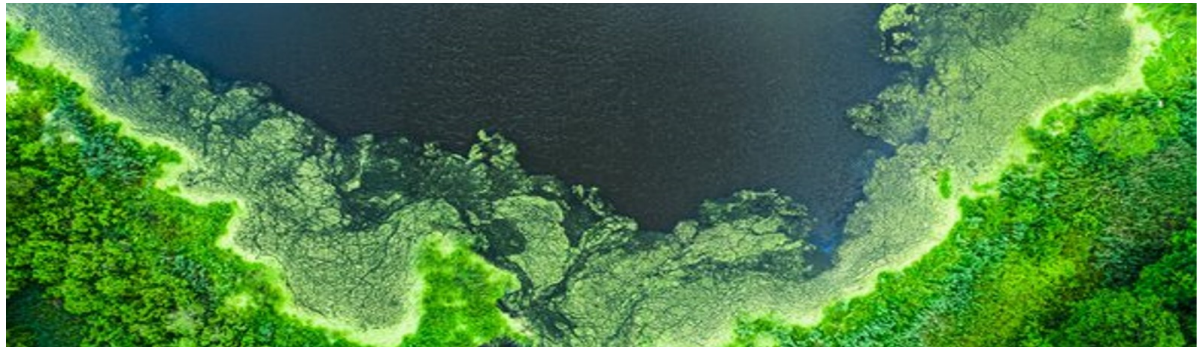


Harnessing Satellites for Water



by Blake Schaeffer, Scientist at US EPA.

Satellites can provide a wide range of water quality measures such as temperature, light attenuation, oil slicks, organic matter, chlorophyll, turbidity, and benthic habitat type. Research and practical applications have evolved and quickly improved with newer satellite technologies including operational missions such as the European Sentinels, 2-5m resolution commercial missions, and new/upcoming hyperspectral missions, such as the NASA PACE and GLIMR missions.

Across the US, there are field measurements of water temperature for more than 11,000 lakes (data available in the Water Quality Portal). The Landsat (30m spatial resolution) satellite substantially increases the number of lakes to more than 170,000 lakes across the US. That number doesn't even include measurements from rivers and estuaries! By the way, Landsat surface temperature data is freely available at the USGS Earth Explorer website.

A recent study on potential annual cost savings looked at the satellite monitoring of chlorophyll from the European Space Agency Sentinel-3 and NASA and USGS Landsat satellites was between \$5.7-\$316 million just for lakes! Also, satellite data used in recreational early warning systems have been shown to save \$360,000 in a single advisory case study. That is huge! Satellites span political and geographic bounda-

ries, provide an opportunity for systematic approaches to better target discrete sampling, and a more comprehensive spatial and temporal context. Within this scenario, IWA can help to widen the use of these products in the water industry and ensure they are universal and accessible.

You may be wondering where we are in terms of satellites technology adoption. Operational satellites such as Landsat, the European Sentinels, and even commercial satellites allow for long term investments and benefits that can cover the full technology adoption lifecycle. Based on a technology adoption lifecycle, the water satellite community is currently in the "early adopters" phase and transitioning to the "early majority." Satellite derived water quality information is now at the phase where there are some early adopters of the technology and progress is accelerating quickly.

Additional evidence of the early majority adoption of satellite technologies comes from American Water Works Association's (AWWA) update of the M57 manual on algal source to treatment methods. The manual is being updated with a new chapter dedicated to the use of satellite remote sensing techniques. Also, the Interstate Technology Regulatory Council (ITRC) has included satellite remote sensing as a monitoring tool in their guidance. Finally, the World Health Organization (WHO) has also included remote sensing as a monitoring tool in their recently updated guide for cyanobacteria.

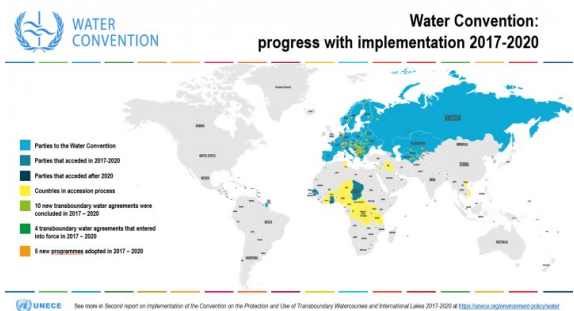
UNECE report highlights progress in implementation of the Water Convention and calls for stronger cooperation on transboundary water basins

24 September 2021



Joining the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) makes a difference! Parties to the Water Convention constantly advance water cooperation at the basin, subbasin and bilateral levels. The conclusion of at least 10 new transboundary water cooperation agreements and the entry into force of another 4 in the period 2017–2020 demonstrate the Parties' strong commitment to effective cooperation. Most of the 144 transboundary river and lake basins reported on by the Parties are covered by agreements or arrangements in force. Nevertheless, there are at least 16 river and lake basins and 15 river and lake subbasins that are not covered by any agreement or arrangement. These are some of the findings of the second report on implementation of the Water Convention, published by the United Nations Economic Commission for Europe (UNECE) on the occasion of the the ninth session of the Meeting of the Parties to the Water Convention (Geneva and online, 29 September–1 October 2021). The report builds on the national reports submitted by all the Parties to the Convention in the framework of the second reporting exercise on Sustainable Development Goal indicator 6.5.2 and under the Water Con-

It covers the period 2017–2020 – a crucial phase in the evolution of the Water Convention, marked by the enlargement of the treaty's membership through the accession of several countries from outside the UNECE region and the initiation, by other such countries, of their national processes towards accession. For the first time, the geographical scope of the report covers the implementation of the Convention by two of its new Parties from beyond the UNECE region (Chad and Senegal).



The report confirms that, where agreements for transboundary waters are in place, in most cases, participating countries take part in a joint body established to facilitate implementation of an agreement. Joint bodies, such as bilateral or basin commissions, act as effective platforms for day-to-day dialogue and cooperation. However, not many joint bodies are tasked with dealing with climate change adaptation, public participation and consultations and early warning of water-related diseases, despite the critical importance of these areas for the well-being of populations and ecosystems in transboundary basins. Despite overall positive trends, some Parties face difficulties in the negotiation and adoption of agreements for transboundary waters and, simultaneously, the establishment of joint bodies.

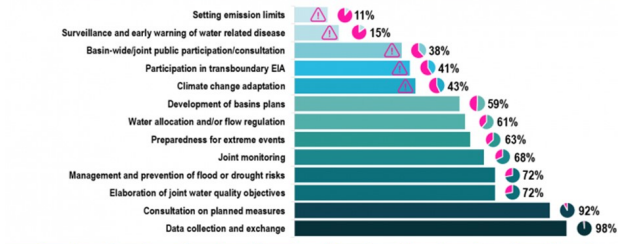
SDG 6.5.2 TRANSBOUNDARY COOPERATION

Transboundary waters account for **60%** of the world's freshwater flows

Why is the progress slow ?



vention



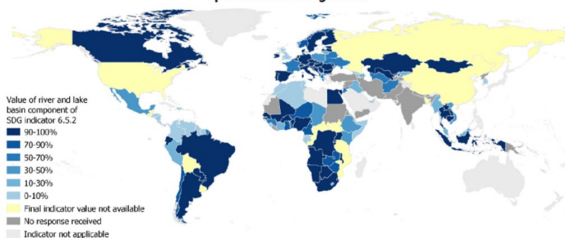
See more in Second report on implementation of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes 2017-2020 #Slovenia #France #Spain #Germany #Poland #Czechia

This is identified as a particular challenge in basins where other riparian countries are not Parties to the Water Convention, showing the importance of motivating these neighbouring countries to join the Convention. Challenges also relate to exchange of data and information: in at least 24 river and lake basins, riparian countries do not exchange data and information at the basin level.

Although the report demonstrates progress in improving knowledge of transboundary groundwaters, the identification, delineation and characterization of transboundary aquifers remain challenges for many Parties. The report recommends providing support to the conclusion of agreements to cover transboundary groundwaters where they are not covered by existing agreements and to the operationalization of cooperation on transboundary groundwaters where groundwaters are covered by existing agreements.

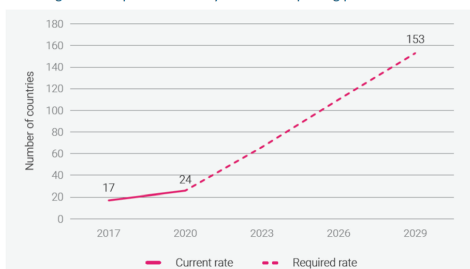
The second progress report also shows a need to facilitate cooperation in the areas of human health, adaptation to climate change and disaster risk reduction in transboundary basins. The report concludes with a series of recommendations addressed to the Parties, aimed at assisting them to identify ways to strengthen implementation of the provisions of the Convention and improve understanding of its requirements, including by using the institutional platform of the Convention.

Proportion of transboundary river and lake basin area in a country covered by an operational arrangement



Acceleration

⇒ Building on the impetus offered by SDG 6.5.2 reporting process



Turkey to ratify Paris Climate Agreement soon: Minister

Paris Agreement on climate change mitigation is on agenda of Turkish parliament, says environment minister

Yıldız Nevin Gündoğmuş 30 09 2021



Turkey's environment and urbanization minister on Thursday said the 2016 Paris Agreement on climate change mitigation has become an agenda item of the parliament and his country would soon become a party to the deal once it is ratified.

Murat Kurum's remarks came during a pre-COP26 meeting held in Italy's Milan city.

He said that his country would soon be part of the agreement to contribute to the efforts against climate change, and Turkey has already set a "net zero emission" target.

Kurum said the Turkish government has made it a priority to invest more in the future in green and sustainable development, and renewable energy.

The Turkish minister went on to note that Intergovernmental Panel on Climate Change (IPCC) reports pointed out that the negative effects of climate change were moving toward an irreversible level and they would continue to be felt in a stronger, faster and more intensified manner in the future.

"Our expectation from COP26 is that all countries take a fair level of responsibility in the fight against climate change," the minister said, adding no country should be left behind and that technology should be shared especially with developing countries.

He argued that the problem was aggravating as the developed countries keep sending emission-producing industries to the developing countries which means the developing countries would not live up to reaching zero-emission goals. Kurum also had a conversation with US special presidential envoy for climate John Kerry and UN Human Settlements Program (UN-Habitat) Executive Director Maimunah Mohd Sharif.



Ethiopia reaches second-year target for filling disputed Nile mega-dam

19/07/2021

Ethiopia has completed filling the reservoir of its huge dam on the Blue Nile river for a second year, a minister said on Monday, a move that has already angered Egypt.

Addis Ababa says the Grand Ethiopian Renaissance Dam (GERD), a \$4 billion hydropower project, is crucial to its economic development and to provide power.

But the dam has been a source of dispute ever since Ethiopia broke ground on the project in 2011, with Egypt and Sudan viewing it as a threat because of their dependence on Nile waters.

Talks held under the auspices of the African Union have failed to yield a three-way agreement on the dam's filling and operations, and Cairo and Khartoum have demanded Addis Ababa cease filling the massive reservoir until such a deal is reached.

But Ethiopian officials have argued that filling is a natural part of the dam's construction process and cannot be stopped.

"The second filling of the Renaissance dam has been completed and the water is overflowing," Seleshi Bekele, Ethiopia's minister for water, irrigation and energy said on Monday.

"It means we have now the needed volume of the water to run the two turbines," he said in a tweet.

Long-running diplomatic efforts to resolve the dispute between the three countries have yielded little success.

The UN Security Council met earlier this month to discuss the project, although Ethiopia later slammed the session as an "unhelpful" distraction from the AU-led process.

The United States has also said Ethiopia's filling of the dam had the potential to raise tensions and has urged all parties to refrain from any unilateral actions.

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Reservoir-filling began last year, with Ethiopia announcing in July 2020 it had hit its target of 4.9 billion cubic metres.

There is now enough water to install and operate the dam's first two turbines, which would allow the project to start producing energy for the first time, said the official, who spoke on condition of anonymity because he was not authorised to brief the media. (FRANCE 24 with REUTERS and AFP)



We need to built a future,
Where people live in harmony with nature

HPA

Think Forward . Lead Forward

