

Safe Drinking Water and the Global Development Agenda

Technical Brief
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Technical Brief: Safe Drinking Water and the Global Development Agenda

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This document is part of a collection of resources for learning and training about household water treatment and safe storage (HWTS). To access CAWST’s other HWTS resources, visit cawst.org/resources.

1 Introduction

If you are implementing a household water treatment and safe storage (HWTS) initiative, your work is contributing to a broader global development agenda. Understanding this agenda and its history will help you recognize and communicate your role within it.

Safe drinking water is an important priority for international development. The global community has created declarations, goals, and approaches to address the need for safe drinking water. These have included: the Millennium Development Goals (MDGs), water safety planning, the human right to water, and the Sustainable Development Goals (SDGs).

In this technical brief:

- We define safe drinking water and describe why it is important for people’s health, development, and productivity.
- We discuss some of the most important recent goals, declarations, and approaches that have influenced the global agenda for safe drinking water.
- We briefly describe how household water treatment and safe storage (HWTS) interventions can contribute to the global agenda for safe drinking water.

Key words in this document are marked in a bold font. If you are reading this on a screen, you can go to the definition of key words by clicking on them while holding the Ctrl button. If you are reading a printed copy, please refer to Section 7: Definitions.

2 Safe Drinking Water

2.1 What is Safe Drinking Water?

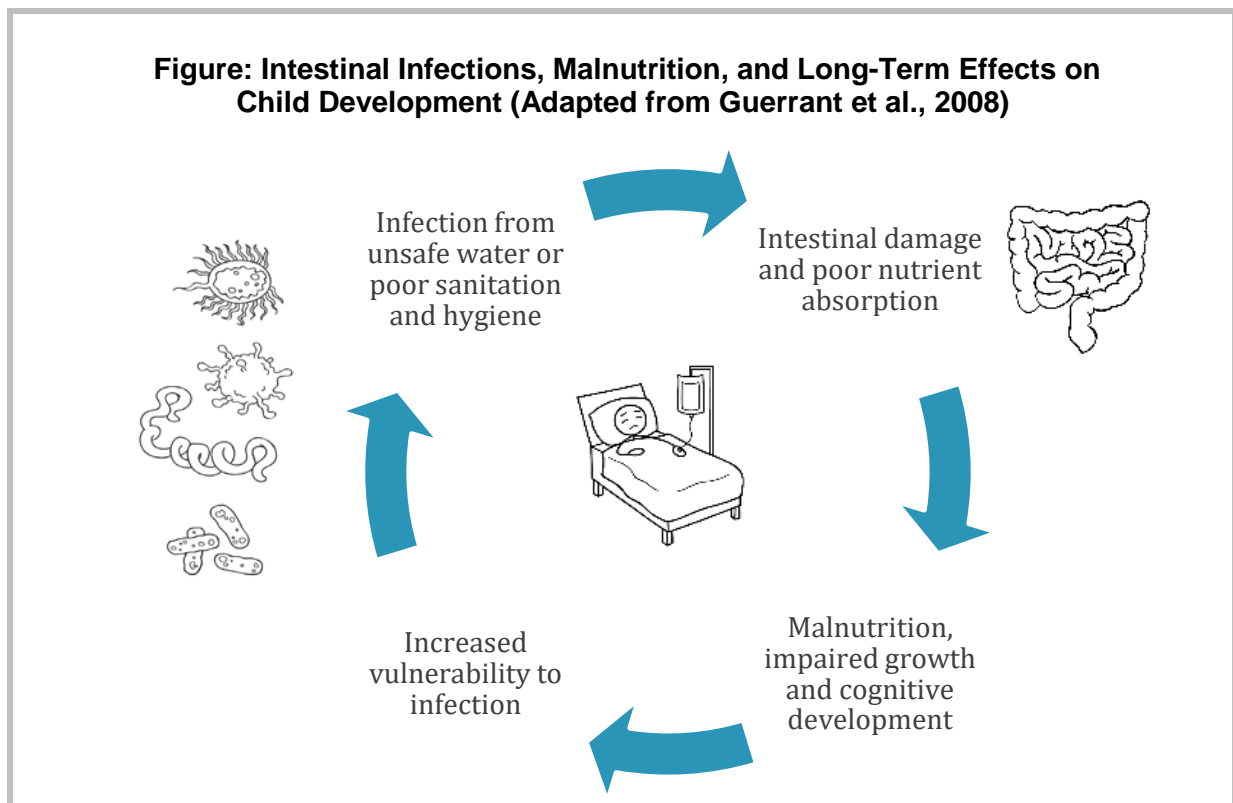
Safe drinking water is defined as water that “does not represent any significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life stages” (World Health Organization, 2017a). The World Health Organization (WHO) **guidelines** and countries’ national **standards** for drinking water quality set limits for microbiological and chemical parameters. These limits help to determine if water is safe for drinking. Usually, safe drinking water contains some substances other than water, but these are at low enough concentrations that they are unlikely to harm people’s health.



2.2 Why is Safe Drinking Water Important?

Safe drinking water is important for health. In many communities, the water sources people rely on are contaminated with feces. When families drink contaminated water and use it to prepare food and infant formula, they increase their risk of getting sick. Diarrhea is one of the most common health problems caused by **pathogens** in unsafe water. In 2012, unsafe drinking water caused an estimated 502,000 deaths from diarrhea (Prüss-Ustün et al., 2014).

Safe drinking water is important for growth and development. Children’s immune systems are not yet fully developed. When children consume pathogens from unsafe water, they are vulnerable to infections. Infections can cause diarrhea and inflammation of the intestines, making it more difficult for children’s digestive systems to absorb the nutrients they need from their food. Without enough nutrients, children are even more vulnerable to infections. Frequent infection and undernutrition can contribute to stunting and impaired mental and behavioural development (Guerrant et al., 2008; Prendergast & Humphrey, 2014).



Safe drinking water is also important for access to education and employment. People without access to safe drinking water often spend more time traveling to collect water. Illnesses from unsafe water cause people to spend more time at home, recovering or caring for sick family members. With safe drinking water and good sanitation and hygiene practices, people are more likely to be in good health and have time to engage in education and productive work.



2.3 Why Integrate Water, Sanitation, and Hygiene (WASH)?

The term **WASH** refers to water, sanitation, and hygiene issues and interventions. In 2012, over 800,000 deaths from diarrheal diseases were caused by risk factors associated with unsafe drinking water, poor sanitation, and poor handwashing practices (Prüss-Ustün et al., 2014). Addressing drinking water quality alone would not be enough to address this disease burden. This document focuses specifically on drinking water, while recognizing that it is important to address water quality alongside sanitation and hygiene improvements.

3 The Global Development Agenda for Safe Drinking Water

Over the last 20 years, the global community has created goals, targets, declarations, and strategies with the aim of increasing access to safe drinking water.

3.1 Millennium Development Goals (MDGs) (2000–2015)

World leaders came together in September 2000, after a decade of United Nations conferences and summits, to adopt the United Nations Millennium Declaration. They announced a series of targets, with a deadline of 2015, called the **Millennium Development Goals (MDGs)**.

Access to safe water was included in one of the eight MDGs. MDG target 7c was: to “halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.” This ambitious target increased the world’s focus on, and funding for, water and sanitation. To track progress, the **Joint Monitoring Programme (JMP)** counted the number of households with access to an **improved water source**.

What are Improved and Unimproved Water Sources?

Improved water source: “a source that, by the nature of its construction and when properly used, adequately protects the source from outside contamination, particularly faecal matter.” Examples: piped water into home, public tap, borehole, protected dug well, protected spring, rainwater.

Unimproved water source: a source that does not meet the criteria of an improved water source. Examples: unprotected springs, unprotected dug wells, surface water, bottled water.

Access to improved water sources was an indicator for access to safe drinking water under the MDGs. This was relatively easy to measure, but did not take water quality or source reliability into account. Improved sources were assumed to be safe and reliable.

(World Health Organization & UNICEF, n.d.)



The MDG target for drinking water was met in 2010. As the MDG era came to an end, however, large disparities in access to safe drinking water still existed between and within countries. In 2015, eight out of 10 people using unimproved water sources lived in rural areas (World Health Organization & UNICEF, 2015). As well, there was growing recognition that improved water sources are not always safe to drink, especially by the time water reaches someone’s home. Water quality often decreases between the source and people’s homes due to contamination during collection and transportation (Wright, Gundry, & Conroy, 2004)

3.2 Water Safety Planning (2004–)

During the MDG era, there was increasing recognition of the many factors that affect drinking water quality between the source and a user's glass. Monitoring systems for the MDGs did not capture drinking water quality or potential risks to drinking water safety.

Water safety planning is one approach used by governments, community-based organizations, and communities to address water quality issues. Water safety planning involves:

- Describing the water supply system (all the steps water goes through from the source to a user's glass).
- Identifying risks to water safety from the source to the user.
- Developing and implementing a plan to prioritize and manage risks. This involves implementing barriers to risk (improvements such as adopting more sanitary water collection and handling practices, improving water treatment systems, or strengthening methods of source protection).
- Continual monitoring to make sure the water safety plan is working effectively.



First introduced in 2004 by the World Health Organization (WHO) and the International Water Association (IWA), water safety planning is now used around the world (Bartram, 2009; Davison et al., 2005). Over 50 countries report having a national strategy for scaling up water safety planning (World Health Organization, 2014).

3.3 Water as a Human Right (2010)

In 2010, the United Nations officially affirmed the right of all people to have access to water that is sufficient, safe, acceptable, accessible, and affordable (United Nations Department of Economic and Social Affairs, 2014). Declaring safe water a human right was a major step by the international community. It drew attention to the importance of water and sanitation for achieving other human rights and other development goals.

3.4 Sustainable Development Goals (2015–2030)

In September 2015, world leaders adopted a new set of goals to build upon the MDGs and establish an agenda for the next 15 years. These 17 goals, each with specific targets to achieve by 2030, are called the **Sustainable Development Goals (SDGs)**.

SUSTAINABLE DEVELOPMENT GOALS



Sustainable Development Goals (United Nations, 2016)

Goal 6 of the SDGs focuses on water and sanitation. Target 6.1 aims to achieve “universal and equitable access to safe and affordable drinking water for all” by 2030. This target and the indicators used to measure it go beyond the MDG target and indicators in several ways:

- Drinking water quality and source reliability are included in the indicators. To count as having safely managed drinking water, households must have an improved water supply that is located on premises, available when needed, and free of fecal and priority chemical contaminants. The table below outlines the service levels used to measure access to safely managed drinking water (World Health Organization, 2017b).
- Under the SDGs, the focus on “universal and equitable access” will require addressing disparities and reaching the poorest and most vulnerable populations. The MDGs focused on “halving the gap” in access but did not emphasize reaching the most underserved populations. The first JMP report under the SDGs highlights disparities in access to basic drinking water services between urban and rural areas, income levels, and regions (World Health Organization & UNICEF, 2017).
- Indicators have expanded beyond households to include schools and health care facilities. These settings have their own service levels, slightly different from the ones shown below for household drinking water services.

Table: Service levels for household access to drinking water under the SDGs

Service Level	Definition
Safely Managed	Drinking water from an improved (basic) drinking water source that is: <ul style="list-style-type: none"> • located on premises, • available when needed, and • free of fecal and priority chemical contamination
Basic (known as “improved water source” under MDGs)	Drinking water from an improved source (piped water, boreholes or tube wells, protected dug wells, protected springs or rainwater). Collection time must be no more than 30 minutes for a round-trip, including time spent waiting in line.
Limited	Drinking water from an improved source with a total collection time of more than 30 minutes for a round-trip including time spent waiting in line.
Unimproved	Drinking water from an unprotected well or unprotected spring.
Surface Water	Drinking water collected directly from rivers, dams, lakes, ponds, streams, canals, or irrigation channels.

(World Health Organization, 2017b)

4 Global Progress in Access to Safe Drinking Water

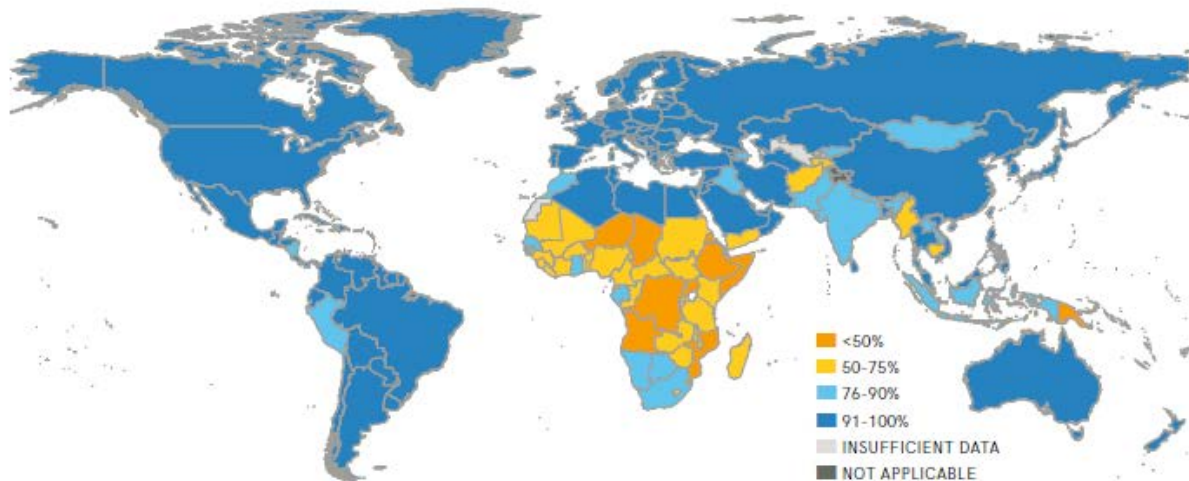
The initiatives and goals described above have been influential in increasing global access to safe drinking water and measuring progress against targets.

Tracking progress in access to safe drinking water is challenging. In the most recent JMP report, data for access to safely managed drinking water services—the new highest service level category introduced in the SDGs—was only available for 96 out of 232 countries.

Based on available data, around 71% of the global population used a safely managed drinking water service as of 2015. This figure is impressive. However, 2015 data also indicates that 844 million people still lack access to even basic drinking water services (World Health Organization & UNICEF, 2017). This means that 844 million people still rely on one of the following:

- improved sources that take over 30 minutes to collect water from;
- unimproved sources (unprotected wells and springs); or
- surface water sources.

Access to safely managed drinking water remains much higher in some regions than others. Eight out of the ten countries where at least 20% of the population uses limited drinking water services are in Africa (World Health Organization & UNICEF, 2017).



*Proportion of national population using at least a basic drinking water source (2015 data).
Figure from WHO & UNICEF (2017).*

5 How can Household Water Treatment and Safe Storage (HWTS) Contribute to the Global Development Agenda?

This section briefly highlights some of the ways HWTS solutions can contribute to the global development agenda for safe drinking water. For more information about the benefits and limitations of HWTS, refer to *CAWST Technical Brief: Introduction to Household Water Treatment and Safe Storage*.

5.1 Addressing Disparities in Household Access

Achieving universal access to safely managed drinking water is an ambitious goal. The most recent JMP report highlights disparities in access to basic and safely managed drinking water services (World Health Organization & UNICEF, 2017). Many people living in rural, remote, or underserved regions do not yet have safely managed drinking water sources they can rely on. If unprotected, limited, or basic water sources are their only option, families can use HWTS to improve their drinking water quality. Appropriate HWTS systems—used correctly, consistently, and continually—can help people ensure that their drinking water is safe.

5.2 Adding Low-Cost Barriers to Water Safety Plans

HWTS practices are important barriers that reduce risks to water safety. By considering household practices and adopting HWTS, water safety planning teams can increase the likelihood that water will be safe to drink when it reaches people's homes and drinking glasses. For more information about linkages between HWTS and WSPs, refer to *CAWST Technical Brief: Water Safety Plans and Household Water Treatment and Safe Storage*.

5.3 Improving Water Quality in Household and Non-Household Settings

The SDGs place a greater emphasis on non-household settings such as schools and health centres. In these settings, and in people's homes, simple point-of-use water treatment technologies can be used to increase the safety of drinking water.

5.4 Contributing to other Development Goals.

Using HWTS to increase access to safe drinking water will support efforts to achieve other SDGs. For example, poverty (goal 1), hunger (goal 2), health (goal 3), education (goal 4), and gender equality (goal 5), are closely linked to water and sanitation.

6 Summary

Safe drinking water, along with improved sanitation and hygiene, is an important priority in the global development agenda. Safe drinking water is important for people's health, physical and mental development, and productivity.

Since the 1990s, important developments in the global agenda for safe drinking water included:

- The **Millennium Development Goals** made safe drinking water a global priority and began important discussions about the need to measure water quality in addition to water availability.
- **Water safety planning** introduced a practical approach for assessing risks and implementing measures to improve water safety.
- The **human right to water** created a greater sense of responsibility for ensuring safe drinking water for all.
- The **Sustainable Development Goals** expanded targets and indicators for access to safely managed drinking water, putting a greater emphasis on equitable access, water quality, and incremental improvements in drinking water services.

HWTS is not a complete solution to the global need for safe drinking water. However, HWTS can support the global development agenda by:

- Addressing disparities and helping the most vulnerable improve their drinking water quality.
- Adding simple, low-cost control measures to water safety plans.
- Improving water quality in both household and non-household settings.
- Contributing to other SDGs.

7 Definitions

Guideline: A recommended limit that should not be exceeded.

Human right to water: Resolution 64/292 at the United Nations General Assembly recognized the human right to water and sanitation. This formally acknowledged the right of all people to water that is sufficient, safe, acceptable, accessible, and affordable.

Improved water source: A source that, by the nature of its construction and when properly used, adequately protects the source from outside contamination, particularly fecal matter. Examples: piped water into home, public tap, borehole, protected dug well, protected spring, rainwater.

Joint Monitoring Programme (JMP) for Water Supply and Sanitation: A joint programme of the World Health Organization (WHO) and UNICEF, responsible for reporting country, regional, and global estimates on WASH progress since 1990.

Millennium Development Goals (MDGs): Eight goals with measurable targets for improving the lives of the world's poorest people during the time frame 2000–2015.

Pathogen: An organism that causes disease.

Safe drinking water: Water that “does not represent any significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life stages” (World Health Organization, 2017a).

Standard: A mandatory limit that must not be exceeded. Standards often reflect a legal duty or obligation.

Sustainable Development Goals (SDGs): A set of 17 goals with 169 targets covering a broad range of sustainable development issues, to be met during the time frame 2015–2030.

WASH: A general term used to describe issues and solutions related to water, sanitation, and hygiene.

Water safety planning: A preventative, risk-based, system-wide approach to ensuring that water remains safe from the catchment (source) to the user (household member). Also called the WSP approach.

8 Additional Resources

CAWST HWTS Knowledge Base. Available at www.hwts.info.

- A knowledge base for point-of-use water treatment solutions, from technology options to implementation best practices.

CAWST HWTS Education and Training Materials. Available at <https://resources.cawst.org>.

- Technical briefs, lesson plans, presentations, posters, and other resources for learning and training about HWTS.

World Health Organization & International Water Association. Water Safety Portal.

Available at: <http://www.wsportal.org/>

- Website with information about the WSP approach, including tools, case studies, and other resources for trainers and implementers of WSPs.

World Health Organization: Publications and Documents Related to Household Water Treatment and Safe Storage. Available at: www.who.int/water_sanitation_health/water-quality/household/household-publications/en.

- Resources related to national HWTS policies, the Scheme to Evaluate Household Water Treatment Technologies, water quality guidelines, water safety planning, and more.

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