

Progress on Freshwater Ecosystems

GLOBAL INDICATOR
6.6.1 UPDATES AND
ACCELERATION NEEDS
2021

EXECUTIVE SUMMARY





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Target 6.6: Ecosystems

By 2030, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes¹

Freshwater ecosystems have enormous biological, environmental, social, educational and economic value and provide a range of goods and services upon which people, and all life, depend. Ecosystems purify fresh water, regulate flows, supply water and food to billions of people, drive water, carbon and nutrient cycles, harbour exceptional freshwater biodiversity (Reid and others, 2018) and enable the productive use of water for drinking, agriculture, energy generation, navigation, employment and tourism (UN-Water, 2019). In the context of the Sustainable Development Goal (SDG) framework, freshwater ecosystems are foundational natural resources of the biosphere. Numerous development actions depend on them and either succeed or fail depending on the functional capacity or integrity of the ecosystem. Any adverse changes in the quantity and quality of fresh water ultimately reduce capacities to develop sustainably.

SDG target 6.6 seeks to halt the degradation and destruction of freshwater ecosystems and to assist the recovery of those that are already degraded. The target includes ecosystems such as inland and coastal wetlands, rivers, lakes, reservoirs and groundwater. Actions taken to protect and restore freshwater ecosystems readily contribute to the achievement of other SDG targets including on climate (target 13.1 on strengthening resilience and adaptive capacity to climate-related hazards and natural disasters in all countries), land (target 15.3 to combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world) and oceans (target 14.1 to prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution). Progress towards target 6.6 is monitored through indicator 6.6.1.

¹ While the official wording of target 6.6 states 2020, it is assumed the date will be updated to 2030.

Indicator 6.6.1: Change in the extent of water-related ecosystems over time

To inform decisions and actions that protect and restore freshwater ecosystems requires monitoring their particular properties (area, quantity and quality) to generate information that

can be used to determine the extent of any changes over time. This includes, for example, changes to the surface area of lakes, reservoirs and wetlands, changes in the water quality of lakes, reservoirs and rivers, and changes in the quantity of river flow and water held underground in aquifers.



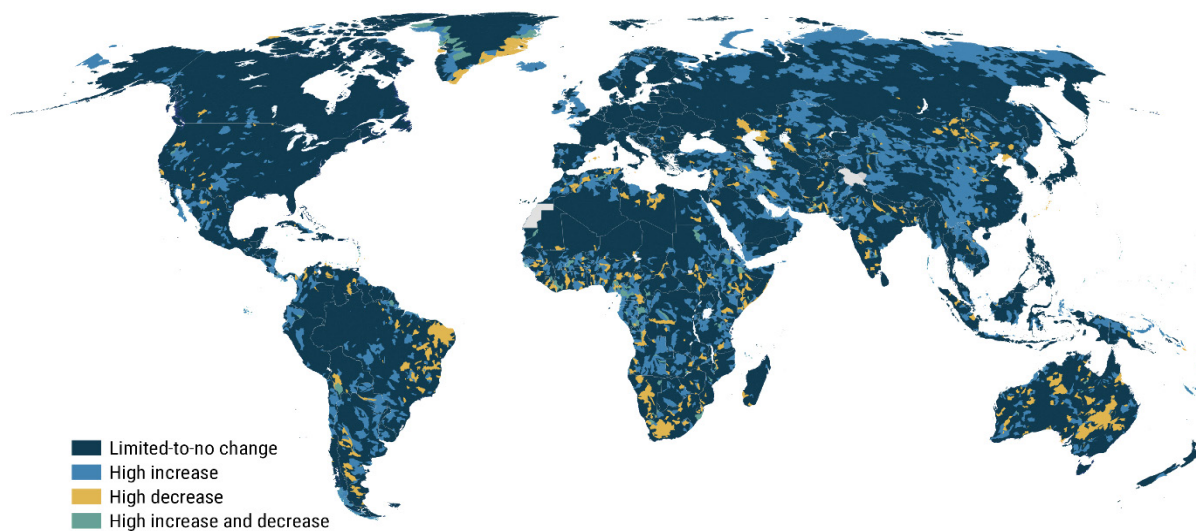
Denali National Park and Preserve, Arkansas, USA by Sterling Lanier on Unsplash

Executive summary

Human activities are causing globally observable changes to freshwater ecosystems and hydrological regimes. Demand for water from the world's increasing population has redefined natural landscapes into agricultural and urban land. Global precipitation and temperature changes are exacerbating the problem, impacting the quantity and quality of fresh water.

Rapid changes are being observed in surface-water area. The extent of surface water available in one fifth of the world's rivers basins² has changed significantly in the last five years. These impacted river basins are experiencing both rapid increases (light blue on map) in their surface-water area due to flooding, a growth in reservoirs and newly inundated land, and rapid declines (yellow on map) due to the drying up of lakes, reservoirs, wetlands, floodplains and seasonal water bodies.

Figure 1. Global surface-water changes

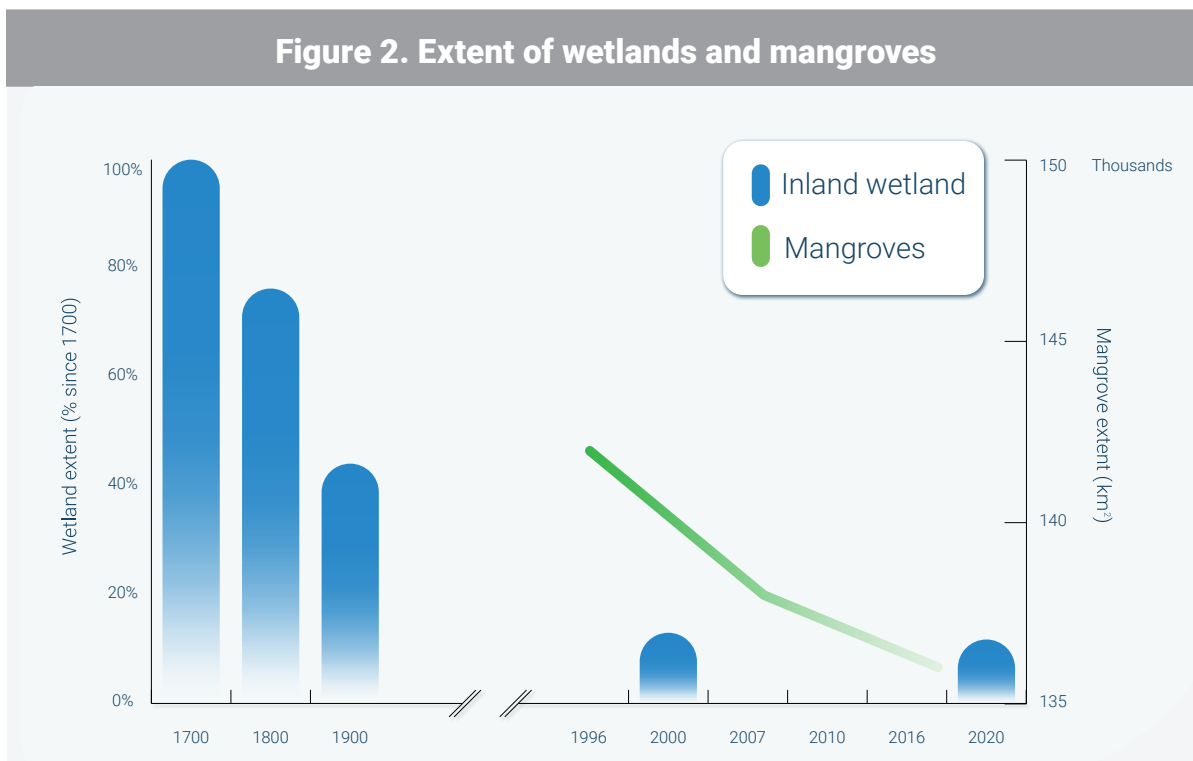


Source: DHI GRAS / UNEP

² 4,111 out of a total of 19,426 basins. The indicator compares changes during the last five years with changes during the last 20 years.

Coastal and inland wetlands are experiencing ongoing loss, with more than 80 per cent of wetlands estimated to have been lost since the pre-industrial era. At present, only 10–12 million km² are estimated to remain.

The area covered by coastal mangroves has also declined globally, by 4.2 per cent since 1996. Wetlands are needed to mitigate climate change, reduce the impacts of floods and droughts, and protect freshwater biodiversity loss.



It is crucial that the quality of lake water be improved. From a sample of 2,300 large lakes, almost a quarter recorded high to extreme turbidity readings in 2019. Approximately 21 million people, including 5 million children, live within a 5 km radius of the high-turbidity lakes, and likely rely on their water for various purposes. High turbidity can indicate water pollution, as the large volume of suspended particles act as hosts for pollutants such as metals and bacteria. Lakes with high turbidity can therefore adversely impact human and ecosystem health and must be improved to prevent this.

Recommendations to accelerate action to protect freshwater ecosystems

Implement and enforce national and river basin-level policies, laws and practices to effectively protect the integrity of freshwater ecosystems and undertake large-scale restoration of degraded freshwater ecosystems. Governments are urged to act to develop and implement action plans, road maps, investment portfolios, legislative frameworks and governing mechanisms that are able to identify, protect and/or restore countries' priority freshwater ecosystems.

Protection and restoration interventions should account for interdependent hydrological processes occurring within the entire river basin or watershed area. The provision of fresh water of sufficient quantity and quality to sustainably meet the socioeconomic and environmental demands of a dependent population should be the minimum benchmark of success.

Increase the uptake of freshwater data into water-dependent sectoral processes. Promote, share and disseminate available data across sectors and institutions and to companies that depend on fresh water.

The SDG 6 and indicator 6.6.1 national focal points are well positioned to promote planning across sectors and to process data and trends (particularly at the basin level) using data on the Freshwater Ecosystems Explorer.

Cross-sectoral planning should be in line with the framework of integrated water resources management (IWRM; indicator 6.5.1), with its implementation supporting the achievement of SDG 6.

Improve coordination across institutions working on freshwater security in order to achieve SDG 6. Recognizing the central role of healthy ecosystems in achieving water security, each of the above recommendations requires effective coordination among the institutions working on various aspects of social, economic and environmental water-related objectives, covered by each of the SDG 6 targets. Implementation of indicator 6.5.1 on IWRM supports cross-sectoral coordination and planning.



Denali National Park and Preserve, Arkansas, USA by Sterling Lanier on Unsplash

Lead authors

Stuart Crane (United Nations Environment Programme – UNEP); Christian Tottrup, Michael Munck (DHI GRAS)

Contributing authors

Torsten Bondo, Silvia Huber, Cécile M.M. Kittel, Daniel Druce, Mads Christensen, Razvan Berteau, Jonas B. Sølvsteen (DHI GRAS)

Reviewers

Joakim Harlin (UNEP); Paul Glennie, Gareth James Lloyd, Maija Bertule, Lisbet Rhiannon Hansen (UNEP-DHI Centre on Water and Environment); Chris Dickens (International Water Management Institute – IWMI); Bo Elberling (University of Copenhagen); Justin Hanson, Alejandro E. Lasarte (DHI); Ake Rosenqvist (Japan Aerospace Exploration Agency – JAXA)/solo Earth Observation – soloEO); Lammert Hilarides (Wetlands International); Stefan Simis (Plymouth Marine Laboratory); Kerstin Stelzer (Brockmann Consult); UN-Water Members and Partners; Strategic Advisory Group for the Integrated Monitoring Initiative for SDG 6

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Learn more about progress towards SDG 6

6 CLEAN WATER AND SANITATION



How is the world doing on **Sustainable Development Goal 6**? View, analyse and download global, regional and national water and sanitation data: <https://www.sdq6data.org/>

Sustainable Development Goal (SDG) 6 expands the Millennium Development Goal (MDG) focus on drinking water and basic sanitation to include the more holistic management of water, wastewater and ecosystem resources, acknowledging the importance of an enabling environment. Bringing these aspects together is an initial step towards addressing sector fragmentation and enabling coherent and sustainable management. It is also a major step towards a sustainable water future.

Monitoring progress towards SDG 6 is key to achieving this SDG. High-quality data help policymakers and decision makers at all levels of government to identify challenges and opportunities, to set priorities for more effective and efficient implementation, to communicate progress and ensure accountability, and to generate political, public and private sector support for further investment.

The 2030 Agenda for Sustainable Development specifies that global follow-up and review shall primarily be based on national official data sources. The data are compiled and validated by the United Nations custodian agencies, who contact country focal points every two to three years with requests for new data, while also providing capacity-building support. The last global “data drive” took place in 2020, resulting in status updates on nine of the global indicators for SDG 6 (please see below). These reports provide a detailed analysis of current status, historical progress and acceleration needs regarding the SDG 6 targets.

To enable a comprehensive assessment and analysis of overall progress towards SDG 6, it is essential to bring together data on all the SDG 6 global indicators and other key social, economic and environmental parameters. This is exactly what the SDG 6 Data Portal does, enabling global, regional and national actors in various sectors to see the bigger picture, thus helping them make decisions that contribute to all SDGs. UN-Water also publishes synthesized reporting on overall progress towards SDG 6 on a regular basis.



<p>Summary Progress Update 2021: SDG 6 – Water and Sanitation for All</p>	<p>Based on latest available data on all SDG 6 global indicators. Published by UN-Water through the UN-Water Integrated Monitoring Initiative for SDG 6.</p> <p>https://www.unwater.org/publications/summary-progress-update-2021-sdg-6-water-and-sanitation-for-all/</p>
<p>Progress on Household Drinking Water, Sanitation and Hygiene – 2021 Update</p>	<p>Based on latest available data on SDG indicators 6.1.1 and 6.2.1. Published by World Health Organization (WHO) and United Nations Children’s Fund (UNICEF).</p> <p>https://www.unwater.org/publications/who-unicef-joint-monitoring-program-for-water-supply-sanitation-and-hygiene-jmp-progress-on-household-drinking-water-sanitation-and-hygiene-2000-2020/</p>
<p>Progress on Wastewater Treatment – 2021 Update</p>	<p>Based on latest available data on SDG indicator 6.3.1. Published by WHO and United Nations Human Settlements Programme (UN-Habitat) on behalf of UN-Water.</p> <p>https://www.unwater.org/publications/progress-on-wastewater-treatment-631-2021-update/</p>
<p>Progress on Ambient Water Quality – 2021 Update</p>	<p>Based on latest available data on SDG indicator 6.3.2. Published by United Nations Environment Programme (UNEP) on behalf of UN-Water.</p> <p>https://www.unwater.org/publications/progress-on-ambient-water-quality-632-2021-update/</p>
<p>Progress on Water-Use Efficiency – 2021 Update</p>	<p>Based on latest available data on SDG indicator 6.4.1. Published by Food and Agriculture Organization of the United Nations (FAO) on behalf of UN-Water.</p> <p>https://www.unwater.org/publications/progress-on-water-use-efficiency-641-2021-update/</p>
<p>Progress on Level of Water Stress – 2021 Update</p>	<p>Based on latest available data on SDG indicator 6.4.2. Published by FAO on behalf of UN-Water.</p> <p>https://www.unwater.org/publications/progress-on-level-of-water-stress-642-2021-update/</p>
<p>Progress on Integrated Water Resources Management – 2021 Update</p>	<p>Based on latest available data on SDG indicator 6.5.1. Published by UNEP on behalf of UN-Water.</p> <p>https://www.unwater.org/publications/progress-on-integrated-water-resources-management-651-2021-update/</p>
<p>Progress on Transboundary Water Cooperation – 2021 Update</p>	<p>Based on latest available data on SDG indicator 6.5.2. Published by United Nations Economic Commission for Europe (UNECE) and United Nations Educational, Scientific and Cultural Organization (UNESCO) on behalf of UN-Water.</p> <p>https://www.unwater.org/publications/progress-on-transboundary-water-cooperation-652-2021-update/</p>
<p>Progress on Water-related Ecosystems – 2021 Update</p>	<p>Based on latest available data on SDG indicator 6.6.1. Published by UNEP on behalf of UN-Water.</p> <p>https://www.unwater.org/publications/progress-on-water-related-ecosystems-661-2021-update/</p>
<p>National Systems to Support Drinking-Water, Sanitation and Hygiene – Global Status Report 2019</p>	<p>Based on latest available data on SDG indicators 6.a.1 and 6.b.1. Published by WHO through the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) on behalf of UN-Water.</p> <p>https://www.unwater.org/publication_categories/glaas/</p>

Presenting the UN-Water Integrated Monitoring Initiative for SDG 6

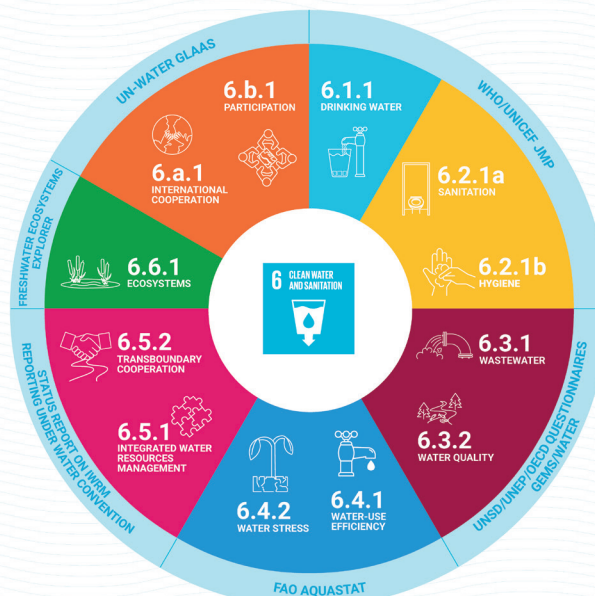
Through the UN-Water Integrated Monitoring Initiative for SDG 6 (IMI-SDG6), the United Nations seeks to support countries in monitoring water- and sanitation-related issues within the framework of the 2030 Agenda for Sustainable Development, and in compiling country data to report on global progress towards SDG 6.

IMI-SDG6 brings together the United Nations organizations that are formally mandated to compile country data on the SDG 6 global indicators, and builds on ongoing efforts such as the World Health Organization (WHO)/United Nations Children's Fund (UNICEF) Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP), the Global Environment Monitoring System for Freshwater (GEMS/Water), the Food and Agriculture Organization of the United Nations (FAO) Global Information System on Water and Agriculture (AQUASTAT) and the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS).

This joint effort enables synergies to be created across United Nations organizations and methodologies and requests for data to be harmonized, leading to more efficient outreach and a reduced reporting burden. At the national level, IMI-SDG6 also promotes intersectoral collaboration and consolidation of existing capacities and data across organizations.

The overarching goal of IMI-SDG6 is to accelerate the achievement of SDG 6 by increasing the availability of high-quality data for evidence-based policymaking, regulations, planning and investments at all levels. More specifically, IMI-SDG6 aims to support countries to collect, analyse and report SDG 6 data, and to support policymakers and decision makers at all levels to use these data.

- Learn more about SDG 6 monitoring and reporting and the support available: www.sdg6monitoring.org
- Read the latest SDG 6 progress reports, for the whole goal and by indicator: https://www.unwater.org/publication_categories/sdg6-progress-reports/
- Explore the latest SDG 6 data at the global, regional and national levels: www.sdg6data.org



INDICATORS	CUSTODIANS
6.1.1 Proportion of population using safely managed drinking water services	WHO, UNICEF
6.2.1 Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water	WHO, UNICEF
6.3.1 Proportion of domestic and industrial wastewater flows safely treated	WHO, UN-Habitat, UNSD
6.3.2 Proportion of bodies of water with good ambient water quality	UNEP
6.4.1 Change in water-use efficiency over time	FAO
6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	FAO
6.5.1 Degree of integrated water resources management	UNEP
6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation	UNECE, UNESCO
6.6.1 Change in the extent of water-related ecosystems over time	UNEP, Ramsar
6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan	WHO, OECD
6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management	WHO, OECD

UN-Water reports

UN-Water coordinates the efforts of United Nations entities and international organizations working on water and sanitation issues. By doing so, UN-Water seeks to increase the effectiveness of the support provided to Member States in their efforts towards achieving international agreements on water and sanitation. UN-Water publications draw on the experience and expertise of UN-Water’s Members and Partners.

<p>SDG 6 Progress Update 2021 – summary</p>	<p>This summary report provides an executive update on progress towards all of SDG 6 and identifies priority areas for acceleration. The report, produced by the UN-Water Integrated Monitoring Initiative for SDG 6, present new country, region and global data on all the SDG 6 global indicators.</p>
<p>SDG 6 Progress Update 2021 – 8 reports, by SDG 6 global indicator</p>	<p>This series of reports provides an in-depth update and analysis of progress towards the different SDG 6 targets and identifies priority areas for acceleration: Progress on Drinking Water, Sanitation and Hygiene (WHO and UNICEF); Progress on Wastewater Treatment (WHO and UN-Habitat); Progress on Ambient Water Quality (UNEP); Progress on Water-use Efficiency (FAO); Progress on Level of Water Stress (FAO); Progress on Integrated Water Resources Management (UNEP); Progress on Transboundary Water Cooperation (UNECE and UNESCO); Progress on Water-related Ecosystems (UNEP). The reports, produced by the responsible custodian agencies, present new country, region and global data on the SDG 6 global indicators.</p>
<p>UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS)</p>	<p>GLAAS is produced by the World Health Organization (WHO) on behalf of UN-Water. It provides a global update on the policy frameworks, institutional arrangements, human resource base, and international and national finance streams in support of water and sanitation. It is a substantive input into the activities of Sanitation and Water for All (SWA) as well as the progress reporting on SDG 6 (see above).</p>
<p>United Nations World Water Development Report</p>	<p>The United Nations World Water Development Report (WWDR) is UN-Water’s flagship report on water and sanitation issues, focusing on a different theme each year. The report is published by UNESCO, on behalf of UN-Water and its production is coordinated by the UNESCO World Water Assessment Programme. The report gives insight on main trends concerning the state, use and management of freshwater and sanitation, based on work done by the Members and Partners of UN-Water. Launched in conjunction with World Water Day, the report provides decision-makers with knowledge and tools to formulate and implement sustainable water policies. It also offers best practices and in-depth analyses to stimulate ideas and actions for better stewardship in the water sector and beyond.</p>

The progress reports of the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP)	The JMP is affiliated with UN-Water and is responsible for global monitoring of progress towards SDG6 targets for universal access to safe and affordable drinking water and adequate and equitable sanitation and hygiene services. Every two years the JMP releases updated estimates and progress reports for WASH in households, schools and health care facilities.
Policy and Analytical Briefs	UN-Water's Policy Briefs provide short and informative policy guidance on the most pressing freshwater-related issues that draw upon the combined expertise of the United Nations system. Analytical Briefs provide an analysis of emerging issues and may serve as basis for further research, discussion and future policy guidance.

UN-Water planned publications

- **UN-Water Policy Brief on Gender and Water**
- **Update of UN-Water Policy Brief on Transboundary Waters Cooperation**
- **UN-Water Analytical Brief on Water Efficiency**

More information: <https://www.unwater.org/unwater-publications/>

