015
- 43 Household Latrine Programme in Lankien, South Sudan, Oxfam, 2016
- 44 European Union development assistance for drinking water supply and basic sanitation in sub-Saharan countries, European Court of Auditors, 2012
- 45 <http://www.ircwash.org/news/adopting-life-cycle-costs-approach-sustainable-service-delivery-experiment>, IRC WASH, 2015
- 46 Personal correspondence with Oxfam in South Sudan, 16/02/2016
- 47 Personal coorespondance with WaterAid, 09/02/2016
- 48 Personal correspondence with N. Boot (GOAL/UNICEF), 24/02/2016
- 49 Delivering sustainable water supply in fragile and conflict affected states: experiences from Syria, Boot, N et al., 2015, 38<sup>th</sup> WEDC International Conference, L'boro University, 2015