# Monitoring Water and Sanitation in the 2030 Agenda for Sustainable Development

An introduction

# Water and sanitation in the 2030 Agenda for Sustainable Development

## Water and sanitation at the core of sustainable development

Water and sanitation are at the very core of sustainable development. Safe drinking water and adequate sanitation and hygiene are pillars of human health and well-being. In addition to domestic purposes, water is needed for food, energy and industrial production, uses that are highly interconnected and potentially conflicting. These various uses generate wastewater which may cause pollution if not properly managed. Water is also needed to ensure healthy ecosystems, which in turn can improve the quantity and quality of freshwater, as well as overall resilience to human and environmentally induced change. The climate system is linked to the environment and the socio-economic system through water, and climate change is often reflected in shifts in water availability, increasing water scarcity in some regions, and flooding in others. Consequently, water is a key factor in managing risks related to famine, epidemics, migration, inequalities, political instability and natural disasters.

Cutting across sectors and regions, water is instrumental in the implementation of integrated development solutions; however, its highly interlinked nature also makes the water sector fragmented, calling for a greater level of coordination. Integrated water resources management is essential to harness synergies as well as to manage potential trade-offs, to ensure availability and sustainable management of water and sanitation for all.

## A new global agenda for people, planet and prosperity

In September 2015, heads of state from all around the world gathered in New York to adopt the 2030 Agenda for Sustainable Development, an ambitious "plan of action for people, planet and prosperity," comprised of 17 Sustainable Development Goals (SDGs) and 169 targets, aiming to do nothing less than

"transform our world". Building on the UN Millennium Declaration and its eight Millennium Development Goals (MDGs) (2000-2015), the 2030 Agenda expands the MDG focus on poverty reduction to now cover all aspects of sustainable development in all countries of the world to ensure that no one is left behind. With the formal adoption of the SDGs complete, the UN system will continue to support Member States as they transition towards implementation of the agenda.

## A dedicated goal on water and sanitation

The 2030 Agenda includes a dedicated goal on water and sanitation (SDG 6) that sets out to "ensure availability and sustainable management of water and sanitation for all." SDG 6 expands the MDG focus on drinking water and sanitation to now cover the entire water cycle, including the management of water, wastewater and ecosystem resources. With water at the very core of sustainable development, SDG 6 does not only have strong linkages to all of the other SDGs, it also underpins them; meeting SDG 6 would go a long way towards achieving much of the 2030 Agenda.

## SDG 6 targets and indicators

In the words of UN Deputy Secretary-General Jan Eliasson, data are the "lifeblood of decision-making and the raw material for accountability". A clear lesson from the MDGs is that we cannot manage what we do not measure, and what gets measured is far more likely to get done. For example, the specific MDG target on drinking water and basic sanitation was provided with two indicators and a global monitoring framework, resulting in excellent progress in many parts of the world.

In this way monitoring will be critical to ensuring the success of the SDG framework, and it is necessary to identify and apply specific, measurable and action-oriented indicators. The Member State-led Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) is responsible for developing an indicator framework for SDG monitoring at the global level and to support its implementation. The UN-Water family has been closely involved throughout the SDG process, and supports the IAEG-SDGs on behalf of the UN system in regard to SDG 6.

SDG 6 contains eight targets: six on outcomes in regard to water and sanitation, and two on the means of implementing the outcome targets. Based on an extensive consultation process including all UN agencies involved in global monitoring of water and sanitation, academia, business, civil society and Member States, UN-Water has proposed a set of core indicators for national and global monitoring of SDG 6. The targets and associated indicators, as listed by the IAEG-SDGs in December 2015, are presented below. For more information please refer to http://www.unwater.org/sdgs/en/.

# Overview of SDG 6 targets and proposed indicators for global progress monitoring

Indicators as listed by the Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs)

**Target 6.1** "By 2030, achieve universal and equitable access to safe and affordable drinking water for all"

**Indicator listed by IAEG-SDGs**

- Proportion of population using safely managed drinking water services

**Target 6.2** "By 2030, 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"

**Indicator listed by IAEG-SDGs**

- Proportion of population using safely managed sanitation services, including a handwashing facility with soap and water

**Target 6.3** "By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally"

**Indicators listed by IAEG-SDGs**

- Proportion of wastewater safely treated
- Proportion of bodies of water with good ambient water quality

**Target 6.4** "By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity"

**Indicators listed by IAEG-SDGs**

- Change in water use efficiency over time
- Level of water stress: freshwater withdrawal as a proportion of available freshwater resources

**Target 6.5** "By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate"

**Indicators listed by IAEG-SDGs**

- Degree of integrated water resources management implementation (0- 100)
- Proportion of transboundary basin area with an operational arrangement for water cooperation

**Target 6.a** "By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies"

**Indicator listed by IAEG-SDGs**

- Amount of water- and sanitation-related official development assistance that is part of a government coordinated spending plan

**Target 6.6** "By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes"

**Indicator listed by IAEG-SDGs**

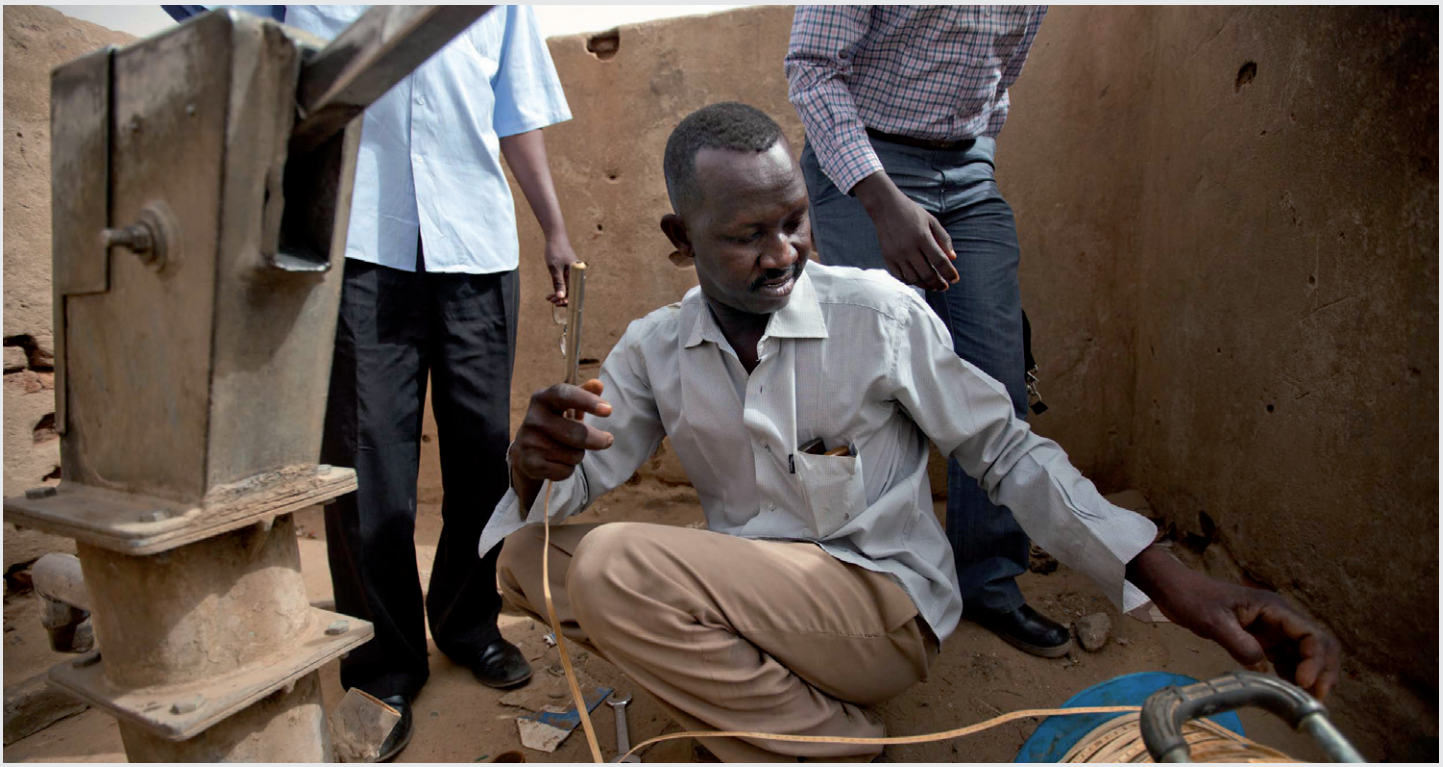
- Change in the extent of water-related ecosystems over time

**Target 6.b** "Support and strengthen the participation of local communities in improving water and sanitation management"

**Indicator listed by IAEG-SDGs**

- Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

# Monitoring SDG 6



## The importance of SDG 6 monitoring

Credible water sector data will underpin advocacy, stimulate political commitment and public and private investments, inform decision making on all levels and trigger well-placed investment towards optimum health, environment and economic gains. Data thus provide numerous social, economic, and environmental benefits in both public and private sectors. For example, monitoring water availability, withdrawals and consumption enables the use of mechanisms to promote improved allocation between users and uses, and stimulates water savings and use efficiency. Similarly, information about drinking water quality and the sanitation situation, including wastewater discharge, supports public health interventions and the protection of water bodies.

Over time, monitoring can also help identify best practices and support productive integration across sectors and targets within the SDG framework. Lastly, monitoring costs are often marginal compared to the large investments that are typical for the water sector and informed investment decisions allow for efficient use of financial, human and natural resources.

## Technology for data revolution and improved cost-efficiency

New technologies are rapidly improving our capacity to collect, store, analyse, report and share data, and at the same time are cutting the costs of doing so. Some examples include rapid advancements in the field of mobile phone-based and geospatial data collection tools, where data can be made available in real time for various uses through mobile-to-web solutions.

Simplified and affordable technology allows for the expansion of citizen science, which in turn can help bring monitoring to resource-constrained or remote settings and improve data disaggregation. Similarly, earth observations can be used for cost-effective monitoring of the extent and quality of ecosystems, land use and hydrology.

## National monitoring as the foundation for regional and global monitoring

Member States will own the monitoring and reporting of the SDGs and also be the main beneficiaries of improved access to better-quality data. Any monitoring initiative must therefore be sensitive to national needs. To ensure the sustainability of monitoring systems and processes at this level, a greater focus on capacity development is necessary.

Regional and global monitoring should build on, and reinforce, national monitoring. To allow for comparison of data between countries and over time and to track progress at the regional and global levels, it is necessary to promote harmonised monitoring approaches and the use of similar standards and definitions across countries.

## The ladder approach to monitoring

To enable Member States to begin monitoring efforts at a level in line with their national capacity and available resources, there is also a need for flexible methodologies, for which the concept of a monitoring ladder is useful. With a ladder approach, countries can start with more simple methodologies, such as using alternative data sources or monitoring a limited number of parameters at a limited number of sites, and as their capacity and resources increase, they can "climb the ladder" to progressively adopt more advanced and better disaggregated methodologies.

There are also significant opportunities for combining various methods and data sources, including direct measurements, surveys, remote sensing, estimates and literature reviews. In the short term, some estimates and modelling will likely be needed to fill existing data gaps. In the longer term, as the monitoring capacity and resources improve, national monitoring will feed directly into global monitoring.

## A coherent framework for global monitoring of SDG 6

Building on national monitoring efforts, the UN-Water family stands ready to support Member States in global monitoring of SDG 6.

For drinking water, sanitation and hygiene (SDG targets 6.1 and 6.2), the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) is well placed, with 15 years' experience from MDG monitoring. For the new targets on wastewater treatment and water quality, water use and use efficiency, integrated water resources management and water-related ecosystems (SDG targets 6.3 to 6.6), a new global monitoring initiative, Integrated monitoring of water and sanitation related SDG targets - GEMI, is currently being developed based on existing monitoring initiatives. And finally, the monitoring of the means of implementation (SDG targets 6.a and 6.b) can build on the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) and the GEMI reporting towards target 6.5 on integrated water resources management (IWRM), which is based on the existing UN-Water IWRM status reporting.

JMP, GEMI and GLAAS will be progressively aligned to ensure a coherent SDG 6 monitoring framework, and together, they will be able to monitor progress towards the entirety of SDG 6, while also underpinning the monitoring of many other SDGs and targets through the use of multipurpose indicators.

| TARGETS | SDG 6 MONITORING |
|---|---|
| 6.1 | JMP |
| 6.2 | |
| 6.3 | GEMI |
| 6.4 | |
| 6.5 | |
| 6.6 | |
| 6.a | GLAAS (with 6.5 IWRM) |
| 6.b | |

## Implementing global monitoring of SDG 6 at the national level

The work to implement global monitoring of SDG 6 at the national level – including developing monitoring methodologies and supporting countries in regard to data collection, analysis, and reporting – is organised around the SDG 6 targets, with one team for 6.1 and 6.2 (JMP), four teams for 6.3 to 6.6 (GEMI), and one team for 6.a and 6.b (GLAAS). Each team has a designated lead from a UN agency, and contains representatives from relevant UN agencies as well as other international monitoring partners.

The monitoring methodologies will differ in their nature and scope, and data collection may involve different stakeholders and governmental bodies.

The ambition for work on the national level is nevertheless to bring representatives from each target team together in a coordinated SDG 6 Monitoring Team, to maximise synergies and minimise overlap. A focal point from the UN system will be appointed to facilitate interaction between this team and national structures and efforts.

Member States will need to decide on a suitable structure for implementation on the national level. One option could include a designated national focal point and a national inter-sectoral monitoring team, comprised of all stakeholders relevant for SDG 6 monitoring, including statistical offices, national agencies/ministries, and other sector representatives. The responsibility for national data collection, analysis and dissemination, as well as reporting, could then fall on the inter-sectoral team.

Establishing mechanisms for easy and transparent sharing and validation of data is critical for ensuring a strong link between national and global level monitoring.

For the purpose of SDG 6 monitoring and reporting, a global data repository will therefore be established. It will be necessary to agree on formalities related to data ownership and use along with the technical aspects related to data transfer.

# Integrated monitoring of water and sanitation related SDG targets - GEMI

## Background and objectives

In approaching the 2030 Agenda for Sustainable Development with a dedicated goal on water and sanitation, it was recognized that the sector at large would require a coherent monitoring framework, with improved data collection and analysis. JMP and GLAAS were already tracking progress in regard to drinking water, sanitation and hygiene (SDG targets 6.1 and 6.2, and 6.a and 6.b), but the many initiatives that monitored different aspects of the management of water, wastewater and ecosystem resources lacked a coherent global mechanism.

To meet this need, the Integrated Monitoring initiative GEMI was established in 2014 as an inter-agency initiative composed of United Nations Environment Programme (UNEP), the United Nations Human Settlements Programme (UN-Habitat), the United Nations Children's Fund (UNICEF), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), and the World Meteorological Organization (WMO), operating under the UN-Water umbrella and complementing JMP and GLAAS.

The initiative's focus is to integrate and expand existing monitoring efforts on wastewater treatment and water quality, water use and use-efficiency, integrated water resources management and water-related ecosystems (SDG targets 6.3 to 6.6, and 6.a and 6.b).

The long term goal is to (i) establish and manage, by 2030, a coherent monitoring framework for water and sanitation to inform the post-2015 period, and (ii) contribute to country progress through well-informed decision-making on water, based on harmonized, comprehensive, timely and accurate information. The specific objectives are to:

- **Integrate and expand existing monitoring efforts, to ensure harmonised monitoring of the entire water cycle**
- **Provide Member States with a monitoring guide for SDG targets 6.3-6.6**
- **Engage Member States and enhance their capacity in water sector monitoring**
- **Report on global progress towards SDG targets 6.3-6.6**

The GEMI framework allows Member States to pursue national monitoring interests with flexibility (as described in the above mentioned ladder approach), and to address national and regional issues while maintaining compatibility with global monitoring efforts. The methodologies will also combine traditional and innovative data collection.

Some examples of existing monitoring initiatives to be integrated include FAO's AQUASTAT, which is operational since 1994 and has been collecting country-based data and information on water resources and their use on the global scale since 1961, and UNEP's GEMStat, which gathers ambient water quality data from more than 4000 sampling stations worldwide, with records starting in 1965.

## Implementing GEMI as an integral part of SDG 6 monitoring efforts

GEMI is an integral part of SDG 6 monitoring, and its implementation will be harmonized with that of JMP and GLAAS, as part of the strategy for SDG 6 monitoring. However, where JMP and GLAAS already have many years of experience, GEMI is a newly developed framework that will require additional support in its initial stages.

The first phase of GEMI implementation (2015-2018) will focus on the development of monitoring methodologies, to be integrated into a Monitoring Guide for use in countries by countries, and the establishment of a global baseline.

Before the methodologies are rolled out globally, they will be pilot tested in a small number of countries and revised as necessary based on lessons learned.

In 2017, the methodologies will then be implemented on a global scale, to enable the establishment of a global baseline in 2018. To realise both the pilot testing and global implementation, the first step is to sensitize countries to build a national interest for water sector monitoring. To prepare for global implementation, a number of regional workshops will be organised in late 2016 to bring together Member States and international monitoring partners, with the aim of facilitating cooperation and sharing knowledge and experience. Such peer-to-peer interaction will be an important component of capacity development in a resource-constrained environment. The monitoring efforts will then continue and cover the whole SDG period (2015-2030), and after the first phase, GEMI, JMP and GLAAS will likely be fully integrated.

| Timeline for GEMI phase 1 | 2015 | | 2016 | | | | 2017 | | | | 2018 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Development/revision of monitoring methodologies | • | • | • | | | • | | | • | • | | |
| Country and regional sensitization | | • | • | | • | • | • | • | | | | |
| Pilot testing of methodologies (6 countries) | | | • | • | • | | | | | | | |
| Establishment of global data repository | | | | • | • | • | • | | | | | |
| Global roll-out of monitoring (50 countries) | | | | | | | • | • | • | • | • | |
| Establishment of a global baseline | | | | | • | • | | | | • | • | • |

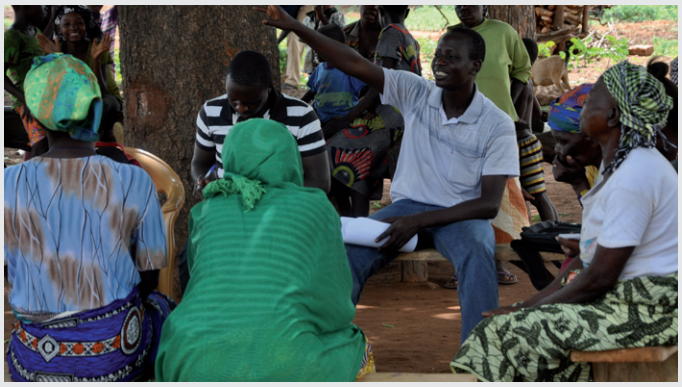
## How to get engaged in SDG 6 monitoring

If you would like to know more about SDG 6 monitoring and follow the progress of the Integrated Monitoring initiative GEMI, the first step is to sign up for the UN-Water newsletter, which provides updated information about continuous work and upcoming events of relevance. The second step to get engaged is to join our events in international fora, e.g. at the World Water Week in Stockholm.

Participation in the regional workshops in late 2016 provides a great opportunity to engage in GEMI, for Member States to prepare for the implementation of SDG 6 monitoring on the national level, and for international monitoring partners to explore how they could support Member States in this work.

In 2015-2016, the focus lies on developing monitoring methodologies and pilot testing them in a small number of countries. The development of the monitoring methodologies is based on the proposed indicators for SDG targets 6.3 to 6.6, and the work is organised in four target teams. If you wish to contribute to this work, you are encouraged to contact us to explore options for participation in one of the target teams.

The pilot testing of methodologies will broadly follow the implementation strategy for SDG 6 monitoring as outlined above, kicking-off with a national workshop and the adoption of a national



implementation plan. Based on needs and available resources, pilot countries will receive a varying degree of technical support in data collection, validation, analysis and reporting. The GEMI pilot countries are selected based on interest in water sector monitoring, while at the same time ensuring a representative mix in terms of geographical region, level of development, and size of population/physical area. The number of pilot countries is determined by available resources; additional countries motivated to become a pilot are nevertheless encouraged to contact us to explore options for participation. Any feedback is always highly appreciated.

# Monitoring water and sanitation at a glance

Water and sanitation, as absolute necessities for people, planet and prosperity, are at the very core of sustainable development. In embarking upon the 2030 Agenda for Sustainable Development with a dedicated goal on water and sanitation, credible data is needed to underpin sector advocacy, stimulate political commitment, inform decision making and trigger well-placed investment towards optimum health, environment and economic gains.

At present, there are several global initiatives that are monitoring different aspects of the water sector, but a coherent framework is missing. To fulfil this need, Integrated monitoring of water and sanitation related SDG targets – GEMI, is currently being developed, integrating and expanding existing efforts to ensure harmonised monitoring of the entire water cycle.

Focusing on aspects related to water, wastewater and ecosystem resources, GEMI complements WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) and UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) efforts on drinking water and sanitation.

Together, JMP, GEMI and GLAAS will be able to monitor global progress towards the entirety of SDG 6.

# Contact information

**Integrated monitoring of water and sanitation related SDG targets - GEMI is an inter-agency initiative composed of UNEP, UN-Habitat, UNICEF, FAO, UNESCO, WHO and WMO, operating under the umbrella of UN-Water. For more information, please contact one of our focal points.**

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# Learn more

**About water and sanitation in the 2030 Agenda for Sustainable Development:** www.unwater.org/sdgs/en/
**About the GEMI monitoring initiative:** www.unwater.org/gemi/en/

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