



# GLOBAL WATER INFORMATION SYSTEM

Monitoring and predicting global hydrological conditions  
for a climate ready world

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Credit: Jana Seidlova

### THE CHALLENGE

Effective water management and climate change mitigation and adaptation require water information. We can only manage what we measure. This basic principle applies for water management and disaster risk reduction, especially when changing environmental conditions and climate change impact our environment and societies. How much water is available to provide clean drinking water and food for everyone, to generate hydropower, to allow transportation on water courses and to save or restore function ecosystems? How can societies be protected and be prepared for water related disasters like floods and droughts? How much carbon uptake can we trigger through water and land management? To answer this, we need knowledge about the status and future development of water resources and hydrological hazards. Currently, this is a challenge in most parts of the world.

Key questions we will need to answer are: Will we have enough water or too much? Will the quality of water change? Do we need to build dams or other means of water storage to compensate for changes in rainfall, snow cover and ice melt? How do we optimise water and land management for carbon uptake?

Currently water information is fragmented, has large gaps, and is partially inaccessible. As a result, water management and planning are not fit for purpose. The growing information gap hinders us from further optimizing the use of water resources for societal benefit, climate smart action and ecological sustainability.

### THE CHANGE NEEDED

- Improved local level and national capacity and infrastructure to support planning and operating water and land management systems (including storage and allocation), as well as for disaster risk reduction, adaptation to climate change, and climate change mitigation action.

- Enhanced data and information exchange capabilities for amplifying and sharing of benefits of regional cooperation.
- Improved services and information to reduce drought and flood related climate change impacts.

### THE SOLUTION: THE GLOBAL WATER INFORMATION SYSTEM

We want to empower national and international water management and catalyze international cooperation through trustful bilateral and multilateral water assessments and outlooks. We want to create a global system that is interconnected and helps us and future generations to better understand how global hydrological systems change with changing climate and through human management of water systems and land surfaces. The capacity to monitor and manage this vital resource is fragmented and inadequate. We aspire to achieve the Global Water Information System through the following initiatives:

#### I. THE GLOBAL HYDROLOGICAL STATUS AND OUTLOOK SYSTEM (HYDROSOS)

To set up the first global operational mechanism for integrating hydrological status assessments and outlooks from and for national and regional stakeholders, in collaboration with transboundary basin organizations, global modeling centers, and technical and implementing partners. The HydroSOS framework aims at ensuring the provision of hydrological forecasts in a way that is consistent and comparable on local, regional and global scale to support the sustainable development agenda with baseline physical data on water.

## II. GLOBAL WATER DATA PORTAL

Establish a data portal which brings together water-related information curated by different organizations in one platform. This ensures transparent and easy accessibility of water data for all stakeholders and users, which further improves forecasting capabilities, water management, climate smart development planning and policy making

## III. ANNUAL GLOBAL STATE OF THE WATER REPORT

The Global State of the Water Report presents an overall picture of the available water resources in different basins globally during the previous year. The annual report allows to assess water resources and threats with respect to mean conditions and provides an insight into the change in current conditions compared to historical water data. Complementing the annual State of the Climate Report issued by WMO, the water report will allow to assess the impact of activities targeted at integrated water and climate action at global level.

## THE OUTCOMES

The Global Water Information System will support global agendas – 2030 Agenda, Sendai's Framework for Disaster Risk Reduction and foster international and regional cooperation among countries. Specific benefits are:

- Comprehensive overview of the status and further development of local, regional and global water resources.
- Enhanced local operational capabilities supports water resources and land management.
- Shared information products inform decision makers and prevent conflicts at river basin scale.
- Integrated regional/global overview will assist aid & development sector, NGOs (non-governmental Organizations) and UN (United Nations) agencies in their anticipatory action and response.
- The information derived from products enabled by HydroSOS will inform the different sectoral water users including energy, public water supply, agriculture, disaster risk reduction, and environment.

## THE IMPLEMENTATION: A COLLABORATIVE APPROACH

The Global Water Information System will be implemented with support from Members, regional and basin organizations, UN agencies, global funding institutions, research organizations, and other partners.

## IMPLEMENTATION STREAMS

HydroSOS – The initiative will focus on assessment of national capacities, capacity development, technical applications, establishment of Hydrological Centres, and approach implementation of HydroSOS regionally through project development

- Global Data portal – The HydroSOS products as well as products from other stakeholders will feed into a Global Data Portal where information is accessible for stakeholders and end users.
- Global state of the water report – This annual water status report will inform policy development and climate change mitigation and adaptation action.

## BUDGET

Estimated global implementation cost (one time): 525 Mi USD

Estimated global annual maintenance (recurring): 475 Mi USD



Illustration of the water cycles

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